nrm 1

RICS new rules of measurement

Order of cost estimating and cost planning for capital building works

RICS

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RICS new rules of measurement

NRM 1: Order of cost estimating and cost planning for capital building works

2nd edition

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Acknowledgments

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Foreword to the first edition

Since 1922 the Standard Method of Measurement (SMM) has provided quantity surveyors with rules of measurement for building works. However, these rules were specifically drafted to advise quantity surveyors on how to measure building work items for inclusion in bills of quantities which, in turn, are used for the purpose of obtaining a tender price for a building project. Previous SMMs did not provide specific guidance on the measurement of building works for the purpose of producing cost estimates or cost plans. In the absence of any rules for measuring and describing building works for estimates and cost plans, quantity surveyors have generally adopted the principles described in the SMM. This, however, has resulted in inconsistent approaches being used by quantity surveyors to the measurement and description of building works for estimates and cost plans. This lack of consistency in measurement and description makes it extremely difficult for the employer and project team to understand what is included in the cost estimate, cost limit or cost target advised by the quantity surveyor; often resulting in doubts about the cost advice provided. Moreover, this lack of uniformity afforded a just ground of complaint on the part of the employer, as the employer was often left in doubt as to what was really included in a cost estimate or cost plan.

A Steering Group was set up by the RICS Quantity Surveying and Construction Professional Group to research the problems associated with the measurement of building works at all stages of the design and construction process. The Steering Group recognised that both the employer and the project/design team members need to have confidence in the measurement and cost information provided by the quantity surveyor; and quickly came to the conclusion that it was essential that guidance be made available to quantity surveyors so that a common and consistent basis is used to measure areas and building works items for the purpose of order of cost estimates and cost plans; as well as giving guidance on providing a structured approach for dealing with the other constituents needed to calculate cost estimates, cost limits or cost targets. Hence, it was decided that a bespoke set of measurement rules were required for the preparation of order of cost estimates and elemental cost plans.

Foreword to the second edition

Although the first edition of the *RICS new rules of measurement: Order of cost estimating and elemental cost planning* was published in February 2009, a number of factors have combined to cause the need for a second edition. As part of the review of the first edition, the opportunity was also taken to simplify and augment certain aspects the rules. The main changes incorporated in the second edition are:

- the title of the rules has been changed to the *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works* to distinguish between the rules for capital building works and building maintenance works.
- the renumbering of group element 9: Facilitating works as group element 0 (i.e. making facilitating works the first group element); with the group elements now being 0 to 8 (being group elements 1 to 9 in the first edition of the *RICS new rules of measurement: Order of cost estimating and elemental cost planning*);
- the renumbering of group elements 10 to 15 as 9 to 14, with group elements 9 to 14 being main contractor's preliminaries, main contractor's overheads and profit, project/design team fees, other development/project costs, risks and inflation respectively;
- to restructure group element 1: Substructure. This now comprises a single element (1.1: Substructure), which is divided into five sub-elements, namely: 1.1.1: Standard foundations, 1.1.2: Specialist foundation systems, 1.1.3: Lowest floor construction, 1.1.4: Basement excavation, and 1.1.5: Basement retaining walls;
- to rename and restructure the sub-elements within element 2.2: Upper floors. This element is now divided into three sub-elements, namely: 2.2.1: Floors, 2.2.2: Balconies, and 2.2.3: Drainage to balconies;
- to rename element 5.13: Special installations/systems and restructure the sub-elements within, namely: 5.13.1: Specialist piped supply installations, 5.13.2: Specialist refrigeration systems, 5.13.3: Other specialist mechanical installations/ systems, 5.13.4: Specialist electrical/ electronic installations/ systems, and 5.13.5: Water features;
- to change the headings of a few of the elements and sub-elements; again so that both the NRM and BCIS elemental breakdown structures are fully aligned (e.g. element 5.1 has been changed from 'Sanitary appliances' to 'Sanitary installations', element 5.9 from 'Gas and other fuel installations' to 'Fuel installations/ systems' and sub-element 5.8.5 has been changed from 'Transference devices' to 'Local electricity generation systems');
- to omit the sub-elements relating to testing and commissioning of services and incorporating these works within each sub-element to which such work applies; and
- to place the rules of measurement for compiling an elemental cost model within Part 2 (Measurement rules for order of cost estimating) of the rules – Paragraph 2.8 (Measurement rules for elemental method of estimating), thereby making clearer the purpose and use of this cost management tool. These measurement rules were incorporated within an appendix in the first edition of the rules.

The revised logic and arrangement of the group elements, elements and sub-elements (i.e. levels 1 to 3) for elemental cost planning can be found at Appendix E to these rules.

First and foremost, changes (1) to (7) referred to above have been made so that both the RICS NRM and RICS BCIS (Building Cost Information Service) elemental breakdown structures are fully aligned. Notwithstanding these changes, the basic organisation of the second edition of the *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works* remains the same as the first edition. Change (8) has been made simply to make clear the purpose and use of the elemental method of estimating to establish an initial cost model before embarking on the preparation of formal cost plan 1, and how these rules can be used as a basis for the preparation of cost analyses and benchmark data.

Account has also been taken to make minor amendments and corrections to the text of the second edition, as well as to simplify and augment certain aspects the rules. Other than the changes referred to above, there are no changes in principle or in the general arrangement of the *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works*.

The Steering Group is indebted to a number of organisations and individuals who have contributed comments and suggestions for amendment, in particular David Benge of Gleeds Cost Management Limited for his invaluable advice and assistance throughout.

The work of analysing the comments and suggestions and drafting the second edition of the *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works* was undertaken by David Benge of Gleeds Cost Management Limited.

This second edition will become operative on 1 January 2013 and is post dated accordingly.

Acknowledgments

The development of the *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works* was facilitated by the RICS Quantity Surveying and Construction Professional Group under the direction of the Steering Group.

Lead author:

- David Benge, Gleeds Cost Management Limited

Steering Group:

- **Chair**: Stuart Earl, Gleeds Cost Management Limited
- David Benge, Gleeds Cost Management Limited
- Alan Cripps, RICS
- John Davidson, Consultant
- Adrian Green, Laing O'Rourke
- Andy Green, Faithful and Gould
- Joe Martin, BCIS
- Alan Muse, RICS
- Sean Smylie, Shepherd Construction; Contractors Legal Group; U.K. Contractors Group
- Roy Stratton, Countryside Properties

The substantive drafting of the *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works* was undertaken by Mr David Benge of Gleeds Cost Management Limited.

The Steering Group express their thanks to the professional and trade bodies, and to the quantity surveyors and building contractors, for their co-operation and advice in the detailed consultations that have taken place. The Steering Group also expresses its thanks to the surveyors who have assisted in testing the *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works* and to the editors who have had the task of bringing together the final document.

Introduction

Status of the *RICS new rules of measurement*

These rules have the status of a guidance note. Where recommendations are made for specific professional tasks, these are intended to represent 'best practice', i.e. recommendations which in the opinion of RICS meet a high standard of professional competence.

Although members are not required to follow the recommendations contained in the note, they should take into account the following points.

When an allegation of professional negligence is made against a surveyor, a court or tribunal may take account of the contents of any relevant guidance notes published by RICS in deciding whether or not the member had acted with reasonable competence.

In the opinion of RICS, a member conforming to the practices recommended in this note should have at least a partial defence to an allegation of negligence if they have followed those practices. However, members have the responsibility of deciding when it is inappropriate to follow the guidance.

It is for each surveyor to decide on the appropriate procedure to follow in any professional task. However, where members do not comply with the practice recommended in this note, they should do so only for a good reason. In the event of a legal dispute, a court or tribunal may require them to explain why they decided not to adopt the recommended practice. Also, if members have not followed this guidance, and their actions are questioned in an RICS disciplinary case, they will be asked to explain the actions they did take and this may be taken into account by the Panel.

In addition, guidance notes are relevant to professional competence in that each member should be up to date and should have knowledge of guidance notes within a reasonable time of their coming into effect.

Document status defined

RICS produces a range of standards products. These have been defined in the table below. This document is a guidance note.

Type of document	Definition	Status
RICS practice statement	Document that provides members with mandatory requirements under Rule 4 of the Rules of Conduct for members	Mandatory
RICS code of practice	Standard approved by RICS, and endorsed by another professional body that provides users with recommendations for accepted good practice as followed by conscientious practitioners	Mandatory or recommended good practice (will be confirmed in the document itself)
RICS guidance note	Document that provides users with recommendations for accepted good practice as followed by competent and conscientious practitioners	Recommended good practice
RICS information paper	Practice based information that provides users with the latest information and/or research	Information and/or explanatory commentary

The RICS new rules of measurement (NRM) suite of documents in context

The *RICS new rules of measurement* (NRM) is a suite of documents issued by the RICS Quantity Surveying and Construction Professional Group. The rules have been written to provide a standard set of measurement rules that are understandable by anyone involved in a construction project.

The rules provide essential guidance to all those involved in, as well as those who wish to be better informed about, the cost management of construction projects. Although the *RICS new rules of measurement* are principally based on UK practice, the requirements for a coordinated set of rules and underlying philosophy behind each volume have worldwide application.

- NRM 1: Order of cost estimating and cost planning for capital building works
- NRM 2: Detailed measurement for building works
- NRM 3: Order of cost estimating and cost planning for building maintenance works.

The NRM suite comprises the following three volumes:

NRM 1: Order of cost estimating and cost planning for capital building works

This volume provides indispensable guidance on the quantification of building works for the purpose of preparing cost estimates and cost plans. Direction on how to quantify other items forming part of the cost of a construction project, but which are not reflected in the measurable building work items, is also provided – i.e. preliminaries, overheads and profit, project team and design team fees, risk allowances, inflation, and other development and project costs.

NRM 1 is the 'cornerstone' of good cost management of construction projects – enabling more effective and accurate cost advice to be given to clients and other project team members, as well as facilitating better cost control.

Although written primarily for the preparation of order of cost estimates and cost plans, the rules will be invaluable when preparing approximate estimates.

In addition, the rules can be used as a basis for capturing historical cost data in the form required for order of cost estimates and elemental cost plans, thereby completing the 'cost management cycle'.

NRM 2: Detailed measurement for building works

This volume provides fundamental guidance on the detailed measurement and description of building works for the purpose of obtaining a tender price. The rules address all aspects of bill of quantities (BQ) production, including setting out the information required from the employer and other construction consultants to enable a BQ to be prepared, as well as dealing with the quantification of non-measurable work items, contractor designed works and risks. Guidance is also provided on the content, structure and format of BQ, as well as the benefits and uses of BQ.

While written mainly for the preparation of bill of quantities, quantified schedules of works and quantified work schedules, the rules will be invaluable when designing and developing standard or bespoke schedules of rates.

These rules provide essential guidance to all those involved in the preparation of bill of quantities, as well as those who wish to be better informed about the purpose, use and benefits of bill of quantities.

NRM 3: Order of cost estimating and cost planning for building maintenance works

This volume provides essential guidance on the quantification and description of maintenance works for the purpose of preparing initial order of cost estimates during the preparation stages of a building project, cost plans during the design development and pre-construction stages, and detailed, asset-specific cost plans during the pre-construction phases of a building project. The guidance provided by the rules also aids the procurement and cost control of maintenance works.

The rules follow the same framework and premise as *NRM 1: Order of cost estimating and cost planning for capital building works*. Consequently, they give direction on how to quantify and measure other items associated with maintenance works, but which are not reflected in the measurable maintenance work items – i.e. maintenance contractor's management and administration charges, overheads and profit, other maintenance-related costs, consultants' fees and risks in connection with maintenance works.

Unlike capital building works projects, maintenance works are required to be carried out from the day a building or asset is put to use until the end of its life. Accordingly, while the costs of a capital building works project are usually incurred by the building owner/developer over a relatively short-term, costs in connection with maintenance works are incurred throughout the life of the building – over the long-term. Consequently, the rules provide guidance on the measurement and calculation of the time value of money, guidance on using the measured data to inform life cycle of cost plans and forward maintenance plans, as well as VAT, and taxation.

NRM 3: Cost estimating and cost planning for building maintenance works, together with *NRM 1: Order of cost estimating and cost planning for capital building works,* presents the basis of good cost management of capital building works and maintenance works – enabling more effective and accurate cost advice to be given to clients and other project team members, as well as facilitating better cost control.

Identity

The rules are called NRM 1: *Order of cost estimating and cost planning for capital building works*.

Enquiries

Enquiries concerning the rules may be made in the first instance to the Quantity Surveying and Construction Professional Group at RICS.

RICS QS & Construction Professional Group

The Royal Institution of Chartered Surveyors (RICS)

Parliament Square

London SW1P 3AD

United Kingdom

e: qsandc.professionalgroup@rics.org

Any suggestions for future revisions are welcomed and may also be sent to the Quantity Surveying and Construction Professional Group at RICS.

Part 1: General

Part 1: General

1.1 Introduction

1.1.1 This part places order of cost estimating and cost planning in context with the RIBA Plan of Work and OGC Gateway Process, and explains the symbols, abbreviations and definitions used in the rules.

1.2 Measurement in context with the RIBA Plan of Work and OGC Gateway Process

1.2.1 Throughout this document, references are made to both the RIBA Plan of Work and the OGC Gateway Process and the RIBA Work Stages/OGC Gateways within.

1.2.2 The RIBA Plan of Work is a construction industry recognised framework that organises the process of managing and designing building projects and administering building contracts into a number of key Work Stages. The RIBA Plan of Work has 11 sequential steps. Despite its apparent linear nature, it should be recognised that the sequence or content of RIBA Work Stages may need to be varied or overlapped to suit the proposed procurement method. Consequently, when two or more Work Stages are combined, it is not always transparent when a building project is moving from one stage to another. As such, it is an ideal tool, provided that it is conceptualised as providing the basic outline of the building project process.

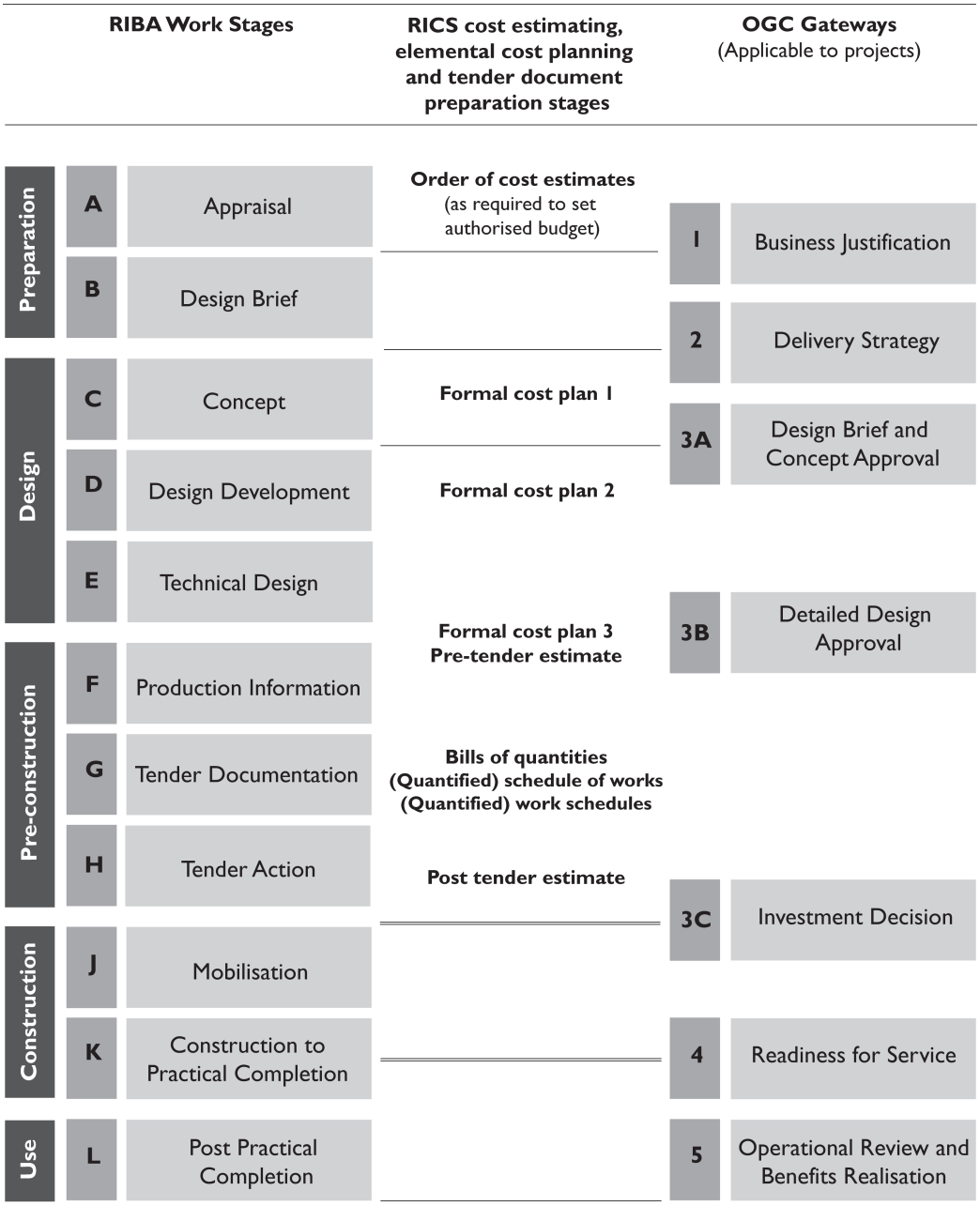
1.2.3 As an alternative to the RIBA Plan of Work, central civil government, the health sector, local government and the defence sector have adopted the OGC Gateway Process as best practice for managing and designing building projects. The process examines programmes and projects at key decision points in their life cycle. It looks ahead to provide assurance that the employer can progress to the next stage. Project reviews are carried out under OGC Gateway Reviews 1 to 5. Typically a project will undergo three reviews before commitment to invest, and two looking at service implementation and confirmation of the operational benefits.

1.2.4 Both models are recognised frameworks for managing and designing building project.

1.2.5 Cost estimates and cost plans will need to be prepared by the quantity surveyor/cost manager at various stages of the RIBA Plan of Work or at various gateways in the OGC Gateway Process, whichever management process is applicable. To address this requirement RICS has determined a series of formal cost estimating and elemental cost planning stages. These formal stages are shown in Figure 1.1 in the context of the RIBA Work Stages and OGC Gateways. Notwithstanding this, some employers may require the preparation of cost plans at different RIBA Work Stages. For example, some employers may ask for Formal Cost Plan 1 to be prepared at Work Stage C+ (Work Stage C+ being an employer-defined work stage, which occurs at a point between the completion of Work Stage C: Concept and Work Stage D: Design Development). Work Stage C+ would usually comprise the deliverables that the employer requires prior to submitting a building project for planning approval. It is essential, therefore, that the quantity surveyor/cost manager ascertains from the employer if there is to be any deviation from the recommended formal cost planning stages before commencing the cost planning process.

1.2.6 Figure 1.1 (overleaf) illustrates the various cost estimating, cost planning and tender document preparation stages in context with the RIBA Work Stages and OGC Gateways.

Figure 1.1 Cost estimating, elemental cost planning and tender document preparation stages in context with the RIBA Work Stages and OGC Gateways



Notes:

(1) The tender document preparation stages referred to in Figure 1.1 above relate to traditional contract strategies (i.e. using a bill of quantities, schedule of works or works schedule as the basis for obtaining a price from contractors for the works). Were a design and build or design and construct contract strategy is to be adopted, procurement can occur at any RIBA Work Stage; with the employer's requirements most commonly being based on RIBA Work Stages C, D or E design information.

(2) A prerequisite of OGC Gateway Review 3: Investment Decision, is that the design brief, concept design and detailed design have been approved and signed off by the Senior Responsible Owner (SRO). For the purpose of comparing the OGC Gateway Process with the RIBA Work Stages, these two decision points are referred to as OGC Gateway 3A (Design Brief and Concept Approval) and OGC Gateway 3B (Detailed Design Approval); with OGC Gateway 3C representing the final OGC Gateway Review 3 (Investment Decision).

1.3 Purpose of NRM 1

1.3.1 The *RICS new rules of measurement* have been written to provide a standard set of measurement rules that are understandable by all those involved in a construction project, including the employer; thereby aiding communication between the project/design team and the employer. In addition, the *RICS new rules of measurement* should assist the quantity surveyor/cost manager in providing effective and accurate cost advice to the employer and the project/design team.

1.3.2 The document provides rules of measurement for the preparation of order of cost estimates and elemental cost plans. Direction on how to describe and deal with costs and allowances forming part of the cost of a building, but which are not reflected in the measurable building work items, is also provided.

1.3.3 The *RICS new rules of measurement* do not explain estimating methods, cost planning techniques, procurement methods or contract strategies; advice on these is obtainable in other RICS publications and from other external publications.

1.3.4 The *RICS new rules of measurement* are based on UK practice but the requirements for a coordinated set of rules and underlying philosophy behind each section have worldwide application.

1.4 Use of NRM 1

1.4.1 The *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works* provides a structured basis for measuring building work and presents a consistent approach for dealing with other key cost components associated with a building project when preparing order of cost estimates and elemental cost plans. The rules represent the essentials of good practice.

1.4.2 The rules deal with measurement for the preparation of:

- order of cost estimates, including 'rough' order of cost estimates;
- elemental cost models;
- cost plans;
- cost analyses; and
- benchmark analyses.

1.4.3 Users of the rules are advised to adopt metric units as the standard system of measurement. Where the employer requires reference to imperial units these may be provided as supplementary information (e.g. in parenthesis).

1.4.4 Although the British Standard BS 8888:2006 *Technical Product Specification* (for defining, specifying and graphically representing products) recommends the inclusion of a comma rather than a point as a decimal marker, and a space instead of a comma as a thousands separator, the traditional UK convention has been adopted in these rules (i.e. a point as a decimal marker and a comma as a thousands separator). Users should take care to ensure that this does not conflict with employer requirements.

1.5 Structure of NRM 1

1.5.1 The *RICS new rules of measurement: Order of cost estimating and cost planning for capital building works* is divided into four parts with supporting appendices:

- **Part 1** places cost estimating and elemental cost planning in context with the RIBA Plan of Work and the OGC Gateway Process and explains the symbols, abbreviations and definitions used in the rules.

- **Part 2** describes the purpose and content of an order of cost estimate; defines its key constituents; explains how to prepare an order of cost estimate; and sets out the rules of measurement for the preparation of order of cost estimates using the floor area method, functional unit method and elemental method.
- **Part 3** describes the purpose of elemental cost plans; explains their key constituents; and explains how to prepare an elemental cost plan.
- **Part 4** comprises the tabulated rules of measurement for the preparation of formal cost plans.
- **Appendices:**

  Appendix A: Core definition of gross internal area (GIA)

  Appendix B: Commonly used functional units and functional units of measurement

  Appendix C: Core definition of net internal area (NIA)

  Appendix D: Special use definitions for shops

  Appendix E: Logic and arrangement of levels 1 to 3 for elemental cost planning

  Appendix F: Information requirements for formal cost plans

  Appendix G: Template for elemental cost plan (based on level 1 codes)

  Appendix H: Template for elemental cost plan (based on level 2 codes)

1.6 Symbols, abbreviations and definitions

Symbols, abbreviations and certain key words and phrases used in the rules are as detailed below.

1.6.1 Symbols used for measurement

ft^2	square foot
ha	hectare
kg	kilogramme
kN	kilonewton
kW	kilowatt
m	linear metre
m^2	square metre
m^3	cubic metre
mm	millimetre
nr	number
t	tonne

1.6.2 Abbreviations

Cost/ft^2 of GIFA	cost per square foot of gross internal floor area
Cost/m^2 of GIFA	cost per square metre of gross internal floor area
EUQ	element unit quantity
EUR	element unit rate
GEA	gross external area (gross external floor area)
GIFA (GIA)	gross internal floor area (gross internal area)
NIA	net internal area (net internal floor area)
OCE	order of cost estimate
OGC	Office of Government Commerce

PC Sum	prime cost sum
RIBA	Royal Institute of British Architects
RICS	Royal Institution of Chartered Surveyors
RPI	retail price index (or indices)
SA	site area
TPI	tender price index (or indices)

Note: The names of UK government departments are frequently changed. This applies to the Office of Government Commerce. Notwithstanding this, the acronym OGC has not been changed as it is a construction industry recognised phrase.

1.6.3 Definitions

Authorised budget (or **approved estimate**) – See the definition for cost limit.

Base cost estimate – means an evolving estimate of known factors without any allowances for risk and uncertainty, or element of inflation. The base cost estimate is the sum of the works cost estimate, the project/design team fees estimate and the other development/project costs estimate.

Base date of cost data – means the date on which rates and prices contained within cost analyses or benchmark analyses are taken as a basis for calculations.

Building work (or **building works**) – means all components measured and incorporated in group elements 1 to 8 (i.e. Substructure; Superstructure; Internal finishes; Fittings, furnishings and equipment; Services; Prefabricated buildings and building units; Work to existing buildings; and External works).

Building works estimate – means the sum of the cost targets for group elements 1 to 8 (i.e. Substructure; Superstructure; Internal finishes; Fittings, furnishings and equipment; Services; Prefabricated buildings and building units; Work to existing buildings; and External works). It excludes facilitating works estimate, as well as those relating to main contractor's preliminaries, main contractor's overheads, profit/design team fees estimate, other development/project costs estimate and risk allowances.

Component – means a measured item that forms part of an element or a sub-element. The quantity of one or more items will be measured and the cost estimated to ascertain the cost target for an element or a sub-element.

Construction inflation – means an allowance included in the order of cost estimate or cost plan for fluctuations in the basic prices of labour, plant and equipment, and materials during the period from the date of tender return to the mid-point of the construction period. See also the definition for tender inflation.

Cost checks (cost check or cost checking) – take place during all design stages and are concerned with comparing current estimated costs against cost targets previously set for elements or sub-elements of the building.

Cost control – means the process of planning and controlling the costs of building(s). Takes place throughout complete duration of the construction project.

Cost limit (or authorised budget or approved estimate) – means the maximum expenditure that the employer is prepared to make in relation to the completed building.

Cost per functional unit (or functional unit cost) – is the unit rate which, when multiplied by the number of functional units, gives the total building works estimate (i.e. works cost estimate less main contractor's preliminaries and main contractor's overheads and profit). The total recommended cost limit (i.e. cost limit, including inflation) can also be expressed as a cost per functional unit when reporting costs.

Cost per m² of gross internal floor area (or cost/m² of GIFA) – is the unit rate which, when multiplied by the gross internal floor area (GIFA), gives the total building works estimate (i.e. works cost estimate less main contractor's preliminaries and main contractor's overheads and profit). Other cost estimates that form part of an order of cost estimate or a cost plan should also be converted to costs/m² of GIFA when reporting costs to the employer and project team (i.e. to express cost targets for group elements, elements, sub-elements, as well as the cost limit). They are also used in cost analyses and benchmarking as a means of documenting costs of previously completed building projects.

Cost plan – See the definition for elemental cost plan.

Cost target – means the recommended total expenditure for an element. The cost target for each element is likely to be derived from a number of sub-elements and components.

Deflation – means a downward movement in the average level of prices and or costs (i.e. the opposite of inflation).

Design team – means architects, engineers and technology specialists responsible for the conceptual design aspects and their development into drawings, specifications and instructions required for construction of the building or facility and associated processes. The design team is a part of the project team.

Element – means a major part of a group element (e.g. the elements that create group element 3: Internal finishes are 3.1: Wall finishes, 3.2: Floor finishes, and 3.3: Ceiling finishes). A separate cost target can be established for each element.

Element unit quantity (EUQ) – is a unit of measurement that relates solely to the quantity of the element or sub-element itself (e.g. the area of the external walls, the area of windows and external doors and the number of internal doors).

Element unit rate (EUR) – means the total cost of an element divided by the element unit quantity (EUQ). For example, the EUR for external walls is the total cost of the external walls divided by EUQ for external walls. EURs include all the cost of all materials, labour, plant, subcontractor's preliminaries, subcontractor's design fees and subcontractor's overheads and profit. EURs exclude main contractor's preliminaries, main contractor's overheads and profit and other allowances, such as project/design team fees, other development/project costs, risk allowances and inflation. These items are to be assessed separately.

Elemental cost analysis (or cost analysis) – is a full appraisal of costs involved in previously constructed buildings and is aimed mainly at providing reliable information that will assist in accurately estimating cost of future buildings. It provides a product-based cost model, providing data on which initial elemental estimates and elemental cost plans can be based.

Elemental cost plan (or cost plan) – is the critical breakdown of the cost limit for the building(s) into cost targets for each element of the building(s). It provides a statement of how the design team proposes to distribute the available budget among the elements of the building, and a frame of reference from which to develop the design and maintain cost control. It also provides both a work breakdown structure (WBS) and a cost breakdown structure (CBS), which, by codifying, can be used to redistribute work in elements to construction works packages for the purpose of procurement.

Elemental method – is a budget setting technique which considers the major elements of a building and provides an order of cost estimate based on an elemental breakdown of a building project. The elemental method can also be used to develop an initial cost model as a prerequisite to developing an elemental cost plan. The method involves the use of element unit quantities (EUQ) and element unit rates (EUR).

Employer – means the owner and/or the developer of the building; in some cases the ultimate user. The terms Senior Responsible Owner (SRO) and Project Sponsor are used by central civil government and the defence sector; being the representatives empowered to manage the building project and make project specific decisions. For the purpose of these measurement rules, the term employer shall also mean Senior Responsible Owner (SRO) or Project Sponsor.

Enabling works – means works executed ahead of the main building contract. Enabling works are employer and/or project team specified works, which might include a mixture of facilitating works

and new building works (e.g. site preparatory works such as major demolition, removal of contaminated materials, reptile mitigation measures, and soil stabilisation; together with new sewers, new access road, new drainage, new retaining walls, and minor new building works).

Estimate base date – means the date on which the cost limit (excluding inflation – i.e. the sum of the works cost estimate, project/design team fees estimate, other development/project costs estimate and risk allowance estimate) is established as a basis for calculating inflation, changes or other related variances.

Facilitating works – means all components measured and incorporated in group element 0 (i.e. Facilitating works). Includes specialist works which, normally, need to be completed before any building works can commence (e.g. major demolition works, soil stabilisation works and or temporary diversion of mains drainage).

Facilitating works estimate – means the sum of the cost targets for group element 0 (i.e. Facilitating works). It excludes the building works estimate, as well as those relating to main contractor's preliminaries, main contractor's overheads, profit/design team fees estimate, other development/project costs estimate and risk allowances.

Facilitating works and building works estimate – means the sum of the cost targets for group elements 0 to 8 (i.e. Facilitating works; Substructure; Superstructure; Internal finishes; Fittings, furnishings and equipment; Services; Prefabricated buildings and building units; Work to existing buildings; and External works). It excludes cost targets relating to main contractor's preliminaries and main contractor's overheads, profit/design team fees estimate, other development/project costs estimate and risk allowances.

Formal Cost Plan – is the elemental cost plan which is reported to the employer on completion of a specific RIBA Work Stage or OGC Gateway.

Formal Cost Plan stage – is the point at which the quantity surveyor/cost manager formally submits an elemental cost plan to the employer for consideration. The formal cost plan stages are interlinked with the appropriate RIBA Work Stages and OGC Gateways.

Functional unit – means a unit of measurement used to represent the prime use of a building or part of a building (e.g. per bed space, per house and per m^2 of retail area). It also includes all associated circulation space.

Functional unit method – is a rough budget-setting technique which consists of selecting a suitable standard functional unit of use for the project, and multiplying the projected number of units by an appropriate cost per functional unit.

Gross external area (GEA) – is the area of a building measured externally (i.e. to the external face of the perimeter walls) at each floor level. The rules of measurement of gross external floor area are defined in the latest edition of the RICS *Code of Measuring Practice*.

Gross internal floor area (GIFA) (or gross internal area (GIA)) – is the area of a building measured to the internal face of the perimeter walls at each floor level. The rules of measurement of gross internal floor area are defined in the latest edition of the RICS *Code of Measuring Practice*.

Group element – means the main headings used to describe the facets of an elemental cost plan (i.e. Substructure; Superstructure; Internal finishes; Fittings, furnishings and equipment; Services; Complete buildings and building units; Work to existing buildings; External works; Facilitating works; Main contractor's preliminaries; Main contractor's overheads and profit; Project/design team fees; Other development/project costs; Risks; and Inflation).

Inflation – means an upward movement in the average level of prices and or costs (i.e. the opposite of deflation). It is included as an allowance in the order of cost estimate or cost plan for fluctuations in the basic prices of labour, plant and equipment and materials. Refer to definitions for tender inflation and construction inflation.

Main contractor (or prime contractor) – means the contractor responsible for the total construction and completion process of the building project. The term prime contractor is often used to mean main contractor in central civil government and the defence sector. The term is used synonymously, irrespective of the contract strategy used (e.g. traditional, design and build, design and construct, design and manage or management contracting).

Main contractor's overheads and profit – means the main contractor's costs associated with head office administration proportioned to each building contract plus the main contractor's return on capital investment. Main contractor's preliminaries exclude costs associated with subcontractor's overheads and profit, which are to be included in the unit rates applied to building works.

Main contractor's preliminaries – are items which cannot be allocated to a specific element, sub-element or component. Main contractor's preliminaries include the main contractor's costs associated with management and staff, site establishment, temporary services, security, safety and environmental protection, control and protection, common user mechanical plant, common user temporary works, the maintenance of site records, completion and post-completion requirements, cleaning, fees and charges, sites services and insurances, bonds, guarantees and warranties. Main contractor's preliminaries exclude costs associated with subcontractor's preliminaries, which are to be included in the unit rates applied to building works.

Net internal area (NIA) – is the usable area within a building measured to the internal face of the perimeter walls at each floor level. The rules of measurement of net internal area are defined in the latest edition of the RICS *Code of Measuring Practice*.

OGC Gateway Process – is a process that examines programmes and projects at key decision points in their lifecycle. It looks ahead to provide assurance that the employer can progress to the next stage. Project reviews are carried out under OGC Gateway reviews 1 to 5. Typically a project will undergo three reviews before a commitment to invest, and two looking at service implementation and confirmation of the operational benefits. The process is best practice in central civil government, the health sector, local government and the defence sector. The emphasis of the OGC Gateway Process is to examine the business case, which requires an assessment of the total development cost of the building project.

OGC Gateways (or OGC Gateway) – are key decision points within the OGC Gateway Process.

Option cost – is an estimate of the cost of alternative design solutions to achieve the employer's objectives; so that they can be compared and appraised. Option costs will be incorporated in the overarching cost report.

Order of cost estimate – means the determination of possible cost of a building(s) early in design stage in relation to the employer's fundamental requirements. This takes place prior to preparation of a full set of working drawings or bills of quantities and forms the initial build-up to the cost planning process.

Other development/project costs – means costs that are not necessarily directly associated with the cost of constructing the building, but form part of the total cost of the building project to the employer (e.g. land acquisition costs, fees for letting agents, marketing costs and contributions associated with Section 106 Agreements).

Overheads and profit – See definition for main contractor's overheads and profit.

Preliminaries – See definition for main contractor's preliminaries.

Price stability – is the boundary between inflation and deflation.

Prime cost sum (PC Sum) – means a sum of money included in a unit rate to be expended on materials or goods from suppliers (e.g. supply only ceramic wall tiles at £36.00/m^2, supply only door furniture at £90.00/door or supply only facing bricks at £390.00/1,000). It is a supply only rate for materials or goods where the precise quality of those materials and goods are unknown. PC Sums exclude all costs associated with fixing or installation, all ancillary and sundry materials and goods required for the fixing or installation of the materials or goods, subcontractor's design fees, subcontractor's preliminaries, subcontractor's overheads and profit, main contractor's design fees, main contractor's preliminaries and main contractor's overheads and profit.

Project team – means employer, project manager, quantity surveyor/cost manager, design team and all other consultants responsible for the delivery of the building project on time, on cost and to the required performance criteria (design and quality). The project team will include the main contractor where the main contractor has been engaged by the employer to provide pre-construction services.

Project/design team fee(s) – means project team and design team consultants' fees for pre-construction, construction and post-construction related services, other consultants' fees, fees and charges for intrusive site investigations, specialist support consultants' fees and main contractor's fees for the provision of pre-construction services. See group element 11: Project/design team fees for an indicative list of project/design team fees.

Project/design team fees estimate – means the total estimated cost of all project/design team fees at the estimate base date (i.e. excluding tender inflation and construction inflation).

Residual risk (or retained risk) – means the risks retained by the employer.

Retail area – means the net internal area (NIA). The rules of measurement of the retail area of a shop are defined in the latest edition of the RICS *Code of Measuring Practice*.

RIBA Outline Plan of Work – summarises the deliverables required under each RIBA Work Stage.

RIBA Plan of Work – is a model procedure dealing with basic steps in decision making for a medium-sized building project. The RIBA Plan of Work sets out a logical structure for building projects, starting with the brief and ending with post-occupancy evaluation. The procedures identify the responsibilities of the design team at each stage of the design and contract administration process. Each step is referred to as a RIBA Work Stage. The full title of the RIBA Plan of Work is The Architect's Plan of Work, published by RIBA, but it is commonly known and referred to as the RIBA Plan of Work in the building construction industry.

RIBA Work Stage (or RIBA Work Stages) – means the stage into which the process of designing building projects and administering building contracts may be divided. Some variations of the RIBA Work Stages apply for design and build procurement.

Risk allowance – means the amount added to the base cost estimate for items that cannot be precisely predicted to arrive at the cost limit.

Risk register (or risk log) – means a schedule of identified risks.

Risk value – means an estimate of the cost of the individual risk.

Site area – means the total area of the site within the site title boundaries (or the total area within the site title boundaries defined by the employer as the site for the building), measured on a horizontal plane.

Subcontractor – means a contractor who undertakes specific work within the building project; known as specialist, works, trade, work package, and labour only subcontractors.

Subcontractor's preliminaries – are preliminaries that relate specifically to building work which is to be carried out by a subcontractor. Costs associated with subcontractor's preliminaries are to be included in the unit rates applied to sub-elements and individual components.

Sub-element – means a part of an element. As with elements, a separate cost target can be established for each sub-element (e.g. the sub-elements that comprise element 2: Superstructure are 2.1 Frame; 2.2: Upper floors; 2.3: Roof; 2.4: Stairs and ramps; 2.5: External walls; 2.6: Windows and external doors; 2.7: Internal walls and partitions; and 2.8: Internal doors.

Tender inflation – means an allowance included in the order of cost estimate or cost plan for fluctuations in the basic prices of labour, plant and equipment, and materials during the period from the estimate base date to the date of tender return. See also the definition for construction inflation.

Total development cost – means the cost limit (including inflation – i.e. the total of the works cost estimate, the project/design team fees estimate, other development/project costs estimates, tender inflation and construction inflation) for the building project.

Unit rate(s) – means the monetary rate applied to an element, sub-element or component per unit of measurement (e.g. cost per m, cost per m^2 and cost per m^3). The term also includes costs/m^2 of GIFA and cost per functional unit (or functional unit cost).

Works cost estimate – means the combined total estimated cost of the building works estimate, the main contractor's preliminaries and the main contractor's overheads and profit prepared using prices current at the time the estimate is prepared (or updated). The works cost estimate contains no allowance for project/design team fees, other development/project costs, risk allowances, tender inflation and construction inflation.

Part 2: Measurement rules for order of cost estimating

Part 2: Measurement rules for order of cost estimating

2.1 Introduction

2.1.1 Part 2 of the rules describes the purpose and content of an order of cost estimate, puts order of cost estimates in context with the RIBA Plan of Work and OGC Gateway Process, and sets out the rules of measurement for the preparation of order of cost estimates using the following estimating methods:

(a) floor area method;

(b) functional unit method (e.g. per bed space, per house type and per m^2 of retail area); and

(c) elemental method (i.e. individual elements).

2.1.2 The content and application of unit rates (i.e. costs/m^2 of GIFA, functional unit rates and element unit rates (EURs)) to measured quantities to generate the base cost of the building works is also described; together with the method of dealing with cost allowances for main contractor's preliminaries, main contractor's overheads and profit, project/design team fees, other development/project costs, risk allowances, inflation and Value Added Tax (VAT).

2.1.3 In addition, the basic information requirements needed (from the employer and other project team members) by the quantity surveyor/cost manager to complete order of cost estimates are outlined. The essential content of the quantity surveyor's/cost manager's order of cost estimate report to the employer is also described.

2.1.4 The rules of measurement for element unit quantities used for the elemental method of estimating can also be used as a basis for measuring element unit quantities (EUQs) for the cost analysis of building projects.

2.2 Purpose of an order of cost estimate

2.2.1 Order of cost estimates are produced as an intrinsic part of RIBA Work Stages A: Appraisal and B: Design Brief, or OGC Gateways 1 (Business Justification) and 2 (Delivery Strategy). The requirements of RIBA Work Stages A and B, as described in the RIBA Outline Plan of Work, are as follows:

(a) RIBA Work Stage A: Appraisal:

'Identification of [employer's] needs and objectives, business case and possible constraints on development. Preparation of feasibility studies and assessment of options to enable the [employer] to decide whether to proceed.'

OGC Gateway 1 (Business Justification) can be compared with RIBA Work Stage A.

(b) RIBA Work Stage B: Design Brief

'Development of initial statement of requirements into the Design Brief by or on behalf of the [employer] confirming key requirements and constraints. Identification of procurement method, procedures, organisational structure and range of consultants and others to be engaged for the project.'

OGC Gateway 2 (Delivery Strategy) can be compared with RIBA Work Stage B.

Project stages from the RIBA Outline Plan of Work 2007, copyright Royal Institute of British Architects, are reproduced here with the permission of the RIBA.

2.2.2 The purpose of an order of cost estimate is to establish if the proposed building project is affordable and, if affordable, to establish a realistic cost limit for the building project. The cost limit is the maximum expenditure that the employer is prepared to make in relation to the completed building project, which will be managed by the project team (i.e. authorised budget).

2.2.3 As part of RIBA Work Stages A and B or Gateways 1 and 2, it may be necessary to estimate the cost of a number of alternative building types or development scenarios for a site. Such alternative scenarios are known as option costs or option costings.

2.3 Information requirements for order of cost estimates

2.3.1 To enable preparation of an order of cost estimate, information will be required **from the employer** as follows:

(a) Location of the site and the availability of the site for commencement of the building project.

(b) A statement of building use.

(c) A statement of floor area (or number of functional units) and schedule of accommodation – in conjunction with the architect.

(d) Requirements for refurbishment (if the project comprises rehabilitation of an existing building) – in conjunction with the architect. Details of the new use and any outstanding maintenance or repairs necessary to give the building fabric the required life expectancy are required.

(e) Initial project/design brief, including statement of quality, sustainability requirements and 'fit-out' requirements – in conjunction with the architect.

(f) Details of any enabling works, decanting or other specific requirements.

(g) Indicative programme, including key dates (e.g. planning application and occupation dates).

(h) Details of any particular restraints to be imposed by the employer, local planners or statutory undertakers – in conjunction with the architect (e.g. work in a secure area, limitations on building position, work in a conservation area, work to a historic or listed building, external appearance and number of storeys).

(i) Details of any particular site conditions – in conjunction with the architect (e.g. sloping site, likelihood of contaminated ground, demolition of existing buildings, adequacy and condition of existing mains services).

(j) Budget/cash flow constraints.

(k) Initial views (if any) on construction procurement options and contract strategies.

(l) Life span (e.g. 10 year, 25 year or 60 year target life span).

(m) An indication of the proposed storey heights of the building – in conjunction with the architect. The introduction of raised access floors for IT cabling or deep suspended ceiling voids for mechanical and electrical services installations could significantly increase storey height, thus increasing estimated costs. Where such requirement is known, it is recommended that this is stated.

(n) Particular requirements in respect of mechanical and electrical services installations – in conjunction with the architect (and mechanical and electrical services engineer – if appointed).

(o) Requirements in respect of:

- treatment of project/design team fees;
- approach to other development/project costs;
- treatment of inflation; and
- treatment of Value Added Tax (VAT).

(p) Other considerations (e.g. approach to dealing with capital allowances, land remediation and grants).

2.3.2 To enable preparation of an order of cost estimate, information will be required **from the architect** as follows:

(a) Design study sketches or drawings for each alternative design/development option to a suitable scale, comprising:

- floor plans (for each different floor plate configuration/shape and use);
- roof plan(s);
- elevations; and
- sections.

(b) Schedule of gross external areas (GEA), gross internal floor areas (GIFA), net internal areas (NIA) – (i.e. usable area for shops, supermarkets and offices) on a floor by floor basis and site area (SA).

(c) Minimum storey heights.

(d) Schedule of accommodation – in conjunction with the employer.

(e) Number of car parking spaces and whether above ground or below ground.

(f) Indicative specification/design intent for building option(s).

(g) Indicative environmental/sustainability strategy – in conjunction with the mechanical and electrical services engineer.

(h) Advice on likely site constraints.

(i) Advice on likely planning constraints.

(j) Definition of 'fit-out'.

(k) Initial risk register/log.

2.3.3 To enable preparation of an order of cost estimate, information will be required from the mechanical and electrical services engineer (if appointed) as follows:

(a) Indicative services specification/design intent for building option(s).

(b) Indicative environmental/sustainability strategy – in conjunction with the architect.

(c) Advice on availability and/or adequacy of utility services connections to the site.

(d) Initial risk register/log.

2.3.4 To enable preparation of an order of cost estimate, information will be required from the structural engineer (if appointed) as follows:

(a) Advice on probable ground conditions.

(b) Indicative services specification/design intent for building option(s).

(c) Initial risk register/log.

2.3.5 The accuracy of an order of cost estimate is dependent on the quality of the information supplied to the quantity surveyor/cost manager. The more information provided, the more reliable the outcome will be. Where little or no information is provided, the quantity surveyor/cost manager will need to qualify the order of cost estimate accordingly.

2.4 Constituents of an order of cost estimate

2.4.1 The key constituents of an order of cost estimate are as follows.

Constituent	
Facilitating works estimate (1)	See paragraph 2.5
Building works estimate (2)	see paragraph 2.6
Main contractor's preliminaries estimate (3)	See paragraph 2.10
Sub-total (4) [(4) = (1) + (2) + (3)]	
Main contractor's overheads and profit estimate (5)	See paragraph 2.11
Works cost estimate (6) [(6) = (4) + (5)]	
Project/design team fees estimate (if required) (7)	See paragraph 2.12
Sub-total (8) [(8) = (6) + (7)]	
Other development/project costs estimate (if required) (9)	See paragraph 2.13
Base cost estimate (10) [(10) = (8) + (9)]	
Risk allowances estimate (11) [(11) = (11(a)) + (11(b)) + (11(c))+ (11(d))]	See paragraph 2.14
(a) Design development risks estimate (11(a))	
(b) Construction risks estimate (11(b))	
(c) Employer change risks estimate (11(c))	
(d) Employer other risks estimate (11(d))	
Cost limit (excluding inflation) (12) [(12) = (10) + (11)]	
Tender inflation estimate (13)	See paragraph 2.15
Cost limit (excluding construction inflation) (14) [(14) = (12) + (11)]	
Construction inflation estimate (15)	See paragraph 2.16
Cost limit (including inflation) (16) [(16) = (14) + (15)]	
VAT assessment	See paragraph 2.17

2.4.2 The base cost estimate is the total of the building works estimate, main contractor's preliminaries estimate and main contractor's overheads and profit estimate, project/design team fee estimate and the other development/project costs estimate. The base cost estimate is to contain no allowances for risk or inflation.

2.4.3 Allowances for risk and inflation are to be calculated separately and added to the base cost estimate to determine the cost limit for the building project.

2.5 Measurement rules for facilitating works

2.5.1 Facilitating works is a term used to describe specialist works which, normally, need to be completed before any building works can commence (e.g. demolition works, works involving the removal of hazardous and deleterious materials, and soil stabilisation). The terms facilitating works and enabling works must not be confused. Enabling works is a term commonly used to define a package of works, which often includes facilitating works, temporary works and new permanent works (e.g. a combination of major demolition works, intrusive site investigations, a new access road, and the provision of mains services by statutory undertakings).

2.5.2 Quantities for facilitating works shall be based on either the site area (SA), the area affected (in m^2), linear meters (m), enumerated (nr) or itemised (item) as deemed appropriate. Where the

quantity is based on the SA, the SA is the total area of the site within the site title boundaries (or the total area within the site title boundaries defined by the employer as the site for the building or buildings), less the footprint of any existing buildings, measured on a horizontal plane.

2.6 Measurement rules for building works

2.6.1 Quantities for building works shall be determined by measuring the total gross internal floor area (GIFA) of the building or buildings (using the floor area method) or by projecting the number of functional units (using the functional unit method). In certain circumstances, a combination of both floor area methods and functional unit methods may need to be employed.

(a) **Floor area method**

(i) The total gross internal floor area (GIFA) of the building or buildings is measured and multiplied by an appropriate cost/m^2 of GIFA. The equation for calculating the total estimated cost of building works is therefore:

$$c = a \times b$$

where:

a = GIFA

b = cost/m^2 of GIFA for building works

c = building works estimate (i.e. total estimated cost of building works)

(ii) The gross internal floor area (GIFA) is to be measured in accordance with the 'Core definition: gross internal area (GIA)' of the *RICS Code of Measuring Practice*, which is reproduced in Appendix A of these rules.

(iii) Where measurement is for more than one building, the measurement for each building is to be shown separately.

(iv) Where a single building comprises more than one user function (e.g. residential, retail and offices), then the GIFA of each function is to be calculated and quantified separately. The sum total of the GIFA for each separate function is to be equal to the GIFA for the whole building. For the purpose of establishing the GIFA of each separate building function, the centre line of the party wall shall be used to delineate the functions.

(v) Where the external works is to be measured separately, the site area (SA) is to be measured. The SA is the total area of the site within the site title boundaries (or the total area within the site title boundaries defined by the employer as the site for the building or buildings), excluding the footprint of the new building(s), measured on a horizontal plane.

(b) **Functional unit method**

(i) Functional units are a unit of measurement used to represent the prime use of a building or part of a building. Each functional unit includes all circulation necessary. It is essential that the functional unit is clearly identified when measurements are expressed in this way. A list of commonly used functional units and functional units of measurement for buildings is provided in Appendix B of these rules.

(ii) A suitable functional unit of use for the building is to be selected. The total number of functional units is determined and multiplied by an appropriate cost per functional unit (or functional unit cost). The equation for calculating the total estimated cost of building works is therefore:

$$c = a \times b$$

where:

a = number of functional units

b = cost per functional unit (or functional unit cost)

c = building works estimate (i.e. total estimated cost of building works)

(iii) Where measurement for the functional unit is to be 'net internal area', the net internal area (NIA) is to be measured in accordance with the 'Core definition: net internal area (NIA)' of the *RICS Code of Measuring Practice*, which is reproduced in Appendix C of these rules.

(iv) Where measurement for the functional unit is to be expressed as 'retail area', the retail area of the shop is to be measured in accordance with the 'Special Use Definition: Shops' of the *RICS Code of Measuring Practice*, which is reproduced in Appendix D of these rules.

(v) A functional unit includes all circulation necessary.

(vi) Where the external works is to be measured separately, the site area (SA) is to be measured. The SA is the total area of the site within the site title boundaries (or the total area within the site title boundaries defined by the employer as the site for the building or buildings), excluding the footprint of the new building(s), measured on a horizontal plane.

2.7 Elemental method

2.7.1 The elemental method is an alternative approach for calculating the total estimated cost of building works (i.e. the building works estimate). The elemental method considers the major elements of a building and provides an order of cost estimate based on an elemental breakdown of the building project. Ordinarily, the group elements and elements used in the elemental method are the same as those used in the elemental cost planning process (see Parts 3 and 4 of these rules). However, the choice and number of elements used to break down the cost of building works will be dependent on the information available. The major elements commonly used when preparing an order of cost estimate using the elemental method are listed in the following table:

Group element	Element
0 Facilitating works	–
1 Substructure	1.1 Substructure
2 Superstructure	2.1 Frame 2.2 Upper floors 2.3 Roof 2.4 Stairs and ramps 2.5 External walls 2.6 Windows and external doors 2.7 Internal walls and partitions 2.8 Internal doors
3 Internal finishes	3.1 Wall finishes 3.2 Floor finishes 3.3 Ceiling finishes
4 Fittings, furnishings and equipment	4.1 Fittings, furnishing and equipment

5 Services	5.1 Sanitary installations 5.2 Services equipment 5.3 Disposal installations 5.4 Water installations 5.5 Heat source 5.6 Space heating and air conditioning 5.7 Ventilation 5.8 Electrical installations 5.9 Fuel installations 5.10 Lift and conveyor installations 5.11 Fire and lightning protection 5.12 Communication, security and control systems 5.13 Specialist installations 5.14 Builder's work in connection with services
6 Prefabricated buildings and building units	
7 Work to existing buildings	
8 External works	

Note: See Appendix E: Logic and arrangement of levels 1 to 3 for elemental cost planning, which provides a detailed list of all the group elements and elements used for elemental cost planning.

2.7.2 The method of measuring and the unit of measurement for each of the elements are set out in Table 2.1.

2.7.3 If suitable information is available, then element unit quantities (EUQ) are measured for an element in accordance with the rules and priced with suitable element unit rates (EUR) to ascertain the cost target for an element. Where insufficient information is available for a particular element, the EUQ for the element is based on the GIFA. The equation for calculating the cost target for an element is therefore:

$$c = a \times b$$

where:

a = EUQ

b = EUR

c = cost target (for element)

2.7.4 The total estimated cost of building works (i.e. the building works estimate) is ascertained by adding together the cost target for each element. The equation for calculating the building works estimate using the elemental method is therefore:

$$b = \sum (a1 + a2 + a3 + a\ 4 + a5 + a6 + a7 + a8 + a9)$$

where:

a1, a2, a3, etc. = cost target for element

b = building works estimate

2.7.5 Where measurement is to be based on the gross internal floor area (GIFA), the area is to be measured in accordance with the 'Core definition: gross internal floor area (GIA)' of the *RICS Code of Measuring Practice*, which is reproduced in Appendix A of these rules.

2.7.6 Where a building project comprises more than one building, the measurement for each building is to be shown separately.

2.7.7 The elemental method can also be used to generate an initial cost model (or an outline elemental cost plan) at the commencement of *RIBA Work Stage* C: Concept or OGC Gateway 3A: Design Brief and Concept Approval, whichever is applicable. This elemental breakdown provides a frame of reference from which Formal Cost Plan 1 can be developed (see Part 3 of these rules). The initial EUQs and EURs will eventually be superseded by more detailed measurement of elements, sub-elements and components and unit rates once suitable design information has been prepared and the elemental cost plan evolves.

2.7.8 The measurement rules for the elemental method of estimating in Table 2.1 (opposite) can also be used as a basis for measuring element unit quantities (EUQs) for the purpose of cost analysis and benchmark analysis of building projects. The content of each group and element is defined in Part 4: Tabulated rules of measurement for elemental cost planning.

2.8 Measurement rules for elemental method of estimating

2.8.1 Table 2.1 comprises the rules of measurement for element unit quantities (EUQs), which can be used to develop an order of cost estimate using the elemental method of estimating. The rules are tabulated.

2.8.2 The table comprises the rules of measurement for building works (i.e. for group elements 0 to 8). The table is structured as follows:

- The first column lists the group elements.
- The second column lists the elements.
- The third column lists the unit of measurement for group elements and elements, as appropriate.
- The fourth column contains the rules for measuring EUQs for group elements and elements, as appropriate.
- The last column contains further advice on measuring EUQs.
- Horizontal lines divide the tables to denote the end of a group element or element.
- The rules are written in the present tense.

2.8.3 The definition of each group element and element used in the elemental method of cost estimating are the same as those defined for elemental cost plans in Part 4: Tabulated rules of measurement for elemental cost planning.

2.8.4 If suitable information is available, then EUQs are measured for a group element or element in accordance with the rules and priced with suitable element unit rates (EUR) to ascertain the cost target for an element.

2.8.5 Where insufficient information is available for a particular element, the EUQ for that element is to be the GIFA.

2.8.6 The measurement rules for the elemental method of estimating in Table 2.1 can also be used as a basis for measuring EUQs for the purpose of measuring quantities for the purpose of preparing cost analyses and benchmark analyses of tendered building projects.

Notes:

- Used to develop order of cost estimates using the elemental method of estimating.
- Where insufficient information is available for a particular element, the EUQ for that element is to be the gross internal floor area (GIFA or GIA).

Table 2.1: Rules of measurement for elemental method of estimating

Group element	Element	Unit	Measurement rules	Notes
0 Facilitating works	1 Toxic/hazardous/ contaminated material treatment	m^2	The area measured is the site area (i.e. the total area of the site).	Costs to be separately shown for each type of toxic/hazardous material to be removed.
	2 Major demolition works		1 The area measured is the gross internal floor area (GIFA) of the building(s) demolished. 2 The area measured is measured in accordance with the rules of measurement for ascertaining GIFA.	Costs to be separately shown for each building demolished.
	3 Temporary support to adjacent structures		The area measured is the area of wall to be supported.	Costs to be separately shown for each structure to be supported.
	4 Specialist groundworks		The area measured is the site area (i.e. the total area of the site).	Costs to be separately shown for each element.
	5 Temporary diversion works			
	6 Extraordinary site investigation works			
1 Substructure	1 Substructure	m^2	1 The area measured is the area of the lowest floor measured to the internal face of the external perimeter walls. 2 The area of the lowest floor shall be measured in accordance with the rules of measurement for ascertaining the gross internal floor area (GIFA). 3 Areas of basements to be shown separately. 4 The area of basements shall be measured in accordance with the rules of measurement for ascertaining GIFA.	

Group element	Element	Unit	Measurement rules	Notes
2 Superstructure	1 Frame	m^2	1 The area measured is the area of the floors related to the frame. 2 The area of the frame shall be measured in accordance with the rules of measurement for ascertaining the gross internal floor area (GIFA).	Buildings with open ground floors and the like exclude the area of the open ground floor (i.e. for a completely framed building this would equate to the GIFA).
	2 Upper floors		1 The area measured is the total area of upper floor(s). 2 The area of the upper floors shall be measured in accordance with the rules of measurement for ascertaining the gross internal floor area (GIFA). 3 Sloping surfaces such as galleries, tiered terraces and the like are to be measured flat on plan. 4 Areas for balconies, galleries, tiered terraces, service floors, walkways, internal bridges, external links, and roofs to internal buildings shall be shown separately.	Where balconies are included, the sum of the upper floors and lowest floor will exceed the GIFA.

Group element	Element	Unit	Measurement rules	Notes
	3 Roof	m^2	The area measured is the area of the roof on plan. 2 The area measured is the area of the roof on plan measured to the inside face of the external walls.	
	4 Stairs and ramps	nr	1 Enumerate; giving total number of storey flights, i.e. the number of staircases or ramps multiplied by the number of floors served (excluding the lowest floor served in each case). 2 The total vertical rise of each staircase or ramp is to be stated, measured from top of structural floor level to top of structural floor level.	
	5 External walls	m^2	The area measured is the area of the external wall, measured on the internal perimeter (i.e. the internal face) of the external wall, less the area of windows.	1 It is unlikely that the thickness of external wall construction will be known the RIBA Work Stages A (Appraisal) and B (Design Brief) or OGC Gateways 1 (Business Justification) and 2 (Delivery Strategy). 2 Costs to be separately shown for each type of external wall system. 3 Sub-element includes costs in connection with forming openings for windows and external doors.
	6 Windows and external doors		The area measured is the area of windows and external doors measured over frames.	Costs in connection with forming openings for windows and external doors to be included in sub-element 2.5: External walls.

Group element	Element	Unit	Measurement rules	Notes
	7 Internal walls and partitions	m^2	The area measured is the area of internal walls and partitions, measured on the centre line of the internal wall or partition. No deduction is made for door openings, screens or the like.	Costs to be separately shown for each type of internal wall or partition.
	8 Internal doors	nr	Enumerate; giving total number of internal doors.	Irrespective of door type.
3 Internal finishes	1 Wall finishes	m^2	The area measured is the total area of wall finishes (i.e. the area of wall to which finishes are applied).	
	2 Floor finishes		The area measured is the total area of floor finishes (i.e. the area of floor to which finishes are applied).	
	3 Ceiling finishes		The area measured is the total area of ceiling finishes (i.e. the area of ceiling to which finishes are applied).	
4 Fittings, furnishings and equipment		m^2	1 The area measured is the gross internal floor area (GIFA). 2 The area measured is measured in accordance with the rules of measurement for ascertaining GIFA.	
5 Services	1 Sanitary installations	nr	1 Enumerate; giving total number of appliances. 2 The total number of appliances enumerated is the total number of items listed below: (a) domestic sanitary appliances (nr) (b) specialist sanitary appliances (nr) (c) bathroom pods (nr) (d) toilet pods (nr) (e) shower room pods (nr).	

Group element	Element	Unit	Measurement rules	Notes
	2 Services equipment	nr	1 Enumerate; giving total number of items. 2 The total number of items enumerated is the total number of items listed below: (a) commercial catering equipment (nr) (b) sinks supplied as an integral part of catering equipment (nr) (c) food storage equipment (nr) (d) specialist equipment (nr).	
	3 Disposal installations		1 Enumerate; giving total number of above ground waste installations to sanitary appliances and services equipment, and entry chutes to refuse disposal installation. 2 The total number of items enumerated is the total number of items listed below: (a) waste points sanitary appliances (nr) (b) waste points to services equipment (nr) (c) waste points for laboratory and industrial liquid waste (nr) (d) entry points to rubbish chutes (nr) (e) entry points to chemical and industrial waste appliances (nr).	1 Do not separately enumerate ancillary fittings/items. Costs of ancillary fittings/items to be included in unit cost for item. 2 Costs and measurements to be separately shown for: (a) drainage to sanitary appliances (b) drainage to services equipment (e.g. sinks) (c) drainage for laboratory and industrial liquid waste (d) refuse disposal installations (e) chemical and industrial refuse disposal installations.

Group element	Element	Unit	Measurement rules	Notes
	4 Water installations	nr	1 Enumerate; giving total number of draw-off points. 2 The total number of draw-off points enumerated is the total number of items listed below: (a) mains supply draw-off points (nr) (b) cold water draw-off points (nr) (c) hot water draw-off points (nr) (d) steam and condensate draw-off points (nr).	Costs to be separately shown for each: (a) mains supply draw-off points (b) cold water draw-off points (c) hot water draw-off points (d) steam and condensate draw-off points.
	5 Heat source	kW	State total number of kilowatts (kW).	1 Costs to be separately shown for each heat source. 2 State number and type of each heat source. 3 Rating in kilowatts (kW) to be stated for each heat source.
	6 Space heating and air conditioning	m^2	1 The area measured is the area serviced by the system. 2 The area serviced is measured in accordance with the rules of measurement for ascertaining the gross internal floor area (GIFA). 3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to measured using the rules of measurement for ascertaining the GIFA.	Costs to be separately shown for each type of system.
	7 Ventilation			
	8 Electrical installations			
	9 Fuel installations			

Group element	Element	Unit	Measurement rules	Notes
	10 Lift and conveyor installations	nr	Enumerate; giving total number of lift and conveyor installations.	1 Costs to be separately shown for each type of lift and/or conveyor installation: (a) lifts (passenger, goods, fire fighting, etc); also state number of levels served (b) enclosed hoists; also state number of levels served (c) escalators; also state number of levels served (nr), rise (m) and length of travel (m) (d) moving pavements; also state length of travel (m) (e) powered stairlifts (f) conveyors (passenger or goods); also length of travel (m) (g) dock levellers and scissor lifts; also state total rise (m) and designed load (kN) (h) cranes and unenclosed hoists; also state total rise (m) and designed load (kN) (i) car lifts; also state number of levels served (j) car stacking systems; also state capacity (k) car/lorry turntables and the like (l) document handling systems (m) other lift and conveyor installations.

Group element	Element	Unit	Measurement rules	Notes
	11 Fire and lightning protection	m^2	1 The area measured is the area serviced by the system. 2 The area serviced is measured in accordance with the rules of measurement for ascertaining the gross internal floor area (GIFA). 3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to measured using the rules of measurement for ascertaining GIFA.	Costs to be separately shown for each type of system.
	12 Communication, security and control systems			
	13 Specialist installations			
	14 Builder's work in connection with services		1 The area measured is the gross internal floor area (GIFA). 2 The area measured is measured in accordance with the rules of measurement for ascertaining GIFA.	
6 Prefabricated buildings and building units	1 Prefabricated buildings and building units	m^2	1 The area measured is the gross internal floor area (GIFA) of the complete buildings or prefabricated room units. 2 The area measured is measured in accordance with the rules of measurement for ascertaining GIFA.	Costs to be separately shown for each: (a) complete prefabricated building (b) type of prefabricated room unit (stating number of units).

Group element	Element	Unit	Measurement rules	Notes
7 Work to existing buildings	1 Minor demolition and alteration works	m^2	1 The area measured is the gross internal floor area (GIFA) of the building(s) demolished or altered. 2 The area measured is measured in accordance with the rules of measurement for ascertaining GIFA.	Costs to be separately shown for each building demolished or altered.
	2 Repairs to existing services			
	3 Damp-proof courses/fungus and beetle eradication		1 The area measured is the gross internal floor area (GIFA) of the room(s) treated. 2 The area of the rooms treated is measured in accordance with the rules of measurement for ascertaining GIFA.	
	4 Facade retention		The area measured is the area of facade to be retained.	
	5 Cleaning existing surfaces		The area measured is the surface area of the surface to be cleaned. No deduction for voids.	Costs to be separately shown for each type of surface.
	6 Renovation works		The area measured is the area to be renovated.	Costs to be separately shown for each type of surface to be renovated.

Group element	Element	Unit	Measurement rules	Notes
8 External works	1 Site preparation works	m^2	The area measured is the site area (SA), less the footprint of the building (or buildings) measured on the horizontal plane.	Costs to be separately shown for each element.
	2 Roads, paths, pavings and surfacings			
	3 Soft landscapes, planting and irrigation systems			
	4 Fencing, railings and walls			
	5 External fixtures			
	6 External drainage			
	7 External services			
	8 Minor building works and ancillary buildings		1 The area measured is the gross internal floor area (GIFA) of the building(s). 2 The area measured is measured in accordance with the rules of measurement for ascertaining GIFA.	
9 Main contractor's preliminaries		%	The cost of main contractor's preliminaries as a percentage of the total cost of facilitating works and building works.	
10 Main contractor's overheads and profit			The cost of main contractor's overheads and profit as a percentage of the total cost of facilitating works, building works and costs of main contractor's preliminaries.	

2.9 Unit rates and element unit rates (EURs) used to estimate the cost of facilitating works and building works

2.9.1 Unit rates used are to be current at the time the order of cost estimate is produced. That is, they must exclude any allowances for future inflation or deflation (refer to paragraph 2.16 (Measurement rules for inflation)).

2.9.2 Unit rates applied to measured quantities are to be applicable to the method of measurement used (i.e. rates based on cost/m^2 of GIFA to be used for measured quantities determined using the floor area method, a cost per functional unit for measured quantities calculated using the functional unit method and appropriate element unit rates (EURs) where measured quantities are derived using the elemental method).

2.9.3 Both unit rates (i.e. cost/m^2 of GIFA or cost per functional unit (or functional unit cost)) and element unit rates (EURs) used to estimate the total cost of building works are to include the cost of all materials, labour and plant that are specifically required to construct the building or element. Unit rates and EURs are also to include allowances for any subcontractors' or suppliers' design fees, subcontractors' preliminaries and subcontractors' overheads and profit. Unit rates and EURs are to exclude allowances for main contractor's preliminaries, main contractor's overheads and profit and other allowances, such as project/design team fees, other development/project costs, risk allowances and inflation. These items are to be assessed separately and added to the estimated cost of facilitating works and building works (i.e. the building works estimate).

2.9.4 Costs per functional unit (or functional unit costs) include costs connected with all circulation space associated with the functional unit.

2.9.5 The cost/m^2 of GIFA, the cost per functional unit (or functional unit cost) and EURs can be interpolated from cost analyses or from benchmark analyses of previous buildings of a similar type. Unit rates ascertained from cost analyses or benchmark analyses of previous buildings should, if necessary, be adjusted to reflect changes in specification level between the previous building and the proposed building. Time and regional variation of costs should also be considered.

2.9.6 When using unit rates from cost analyses and benchmark analyses, it is recommended that such rates are adjusted to reflect prices current at the time the order of cost estimate is prepared (i.e. adjusted to remove allowances included for construction inflation). Consider the following scenario:

A cost analysis is to be prepared on a building project, where:

Tender return date:	*7 December 2012*
Original contract sum (i.e. the agreed tender price):	*30,600,900*
Possession of the site (and commencement date of the contract period):	*11 February 2013*
Contract period (i.e. construction period):	*30 months*
Date for completion:	*6 August 2015*
Tender price index (TPI) to be stated in cost analysis:	*December 2012 (or 4th quarter 2012)*

Based on the above scenario, the original contract sum (and rates and prices within) will include an allowance by the main contractor for construction inflation (i.e. an allowance to cover the risks of inflation during the period from the 'tender return date' to the 'date for completion'). If no adjustment is made to the original contract sum (and rates and prices within) for construction inflation in the cost analysis, and the TPI is given as the 'tender return date', then there is a significant risk that a quantity surveyor/cost manager will over allow for construction inflation when developing an order of cost estimate. Therefore, it is recommended that all construction inflation is omitted from cost analyses and benchmark analyses data.

2.9.7 It is further recommended that cost analyses (and benchmark analyses) be based on the agreed tender price (i.e. the original contract sum); not on the final contract sum (i.e. the agreed final account sum). The two main reasons for this are:

(a) The cost analysis (or benchmark analyses) would not be available until after the final account sum had been agreed, which could be three or four years after an analysis undertaken at tender stage.

(b) It is much more difficult to analyse both the original contract sum and variation account than to analyse the original contract sum alone.

2.10 Updating unit rates and other costs to current estimate base date

2.10.1 The estimate base date is to be established for an order of cost estimate. It is essential, therefore, that the unit rates used from cost analyses and benchmark analyses are updated to bring them into line with the estimate base date established for the order of cost estimate.

2.10.2 To update a unit rate from cost analyses or benchmark analyses data to the current estimate base date, the unit rate is increased by the amount of inflation occurring during the period from the base date of cost data to the current estimate base date. The equation for calculating the updated unit rate is therefore:

$$Ra2 = Ra1 + (Ra1 \times p)$$

where:

Ra1 = unit rate at base date of cost data

Ra2 = unit rate at current estimate base date p = percentage addition for inflation

The percentage addition for inflation (p) can be computed using published indices (i.e. tender price indices (TPI), building cost indices or retail price indices (RPI)). Alternatively, the percentage addition can be derived from in-house sources of indices. Using published indices, the equation for calculating the percentage addition for inflation is therefore:

$$p = ((\text{index } 2 - \text{index } 1) \div \text{index } 1) \times 100$$

where:

index 1 = index at base date of cost data

index 2 = index at current estimate base date

p = percentage addition for inflation

Note: Care should be taken not to update previous rates that were based on percentage additions (e.g. main contractor's preliminaries, main contractor's overheads and profit and project/design team fees). Such items will be systematically updated when the percentage addition is applied to the updated unit rates (and other rates).

2.11 Measurement rules for main contractor's preliminaries

2.11.1 Main contractor's preliminaries are to be added as a percentage to the total cost of building works (i.e. to the building works estimate). The percentage addition to be applied for main contractor's preliminaries can be derived from a properly considered assessment of cost analyses of previous building projects. The percentage can be ascertained by calculating the main contractor's preliminaries as a percentage of the total cost of all elements forming the building works. Benchmark data from previously completed building projects can also be used to assess the level of main contractor's preliminaries to be applied to a new building project.

2.11.2 The estimated cost of main contractor's preliminaries is to be calculated by applying the selected percentage addition for main contractor's preliminaries to the cost of the building works. The equation for calculating the total estimated cost of main contractor's preliminaries is therefore:

$$c = a \times p$$

where:

a = building works estimate (i.e. total estimated cost of building works)

p = percentage for main contractor's preliminaries

c = main contractor's preliminaries estimate (i.e. total estimated cost of main contractor's preliminaries)

2.11.3 The main contractor's preliminaries estimate is added to the building works estimate.

2.11.4 If known at this early stage, costs relating to known site constraints, special construction methods, sequencing of works or other non-standard requirements are to be assessed and identified separately.

2.11.5 Allowance for subcontractors' preliminaries, design fees, risk allowances and overheads and profit are to be incorporated in the cost/m^2 of GIFA, cost per functional unit (or functional unit cost) or element unit rates (EURs) used to estimate the cost of building works (i.e. to calculate the building works estimate).

2.11.6 A list of typical items found within main contractor's preliminaries, is provided at Part 4: Tabulated rules of measurement for elemental cost planning (group element 9: Main contractor's preliminaries). This list is not meant to be definitive or exhaustive, but is simply a guide.

2.12 Measurement rules for main contractor's overheads and profit

2.12.1 Main contractor's overheads and profit is to be based on a percentage addition. The estimated cost of any main contractor's overheads and profit is to be calculated by applying the selected percentage addition for overheads and profit to the combined total cost of the building works estimate and the main contractor's preliminaries estimate. The equation for calculating the total estimated cost of main contractor's overheads and profit is therefore:

$$c = (a + b) \times p$$

where:

a = building works estimate (i.e. total estimated cost of building works)

b = main contractor's preliminaries estimate (i.e. total estimated cost of main contractor's preliminaries)

p = percentage for main contractor's overheads and profits

c = main contractor's overheads and profit estimate (i.e. total estimated cost of main contractor's overheads and profit).

2.12.2 The percentage addition to be applied for main contractor's overheads and profit is to be derived from a properly considered assessment of main contractor's overheads and profit found on previous building projects.

2.12.3 The main contractor's overheads and profit estimate is added to the combined total of the building works estimate and the main contractor's preliminaries estimate. This gives the works cost estimate. The equation for calculating the works cost estimate is therefore:

$$d = a + b + c$$

where:

a = building works estimate

b = main contractor's preliminaries estimate

c =main contractor's overheads and profit estimate

d = works cost estimate

2.12.4 A typical list of items to be found within main contractor's overheads and profit, is provided at Part 4: Tabulated rules of measurement for elemental cost planning (group element 10: Main contractor's overheads and profit). This list is not meant to be definitive or exhaustive, but is simply a guide.

2.13 Measurement rules for project/design team fees

2.13.1 Project/design team fees are the fees associated with the project/design team and other specialist consultants required for the building project. Project/design team fees may also include main contractor's pre-construction fees. A typical list of project/design team fees, including items to be found within main contractor's pre-construction fees, is provided at Part 4: Tabulated rules of measurement for elemental cost planning (group element 11: Project/design team fees). This list is not meant to be definitive or exhaustive, but is simply a guide.

2.13.2 Project/design team fees are to be included in order of cost estimates unless specifically excluded at the request of the employer.

2.13.3 It is recommended that a single allowance be made for project/design team fees.

2.13.4 For the purpose of order of cost estimates, it is recommended that project/design team fees be based on a percentage addition. Project/design team fees are to be calculated by applying the selected percentage addition for project/design team fees to the works cost estimate. The equation for calculating project/design team fees is therefore:

$$c = a \times p$$

where:

a = works cost estimate

p = percentage for project/design team fees

c = project/design team fees estimate (i.e. total estimated cost of project/design team fees)

2.13.5 The project/design team fee estimate is added to the works cost estimate.

2.14 Measurement rules for other development/project costs

2.14.1 Other development/project costs are for costs that are not necessarily directly associated with the works costs or project/design team fees, but form part of the total cost of the building project to the employer; for example, insurances, planning fees, fees in connection with party wall awards, decanting and relocation costs, marketing costs and contributions associated with planning permissions (such as Section 106 and Section 278 Agreements in the United Kingdom). Examples of other development/project costs are provided in Part 4: Tabulated rules of measurement for elemental cost planning (group element 12: Other development/project costs). These examples do not provide a definitive or exhaustive list of items, but are simply a guide.

2.14.2 Other development/project costs are to be included in order of cost estimates unless specifically excluded at the request of the employer. Other development/project costs are to be added as a lump sum allowance.

2.14.3 The nature of other development/project costs and the extent of the lump sum allowance to be included in the order of cost estimate are to be ascertained in conjunction with the employer.

2.14.4 The total estimated cost of other development/project costs is added to the combined total of the works cost estimate and the project/design team fees estimate.

2.14.5 The combined total of the works cost estimate, the project/design team fees estimate and the other development/project costs estimate is the base cost estimate (i.e. the risk-free estimate).

2.15 Measurement rules for risk

2.15.1 All building projects involve risks; some obvious, some less so. The proper management of risk saves time and money. Risks can occur at any point in a building project and it is essential that they are identified, assessed, monitored and controlled.

2.15.2 Risk exposure (i.e. the potential effect of risk) changes as the building project progresses; continually managing the risks is therefore essential. As the design evolves, more of the project requirements are defined, and a risk response can be decided. For example:

(a) **Risk avoidance**: where risks have such serious consequences on the project outcome that they are totally unacceptable. Risk avoidance measures might include a review of the employer's brief and a reappraisal of the project, perhaps leading to an alternative development mix, alternative design solution or its cancellation.

(b) **Risk reduction**: where the level of risk is unacceptable. Typical action to reduce risk can take the form of:

(i) Redesign: combined with improved value engineering.

(ii) More detailed design or further site investigation: to improve the information on which cost estimates and programmes are based.

(iii) Different materials or engineering services: to avoid new technology or unproven systems or long delivery items.

(iv) Different methods of construction: to avoid inherently risky construction techniques.

(v) Changing the project execution plan: to package the work content differently, or to carry out enabling works.

(vi) Changing the contract strategy: to allocate risk between the project participants in a different way.

(c) **Risk transfer**: where accepting the risk would not give the employer best value for money.

The object of transferring risk is to pass the responsibility to another party able to better control the risk. Whenever risk is transferred there is usually a premium to be paid (i.e. the receiving party's valuation of the cost of the risk). To be worthwhile, risk transfer should give better overall value for money to the employer (the total cost of the risk to the employer is reduced by more than the cost of the risk premium). Risk transfer measures include taking out insurance cover where appropriate.

(d) **Risk sharing**: occurs when risk is not entirely transferred and the employer retains some element of risk.

(e) **Risk retention**: risks retained by the employer that are not necessarily controllable. This remaining risk is called the residual risk exposure.

2.15.3 Considering the limited information about the building project and site conditions, the risk allowance at the RIBA Preparation Work Stage (i.e. A: Appraisal and B: Design Brief) and the OGC Business Justification and Delivery Strategy Gateways can be a significant percentage of the total estimated cost; whereas, after completion (when all accounts are settled) the requirement for a risk allowance will be zero. Proper risk identification, assessment, monitoring and control are therefore a prerequisite of realistic cost estimates and of minimising the consequential costs arising from the employer's residual risk exposure.

2.15.4 It is recommended that risk allowances are not a standard percentage, but a properly considered assessment of the risk, taking into account the completeness of the design and other uncertainties such as the amount of site investigation done.

2.15.5 It is recommended that separate allowances be made for each of the following:

(a) **Design development risks** – an allowance for use during the design process to provide for the risks associated with design development, changes in estimating data, third party risks (e.g. planning requirements, legal agreements, covenants, environmental issues and pressure groups), statutory requirements, procurement methodology and delays in tendering.

(b) **Construction risks** – an allowance for use during the construction process to provide for the risks associated with site conditions (e.g. access restrictions/limitations, existing buildings, boundaries, and existing occupants and users), ground conditions, existing services and delays by statutory undertakers.

(c) **Employer change risks** – an allowance for use during both the design process and the construction process to provide for the risks of employer driven changes (e.g. changes in scope of works or brief, changes in quality and changes in time).

(d) **Employer other risks** – an allowance for other employer risks (e.g. early handover, postponement, acceleration, availability of funds, liquidated damages or premiums on other contracts due to late provision of accommodation, unconventional tender action and special contract arrangements).

2.15.6 Lists of typical risks for each category of risk are at Part 4: Tabulated rules of measurement for elemental cost planning (group element 13: Risks). These lists are not meant to be definitive or exhaustive, but are simply a guide.

2.15.7 Risk allowances are to be included in the order of cost estimates. Even at the RIBA Preparation Work Stage and the OGC Business Justification and Delivery Strategy Gateways, it is recommended that the size of the initial risk allowance is based on the results of a formal risk analysis. If the risk characteristics are not acceptable to the employer, it is advisable that the risk allowance is not determined until management action has been taken to review the employer's risk exposure and to identify suitable risk responses that will reduce this exposure to an acceptable level. It is recommended that a revised risk analysis is undertaken to determine the most likely out-turn cost and the risk allowance.

2.15.8 Throughout the RIBA Preparation Work Stage and the OGC Business Justification and Delivery Strategy Gateways of a building project, it is advisable that effort is concentrated upon the main sources of risk. It may be beneficial, even at this stage of the project, to prepare a project specific risk register incorporating the major risks identified and a risk management strategy. It is recommended that risks are not excluded without due consideration. Take care not to allow the natural optimism which surrounds the early stages of a building project to influence the realism of judgments which are to be made.

2.15.9 The risks, which can influence the cost of a project, change as the building project progresses through the subsequent RIBA Work Stages. It is recommended that risk registers and risk estimates are reassessed at regular intervals throughout the various formal stages of cost planning which follow once the cost limit has been authorised by the employer.

2.15.10 For the purpose of order of cost estimates, risk allowances for design development risks, construction risks and employer's risks based on the application of percentage additions are to be calculated by multiplying the base cost estimate by the selected percentage additions. The equation for calculating the risk allowances for design development risk, construction risk and employer's risk are therefore:

for design development risks: $R1 = a \times p1$

for construction risks: $R2 = a \times p2$

for employer change risks: $R3 = a \times p3$

for employer other risks: $R4 = a \times p4$

where:

a = base cost estimate

p1 = percentage risk allowance for design development risks

p2 = percentage risk allowance for construction risks

p3 = percentage risk allowance for employer change risks

p4 = percentage risk allowance for employer other risks

R1 = risk allowance estimate for design development risks (i.e. total estimated cost of risk allowance for design development risks)

R2 = risk allowance estimate for construction risks (i.e. total estimated cost of risk allowance for construction risks)

R3 = risk allowance estimate for employer change risks (i.e. total estimated cost of risk allowance for employer change risks)

R4 = risk allowance estimate for employer other risks (i.e. total estimated cost of risk allowance for employer other risks)

2.15.11 The equation for calculating the total risk allowance estimate is therefore:

$$RA = R1 + R2 + R3 + R4$$

where:

R1 = risk allowance estimate for design development risks

R2 = risk allowance estimate for construction risks

R3 = risk allowance estimate for employer change risks

R4 = risk allowance estimate for employer other risks

RA = risk allowances estimate

2.15.12 The risk allowance estimate is added to the base cost estimate. This gives the proposed cost limit (excluding inflation). The equation for calculating the cost limit (excluding inflation) is therefore:

$$CL = a + b$$

where:

a = base cost estimate

b = risk allowances estimate

CL = cost limit (excluding inflation)

2.16 Measurement rules for inflation

2.16.1 An order of cost estimate is to be prepared using rates and prices current at the time the estimate is prepared. However, it is also necessary to consider possible future effects of inflation on these rates and prices over a period of time (i.e. from the estimate base date to construction completion). The rules divide inflation over a period of time into two categories; namely:

(a) to date of tender (i.e. tender inflation); and

(b) during the construction period (i.e. construction inflation).

2.16.2 For the purpose of order of cost estimates, the period used to ascertain the effects of inflation are as follows:

(a) Tender inflation: the period from the estimate base date to the date of tender return.

(b) Construction inflation: the period from the date of tender return to the mid-point of the construction period.

2.16.3 For the purpose of order of cost estimates, a simple approach can be used to ascertain the amount of tender inflation and construction inflation to be included.

2.16.4 The amount of tender inflation is ascertained by applying a single percentage rate for tender inflation to the cost limit (excluding inflation). The addition of tender inflation gives the projected cost limit (excluding construction inflation) for the building project. The equation for calculating the amount of tender inflation is therefore:

$$t = CL \times p$$

where:

CL = cost limit (excluding inflation)

p = percentage for tender inflation

t = tender inflation estimate

The percentage for tender inflation (p) can be computed using published indices (i.e. tender price indices (TPI), building cost indices or retail price indices (RPI)). Alternatively, the percentage addition can be derived from in-house sources of indices.

2.16.5 The tender inflation estimate is added to the cost limit (excluding inflation). This gives the proposed cost limit (excluding construction inflation). The equation for calculating the cost limit (excluding construction inflation) is therefore:

CL2 = CL1 + t

where:

CL1 = cost limit (excluding inflation)

CL2 = cost limit (excluding construction inflation)

t = tender inflation estimate

2.16.6 The amount of construction inflation is ascertained by applying a single percentage rate for construction inflation to the cost limit (excluding construction inflation). The addition of construction inflation gives the projected cost limit (including inflation) for the building project. The equation for calculating the amount of construction inflation is therefore:

c = CL x p

where:

CL = cost limit (excluding construction inflation)

p = percentage for construction inflation

c = construction inflation estimate

The percentage for construction inflation (p) can be computed using published indices (i.e. tender price indices (TPI), building cost indices or retail price indices (RPI)). Alternatively, the percentage addition can be derived from in-house sources of indices.

2.16.7 The construction inflation estimate is added to the cost limit (excluding inflation). This gives the proposed cost limit (including inflation). The equation for calculating the cost limit (including inflation) is therefore:

CL2 = CL1 + c

where:

CL1 = cost limit (excluding construction inflation)

CL2 = cost limit (including inflation)

c = construction inflation estimate

Note: Care should be taken to ensure that the rates used to calculate an order of cost estimate that were derived from cost analyses or benchmark analyses have been adjusted to reflect prices current at the time the order of cost estimate is prepared (i.e. adjusted to remove allowances included for construction inflation). Refer to paragraph 2.9.6 of these rules.

2.16.8 It is recommended that potential cost increases caused by tendering conditions and the effects of changes in the market are also considered, such as price increases associated with particular materials or products or the impact of major projects sapping resources (home and abroad); particular specialist, works, trade, work package, and labour only subcontractors; or other countries buying major quantities of raw materials (e.g. China). However, it is recommended that

such potential cost increases caused by tendering conditions and the effects of changes in the market be initially dealt with under risk allowances.

2.17 Value Added Tax (VAT) assessment

2.17.1 Value Added Tax (VAT) in relation to buildings is a complex area. Therefore, it is recommended that VAT is excluded from order of cost estimates.

2.17.2 It is recommended that specialist advice is sought on VAT matters to ensure that the correct rates are applied to the various aspects of a building project.

2.18 Other considerations

2.18.1 Other considerations include:

(a) capital allowances for taxation purposes;

(b) land remediation relief; and

(c) grants.

2.18.2 Taxation allowances, taxation relief and grants can provide valuable financial aid to an employer on certain types of building project. However, it is recommended that specialist advice is sought to maximise the availability and quantum of capital allowances, land remediation relief and grants. For that reason, it is recommended that allowances in connection with capital allowances, land remediation relief and grants be excluded from order of cost estimates.

2.19 Reporting of order of cost estimates

2.19.1 Costs are to be expressed as 'cost/m^2 of GIFA'.

2.19.2 Where appropriate and/or required by an employer, costs may be expressed as a 'cost per functional unit' (or 'functional unit cost') as an alternative to, or in addition to, the cost/m^2 of GIFA. The functional unit may be an employer defined unit. It is essential, therefore, that the functional unit is clearly identified when costs are expressed in this way.

2.19.3 Order of cost estimates, as with all estimates, are to be of forecast out-turn cost, with stated allowances for project/design team fees, other development/project costs, risk allowances, inflation and VAT as appropriate.

2.19.4 Items included in and excluded from the estimated cost are to be clearly communicated to the employer when reporting the order of cost estimate.

2.19.5 Typical items to be included in order of cost estimates reports are:

(a) project title;

(b) project description;

(c) a statement of cost (including cost limit);

(d) details of the information and specification on which the cost plan was prepared;

(e) a statement of the floor areas;

(f) basis of cost estimates (i.e. assumptions);

(g) estimate base date (i.e. to which inflation has been applied);

(h) estimated costs of and a request for decisions on any alternative proposals (i.e. summary of

(i) option costs); and

(j) inclusions and exclusions (i.e. a clear and unambiguous statement of what is included in and excluded from the order of cost estimate).

Part 3: Measurement rules for cost planning

Part 3: Measurement rules for cost planning

3.1 Introduction

3.1.1 Part 3 of the rules describes the purpose and content of elemental cost plans and explains the rules of measurement for the preparation of formal cost plans. The formal cost planning stages are also put in context with the RIBA Plan of Work and the OGC Gateway Process.

3.1.2 The content and application of unit rates to measured quantities to generate the base cost of the building works is also described; together with the method of dealing with cost allowances for main contractor's preliminaries, main contractor's overheads and profit, project/design team fees, other development/project costs, risk allowances, inflation, Value Added Tax (VAT) and capital allowances.

3.1.3 In addition, the basic information requirements needed (from the employer and other project team members) by the quantity surveyor/cost manager to complete an elemental cost plan are outlined. The essential content of the quantity surveyor's/cost manager's cost reports to the employer is also described.

3.1.4 The measurement rules for elemental cost planning can also be used as a basis for measuring quantities for the application to whole life cycle costing.

3.2 Purpose of cost planning

3.2.1 Elemental cost plans are produced as an intrinsic part of RIBA Work Stages C: Concept, D: Design Development, E: Technical Design and F: Production Information; or, when the OGC Gateway Process is used, Gateways 3A (Design Brief and Concept Approval) and 3B (Detailed Design Approval). The requirements of RIBA Work Stages C, D, E and F, as described in the RIBA Outline Plan of Work, are as follows:

(a) RIBA Work Stage C: Concept:

'Implementation of Design Brief and preparation of additional data. Preparation of Concept Design including outline proposals for structural and building services systems, outline specifications and [Formal Cost Plan 1]. Review of procurement route.'

OGC Gateway 3A (Design Brief and Concept Approval) can be compared with RIBA Work Stage C.

(b) RIBA Work Stage D: Design Development:

'Development of concept design to include structural and building services systems, updated outline specifications and cost plan. Completion of Project Brief. Application for detailed planning permission.'

Note: Application for detailed planning permission may be moved to suit project requirements.

(c) RIBA Work Stage E: Technical Design:

'Preparation of technical design(s) and specifications, sufficient to co-ordinate components and elements of the project and information for statutory standards and construction safety.'

Note: Information for statutory standards and construction safety may be moved to suit project requirements.

OGC Gateway 3B (Detailed Design Approval) can be compared with RIBA Work Stages D and E.

(d) RIBA Work Stage F: Production Information:

'F1 Preparation of production information in sufficient detail to enable a tender or tenders to be obtained. Application for statutory approvals.'

Note: Application for statutory approvals may be moved to suit project requirements.

'F2 Preparation of further information for construction required under the building contract.' Note: Further information for construction may be moved to suit project requirements. OGC Gateway 3B (Detailed Design Approval) can be compared with RIBA Work Stages D and E.

Project stages from the RIBA Outline Plan of Work 2007, copyright Royal Institute of British Architects, are reproduced here with the permission of the RIBA.

3.2.2 The main purpose of elemental cost planning is to:

(a) ensure that employers are provided with value for money;

(b) make employers and designers aware of the cost consequences of their desires and/or proposals;

(c) provide advice to designers that enables them to arrive at practical and balanced designs within budget;

(d) keep expenditure within the cost limit approved by the employer; and

(e) provide robust cost information upon which the employer can make informed decisions.

3.2.3 Elemental cost planning (or cost planning) is a budget distribution technique that is implemented during the design stages of a building project. It involves a critical breakdown of the cost limit (i.e. the employer's authorised budget) for the building(s) into cost targets for each element of the building(s). Cost targets are the recommended expenditure for each element (e.g. substructure, frame, upper floors and roof).

3.2.4 The elemental cost plan (or cost plan) that results is a statement of how the project team proposes to distribute the available budget among the elements of the building. It provides a frame of reference from which to develop the design and maintain cost control. It also provides both a work breakdown structure (WBS) and a cost breakdown structure (CBS) which, by codifying, can be used to redistribute works in elements to construction works packages for the purpose of procurement.

3.2.5 Elemental cost planning is an iterative process, which is performed in steps of increasing detail as more design information becomes available.

3.3 Constituents of a cost plan

3.3.1 The key constituents of an elemental cost plan are:

Constituent	
Facilitating works estimate (1)	See paragraph 3.10
Building works estimate (2)	See paragraph 3.11
Main contractor's preliminaries estimate (3)	See paragraph 3.14
Sub-total (4) [(4) = (1) + (2) + (3)]	
Main contractor's overheads and profit estimate (5)	See paragraph 3.15
Works cost estimate (6) [(6) = (4) + (5)]	
Project/design team fee estimate (7) [(7) = (7(a)) + (7(b)) + (7(c))]	See paragraph 3.16
(a) Consultants' fees (7(a))	
(b) Main contractor's pre-construction fee estimate (if applicable) (7(b))	
(c) Main contractor's design fees estimate (if applicable) (7(c))	
Sub-total (8) [(8) = (6) + (7)]	
Other development/project costs estimate (8)	See paragraph 3.17
Base cost estimate (10) [(10) = (8) + (9)]	
Risk allowances estimate (11) [(11) = (11(a)) + (11(b)) + (11(c)) + (11(d))]	See paragraph 3.18
(a) Design development risks estimate (11(a))	
(b) Construction risks estimate (11(b))	
(c) Employer change risks estimate (11(c))	
(d) Employer other risks estimate (11(d))	
Cost limit (excluding inflation) (12) [(12) = (10) + (11)]	
Tender inflation estimate (13)	See paragraph 3.19
Cost limit (excluding construction inflation) (14) [(14) = (12) + (13)]	
Construction inflation estimate (15)	See paragraph 3.19
Cost limit (including inflation) (16) [(16) = (14) + (15)]	
VAT assessment	See paragraph 3.20

3.3.2 The base cost estimate is the total estimated cost of the building works, main contractor's preliminaries and main contractor's overheads and profit. The base cost estimate is to contain no allowances for risk or inflation (i.e. the risk-free estimate).

3.3.3 Allowances for risk and inflation are to be calculated separately and added to the base cost estimate to determine the cost limit for the building project.

3.4 Formal cost planning stages

3.4.1 There are a number of formal cost planning stages, which are comparable with the RIBA Design and Pre-Construction Work Stages and OGC Gateways 3A (Design Brief and Concept Approval) and 3B (Detailed Design Approval) for a building project. The employer is required to 'approve' the cost plan on completion of each RIBA Work Stage before authorising commencement of the next RIBA Work Stage.

3.4.2 For most building projects, formal cost plans are to be completed, and submitted to the employer for approval, for each of the following RIBA Work Stages or OGC Gateways:

Formal Cost Plan	RIBA Work Stage
1	C: Concept
2	D: Design Development
3	E: Technical Design F: Production Information

Formal Cost Plan	OGC Gateway
1	3A: Design Brief and Concept Approval
2 and 3	3B: Detailed Design Approval

3.4.3 Formal Cost Plan 1 is prepared at a point where the scope of work is fully defined and key criteria are specified but no detailed design has commenced. Formal Cost Plan 1 will provide the frame of reference for Formal Cost Plan 2. Likewise, Formal Cost Plan 2 will provide the frame of reference for Formal Cost Plan 3. Neither Formal Cost Plans 2 nor 3 involve the preparation of a completely new elemental cost plan; they are progressions of the previous formal cost plans, which are developed through the cost checking of cost significant components and cost targets as more design information and further information about the site becomes available.

3.4.4 Whether or not a formal cost plan is prepared at each RIBA Work Stage or OGC Gateway is dependent on the procurement strategy selected. For example, the preparation of an updated cost plan might not be required at Work Stage F: Production Information where a design and build contract strategy is selected.

3.4.5 The cost targets within each formal cost plan approved by the employer will be used as the baseline for future cost comparisons. Each subsequent cost plan will require reconciliation with the preceding cost plan and explanations relating to changes made. In view of this, it is essential that records of any transfers made to or from the risk allowances and any adjustments made to cost targets are maintained, so that explanations concerning changes can be provided to both the employer and the project team.

3.4.6 To avoid unnecessary conflict, it is essential that employers and other project/design team members are aware of what is included in each element of the cost plan.

3.5 Reviewing and approving cost plans

3.5.1 Prior to the employer authorising commencement of the next RIBA Work Stage or OGC Gateway, the formal cost plan for the preceding RIBA Work Stage or OGC Gateway is to be reviewed by the employer and the project team to ensure that:

(a) the building project is affordable;

(b) the cost target for each element of the project is reasonable and up to date; and

(c) the cost limit has not been exceeded.

3.5.2 Following the review, the employer will sign off the cost plan and give any necessary instructions and/or authorise commencement of the next RIBA Work Stage or OGC Gateway.

3.6 Cost control in procurement

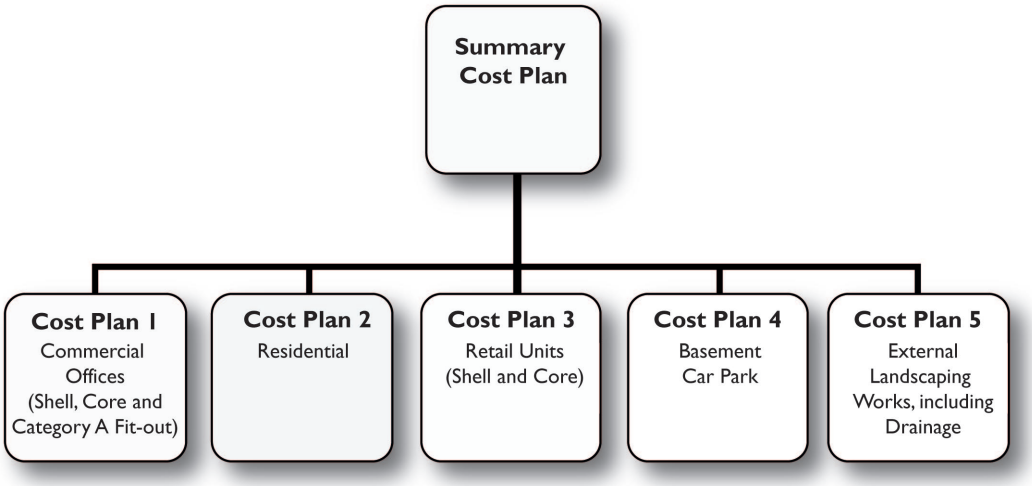
3.6.1 The cost plan becomes a fundamental cost control mechanism where a building project is procured by the use of separate work packages. By using codified cost plans, the components allocated to each element and sub-element can simply be redistributed into the required work packages. Redistributing components into work packages will provide cost targets for each package, which can be used as a cost management tool during both the RIBA Pre-Construction and Construction Work Stages and OGC Gateway 4 (Readiness for Service).

3.6.2 The method of codifying and redistributing cost targets from elements to work packages is at paragraph 4.5 of Part 4 of these rules.

3.7 Building projects comprising multiple buildings

3.7.1 Where a building project comprises more than one type of building, it is recommended that a separate cost plan be prepared for each building; culminating in a 'summary cost plan' for the entire building project (see Figure 3.1).

Figure 3.1: Typical cost plan breakdown structure for building projects comprising multiple components or buildings



3.8 Information requirements for formal cost plans

3.8.1 The information base of the building project continues to expand during the RIBA Design and Pre-Construction Work Stages and OGC Gateways 3A (Design Brief and Concept Approval), 3B (Detailed Design Approval) and 3C (Investment Decision), as more project/design team, main contractor, specialist subcontractor and employer interaction takes place.

3.8.2 A list of the key information required to enable preparation of formal cost plans is at Appendix G of these measurement rules.

3.9 Format, structure and content of elemental cost plans

3.9.1 Examples of templates showing the format, structure and content of elemental cost plans, based on level 1 and level 2 code levels, are provided at Appendix G and Appendix H to these rules.

3.10 Measurement rules for facilitating works

3.10.1 The rules of measurement for facilitating works (i.e. group element 0) are detailed in Part 4: Tabulated rules of measurement for elemental cost planning.

3.10.2 The measurement rules applicable to facilitating works shall be the same those for the measurement of building works, as given in paragraphs 3.11.2 to 3.11.5, inclusive, of these rules.

3.11 Measurement rules for building works

3.11.1 The rules of measurement for building works (i.e. group elements 1 to 8) are detailed in Part 4: Tabulated rules of measurement for elemental cost planning.

3.11.2 The degree of detail to be measured for building work is to be related to the cost significance of the elements in the particular design. Where sufficient information is available, cost significant items are to be measured by means of approximate quantities. Composite items are measured by combining or grouping together work items to common forms of measurement. Non-cost significant items (such as minor items and labours on cost significant items) are ignored in measurement, but are to be accounted for by increasing the applicable unit rate by an appropriate percentage or by other appropriate methods.

3.11.3 Quantities shall be given to the nearest whole unit except that any quantity less than one whole unit shall be given as one unit. Quantities measured in tonnes shall be given to two places of decimals.

3.11.4 The method of measuring quantities for each formal cost plan shall be as follows:

(a) **Formal Cost Plan 1**

(i) This is the first formal cost plan. It coincides with the completion of the concept design at the point where the scope of works is fully defined and key criteria are specified but no detailed design has commenced.

(ii) Cost Plan 1 will provide the frame of reference for Cost Plan 2.

(iii) The key information required from the employer and other project/design team members to enable preparation of Formal Cost Plan 1 is set out in Appendix G of these rules.

(iv) For Cost Plan 1, a condensed list of elements is used, which will be developed into a full list of elements, sub-elements and components as more design and other information becomes available as the building project progresses.

(v) Quantities for building works shall be determined in accordance with Part 4: Tabulated rules of measurement for elemental cost planning (i.e. group elements 1 to 8).

(vi) Where insufficient design information is available from which to quantify building works in accordance with the rules of measurement for elemental cost planning, then the quantity measured is to be the GIFA.

(b) **Formal Cost Plan 2**

(i) This is the second formal cost plan, which coincides with the completion of the design development. Formal Cost Plan 2 is a progression of Formal Cost Plan 1. It is

developed by cost checking of cost significant cost targets for elements as more detailed design information is made available from the design team.

(ii) Cost Plan 2 will provide the frame of reference for Cost Plan 3.

(iii) The key information required from the employer and other project/design team members to enable preparation of Formal Cost Plan 2 is set out in Appendix G of these rules.

(iv) The cost checks are to be carried out against each pre-established cost target.

(v) Quantities for building works shall be determined in accordance with Part 4: Tabulated rules of measurement for elemental cost planning (i.e. group elements 1 to 8).

(vi) Where insufficient design information is available from which to quantify building works in accordance with the rules of measurement for elemental cost planning, then the quantity measured is to be the GIFA.

(c) **Formal Cost Plan 3**

(i) This third formal cost plan stage is based on technical designs, specifications and detailed information for construction. Formal Cost Plan 3 is a progression of Formal Cost Plan 2. It is developed by cost checking of cost significant cost targets for elements as more detailed design information is made available from the design team.

(ii) Cost Plan 3 will provide the frame of reference for appraising tenders.

(iii) The key information required from the employer and other project/design team members to enable preparation of Formal Cost Plan 3 is set out in Appendix H of these rules.

(iv) The cost checks are to be carried out against each pre-established cost target.

(v) Quantities for building works shall be determined in accordance with Part 4: Tabulated rules of measurement for elemental cost planning (i.e. group elements 1 to 8).

(vi) Where insufficient design information is available from which to quantify building works in accordance with the rules of measurement for elemental cost planning, then the quantity measured is to be the GIFA.

3.11.5 Contractor designed work:

(a) As the procurement strategy is developed it is likely that the employer will require the transfer of the design liability for all, or some, elements of the works to the contractor. When the contractor is to be liable for the design of specific elements only (i.e. not the entire building project), this is referred to as 'contractor designed work'. Contractor designed works include any works that require the contractor to undertake its design, whether directly or via a work package subcontractor. Contractor designed work is sometimes referred to as the 'Contractor Designed Portion (CDP)'.

(b) Elements, sub-elements and components for which the contractor is required to take responsibility for the design, such as foundations, windows, pre-cast concrete components, roof trusses and/or mechanical and electrical engineering services, the work items shall be identified and described separately in the cost plan as 'contractor designed works'.

(c) The rules for dealing with contractor designed work, where design liability for the entire building project is to be transferred to the contractor, are at paragraph 3.16.7 (Main contractor's design fees) of these rules.

3.12 Unit rates used to estimate the cost of building works

3.12.1 The unit rates (including element unit rates (EUQs) and composite unit rates) used to estimate the total cost of building works are to include the cost of all materials, labour and plant that are specifically required to construct the item. Costs are also to include any subcontractors' preliminaries, design fees, risk allowances, and overheads and profit.

3.12.2 Unit rates used to estimate the cost of building works (i.e. building works estimate) are to exclude main contractor's preliminaries, main contractor's overheads and profit and other allowances, such as project/design team fees, other development/project costs, risk allowances and inflation. These items are to be assessed separately and added to the building works estimate.

3.12.3 When using unit rates from cost analyses and benchmark analyses, care should be taken to ensure that such rates have been adjusted to reflect prices current at the time the cost plan is prepared (i.e. adjusted to remove allowances included for construction inflation). Refer to paragraph 2.9.6 at Part 2 of these rules

3.13 Updating unit rates and other costs to current estimate base date

3.13.1 The estimate base date is to be re-established at each formal cost plan. Therefore, before using the preceding order of cost estimate or formal cost plan to progress the next formal cost plan, it is essential that the unit rates and other rates used in the preceding order of cost estimate or formal cost plan are updated to bring them into line with the estimate base date established for the next formal cost plan.

3.13.2 To update a unit rate and other rate from the previous estimate base date to the current estimate base date, the unit rate (or other rate) is increased by the amount of inflation occurring during the period from the previous estimate base date to the current estimate base date. The equation for calculating the updated unit rate (or other rate) is therefore:

$$Ra2 = Ra1 + (Ra1 \times p)$$

where:

Ra1 = unit rate (or other rate) at previous estimate base date

Ra2 = unit rate (or other rate) at current estimate base date

p = percentage addition for inflation

The percentage addition for inflation (p) can be computed using published indices (i.e. tender price indices (TPI), building cost indices or retail price indices (RPI)). Alternatively, the percentage addition can be derived from in-house sources of indices. Using published indices, the equation for calculating the percentage addition for inflation is therefore:

$$p = ((\text{index } 2 - \text{index } 1) \div \text{index } 1) \times 100$$

where:

Index 1 = index at base date of cost data

Index 2 = index at current estimate base date

p = percentage addition for inflation

Note: Care should be taken not to update previous rates that were based on percentage additions (e.g. main contractor's preliminaries, main contractor's overheads and profit and project/design team fees). Such items will be updated when the percentage addition is applied to the updated unit rates (and other rates). Similarly, updating percentages are not to be applied to items for which fixed costs have been agreed (e.g. consultants' fees where based on a fixed lump sum).

3.14 Measurement rules for main contractor's preliminaries

3.14.1 Main contractor's preliminaries are a cost significant element in most construction projects, which are directly influenced by the choice of construction method more than any other element. The cost checking of main contractor's preliminaries is an iterative process which is repeated for each formal cost plan.

3.14.2 The methods of estimating the cost of the preliminaries will vary according to the RIBA Work Stage or OGC Gateway reached. To begin with, for Formal Cost Plan 1 (prepared for RIBA Work Stage C: Concept or OGC Gateway 1: Business Justification), the estimated cost of main contractor's preliminaries will be based on a percentage addition derived from a properly considered assessment of cost analyses of previous buildings. However, as more information becomes available a more detailed approach to cost checking the cost target for main contractor's preliminaries is to be taken.

3.14.3 When preparing Formal Cost Plans 2 and 3 (i.e. at RIBA Work Stages D, E, and F or at OGC Gateways 3A and 3B), to ensure that the previous cost target is sufficient, it is essential that thorough cost checks are carried out on cost significant items of main contractor's preliminaries. To facilitate the cost checking process, it is recommended that the checklist of main contractor's preliminaries items included in these rules of measurement be used as an aide memoire. (Refer to Part 4: Tabulated rules of measurement for elemental cost planning; paragraph 4.2.5.)

3.14.4 Where the estimated cost of main contractor's preliminaries, or any part of the main contractor's preliminaries, is to be based on a percentage addition, the estimated cost is to be calculated by applying the selected percentage addition for main contractor's preliminaries to the cost of the building works estimate. The equation for calculating the total estimated cost of main contractor's preliminaries is therefore:

$$c = a \times b$$

where:

a = building works estimate (i.e. total estimated cost of building works)

b = percentage for main contractor's preliminaries

c = main contractor's preliminaries estimate (i.e. total estimated cost of main contractor's preliminaries)

3.14.5 Alternatively, the estimated cost of all or part of the main contractor's preliminaries can be assessed as a lump sum.

3.14.6 The main contractor's preliminaries estimate is added to the building works estimate.

3.14.7 Allowance for subcontractors' preliminaries is to be made in the unit rates applied to measured quantities.

3.14.8 Where the main contractor has been appointed early (e.g. as part of a two stage tendering process), the actual agreed level of main contractor's preliminaries is to be included in the cost plan. Any compensating adjustments are to be made to the applicable cost targets.

3.14.9 It is recommended that the allowance for main contractor's preliminaries be treated as a separate cost target.

3.15 Measurement rules for main contractor's overheads and profit

3.15.1 When preparing a cost estimate for main contractor's overheads and profit, overheads and profit can be either combined as a single cost centre or treated as two separate cost centres (i.e. one being main contractor's overheads and the other main contractor's profit). Main contractor's overheads and profit are to be based on a percentage addition. The estimated cost of any main contractor's overheads and profit is to be calculated by applying the selected percentage addition for overheads and profit to the combined total cost of the building works estimate and the main contractor's preliminaries estimate.

3.15.2 Where main contractor's overheads and profit are to be combined as a single cost centre, the equation for calculating the total estimated cost of main contractor's overheads and profit is:

$$d = (a + b) \times c$$

where:

a = building works estimate (i.e. total estimated cost of building works)

b = main contractor's preliminaries estimate (i.e. total estimated cost of main contractor's preliminaries)

c = percentage for main contractor's overheads and profit

d = main contractor's overheads and profit estimate (i.e. total estimated cost of main contractor's overheads and profit)

3.15.3 The percentage addition to be applied for combined main contractor's overheads and profit is to be derived from a properly considered assessment of main contractor's overheads and profit found on previous building projects.

3.15.4 The main contractor's overheads and profit estimate is added to the combined total of the building works estimate and the main contractor's preliminaries estimate. This gives the works cost estimate. The equation for calculating the works cost estimate is therefore:

$$d = a + b + c$$

where:

a = building works estimate

b = main contractor's preliminaries estimate

c = main contractor's overheads an profit estimate

d = works cost estimate

3.15.5 Where main contractor's overheads and profit are to be treated as two separate cost centres, the equations for calculating the total estimated cost of main contractor's overheads and profit are as follows:

(a) For main contractor's overheads:

$$d = (a + b) \times c$$

where:

a = building works estimate (i.e. total estimated cost of building works)

b = main contractor's preliminaries estimate (i.e. total estimated cost of main contractor's preliminaries)

c = percentage for main contractor's overheads

d = main contractor's overheads estimate (i.e. total estimated cost of main contractor's overheads)

(b) For main contractor's profit:

$$e = (a + b) \times c$$

where:

a = building works estimate (i.e. total estimated cost of building works)

b = main contractor's preliminaries estimate (i.e. total estimated cost of main contractor's preliminaries)

c = percentage for main contractor's profit

e = main contractor's profit estimate (i.e. total estimated cost of main contractor's profit)

3.15.6 The percentages addition to be applied for main contractor's overheads and main contractor's profit are to be derived from a properly considered assessment of main contractor's overheads and profit found on previous building projects.

3.15.7 The main contractor's overheads and main contractor's profit estimates are added to the combined total of the building works estimate and the main contractor's preliminaries estimate. This gives the works cost estimate. The equation for calculating the works cost estimate is therefore:

$$e = a + b + c + d$$

where:

a = building works estimate

b = main contractor's preliminaries estimate

c = main contractor's overheads estimate

d = main contractor's profit estimate

e = works cost estimate

3.15.8 Where the main contractor has been appointed early (e.g. as part of a two-stage tendering process), the actual agreed level of overheads and profit is to be included in the cost plan. Any compensating adjustments are to be made to the applicable cost targets.

3.15.9 It is recommended that the allowance for main contractor's overheads and profit be treated as a separate cost target.

3.16 Measurement rules for project/design team fees

3.16.1 Project/design team fees are the fees associated with the project/design team and other specialist consultants required for the building project (i.e. consultants' fees). Project/design team fees also include main contractor's pre-construction fees.

3.16.2 A list of typical project/design team fees is included in Part 4: Tabulated rules of measurement for elemental cost planning (group element 11). The tables are intended to be used by the quantity surveyor/cost manager to assist in the cost estimating and cost checking process. The lists are not meant to be definitive or exhaustive, but are merely a guide.

3.16.3 It is recommended that separate allowances be made for:

(a) consultants' fees;

(b) main contractor's pre-construction fees (if applicable); and

(c) main contractor's design fees (if applicable).

3.16.4 Project/design team fees are to be included in cost plans unless specifically excluded at the request of the employer.

3.16.5 **Consultants' fees:**

(a) Estimates of consultants' fees are to be based on a percentage addition.

(b) The estimated cost of consultants' fees is to be calculated by applying the selected percentage addition for consultants' fees to the works cost estimate (i.e. the combined total of the building works estimate, main contractor's preliminaries and main contractor's overheads and profit). The equation for calculating project/design team fees is therefore:

$$c = a \times b$$

where:

a = works cost estimate

b = percentage for consultants' fees

c = consultants' fees estimate (i.e. total estimated cost of consultants' fees)

(c) The percentage addition to be applied for project/design team fees is to be derived from a properly considered assessment of project/design team fees on other similar previous building projects.

(d) Where actual project/design team fees are known (e.g. the architect's fees), the actual fee is to be included in the cost plan. Any compensating adjustments are to be made to the applicable cost targets.

(e) Care is to be taken to ensure that the scope of services agreed between the employer and a consultant is sufficient to complete the building project when estimating the cost of resources. Any requirement for additional services needs to be identified and allowed for in the cost plan (e.g. the cost of carrying out detailed reinforcement design would not normally be included in scope of services (or fee agreement) for the structural engineer, unless specifically requested by the employer). Thus, cost checks on project/design team fees are to include checks on the sufficiency of the scope of services.

(f) Where a design and build contract strategy has been selected, the responsibility of design will be transferred to the main contractor. Therefore, the design team members who are to be novated to the main contractor, and the timing of the novation, need to be identified. This will enable the project/design team fees applicable to those design team members to be assessed and redistributed from the cost target for consultants' fees to the cost target for main contractor's design fees as appropriate (see paragraph 3.16.7).

3.16.6 Main contractor's pre-construction fee:

(a) Where it has been decided by the employer, in consultation with the project team, to employ a main contractor (or specialist contractors) to provide pre-construction advice and/or other services, an allowance for the fee for providing such services is to be determined and included in the cost plan. The estimated cost of a main contractor's pre-construction fees may be calculated by using a percentage addition or derived lump sum.

(b) Where the estimated cost of the main contractor's pre-construction fee is to be based on a percentage, the estimated cost is to be calculated by applying the selected percentage addition for the main contractor's pre-construction fee to the works cost estimate (i.e. the combined total of the building works estimate, main contractor's preliminaries and main contractor's overheads and profit).

(c) The percentage addition, or lump sum, to be applied for the main contractor's pre-construction fee (or specialist contractor's fees) is to be derived from a properly considered assessment of fees charged on other similar previous building projects; taking account of the type of services required and the duration of the pre-construction period. The equation for calculating the main contractor's pre-construction fees is therefore:

$$c = a \times b$$

where:

a = works cost estimate

b = percentage for main contractor's pre-construction fees

c = main contractor's pre-construction fees estimate (i.e. total estimated cost of main contractor's pre-construction fees)

(d) Care needs to be taken when estimating the cost of pre-construction fees, to ensure that sufficient allowance has been made for main contractor's overheads and profit on the pre-construction fee.

3.16.7 Main contractor's design fees:

(a) Where design liability is to be transferred to the main contractor for the entire building project (i.e. where a design and build or other main contractor led design contract strategy is to be used) and all, or some, of the consultants within the design team are to be novated, the balance of the consultants' fees due after novation has occurred are to be transferred from the cost target for consultants' fees to the cost target for main contractor's design fees.

(b) The allowance for main contractor's design fees is to be derived from a properly considered assessment of main contractor's design fees found on previous building projects.

3.16.8 The equation for calculating the total project/design team fees estimate is therefore:

$$a = F1 + F2 + F3$$

where:

F1 = consultants' fees estimate

F2 = main contractor's pre-construction fees estimate

F3 = main contractor's design fees estimate

a = project/design team fee estimate

3.16.9 The project/design team fee estimate is added to the works cost estimate.

3.16.10 The rules for dealing with contractor designed work, where design liability for only specific elements and/or components of building project is to be transferred to the contractor, are at paragraph 3.11.5 (Contractor designed work) of these rules.

3.17 Measurement rules for other development/project costs

3.17.1 Other development/project costs are for costs that are not necessarily directly associated with the cost of the building works, but form part of the total cost of the building project to the employer (e.g. insurances, planning fees, fees in connection with party wall awards, decanting and relocation costs, marketing costs and contributions associated with planning permissions).

3.17.2 Other development/project costs are to be included in cost plans unless specifically excluded at the request of the employer. Other development/project costs are to be added as a lump sum allowance.

3.17.3 The nature of other development/project costs and the extent of the lump sum allowance to be included in the cost plan are to be ascertained in conjunction with the employer.

3.17.4 The total estimated cost of other development/project costs is added to the combined total of the works cost estimate and the project/design team fees estimate.

3.17.5 A tabulated list of typical other development/project costs is included in Part 4: Tabulated rules of measurement for elemental cost planning (group element 12). The examples provided do not provide a definitive or exhaustive list of items, but are simply a guide.

3.17.6 It is recommended that the allowance for other development/project costs be treated as a separate cost target.

3.17.7 The combined total of the works cost estimate, the project/design team fees estimate and the other development/project costs estimate is the base cost estimate.

3.18 Measurement rules for risk allowances

3.18.1 Risk allowances, based on the results of a formal risk analysis, are to be included in each formal cost plan. Risk allowances are to reflect the employer's risk exposure. In setting the amount of the risk allowances, the possible consequences of the employer's residual risk should be taken into account. The only satisfactory way to ensure that risk allowances provide for the risks to the project is to determine the size of the allowances from the results of risk analysis. Risk allowances are not to be standard percentages, but a properly considered assessment of the risk, taking account of the completeness of the design and other uncertainties such as the amount of site investigation completed to date.

3.18.2 The need to undertake a formal risk analysis to identify the employer's risk exposure and to make considered risk allowances for risks is explained in section 2.15 (Measurement rules for risk) in Part 2: Measurement rules for order of cost estimating.

3.18.3 Risk registers and risk estimates are to be reassessed at regular intervals throughout the various RIBA Work Stages and OGC Gateways to ensure that estimates, formal cost plans and cash flows realistically reflect the potential impact of any residual risks.

3.18.4 Successive assessments are to show decreasing risk due to reducing uncertainty as a consequence of the increasing definition of the project itself and decreasing uncertainty as a result of decisions which are made as the project progresses. However, it should be noted that risk does not always decrease.

3.18.5 It is recommended that risk allowances be treated as three separate cost targets, which are used to 'top up' other overspending cost targets as the project progresses. As an element overruns its cost target, a transfer is made from the appropriate risk allowance to allow for the increase. Similarly, if a cost target is likely to under run, the surplus is transferred into the appropriate risk allowance. The recommended cost targets are:

(a) design development risks;

(b) construction risks;

(c) employer change risks; and

(d) employer other risks.

Note: See paragraph 2.15.5 (risk allowances) in Part 2: Measurement rules for order of cost estimating for definitions of the above categories of risk allowance.

3.18.6 Main contractor's design development risk:

(a) Where design liability is to be transferred to the main contractor (i.e. where a design and build or other main contractor led design contract strategy is to be used), it is recommended that an allowance for main contractor's design development risk be included in the risk allowance for design development risk.

(b) Main contractor's design development risk is a risk allowance that the main contractor may incorporate in its tender price as the risk of accepting the novation of all, or some, of the employer's design team members (e.g. the architect, the structural engineer and the building services engineer).

3.18.7 Where any aspects of risk allowances for design development risks, construction risks and employer risks are to be based on a percentage addition, the allowances are to be calculated by multiplying the base cost estimate by the selected percentage additions. The equations for calculating the risk allowances for design development risk, construction risk and employer risk are therefore:

for design development risks: $R1 = a \times p1$

for construction risks: $R2 = a \times p2$

for employer change risks: $R3 = a \times p3$

for employer other risks: $R4 = a \times p4$

where:

a = base cost estimate

p1 = percentage risk allowance for design development risks

p2 = percentage risk allowance for construction risks

p3 = percentage risk allowance for employer change risks

p4 = percentage risk allowance for employer other risks

R1 = risk allowance estimate for design development risks (i.e. total estimated cost of risk allowance for design development risks)

R2 = risk allowance estimate for construction risks (i.e. total estimated cost of risk allowance for construction risks)

R3 = risk allowance estimate for employer change risks (i.e. total estimated cost of risk allowance for employer change risks)

R4 = risk allowance estimate for employer other risks (i.e. total estimated cost of risk allowance for employer other risks)

3.18.8 The equation for calculating the total risk allowance estimate is therefore:

RA = R1 + R2 + R3 + R4

where:

R1 = risk allowance estimate for design development risks

R2 = risk allowance estimate for construction risks

R3 = risk allowance estimate for employer change risks

R4 = risk allowance estimate for employer other risks

RA = risk allowances estimate

3.18.9 The risk allowance estimate is added to the combined total of the base cost estimate, project/design team fee estimate and the other development/project costs estimate. This gives the proposed cost limit (excluding inflation). The equation for calculating the cost limit (excluding inflation) is therefore:

CL = a + b

where:

a = base cost estimate

b = risk allowances estimate

CL = cost limit (excluding inflation)

3.18.10 Lists of typical design development risks, construction risks and employer risks are included in Part 4: Tabulated rules of measurement for elemental cost planning (group element 13: Risks). The lists are intended to be used by the quantity surveyor/cost manager to assist in the cost estimating and cost checking process. The lists are not meant to be definitive or exhaustive, but are merely a guide.

3.19 Measurement rules for inflation

3.19.1 Elemental cost plans are to be prepared using rates and prices current at the time the cost plan is prepared. However, it is also necessary to consider possible future effects of inflation on these rates and prices over a period of time (i.e. from the estimate base date to construction completion). Inflation can be either an upward or downward movement in the average level of prices (i.e. inflation or deflation), or stable (i.e. price stability – the boundary between inflation and deflation). The rules divide this period of time into two categories; namely, inflation:

(a) to date of tender (tender inflation); and

(b) during the construction period (construction inflation).

3.19.2 For the purpose of cost planning, the period used to ascertain the effects of inflation are as follows:

(a) Tender inflation: the period from the estimate base date to the date of tender return.

(b) Construction inflation: the period from the date of tender return to the mid-point of the construction period.

3.19.3 It is recommended that the allowances for inflation be treated as two separate cost targets (tender inflation and construction inflation).

3.19.4 **Tender inflation**: The amount of tender inflation is ascertained by applying a single percentage rate for tender inflation to the cost limit (excluding inflation). The addition of tender inflation gives

the projected cost limit (excluding construction inflation) for the building project. The equation for calculating the amount of tender inflation is therefore:

$$t = CL \times p$$

where:

CL= cost limit (excluding inflation)

p = percentage for tender inflation

t = tender inflation estimate

The percentage for tender inflation (p) can be computed using published indices (i.e. tender price indices (TPI), building cost indices or retail price indices (RPI)). Alternatively, the percentage addition can be derived from in-house sources of indices.

Note: This is a simplistic approach to estimating an allowance for tender inflation. Where a building project is to be procured by the use of separate works packages, it will be necessary to ascertain a separate allowance for tender inflation for each works package; based on the procurement programme for each works package. This is because each works package will be procured at different times throughout the construction period. The method of calculating tender inflation for each works package is the same as described above, but with discrete percentages applied to each works package. As part of the cost control process, the original allowances for inflation will need to be redistributed to each works package from the original cost centre.

3.19.5 The tender inflation estimate is added to the cost limit (excluding inflation). This gives the proposed cost limit (excluding construction inflation). The equation for calculating the cost limit (excluding construction inflation) is therefore:

$$CL2 = CL1 + t$$

where:

CL1= cost limit (excluding inflation)

CL2 = cost limit (excluding construction inflation)

t = tender inflation estimate

3.19.6 **Construction inflation**: The amount of construction inflation is ascertained by applying a single percentage rate for construction inflation to the cost limit (excluding construction inflation). The addition of construction inflation gives the projected cost limit (including inflation) for the building project. The equation for calculating the amount of construction inflation is therefore:

$$c = CL \times p$$

where:

CL = cost limit (excluding construction inflation)

p = percentage for construction inflation

c = construction inflation estimate

The percentage for construction inflation (p) can be computed using published indices (i.e. tender price indices (TPI), building cost indices or retail price indices (RPI)). Alternatively, the percentage addition can be derived from in-house sources of indices.

Notes:

(a) This is a simplistic approach to estimating an allowance for construction inflation. Where a building project is to be procured by the use of separate works packages, it will be necessary to ascertain a separate allowance for construction inflation for each works package; based on the procurement programme for each works package. This is because each works package will be procured at different times throughout the construction period. The method of calculating construction inflation for each works package is the same as described above, but

with discrete percentages applied to each works package. As part of the cost control process, the original allowances for inflation will need to be redistributed to each works package from the original cost centre.

(b) Care should be taken to ensure that the rates used to calculate an order of cost estimate that were derived from cost analyses or benchmark analyses have been adjusted to reflect prices current at the time the order of cost estimate is prepared (i.e. adjusted to remove allowances included for construction inflation). Refer to paragraph 2.9.6 at Part 2 of these rules.

3.19.7 The construction inflation estimate is added to the cost limit (excluding construction inflation). This gives the proposed cost limit (including inflation). The equation for calculating the cost limit (including inflation) is therefore:

$$CL2 = CL1 + c$$

where:

CL1 = cost limit (excluding construction inflation)

CL2 = cost limit (including inflation)

c = construction inflation estimate

3.19.8 It is recommended that potential cost increases caused by tendering conditions and the effects of changes in the market are also considered, such as price increases associated with particular materials or products or the impact of major projects sapping resources (home and abroad); or other countries buying major quantities of raw materials (e.g. China). However, it is recommended that such potential cost increases caused by tendering conditions and the effects of changes in the market be dealt with under risk allowances.

3.20 Value Added Tax (VAT) assessment

3.20.1 Value Added Tax (VAT) in relation to buildings is a complex area. Furthermore, in the UK, capital allowances are given against the net capital cost to the taxpayer. Therefore, as VAT is part of that capital cost, employers will incur differing overall capital expenditure for the same building component depending on whether they can or cannot fully recover, or recover a portion of, the VAT. In view of these complexities, it is recommended that VAT is excluded from cost plans.

3.20.2 It is recommended that specialist advice is sought on VAT matters to ensure that the correct rates are applied to the various aspects of a building project.

3.21 Other considerations

3.21.1 Capital allowances for taxation purposes:

Capital allowances provide tax relief for certain items of capital expenditure on buildings. This is a valuable form of tax relief that, in most cases, is either under-claimed or not claimed due to the lack of understanding or application of the legislation governing the availability of relief.

It is recommended that specialist advice is sought to maximise the availability and quantum of capital allowances.

3.21.2 Land remediation allowances:

Land remediation tax relief provides considerable tax relief for expenditure in remediating contaminated land. Expenditure must be incurred on the prevention, remediation or mitigation of the effects of the pollutant or on the restoration of the land to its former state. The expenditure must be directly linked to the remediation and, as such, general site clearance will not apply.

It is recommended that specialist advice is sought to maximise the availability and quantum of the tax relief.

3.21.3 Grants:

Grants provide valuable financial aid to funding certain types of building project. These can be significant allowances.

It is recommended that specialist advice is sought to maximise the availability and quantum of the grants.

Taxation allowances, taxation relief and grants can provide valuable financial aid to an employer on certain types of building project. However, it is recommended that specialist advice is sought to maximise the availability and quantum of capital allowances, land remediation relief and grants. For that reason, it is recommended that allowances in connection with capital allowances, land remediation relief and grants be excluded from cost plans.

3.22 Reporting of elemental cost plans

3.22.1 Costs are to be expressed as 'cost/m^2 of GIFA'.

3.22.2 Where appropriate and/or required by an employer, costs may be expressed as a cost/ft^2 of GIFA or a cost per functional unit (or functional unit cost) as an alternative to, or in addition to, the cost/m^2 of GIFA. The functional unit may be an employer defined unit. It is essential, therefore, that the functional unit is clearly identified when costs are expressed in this way.

3.22.3 Items included in and excluded from the estimated cost are to be clearly communicated to the employer when reporting cost plans.

3.22.4 Typical items to be included in cost plan reports are as follows:

(a) executive summary;
(b) project title;
(c) project description;
(d) status of cost plan;
(e) a statement of cost (including cost limit);
(f) details of the information and specification on which the cost plan was prepared;
(g) a statement of the floor areas;
(h) the cost plan;
(i) basis of cost estimates (i.e. assumptions);
(j) estimate base date (i.e. to which inflation has been applied);
(k) reasons for changes to previous cost targets (explaining the transfers and adjustments that have taken place against the previous cost plan);
(l) estimated costs of and a request for decisions on any alternative proposals;
(m) value engineering options;
(n) conclusions;
(o) recommendations;
(p) cash flow forecast, where appropriate; and
(q) inclusions and exclusions (i.e. a statement of what is included in and excluded from the order of cost estimate).

Part 4: Tabulated rules of measurement for elemental cost planning

Part 4: Tabulated rules of measurement for elemental cost planning

4.1 Introduction

4.1.1 Part 4 of the rules comprises the rules of measurement for elemental cost planning. It explains the use of the tabulated rules and describes how to codify elemental plans. Advice is also given on how to reallocate costs from elements and sub-elements to works packages where building works are to be procured through the use of works packages.

4.1.2 The rules of measurement for elemental cost planning can also be used as a basis for measuring quantities for the application to whole life cycle costing.

4.2 Use of tabulated rules of measurement for elemental cost planning

4.2.1 The rules of measurement for elemental cost planning are set out in tables. Tables are provided for each of the following group elements:

Group element 0:	Facilitating works	Building works
Group element 1:	Substructure	Building works
Group element 2:	Superstructure	Building works
Group element 3:	Internal finishes	Building works
Group element 4:	Fittings, furnishings and equipment	Building works
Group element 5:	Services	Building works
Group element 6:	Prefabricated buildings and building units	Building works
Group element 7:	Work to existing buildings	Building works
Group element 8:	External works	
Group element 9:	Main contractor's preliminaries	
Group element 10:	Main contractor's overheads and profit	
Group element 11:	Project/design team fees	
Group element 12:	Other development/project costs	
Group element 13:	Risks	
Group element 14:	Inflation	

4.2.2 **Facilitating works and building works**: The tables for group elements 0 to 8, inclusive, comprise the rules of measurement for facilitating works (group element 0) and building works (group elements 1 to 8). Each table is structured as follows:

(a) The group element is given in the first heading.

(b) The element is given in the second heading.

(c) The left hand column lists the sub-elements and contains the definition rules applicable to each sub-element.

(d) The second and third columns list the components and the unit of measurement for components respectively.

(e) The fourth column contains the rules for measuring components.

(f) The next two columns describe the items included and excluded from each element and sub-element. Where exclusions are stated, cross references to the appropriate element or sub-element is given.

(g) Horizontal lines divide the tables to denote the end of a sub-element.

(h) The symbol '/' used between two or more units of measurement in the third column (unit of measurement), means 'or'.

(i) The rules are written in the present tense.

4.2.3 The tabulated measurement rules are based on four principal levels. Levels 1 to 3 in the rules are headings under which actual work items (i.e. group element, element and sub-element) are allocated. Level 4 are the rules of measurement for components.

(a) **Level 1: group element**: The primary classifications used for grouping elements (i.e. headings).

(b) **Level 2: element**: Key part of a group element.

(c) **Level 3: sub-element**: Part of an element. One or more sub-element will constitute an element.

(d) **Level 4: component**: A building work item which forms part of a sub-element. One or more components will be measured to ascertain the cost of an element or sub-element.

4.2.4 These levels provide the basis of a codified framework for elemental cost planning, which can be used both as a frame of reference for cost checking cost targets and the overall cost limit as more design information becomes available. They provide both a work breakdown structure (elements) and a cost breakdown structure (cost targets) for a building project.

4.2.5 **Main contractor's preliminaries**: The table for group element 9 comprises lists of typical items included in main contractor's preliminaries. The table is intended to be used by the quantity surveyor/cost manager to assist in the cost estimating and cost checking process. The lists are not meant to be definitive or exhaustive, but are merely a guide. The table is structured as follows:

(a) The group element is given in the first heading.

(b) The element is given in the second heading.

(c) The sub-element is given in the third heading.

(d) The left hand column lists the components.

(e) The second column describes the items included in each element and sub-element. The third column identifies the appropriate unit of measurement for included items. The fourth column describes the excluded items. Where exclusions are stated, cross references to the appropriate group element, element or sub-element are given.

(f) Horizontal lines divide the tables to denote the end of a component.

4.2.6 **Main contractor's overheads and profit**: The table for group element 10: Main contractor's overheads and profit is structured as follows:

(a) The group element is given in the first heading.

(b) The element is given in the first column.

(c) The second and third columns describe the items included and excluded from each element.

(d) Where exclusions are stated, cross references to the appropriate element are given

(e) Horizontal lines divide the tables to denote the end of an element.

4.2.7 **Project/design team fees**: The table for group element 11 comprises lists of typical project/design team fees. The table is intended to be used by the quantity surveyor/cost manager to assist in the cost estimating and cost checking process. The lists are not meant to be definitive or exhaustive, but are merely a guide. The table is structured as follows:

(a) The group element is given in the first heading.

(b) The element is given in the second heading.

(c) The left hand column (component) comprises a list of typical project/design team fee headings.

(d) The second column describes the items included in each element and sub-element. The third column identifies the appropriate unit of measurement for included items. The fourth column describes the excluded items. Where exclusions are stated, cross references to the appropriate element are given.

(e) Horizontal lines divide the tables to denote the end of a component.

4.2.8 **Other development/project costs**: The table for group element 12 comprises a tabulated list of typical other development/project costs. The lists are not meant to be definitive or exhaustive, but are merely a guide. The table is structured as follows:

(a) The group element is given in the first heading.

(b) The element is given in the second heading.

(c) The left hand column (component) comprises a list of typical other development/project cost headings.

(d) The second column describes the items included in each element and sub-element. The third column identifies the appropriate unit of measurement for included items. The fourth column describes the excluded items. Where exclusions are stated, cross references to the appropriate element are given.

(e) Horizontal lines divide the tables to denote the end of a component.

4.2.9 **Risks**: Group element 13 comprises lists of typical risks. The lists are not meant to be definitive or exhaustive, but are merely a guide.

(a) The group element is given in the first heading.

(b) The element is given in the second heading.

(c) The lists set out examples of risk.

4.2.10 **Inflation**: The table for group element 14: Inflation is structured as follows:

(a) The group element is given in the first heading.

(b) The element is given in the first column.

(c) The second column describes the items included in each element, the third column gives the unit of measurement, and the fourth column gives the items excluded from each element. Where exclusions are stated, cross references to the appropriate element are given.

(d) Horizontal lines divide the tables to denote the end of an element.

4.3 Work not covered by the rules of measurement for elemental cost planning

4.3.1 Rules of measurement adopted for components not covered by the rules of measurement for elemental cost planning shall be stated in the cost plan. Such rules shall, as far as possible, conform to those rules given in the rules of measurement for similar components.

4.4 Method of codifying elemental cost plans

4.4.1 The logic and arrangement of levels for elemental cost plans is shown at Appendix E of these rules.

4.4.2 Codes for levels 1 to 3 are provided by the measurement rules, while codes for level 4 (i.e. components) will be user defined. This is because of the number of variable components that could be generated for any one sub-element. It is recommended, therefore, that each component measured be numbered sequentially within the sub-element. This will allow a unique level 4 code to be established for each component. For example:

- Level 1: Superstructure: group element number (2)
- Level 2: Frame: element number (1)

- Level 3: Concrete frames: sub-element number (4)
- Level 4: Beams (1200mm x 800mm): component number (3) – user defined
- Level 4: Beams (2000mm x 800mm): component number (4) – user defined

Based on this example, the code for the 1200mm x 800mm beams would be: 3.1.4.3; and the code for the 2000mm x 800mm beams would be: 3.1.4.4.

Further code levels can be added to suit user requirements. For example, a user defined level 5 code can be introduced if there is a need to break down the frame into sub-components. For example:

- Level 5: Concrete: Number (1)
- Level 5: Formwork: Number (2)
- Level 5: Reinforcement: Number (3)

Based on this example, the code for the reinforcement sub-component to the 1200mm x 800mm beams would be: 3.1.4.3.3.

4.4.3 It is essential, therefore, that each component be continuously and sequentially numbered under the sub-element. Additional code levels can be integrated as necessary to meet other user requirements. This will result in each component being given a unique code.

4.5 Method of codifying elemental cost plans for works packages

4.5.1 Where the building project is to be procured through the use of works packages, the works allocated to elements and sub-elements can be reallocated to the applicable work package. This can be achieved by simply introducing one or more numeric suffix to each item in the cost plan (see Figure 4.1 (opposite)).

4.5.2 Alternatively, one or more character(s) can be used as a suffix to identify a work package.

4.5.3 If elements need to be further broken down, additional levels of code may be introduced to meet user requirements.

Figure 4.1: Example of works package codification framework

Work package	Suffix
Main contractor's preliminaries	/001
Substructure and groundworks	/002
Piling	/003
Concrete works (including precast components)	/004
Structural steelwork	/005
Carpentry	/006
Masonry (brickwork and blockwork)	/007
Roof systems and rainwater goods	/008
Joinery (including internal doors, toilet cubicles and vanity units)	/009
Windows and external doors	/010
Curtain walling	/011
Dry linings and partitions	/012
Tiling	/013
Decorating/painting	/014
Floor coverings	/015
Suspended ceilings	/016
Mechanical and electrical services installations (including sanitary appliances)	/017
Lifts	/018
Loose fittings, furnishings and equipment	/019
External drainage	/020
External works – soft landscape works	/021
External works – hard landscape works	/022
Main contractor's overheads and profit	/023

Group element 0: Facilitating works

Group element 0 comprises the following elements:

0.1 Toxic/hazardous/contaminated material treatment

0.2 Major demolition works

0.3 Temporary support to adjacent structures

0.4 Specialist groundworks

0.5 Temporary diversion works

0.6 Extraordinary site investigation works

Note: Works associated with general site preparation and groundworks, minor demolition works, and permanent roads, paths and pavings are included in group element 8: External works. The provision of temporary roads and services is included in group element 9: Main contractor's preliminaries.

Element 0.1: Toxic/hazardous material treatment

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Toxic or hazardous material removal **Definition:** Removal, employing special safety measures, of toxic or hazardous material prior to demolition or refurbishment works.	1 Toxic or hazardous material removal: details to be stated. 2 Toxic or hazardous chemical removal: details to be stated.	item	C1 Cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately.	1 Removal of toxic or hazardous parts of building fabric (e.g. asbestos containing materials). 2 Removal of toxic or hazardous insulating materials or components from existing services installations, including storage tanks and vessels. 3 Removal of toxic or hazardous chemicals from existing services installations, including storage tanks and vessels. 4 Safe disposal. **Note**: Where no asbestos survey records exist, an allowance should be made within the construction risk allowance. 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Contaminated ground material removal or treatment (included in sub-element 0.1.2: Contaminated land). 2 Asbestos survey fees and the like (included in group element 11: Project/design team fees).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Contaminated land **Definition**: Removal and/or treatment of contaminated ground material.	1 Contaminated ground material removal: details to be stated.	m^2/m^3	C1 The area measured is the area of contaminated land. C2 Where the volume of excavation and disposal of contaminated ground material is measured, the volume measured is the surface area of the contaminated material multiplied by the average depth of the contaminated material. C3 Quantities given for disposal of contaminated ground material are the bulk before excavating and no allowance is made for subsequent variations to bulk or for extra space to accommodate earthwork support. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately.	1 Contaminated ground material removal using dig and dump strategy, including safe disposal of excavated material to licensed tip (i.e. non-hazardous and hazardous material), tipping charges and landfill tax. 2 Contaminated ground material treatment using in-situ methods, such as: – dilution – clean cover – on-site encapsulation – bio-remediation – soil washing – soil flushing – thermal treatment – vacuum extraction – stabilisation. 3 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Undertaking environmental audits and intrusive ground investigations/surveys (included in group element 11: Project/design team fees). 2 Preparing 'Remediation Strategy/Plan' (included in group element 11: Project/design team fees). 3 Supervision to ensure compliance with remediation strategy/plan (included in group element 11: Project/design team fees). 4 Reinstatement works required by alleviation strategy (included in group element 1: Substructure or group element 8: External works, as appropriate).
	2 Contaminated ground material treatment: details to be stated.	m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Eradication of plant growth **Definition**: Eradication of Japanese knotweed, giant hogweed or other invasive plant.	1 Eradication by dig and dump strategy: details to be stated.	m^2/m^3	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area designated as infected by the plant growth. C3 Where the volume of excavation and disposal of contaminated ground material is measured, the volume measured is the surface area of the contaminated material multiplied by the average depth of the contaminated material. C4 Quantities given for disposal of contaminated ground material are the bulk before excavating and no allowance is made for subsequent variations to bulk or for extra space to accommodate earthwork support. C5 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately.	1 Eradication by dig and dump strategy (including inserting rootbarrier® membrane system or the like), including excavation and safe disposal of excavated material to licensed tip, tipping charges, landfill tax and backfilling voids with inert material. 2 Eradication by chemical treatment. 3 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Site investigation surveys for Japanese knotweed, giant hogweed or other invasive plant (included in element 11.1: Consultant's fees). 2 Supervision of removal of Japanese knotweed, giant hogweed or other invasive plant by specialist consultant (included in element 11.1: Consultant's fees). **Note**: Removal undertaken by a works contractor, but is to be carried out under strict supervision of a specialist consultant.
	2 Eradication by chemical treatment: details to be stated.	nr/m^2			

Element 0.2: Major demolition works

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Demolition works **Definition:** Taking down to ground level and removing complete buildings/structures or parts of buildings/structures, including services, fittings and finishes thereto.	1 Demolition of entire buildings: details to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The linear length of components is measured on the centre line of the component. C3 The area measured is the gross external area (GEA), measured using the rules of measurement for ascertaining the GEA. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately.	1 Demolition of entire buildings and structures, including removing service installations (i.e. significant buildings and structures). 2 Demolition of major parts of existing buildings and structures (including removing service installations) ready to receive new construction. 3 Credits for materials arising from demolition works. 4 Disposal of materials arising from demolition, including materials classified as inert, non-hazardous and hazardous (including WAC (waste acceptance criteria) test charges). 5 Disconnecting existing mains services, including water, gas, electricity, drainage, district heating, telecommunication systems, data systems and the like). 6 Statutory undertaker's fees and charges for disconnecting main services. 7 Temporary supports to retain existing basement retaining walls and the like, including the design, installation, maintenance, repositioning (to facilitate construction works) and removal of props, wailings and grubbing up and disposal of anchor blocks/foundations where not part of the permanent works. 8 Periodic temporary inspections. 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Soft strip works carried out separately from demolition works. 2 Removing parts of existing buildings (included in group element 7: Work to existing buildings). 3 Alterations to existing buildings (included in group element 7: Work to existing buildings). 4 Stripping out services in conjunction with alteration works to existing buildings (included in sub-element 7.1.1: Minor demolition works and alteration works). 5 Decontaminating existing services systems prior to demolition, e.g. boilers and fuel storage tanks and vessels (included in sub-element 0.1.1: Toxic or hazardous material removal.) 6 Temporary or semi-permanent support to structures or facades (included in element 7.4: Facade retention). 7 Minor demolitions carried out as part of the site clearance (included in sub-element 8.1.1: Site clearance).
	2 Demolition of major parts of existing buildings: details to be stated.				
	3 Temporary propping to existing basement retaining walls: details, including type of material, whether single or double props, type of anchor blocks/ foundations, to be stated.	nr			
	4 Extra over temporary propping for providing wailings: details, including type of material, to be stated.	m			
	5 Periodic technical inspections of temporary propping: details to be stated.	nr			
	6 Returning to site to reposition temporary props: details, including type of material, whether single or double props, type of anchor blocks/ foundations (if new required), to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	7 Removal of temporary props: details to be stated.				
	8 Removal of wailings: details to be stated.	m			
	9 Grubbing up of anchor blocks/ foundations to temporary props and infilling voids: details, including type of filling material, size of void to be stated.	nr			
2 Soft strip works **Definition:** Stripping out building components, services, fittings and finishes in from a building as preparatory works to demolition or refurbishment.	1 Preparatory to demolition: extent of works to be stated.	item/m^2	C1 The area measured is the gross internal floor area (GIFA), measured using the rules of measurement for ascertaining the GIFA.	1 Soft strip works carried out separately from demolition works. 2 Removal of existing non-structural walls and partitions. 3 Removal of existing internal doors, screens, balustrades, handrails, and the like. 4 Removal of finishes. 5 Removal of furnishings, fixtures and fittings; 6 Isolating, draining down and disconnecting existing mains services, including water, gas, electricity, drainage, district heating, telecommunication systems, data systems and the like. 7 Removal of building engineering services, including lift installations. 8 Credits for materials arising from demolition works. 9 Disposal of materials arising from soft strip works. 10 Statutory undertaker's fees and Sundry items. 11 charges for disconnecting main services. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, risk allowance, overheads and profit.	1 Removal of toxic or hazardous parts of building fabric (e.g. asbestos containing materials), including materials and chemicals (included in sub-element 0.1.1: Toxic or hazardous material removal).
	2 Preparatory to refurbishment: extent of works to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				Note: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 0.3: Temporary support to adjacent structures

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Temporary support to adjacent structures **Definition:** Temporary or semi-permanent support for unstable structures (i.e. structures not to be demolished) adjacent to the building being built.	1 Support structures: details to be stated. 2 Taking down and repositioning support structures: details to be stated. 3 Periodic technical inspections of temporary support structures: details to be stated. 4 Removing support structures: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work arising out of Party Wall Awards/Agreements is to be described and identified separately.	1 Temporary or semi-permanent supports to structures adjacent to the site on which the building is being built, including party walls. 2 Location surveys. 3 Commencement and completion condition surveys. 4 Dead, raking, flying or box shores; strutting (including bracing; sole plates and wall plates; needles, including holes; brackets, blockings and wedges; dog irons and similar metal work). 5 Foundations for shores. 6 Cutting holes in existing structures for needles and the like. 7 Design, erection, maintenance, reposition and removal of support structures. 8 Periodic temporary inspections. 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Facade retention works where existing facade is to be integrated into new building (included in element 7.4: Facade retention. 2 Temporary supports to basement retaining walls (included in sub-element 0.1.2: Major demolition works). 3 Temporary screens required for alteration works (included in sub-element 7.1.1: Minor demolition works and alteration works). 4 Supports to small openings cut into existing walls or after removal of internal walls or the like (included in sub-element 7.1.1: Minor demolition works and alteration works).

Element 0.4: Specialist groundworks

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Site dewatering and pumping **Definition:** Temporarily lowering the ground water level over the whole of the site to facilitate construction.	1 Site dewatering: details to be stated.	item/m^2	C1 Where components are to be itemised, the number of key elements comprising the component are to be identified, described and enumerated within the description of the component. C2 The area measured is the area affected by the dewatering system employed. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately.	1 Forming well points, including well pointing equipment and well point installation. 2 Filling (gravel or other filling). 3 Drain tubes and ring mains (installing and removing). 4 Sumps. 5 Pumps and pumping, including standby pumps. 6 Off-site disposal of water. 7 Running costs. 8 Attendance, including out of hours. 9 Sundry items associated with site dewatering. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Permanent land drainage (included in sub-element 8.6.4: Land drainage).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Soil stabilisation measures **Definition:** Stabilisation or improvement of bearing capacity or slip resistance of existing ground to facilitate construction by injecting or otherwise introducing stabilising materials, by power vibrating, by soil nailing or by ground anchors.	1 Soil stabilisation measures: details to be stated.	m^2	C1 The area measured is the area affected by the soil stabilisation measure. C2 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately.	1 Soil stabilisation measures, including: – cement or chemical grouting – electrochemical stabilisation – sand stowing – forming regular pattern of holes, compacting surrounding soil, and filling with aggregates or hard fill, all by means of power vibrators – soil nailing – ground anchors – pressure grouting – compacting – freezing of ground water and subsoil – stabilising soil in situ by incorporating cement with a rotovator. 2 Sundry items. 3 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Consolidating and compacting formation level to receive construction (included in sub-element 1.1.1: Standard foundations; sub-element 1.1.4: Basement excavation; sub-element 1.1.5: Basement retaining walls; or sub-element 1.1.3: Lowest floor construction, as appropriate).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Ground gas venting measures **Definition:** Systems to prevent accumulation of radon or landfill gases.	1 Ground gas venting: details to be stated.	m^2	C1 The area measured is the area affected by the gas venting measure. C2 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately.	1 Ground gas venting measures, including: – gas proof membranes – perforated collection pipes – proprietary gas dispersal fin layers – radon sumps – vent pipes, including vertical risers to vent at high level. 2 Sundry items associated with ground gas venting measures. 3 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Gas proof membranes used to also serve as a damp-proof membrane (included in sub-element 1.1.3: Lowest floor construction). 2 Radon sumps under ground slab of building (included in sub-element 1.1.3: Lowest floor construction). 3 Granular venting layers (included in sub-element 1.1.3: Lowest floor construction).

Element 0.5: Temporary diversion works

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Temporary diversion works **Definition:** Temporary diversion of existing drainage systems, existing services installations and systems, rivers, streams and the like.	1 Temporary diversion of drains: details to be stated. 2 Temporary diversion of services: details to be stated. 3 Temporary diversion of waterways: details to be stated.	item	C1 Works are to be itemised and described. C2 Where insufficient information is available, such works are to be included in group element 14: Risks, as appropriate.	1 All works in connection with temporary diversion of drains. 2 All works in connection with temporary diversion of services (e.g. water, electricity, gas and communications). 3 All works in connection with temporary diversion of rivers, streams and the like. 4 Statutory undertaker's fees and charges in connection with diversion works. 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 0.6: Extraordinary site investigation works

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Archaeological investigation **Definition:** Site based archaeological investigation works	1 Excavation works: details to be stated	item	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where components are to be measured per week, the number of weeks is to be stated. The cost per week is to be calculated by multiplying the number of operatives by the number of days per week that they are in attendance. C3 Where insufficient information is available, such works are to be included in group element 13: Risks, as appropriate.	1 Physical archaeological investigation works (i.e. site based excavation works in search of artefacts and the like) carried out by the main contractor under the guidance and instruction of an archaeologist (e.g. breaking out concrete and initial excavation to expose ground for archaeologist). 2 Provision of temporary screens and the like. 3 Attendance on archaeologists.	1 Desktop studies (included in group element 11: Project/design team fees). 2 Archaeologist's fees and charges in connection with fieldworks, reporting and carrying out physical archaeological investigation works (included in group element 12: Other development/project costs, as appropriate).
	2 Temporary screens and the like: details to be stated	nr			
	3 Attendance on archaeologists	per week			
2 Reptile/wildlife mitigation measures **Definition:** Relocation of reptiles/wildlife and provision of fences/barriers to cordon off the working area.	1 Physical reptile/wildlife mitigation measures: details to be stated	item	C1 Where components are to be enumerated, the number of components is to be stated. C2 The linear length of components is measured on the centre line of the component. C3 Where components are to be measured per week, the number of weeks is to be stated. The cost per week is to be calculated by multiplying the number of operatives by the number of days per week that they are in attendance. C4 Where insufficient information is available, such works are to be included in group element 13: Risks, as appropriate.	1 Trapping and relocation of reptiles/wildlife and the like carried out by the main contractor 2 Provision of temporary fences, barriers and the like to cordon off working area 3 Attendance on specialists	1 Desktop studies (included in group element 11: Project/design team fees). 2 Ecologist's fees and charges in connection with ascertaining and carrying out reptile/wildlife mitigation measures (included in group elements 11: Project/design team fees or 12: Other development/project costs, as appropriate).
	2 Temporary fences, barriers and the like: details to be stated	nr/m			
	3 Attendance	per week			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Other extraordinary site investigation works	1 Physical site investigation works: details to be stated.	item	C1 Where components are to be enumerated, the number of components is to be stated. C2 The linear length of components is measured on the centre line of the component. C3 Where components are to be measured per week, the number of weeks is to be stated. The cost per week is to be calculated by multiplying the number of operatives by the number of days per week that they are in attendance. C4 Where insufficient information is available, such works are to be included in group element 13: Risks, as appropriate.	1 Physical works in connection with extraordinary site investigation works carried out by the main contractor. 2 Provision of temporary screens, fences, barriers and the like to cordon off working area. 3 Attendance on specialists.	1 Desktop studies (included in group element 11: Project/design team fees). 2 Specialist consultants' fees and charges in connection with ascertaining and carrying out extraordinary site investigation works (included in group elements 11: Project/design team fees or 12: Other development/project costs, as appropriate).
	2 Temporary screens, fences, barriers and the like: details to be stated	nr/m			
	3 Attendance	per week			

Group element 1: Substructure

Group element 1 comprises the following elements:

1.1 Substructure

Element 1.1: Substructure

Note: Where testing and commissioning of drainage installations is required to be measured under sub-element 1.1.3: Lowest floor construction, the terms shall include the following works:

1 Testing includes:

(1) Air tests

(2) Water tests

(3) Dyes required for testing

2 Temporary operation of drainage to employer's requirements

3 Setting all drainage installations to work after completion of commissioning.

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Standard foundations **Definition:** Standard foundations up to and including the damp-proof course.	1 Strip foundations: details, including depth of foundation, to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The linear length of components is measured on the centre line of the component.	1 Wall and column foundations. 2 Foundation walls to underside of damp-proof course (to both perimeter and internal load bearing walls). 3 Isolated pad foundations. 4 Trench and pit excavations, including earthwork support (including insertion and extraction of steel sheet piling if used).	1 Raft foundations and the like (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction). 2 Foundations to temporary accommodation (included in group element 10: Preliminaries). 3 Forming new contours to the site (included in sub-element 8.1.2: Preparatory groundworks).
	2 Isolated pad foundations: details, including size of and reinforcement rate (kg/m^3) to pile cap, to be stated.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	3 Extra for disposal of contaminated excavated material: details to be stated.	m^3	C3 The volume of disposal of contaminated material measured is the surface area of the contaminated material multiplied by the average depth of the contaminated material. C4 Quantity given for disposal is the bulk before excavating and no allowance is made for subsequent variations to bulk or for extra space to accommodate earthwork support. C5 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C6 Curved work is to be described and identified separately. C7 Work to existing buildings is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	5 Excavating below ground water level. 6 Breaking out surface materials (e.g. hardstandings, pavements and the like). **Note**: Where no information relating to the ground conditions is available, an allowance is to be made within the construction risk allowance for the extra cost of removing unforeseen obstructions and dealing with unknown ground conditions. 7 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works). **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction *risk allowance* for the extra cost of disposing of contaminated material. 8 Disposal of surface water and ground water, where dewatering techniques not employed. 9 Consolidating and compacting formation level to receive foundations. 10 Blinding. 11 Concrete, reinforcement, formwork (temporary and permanent) and excavating and backfilling of working space required to facilitate placement of formwork. 12 Specialist concrete grades, including waterproof concrete and additives. 13 Brickwork and blockwork walling, including air/ventilation bricks and the like. 14 Forming cavities, including wall ties. 15 Filling cavities. 16 Thermal insulation to cavities. 17 Damp-proof courses.	4 Cultivating and final grading of soil for seeding, turfing or planting (included in element 8.3: Soft landscaping, planting and irrigation systems, as appropriate). 5 Pile caps and ground beams (included in sub-element 1.1.2: Piled foundations). 6 Base slab/bed construction, including damp-proof membranes (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction). 7 Basement excavation (included in sub-element 1.2.1: Basement excavation). 8 Piles (included in sub-element 1.1.2: Piled foundations). 9 Basement retaining walls (included in element 1.3: Basement retaining walls). 10 Columns (i.e. portion below base slab/bed – included in element 2.1: Frame, as appropriate). 11 Drainage (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction or sub-element 8.6.1: Surface water and foul water drainage, as appropriate). 12 Dewatering (included in sub-element 9.3.1 Site dewatering and pumping). 13 Soil stabilisation (included in sub-element 9.3.2: Soil stabilisation measures). 14 Removing contaminated ground material, where carried out as facilitating works (included in sub-element 9.1.2: Contaminated land). 15 Treatment of contaminated ground material, where carried out as facilitating works (included in sub-element 9.1.2: Contaminated land).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				18 Service ducts and the like through foundation walls. 19 Sundry items. 20 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
2 Specialist foundations **Definition:** – Load bearing foundation piles and caissons. – Inserting additional foundation support under and around existing foundations.	**Piled foundations:** 1 Piling mats/platforms: details, including thickness of mat/platform (mm), to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The linear length of components is measured on the centre line of the component. C3 The area measured for piling mats/platforms is the surface area of the piling mat/platform. C4 The volume of disposal of excavated material arising from piling measured is the cross-sectional area of the pile multiplied by the depth of the pile. C5 Quantity given for disposal is the bulk before excavating and no allowance is made for subsequent variations to bulk. C6 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C7 Curved work is to be described and identified separately. C8 Work to existing buildings is to be described and identified separately.	1 Piles, including: – precast concrete reinforced piles – precast prestressed concrete piles – precast reinforced segmental concrete piles – bored cast-in-place concrete piles – driven cast-in-place concrete piles – steel bearing piles – timber bearing piles – mini piles. 2 Permanent caissons. 3 Vibro-compacted columns. 4 Piling mats and platforms (installing, moving, modifying and removing on completion). 5 Piling rigs/other plant, including bringing to and removing from site, maintenance, erection, dismantling and moving piling rigs to each pile position. **Note**: Where information about ground strata is unknown, an allowance is to be made within the construction risk allowance for breaking through obstructions. 6 Disposal of excavated material arising from piling, including tipping charges and landfill tax.	1 Piles and caissons forming embedded retaining walls (included in sub-element 1.3.2: Embedded basement retaining walls). 2 Dewatering (included in sub-element 9.3.1 Site dewatering and pumping). 3 Soil stabilisation (included in sub-element 9.3.2: Soil stabilisation measures).
	2 Piling plant: details to be stated.	item			
	3 Moving piling rig to pile position.	nr			
	4 Piles: details, including type, diameter (mm) and depth (m) of piles, to be stated.				
	5 Extra for pile casings or linings: details, including material, length (m), diameter (mm) and if permanent or temporary, to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	6 Caissons: details, including type, diameter (mm) and depth (m) of caisson, to be stated.		C9 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	**Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction risk allowance for the extra cost of disposing of contaminated material. 7 Disposal of surface water and ground water, where dewatering techniques not employed. 8 Cutting off excess lengths of piles. 9 Cutting out concrete to tops of piles and preparing pile heads and reinforcement for capping. 10 Grouting. 11 Pile tests (e.g. load tests and integrity tests). 12 Pile caps. 13 Ground beams. 14 Trench and pit excavations for pile caps and ground beams, including earthwork support (including insertion and extraction of steel sheet piling if used). 15 Disposal of excavated material, including tipping charges and landfill tax. (Refer to Note above about disposal of contaminated material).	
	7 Disposal of excavated material arising from piling.	m^3			
	8 Extra for breaking through obstructions.	nr/m^3			
	9 Cutting off tops of concrete piles and preparing pile heads.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	10 Pile tests: details, including type of test, pile type, diameter of pile and number of piles to be stated.	item		16 Disposal of surface water and ground water, where dewatering techniques not employed. 17 Consolidating and compacting formation level to receive pile caps and ground beams. 18 Blinding. 19 Protection boarding to underside of pile caps and ground beams (e.g. to provide heave protection). 20 Concrete, reinforcement, formwork (temporary and permanent) and excavating and backfilling of working space required to facilitate placement of formwork. 21 Specialist concrete grades, including waterproof concrete and additives. 22 Sundry items. 23 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	11 Vibro-compacted columns: details, including size (mm) and length (m) of column, to be stated.	nr			
	12 Pile caps: details, including size of and reinforcement rate (kg/m^3) to pile cap, to be stated.	m			
	13 Ground beams: details, including size of and reinforcement rate (kg/m^3) to pile cap, to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	Underpinning: 14 Underpinning: details to be stated.	m	C1 The length of underpinning measured is the extreme length. C2 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C3 Curved work is to be described and identified separately. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Underpinning to external walls adjoining the new building. 2 Underpinning to walls within existing buildings, which are to be rehabilitated (i.e. internal walls). 3 Preliminary trenches and underpinning pits, excavation and earthwork support. 4 Temporary supports. 5 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works). **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction risk allowance for the extra cost of disposing of contaminated material. 6 Cutting away existing projecting foundations and the like. 7 Preparing existing work to receive pinning up of new work. 8 Concrete, including reinforcement, formwork and additional excavation and backfilling of working space required to facilitate placement of formwork. 9 Masonry (brickwork, blockwork and the like). 10 Waterproof tanking. 11 Sundry items. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Underpinning to external site boundary walls and the like which are not an integral part of the new building or rehabilitated building (included in sub-element 8.8.3: Underpinning to external site boundary walls).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Lowest floor construction **Definition:** The entire lowest floor assembly below the underside of screed or lowest floor finish.	1 Lowest floor construction: details to be stated. **Note**: Reinforcement rate (kg/m^3 or kg/m^2 as appropriate) for concrete slabs and beds to be stated.	m^2	C1 The area measured is the area of the floor construction measured to the internal face of the external perimeter walls. C2 The area of the floor construction shall be measured in accordance with the rules of measurement for ascertaining the gross internal floor area (GIFA). C3 Where more than one type of floor construction is employed, the area measured for each floor construction is the area covered by that floor construction. C4 The length of retaining walls at changes in level measured is their extreme length, over all obstructions. The height measured is the distance from top of the slab to the underside of the attached slab. C5 The area measured for forming swimming pool tanks and the like is the area of the swimming pool (or other similar facility) on plan, measured to the internal face of the swimming pool walls. C6 The area measured for forming lift pits and the like is the area of the lift pit on plan, measured to the internal face of the lift pit. C7 The length of linear components measured is their extreme length, over all obstructions. C8 The length of below ground drainage pipelines measured is their extreme length, over all fittings, branches and the like. C9 Where components are to be enumerated, the number of components is to be stated. C10 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C11 Curved work is to be described and identified separately. C12 Work to existing buildings is to be described and identified separately.	1 Lowest floor assemblies, such as: – ground slabs/beds – basement slabs/beds – raft foundations – suspended floors serving as lowest floor level systems, i.e. where void between ground slab/bed under and lowest floor slab (including, suspended timber floor construction and precast/composite decking systems). 2 Thickening to slabs/beds for load-bearing walls, machine bases and the like. 3 Sumps, pits, chambers and the like integral to the lowest floor construction. 4 Inclined and stepped slabs/beds. 5 Ramps in slabs 6 Retaining walls at changes in level. 7 Lift pits and the like below the lowest floor. Including waterproofing. 8 Swimming pool tanks, including boom pits, and the like. Including waterproofing. 9 Surface area excavations (i.e. to remove topsoil and to reduce levels), including earthwork support. 10 Pit excavations, including earthwork support. 11 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works. **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction risk allowance for the extra cost of disposing of contaminated material. 12 Disposal of surface water and ground water, where dewatering techniques not employed.	1 Bulk excavation to form basements (included in sub-element 1.2.1: Basement excavation). 2 Non-structural screeds (included in sub-element 3.2.1: Finishes to floors). 3 Floating floors (included in sub-element 3.2.1: Finishes to floors). 4 Applied floor finishes (included in sub-element 3.2.1: Finishes to floors). 5 Finishes to swimming pool tanks, including tank linings (included in sub-element 3.2.1: Finishes to floors). 6 Hardeners and sealers applied to slabs/beds after construction (included in sub-element 3.2.1: Finishes to floors). 7 Podium slabs, transfer slabs and other suspended upper floor constructions forming part of the basement construction (included in element 2.2: Upper floors). 8 Basement roofs, i.e. where not performing as a floor (included in element 2.3: Roof). 9 Machine bases constructed on top of slabs and beds (included in element 5.14: Builder's work in connection with services). 10 Drainage beyond the first manhole external to the enclosing walls of the building (included in sub-element 8.6.1: Surface water and foul water drainage). 11 Ground gas venting to the entire site (included in sub-element 9.3.3: Ground gas venting measures, as appropriate).
	2 Extra over lowest floor construction for forming ramps and the like: details to be stated.				
	3 Extra over lowest floor construction for forming of lift pits and the like: details, including the number and size (m) of lift pits, to be stated.	nr			
	4 Extra over lowest floor construction for forming swimming pool tanks and the like: details, including the size (m), to be stated.				
	5 Retaining walls at changes in level: details, including thickness (mm), height (m) and reinforcement rate (kg/m^3), to be stated.	m			
	6 Designed joints: details, including height (mm), to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	7 Drainage below ground: details, including average depth of trench (m), type and nominal size of pipe (mm), and materials for beds and haunchings/surrounds, to be stated.		C13 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the drainage installation. A single combined percentage addition can be applied to cover the costs of both testing and commissioning. C14 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	13 Consolidating and compacting formation level to receive floor construction. 14 Concrete, reinforcement, formwork (temporary and permanent), and working space for formwork. 15 Specialist concrete grades, such as waterproof concrete. 16 Filling to make up levels. 17 Blinding beds. 18 Protection boarding to underside of floor/base slabs (e.g. to provide heave protection). 19 Damp-proof membranes, including gas proof membranes serving as a damp-proof membrane. 20 Service ducts and the like below the lowest floor construction. 21 Fixing devices cast into concrete (i.e. dowels, anchor bolts, anchor boxes, anchor fixing slots and the like). 22 Design joints, including at intersection of base slab/bed and external perimeter wall, to provide bays and the like. 23 Worked finishes (i.e. in-situ surface treatments), including the application of surface hardeners and power floated finishes. 24 Structural screeds, including reinforcement. 25 Suspended timber floors, including floor boards, joists, joist struts, plates and the like. Including supporting masonry/concrete walls under (i.e. load-bearing sleeper walls). 26 Precast/composite decking systems, including concrete components, in-situ concrete, site fixed formwork and reinforcement, filler units, fixing slips, metal clips and other fixings, joints (including grouting joints), worked finishes and performance tests.	
	8 Gullies, floor outlets and the like: details to be stated.	nr			
	9 Internal manholes, catch-pits, petrol interceptors or the like: details to be stated.				
	10 Testing of drainage installations.	%			
	11 Commissioning of drainage installations				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				27 Drainage below or within lowest floor assembly, including pipework, pipework ancillaries (e.g. gullies, gratings, rodding and access points) and fittings to pipework (to first manhole beyond the external enclosing walls). 28 Internal manholes and the like, including channels benching, step irons, access covers and other accessories. 29 Floor outlets. 30 Prefabricated floor channels and gratings in ground floor construction. 31 Trenches for pipework, including excavation, earthwork support, backfilling and disposal of surplus material. 32 Granular beds and surround, concrete beds, cradles, haunching and surrounds, and foamed concrete backfill. 33 Venting below building (e.g. radon sumps under ground slab/bed). 34 Special filling material beneath base slab/bed. 35 Sundry items. 36 Testing and commissioning of drainage installations 37 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fee, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Basement excavation **Definition:** Bulk excavation required for construction of floors below ground level.	1 Basement excavation: details, including average depth of excavation, to be stated.	m^3	C1 The volume measured for basement excavation and disposal of excavated material is the area of the basement measured to the external face of the external perimeter walls multiplied by the average depth of excavation. C2 The depth of basement excavation shall be measured from either the average existing ground level to the formation level or adjusted ground level (i.e. where a new ground level has been established following preparatory groundworks) to the formation level, whichever is applicable. C3 The volume of disposal of contaminated material measured is the surface area of the contaminated material multiplied by the average depth of the contaminated material. C4 Quantity given for disposal is the bulk before excavating and no allowance is made for subsequent variations to bulk or for extra space to accommodate earthwork support. C5 The area of earthwork support and working space measured is the full depth to all faces of excavation. C6 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C7 Work within existing buildings is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and/or components of the building project (i.e. not the entire building project).	1 Bulk excavation to form basements and the like. 2 Temporary or permanent support to the bulk excavation (e.g. earthwork support, caissons, steel sheet piling and the like), including insertion and extraction of temporary steel sheet piling and caissons. 3 Additional excavation required to facilitate construction of basement retaining walls (e.g. where open excavation method is employed), including excavating, back filling (e.g. with selected excavated material or granular material) and disposal of surplus excavated material. 4 Excavating below ground water level. 5 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works). **Note**: Where no information relating to the ground conditions is available, an allowance is to be made within the construction risk allowance for the extra cost of removing unforeseen obstructions and dealing with unknown ground conditions. **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction risk allowance for the extra cost of disposing of contaminated material. 6 Disposal of surface water and ground water, where dewatering techniques not employed. 7 Consolidating and compacting formation level to receive base slab/bed construction. 8 Sundry items. 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries.	1 Excavation and earthworks to forming new site contours and adjust existing site levels (included in sub-element 8.1.2 Preparatory groundworks). 2 Excavation and disposal in connection with trench and pit excavations associated with pile caps, ground beams, retaining walls, ground slabs/beds, raft foundations and drainage below the level from which the basement base slab is to be constructed (included in sub-element 1.1.2: Piled foundations, sub-element 1.3.1: Basement retaining walls or sub-element 1.4.1: Ground floor slab/bed and suspended floor construction, as appropriate). 3 Construction of basement retaining walls (included in element 1.3: Basement retaining walls). 4 Excavation and disposal in connection with the construction of diaphragm walling (included in sub-element 1.3.2 Embedded basement retaining walls). 5 Construction of base slab/bed (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction). 6 Excavation and disposal in connection with formation of swimming pools or the like below lowest floor level (included in sub-element 1.3.2: Embedded basement retaining walls). 7 Consolidating and compacting formation level to receive floor construction (included in element 1.4: Ground floor construction). 8 Dewatering (included in sub-element 9.3.1 Site dewatering and pumping). 9 Soil stabilisation (included in sub-element 9.3.2: Soil stabilisation measures).
	2 Disposal of excavated material: details to be stated.				
	3 Extra for disposal of contaminated excavated material: details to be stated.				
	4 Earthwork support: details to be stated.	m^2			
	5 Additional excavation: details to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
5 Basement retaining walls **Definition:** – External basement retaining walls in contact with earthwork up to and including the damp-proof course. – External basement retaining walls consisting of shoulder to shoulder piles or other vertical construction, which are subsequently partially excavated on one side to form retaining walls which obtain their stability from the embedded lower portion.	**Basement retaining walls:** 1 Basement retaining wall: details to be stated. **Note**: Reinforcement rate (kg/m^3) and formwork finish for in-situ concrete walls to be started.	m/m^2	C1 Where the area of the basement retaining wall is to be measured, the area measured is the surface area of the exposed face of the retaining wall. C2 The height of the basement retaining wall shall be measured from the top of the base slab/bed or the top of the basement retaining wall base/toe to the level at which the basement retaining wall connects with the external wall above ground (i.e. at the level at which the external wall changes from being a retaining wall to a non-retaining wall). C3 Where the length of the basement retaining wall is to be measured, the length of the basement wall shall be measured on the centre line. C4 Where more than one type of retaining wall construction is employed, each type of retaining wall construction is to be stated separately. C5 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C6 Curved work is to be described and identified separately. C7 Work within existing buildings is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Concrete retaining walls, including concrete, reinforcement, and formwork and excavating and backfilling working space required to facilitate construction of retaining walls. 2 Specialist concrete grades, such as waterproof concrete. 3 Trench excavations for bases/toes to basement retaining walls which commence below the level from which the construction of the basement base slab is to commence. 4 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works). **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction risk allowance for the extra cost of disposing of contaminated material. 5 Fixings cast into/fixed to concrete retaining walls to retain masonry walls (e.g. brickwork, blockwork and stonework) facing wall. 6 Masonry walls (e.g. brickwork, blockwork and stonework) forming an integral part of the basement retaining wall construction, including where used for the purpose of concealment (external and internal skins), including reinforcement and design joints. 7 Waterproof tanking to walls. 8 Applied protection to external tanking (e.g. protection boards). 9 Thermal insulation, damp-proof membranes, vapour barriers and the like.	1 External basement walls not in contact with earthwork (i.e. non-retaining walls – included in sub-element 2.5.2: External walls below ground level). 2 Embedded retaining basement walls – included in sub-element 1.3.2: Embedded basement retaining walls). 3 Bulk excavation to form basements (included in sub-element 1.2.1: Basement excavation). 4 Additional excavation required to facilitate construction of basement retaining walls (e.g. where open excavation method is employed – included in sub-element 1.2.1: Basement excavation). 5 Applied finishes to inner faces of external walls (included in element 3.1: Wall finishes). 6 Retaining walls not providing external walls to building (i.e. which form part of the external works – included in sub-element 8.4.3: Retaining walls). 7 Drainage beyond soil connection (included in sub-element 1.1.3: Lowest floor construction or sub-element 8.6.1: Surface water and foul water drainage, as appropriate).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				10 Ground water pressure relief drains to basements and retaining walls connected to the drainage system (i.e. fin drains, filter drains and blanket drains). To soil connection. 11 Sundry items associated with the construction of basement retaining walls. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	Embedded basement retaining walls: 2 Piling mats/ platforms: details, including thickness of mat/platform (mm), to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured for piling mats/platforms is the surface area of the piling mat/platform. C3 Secant piles and the like are to be enumerated. C4 The linear length of guide walls and contiguous bored pile walls is measured on the centre line of the guide wall or contiguous bored pile wall as applicable.	1 Pile walls (i.e. contiguous bored pile walls; hard/hard secant pile walls; and hard/soft secant pile walls), including guide walls, trimming and cleaning faces, cutting out concrete to tops of piles and preparing pile heads and reinforcement for capping, and disposal of excavated material arising from piling. **Note**: Where no contamination/remediation strategy report exists, an allowance should be made within the construction risk allowance for the extra cost of disposing of contaminated material.	1 External basement walls not in contact with earthwork, i.e. non-retaining walls (included in sub-element 2.5.2: External walls below ground level). 2 Bulk excavation to form basements (included in sub-element 1.1.4: Basement excavation). 3 Piled walls providing temporary support to excavation works (included in sub-element 1.1.4: Basement excavation). 4 Applied finishes to inner faces of external walls (included in element 3.1: Wall finishes).
	3 Piling plant: details to be stated.	item			
	4 Moving piling rig to pile position.	nr			
	5 Guide walls: details to be stated.	m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	6 Piles: details, including type, diameter (mm), depth (m), total length (m) and embedded length (m) of piles of piles, to be stated.	nr	C5 The area measured for steel sheet piling is the total surface area of specified sheet pile length. C6 The area measured for diaphragm walls is the area of the diaphragm wall, measured on the centre line of the diaphragm wall. C7 The volume of disposal of excavated material arising from piling measured is the cross-sectional area of the pile multiplied by the depth of the pile. C8 Quantity given for disposal is the bulk before excavating and no allowance is made for subsequent variations to bulk. C9 The area measured for trimming and cleaning faces of walls is the surface area of the exposed piled or diaphragm wall. C10 The linear length of capping beams is measured on the centre line of the capping beam. C11 The area measured for each basement retaining wall component is the area of the component, measured on the centre line of the component. C12 The area measured for concrete applied by spray or gun is the surface area of the surface to which it is to be applied. C13 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C14 Curved work is to be described and identified separately. C15 Work within existing buildings is to be described and identified separately. C16 Contractor designed work is to be described and identified separately.	2 Steel sheet piling, including extensions and cutting off surplus lengths. 3 Diaphragm walls, including excavating and disposal of excavated material, support fluid to uphold faces of excavation, concrete, reinforcement, formwork, joints and waterproof joints, guide walls, and trimming and cleaning faces. (Refer to Note above about disposal of contaminated material). 4 Ground anchors. 5 Capping beams, including concrete, reinforcement and formwork. 6 Piling mats and platforms (installing, moving and removing on completion). 7 Pile rigs/other plant, including bringing to and removing from site, maintenance, erection, dismantling and moving piling rigs to each pile position. 8 Pile tests (e.g. load tests and integrity tests). 9 Instrumentation and monitoring. 10 Groundwater pressure relief drains to basements and retaining walls connected to the drainage system (i.e. fin drains, filter drains and blanket drains). To soil connection. 11 Concrete walls forming an integral part of the embedded basement wall construction, including reinforcement, tying to piled wall formwork. 12 Specialist concrete grades, such as waterproof concrete. 13 Temporary works (e.g. props and wailings to support contiguous bored piled walls), and removal, including any necessary temporary anchors, foundations and the like. 14 Fixings cast into/fixed to concrete retaining walls to retain masonry walls (e.g. brickwork, blockwork and stonework) facing wall.	5 Retaining walls not providing external walls to building, i.e. which form part of the external works (included in sub-element 8.4.3: Retaining walls). 6 Drainage beyond soil connection (included in sub-element 1.1.3: Lowest floor construction or sub-element 8.6.1: Surface water and foul water drainage, as appropriate).
	7 Contiguous bored pile walls: details, including diameter (mm), depth (m), total length (m) and embedded length (m) of piles of piles, to be stated.	m			
	8 Disposal of excavated material arising from piling.	m^3			
	9 Cutting off tops of concrete piles.	nr/m			
	10 Steel sheet piling: details, including total area (m^2) and total driven area (m^2) to be stated.	m^2			
	11 Cutting off surplus lengths steel sheet piling.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	12 Pile tests: details to be stated.	item	**Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	15 Masonry walls/facings (e.g. brickwork, blockwork and stonework) forming an integral part of the embedded basement retaining wall. 16 Waterproof tanking to walls. 17 Applied protection to external tanking (e.g. protection boards). 18 Thermal insulation, damp-proof membranes, vapour barriers and the like. 19 Concrete applied by spray or gun, including reinforcement, formwork and design joints. 20 Sundry items. 21 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	13 Diaphragm walls: details, including depth of excavation, thickness (mm) of wall reinforcement rate (kg/m^3), to be stated.	m^2			
	14 Ground anchors: details, including type, to be stated.	nr			
	15 Trimming and cleaning faces of piled and diaphragm walls.	m^2			
	16 Temporary works: details to be stated.	item			
	17 Removal of temporary works: details to be stated.				
	18 Capping beams: details, including beam size (mm) and reinforcement rate (kg/m^3), to be stated.	m			
	19 Basement retaining wall components: details to be stated. **Note**: Reinforcement rate (kg/m^3) and formwork finish for in-situ concrete walls to be started.	m^2			
	20 Concrete applied by spray or gun: details, including thickness (mm), to be stated.				

Group element 2: Superstructure

Group element 2 comprises the following elements:

2.1 Frame

2.2 Upper floors

2.3 Roof

2.4 Stairs and ramps

2.5 External walls

2.6 Windows and external doors

2.7 Internal walls and partitions

2.8 Internal doors

Element 2.1: Frame

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Steel frames **Definition:** Structural steelwork in frames, including all fittings, fixings and components.	1 Structural steel frame, including fittings and fixings: details, including size of column grid (m), to be stated. 2 Fire protection to steel frame: details to be stated. 3 Factory applied paint systems: details to be stated.	t	C1 The total mass of the steel frame is to be stated. The mass of framing includes all fittings and components. C2 The mass measured for fire protection and paint system is the total mass of the structural steel frame. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Structural steel frame, including all components (e.g. columns, beams, composite columns and beams, lattice beams, braces, struts and the like). 2 Fittings and fixings. 3 Roof trusses, where an integral part of the frame and cannot be separated from the frame. 4 Floor and roof members or decks forming an integral part of the frame, which cannot be separated from the frame. 5 Fabrication, trial erection and permanent erection on site (including holding down bolts, assemblies, grouting under base plates and the like).	1 Space frames and decks, including structural support framework (included in sub-element 2.1.2: Space frames/decks). 2 Specialist, proprietary and modular lightweight steel frame systems (included in sub-element 2.1.6: Specialist frames). 3 Roof trusses which can be separated from the frame (included in sub-element 2.3.1: Roof structure). 4 Floor, roof and wall structures which can be separated from the frame (included in sub-element 2.3.1: Roof structure; element 2.5: External walls or element 2.7: Internal walls and partitions, as appropriate).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				6 Factory applied coatings, including fire protective coatings and paint systems. 7 Sundry items. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	5 Beams forming an integral part of a floor or roof which can be separated from the frame (included in element 2.2: Upper floors or sub-element 2.3.1: Roof structures, as appropriate). 6 Lintels (included in element 2.6: Windows and external doors or element 2.8: Internal doors as, appropriate). 7 Casing steel members in concrete for protection (included in sub-element 2.1.3: Concrete casings to steel frames). 8 Site applied decorative painting additional to factory applied protection and paint systems (included in group element 3: Internal finishes, as appropriate).
2 Space frames/decks **Definition:** Space frames/decks, including structural support framework, and including all components.	1 Space frame/deck, including structural support framework, fittings and fixings: details to be stated. 2 Fire protection to steel frame: details to be stated. 3 Factory applied paint systems: details to be stated.	m^2	C1 The area measured is the area of the upper floors. The area is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C2 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project.	1 Space frames/decks, including fittings and fixings. 2 Structural support framework. 3 Fittings and fixings. 4 Fabrication, trial erection and permanent erection on site (including holding down bolts, assemblies, grouting under base plates and the like). 5 Factory applied coatings, including fire protective coatings and paint systems. 6 Sundry items. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Casing steel members in concrete for protection (included in sub-element 2.1.3: Concrete casings to steel frames). 2 Site applied decorative painting additional to factory applied protection and paint systems (included in group element 3: Internal finishes).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Concrete casings to steel frames **Definition:** Protective casings to columns and beams for structural or protective purposes, including fire protection.	1 Column casings: details, including number of columns (nr), column size and type of formwork finish, to be stated. 2 Beam casings: details, including number of beams (nr), beam size and type of formwork finish, to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 Column casings: The linear length measured is the distance between the top of the slab/bed, pile cap or ground beam (as appropriate) and the soffit of the beam attached to the next floor level (or to soffit of suspended slab if no beams). C3 Beam casings: The linear length is measured on the centre line of the beam. C4 No deduction is made for volume of steel. C5 Concrete additives: details to be stated. C6 Complex shapes: details to be stated. C7 Special formed finishes: details to be stated. C8 Work to existing buildings is to be described and identified separately. C9 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Concrete. 2 Specialist concrete grades and additives. 3 Formwork. 4 Special formed finishes to in-situ concrete. 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
4 Concrete frames **Definition:** Concrete columns and beams.	1 Columns: details, including number (nr) of columns, column size (mm), concrete grade, reinforcement rate (kg/m^3) and type of formwork finish, to be stated. 2 Beams: details, including number (nr) of beams, beam size (mm), reinforcement rate (kg/m^3) and type of formwork finish, to be stated.	m	C1 Columns: The linear length measured is the distance between the top of the slab/bed, pile cap or ground beam (as appropriate) and the soffit of the beam attached to the next floor level (or to soffit of suspended slab if no beams). C2 Size of column grid to be stated. C3 Beams: the linear length is measured on the centre line of the beam. **Notes**: (1) Where upper floors do not form an integral part of the structural frame, the beam size stated is the total width by the total depth.	1 Beams. 2 Columns, blade columns and the like. 3 Walls and core walls forming an integral part of the structural assembly. 4 Concrete. 5 Specialist concrete grades and additives. 6 Reinforcement, including starter bars, punching shear reinforcement and the like. 7 Reinforcement for precast, prestressed and post-tensioned concrete, including stressing cables, applying stressing and the like. 8 Formwork. 9 Designed joints (e.g. to walls).	1 Upper floors (included in element 2.2: Upper floors). 2 Roof slabs (included in sub-element 2.3.1: Roof structure).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	3 Walls: details, including thickness of wall (mm), concrete grade, reinforcement rate (kg/m^3) and type of formwork finish, to be stated.	m^2	(2) Where upper floors form an integral part of the structural frame, the beam size stated is the total width by the depth below the concrete floor (measured from the underside of the concrete floor to the bottom/underside of the beam). Notwithstanding this, an appropriate allowance shall be made in the *unit rate* for beam reinforcement that is integrated within the concrete floor). C4 Walls: the area measured is the area of the wall, measured on the centre line of the wall. No deduction is made for door openings, windows, screens and the like. C5 No deduction is made for volume of steel. C6 Concrete grade/mix to be stated. C7 Concrete additives: details to be stated. C8 Complex shapes: details to be stated. C9 Special formed finishes: details to be stated. C10 Curved work is to be described and identified separately. C11 Work to existing buildings is to be described and identified separately. C12 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	10 Worked finishes (i.e. in-situ surface treatments), including the application of surface hardeners. 11 Special formed finishes to in-situ concrete. 12 Grouting up of frame components. 13 Forming openings for doors, windows, screens and the like. 14 Sundry items. 15 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	4 Extra over walls for forming openings in walls for doors, windows, screens and the like: details, including thickness of wall (mm), overall size of opening (m) and type of formwork finish, to be stated.	nr			
	5 Designed joints: details to be stated.	m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
5 Timber frames **Definition:** Timber frame systems, including all components.	1 Timber frames: details to be stated.	m^2	C1 The area measured is the area of the upper floors. The area is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C2 Area measured to include area of roof, where roof structure (including roof trusses) is an integral part of the frame. C3 Details of floor, roof (including trussed roofs) and wall members or decks which cannot be separated from the frame are to be stated. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Complete timber frame systems, including all components and fixings. 2 Panel systems, such as off-site manufactured timber frames. 3 Laminated timber structures and the like. 4 Roof trusses, where an integral part of the frame and cannot be separated from the frame. 5 Floor, roof and structural wall members, including wall linings and floor boarding, forming an integral part of the frame, which cannot be separated from the frame system. 6 Specialist subcontractor/supplier design of timber frame. 7 Trial erection and permanent erection on site of timber frame (when required). 8 Treatments to timber. 9 Site applied fire retarding paint. 10 Sundry items. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Prefabricated complete and semi-complete buildings and modular room units (included in element 6.1: Prefabricated buildings). 2 Roof trusses which can be separated from the frame (included in sub-element 2.3.1: Roof structure). 3 Floor, roof and structural wall members, including wall linings and floor boarding, which can be separated from the frame (included in sub-element 2.2.3: Timber floors; sub-element 2.3.1: Roof structure; element 2.5: External walls or element 2.7: Internal walls and partitions, as appropriate). 4 Finishes applied to external walls and internal walls, floors and ceilings (included in sub-element 2.5.1: External walls above ground level, sub-element 2.5.2: External walls below ground level or group element 3: Internal finishes, as appropriate).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
6 Specialist frames **Definition:** Specialist structural frame systems, including all components.	1 Specialist frame: details to be stated.	m^2	C1 The area measured is the area of the upper floors. The area is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C2 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Portal frames and similar individual structural units (steel, concrete, timber or other material). 2 Specialist, proprietary and modular lightweight steel frame systems. 3 Cellular construction such as tunnel (slip) form. 4 Components, fittings and fixings. 5 Roof trusses, where an integral part of the frame and cannot be separated from the frame. 6 Floor and roof members or decks forming an integral part of the frame, which cannot be separated from the frame. 7 Fabrication, trial erection and permanent erection on site (including holding down bolts, assemblies, grouting under base plates and the like). 8 Factory applied coatings, including fire protective coatings and paint systems. 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Structural steel frames (included in sub-element 2.1.1: Steel frames). 2 Space frames and decks (included in sub-element 2.1.2: Space frames/decks). 3 Concrete frames (included in sub-element 2.1.4: Concrete frames). 4 Timber frames (included in sub-element 2.1.5: Timber frames). 5 Prefabricated buildings and structures (included in group element 6: Complete buildings and building units). 6 Floor, roof and structural wall members, including wall linings and floor boarding which can be separated from the frame (included in included in sub-element 2.2.3: Timber floors, sub-element 2.3.1: Roof structure, element 2.5: External walls or element 2.7: Internal walls and partitions, as appropriate).

Element 2.2: Upper floors

Note: Where testing and commissioning of drainage installations is required to be measured under sub-element 2.2.3: Drainage to balconies, the terms shall include the following works:

1 Testing includes:

(1) Plugging outlets and carrying out water tests

(2) Water required for testing

2 Commissioning includes:

(1) Commissioning, including preliminary checks, setting systems and installations to work and regulation thereof, and commissioning records

(2) Temporary operation of drainage to employer's requirements

(3) Setting all drainage installations to work after completion of commissioning

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Floors **Definition:** – Reinforced and post tensioned concrete – Floor decks consisting of proprietary precast units, a combination of in-situ concrete with filler units of other material – Structural timber floor construction, including floor boards – Structural screeds.	**Concrete floors:** 1 Suspended floor slabs: details, including thickness (mm); concrete strength (N/mm^2), reinforcement rate (kg/m^3) and type of formwork finish, to be stated.	m^2	C1 The area measured is the area of the upper floors. The area is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). No deduction is to be made for beams which form an integral part of the upper floor. C2 Where more than one floor construction type is employed, the area measured for each floor construction type is measured. C3 Where more than one floor construction type is employed, the combined area of each floor construction type shall equal the total area of the upper floors. C4 Areas for balconies, galleries, tiered terraces, service floors, walkways, internal bridges, external links, roofs to internal buildings, shall be shown separately. C5 Sloping surfaces to be measured flat on plan. **Note**: Where balconies are included, the area of the upper ground floor and lowest ground floor will exceed the GIFA. C6 The length of linear components measured is their extreme length. Curved work is to be described and identified separately. C7 Work to existing buildings is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Concrete suspended floors, including: – upper floors – podium slabs forming roofs to basements – transfer structures – balconies (internal and external) which are an integral part of the suspended floor construction – mezzanine floors – service floors and the like – galleries, tiered terraces and the like – walkways, internal bridges and the like – external corridors/bridges forming links between buildings, including supporting frames – beams which form an integral part of the floor in framed buildings – floor beams in unframed building – roofs to internal buildings, where an integral part of the upper floor construction. 2 Reinforced concrete floors, including solid, waffle and trough slabs. Including all concrete, reinforcement (including punching shear reinforcement) and formwork (to soffits, edges and openings). 3 Post tensioned concrete floors, including concrete, reinforcement, (i.e. stressing cables), formwork, applying stressing and grouting up) and formwork. 4 Worked finishes (i.e. in-situ surface treatments), including tamped finish, power float finish and the application of surface hardeners. 5 Permanent formwork, including profiled sheet metal decking. 6 Designed joints.	1 Basement roofs, i.e. where not acting as a podium slab or transfer slab (included in element 2.3: Roof). 2 Non-structural screeds (included in sub-element 3.2.1: Finishes to floors). 3 Structural screeds (included in sub-element 2.2.4: Structural screeds). 4 Floating floors (included in sub-element 3.2.1: Finishes to floors). 5 Applied floor finishes (included in sub-element 3.2.1: Finishes to floors). 6 Hardeners and sealers applied to suspended floor slabs after construction (included in sub-element 3.2.1: Finishes to floors). 7 Raised access floors (included in sub-element 3.2.2: Raised access floors). 8 Applied ceiling finishes (included in sub-element 3.3.1: Finishes to ceilings). 9 False ceilings (included in sub-element 3.3.2: False ceilings). 10 Suspended ceilings (included in sub-element 3.3.3: Demountable suspended ceilings). 11 Roofs to internal buildings which are not an integral part of the upper floor construction, floor area (included in element 2.3: Roof). 12 Structural screeds applied to roof decking (included in sub-element 2.3.1: Roof structure). 13 Balconies which are not an integral part of the upper floor construction (included in sub-element 2.2.5: Balconies). 14 Drainage to balconies which are an integral part of the upper floor construction (included in sub-element 2.2.6: Drainage to balconies).
	2 Edge formwork: details of formwork finish to be stated.	m			
	3 Designed joints: details to be stated.				
	4 Surface treatments: details to be stated.	m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				7 Sundry items. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	Precast/composite decking systems 5 Suspended floor slab: details, including type, thickness (mm), span (m) and loading (kN/m^2), to be stated.	m^2	C1 The area measured is the area of the upper floors. The area is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C2 Where more than one floor construction type is employed, the area measured for each floor construction type is measured separately. C3 Where more than one floor construction type is employed, the combined area of each floor construction type shall equal the total area of the upper floors. C4 Areas for balconies, galleries, tiered terraces, walkways, internal bridges, external links, and roofs to internal buildings shall be shown separately. C5 Sloping surfaces to be measured flat on plan. **Note**: Where balconies are included, the area of the upper ground floor and lowest ground floor will exceed the GIFA. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Suspended floors, including: – upper floors – podium slabs forming roofs to basements – balconies (internal and external) which are an integral part of the suspended floor construction – mezzanine floors – service floors and the like – galleries, tiered terraces and the like – walkways, internal bridges and the like – external corridors/bridges forming links between buildings, including supporting frames – roofs to internal buildings, where an integral part of the upper floor construction. 2 Solid, hollow, tee or other section precast and prestressed concrete plank and slab decks. 3 Composite decks of precast and prestressed concrete beams with filler blocks of precast concrete, in-situ concrete and other materials. 4 Composite decks of in-situ concrete on precast or prestressed concrete planks. 5 Hollow tile decks of in-situ concrete with filler blocks of clay, precast concrete or other material.	1 Precast/composite decking systems used in ground floor construction (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction). 2 Precast decking forming an integral part of precast concrete frame assemblies (included in sub-element 2.1.6: Specialist frames). 3 Basement roofs, i.e. where not acting as a podium slab or transfer slab (included in element 2.3: Roof). 4 Non-structural screeds (included in element 3.2: Floor finishes). 5 Structural screeds (included in sub-element 2.2.4: Structural screeds or sub-element 2.3.1: Roof structure, as appropriate). 6 Hardeners and sealers applied to suspended floor slabs after construction (included in sub-element 3.2.1: Finishes to floors). 7 Floating floors (included in sub-element 3.2.1: Finishes to floors). 8 Applied floor finishes (included in sub-element 3.2.1: Finishes to floors). 9 Raised access floors (included in sub-element 3.2.2: Raised access floors). 10 Applied ceiling finishes (included in sub-element 3.3.1: Finishes to ceilings).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				6 Precast and prestressed concrete components. 7 In-situ concrete. 8 Site fixed formwork and reinforcement. 9 Filler units. 10 Fixing slips, metal clips and other fixings. 11 Joints, including grouting joints. 12 Worked finishes (i.e. in-situ surface treatments), including the application of surface hardeners. 13 Performance tests. 14 Sundry items. 15 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	11 False ceilings (included in sub-element 3.3.2: False ceilings). 12 Suspended ceilings (included in sub-element 3.3.3: Demountable suspended ceilings). 13 Roofs to internal buildings which are not an integral part of the upper floor construction (included in sub-element 3.3.3: Demountable suspended ceilings). 14 Balconies which are not an integral part of the upper floor construction (included in sub-element 2.2.5: Balconies). 15 Drainage to balconies which are an integral part of the upper floor construction (included in sub-element 2.2.6: Drainage to balconies).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	Timber floors: 6 Timber floors: details to be stated.	m^2	C1 The area measured is the area of the upper floors. The area is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C2 Where more than one floor construction type is employed, the area measured for each floor construction type is measured. C3 Where more than one floor construction type is employed, the combined area of each floor construction type shall equal the total area of the upper floors. C4 Areas for balconies, galleries, tiered terraces, walkways, internal bridges, external links, and roofs to internal buildings shall be shown separately. C5 Sloping surfaces to be measured flat on plan. **Note**: Where balconies are included, the area of the upper ground floor and lowest ground floor will exceed the GIFA. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Timber suspended floors, including: – upper floors – balconies (internal and external) which are an integral part of the suspended floor construction – mezzanine floors – service floors and the like – galleries, tiered terraces and the like – walkways, internal bridges and the like – external corridors/bridges forming links between buildings, including supporting frames – roofs to internal buildings, where an integral part of the upper floor construction. 2 Structural floor members, including joists, struts, trimmers, plates and the like. 3 Carpenter's metalwork, including strutting, joist hangers, straps, bolts and the like. 4 Floor surface where construction does not provide a platform (e.g. floor boarding to joisted floors). 5 Thermal insulation. 6 Sundry items. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Suspended timber floors used in lowest floor construction (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction). 2 Joists and other structural members forming an integral part of a timber frame structure (included in sub-element 2.1.5: Timber frames). 3 Surface treatments to floor boarding (included in sub-element 3.2.1: Finishes to floors). 4 Applied floor finishes (included in sub-element 3.2.1: Finishes to floors). 5 Balustrades and handrails to internal balconies, walkways, atriums, and the like (included in element 2.7: Internal walls and partitions). 6 Applied ceiling finishes and linings (included in sub-element 3.3.1: Finishes to ceilings). 7 False ceilings and demountable suspended ceilings (included in sub-element 3.3.2: False ceilings or 3.3.3: Demountable suspended ceilings, as appropriate). 8 Roofs to internal buildings which are not an integral part of the upper floor construction, (included in sub-element 3.3.2: False ceilings). 9 Balconies which are not an integral part of the upper floor construction (included in sub-element 2.2.5: Balconies). 10 Drainage to balconies which are an integral part of the upper floor construction (included in sub-element 2.2.6: Drainage to balconies).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	Structural screeds: 7 Structural screeds: details, including thickness (mm), reinforcement rate (kg/m^3) and surface treatments, to be stated.	m^2	C1 The area measured is the area to which screed is applied. The area is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C2 Where more than one thickness of screed is employed, the area for each screed is measured. C3 Where more than one screed is employed, the combined area of each screed type shall equal the total area of the upper floors. C4 Areas of balconies, galleries, tiered terraces, walkways, internal bridges, external links, and roofs to internal buildings shall be shown separately. C5 Sloping surfaces to be measured flat on plan. **Note**: Where balconies are included, the area of the upper ground floor and lowest ground floor will exceed the GIFA. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Screed. 2 Reinforcement. 3 Worked finishes. 4 Surface treatments (e.g. surface hardeners and non-slip inserts). 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Non-structural screeds (included in sub-element 3.2.1: Finishes to floors).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Balconies **Definition:** Internal and external balconies which are not an integral part of the upper floor construction.	1 Balconies: details, including floor area (m^2) of balcony, to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Purpose made balconies, which are not an integral part of the upper floor construction. Comprising bolt-on frame, decking, soffit panels, integral drainage/drainage trays and balustrades/handrails. 2 Protective coatings and paint systems. 3 Surface treatments (e.g. surface hardeners and non-slip inserts). 4 Fittings and fixings. 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Proprietary bolt-on balconies (e.g. 'Juliet' balconies – included in sub-element 2.5.5: Subsidiary walls, balustrades, handrails, railings and proprietary balconies). 2 Low level and dwarf walls, balustrades, handrails and railings to external walkways which form an integral part of the building envelope and the like (included in sub-element 2.5.5: Subsidiary walls, balustrades, handrails, railings and proprietary balconies). 3 Drainage to balconies which is not an integral part of the balcony unit (included in sub-element 2.2.3: Drainage to balconies).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Drainage to balconies **Definition:** Piped internal or external disposal systems for taking rainwater from balconies to the first underground drain connection or gully.	1 Rainwater pipes: details to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all fittings, branches and the like. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Rainwater downpipes, including bends, swan necks and rainwater shoes and the like. 2 Floor outlets. 3 Testing and commissioning of above ground surface water drainage systems. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Drainage to external walkways and the like (included in sub-element 2.5.5: Subsidiary walls, balustrades, handrails, railings and proprietary balconies). 2 Surface water drainage beyond the first underground drain connection or gully (included in element 8.6: External drainage).
	2 Floor outlets: details to be stated.	nr			
	3 Testing of installations.	%			
	4 Commissioning of installations.				

Element 2.3: Roof

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Roof structure **Definition:** All components of the roof structure.	1 Roof structure – pitched roofs: details, including design loads (kN/m^2), spans (m) and angle of pitch (°), to be stated.	m^2	C1 The area measured for pitched roofs is the area of the roof on plan, to the extremities of the eaves. C2 The area measured for dormers is the area of the dormer on plan, to the extremities of the eaves and valleys. C3 Flat roofs (without parapet walls): The area measured is the area of the roof on plan, to the extremities of the eaves. C4 Flat roofs (with parapet walls): The area measured is the area within the parapet walls measured to the internal face of the parapet walls to the roof. **Note**: Roof housings (e.g. lift and motor and plant rooms). These shall be broken down into the appropriate constituent components and measured in accordance with the measurement rules for the applicable components. C5 Work to existing buildings is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Roof decks and slabs. 2 Trusses, purlins, rafters, binders, hangers, hip and valley rafters, ridge boards, wall plates, firrings, ceiling joists and the like. 3 Dormer trusses. 4 Prefabricated dormers. 5 Specialist subcontractor/supplier design of roof trusses. 6 Roof boarding. 7 Beams which form an integral part of the roof in a framed building. 8 Carpenter's metalwork, including connectors, bracings, straps, hangers, strutting, joist hangers, bolts and the like. 9 Eaves and verge structure. 10 Gable ends and internal walls above wall plate level forming part of the roof construction. 11 Concrete, reinforcement, formwork (temporary and permanent) and worked finishes. 12 Precast/composite decking systems, including concrete components, in-situ concrete, site fixed formwork and reinforcement, filler units, fixing slips, metal clips and other fixings, joints (including grouting joints), worked finishes and performance tests. 13 Basement roofs (i.e. where not acting as a podium slab or transfer slab). 14 Roofs to internal buildings. 15 Beams in unframed buildings.	1 Dormer coverings and windows to dormers (included in sub-elements 2.3.2: Roof coverings and 2.6.1: External windows, as appropriate). 2 Basement roofs acting as a podium slab or transfer slab (included in element 2.2: Upper floors, as appropriate). 3 Parapet wall, including copings and cappings (included in element 2.5: External walls). 4 Roof platforms integral to framing system such as off-site manufactured timber frames or panel systems (included in element 2.1.5: Timber frames). 5 Gable ends formed as part of the external wall construction (included in element 2.5: External walls). 6 Internal walls in roof formed as part of the internal walls construction (included in element 2.7: Internal walls and partitions). 7 Chimneys (included in element 2.5: External walls or element 2.7: Internal walls and partitions, as appropriate). 8 Roofs to internal buildings (included in element 2.2: Upper floors or element 2.3: Roof, as appropriate). 9 Canopies to external areas (included in sub-element 8.8.2: Ancillary buildings and structures). 10 Canopies to external doors (included in sub-element 2.6.2: External doors).
	2 Extra over roof structure – pitched roofs for forming dormer.				
	3 Prefabricated dormers: details to be stated.	nr			
	4 Roof structure – flat roofs: details, including design loads (kN/m^2) and spans (m), to be stated.	m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				16 Structural screeds to roofs, including reinforcement and worked finishes. 17 Permanent formwork. 18 Thermal insulation laid in roof space (e.g. laid between or over ceiling joists). 19 Sundry items. 20 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	11 Horizontal solar/rainscreen systems providing protection to external walls (included in sub-element 2.5.3: Solar/rain screening).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Roof coverings **Definition:** Protective cladding, coverings and coatings to roofs.	1 Roof coverings, non-structural screeds, thermal insulation, and surface treatments: details to be stated.	m^2	C1 The area to be measured for roof coverings and the like is the surface area of the roof covering to the extremities of the eaves or to the internal face of the parapet wall, whichever is applicable, excluding the area of rooflights, skylights and openings. No deduction is made for voids less than $1.00m^2$. C2 The area to be measured for dormer coverings is the surface area of the dormer roof coverings to the extremities of the eaves. No deduction is made for voids less than $1.00m^2$. C3 Where more than one type of roof covering system is employed, the area measured for each system is the area covered by the system. C4 The length of linear components measured is their extreme length. C5 Curved work is to be described and identified separately. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Roof cladding/coverings (e.g. tiling, slating, sheet coverings and thatching), including battening, underlay, vapour control layers, hip, valley, eaves and verge treatment, flashings, edge trims and other components required for the applicable cladding/covering system. 2 Mastic asphalt roofing, liquid applied roof coatings and built up felt roof coverings, including underlay, vapour control layers, flashings, edge trims, skirtings, upstands and other boundary work, and other components required for the applicable roof covering system. 3 Photovoltaic devices (e.g. tiles, slates, profiled sheets) where an integral part of a roof covering system. 4 Roof ventilation tiles. 5 Non-structural screeds to roofs, including reinforcement and worked finishes. 6 Thermal insulation to roofs, including insulation overlays for inverted roofs. 7 Surface treatments to roof coverings (e.g. solar reflective painting, chippings and the like). 8 Paving tiles, paving slabs and the like, to form service walkways, roof terraces and the like on roof surfaces. 9 Green roofs and roof gardens, including protection layer, drainage layer, filter membranes and growing medium. 10 Planting to green roofs/roof gardens. 11 Sundry items. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Dormer construction and windows to dormers (included in sub-elements 2.3.1: Roof structure and 2.6.1: External windows, as appropriate). 2 Vertical cladding to walls where of the same construction as the roof (included in element 2.5: External walls). 3 Structural screeds to roofs (included in sub-element 2.3.1: Roof structure). 4 Finishes to ceilings under roof structure (included in sub-element 3.3.1: Finishes to ceilings). 5 False ceilings and suspended ceilings under roof structure (included in sub-element 3.3.2: False ceilings or 3.3.3 Demountable suspended ceilings, as appropriate). 6 Solar water collectors, heating panels and the like (included in sub-element 5.8.6: Transformation devices). 7 Photovoltaic tiles, panels and the like where not an integral part of the roof covering system (included in sub-element 5.8.6: Transformation devices). 8 Roof and smoke vents (included in sub-element 2.3.5: Rooflights, skylights and openings).
	2 Extra over roof coverings for coverings to dormers, including cladding to dormer cheeks.				
	3 Eaves, verge treatment to pitched roofs: details to be stated.	m			
	4 Edge treatment to flat roofs: details stated.				
	5 Flashings: details to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Specialist roof systems **Definition:** Glazed and other specialist roofing systems.	1 Specialist roof systems: details to be stated.	m^2	C1 The area measured is the area of the glazed roof on plan. C2 Curved work is to be described and identified separately. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Patent glazing. 2 Glazed roofing systems. 3 Perspex roofing systems. 4 Roof components, including flashings, cover strips, integral drainage channels, perimeter treatments and the like. 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Rooflights and other glazed openings (included in sub-element 2.3.5: Rooflights, skylights and openings).
4 Roof drainage **Definition:** Piped internal or external disposal systems for taking rainwater from roofs and the like to the first underground drain connection or gully.	1 Gutters: details to be stated.	m	C1 The length of linear components measured is their extreme length, over all fittings, branches and the like. C2 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C3 Curved work is to be described and identified separately. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Gutters (other than those forming an integral part of a cladding or curtain walling system), including fittings, gutter outlets, balloons and gratings to outlets, and the like. 2 Rainwater downpipes, including bends, swan necks and rainwater shoes. 3 Syphonic roof drainage pipework systems. 4 Rainwater heads, including gratings. 5 Painting and anti-corrosion treatments to gutters and rainwater downpipes. 6 Testing and commissioning of above ground surface water drainage systems. 7 Sundry items. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Gutters forming an integral part of a roof structure (included in sub-element 2.3.1: Roof structure). 2 Gutters forming an integral part of a cladding or curtain walling system (included in element 2.5: External walls, as appropriate). 3 Gutters and rainwater pipes to balconies and canopies (included in sub-element 2.2.6: Drainage to balconies, sub-element 2.6.1: External windows or sub-element 2.6.2: External doors, as appropriate). 4 Rainwater harvesting systems (included in sub-element 5.4.2: Cold water distribution). 5 Surface water drainage beyond the first underground drainage connection or gully (included in sub-element 8.6.1: Surface water and foul water drainage).
	2 Rainwater pipes: details to be stated.				
	3 Testing of installations.	%			
	4 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
			C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	**Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
5 Rooflights, skylights and openings **Definition:** Rooflights, skylights and openings to roof.	1 Rooflights, skylights and openings: type and size to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area of rooflights, skylights and openings. C3 Curved work is to be described and identified separately. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Rooflights, skylights and the like. 2 Opening gear, frames, kerbs and glazing. 3 Sun pipes/tubes. 4 Pavement lights. 5 Roof hatches. 6 Access hatches to roof spaces. 7 Smoke vents. 8 Roof vents and roof cowls. 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Dormer roofs and windows (included in sub-elements 2.3.1: Roof structure, 2.3.2: Roof coverings and 2.6.1: External windows, as appropriate). 2 Access hatches to false ceilings or demountable suspended ceilings (included in sub-element 3.3.2: False ceilings or 3.3.3: Demountable suspended ceilings, as appropriate). 3 Flashings to rooflights, skylights and openings (included in sub-element 2.3.2: Roof coverings).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
6 Roof features **Definition:** Roof features not forming part of the main roof structure.	1 Roof features: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Turrets. 2 Wind vanes. 3 Spires. 4 False chimneys. 5 Enclosures designed solely to conceal plant, rooflines, and the like (complete structure including wall louvers). 6 Fall arrest systems. 7 Access systems for cleaning roof. 8 Roof edge protection (permanent). 9 Balustrades, handrails and the like to roof edges and walkways. 10 Service walkways within roof voids. 11 Sundry items. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Finials (included in sub-element 5.11.2: Lightning protection). 2 Building Maintenance Units (BMUs) (included in sub-element 2.5.6: Facade access/cleaning systems). 3 Facade access systems (included in sub-element 2.5.6: Facade access/cleaning systems). 4 Roof top wind turbines and wind energy systems (included in sub-element 5.8.5: Local electricity generation systems). 5 Photovoltaic tiles, panels and the like (included in sub-element 5.8.5: Local electricity generation systems). 6 Solar water collectors, heating panels and the like (included in sub-element 5.8.5: Local electricity generation systems).

Element 2.4: Stairs and ramps

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Stair/ramp structures **Definition:** Construction of staircases, ramps and landings.	1 Stair structures: details, including vertical rise of staircase, to be stated. 2 Ramp structures: details, including vertical rise of ramp, to be stated.	nr	C1 Number of storey flights (i.e. the number of staircases or ramps multiplied by the number of floors served (excluding the lowest floor served in each case). C2 The vertical rise of stairs or ramps is the distance measured from top of structural floor level to top of structural floor level. C3 Curved work is to be described and identified separately. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Staircases, including spiral staircases and the like. 2 Access ramps. 3 Landings between floor levels. 4 Fire escape staircases. 5 In-situ and precast concrete, including concrete, reinforcement, formwork, worked finishes and grouting (of precast units). 6 Staircases fabricated from steel, timber or other material, including off-site applied coatings and paint systems. 7 Sundry items. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Landings at floor levels (included in element 2.2: Upper floors, as appropriate). 2 Ramps which are an integral part of the floor construction levels (included in sub-element 1.1.3: Lowest floor construction or element 2.2: Upper floors, as appropriate). 3 Walls forming stairwells (included in element 1.3: Basement retaining walls; element 2.5: External walls or element 2.7: Internal walls and partitions, as appropriate). 4 Access and escape ladders, chutes, slides and the like (included in sub-element 2.4.4: Ladders/chutes/slides).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Stair/ramp finishes **Definition:** Finishes to stairs, ramps and landings.	1 Stair finishes: details, including vertical rise of staircase, to be stated. 2 Ramp finishes: details, including vertical rise of ramp, to be stated.	nr	C1 Number of storey flights (i.e. the number of staircases or ramps multiplied by the number of floors served, excluding the lowest floor served in each case). C2 The vertical rise of stairs or ramps is the distance measured from top of structural floor level to top of structural floor level. C3 Curved work is to be described and identified separately. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Finishes to treads and risers. 2 Finishes to landings between floor levels. 3 Finishes to ramp surfaces. 4 Finishes to strings. 5 Finishes to the soffits of staircases. 6 Sundry items. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Finishes to landings at floor levels (included in element: 3.2: Floor finishes). 2 Finishes to stairwells (included in group element 3: Internal finishes, as appropriate).
3 Stair/ramp balustrades and handrails **Definition:** Balustrades and handrails to stairs, ramps and landings.	1 Wall handrails: details, including vertical rise of staircase or ramp, to be stated. 2 Combined balustrades and handrails: details, including vertical rise of staircase or ramp, to be stated.	nr	C1 Number of storey flights (i.e. the number of staircases or ramps multiplied by the number of floors served (excluding the lowest floor served in each case). C2 The vertical rise of stairs or ramps is the distance measured from top of structural floor level to top of structural floor level. C3 Curved work is to be described and identified separately. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Balustrades and handrails to stairs. 2 Balustrades and handrails to landings between floor levels. 3 Balustrades and handrails to landings. 4 Applied coatings and paint systems. 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Balustrades and handrails to internal platforms, walkways and the like (included in sub-element 2.7.2: Balustrades and handrails).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Ladders/chutes/slides **Definition:** Access and escape ladders and the like.	1 Ladders: details to be stated. 2 Chutes: details to be stated. 3 Slides: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Fire escape ladders. 2 Fire escape chutes/slides. 3 Access ladders. 4 Loft ladders, including hatch doors where an integral part of the loft ladder. 5 Applied coatings and paint systems. 6 Sundry items. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 2.5: External walls

Note: Where testing and commissioning is required to be measured under sub-elements 2.5.5: Subsidiary walls, balustrades, handrails, railings and proprietary balconies, and 2.5.6: Facade access/cleaning systems, the terms shall include the following works:

1 Testing includes:

(1) Testing equipment and consumables

(2) Calibration

(3) Site installation tests, including water tests for drainage installations

(4) Static testing, including testing records

(5) Performance testing, including performance test records

(6) Fuels and water required for testing

2 Commissioning includes:

(1) Commissioning, including preliminary checks, setting systems and installations to work and regulation thereof, and commissioning records

(2) Temporary operation of equipment to employer's requirements

(3) Fuels and water required for commissioning

3 Setting all drainage installations and mechanical and electrical services and installations to work after completion of commissioning (initial operation)

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 External enclosing walls above ground level **Definition:** External enclosing walls above ground floor level.	1 External walls: details to be stated. **Note**: Reinforcement rate (kg/m^3) and formwork finish for in-situ concrete walls to be stated.	m^2	C1 The area measured is the area of the external wall, measured on the centre line of the external wall. No deductions for windows or external doors. **Note**: Faceted cladding, or similar external wall constructions, is to be measured flat on elevation, with no allowance for forming facets. The unit rate applied is to allow for the nature of the walling system. C2 Where more than one type of external wall system is employed, the area measured for each external wall system is measured separately.	1 External enclosing walls (i.e. both internal and external skins). 2 Underside of returns in external walls. 3 Parapet walls, including copings and cappings, to roofs formed as part of the external walls. 4 Gable walls formed as part of the wall construction. 5 Chimneys forming part of external walls. 6 Columns and beams in unframed structures. 7 Curtain walling (designed and fixed as an integrated assembly – complete with opening lights, doors, ventilators, and the like).	1 Columns and beams, which form an integral part of the structural frame (included in element 2.1: Frame, as appropriate). 2 Concrete walls, core walls and the like where an integral part of the structural frame (included in sub-element 2.1.4: Concrete frames). 3 Walls provided by framing system such as off-site manufactured timber frames or tunnel form (included in element 2.1: Frame). 4 Roof structures and cladding (included in element 2.3: Roof).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	2 Extra over external walls for plinths, cornices, ornamental bands and the like: details to be stated.		C3 Where more than one external wall system is employed, the combined area of each external wall system shall equal the total area of all external wall systems. C4 The area measured for external wall finishes is the surface area of the external wall component to which the finish is to be applied. C5 Other cost significant sub-components, such as decorative masonry or brickwork bands/panels; or cover strips and window boards which form an integral part of internal skins/backing walls to curtain walling systems, cladding systems and the like, are to be measured by area (m^2), linear measurement (m) or enumerated (nr) and identified separately. C6 The length of linear components measured is their extreme length, over all obstructions. C7 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C8 Curved work is to be described and identified separately. C9 Work to existing buildings is to be described and identified separately. C10 Contractor designed work is to be described and identified separately. **Note:** Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	8 Structural glazing assemblies and the like (i.e. glazing that forms an integral part of a cladding system). 9 Profiled sheet cladding systems, including cladding rails and the like. 10 Photovoltaic glazing or cladding panels where an integral part of a curtain walling system, or structural glazing assemblies or profiled sheet cladding systems. 11 Opening vents and panels to curtain walling system, or structural glazing assemblies or profiled sheet cladding systems. 12 Integral blinds to windows curtain walling system or structural glazing assemblies. 13 Safety barriers, handrails or combined balusters and handrails to facetted glazing or cladding systems. 14 Rigid sheet cladding systems, including support framework. 15 Projecting fins to cladding systems, including any applied artwork. 16 Panelled walling systems, including panels to a frame structure. 17 Internal skins/backing walls to curtain walling systems, cladding systems, walling systems and the like, including window boards, cover strips and the like. 18 Concrete walls, including reinforcement and formwork. 19 Masonry walls (i.e. brickwork, blockwork and stonework), including forming cavities, wall ties, thermal insulation and the like. 20 Plinths, cornices, ornamental bands and quoins which are formed with a different material from general wall. 21 Lightweight steel frame systems, including cladding and insulation.	5 Gable ends, internal walls and chimneys above plate level formed as part of the roof construction (included in element 2.3: Roof). 6 Windows and doors (included in element 2.6: Windows and external doors). 7 Applied finishes to inner faces of external walls, including dry lining systems (included in sub-element 3.1.1: Finishes to walls). 8 False ceilings and demountable suspended ceilings forming external soffits (included in sub-element 2.5.4: External soffits). 9 Applied finishes to external soffits (included in sub-element 2.5.4: External soffits). 10 Retaining walls to basements (included in element 1.3: Basement retaining walls, as appropriate). 11 Walls to roof enclosures designed solely to conceal plant, tank rooms, and the like (included in sub-element 2.3.6: Roof features). 12 Walls and railings to external walkways and balconies built of the upper floor construction (included in sub-element 2.5.5: Subsidiary walls, balustrades, handrails, railings and proprietary balconies). 13 Blinds and blind boxes which are not an integral part of the window system (included in sub-element 4.1 (General fittings and equipment). 14 Railings to parapet walls (included in sub-element 2.5.5: Subsidiary walls, balustrades, handrails, railings and proprietary balconies). 15 Work in retaining facades to existing buildings (included in sub-element 7.4.1: Facade retention). 16 Common user access scaffolding (included in group element 10: Main contractor's preliminaries).
	3 Extra over external walls for quoins: details to be stated.	m			
	4 Extra over external walls for forming openings for windows: details, including overall size of opening (mm), to be stated.	nr			
	5 Extra over external walls for forming openings for external doors: details, including overall size of opening (mm), to be stated.				
	6 Extra over cladding or curtain walling system for integral photovoltaic panels: details, including overall size of opening (mm), to be stated.				
	7 Extra over cladding or curtain walling system for integral opening vents and panels: details, including purpose of opening and overall size of opening (mm), to be stated.	nr/m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	8 Projecting fins to cladding or curtain walling system: details, including overall size of panel (mm), to be stated.	nr		22 Thermal insulation, membranes, and the like. 23 Timber and plastic cladding systems (e.g. weatherboarding). 24 Insulating render systems. 25 Finishes applied to external wall (e.g. paint systems, coating systems, ceramic/stone cladding, tiling and other materials. 26 Finishes to underside of returns in external walls. 27 Planted 'green' walls, including protection layer, drainage layer, filter membranes and growing medium. 28 Forming openings in external walls for external windows and external doors, including lintels/beams, head courses, damp-proof courses, cavity trays, closing cavities and all other work to soffits, sills and reveals of openings. 29 Sundry items. 30 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	9 Extra over projecting fins for applied artwork: details to be stated.	item			
	10 Safety barriers, handrails or combined balusters and handrails to facetted glazing or cladding systems: details to be stated.	nr/m			
	11 Finishes applied to external walls: details to be stated.	m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 External enclosing walls below ground level **Definition:** External enclosing walls below ground floor level that are not formed by retaining walls.	1 External walls: details to be stated. **Note**: Reinforcement rate (kg/m^3) and formwork finish for in-situ concrete walls to be stated.	m^2	C1 The area measured is the area of the external wall, measured on the centre line of the external wall. No deductions for windows or external doors. C2 Where more than one type of external wall system is employed, the area measured for each external wall system is measured separately. C3 Where more than one external wall system is employed, the combined area of each external wall system shall equal the total area of all external wall systems. C4 The area measured for external wall finishes is the surface area of the external wall component to which the finish is to be applied. C5 Other cost significant sub-components, such as cover strips and window boards which form an integral part of internal skins/backing walls to curtain walling systems, cladding systems and the like, are to be measured by area (m^2), linear measurement (m) or enumerated (nr) and identified separately. C6 The length of linear components measured is their extreme length, over all obstructions. C7 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C8 Curved work is to be described and identified separately. C9 Work to existing buildings is to be described and identified separately. C10 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 External basement walls below ground floor level not in contact with earthwork or part of an embedded retaining wall construction (i.e. not retaining walls). 2 External enclosing walls (i.e. both internal and external skins). 3 Underside of returns in external walls. 4 Parapet walls, including copings and cappings, to roofs formed as part of the external walls. 5 Gable walls formed as part of the wall construction. 6 Chimneys forming part of external walls. 7 Columns and beams in unframed structures. 8 Curtain walling (designed and fixed as an integrated assembly – complete with opening lights, doors, ventilators, and the like). 9 Structural glazing assemblies and the like (i.e. glazing that forms an integral part of a cladding system). 10 Profiled sheet cladding systems, including cladding rails and the like. 11 Photovoltaic glazing or cladding panels where an integral part of a curtain walling system, or structural glazing assemblies or profiled sheet cladding systems. 12 Rigid sheet cladding systems, including support framework. 13 Panelled walling systems, including panels to a frame structure. 14 Internal skins/backing walls to curtain walling systems, cladding systems, walling systems and the like, including window boards, cover strips and the like. 15 Concrete walls, including reinforcement and formwork.	1 Basement excavation (included in element 1.1.4: Basement excavation). 2 Temporary or permanent support to the excavation, e.g. caissons, sheet piling, continuous piling, and the like (included in element 1.2: Basement excavation). 3 Basement wall construction, where wall in contact with earthwork (included in element 1.1.4: Basement excavation). 4 Embedded basement retaining wall construction (included in sub-element 1.1.5: Basement retaining walls). 5 Columns and beams, which form an integral part of the structural frame (included in element 2.1: Frame, as appropriate). 6 Concrete walls, core walls and the like where an integral part of the structural frame (included in sub-element 2.1.4: Concrete frames). 7 Walls provided by framing system such as off-site manufactured timber frames or tunnel form (included in element 2.1: Frame). 8 Applied finishes to inner faces of external walls including dry lining systems (included in sub-element 3.1.1: Finishes to walls).
	2 Extra over external walls for plinths, cornices, ornamental bands and the like: details to be stated.	m			
	3 Extra over external walls for quoins: details to be stated.				
	4 Extra over external walls for forming openings for windows: details, including overall size of opening (mm), to be stated.	nr			
	5 Extra over external walls for forming openings for external doors: details, including overall size of opening (mm), to be stated.				
	6 Finishes to external walls: details to be stated.	m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				16 Masonry walls (i.e. brickwork, blockwork and stonework), including forming cavities, wall ties, thermal insulation and the like. 17 Plinths, cornices, ornamental bands and quoins which are formed with a different material from general wall. 18 Lightweight steel frame systems, including cladding and insulation. 19 Thermal insulation, membranes, and the like. 20 Timber and plastic cladding systems (e.g. weatherboarding). 21 Insulating render systems. 22 Finishes applied to external wall (e.g. paint systems, coating systems, ceramic/stone cladding, tiling and other materials. 23 Finishes to underside of returns in external walls. 24 Planted 'green' walls, including protection layer, drainage layer, filter membranes and growing medium. 25 Forming openings in external walls for external windows and external doors, including lintels/beams, head courses, damp-proof courses, cavity trays, closing cavities and all other work to soffits, sills and reveals of openings. 26 Sundry items. 27 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Solar/rain screening **Definition:** Cladding systems and the like attached to the exterior of the building to protect the external walls.	1 Vertical solar/rain screening: details, including projection (mm), to be stated.	m^2	C1 The area measured is the area of the overcladding system. C2 Where more than one type of overcladding system is employed, the area for each overcladding system is measured. C3 The length of linear components measured is their extreme length, over all obstructions. C4 Curved work is to be described and identified separately. C5 Work to existing buildings is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Vertical and horizontal exterior overcladding systems, including support system. 2 'Brise Soleil' and the like, including support systems. 3 Sundry items. 4 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 External shutters, integral to blinds to windows, canopies and the like, providing protection to windows and doors (included in element 2.6: Windows and external doors).
	2 Horizontal solar/rain screening: details to be stated.	m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 External soffits **Definition:** External false ceilings and demountable suspended ceilings which form an integral part of the building envelope.	1 External soffit: details to be stated.	m^2	C1 The area measured for each type of external soffit is the surface area of the soffit to which the finish is to be applied. C2 The area measured for each type of finish applied to external soffits is the surface area of the soffit to which the finish is to be applied. C3 The length of linear components measured is their extreme length, over all obstructions. C4 Other cost significant components to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Curved work is to be described and identified separately. C7 Work to existing buildings is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 In-situ/board ceilings, including soffit linings and battens, fixed direct to underside of upper floor construction. 2 Demountable suspended ceiling systems, including suspension system. 3 Insulation fixed direct to underside of upper floor construction or laid on soffit construction. 4 In-situ coatings applied to false ceilings (e.g. plaster skim coats, render, roughcast, and specialist coatings). 5 Painting and decorating to false ceilings. 6 Cornices, covings and the like. 7 Shadow gaps and the like, including painting. 8 Access hatches and the like in external soffit construction. 9 Sundry items. 10 Where works are to be carried out by a subcontractor, *subcontractor's* preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 False ceilings to internal ceilings (included in sub-element 3.3.2: False ceilings). 2 Applied finishes to internal false ceilings (included in sub-element 3.3.1: Finishes to ceilings). 3 Demountable suspending ceilings to internal ceilings (included in sub-element 3.3.3: Demountable suspended ceilings).
	2 Cornices, covings and the like: details to be stated.	m			
	3 Shadow gaps and the like: details to be stated.				
	4 Access hatches and the like: details to be stated.	nr			
	5 Finishes applied to external soffits: details to be stated.	m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
5 Subsidiary walls, balustrades and proprietary balconies **Definition:** Subsidiary components which form an integral part of the building envelope.	1 Walls: details to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Where more than one type of component is employed, each component is measured. C4 Other cost significant components to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C5 Curved work is to be described and identified separately. C6 Work to existing buildings is to be described and identified separately. C7 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the rainwater drainage installation. A single combined percentage addition can be applied to cover the costs of both testing and commissioning. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Low level or dwarf walls, balustrades, handrails and railings to external walkways and balconies built off the upper floor construction, which form an integral part of the building envelope (e.g. to provide walkway between external enclosing wall and edge of upper floor construction), including walls forming planters. 2 Walls forming planters, including protection layer, drainage layer, filter membranes and growing medium. 3 Wall handrails. 4 Combined balustrades and handrails. 5 Railings and barriers to tops of parapet walls. 6 Proprietary bolt-on balconies (e.g. 'Juliet' balconies). 7 Surface water drainage from external walkways and the like attached to building to first underground drain connection or gully, including floor outlets. 8 All work, materials, components and the like required to construct subsidiary components. 9 Testing and commissioning of above ground surface water drainage systems. 10 Sundry items. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for *subcontractor's* preliminaries, design fees, risk allowance, overheads and profit.	1 Surface water drainage beyond the first underground drain connection or gully (included in sub-element 8.6.1: Surface water and foul water drainage). 2 Internal and external balconies which are an integral part of the upper floor construction (included in element 2.2: Upper floors, as appropriate).
	2 Walls forming planters: details to be stated.				
	3 Combined balustrades and handrails: details to be stated.				
	4 Wall mounted handrails: details to be stated.				
	5 Parapet railings: details to be stated.				
	6 Proprietary bolt-on balconies: details to be stated.				
	7 Rainwater pipes: details to be stated.	nr			
	8 Floor outlets: details to be stated.				
	9 Testing of rainwater drainage installation.	%			
	10 Commissioning of rainwater drainage installation.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
6 Facade access/cleaning systems **Definition:** Systems for accessing and cleaning facades.	1 Facade cleaning systems: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Window and facade cleaning trolley/cradles (including twin track, manual and automatic systems). 2 Combined facade and roof cleaning systems. 3 Building maintenance units (BMU). 4 Other facade access systems. 5 Builder's work in connection with facade access/cleaning systems. 6 Testing and commissioning of facade access/cleaning systems. 7 Sundry items. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Separate access systems for cleaning roof (included in sub-element 2.3.6: Roof features). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 2.6: Windows and external doors

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 External windows **Definition:** Windows and openings in external walls for ventilation and light.	1 Windows: details, including overall size of opening (mm), to be stated.	m^2	C1 Where the area of the component is to be measured, the area measured is the area of the component measured over frames. C2 Where more than one type of component is employed, each component is measured. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C4 Curved work is to be described and identified separately. C5 Work to existing buildings is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Windows, including opening lights, fixed lights, frames, linings, window boards, cover trims. Ironmongery and glazing. 2 Windows to dormers. 3 Louvered windows and panels. 4 External shop fronts, including temporary shop fronts. 5 Roller shutters, sliding shutters, grilles and the like providing security or protection to windows and shop fronts. 6 Fly screens and storm windows. 7 Integral blinds to windows. 8 Solar/rainscreen overcladding systems to windows. 9 Photovoltaic glazing where an integral part of window system. 10 Canopies and the like providing protection to windows and shop fronts, including any associated surface water drainage. 11 Protective film applied to windows. 12 External blinds, shutters and like. 13 Window boards, trims and the like, including those which are not an integral part of the window unit. 14 Painting and decorating. 15 Sundry items. 16 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Forming openings for external windows, shop fronts, roller shutters and the like (included in sub-element 2.5.1: External walls above ground floor level or 2.5.2: External walls below ground floor level, as appropriate). 2 Construction of and coverings to dormer windows (included in sub-elements 2.3.1: Roof structure and 2.3.2: Roof coverings). 3 Glazing that forms an integral part of a cladding system, e.g. structural glazing and curtain walling (included in element 2.5: External walls, as appropriate). 4 Integral blinds to curtain walling systems or structural glazing assemblies (included in sub-element 2.5.1 External enclosing walls above ground). 5 Blinds and blind boxes which are not an integral part of the window system (included in sub-element 4.1 (General fittings and equipment). 6 Roller shutters, sliding shutters, grilles and the like, where performing the function of an external door (included in sub-element 2.6.2 External doors). 7 Solar/rainscreen cladding to external walls (included in sub-element 2.5.3: Solar/rain screening).
	2 Louvers: details, including overall size of opening (mm), to be stated.				
	3 Shop fronts: details, including overall size of opening (mm), to be stated.				
	4 Roller shutters, sliding shutters, grilles and the like to window openings: details, including overall size of opening (mm), to be stated.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 External doors **Definition:** Doors and openings in external enclosing walls.	1 External doors: details, including type, number of door leaves (nr), size of each door leaf (mm) and overall size of opening (mm), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where the area of component is to be measured, the area measured is the area of the component measured over frames. C3 The length of linear components measured is their extreme length. C4 Where more than one type of component is employed, each component is measured. C5 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C6 Curved work is to be described and identified separately. C7 Work to existing buildings is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Entrance doors, door frames, door linings, door sets. Including solid, glazed and partially glazed doors, louver doors, and the like. Proprietary and purpose-made. 2 Entrance screens and doors, including frames. 3 Revolving doors. 4 Patio doors. 5 Garage doors. 6 Rolling and sliding shutters, including integral access doors. 7 External shop front doors. 8 Manual and automatic doors. 9 Canopies and the like, providing protection to external doors, including any associated surface water drainage. 10 Grilles (fixed and folding) and the like providing security or protection to doors. 11 Fanlights, sidelights and side panels integral to external door. 12 Architraves. 13 Ironmongery, including door closers, panic locks and the like. 14 Glazed vision panels. 15 Painting and decorating. 16 Fly screens and storm doors. 17 Integral blinds to doors. 18 Solar/rainscreen overcladding to doors. 19 Canopies and the like, providing protection to doors. 20 Sundry items. 21 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Forming openings for external doors, shop front doors, roller shutters and the like (included in sub-element 2.5.1: External walls above ground floor level or 2.5.2: External walls below ground floor level, as appropriate). 2 Enclosed porches. To be broken down into the appropriate constituent sub-elements and measured in accordance with the appropriate measurement rules. 3 Canopies to external areas (included in sub-element 8.8.3: Ancillary buildings and structures). 4 Blinds and blind boxes which are not an integral part of the glazing (included in sub-element 4.1 (General fittings and equipment).
	2 Revolving doors: details, including overall size of opening (mm), to be stated.				
	3 Shop front doors: details, including type, number of door leaves (nr), size of each door leaf (mm) and overall size of opening (mm), to be stated.				
	4 Roller shutters, sliding shutters and the like to external door openings: details, including overall size of opening (mm), to be stated.				
	5 Garage doors: details, including overall size of opening (mm), to be stated.				
	6 Canopies: details to be stated.				
	7 Grilles: details, including overall size of opening (mm), to be stated.				
	8 Architraves: details to be stated.	m			

Element 2.7: Internal walls and partitions

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Walls and partitions **Definition:** Internal walls and fixed partitions.	1 Internal walls: details, including thickness, to be stated.	m^2	C1 The area measured is the area of internal walls and partitions, measured on the centre line of the internal wall or partition. No deduction is made for door openings, screens or the like. C2 Where more than one type of component is employed, each component is measured. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C4 Curved work is to be described and identified separately. C5 Work to existing buildings is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Internal walls, including full height and low level walls. 2 Fixed partitions, including demountable partition systems. 3 Internal shop fronts and the like, including temporary shop fronts. 4 Columns and beams which are not an integral part of a frame structure. 5 Internal walls in roof formed as part of the wall construction. 6 Walls forming chimneys, stairwells and lift shafts. 7 Walls forming cubicles. 8 Walls forming planters, including protection layer, drainage layer, filter membranes and growing medium. 9 Borrowed lights, glazed screens and the like which are an integral part of internal walls and partitions. 10 Concrete walls, including reinforcement and formwork, which are not an integral part of the structural frame. 11 Masonry walls (i.e. brickwork, blockwork and stonework), including floor and head support systems. 12 Timber stud partitions, including cavity insulation, board linings, filling lining joints. 13 Metal stud partitioning systems, including cavity insulation, board linings, filling lining joints. 14 Glazed partitioning. 15 Thermal insulation and membranes. 16 Cappings to low level internal walls, including timber, stone, tiles and other materials.	1 Internal skin of external walls (included in element 2.5: External walls). 2 Columns and beams, which form an integral part of the structural frame (included in element 2.1: Frame, as appropriate). 3 Concrete walls, core walls and the like where an integral part of the structural frame (included in sub-element 2.1.4: Concrete frames). 4 Walls provided by framing system such as off-site manufactured timber frames or tunnel form (included in element 2.1: Frame). 5 Applied wall finishes to internal walls, including dry lining systems (included in element 3.1.1: Finishes to walls). 6 Cubicles, i.e. proprietary pre-finished panel systems and the like (included in sub-element 2.7.4: Cubicles). 7 Special features built-in internal walls and partitions, e.g. fish tanks (included in sub-element 4.1.4: Works of art).
	2 Extra over internal walls for forming openings in walls for internal doors and the like: details, including overall size of opening (mm), to be stated.	nr			
	3 Fixed partitions: details, including thickness, to be stated.	m^2			
	4 Extra over fixed partitions for forming openings in partitions for internal doors and the like: details, including overall size of opening (mm), to be stated.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				17 Blinds, where an integral part of a proprietary partitioning system. 18 Forming openings for internal doors and the like in internal walls, including work to soffit and reveals of openings. 19 Forming openings for internal doors and the like in internal fixed partitions, including work to soffit and reveals of openings. 20 Sundry items. 21 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
2 Balustrades and handrails **Definition:** Internal balustrades, handrails and other fixed non-storey height divisions.	1 Combined balustrades and handrails: details to be stated.	m	C1 The length of linear components measured is their extreme length. C2 Where more than one type of component is employed, each component is measured. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C4 Curved work is to be described and identified separately. C5 Work to existing buildings is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Balustrades and handrails to interior atriums, access walkways, galleries and the like, including off-site and on-site applied coating and paint systems. 2 Sundry items. 3 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Handrails fixed to walls (included in *group* element 4: Fittings, furnishings and equipment). 2 Balustrades and handrails to stairs and staircases (included in sub-element 2.4.3: Stair/ramp balustrades and handrails). 3 Safety barriers, handrails or combined balusters and handrails to facetted glazing or cladding systems (included in sub-element 2.5.1: External enclosing walls above ground level).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Moveable room dividers **Definition:** Moveable partitions intended to divide rooms into smaller spaces.	1 Moveable room dividers and partitions: details, including height (in m), to be stated.	m	C1 The length of linear components is their extreme length. C2 Where more than one type of component is employed, each component is measured. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C4 Curved work is to be described and identified separately. C5 Work to existing buildings is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Moveable room dividers and partitions, including frames, linings, ironmongery, architraves, cover trims and the like. Proprietary and purpose made. 2 Off-site and on-site applied coating and paint systems. 3 Sundry items. 4 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Sliding/folding doors forming an integral part of an internal wall or fixed partitions (included in element 2.8: Internal doors).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Cubicles **Definition:** Proprietary pre-finished panels, assembled to form cubicles, complete with doors.	1 Cubicles: details to be stated. 2 Fixed partitions: details, including thickness, to be stated.	nr/m/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length. C3 The area measured is the area of moveable room dividers and partitions. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C5 Curved work is to be described and identified separately. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Proprietary pre-finished panel cubicles (e.g. toilet and changing) and the like, including doors, trims, cover strips, ironmongery and fittings forming an integral part of the cubicle. 2 Sundry items. 3 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Internal walls and partitions performing as cubicles (included in sub-element 2.7.1: Walls and partitions and element 2.8: Internal doors, as appropriate).

Element 2.8: Internal doors

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Internal doors **Definition:** Doors, hatches, shutters and grilles and other openings in internal walls and partitions.	1 Internal doors: details, including type, number of door leaves (nr), size of each door leaf (mm), and overall size of opening (mm), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where more than one type of component is employed, each component is measured. C3 Cost significant sub-components are to be described and measured linear (m) or enumerated (nr) separately, as appropriate. C4 The length of linear components measured is their extreme length. C5 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Doors, including standard doors, purpose made doors, full-height doors and fire resisting doors. 2 Frames, linings, architraves, stops and the like. 3 Door sets. 4 Fanlights, over-panels and sidelights and the like, integral to the door set. 5 Glazed vision panels and the like. 6 Sliding and folding doors in fixed partitions. 7 Hatches, including doors, frames, linings, architraves, stops and the like. 8 Internal roller shutters, sliding shutters, grilles and the like, including frames, linings, architraves, stops and the like. 9 Ironmongery. 10 Painting and decorating to internal doors. 11 Sundry items. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Forming openings for doors in internal walls and partitions (included in sub-element 2.7.1: Walls and partitions). 2 Sliding and folding partitions (included in sub-element 2.7.3: Moveable room dividers).
	2 Fire resisting doors: details, including type, number of door leaves (nr), fire rating (hours), size of each door leaf (mm), and overall size of opening (mm), to be stated.				
	3 Door sets: details, including type, number of door leaves (nr), size of each door leaf (mm), and overall size of opening (mm), to be stated.				
	4 Composite door and sidelights/over panel units: details, including type, number of door leaves (nr), size of each door leaf (mm), and overall size of opening (mm), to be stated.				
	5 Roller shutters, sliding shutters, grilles and the like: details, including overall size of opening (mm), to be stated.				
	6 Architraves: details to be stated.	m			

Group element 3: Internal finishes

Group element 3 comprises the following elements:

3.1 Wall finishes

3.2 Floor finishes

3.3 Ceiling finishes

Element 3.1: Wall finishes

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Wall finishes **Definition:** Applied finishes to internal wall surfaces, including specialist wall finishes for sports, public amenities and the like.	1 Finishes to walls and columns: details to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured for each type of wall finish is the surface area of the wall to which the finish is to be applied. No deduction is made for voids (e.g. for door openings, screens or the like). C3 The length of linear components measured is their extreme length, over all obstructions. C4 Painting and decorating of walls to individual rooms within residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C5 Other cost significant components are to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate.	1 In-situ coatings applied to walls (e.g. plaster, render and roughcast). 2 Sprayed monolithic coatings to columns and walls (i.e. to provide fire protection, thermal insulation, condensation control, and acoustic control). 3 Plasterboard or other sheet linings, including fixing systems, joint reinforcing scrim, plaster skim coats, and the like. 4 Ceramic wall tiling. 5 Decorative sheet coverings, including lining paper, decorative paper, vinyl and plastics wall covering and textile wall covering. 6 Painting and decorating. 7 Picture rails, dado rails and the like. 8 Proprietary impact and bumper guards, protection strips, corner protectors and the like. 9 Insulation which provides a wall finish. 10 Applied finishes to columns.	1 Fire protective coatings and paint systems to structural steel frames (included in sub-element 2.1.1: Steel frames). 2 Self finished surfaces (e.g. fair faced blockwork walls, facing bricks, pre-finished partitions and the like (included in element 1.3: Basement retaining walls; element 2.5: External walls or element 2.7: Internal walls and partitions, as appropriate). 3 Applied finishes to external face of external walls (included in element 2.5: External walls, where appropriate). 4 Structural screeds (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction or element 2.2: Upper floors, as appropriate).
	2 Picture rails, dado rails and the like: details to be stated.	m			
	3 Proprietary impact and bumper guards, protection strips, corner protectors and the like: details to be stated.	nr/m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
			C6 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C7 Curved work is to be described and identified separately. C8 Work to existing buildings is to be described and identified separately. C9 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	11 Wall finishes to staircase areas/stairwells. 12 Specialist wall finishes. 13 Sundry items. 14 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 3.2: Floor finishes

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Finishes to floors **Definition:** Applied finishes to floor surfaces. Including specialist floors to sports facilities, public amenities and the like.	1 Finishes to floors: details to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured for each type of floor finish is the surface area of the floor to which the finish is to be applied. C4 The area measured for finishings to swimming pool tanks is the area of the swimming pool on plan, measured to the internal face of the swimming pool walls. C5 Other cost significant components are to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate. C6 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item.	1 Non-structural screeds, including under screed damp-proof membranes. 2 Latex screeds (i.e. levelling screeds). 3 Chemical surface hardeners and sealers applied to screeds. 4 Floating floors. 5 Resin-bonded resilient layers. 6 In-situ floor finishes (e.g. granolithic and terrazzo). 7 Tiled floor finishes (e.g. stone, quarry, ceramic and mosaic tiles). 8 Wood block flooring, composition block flooring, parquet flooring and the like. 9 Proprietary thin tiled and strip flooring, blockwood flooring and the like. 10 Floor painting and sealing. 11 Edge fixed carpeting, including underlay, rods, grippers, edgings, and cover and threshold strips.	1 Fire protective coatings and paint systems to structural steel frames (included in sub-element 2.1.1: Steel frames). 2 Structural screeds (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction or element 2.2: Upper floors, as appropriate). 3 Finishes to stair treads and risers (included in sub-element 2.4.2: Stair/ramp finishes). 4 Finishes to floor surfaces integral with the floor construction, e.g. timber board flooring, timber strip/board fine flooring (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction or element 2.2: Upper floors, as appropriate). 5 Floor coverings and skirtings which form an integral part of a proprietary raised access floor system (included in sub-element 3.2.2: Raised access floors).
	2 Specialist flooring systems: details to be stated.				
	3 Skirtings and the like: details to be stated.	m			
	4 Mat wells and mats: details to be stated.	nr			
	5 Finishes to swimming pool tanks, including tank linings: details to be stated.	m^2			
	6 Line markings: details to be stated.	m			
	7 Numeral and symbols: details to be stated.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
			C7 Curved work is to be described and identified separately. C8 Work to existing buildings is to be described and identified separately. C9 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	12 Fixed flexible and semi-flexible tile and sheet coverings (e.g. carpet, vinyl, rubber, PVC, thermoplastic, cork, linoleum and antistatic flooring). 13 Timber sprung floors to sports halls, squash courts and the like. 14 Specialist floor covering systems. 15 Finishes to swimming pool tanks, including tank linings. 16 Floor finishes to internal and external balconies. 17 Skirtings. 18 Mat wells and mats. 19 Line markings, numerals, letters, symbols and the like (e.g. surface markings to denote car park spaces in basement car park). 20 Sundry items. 21 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
2 Raised access floors **Definition:** Platform floors or dry construction, raised above the structural floor to create space for the distribution of services.	1 Raised access floor systems: details to be stated.	m^2	C1 The area measured for each type of raised access floor system is the surface area of the floor to which the finish is to be applied. C2 The length of linear components measured is their extreme length, over all obstructions.	1 Proprietary raised access floor systems, including adjustable pedestals/supports, floor panels, ventilation and access panels, cavity fire barriers, air plenum barriers, outlet boxes and trunking, skirtings/edge trims which form part of the proprietary system, risers and nosings at changes of level, adhesives, bearing pads and shims.	1 Floating floors (included in sub-element 3.2.1: Finishes to floors). 2 Floor covering, skirtings and the like, which are not an integral part of the raised access floor system (included in sub-element 3.2.1: Finishes to floors).
	2 Skirtings and the like: details to be stated.	m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
			C3 Other cost significant components are to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate. C4 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C5 Curved work is to be described and identified separately. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	2 Floor coverings/finishes (i.e. where factory bonded or mechanically fixed on site). 3 Sundry items. 4 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 3.3: Ceiling finishes

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Finishes to ceilings **Definition:** Applied finishes to ceiling surfaces, including specialist ceiling finishes to sports facilities, public amenities and the like.	1 Finishes to ceilings: details to be stated.	m^2	C1 The area measured for each type of ceiling finish is the surface area of the ceiling/soffit to which the finish is to be applied. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Painting and decorating of ceilings to individual rooms within residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Other cost significant components are to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Curved work is to be described and identified separately. C7 Work to existing buildings is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Linings to ceilings (e.g. dry lined plasterboard ceilings, pre-finished sheets, timber boarding and the like). 2 Linings to sides and soffits of beams, bulkheads and the like. 3 In-situ coatings applied to ceilings (e.g. plaster skim coat, render, roughcast, and specialist coatings). 4 Sprayed monolithic coatings to beams and ceilings (i.e. to provide fire protection, thermal insulation, condensation control, and acoustic control). 5 Painting and decorating to ceilings. 6 Cornices, covings and the like. 7 Specialist ceiling finishes. 8 Sundry items. 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 False ceilings (included in sub-element 3.3.2: False ceilings). 2 Applied finishes to false ceilings (included in sub-element 3.3.2: False ceilings). 3 Demountable suspending ceilings (included in sub-element 3.3.3: Demountable suspended ceilings). 4 Finishes to soffits of staircases, including soffits of landings between floors (included in sub-element 2.4.2: Stair/ramp finishes). 5 Fire protective coatings and paint systems to structural steel frames (included in sub-element 2.1.1: Steel frames). 6 Applied finishes to external soffits (included in sub-element 2.5.4: External soffits).
	2 Cornices, covings and the like: details to be stated.	m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 False ceilings **Definition:** False ceilings comprising soffit linings on battens and the like fixed direct to underside of slabs, not demountable, including specialist false ceilings to sports facilities, public amenities, and the like.	1 False ceilings: details to be stated.	m^2	C1 The area measured for each type of false ceiling is the surface area of the ceiling/soffit to which the finish is to be applied. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Painting and decorating of walls to individual rooms within residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Other cost significant components are to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Curved work is to be described and identified separately. C7 Work to existing buildings is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 In-situ/board ceilings, including soffit linings, battens, support framework or suspension system, fixed direct to underside of upper floor construction. 2 Insulation fixed direct to underside of upper floor construction or laid on false ceiling. 3 In-situ coatings applied to false ceilings (e.g. plaster skim coats, render, roughcast, and specialist coatings). 4 Painting and decorating to false ceilings. 5 Cornices, covings and the like. 6 Shadow gaps and the like, including painting. 7 Access hatches and the like in false ceilings. 8 Sundry items. 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Demountable suspending ceilings (included in sub-element 3.3.3: Demountable suspended ceilings). 2 Finishes to soffits of staircases, including soffits of landings between floors (included in sub-element 2.4.2: Stair/ramp finishes). 3 Fire protective coatings and paint systems to structural steel frames (included in sub-element 2.1.1: Steel frames). 4 False ceilings to external soffits (included in sub-element 2.5.4: External soffits).
	2 Cornices, covings and the like: details to be stated.	m			
	3 Access hatches and the like: details to be stated.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Demountable suspended ceilings **Definition:** False ceilings of dry construction comprising a membrane of tiles, panels and trays supported by exposed or concealed suspended grids. Including specialist false ceilings to sports facilities, public amenities and the like.	1 Demountable suspended ceilings: details to be stated.	m^2	C1 The area measured for each type of demountable suspended ceiling is the surface area of the ceiling/soffit to which the finish is to be applied. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate. C4 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C5 Curved work is to be described and identified separately. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Proprietary suspended ceiling systems, including suspension systems. 2 Integrated ceiling systems, including suspension systems. 3 Acoustic suspended ceiling systems, including suspension systems. 4 Specialist suspended ceiling systems, including suspension systems. 5 Insulation fixed direct to underside of upper floor construction or laid on suspended ceiling system. 6 Shadow gaps and the like, including painting. 7 Access hatches in suspended ceilings and the like. 8 Sundry items. 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 False ceilings (included in sub-element 3.3.2: False ceilings). 2 Finishes to soffits of staircases, including soffits of landings between floors (included in sub-element 2.4.2: Stair/ramp finishes). 3 Fire protective coatings and paint systems to structural steel frames (included in sub-element 2.1.1: Steel frames). 4 Demountable suspended ceilings to external soffits (included in sub-element 2.5.4: External soffits).
	2 Shadow gaps and the like: details to be stated.	m			
	3 Access hatches and the like: details to be stated.	nr			

Group element 4: Fittings, furnishings and equipment

Group element 4 comprises the following elements:

4.1 Fittings, furnishings and equipment

Element 4.1: Fittings, furnishings and equipment

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 General fittings, furnishings and equipment **Definition:** Furnishings, fittings and equipment fixed to the building fabric or provided loose within the building.	1 Fittings: details to be stated. 2 Furnishings: details to be stated. 3 Equipment: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Counters, desks, benches and worktops. 2 Mirrors, which are not an integral part of wall finishes, furnishings, fittings and equipment. 3 Curtains, curtain track, rails, pelmets and the like. 4 Blinds and blind boxes which are not an integral part of the window system. 5 Fire place surrounds and hearths. 6 Wall hangings. 7 Loose carpets. 8 Storage racks, shelves, shelving support systems and the like. 9 Tables and chairs. 10 Fitted seating, upholstery. 11 Bedroom furniture, including beds, divans, wardrobes, dressers, vanity units, cupboards, cabinets, drawer units and the like. 12 Bathroom furniture, including vanity units, cupboards, and the like. 13 Lockers, hat and coat rails and the like.	1 Special purpose fittings, furnishings and equipment (included in sub-element 4.2.1: Special purpose fittings, furnishings and equipment). 2 Domestic kitchen fittings and equipment (included in sub-element 4.1.2: Domestic kitchen fittings and equipment). 3 Mirrors, which are an integral part of wall finishes, e.g. wall tiling (included in sub-element 3.1.1: Finishes to walls). 4 External blinds, shutters and like (included in sub-element 2.6.1: External windows). 5 Integral blinds to windows and internal partitions (included in sub-element 2.6.1: External windows or sub-element 2.7.1: Walls and partitions). 6 Automated curtains and blinds (included in sub-element 5.13.4: Specialist electrical/electronic/installations/systems). 7 Ironmongery to windows and doors (included in sub-element 2.6.1: External windows or element 2.8: Internal doors, as appropriate).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				14 Hand-held fire fighting equipment, including fire extinguishers, fire blankets and the like, and including backboards, fixings, and the like. 15 Bins, wheelie bins, continental bins and the like. 16 Safes, including building into structure. 17 Vacuum cleaners, cleaning equipment. 18 Televisions, hi-fi and computers. 19 Vending machines. 20 Telephone booths and enclosures (internal). 21 Other general purpose fittings and furnishings. 22 Delivery, unpacking, sorting, checking all components, assembling, fixing in position (including all bolts and other fixing devices). 23 Sundry items. 24 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	8 Ironmongery to cubicles (included in sub-element 2.7.4: Cubicles). 9 Sanitary appliances and fittings (included in element 5.1: Sanitary appliances, as appropriate). 10 Mat wells and mats (included in sub-element 3.2.1: Finishes to floors). 11 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Domestic kitchen fittings and equipment **Definition:** Domestic kitchen units and equipment of all kinds.	1 Kitchen units: details to be stated. 2 Kitchen appliances: details to be stated. 3 Waste bins, towel rails, storage racks and other accessories: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	Domestic kitchen units and equipment of all kinds, including: 1 Kitchen units, including base units, drawer units, worktops, cupboards and the like. 2 Sinks, taps, waste fittings, waste disposal units where supplied as part of the kitchen fitting installation. 3 Ovens, cookers, hobs, grill, microwaves and the like. 4 Refrigerators, freezers and the like. 5 Dishwashers. 6 Clothes washing machines, clothes dryers, ironing cabinets and the like. 7 Waste bins, towel rails, storage racks and other accessories. 8 Kitchen equipment suites comprising any combination of the foregoing. 9 Other kitchen fittings and equipment. 10 Delivery, unpacking, sorting, checking all components, assembling, fixing in position (including all bolts and other fixing devices). 11 Sundry items. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Catering equipment (included in element 5.2: Services equipment). 2 Sinks not supplied as part of the kitchen fitting installation (element 5.2: Services equipment). 3 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Special purpose fittings, furnishings and equipment **Definition:** Furnishings, fittings and non-mechanical or non-electrical equipment fixed to the building fabric or provided loose within the building. 'Special' in the sense that they are designed for the particular purpose(s) of the building and are likely to be obtained from a specialist supplier or specialist contractor for use within the building.	1 Fittings: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	Furnishings, fittings and non-mechanical or non-electrical equipment fixed to the building fabric or provided loose within the building. 'Special' in the sense that they are designed for the particular purpose(s) of the building and are likely to be obtained from a specialist supplier or specialist contractor for use within the building, including: 1 Furnishings, fittings and equipment designed distinctly for a particular type of building, such as: – hospitals, dentist, medical, welfare and animal welfare buildings. – entertainment buildings, community centres and clubs, including bars. – sports buildings, swimming pools, marinas and stadia. – religious and funerary buildings, including seating. – educational buildings, including workbenches, blackboards and gymnasia equipment. – scientific research buildings, including laboratory workbenches – special residential buildings, hotels and elderly care homes. – rail road, water and air transport buildings and terminals. – agricultural, fishing and forestry buildings. – communications, power supply, mineral supply and water supply buildings. – laundry. – factories, industrial buildings for food, drink, chemicals, engineering, textiles and the like – shops, showrooms, stores, shopping centres and warehouses.	
	2 Furnishings: details to be stated.				
	3 Equipment: details to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				– defence, police, prison and fire service buildings – restaurants, snack bars and public houses. – libraries, record offices, museums, galleries and zoos. 2 Other special purpose fittings, furnishings and equipment. 3 Delivery, unpacking, sorting, checking all components, assembling, fixing in position (including all bolts and other fixing devices). 4 Sundry items. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Signs/notices **Definition:** Directories, notice boards, letters, signs, plaques, symbols and emblems of all kinds for identification and directional purposes within or attached to the building.	1 Component: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	Directories, notice boards, letters, signs, plaques, symbols and emblems of all kinds for identification and directional purposes within or attached to the building, including: 1 Directional signboards. 2 Notice boards, white boards and the like. 3 Sign writing. 4 Shop front lettering, emblems and symbols. 5 Door or floor numbering or lettering. 6 Nameplates, plaques and identification symbols. 7 Lettering, emblems and other identification/directional symbols carved into stone. 8 Delivery, unpacking, sorting, checking all components, assembling, fixing in position (including all bolts and other fixing devices). 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Illuminated display signs, lettering, emblems and symbols for information purposes, advertising and the like (included in sub-element 5.8.4: Specialist lighting installations). 2 Identification labelling and colour coding of services installations and systems (included in element 5.14: Builder's work in connection with services).
5 Works of art **Definition:** Objects d'art and other ornamental and decorative features within or attached to the building.	1 Objects d'art and other ornamental features: details to be stated. 2 Decorative features and panels: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C3 Work to existing buildings is to be described and identified separately.	1 Objects d'art and other ornamental features. 2 Decorative features, including panels. 3 Fish tanks, including fish tanks set into internal walls and partitions. 4 Delivery, unpacking, sorting, checking all components, assembling, fixing in position (including all bolts and other fixing devices). 5 Sundry items.	1 Water features, including fountains and waterfalls (included in sub-element 5.13.4: Water features).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
			C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
6 Non-mechanical and non-electrical equipment **Definition:** Non-mechanical and non-electrical equipment for use within or to enter the building.	1 Equipment: details to be stated. 2 Removable ladders and the like: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Removable disabled access equipment. 2 Removable ladders and the like. 3 Other non-mechanical and non-electrical equipment. 4 Delivery, unpacking, sorting, checking all components, assembling, fixing in position (including all bolts and other fixing devices). 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Fixed access and escape ladders, loft ladders and the like (included in sub-element 2.4.4: Ladders/chutes/slides).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
7 Internal planting **Definition**: Natural and artificial planting in internal environments, including containers	1 Plant and shrub beds: details to be stated.	nr/m/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the surface area of planting. C3 Where measured linear, the length measured is the extreme length, over all obstructions. C4 Other cost significant components to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Work to existing buildings is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	Natural and artificial planting in internal environments, including: 1 Internal prefabricated plant and tree containers, including drainage layers, separation layers, capillary matting and wicks, compost, hydro-culture supporting medium and nutrients. 2 Planting container grown plants. 3 Planting shrubs. 4 Planting trees. 5 Plant to containers which are an integral part of the building fabric, including drainage layers, separation layers, capillary matting and wicks, compost, hydro-culture supporting medium and nutrients. 6 Planting containers and the like to roof gardens, including planting. 7 Watering, feeding and maintenance during the defects liability period (or period for rectifying defects, or the maintenance period, as appropriate). 8 Replacement planting. 9 Artificial plants, preserved plants and the like, including fixing medium and covering medium for artificial plants. 10 Sundry items. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Plant containers which are an integral part of the building fabric – construction only (included in sub-element 1.1.5: Basement retaining walls; element 2.5: External walls or element 2.7: Internal walls and partitions, as appropriate). 2 Green roofs and roof gardens, including protection layer, drainage layer, filter membranes and growing medium (included in sub-element 2.3.2: Roof coverings). 3 Planting to green roofs/roof gardens (included in sub-element 2.3.2: Roof coverings).
	2 Plant containers: details to be stated.	nr			
	3 Trees: details to be stated.				
	4 Tree planters: details to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
8 Bird and vermin control **Definition:** Installations and equipment to repel or trap or otherwise control birds or vermin which may be a nuisance or danger to health.	1 Wires, nets, traps and the like: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the surface area to which the coating is to be applied. C3 Other cost significant components are to be described and measured by area (m^2), linear measurement (m) or enumerated (nr) separately, as appropriate. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	Installations and equipment to repel, trap or otherwise control birds or vermin which may be a nuisance or danger to health, including: 1 Wires, nets, traps and the like. 2 Electronic and sonic systems. 3 Bird repellent coatings and the like. 4 Sundry items. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	2 Electronic and sonic system: details to be stated.				
	3 Bird repellent coatings: details to be stated.	m^2			

Group element 5: Services

Group element 5 comprises the following elements:

5.1 Sanitary installations

5.2 Services equipment

5.3 Disposal installations

5.4 Water installations

5.5 Heat source

5.6 Space heating and air conditioning

5.7 Ventilation

5.8 Electrical installations

5.9 Fuel installations

5.10 Lift and conveyor installations

5.11 Fire and lightning protection

5.12 Communication, security and control systems

5.13 Specialist installations

5.14 Builder's work in connection with services

Note: Where testing and commissioning is required to be measured under elements 5.1 to 5.13, the terms shall include the following works:

1 Testing includes:

(1) Testing equipment and consumables

(2) Calibration

(3) Site installation tests

(4) Static testing, including testing records

(5) Performance testing, including performance test records

(6) Fuels required for testing

2 Commissioning, includes:

(1) Commissioning, including preliminary checks, setting systems and installations to work and regulation thereof, and commissioning records

(2) Temporary operation of equipment to employer's requirements

(3) Fuels required for commissioning

3 Setting all mechanical and electrical services and installations to work after completion of commissioning (initial operation)

Element 5.1: Sanitary installations

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Sanitary appliances **Definition:** Appliances for health, hygiene and personal washing, together with their accessories.	1 Sanitary appliance: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 WC pans and cisterns, WC suites, slop hoppers, urinals and cisterns. 2 Sinks, including sinks not supplied as part of the kitchen fitting installation and catering sinks not supplied as part of the catering equipment installation. 3 Wash basins, hand rinse basins, wash fountains. 4 Bidets. 5 Baths, including bath panels and trims. 6 Shower trays. 7 Shower units, including shower heads and hose. 8 Shower booster pumps. 9 Shower valves. 10 Drinking fountains. 11 Taps, including mixer taps, and waste outlet fittings to the appliances. 12 Water saving devices (e.g. cistermiser) 13 Automated controls and sensors. 14 Final connections to sanitary appliances, including: stop cocks and stop taps, and final pipeline connection from stop cocks and stop taps to taps. 15 Sundry items. 16 Testing and commissioning. 17 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Sanitary installations procured as part of prefabricated building, building unit or pod (included in element 6.1: Complete buildings and building units, as appropriate). 2 Sanitary fittings (included in sub-element 5.1.3: Sanitary fittings). 3 Sinks included with domestic kitchen fittings (included in sub-element 4.1.2: Domestic kitchen fittings and equipment). 4 Sinks included with catering equipment (included in sub-element 5.2.1: Services equipment). 5 Waste pipes, fittings and traps (included in sub-element 5.3.1: Foul drainage above ground). 6 Cold water and hot water distribution (included in sub-element 5.4.2: Cold water distribution or sub-element 5.4.3: Hot water distribution). 7 Instantaneous water heaters, including shower heaters, and storage water heaters (included in sub-element 5.4.4: Local hot water distribution). 8 Heated towel rails, where an integral part of a heating system (included in sub-element 5.6.1: Central heating). 9 Bathroom furniture, including vanity units, cupboards, and the like (included in sub-element 4.1.1: General fittings, furnishings and equipment). 10 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Sanitary ancillaries **Definition:** Bathroom, toilet and shower fittings.	1 Fittings: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Shower cubicles, including shower curtains and rails. 2 Bath/shower curtain rails, screens and the like. 3 Grab/support rails. 4 Towel rails and holders not connected to a heating or hot water supply installation. 5 Hand dryers, including final connection to services. 6 Paper towel dispensers, toilet paper holders, waste bins, soap dispensers and holders. 7 Sanitary incinerators (i.e. sanitary towel disposal). 8 Sanitary macerators. 9 Other sanitary fittings. 10 Sundry items. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 5.2: Services equipment

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Services equipment **Definition:** Catering equipment designed for use in provision of food and drink on a communal or commercial scale.	1 Services equipment: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Catering equipment (designed for use in provision of food and drink on a communal or commercial scale). 2 Sinks supplied as an integral part of catering equipment. 3 Food storage equipment. 4 Other free standing or fixed mechanical and electrical equipment to: – hospitals, dentist, medical, welfare and animal welfare buildings – entertainment buildings, community centres and clubs – sports buildings, swimming pools, marinas and stadia – religious and funerary buildings – educational buildings – scientific research buildings – special residential buildings, hotels and elderly care homes – rail, road, water and air transport buildings and terminals – agricultural, fishing and forestry buildings – communications, power supply, mineral supply and water supply buildings – laundry (including: ironing machines, steam presses, tumble driers, washer extractors, and washing machines) – factories, industrial buildings for food, drink, chemicals, engineering, textiles and the like – shops, showrooms, stores, shopping centres and warehouses – defence, police, prison and fire service buildings – restaurants, snack bars and public houses – libraries, record offices, museums, galleries and zoos.	1 Domestic kitchen equipment (included in sub-element 4.1.2: Domestic kitchen fittings and equipment). 2 Sinks, taps, waste fittings, waste disposal units where supplied as part of the kitchen fitting installation (included in sub-element 4.1.2: Domestic kitchen fittings and equipment). 3 Services equipment procured as part of prefabricated building, building unit or pod (included in element 6.1: Complete buildings and building units, as appropriate). 4 Sanitary incinerators and sanitary macerators (included in sub-element 5.1.3: Sanitary fittings). 5 Refuse chutes, incineration plant and the like installation (included in sub-element 5.3.3: Refuse disposal). 6 Cold rooms, including packaged cold rooms, packaged and walk-in freezers (included in sub-element 5.13.3: Specialist refrigeration systems). 7 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				5 Sundry items. 6 Testing and commissioning. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 5.3: Disposal installations

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Foul drainage above ground **Definition:** Piped foul water drainage systems from sanitary appliances, sinks, and kitchen appliances to the first underground drain connection.	1 Drainage to sanitary appliance: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Waste pipes and fittings. 2 Discharge stacks and waste pipes. 3 Ventilating stacks and pipes, including: air admittance devices (AAVs). 4 Traps, access points, rodding eyes, collars and the like. 5 Prefabricated pipeline assemblies. 6 Prefabricated floor channels and gratings, and drains in upper floor construction. 7 Sump pumps and packaged pumps. 8 Sundry items. 9 Testing and commissioning. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Drainage to balconies (included in sub-element 2.2.6: Drainage to balconies). 2 Rainwater disposal systems from roofs (included in sub-element 2.3.4: Roof drainage). 3 Drainage to external walkways attached to buildings (included in sub-element 2.5.5: Subsidiary walls, balustrades, handrails, railings and proprietary balconies). 4 Drainage from surface of ground floor assembly to first manhole beyond the enclosing walls of the building (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction). 5 Floor outlets and prefabricated floor channels and gratings in ground floor construction (included in sub-element 1.4.1: Ground floor slab/bed and suspended floor construction). 6 Construction of pits for sup pumps and packed pumps (included in sub-element 1.1.3: Lowest floor construction). 7 Internal manholes and the like (included in sub-element 1.1.3: Lowest floor construction).
	2 Drainage to services equipment: details to be stated.				
	3 Testing of installations.	%			
	4 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
					8 Drainage from first manhole beyond the enclosing walls of the building (included in sub-element 8.6.1: Surface water and foul water drainage). 9 Rainwater harvesting systems, including collection pipelines (included in sub-element 5.4.2: Cold water distribution or sub-element 8.7.1: Water mains supply, as appropriate). 10 Grey water systems, including collection pipelines (included in sub-element 5.4.2: Cold water distribution or sub-element 8.7.1: Water mains supply, as appropriate). 11 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
2 Chemical, toxic and industrial liquid waste drainage **Definition:** Separate piped waste disposal systems where the waste needs special treatment or separate storage before disposal from appliance or equipment to external face of the external wall to the building.	1 Drainage to appliance or equipment: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Pipelines and fittings, including glass drainage. 2 Traps, access points, rodding eyes, collars and the like. 3 Gullies. 4 Connections tanks and the like. 5 Storage tanks and vessels. 6 Settlement tanks. 7 Effluent treatment plant. 8 Dosing equipment. 9 Sterilisation equipment. 10 Supports integral to the storage tanks and vessels, settlement tanks, or the like (including mountings). 11 Thermal insulation. 12 Connections to equipment. 13 Control components located externally. 14 Monitoring equipment located externally. 15 Painting, anti-corrosion treatments and coating systems to drainage pipelines. 16 Sundry items. 17 Testing and commissioning.	1 Chemical, toxic and industrial liquid waste drainage from external face of the external wall to the building to the point of disposal (included in sub-element 8.6.3: External chemical, toxic and industrial liquid waste drainage). 2 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				18 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
3 Refuse disposal **Definition:** Refuse chutes, incineration plant and the like.	1 Refuse disposal installation: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Refuse input devices. 2 Refuse chutes and ducts. 3 Plant for the compacting/ macerating of refuse ready for collection (including: compactors, bailing machines, and shredding machines). 4 Refuse collection equipment, including bins and continental bins. 5 Incineration plant and ancillaries, including refuse and waste handling equipment, afterburners, proprietary metal chimney and flues, and ash handling equipment. Including gas fired incinerated plant. 6 Paper shredders. 7 Safety devices. 8 Painting/anti-corrosive treatments. 9 Final connections to services. 10 Sundry items. 11 Testing and commissioning. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Sanitary incinerators and sanitary macerators (included in sub-element 5.1.3: Sanitary fittings). 2 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 5.4: Water installations

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Mains water supply **Definition:** Piped water supply systems from point of entry into building to appliance or equipment.	1 Mains water supply: details, including the number of draw-off points (nr), to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the total gross internal floor area (GIFA) of the building, measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Pipelines and pipeline fittings. 2 Valves. 3 Water meters, internal. 4 Rising main to storage tanks. 5 Water meters, where not provided as part of water mains supply installation by the statutory undertaker. 6 Trace heating. 7 Thermal insulation. 8 Sundry items. 9 Testing and commissioning. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Piped water supply systems bringing water from the statutory undertaker's mains to point of entry into building (included in sub-element 8.7.1: Water mains supply). 2 Connections to statutory undertaker's water main (included in sub-element 8.7.1: Water mains supply). 3 Storage tanks (included in sub-element 5.4.2: Cold water distribution). 4 Water meters, where provided as part of water mains supply by the statutory undertaker (included in sub-element 8.7.1: Water mains supply). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning ofinstallations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Cold water distribution **Definition:** – Piped water supply systems to distribute cold water from point of storage to user point. – Internal rainwater harvesting systems and piped water supply systems to distribute cold water from point of storage, including storage tanks, to user point.	1 Cold water distribution: details, including the number of draw-off points (nr), to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Cold water distribution pipelines to sanitary appliances, sinks, equipment and the like, including fittings. 2 Valves. 3 Water saving devices. 4 Taps, where not part of a sanitary appliance or services equipment. 5 Pumps. 6 Pressurisation expansion units. 7 Pressure booster sets. 8 Water storage tanks, and cisterns. 9 Trace heating. 10 Instrumentation and control components to cold water distribution systems. 11 Thermal insulation. 12 Rainwater harvesting systems (internal), including collection pipelines. 13 Grey water collection pipe systems (internal), including collection pipelines. 14 Sundry items. 15 Testing and commissioning. 16 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Taps to sanitary appliances and domestic kitchen sinks (included in sub-element 5.1.1: Sanitary appliances or 4.1.2: Domestic kitchen fittings and equipment, as appropriate). 2 Taps and valves to services equipment (included in sub-element 5.2.1: Services equipment). 3 Water tanks (i.e. header tanks), including cold water distribution to heat source (included in sub-element 5.5.1: Heat source). 4 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Storage tanks: details, including type, material and capacity, to be stated.	nr			
	3 Rainwater harvesting systems: details to be stated.	item			
	4 Testing of installations.	%			
	5 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Hot water distribution **Definition:** Piped water supply systems to distribute hot water to sanitary appliances, sinks, equipment and other appliances and to distribute mixed water to water heaters and equipment.	1 Hot water distribution: details, including the number of draw-off points (nr), to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Hot water distribution pipelines to sanitary appliances, sinks, equipment and the like, including fittings. 2 Valves. 3 Water saving devices. 4 Taps, where not part of a sanitary appliance or services equipment. 5 Pumps (i.e. secondary hot water circulation pumps). 6 Heat exchangers (including: coil type, reheaters and water to water plate heat exchangers). 7 Storage cylinders, calorifiers. 8 Trace heating and frost protection devices. 9 Hot water storage vessels and expansion vessels (including: domestic hot water system (DHWS) calorifiers, hot water system (HWS) cylinders, unvented hot water systems and, hot water calorifiers incorporating load levellers). 10 Immersion heaters. 11 Insulated combination units, with own feed and expansion tank. 12 Water softeners (including: ion exchange plant (commercial and domestic), magnetic water conditioners, and reverse osmosis plant. 13 Instrumentation and control components to hot water distribution systems (including: temperature measurement sensors). 14 Thermal insulation. 15 Sundry items. 16 Testing and commissioning. 17 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Boilers or other heat sources (included in sub-element 5.5.1: Heat source). 2 Distribution pipelines which distribute hot water from the heat source to heat emitters (included in element 5.6: Space heating and air conditioning, as appropriate) 3 Taps to sanitary appliances and domestic kitchen sinks (included in sub-element 5.1.1: Sanitary appliances or 4.1.2: Domestic kitchen fittings and equipment, as appropriate). 4 Taps and valves to services equipment (included in sub-element 5.2.1: Services equipment). 5 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 6 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Local hot water distribution **Definition:** Systems where hot water is generated in the vicinity of the appliance being served.	1 Water heaters: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Instantaneous water heaters (including shower heaters) and storage water heaters, including flue pipes and terminals. 2 Wall or floor mounted, under sink, multipoint, and over sink units. 3 Sundry items. 4 Testing and commissioning. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
5 Steam and condensate distribution **Definition:** Steam distribution and condensate return pipelines to and from services equipment within the building.	1 Steam and condensate distribution: details, including number of draw-off points (nr), to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Steam distribution pipelines to and condensate return pipelines from services equipment, including fittings. 2 Valves, strainers, pressure reducing sets, and the like. 3 Steam reduction stations. 4 Condensate receivers and storage tanks. 5 Condensate pump sets. 6 Steam connection outlets. 7 Taps, where not part of services equipment. 8 Heat exchangers. 9 Storage cylinders, calorifiers. 10 Instrumentation and control components to steam and condensate systems. 11 Thermal insulation. 12 Sundry items. 13 Testing and commissioning. 14 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Steam generators or other heat sources (included in sub-element 5.5.1: Heat source). 2 Taps and valves to services equipment (included in sub-element 5.2.1: Services equipment). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 5.5: Heat source

Sub-element	Component		Measurement rules for components	Included	Excluded
1 Heat source **Definition:** A heat source supplying heat to one or more heating systems.	1 Heat source (nr): details, including output of heat source (kW), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Biomass fuel boiler plant and ancillary items. 2 Gas and oil fired boiler plant and ancillary items, including: LTHW and MTHW gas-fired boilers, wall-hung and floor mounted domestic gas-fired boilers, light commercial gas-fired boilers gas-fired burners (e.g. atmospheric free standing, blown gas burners (modular), and combination atmospheric), gas-fired condensing boilers, duel fuel boilers (gas and oil), gas-fired blow down facilities, oil-fired condensing boilers oil-fired blow down facilities, and pressurisation plant. 3 Coal fired boiler plant and ancillary items, including burners, blow down facilities, coal distribution equipment, ash handling and storage equipment, grit arrestors and pressurisation plant. 4 Electric boiler plant and ancillaries, including electric and electrode boiler, blow down facilities and pressurisation plant. 5 Packaged steam generators and ancillaries, including blow down facilities and pressurisation plant. 6 Waste and wood pellet boiler plant and ancillary items. 7 Central (combined) heat and power (CHP) boiler plant. 8 Heat pumps (including domestic air to water heat pumps). 9 Ground source heating (GSH), including boreholes and all ancillary components (including closed loop and open loop systems). 10 Water or steam mains, pumps, valves and other equipment from district heating systems.	1 Heat distribution and delivery (included in element 5.6: Space heating and air conditioning). 2 Chimneys and flues which are an integral part of the building structure shall be included with the appropriate structural element. 3 Local heat source (included in sub-element 5.6.2: Local heating). 4 Fuel storage (included in sub-element 5.9.2: Fuel storage and piped distribution systems or sub-element 8.7.7: External fuel storage and piped distribution systems, as appropriate). 5 Photovoltaic tiles, panels and the like (included in sub-element 5.8.6: Transformation devices). 6 Wind turbines (included in sub-element 5.8.5: Transformation devices). 7 Solar collectors (included in sub-element 5.8.5: Transformation devices). 8 Local generation equipment for the production of electrical energy, including emergency and or standby generator plant (included in sub-element 5.8.5: Local electricity generation systems). 9 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 10 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component		Measurement rules for components	Included	Excluded
				11 Step down/non-storage calorifiers connected to external heat source. 12 Building mounted solar thermal panels. 13 Other heat sources. 14 Water tanks (i.e. header tanks), and cold water distribution to heat source. 15 Vibration isolation mountings. 16 Instrumentation and control components to heat source. 17 Forced draft fans. 18 Gantries. 19 Chimneys and all types of flues, where not part of the building. 20 Forced draft extract. 21 Sundry items. 22 Testing and commissioning. 23 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 5.6: Space heating and air conditioning

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Central heating **Definition:** Systems where heating is generated at a central point and distributed to the spaces and/or locations being treated.	1 Central heating systems: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Heating systems from, and including everything within, the plant room specifically related to the heating system, excluding the heat source (including domestic heating and hot water systems). 2 Heat distribution pipelines from heat source to heat emitter or other equipment. 3 Heat emission units, such as: – heat emitters – skirting heaters (e.g. natural convectors and perimeter skirting heaters) – radiant strip heater systems – radiator systems – natural convectors – fan convectors – unit heaters – radiators (e.g. cast iron, steel and aluminium). – convector heaters – continuous convectors – Painting radiators. 4 In-screed embedded pipelines (i.e. underfloor heating). 5 Heated ceiling panels. 6 Warm air heating. 7 Convection systems. 8 Fan assisted convection systems including under-floor systems. 9 Cable heating systems. 10 Plenum air heating system. 11 Off-peak heating system, including storage radiators. 12 Distribution pipelines and pipeline fittings. 13 Heated towel rails, where an integral part of a heating system.	1 Heat source (included in element 5.5: Heat source). 2 Electrically operated heaters other than in storage radiator (included in sub-element 5.6.2: Local heating). 3 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 4 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				14 Valves and fittings. 15 Ductwork. 16 Air handling equipment. 17 Grilles, fans, filters and other ancillary components of central heating systems. 18 Plate recuperator. 19 Thermal wheel – rotary heat recuperator. 20 Duct heater battery – electric. 21 Cables. 22 Instrumentation and control components to heating systems. 23 Thermal insulation. 24 Sundry items. 25 Testing and commissioning. 26 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Local heating **Definition:** Systems where heating is generated in or adjacent to the space or location to be treated.	1 Heaters: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Room heaters or fires, with or without boilers (including electric air heaters). 2 Chimneys and all flues, where not part of the building structure (e.g. proprietary chimneys and flue pipes). 3 Instrumentation and control components to heating systems. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Chimneys and flues which are an integral part of the structure shall be included with the appropriate structural element. 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Central cooling **Definition:** Systems where cooling is performed at a central point and distributed to the spaces and/or locations being treated.	1 Central cooling systems: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Chilled beams. 2 Fan coil systems for cooling only. 3 Air based systems – variable air volume (VAV) for cooling only. 4 Variable refrigerant volume (VRV) systems. 5 Chillers and packaged chillers. 6 Central refrigeration plant. 7 Cooling towers. 8 Distribution pipelines and pipeline fittings (including: refrigerant distribution systems and chilled water distribution systems). 9 Cold and treated water feeds (including: central filtration plant). 10 Valves. 11 Pumps (including: air to water heat pumps, water to water heat pumps, and brine to water pumps). 12 Distribution ductwork and ductwork fittings and ancillaries, e.g. supports, hangers, access openings and dampers (control, fire and smoke). 13 Grilles, fans, filters and other ancillary components of central cooling systems. 14 Air handling units (AHUs). 15 Emission units, including fan coil units, chilled beam and the like. 16 Instrumentation and control components to central cooling systems (including relative and absolute humidity systems). 17 Thermal insulation. 18 Sundry items. 19 Testing and commissioning. 20 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 External cooling towers (included in sub-element 8.8.2: Ancillary buildings and structures). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				Note: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
4 Local cooling **Definition:** Systems where cooling is performed in or adjacent to the space or location to be treated.	1 Cooling units: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Local cooling units, including those with remote condensers. 2 Distribution pipelines and pipeline fittings. 3 Valves. 4 Distribution ductwork and ductwork fittings and ancillaries, e.g. supports, hangers, access openings and dampers (control, fire and smoke). 5 Grilles, fans, filters and other ancillary components of local cooling systems. 6 Instrumentation and control components to local cooling systems. 7 Thermal insulation. 8 Sundry items. 9 Testing and commissioning. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
5 Central heating and cooling **Definition:** Combined systems where heating and cooling are performed at a central point and distributed to the spaces and locations being treated.	1 Combined central heating and cooling systems: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Fan coil systems for heating and cooling. 2 Air based systems – variable air volume (VAV) for heating and cooling. 3 Reverse cycle heat pump systems. 4 Chillers, including vapour compression chillers, absorption chillers (run using low-grade waste heat from other industrial processes), solar thermal absorption chillers, and the like. 5 Distribution pipelines and pipeline fittings. 6 Valves. 7 Pumps. 8 Distribution ductwork and ductwork fittings and ancillaries, e.g. supports, hangers, access openings and dampers (control, fire and smoke). 9 Grilles, fans, filters and other ancillary components of central heating and cooling systems. 10 Air handling units (AHUs). 11 Emission equipment, including fan coil units and the like. 12 Vibration isolation mountings. 13 Instrumentation and control components to central heating and cooling systems. 14 Thermal insulation. 15 Sundry items. 16 Testing and commissioning. 17 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
6 Local heating and cooling **Definition:** Combined systems where heating and cooling are performed in or adjacent to the space to be treated.	1 Local heating and cooling units: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Local heating and cooling units, including those with remote condensers. 2 Distribution pipelines and pipeline fittings. 3 Valves. 4 Pumps. 5 Distribution ductwork and ductwork fittings and ancillaries, e.g. supports, hangers, access openings and dampers (control, fire and smoke). 6 Grilles, fans, filters and other ancillary components of local heating and cooling systems. 7 Vibration isolation mountings. 8 Instrumentation and control components to local heating and cooling systems. 9 Thermal insulation. 10 Sundry items. 11 Testing and commissioning. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
7 Central air conditioning **Definition:** Systems where air treatment is performed at a central point and air is distributed to the spaces and locations being treated.	1 Central air conditioning system: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Plenum air heating systems. 2 VAV (variable air volume) and constant volume air conditioning systems. 3 Dual-duct and induction air conditioning systems. 4 Multi-zone air conditioning systems. 5 Induction air conditioning systems. 6 Hybrid air conditioning systems (i.e. systems based on a combination of a number of other air conditioning systems). 7 Chillers. 8 Air handling units (AHUs). 9 Terminal units/emitters. 10 Distribution pipelines and pipeline fittings. 11 Valves. 12 Pumps. 13 Distribution ductwork and ductwork fittings and ancillaries, e.g. supports, hangers, access openings and dampers (control, fire and smoke). 14 Grilles, fans, filters and other ancillary components of central air conditioning systems. 15 Instrumentation and control components to central air conditioning systems. 16 Thermal insulation. 17 Sundry items. 18 Testing and commissioning. 19 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Heat source (included in element 5.5: Heat source). 2 Local cooling and air treatment independent of heating systems, e.g. local comfort cooling, included in sub-element 5.6.8: Local air conditioning). 3 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 4 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
8 Local air conditioning **Definition:** Systems where air treatment is performed in or adjacent to the space to be treated.	1 Self-contained air conditioning units: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Self-contained air conditioning units providing conditioned air to rooms or areas, including units with remote condensers. Including: room air conditioners, e.g. unitary reverse cycle heat pump terminal units with electric heating and reversing valve, and split systems, e.g. air-cooled with direct expansion evaporator (DX), with gas, hot water or electric heaters. 2 Separate clean room or other local air conditioning systems requiring air management, e.g. terminal re-heat and terminal heat pump air conditioning systems. Including: computer room air conditioners, mini computer room enclosures (e.g. Liebert), telecom equipment precision air-conditioning systems (e.g. Stulz) and unita 3 Distribution pipelines and pipeline fittings. 4 Valves. 5 Pumps. 6 Distribution ductwork and ductwork fittings and ancillaries (e.g. supports, hangers, access openings and dampers (control, fire and smoke)). 7 Grilles, fans, filters and other ancillary components of local air conditioning systems. 8 Vibration isolation mountings. 9 Instrumentation and control components to local air conditioning systems. 10 Thermal insulation. 11 Air curtains (i.e. air movement systems for circulating 'curtain' of tempered air across the dividing space between two areas of differing temperatures). 12 Sundry items. 13 Testing and commissioning.	1 Heat source (included in element 5.5: Heat source). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Building management Systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Other local air conditioning systems: details to be stated.				
	3 Testing of installations.	%			
	4 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				14 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 5.7: Ventilation

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Central ventilation **Definition:** Air movement systems removing vitiated air from spaces and/or supplying fresh outside air to spaces. No environmental control or air treatment except filtration when required.	1 Central ventilation systems: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to measured using the rules of measurement for ascertaining the GIFA. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Air extract systems. 2 Air supply (ventilators) and extract systems. 3 Extract units/terminal units. 4 Fan units. 5 Distribution ductwork and ductwork fittings and ancillaries, e.g. supports, hangers, access openings and dampers (control, fire and smoke). 6 Grilles, fans, filters and other ancillary components of central ventilation systems. 7 Distribution pipelines and pipeline fittings. 8 Valves. 9 Pumps. 10 Vibration isolation mountings. 11 Instrumentation and control components to central ventilation systems. 12 Sundry items. 13 Testing and commissioning. 14 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Local and special ventilation **Definition:** Local and special air movement systems removing vitiated air from spaces and/or supplying fresh outside air to spaces. No environmental control or air treatment except filtration when required.	1 Toilet/ bathroom ventilation units: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Toilet/bathroom ventilation (air movement systems for removing smells, odours and other unwanted contaminants from, or supplying fresh air to, toilet areas, e.g. packaged toilet extract fans). 2 Kitchen ventilation (air movement systems for collecting, containing and removing smells, fumes and other unwanted contaminants from, or supplying fresh air to, kitchen areas), including hoods, canopies and grease filters. 3 Safety cabinet and fume cupboard extracts (air movement systems for collecting, containing, cleaning and removing smells, fumes and other unwanted contaminants), including safety cabinets and fume cupboard extracts with integral extract. 4 Fume extracts (air movement systems for collecting, containing, cleaning and removing smells, fumes and other unwanted contaminants), including hoods, canopies and valances. 5 Dust collection, including dust and particle extraction or separation equipment, discharge stacks, hoods and collection equipment. 6 Anaesthetic gas extracts (i.e. scavenging systems for the removal of anaesthetic gases). 7 Cyclone systems. 8 Unit extract fans. 9 Rotating ventilators. 10 Roof mounted ventilation units, including: smoke extraction units. 11 Car parking ventilation (i.e. air movement systems for removing fumes, smells and other contaminants of the air from car parks to the outside), including systems involving no air treatment and systems supplying fresh air to the car parking spaces. 12 Distribution ductwork and ductwork fittings and ancillaries, e.g. supports, hangers, access openings and dampers (control, fire and smoke).	1 Kitchen ventilation units where an integral part of a domestic kitchen installation or catering installation (included in sub-element 4.1.2: Domestic kitchen fittings and equipment or sub-element 5.2.1: Services equipment). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Kitchen ventilation units: details to be stated.				
	3 Safety cabinet and fume cupboard extracts: details to be stated.				
	4 Fume extracts: details to be stated.				
	5 Dust collection units: details to be stated.				
	6 Anaesthetic gas extracts: details to be stated.				
	7 Cyclone systems: details to be stated.				
	8 Unit extract fans: details to be stated.				
	9 Rotating ventilators: details to be stated.				
	10 Roof mounted ventilation units: details to be stated.				
	11 Car parking ventilation: details to be stated.				
	12 Other local and special ventilation systems: details to be stated.				
	13 Testing of installations.	%			
	14 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				13 Grilles, fans, filters and other ancillary components of local and special ventilation systems. 14 Vibration isolation mountings. 15 Instrumentation and control components to local and special ventilation systems. 16 Sundry items. 17 Testing and commissioning. 18 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Smoke extract/control **Definition:** Air movement and pressurisation systems for removing and controlling the build-up of smoke arising from a fire, and to assist in procuring the safety of personnel and in maintaining safe escape routes.	1 Smoke extract/control systems: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Automatic smoke extract systems. Including: natural smoke relief and fire ventilators, and powered smoke relief ventilators). 2 Automatic smoke compartmentalisation systems. 3 Fan units. 4 Distribution ductwork and ductwork fittings and ancillaries, e.g. supports, hangers, access openings and dampers (control, fire and smoke). 5 Grilles, fans, filters and other ancillary components of smoke ventilation systems. 6 Vibration isolation mountings. 7 Instrumentation and control components to smoke ventilation systems. 8 Sundry items. 9 Testing and commissioning. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Roof vents and roof cowls (included in sub-element 2.3.5: Rooflights, skylights and openings). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 5.8: Electrical installations

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Electrical mains and sub-mains distribution **Definition:** The distribution of LV electricity from (and including) the building main switchgear panel to (and including) the area distribution boards.	1 Electrical mains and sub-mains distribution: details to be stated.	m^2	C1 The area measured is the total gross internal floor area (GIFA) of the building, measured using the rules of measurement for ascertaining the GIFA. C2 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated.) C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project. C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs.	1 Distribution of LV electricity from (and including) the building main switchgear panel to (and including) the area distribution boards. 2 HV switchgear. 3 LV switchgear and distribution boards. 4 HV and LV cables and wiring, including support components, cable trays and the like. 5 Conduits and cable trunking, including all fittings and support components. 6 Busbar trunking. 7 Earthing and bonding components. 8 Transformers. 9 Fuse pillars, base units, poles and accessories and the like. 10 Sundry items. 11 Testing and commissioning. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance and profit.	1 Connections to statutory undertaker's electricity main (included in sub-element 8.7.2: Electricity mains supply). 2 Distribution of HV electricity to on-site transformer (included in sub-element 8.7.2: Electricity mains supply). 3 Transformer sub-stations, including packaged sub-stations main (included in sub-element 8.7.2 Electricity mains supply). 4 Distribution of LV electricity to main switchgear panel within the building, including main switchgear panel, cables, excavating and backfilling trenches and the like (included in sub-element 5.8.2: Power installations). 5 Electric generation installations within the building (included in sub-element 5.8.5: Local electricity generation systems). 6 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 7 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Power installations **Definition:** Sub-circuit power installations from sub-distribution boards terminating at socket outlets, fuse connection units and other accessories. Including final connections to permanent mechanical and electrical equipment.	1 Power installation: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for deigning specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 General low voltage (LV) power installations. 2 Extra LV supply installations. 3 Direct current (DC) installations. 4 LV switchgear and distribution boards, where not included as part of the sub-mains distribution. 5 Uninterruptible power supply (UPS) installations and the like. 6 Cables and wiring, including support components from sub-distribution boards to socket outlets, fuse connection units and the like. 7 Conduits and cable trunking, including all fittings and support components. 8 Earthing and bonding components. 9 Socket outlets, fuse connection units and other outlet accessories. 10 Final connections to equipment (e.g. boilers, kitchen and catering equipment, instantaneous water heaters, cookers and extract terminals). 11 Separate power installations to specialist mechanical and electrical equipment (e.g. to transportation systems). 12 Final connections to specialist mechanical and electrical equipment where not carried out by the equipment installer. 13 Sundry items. 14 Testing and commissioning. 15 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Electric heating installation (included in sub-element 5.6.1: Central heating or sub-element 5.6.2: Local heating, as appropriate). 2 LV switchgear and distribution boards, included as part of the sub-mains distribution (included in sub-element 5.8.1: Electrical mains and sub-mains distribution). 3 Final connections to sanitary appliances and pods (included in sub-elements 5.1.1: Sanitary installations and 5.1.3: Pods, as appropriate). 4 Final connections to specialist mechanical and electrical equipment where carried out by the equipment installer. 5 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 6 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Lighting installations **Definition:** Sub-circuit installations from sub-distribution boards to provide lighting.	1 Lighting installation: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 General internal lighting, including lighting fixed to the exterior of the building (e.g. bulkhead fittings and down lighters to soffits/external suspended ceilings). 2 Emergency lighting. 3 Lighting fixed to the exterior of the building supplied as part of the interior system. 4 Low voltage (LV) switchgear and distribution boards, where not included as part of the sub-mains distribution. 5 Cables and wiring, including support components from sub-distribution boards to lighting points, switches and the like. 6 Conduits and cable trunking, including all fittings and support components. 7 Earthing and bonding. 8 Fittings to lighting points, including roses, pendants and the like. 9 Switches, including pull cords. 10 Luminaires and lamps. 11 Lighting control equipment. 12 Sundry items. 13 Testing and commissioning. 14 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Specialist lighting systems (included in sub-element 5.8.4: Specialist lighting installations). 2 Security lights and lighting systems (included in sub-element 8.7.8: External security systems). 3 Street lighting, area lighting and flood lighting (included in sub-element 8.7.9: External street lighting systems). 4 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Specialist lighting installations **Definition:** Specialist or special effects internal illumination systems.	1 Specialist lighting installation: details to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Illuminated display signs, lettering, emblems and symbols for information purposes, advertising and the like. Cold cathode, fluorescent, and the like. 2 Studio lighting. 3 Auditorium lighting, theatre lighting, stage lighting and the like. 4 Arena lighting. 5 Operating theatres and other specialist lighting installations. 6 Low voltage (LV) switchgear and distribution boards, where not included as part of the sub-mains distribution. 7 Cables and wiring, including support components from sub-distribution boards to lighting points, switches and the like. 8 Conduits and cable trunking, including all fittings and support components. 9 Earthing and bonding. 10 Fittings to lighting points. 11 Switches, including pull cords. 12 Luminaires and lamps. 13 Lighting gantries and the like. 14 Lighting control equipment. 15 Sundry items. 16 Testing and commissioning. 17 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General lighting and emergency lighting installations (included in sub-element 5.8.3: Lighting installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
5 Local electricity generation systems **Definition:** – Local generation equipment for the production of electrical energy, including emergency and or standby generator plant. – Systems using the natural elements (i.e. wind and sun) to generate energy.	**Local generation equipment:** 1 Electricity generation systems: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Emergency/standby generator plant (gas, oil and dual fuel). 2 Ancillary cables and wiring, conduits and cable trunking, and controls required to connect local electricity generation systems to other systems. 3 Sundry items. 4 Testing (including full load and off load testing) and commissioning. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Storage tanks and vessels, and fuel distribution pipelines (included in sub-element 5.9.2: Fuel storage and piped distribution systems or sub-element 8.7.7: External fuel storage and piped distribution systems, as appropriate). 2 Central heat and power (CHP) boiler plant (included in element 5.5: Heat source). 3 Solar collectors (included in element 5.5: Heat source). 4 Photovoltaic tiles, panels and the like (included in sub-element 5.8.6: Transformation devices, sub-element 8.7.3: External transformation devices, as appropriate). 5 Wind turbines and the like (included in sub-element 5.8.6: Transformation devices, sub-element 8.7.3: External transformation devices, as appropriate). 6 Uninterruptible power supply (UPS) installations and the like (included in sub-element 5.8.2: Power installations). 7 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 8 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	Transformation devices: 4 Wind turbines: details, including output (kW), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Wind turbines, including rooftop wind energy systems. 2 Photovoltaic devices, including cells, panels, modules and the like – both roof mounted and building mounted. 3 Solar collectors, including supporting framework (including fish plate collectors, evacuated tube collectors and the like). 4 Other transformation devices. 5 Generators in connection with transformation devices. 6 Ancillary cables and wiring, conduits and cable trunking, and controls required to connect transformation devices to other systems. 7 Sundry items. 8 Testing and commissioning. 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Building mounted solar thermal panels (included in sub-element 5.5.1: Heat source). 2 Horizontal solar systems providing protection to external walls (included in sub-element 2.5.3: Solar/rain screening). 3 Wind turbines external to the building envelope (included in sub-element 8.7.3: External transformation devices). 4 Photovoltaic devices external to the building envelope (included in sub-element 8.7.3: External transformation devices). 5 Heat pumps (included in element 5.5: Heat source). 6 Ground source heating (included in element 5.5: Heat source). 7 Solar collectors (included in element 5.5: Heat source). 8 Photovoltaic devices (e.g. tiles, slates, profiled sheets) where an integral part of a roof covering system (included in sub-element 2.3.2: Roof coverings). 9 Photovoltaic devices (e.g. profiled sheet cladding systems) where an integral part of an external wall system (included in sub-element 2.5.1: External walls above ground floor level or sub-element 2.5.2: External walls below ground floor level, as appropriate). 10 Photovoltaic glazing where an integral part of a curtain walling system, a structural glazing assembly or external windows (included in sub-element 2.5.1: External walls above ground floor level, sub-element 2.5.2: External walls below ground floor level or sub-element 2.6.1: External windows, as appropriate). 11 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 12 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	5 Photovoltaic devices: details, including surface area of units (m^2) and output (kW), to be stated.				
	6 Other transformation devices: details, including output (kW), to be stated.				
	7 Testing of installations.	%			
	8 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
6 Earthing and bonding systems **Definition:** Systems for the transfer of electrical current to earth, to protect personnel, buildings, structure, plant and equipment in the case of electrical fault within the electricity supply system. Also to protect against interference from electromagnetic fields and electromagnetic forces.	1 Earthing and bonding systems: details to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Earthing and bonding cables. 2 Earthing and bonding components, including protective conductors, earth clamps, earth tapes, clean earth bars, earth electrodes, earthing busbars, earth rod covers and boxed, equipotential bonding and all other ancillary components. 3 Sundry items. 4 Testing and commissioning. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Earthing provided with individual systems (included in appropriate sub-element). 2 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 5.9: Fuel installations

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Fuel storage **Definition:** Storage tanks and vessels, for gas, oil, petrol, diesel or liquefied petroleum gas (LPG).	1 Fuel storage: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the total gross internal floor area (GIFA) of the building, measured using the rules of measurement for ascertaining the GIFA. C3 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Gas, oil, petrol, diesel, liquefied petroleum gas (LPG), biomass and other fuel systems. 2 Storage tanks and vessels not supplied in connection with heat source installations. 3 Proprietary supports forming an integral part of the storage tank/vessel unit. 4 Off-site painting/anti-corrosion treatments. 5 Thermal insulation. 6 Sundry items. 7 Testing and commissioning. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Storage tanks and vessels supplied as an integral part of heat source installations (included in sub-element 5.5: Heat source). 2 Storage tanks and vessels external to the building (included in sub-element 8.7.7: External fuel storage and piped distribution systems). 3 Supports not integral to the storage tank/vessel (included in element 5.14: Builder's work in connection with services). 4 Fuel bunds and the like to storage/retention tanks and vessel (included in element 5.14: Builder's work in connection with services). 5 On-site painting of storage tanks and vessels, supports and pipelines (included in element 5.14: Builder's work in connection with services). 6 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 7 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Fuel distribution systems **Definition:** Piped gas supply systems taking gas from point of mains connection within building and distributing to user points.	1 Piped distribution systems: details to be stated.	m^2	C1 The area measured is the total gross internal floor area (GIFA) of the building, measured using the rules of measurement for ascertaining the GIFA. C2 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Gas, oil, petrol, diesel and liquefied petroleum gas (LPG), and other fuel systems. 2 Distribution pipelines from point of mains connection within building to user points, including pipeline ancillaries and fittings. 3 Pipeline components/ ancillaries (e.g. valves and pumps). 4 Bracketary. 5 Manifolds, local meters, gas governors, gas boosters, gas connection outlets. 6 Terminal control equipment. 7 Thermal insulation. 8 Off-site painting/anti-corrosion treatments. 9 Monitoring equipment. 10 Sundry items. 11 Testing and commissioning. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Connection to the statutory undertaker's mains (included in sub-element 8.7.5: Gas mains supply). 2 On-site painting of pipelines, and supports to pipelines (included in element 5.14: Builder's work in connection with services). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 5.10: Lift and conveyor installations

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Lifts and enclosed hoists **Definition:** – Electro-mechanical or electro-hydraulic installations for the conveyance of persons, goods or equipment from one level to another in a vertical plane; and – Permanently fixed lifting equipment, either electro-mechanical or hydraulically operated, for the raising or lowering of persons, goods or equipment.	**Lifts:** 1 Passenger lifts: details, including capacity (i.e. number of persons), speed (in m/sec), number of doors (nr), door heights and number of levels serviced (nr), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Complete lift installation, including lift cars, doors and equipment, guides and counter balances, hydraulic and lifting equipment, emergency lighting, lift alarms and telephones. 2 Fire fighting lifts. 3 Wall climbing lifts. 4 Gantries, trolleys, blocks, hook and ropes, down-shop leads, pendant and the like. 5 Controls and electrical work from and including isolator where supplied with installation. 6 Sundry items. 7 Testing and commissioning. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Lift shaft (included in group elements 1: Substructure and 2: Superstructure, as appropriate). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Wall climbing lifts: details, including capacity (in kg), number of persons, speed (in m/sec) and number of levels serviced (nr), to be stated.				
	3 Goods lifts: details, including capacity (in kg), number of doors, door heights and number of levels serviced (nr), to be stated.				
	4 Testing of lift installations.	%			
	5 Commissioning of lift installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	Enclosed hoists: 6 Enclosed hoists: details, including capacity (in kg) and number of levels (nr) serviced, to be stated.	nr		1 Hoists, kitchen service hoists, dumb waiters and the like. 2 Complete hoist installation, including cages, doors and equipment, guides and counter balances, hydraulic and lifting equipment. 3 Controls and electrical work from and including isolator where supplied with installation. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Hoist enclosure or shaft (included in group elements 1: Substructure and 2: Superstructure, as appropriate). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	7 Testing of enclosed hoist installations.	%			
	8 Commissioning of enclosed hoist installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Escalators **Definition:** Electro-mechanical systems for the conveyance of persons from one level to another by means of a continually moving stairway.	1 Escalators: details, including, number of flights served (nr), angle of rise (in degrees), rise (m) and step width (mm), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The rise is the distance between the finished floor level at the bottom of the escalator and the finished floor level at the top of the escalator. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Escalators. 2 Ancillary components, including under step lighting, under handrail lighting, balustrades, cladding to sides and soffits, chairs. 3 Controls and electrical work from and including isolator where supplied with installation. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Moving pavements **Definition:** Electro-mechanical systems for the conveyance of persons from one place to another by means of a moving flat strip of pavement either level or inclined to elevate from one level to another.	1 Moving pavements: details, including, length (m) and width (mm), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The linear length measured is the extreme length. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Moving pavements. 2 Travelators. 3 Stairlifts. 4 Controls and electrical work from and including isolator where supplied with installation. 5 Sundry items. 6 Testing and commissioning. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				
4 Powered stairlifts **Definition:** Electro-mechanical systems, fixed to the wall or balustrade of a staircase, for the conveyance of persons with impaired mobility from one level to another.	1 Powered stairlifts: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Complete stairlift installation, including rails, folding rails, carriages, hinged bridging platforms, guards, drive units and signage. 2 Controls and electrical work from and including isolator where supplied with installation. 3 Sundry items. 4 Testing and commissioning. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
5 Conveyors **Definition:** Systems for the mechanical conveyance of goods between two or more points.	1 People conveyors: details, including, length (m) and width (mm), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The linear length measured is the extreme length. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Complete conveyor systems. 2 Specialist systems (e.g. baggage handling systems and the like). 3 Controls and electrical work from and including isolator where supplied with installation. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/Building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Goods conveyors: details, including, length (m) and width (mm), to be stated.				
	3 Testing of installations.	%			
	4 Commissioning of installations.				
6 Dock levellers and scissor lifts **Definition:** Localised lifting systems for goods and people.	1 Dock levellers and scissor lifts: details, including total rise (m), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Dock levellers, including canopy. 2 Scissor lifts and levellers. 3 Controls and electrical work from and including isolator where supplied with installation. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Scissor lifts: details, including total rise (m), to be stated.				
	3 Testing of installations.	%			
	4 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
7 Cranes and unenclosed hoists **Definition:** Cranes and unenclosed hoists for the lifting and movement of heavy goods and equipment.	1 Cranes: details including design load (kN) and total rise (m), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Cranes. 2 Travelling cranes. 3 Unenclosed hoists and other lifting systems for materials and goods. 4 Controls and electrical work from and including isolator where supplied with installation. 5 Sundry items. 6 Testing and commissioning. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Travelling cranes: details, including design load (kN), to be stated.				
	3 Unenclosed hoists: details, including total rise (m), to be stated.				
	4 Testing of installations.	%			
	5 Commissioning of installations.				
8 Car lifts, car stacking systems, turntables and the like **Definition:** Vehicle lifting, storage and moving systems.	1 Car lifts: details, including number of floors served (nr), to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Car lifts, car stacking systems and the like. 2 Vehicle turntables. 3 Controls and electrical work from and including isolator where supplied with installation. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Car stacking systems: details, including capacity (i.e. number of cars – nr), to be stated.				
	3 Vehicle turntables: details to be stated.				
	4 Testing of installations.	%			
	5 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
9 Document handling systems **Definition:** Specialist document handling/delivery systems, warehouse picking systems and the like.	1 Document handling/ delivery systems: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Document handling/delivery systems, warehouse picking systems and the like. 2 Controls and electrical work from and including isolator where supplied with installation. 3 Sundry items. 4 Testing and commissioning. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Warehouse picking systems: details to be stated.				
	3 Other systems: details to be stated.				
	4 Testing of installations.	%			
	5 Commissioning of installations.				
10 Other lift and conveyor installations **Definition:** Transport systems not covered by sub-elements 5.11.1 to 5.11.10.	1 Other lift and conveyor installations: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Paternoster lifts. 2 Hoists for moving people with disability. 3 Other transport systems. 4 Controls and electrical work from and including isolator where supplied with installation. 5 Sundry items. 6 Testing and commissioning. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Shafts and the like (included in group elements 1: Substructure and 2: Superstructure, as appropriate). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 5.11: Fire and lightning protection

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Fire fighting systems **Definition:** Piped distribution systems within the confines of the building for fire fighting purposes.	1 Fire hose reels: details of each type of system to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Fire hose reels, including hose reels and pressure booster sets. 2 Dry risers, including inlet breechings, inlet boxes, landing valves, outlet boxes and drain valves. 3 Wet risers, including landing valves, outlet boxes, pressure vessel within diaphragm and control panels. 4 Distribution pipelines, pipeline ancillaries and fittings. 5 Thermal insulation. 6 Control components. 7 Fire and smoke protection curtains (e.g. drop down curtains), including: control panels. 8 Sundry items. 9 Testing and commissioning. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Water supply (included in element 5.4: Water installations as appropriate). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Fire hydrants (included in sub-element 5.4.1: Mains water supply). 4 Hand held fire fighting equipment, including fire extinguishers, fire blankets and the like (included in sub-element 4.1.1: General fittings, furnishings and equipment). 5 Fire detection and alarm systems (included in sub-element 5.12.1: Communication systems). 6 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 7 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Dry risers: details to be stated.				
	3 Wet risers: details to be stated.				
	4 Fire and smoke protection curtains: details of each type of system to be stated.				
	5 Other fire fighting systems: details of each type of system to be stated.	nr/m^2			
	6 Testing of installations.	%			
	7 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Fire suppression systems **Definition**: Piped distribution systems within the confines of the building for fire fighting purposes.	1 Sprinklers: details of each type of system to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to measured using the rules of measurement for ascertaining the GIFA. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Sprinklers, including reaction and control devices and sprinkler heads. 2 Deluge systems, including water storage, reaction and control devices and deluge discharge nozzles. 3 Gas fire fighting systems, including gas storage cylinders and vessels, gas manifolds and equipment, discharge nozzles, detectors and activators. 4 Foam fire fighting systems, including foam generation equipment, storage vessels, detectors and activators, and foam discharge nozzles, etc. 5 Distribution pipelines, pipeline ancillaries and fittings. 6 Water tanks and cisterns for fire fighting installations. 7 Thermal insulation. 8 Control components. 9 Sundry items. 10 Testing and commissioning. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Water supply (included in element 5.4: Water installations as appropriate). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Fire hydrants (included in sub-element 5.4.1: Mains water supply). 4 Hand held fire fighting equipment, including fire extinguishers, fire blankets and the like (included in sub-element 4.1.1: General fittings, furnishings and equipment). 5 Fire detection and alarm systems (included in sub-element 5.12.1: Communication systems). 6 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 7 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Deluge systems: details of each type of system to be stated.				
	3 Gas fire fighting systems: details of each type of system to be stated.				
	4 Foam fire fighting systems: details of each type of system to be stated.				
	5 Other fire suppression systems: details of each type of system to be stated.				
	6 Testing of installations.	%			
	7 Commissioning of installations				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Lightning protection **Definition:** Lightning protection installations.	1 Lightning protection installations (m^2): details of each type of system to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Bonded steel frames and other tape based systems. 2 Finials. 3 Conductor tapes. 4 Grounding/earthing. 5 Sundry items. 6 Testing and commissioning. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Earthing systems (included in sub-element 5.8.6: Earthing and bonding systems). 2 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 5.12: Communication, security and control systems

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Communication systems **Definition:** Systems for communicating, including visual, audio and data installations.	1 Telecommunication systems: details of each type of system to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C4 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C5 Work to existing buildings is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C7 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Telecommunication systems, including wiring, handsets and equipment, telex equipment, facsimile equipment, combined systems (e.g. PAX, PAXB and PNBX systems), and the like. 2 Data transmission, including wiring, computer networking, modems, multiplexers, data terminals and data-bus systems. 3 Paging and emergency call systems, including emergency call buttons, pull cords and the like (including aerials, radio paging equipment, microphones, amplifiers and speakers), induction loops, personal receivers and indicator boards). 4 Public address and conference audio facilities, including public address systems, hospital radio, conference audio facilities, audio frequency induction loop systems, background noise systems (including microphones, amplifiers, and speakers). 5 Radio systems, including cable and satellite systems (including receivers). 6 Projection systems (e.g. cinematographic equipment, fixed or portable projection equipment, screens, back-projection equipment, sound equipment). 7 Fire detection and alarm systems, including manual call points, automatic detection equipment, sounders, controls and indicator panels. 8 Smoke detection and alarm systems. 9 Liquid detection alarms (i.e. systems giving early warning of water/liquid leakage to prevent damage), including: flood line multi-zone leak detection systems.	1 Radio and television studio installations (included in sub-element 5.8.2: Power installations). 2 Illuminated display signs, lettering, emblems and symbols for information purposes, advertising and the like (included in sub-element 5.13.2: Radio and television studios). 3 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 4 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Data transmission systems: details of each type of system to be stated.				
	3 Paging and emergency call systems: details of each type of system to be stated.				
	4 Public address and conference audio systems: details of each type of system to be stated.				
	5 Radio systems: details of each type of system to be stated.				
	6 Projection systems: details of each type of system to be stated.	nr			
	7 Fire detection and alarm systems: details of each type of system to be stated.	m^2			
	8 Smoke detection and alarm systems: details of each type of system to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	9 Liquid detection systems: details of each type of system to be stated.			10 Clocks, card clocks, flexitime installations. 11 Radio and television, including cable and satellite systems. 12 Television systems, including satellite. 13 TV monitors. 14 Pneumatic message systems. 15 Other communication systems. 16 Sundry items. 17 Testing and commissioning. 18 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	10 Clocks, card clocks, flexitime installations: details of each type of system to be stated.	nr			
	11 Door entry systems: details of each type of system to be stated.	m^2			
	12 Radio and televisions: details of each type of system to be stated.				
	13 Television systems: details of each type of system to be stated.	nr			
	14 TV monitors: details of each type of system to be stated.				
	15 Pneumatic message systems: details of each type of system to be stated.	m^2			
	16 Other communication systems: details of each type of system to be stated.	nr/m^2			
	17 Testing of installations.	%			
	18 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Security systems **Definition:** Observation and access control installations and the like.	1 Surveillance equipment: details of each type of system to be stated.	nr/m²	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C4 Installations to residential units, hotel rooms, student accommodation units and the like may be enumerated (nr). The type of residential unit or room and size (by number of bedrooms) of unit is to be stated. C5 Work to existing buildings is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C7 State if external security systems included with building security systems (cross-reference to sub-element 9.7.8: External security systems). C8 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Surveillance equipment (e.g. CCTV), including: cameras. 2 Security detection equipment, including: intruder alarms, temperature measurement sensors, occupancy sensors and active infra-red. 3 Security alarm equipment (i.e. personal attack alarm systems). 4 Access control systems. 5 Burglar and security alarms. 6 Door entry systems (audio (intercom) and visual). 7 Security lights and lighting systems. 8 Other security systems, including: active infra-red, hand geometry, microwave, passive infra-red, x-ray equipment, metal detection portals, and pegging systems. 9 Sundry items. 10 Testing and commissioning. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 External observation and access control installations and the like (unless stated otherwise, included in sub-element 8.7.8: External security systems). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Security detection equipment: details of each type of system to be stated.				
	3 Security alarm equipment: details of each type of system to be stated.				
	4 Access control systems: details of each type of system to be stated.				
	5 Burglar and security alarms: details of each type of system to be stated.				
	6 Door entry systems: details of each type of system to be stated.	nr			
	7 Security lights and lighting systems: details of each type of system to be stated.	nr/m²			
	8 Other security systems: details of each type of system to be stated.				
	9 Testing of installations.	%			
	10 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Central control/building management systems **Definition:** Control systems which, from a central remote location, provide means for controlling and reporting on the performance of the operational systems of a building.	1 Central control/building management systems: details of each type of system to be stated.	m^2	C1 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C2 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C3 Work to existing buildings is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Control panels for mechanical and electrical equipment. 2 Building management systems (BMS), including: central operating station and satellite computer terminal software. 3 Computer aided facilities manage system (CAFM), including: central operating station and computer terminal software. 4 Controlling terminal units and switches. 5 Control cabling and containment. 6 Compressed air and vacuum operated control systems. 7 Sundry items. 8 Testing and commissioning. 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Individual controls to heating, air conditioning installations, and the like (included with services installation or system as appropriate). 2 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 3 Web-based documentation project management systems (included in sub-element 9.1.2.2: Site records). 4 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Computer aided facilities manage system: details of each type of system to be stated.	item			
	3 Testing of installations.	%			
	4 Commissioning of installations.				

Element 5.13: Specialist installations

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Specialist piped supply installations **Definition:** – Piped gas supply systems of high purity (e.g. oxygen or nitrous oxide) from storage source to distribution points in medical treatment, medical research or similar establishments. – Piped distribution systems providing suction for vacuum cleaning and collection facilities. – Piped water supply systems where the water is treated to obtain a high degree of purity for special use and application. – Systems for the treatment and circulation of water for swimming pools.	1 Medical and laboratory gas supply systems: details of each type of system to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Medical and laboratory gas supply systems, including gas bottles and bulk storage vessels, manifold headers, gas governors, monitoring equipment, terminal control equipment, gas detection and alarm equipment, gas connection outlets and the like. 2 Centralised vacuum cleaning systems, including vacuum pumps, blowers and vacuum connection units. 3 Treated water systems, including de-alkalisation, de-ionisation, de-aeration, raw sewage storage tanks and vessels, chemical storage tanks and vessels, purified water tanks and vessels, distillation equipment, electrolytic chlorine ion generation equipment, demineralisation plant, reverse osmosis plant and the like. 4 Swimming pool water treatment, including filter vessels, chemical storage vessels, chemical dosing equipment, ozone generation and injection equipment, de-ozoning vessels, electrolytic chlorine ion generation equipment, pool inlet jets, scum channels, perimeter draw-off grilles and the like. 5 Compressed air systems, including compressors (including motors and starters), inter-coolers, after-coolers, air storage vessels and receivers, air separators, cooling water systems, lubrication systems, local water coolers, compressed air ancillaries, compressed air connection outlets, instrument air pipeline ancillaries (including manifolds), instrument air connection outlets, and the like.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 3 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Centralised vacuum cleaning systems: details of each type of system to be stated.				
	3 Treated water systems: details of each type of system to be stated.				
	4 Swimming pool water treatment systems: details of each type of system to be stated.				
	5 Compressed air systems: details of each type of system to be stated.				
	6 Vacuum installations: details of each type of system to be stated.				
	7 Other specialist piped supply systems: details of each type of system to be stated.				
	8 Testing of installations.	%			
	9 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
– Piped distribution systems providing compressed air for motive power and general purpose use. – Piped distribution systems providing compressed air of high quality (oil free) for purposes of operating pneumatic controls and other delicate instruments and equipment. – Piped distribution systems providing negative pressure at a number of points for particular user or process functions. – Other piped distributions of a specialist nature.				6 Vacuum systems, including vacuum pumps, intercoolers and driers, vacuum connection points and the like. 7 Other specialist piped supply systems. 8 Pipelines, pipeline ancillaries and fittings. 9 Air duct lines, duct line ancillaries and fittings. 10 Thermal insulation. 11 Silencers and acoustic treatment. 12 Control components. 13 Sundry items. 14 Testing and commissioning. 15 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Specialist refrigeration systems **Definition:** Specialist refrigeration systems.	1 Cold rooms: details of each type of system to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Cold rooms, including packaged cold rooms, packaged walk-in freezers, wall panels and linings, ceiling panels and linings, flooring systems, doors and door mechanisms, jointing material, thermal cladding, refrigeration plant and equipment, evaporators, lighting and the like. 2 Ice pads, including waterproof layer, insulation layer, working screed, slip plane layer, bonded refrigeration pads (incorporating pipelines, reinforcement, etc.), floor drains and sealing plates, cooling towers, evaporative condensers, heat recovery systems and the like. 3 Other specialist refrigeration systems. 4 Sundry items. 5 Testing and commissioning 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Central refrigeration plant and chillers (included in sub-element 5.6.3: Central cooling). 2 Cooling towers (included in sub-element 5.6.3: Central cooling). 3 External cooling towers (included in sub-element 8.8.2: Ancillary buildings and structures). 4 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 5 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 6 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Ice pads: details to be stated.				
	3 Other specialist refrigeration systems: details of each type of system to be stated.				
	4 Testing of installations.	%			
	5 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Specialist mechanical installations **Definition:** Specialist installations not covered by elements 5.1 to 5.12 or sub-elements 5.13.1 to 5.13.4.	1 Other specialist installations: details of each type of system to be stated.	nr/m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the system (i.e. the area of the rooms and circulation spaces that are served by the system, which is not necessarily the total gross internal floor area (GIFA) of the building). The area serviced is measured using the rules of measurement for ascertaining the GIFA. C3 Where more than one system is employed, the area measured for each system is the area serviced by the system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C4 Work to existing buildings is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Wave machines. 2 Sauna, sauna equipment. 3 Jacuzzi. 4 Swimming pools. 5 Other specialist installations. 6 Sundry items. 7 Testing and commissioning. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Water supply (included in element 5.4: Water installations as appropriate). 2 Gas supply (included in sub-element 5.9.1: Gas distribution). 3 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 4 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Specialist electrical/ electronic installations **Definition:** Specialist electrical and electronic installation or and systems.	1 Specialist electrical and electronic installation or and systems: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Radio and television studio equipment and installation. 2 Recording studio equipment and installation. 3 Discrete and communal television aerial and satellite systems. 4 Home cinema. 5 Multi-room audio and video. 6 Automated curtains and blinds. 7 Other specialist electrical and electronic installations and systems 8 Sundry items. 9 Testing and commissioning. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 2 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations	%			
	3 Commissioning of installations.				
5 Water features **Definition:** Water systems for display or decorative purposes involving the movement of water.	1 Water Feature: details to be stated.	nr	C1 Number of water features. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Water features, including ornamental fountains and waterfalls. 2 Water filtration equipment. 3 Nutrient treatment and equipment. 4 Final electrical connections. 5 Control components 6 Sundry items. 7 Testing and commissioning. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Drinking fountains (included in sub-element 5.1.1: Sanitary installations). 2 Cold water supply (included in sub-element 5.4.2: Cold water distribution). 3 General purpose low voltage (LV) power supplies (included in sub-element 5.8.2: Power installations). 4 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Testing of installations	%			
	3 Commissioning of installations.				

Element 5.14: Builder's work in connection with services

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Builder's work in connection with services **Definition:** Sundry builder's work associated with the installation of water, gas, electricity, heating, ventilation, above ground drainage, telecommunications and other services, as well as to pods.	1 Builder's work in general areas: details to be stated.	nr/m/ m^2/%	C1 Where quantifiable, cost significant builder's work items in connection with services shall be separately identified and measured by area (m^2), linear measurement (m) or enumerated (nr). C2 Where components are to be enumerated, the number of components is to be stated. C3 Where the length of a component is to be measured, the length of linear components measured is their extreme length, over all obstructions. C4 When not quantifiable, or of a non-cost significant nature, builder's work items in connection with services shall be identified and quantified by a percentage allowance or by applying the GIFA. C5 The area measured is the floor area relating to each builder's work classification. The area is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C6 Percentage additions for builder's work items in connection with services shall e applied to the total cost of all elements comprising group element 5: Services (i.e. elements 5.1 to 5.13 inclusive). C7 Other cost significant items are to be measured by area (m^2), linear measurement (m) or enumerated (nr) and identified separately. C8 Work to existing buildings is to be described and identified separately. C9 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Builder's work in general areas. 2 Builder's work to landlord areas. 3 Builder's work to plant rooms. 4 Plant and equipment bases constructed on top of ground slabs and beds. 5 Fuel bunds and the like to storage/retention tanks and vessels. 6 Forming/cutting holes, mortices, sinkings, chases and the like, including making good. 7 Ducts, pipe sleeves and the like. 8 Trench covers, duct covers and frames. 9 Supports to storage tanks, vessels, cisterns and the like. 10 Stopping up and sealing holes. 11 Fire resistant stopping, including fire sleeves. 12 Fire breaks. 13 Painting/anti-corrosion treatments of mechanical services equipment, including fuel storage tanks and vessels, supports and pipelines. 14 Identification labelling and colour coding of services installations and systems. 15 Other builder's work items in connection with services. 16 Sundry items. 17 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	2 Builder's work to landlord areas: details to be stated.				
	3 Builder's work to plant rooms: details to be stated.				
	4 Large plant and equipment bases: details, including overall size (in m), to be stated.	nr			
	5 Fuel bunds: details, including construction and overall size (in m), to be stated.				

Group element 6: Prefabricated buildings and building units

Group element 6 comprises the following elements:

6.1 Prefabricated buildings building and units

Note: Where on-site testing and commissioning is required to be measured under sub-elements 6.1.1 to 6.1.3, the terms shall include the following works:

1 Testing includes:

(1) Testing equipment and consumables

(2) Calibration

(3) Site installation tests

(4) Static testing, including testing records

(5) Performance testing, including performance test records

(6) Fuels required for testing

2 Commissioning, includes:

(1) Commissioning, including preliminary checks, setting systems and installations to work and regulation thereof, and commissioning records

(2) Temporary operation of equipment to employer's requirements

(3) Fuels required for commissioning

3 Setting all mechanical and electrical services and installations to work after completion of commissioning (initial operation)

Element 6.1: Prefabricated buildings and building units

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Complete buildings **Definition:** Complete or substantially complete self-finished building superstructures of proprietary modular construction, largely prefabricated.	1 Prefabricated modular buildings: details to be stated.	m^2	C1 The area measured is the gross internal floor area (GIFA) of the complete building unit. The area is measured using the rules of measurement for ascertaining GIFA.	1 Complete self-finished prefabricated modular building systems for: – industrial use (e.g. a complete warehouses) – commercial use (e.g. a complete office building) – retail use (e.g. retail units and retail distribution centres) – agricultural use (e.g. a complete livestock buildings and barns) – domestic use (complete dwellings, garages and workshops) – education use (complete school buildings) – healthcare buildings (e.g. complete offices, staff and public amenities, training centres, laboratories, day care centres and specialist surgical buildings) – Other complete off-site prefabricated complete self-finished modular buildings (e.g. aircraft hangars). 2 Where included as part of the building systems: – structure, roof and wall cladding – rainwater drainage – windows, external doors, stairs and the like – internal partitions, linings and finishes – internal doors – fixtures, furnishings and equipment – sanitary appliances – mechanical and electrical services – stopping up and sealing holes – fire resistant stopping, including fire sleeves – fire breaks around units.	1 Prefabricated room units supplied as completed units manufactured off-site (included in sub-element 6.1.2: Building units). 2 Bathroom, toilet and shower pods supplied as completed units manufactured off-site (included in sub-element 6.1.3: Pods). 3 Non-permanent prefabricated buildings/building systems (i.e. used as temporary accommodation for the duration or the building project (included in sub-element 0.1.1: Site accommodation (employer's requirements) or sub-element 0.2.2: Site establishment (main contractor's cost items) as appropriate). 4 Foundations and substructures (included In group element 1: Substructure). 5 Drainage below ground (included in sub-element 1.4.1: Ground Floor Slab/Bed and Suspended Floor Construction or element 8.6: External drainage, as appropriate). 6 Minor prefabricated buildings such as workshops, sheds, stores and the like (included in sub-element 8.8.2: Ancillary buildings and structures).
	2 On-site testing of installations	%	C1 The area measured is the gross internal floor area (GIFA) of the complete building unit. The area is measured using the rules of measurement for ascertaining GIFA. C2 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C3 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.		
	3 On-site commissioning of installations				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				3 Final connections of cold water, hot water, electricity and other fuels to pods. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
2 Building units **Definition:** Complete or substantially complete modular room units of proprietary construction, largely prefabricated and manufactured off-site, for incorporation into buildings.	1 Prefabricated room units, including type of unit, GIFA of unit (in m^2), construction of unit and content of units, to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the gross internal floor area (GIFA) for each type of unit. The area is measured using the rules of measurement for ascertaining GIFA. C3 Building units of different type, composition and GIFA are to be measured separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Prefabricated modular room units, singular or multiple, which are to be enclosed by an external envelope, such as: – accommodation units/bedroom units – hotel suites – office units – classrooms – toilet units/washroom units – corridors – staircases – student accommodation – soundproof rooms – computer rooms – cold rooms – spray booths – Kitchens – kiosks – healthcare modules, including: operating theatres.	1 Complete self-finished prefabricated modular buildings (included in sub-element 6.1.1: Complete buildings). 2 Bathroom, toilet and shower pods supplied as completed units manufactured off-site (included in sub-element 6.1.3: Pods).
	2 On-site testing of installations.	%			
	3 On-site commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				2 Where included as part of the building unit: – structure, roof and wall cladding – windows, external doors, stairs and the like – internal partitions, linings and finishes – internal doors – fixtures, furnishings and equipment – sanitary appliances – mechanical and electrical services. – stopping up and sealing holes – fire resistant stopping, including fire sleeves – fire breaks around units. 3 Final connections of cold water, hot water, electricity and other fuels to pods. 4 Sundry items. 5 Testing and commissioning. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Pods **Definition:** Bathroom, toilet and shower pods supplied as completed units manufactured off-site.	1 Prefabricated bathroom pods: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work to existing buildings is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C4 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Pods complete, including structural framework; floor, wall and ceiling linings; applied finishes; sanitary appliances; all fixtures, furnishings and equipment; and all mechanical and electrical services within pod. 2 Bathroom pods. 3 Toilet pods. 4 Shower Room pods. 5 Final connections of cold water, hot water, electricity and other fuels to pods. 6 Sundry items. 7 Testing and commissioning. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Cold water and hot water distribution feeding pod (included in sub-element 5.4.2: Cold water distribution or sub-element 5.4.2: Hot water distribution). 2 Foul drainage from pod (included in sub-element 5.3.1: Foul drainage above ground). 3 General purpose low voltage (LV) power supplies to pod (included in sub-element 5.8.2: Power installations). 4 Fire resistant stopping in connection with pods, including fire sleeves installed on site (included in element 5.14: Builder's work in connection with services). 5 Builder's work in connection with services (included in element 5.14: Builder's work in connection with services).
	2 Prefabricated toilet pods: details to be stated.				
	3 Prefabricated shower room pods: details to be stated.				
	4 On-site testing of installations	%			
	5 On-site commissioning of installations.				

Group element 7: Work to existing buildings

Group element 7 comprises the following elements:

7.1 Minor demolition works and alteration works

7.2 Repairs to existing services

7.3 Damp-proof courses/fungus and beetle eradication

7.4 Facade retention

7.5 Cleaning existing surfaces

7.6 Renovation works

Note: Fit-out works in connection with a new building (i.e. built to shell and core) do not constitute works to existing buildings. Such fit-out works are to be measured as new works in accordance with the measurement rules.

Element 7.1: Minor demolition works and alteration works

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Minor demolition and alteration works **Definition:** Individual items of work to existing buildings, involving one or more trade, in altering, adapting or repairing existing buildings, including cutting away and removing existing work and inserting new, and minor demolition works and soft strip.	1 Spot items: details to be stated.	item	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where the length of a component is to be measured, the length of linear components measured is their extreme length, over all obstructions. C3 Where the area of a component is to be measured, the area measured for items is the surface area of item. No deduction for voids. C4 Work arising out of party wall awards/agreements is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Stripping out existing services installations, including pipe casings and the like. 2 Stripping out fixtures, fittings. 3 Stripping out skirtings, dado rails, picture rails, architraves and the like. 4 Taking out kitchen fittings and appliances. 5 Removing shelves, work benches and the like. 6 Removing sanitary appliances and fittings. 7 Removing parts of existing buildings. 8 Cutting openings in existing work. 9 Strutting and supports to openings in walls or after removal of walls. 10 Inserting tie beams, tie rods and the like. 11 Removing wall, floor and ceiling finishes. 12 Removing internal walls and partitions, including making good. 13 Removing floor construction. 14 Removing existing roof coverings. 15 Repairs to external wall cladding and covering systems. 16 Repairs to roof coverings (e.g. tiles, slates, sheet coverings, flexible sheet coverings and asphalt). 17 Repairs to existing rainwater installations. 18 Rebuilding chimney stacks. 19 Cutting back chimney breasts. 20 Rebuilding piers and columns. 21 Rebuilding walls and partitions (isolated – where not included in element 2.7: Internal walls and partitions).	1 Removal of toxic or hazardous material prior to alteration works, e.g. asbestos removal (included in sub-element 0.1.1: Toxic or hazardous material removal). 2 Decontaminating existing services systems prior to demolition, e.g. boilers and fuel storage tanks and vessels (included in sub-element 0.1.1: Toxic or hazardous material removal). 3 Underpinning to external walls which are an integral part of the new building (included in sub-element 1.1.3: Underpinning). 4 Underpinning to walls within existing buildings, which are to be rehabilitated, i.e. internal walls (included in sub-element 1.1.3: Underpinning). 5 Underpinning to external site boundary walls (included in sub-element 8.8.3: Underpinning to external site boundary walls). 6 Overhauling and repairs to existing mechanical and electrical installations, systems, plant and equipment (included in sub-element 7.2.1: Existing services). 7 Repairs to masonry, concrete, metal, timber and plastics components (included in element 7.6: Renovation works, as appropriate). 8 New building work and services within existing buildings to be included in the appropriate element/sub-element for building works. Work to existing buildings to be described and identified separately within each element/sub-element.
	2 Minor demolition works: details to be stated.	nr/m/ m^2			
	3 Removal: details to be stated.	item/ nr/m/ m^2			
	4 Alteration works: details to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				22 Repairs to sheet linings (e.g. plasterboard and timber sheeting – to walls, floors and ceilings). 23 Taking out windows, doors, frames, linings, screens and the like preparatory to filling openings and/or taking down wall or partition. 24 Filling in or covering over existing openings. 25 Inserting new windows, doors, stairs, rooflights and the like into existing building fabric. 26 Re-glazing. 27 Repairs to screeds. 28 Repairs to toppings (e.g. granolithic). 29 Latex screeds (i.e. to existing floors). 30 Repairs to plastered, rendered and roughcast coatings (including lathing and baseboards). 31 Repairs to tiled finishes – walls and floors (e.g. quarry tiles, ceramic tiles). 32 Repairs to wood block flooring. 33 Repairs to floor coverings. 34 Degreasing old painted surfaces. 35 Stripping previously decorated surfaces. 36 Removing paint from timber, metal and other similar surfaces (e.g. burning off paint and chemically stripping paint). 37 Repainting existing timber, metal and other similar surfaces (e.g. windows, doors, rooflights and the like). 38 Scrapping paint from plastered surfaces and the like. 39 Minor painting and redecoration (e.g. touch-up painting). 40 Overhauling ironmongery to windows, doors and the like.	9 Repairs to or replacement of structural members (e.g. roof members and structural beams) – (included in sub-element 7.6.2: Concrete repairs, sub-element 7.6.3: Metal repairs or sub-element 7.6.4: Timber repairs, as appropriate). 10 Repairs to existing windows, doors, hatches, rooflights, frames, linings and the like (included in sub-element 7.6.3: Metal repairs, sub-element 7.6.4: Timber repairs or sub-element 7.6.5: Plastics repairs, as appropriate). 11 Damp-proof courses (included in sub-element 7.3.1: Damp-proof courses). 12 Fungus/beetle eradication (included in sub-element 7.2.2: Fungus/beetle eradication).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				41 Applying sealants to existing window and door frames, rooflights and the like. 42 Other alteration works (spot items). 43 Temporary screens required for alteration works. 44 Sundry items. 45 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 7.2: Repairs to existing services

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Repairs to existing services **Definition:** Refurbishment of existing services installations, systems, equipment and plant.	1 Equipment/plant repairs: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the area serviced by the installation/system. The area serviced is measured using the rules of measurement for ascertaining the gross internal floor area (GIFA). C3 Where more than one installation/system is employed, the area measured for each system is the area serviced by the installation/system. Areas to be measured using the rules of measurement for ascertaining the GIFA. C4 Where components are to be itemised, the number of key sub-components comprising the component are to be identified, described and enumerated within the description of the component. C5 Other cost significant items are to be measured by area (m^2), linear measurement (m) or enumerated (nr) and identified separately. C6 Work arising out of party wall awards/agreements is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C8 the percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Repairs to existing sanitary appliances (including clearing blockages). 2 Repairs to/overhauling of existing mechanical and electrical plant and equipment (e.g. boilers, water heaters, storage tanks and vessels, and extractor fans), including the replacement of components. 3 Fault finding. 4 Overhauling existing mechanical and electrical installations and systems (e.g. heating installation, ventilation systems, electrical systems and the like), including the replacement of components. 5 Repairs and upgrades to existing specialist services (e.g. lifts). 6 Renewing flue pipes. 7 Sundry items. 8 Testing and commissioning 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Decontaminating existing services systems prior to demolition, e.g. boilers and fuel storage tanks and vessels (included in sub-element0.1.1: Toxic or hazardous material removal). 2 New services installations (included in group element 5: Services, as appropriate). 3 New services equipment and plant (included in group element 5: Services, as appropriate).
	2 Overhauling services installations/systems: details to be stated.	m^2			
	3 testing of equipment/plant and/or installations.	%			
	4 Commissioning of equipment/plant and/or installations.				

Element 7.3: Damp-proof courses/fungus and beetle eradication

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Damp-proof courses **Definition:** Preventing rising damp in existing masonry walls.	1 Damp-proof courses: details to be stated.	m	C1 The length of linear components measured is their extreme length, over all obstructions. C2 Work arising out of party wall awards/agreements is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Chemical damp-proof courses, including drilling holes, injecting chemicals and making good holes. 2 Injection mortar damp-proof courses. 3 Inserted mechanical damp-proof courses. 4 Local making good to finishes. 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Damp-proof courses inserted into new walls (included in group element 1: Substructure, as appropriate).
2 Fungus/beetle eradication **Definition:** Treating existing timbers to eradicate fungus attacks such as dry and wet rot, and various types of wood boring infestation.	1 Eradication treatment: details to be stated.	m^2	C1 The area measured is the surface area of the treatment. No deduction for voids. C2 Work arising out of party wall awards/agreements is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Opening up existing work (e.g. lifting and replacing floor boards). 2 Cutting out fungus or beetle infested timber, plaster and the like, and disposing of cut out material. 3 Applying preservative treatment (e.g. irrigation of walls by pressure injection, application of anti-fungicide solution and treating with insecticide). 4 Solid rod preservative inserts. 5 Preservative treatments. 6 Paste preservative treatment. 7 Insecticidal smoke treatment.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				8 Sundry items. 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note:** Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Element 7.4: Facade retention

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Facade retention **Definition:** Temporary or semi-permanent support for unstable structures or facades (i.e. structures not to be demolished).	1 Support structures: details to be stated. 2 Periodic technical inspections of support structures: details to be stated. 3 Removing support structures: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Contractor designed work is to be described and identified separately. **Note:** Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Facade retention works where existing facade is to be integrated into new building. 2 Location surveys. 3 Commencement and completion condition surveys. 4 Dead, raking, flying or box shores; strutting (including bracing; sole plates and wall plates; needles, including holes; brackets, blockings and wedges; dog irons and similar metal work). 5 Foundations for shores. 6 Cutting holes in existing structures for needles and the like. 7 Design, erection, maintenance, reposition and removal of support structures. 8 Periodic technical inspections. 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note:** Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Temporary or semi-permanent supports to structures adjacent to the site on which the building is being built, including party walls (included in element 0.3.1: Temporary supports. 2 Temporary supports to basement retaining walls (included in sub-element 0.1.2: Major demolition works). 3 Temporary screens required for alteration works (included in sub-element 7.1.1: Minor demolition works and alteration works). 4 Supports to small openings cut into existing walls or after removal of internal walls or the like (included in sub-element 7.1.1: Minor demolition works and alteration works).

Element 7.5: Cleaning existing surfaces

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Cleaning **Definition:** Cleaning and removing stains and deposits from existing surfaces.	1 Cleaning existing surfaces: details to be stated.	m^2	C1 The area measured is the surface area of the surface to be cleaned. No deduction for voids. C2 Work arising out of party wall awards/agreements is to be described and identified separately.	1 Removing efflorescence, stains, soot, graffiti, vegetation, algae, bird droppings and the like. 2 Cleaning by washing, abrasive blasting, chemical treatment or other methods. 3 Artificial weathering. 4 Sundry items. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note:** Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Bird repellent coatings and the like (included in sub-element 4.4.1: Bird and vermin control).
2 Protective coatings **Definition:** Coatings to protect existing surfaces, including bird/vermin repellent coatings.	1 Protective coatings to existing surfaces: details to be stated.	m^2	C1 The area measured is the surface area of the surface to be coated. No deduction for voids. C2 Work arising out of party wall awards/agreements is to be described and identified separately.	1 Internal and external surfaces. 2 Specialist painting/coating systems (i.e. designed for use on concrete, masonry, steelwork or the like). 3 Lime washing, colourless waterproofers, anti-graffiti colourless coatings and the like. 4 Bird repellent coatings and the like. 5 Sundry items. 6 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note:** Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Bird repellent coatings and the like (included in sub-element 4.4.1: Bird and vermin control).

Element 7.6: Renovation works

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Masonry repairs **Definition:** Local cutting out and reinstatement of existing brick, block or stonework and repointing defective joints.	1 Masonry repairs: details to be stated.	nr/m/ m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where the length of a repair is to be measured, the length of linear components measured is their extreme length, over all obstructions. C3 Where the area of a repair is to be measured, the area measured is the surface area of the repair. C4 Work arising out of party wall awards/agreements is to be described and identified separately.	1 Cutting out decayed, defective and cracked bricks, blocks or stones and inserting new (including isolated repairs, stitching and the like). 2 Plastic stone repairs. 3 Re-dressing stonework to new profiles. 4 Inserting new wall ties (without demolition). 5 Grouting. 6 Rejointing/repointing existing masonry. 7 Sundry items. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note:** Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Damp-proof courses inserted into new walls (included in group element 1: Substructure as appropriate).
2 Concrete repairs **Definition:** Cutting out, repairing, partially replacing, resurfacing and rehabilitating eroded and defective concrete.	1 Concrete repairs: details to be stated.	nr/m/ m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured is the surface area of the repair. C4 Work arising out of party wall awards/agreements is to be described and identified separately.	1 Cutting out defective concrete and replacing with new. 2 Cutting out defective reinforcement and replacing with new. 3 Cleaning and rust proofing existing rusted reinforcement. 4 Concrete and resin/cement mixes in repairs and resurfacing, including spray applied concrete. 5 Anchored mesh reinforcement. 6 Resin or cement impregnation/injection.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				7 Sundry items. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note:** Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
3 Metal repairs **Definition:** Repairing, renovating and conserving existing architectural metalwork, metal components and finishes.	1 Metal repairs: details to be stated.	nr/m/ m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured is the surface area of the repair. C4 Work arising out of party wall awards/agreements is to be described and identified separately.	1 Taking down metalwork. 2 Cleaning and restoring surface finishes. 3 Straightening. 4 Rust proofing. 5 Metalwork repairs (e.g. welding, riveting and bolting), rejointing, reassembling and refixing. 6 Renewing surface finishes off-site. 7 Repairs to structural members (e.g. roof members and structural beams). 8 Repairs to existing windows, doors, hatches, rooflights, frames, linings and the like (including overhauling/renewing ironmongery, sash cords, opening gear and the like). 9 Repairs to staircases, including handrails and balustrades. 10 Sundry items. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note:** Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Renewing/replacing metal components in their entirety (e.g. roof structure, windows, doors, frames, rooflights and the like) – (included in group element 2: Superstructure or sub-element 7.1.1: Minor demolition works and alteration works, as appropriate).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Timber repairs **Definition:** Repairing, renovating and conserving existing timber structures, components and finishes.	1 Timber repairs: details to be stated.	nr/m/ m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured is the surface area of the repair. C4 Work arising out of party wall awards/agreements is to be described and identified separately.	1 Taking down existing work, cleaning and resurfacing, cutting out defective or decayed timber, piecing-in new timber, rejointing, refixing work. 2 Resin repairs to timbers. 3 Preservative/fire retardant treatments. 4 Repairs to structural members (e.g. roof members and structural beams). 5 Repairs to existing windows, doors, hatches, rooflights, frames, linings and the like (including overhauling/renewing ironmongery, sash cords, opening gear and the like). 6 Repairs to staircases, including handrails and balustrades. 7 Sundry items. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note:** Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Renewing/replacing timber components in their entirety (e.g. roof structure, windows, doors, frames, rooflights and the like) – (included in group element 2: Superstructure or sub-element 7.1.1: Minor demolition works and alteration works, as appropriate).
5 Plastics repairs **Definition:** Repairs to plastic windows, rooflights, doors, cladding and the like.	1 Plastics repairs: details to be stated.	nr/m/ m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured is the surface area of the repair. C4 Work arising out of party wall awards/agreements is to be described and identified separately.	1 Renewing domed rooflights. 2 Overhauling of windows, rooflights, doors and the like. 3 Repairs to rooflights, doors and the like. 4 Sundry items. 5 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Renewing/replacing plastics components in their entirety (e.g. roof coverings, windows, doors (including frames), rooflights and the like) – (included in group element 2: Superstructure or sub-element 7.1.1: Minor demolition works and alteration works, as appropriate).

Group element 8: External works

Group element 8 comprises the following elements:

8.1 Site preparation works

8.2 Roads, paths, pavings and surfacings

8.3 Soft landscaping, planting and irrigation systems

8.4 Fencing, railings and walls

8.5 External fixtures

8.6 External drainage

8.7 External services

8.8 Minor building works and ancillary buildings

Note: Works associated with toxic/hazardous material removal; major demolition works; specialist groundworks; temporary diversion works and extraordinary site investigation works are included in group element 0: Facilitating works.

Element 8.1: Site preparation works

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Site clearance **Definition:** Preparatory work required to clear existing site vegetation, trees and the like, including the application of herbicides over the site before commencement of excavation works.	1 Clearing vegetation: details to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where components are to be itemised, the number of key elements comprising the component are to be identified, described and enumerated within the description of the component. C3 The area measured is the surface area to which the work applies. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Work outside the curtilage of the site is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Clearing existing site vegetation (e.g. shrubs and undergrowth), including disposing of arisings. 2 Taking down trees, including grubbing up tree stumps and roots and disposing of arisings. 3 Protection of protected trees. 4 Minor demolition works (e.g. outbuildings and the like). 5 Applying herbicides before commencement of excavation works. 6 Sundry items. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Removal of toxic or hazardous materials (e.g. asbestos) – (included in sub-element 9.1.1: Toxic or hazardous material removal). 2 Major demolition works (included in sub-element 9.2.1: Demolition works). 3 Contaminated ground material removal (included in sub-element 9.1.2: Contaminated land). 4 Contaminated ground material treatment (included in sub-element 9.1.2: Contaminated land). 5 Eradication of Japanese knotweed, giant hogweed or other invasive plant (included in sub-element 9.1.3: Eradication of plant growth). 6 General site contouring and adjusting levels (included in sub-element 8.1.2: Preparatory groundworks).
	2 Taking down trees: details to be stated.	nr			
	3 Removing tree stumps and roots: details to be stated.				
	4 Tree protection: details to be stated.	item			
	5 Minor demolition works: details to be stated.	item/nr			
	6 Applying herbicides: details to be stated.	m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Preparatory groundworks **Definition:** Preparatory earthworks to form new contours.	1 Forming new site contours and adjusting existing site levels: details to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the surface area to which the work applies. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Excavation and earthworks to form new site contours and adjust existing site levels. 2 Breaking out (or grubbing up) existing substructures, ground slabs, strip foundations, basement retaining walls and the like, including disposal. 3 Extracting old piles, including disposal. 4 Breaking out existing hard pavings, including concrete, bituminous bound material, brick, block and other hard materials, including disposal. 5 Removing existing underground storage tanks, including disposal and decontamination where not undertaken as facilitating works. 6 Grubbing up redundant foul and surface water drainage, including manholes, soakaways, catch pits, interceptors and the like, including disposal. Filling void. 7 Filling disused manholes, shafts and the like. 8 Sundry items. 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Ground investigation (included in group element 12: Project/design team fees). 2 Removing contaminated ground material (included in sub-element 9.1.2: Contaminated land). 3 Treatment of contaminated ground material (included in sub-element 9.1.2: Contaminated land). 4 Eradication of Japanese knotweed, giant hogweed or other invasive plant (included in sub-element 9.1.3: Eradication of plant growth). 5 Site dewatering and pumping (included in sub-element 9.1.3: Eradication of plant growth). 6 Soil stabilisation measures (included in sub-element 9.1.3: Eradication of plant growth). 7 Ground gas venting measures (included in sub-element 9.1.3: Eradication of plant growth). 8 Temporary diversion of existing drainage systems, existing services installations and systems, rivers, streams and the like (included in sub-element 9.4.1: Temporary diversion works). 9 Cultivating and final grading of soil for seeding, turfing or planting (included in element 8.3: Soft landscaping, planting and irrigation systems, as appropriate). 10 Excavation and earthworks associated with foundations, basements, ground slabs and beds (included in group element 1: Substructure, as appropriate).
	2 Breaking out existing substructures: details to be stated.				
	3 Breaking out existing hard pavings: details to be stated.				
	4 Grubbing up old drainage pipelines: details to be stated.	m			
	5 Grubbing up old manholes and the like: details to be stated.	nr			
	6 Filling disused manholes and the like: details to be stated.				
	7 Removing existing underground storage tanks, including disposal: details to be stated.				

Element 8.2: Roads, paths, pavings and surfacings

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Roads, paths and pavings **Definition:** Roads, paths and pavements, vehicular and pedestrian, including car parks and protection of grassed areas, and non-specialist surfacings and pavings used for sports and general amenities.	1 Roads: details, including width, to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured for paved areas, hardstandings and the like is the surface area of the paving. No deduction is made for voids caused by tree grilles and the like. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Curved work is to be described and identified separately. C7 Work outside the curtilage of the site is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Excavation and earthworks associated with the construction of roads, paths and pavings. 2 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works). **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction risk allowance for the extra cost of disposing of contaminated material. 3 Disposal of surface water and ground water. 4 Preparation of sub-grades, including applying herbicides, levelling, grading, rolling, sub-grade improvement layers and geotextile membranes. 5 Sub-bases to roads, paths and pavings (e.g. granular and soil-cement), including laying, levelling, grading, and compacting. 6 Blinding (e.g. sand, cement bound sand and lean mix concrete). 7 In-situ concrete to roads, paths and pavings, including formwork, reinforcement, joints, worked finishes and the like. 8 Coated macadam and asphalt to roads, paths and pavings, including road bases, base course and wearing courses, application of binders, forming channels and the like. 9 Interlocking bricks and blocks to roads, paths and pavings, including sand beds, geotextile membranes, paving units, integral kerbs and edgings, and vibrating pavings.	1 Temporary roads, paths, pavings, hardstandings and the like (included in sub-element 10.2.2: Site establishment). 2 Special surfacings and pavings for sport and general amenity areas (included in sub-element 8.2.2: Special surfacings and pavings). 3 Bollards, including removable and collapsible (included in sub-element 8.5.1: Site/street furniture and equipment). 4 Surface water drainage, including road gullies (included in sub-element 8.6.1: Surface water and foul water drainage). 5 Prefabricated channels where not formed by using paving material (included in sub-element 8.6.1: Surface water and foul water drainage).
	2 Paths: details, including width, to be stated.				
	3 Paved areas, hardstandings and the like: details to be stated.	m^2			
	4 Roundabouts: details to be stated.	nr			
	5 Road crossings: details to be stated.				
	6 Steps: details to be stated.				
	7 Ramps: details to be stated.	nr/m			
	8 Traffic calming accessories: details to be stated.	nr			
	9 Tree grilles: details to be stated.				
	10 Vehicle protection barriers: details to be stated.	m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	11 Bumpers: details to be stated.	m		10 Paving slabs to paths and pavings, including sand and mortar beds, separating layers, geotextile membranes, paving slabs, shallow channels and low edgings formed with standard paving units, movement joints and dividing strips (e.g. precast concrete, natural and artificial stone slab paving). 11 Frangible smoke outlet paving panels to basements. 12 Paving slab cycle stands. 13 Brick paving to paths and pavings, including sand and mortar beds, separating layers, geotextile membranes, brick paving, shallow channels and low edgings formed with standard paving units, movement joints and dividing strips. 14 Sett and cobbled pavings to roads, paths and pavings, including sand and mortar beds, separating layers, geotextile membranes, brick paving, shallow channels and low edgings formed with standard paving units, movement joints and dividing strips (e.g. stone setts, concrete setts and cobbles). 15 Gravel surfacing to roads, paths and pavings (sealed and unsealed), including treating base with weedkiller, geotextile membranes, sealing surface with bituminous emulsion and the like. 16 Uncoated stone chipping surfacing to roads, paths and pavings, including treating base with weedkiller, binders and the like. 17 Hoggin and woodchip surfacing to roads, paths and pavings, including treating base with weedkiller, binders and the like. 18 Perforated units as protection to grassed areas (e.g. to form roads, paths and car parking areas).	
	12 Pavement markings: details to be stated.	nr/m			
	13 Repairs to existing roads, paths and pavings: details to be stated.	nr/m/m^2			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				19 Kerbs, kerb channels and the like, including concrete foundations, and haunchings, kerbs and kerb accessories (standard and purpose made kerbs). 20 Edgings, including concrete foundations and haunchings (standard and purpose made edgings). 21 Timber edgings and pegs. 22 Road crossings, zebra crossings and pelican crossings, including road markings, beacons, lights, signs, advance danger signs and the like and final connections to services. 23 Vehicle protection barriers. 24 Vehicle bump rails and the like. 25 Paving accessories, including cat's eyes, tree grilles, traffic calming accessories and the like. 26 Pavement markings, including paint, thermoplastic and hot applied markings. 27 Steps, including structure, finishings, balustrades and handrails. 28 Ramps, including structure, finishings, balustrades and handrails. 29 Repairs to existing roads, paths and pavings. 30 Sundry items. 31 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Special surfacings and pavings **Definition:** Surfacings and pavings specially and specifically for outdoor sporting activities and general amenities.	1 Surfacings and pavings: details to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured for surfacings and pavings is the surface area of the surfacing or paving. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Work outside the curtilage of the site is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project)	1 Surfacings and pavings designed specially and specifically for sports and general amenities, such as: – sheet and liquid applied surfacings (e.g. synthetic rubber, granulated rubber, plastics and fibre) – synthetic tufted surfacings for ski slopes – proprietary coloured no fines concrete and clay/shale surfacings and pavings. 2 Excavation and earthworks associated with the construction of surfacings and pavings for sporting activities and general amenities. 3 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works). **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction risk allowance for the extra cost of disposing of contaminated material. 4 Disposal of surface water and ground water. 5 Preparation of sub-grades, including applying herbicides, levelling, grading, rolling, sub-grade improvement layers and geotextile membranes and the like. 6 Sub-bases to surfacings and pavings, including laying, levelling, grading, and compacting. 7 Accessories to surfacings and pavings. 8 Markings to surfacings and pavings. 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Non-specialist surfacings and pavings used for sports and general amenities (included in sub-element 8.2.1: Roads, paths and pavings). 2 Natural grass surfaces used for sports (included in sub-element 8.3.1: Seeding and turfing). 3 Indoor surfaces used for sports (included in sub-element 3.2.1: Finishes to floors). 4 Surface water drainage, which is not an integral part of the surfacing or paving system (included in sub-element 8.6.1: Surface water and foul drainage or sub-element 8.6.4: Land drainage, as appropriate).

Element 8.3: Soft landscaping, planting and irrigation systems

Note: Where testing and commissioning is required to be measured under sub-element 8.3.3: Irrigation systems, the terms shall include the following works:

1 Testing includes:

(1) Water tests

(2) Water required for testing

2 Commissioning includes:

(1) Commissioning, including preliminary checks, setting systems and installations to work and regulation thereof, and commissioning records

(2) Temporary operation of equipment to employer's requirements

(3) Fuels required for testing and commissioning

3 Setting all installations to work after completion of commissioning.

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Seeding and turfing **Definition:** Preparing soil and seeding or turfing to form lawns, parklands and other general grassed areas.	1 Grassed areas: details to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured for grassed areas is the surface area of the area to be grassed, measured over all obstructions. Areas of roads, paths, pavings, ponds and the like to be deducted. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Work outside the curtilage of the site is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Applying herbicides. 2 Topsoil, including transporting from stockpiles or importing topsoil and spreading. 3 Cultivating topsoil, including removing stones and weeds. 4 Fine grading of topsoil. 5 Providing, spreading and working in manure, compost, mulch, fertiliser, soil ameliorants and the like. 6 Light mesh reinforcement. 7 Seeding, including hydraulic seeding. 8 Turfing. 9 Reinforced grass proprietary systems, including sub-base, topsoil, reinforced root zone, seeding or turfing. 10 Seeding and turfing to retaining structures. 11 Initial grass cutting. 12 Initial marking out of grass sports pitches (e.g. football, rugby and cricket). 13 Watering, before end of defects liability period, period for rectifying defects or maintenance period. 14 Replacement seeding and turfing. 15 Maintenance work specified to be executed during the defects liability period, period for rectifying defects or maintenance period (i.e. as distinct from making good defects), including mowing and fertilising. 16 Work to existing grassed areas, including scarifying, forking, fertilising, applying weedkillers, local reseeding or re-turfing, etc. 17 Sundry items. 18 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Excavation and earthworks to forming new site contours and adjust existing site levels (included in sub-element 8.1.2: Preparatory groundworks). 2 Grass block pavings (included in sub-element 8.2.1: Roads, paths and pavings).
	2 Reinforced grass proprietary systems: details to be stated.				
	3 Marking out of grass sports pitches: details to be stated.	nr			
	4 Work to existing grassed areas: details to be stated.	m^2			
	5 Maintenance of grassed areas: details, including time period (weeks) to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 External planting **Definition:** Preparing soil and planting bulbs, corms, tubers, hebacaceous plants, trees, hedges, shrubs and reed beds.	1 Planting: details to be stated.	m^2	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured is the surface area of external planting, measured over all obstructions. Areas of roads, paths, pavings, ponds and the like to be deducted. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Work outside the curtilage of the site is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Applying herbicides. 2 Topsoil, including transporting from stockpiles or importing topsoil and spreading. 3 Cultivating topsoil, including removing stones and weeds. 4 Fine grading of topsoil. 5 Forming raised and sunken beds, borders and the like. 6 Providing, spreading and working in manure, compost, mulch, fertiliser, soil ameliorants and the like. 7 Overlays, including mulch matting, and gravel, bark or other materials. 8 Planting bulbs, corms, tubers and the like. 9 Planting container grown plants. 10 Planting to retaining structures. 11 Planting shrubs and hedges. 12 Fence support for hedges. 13 Planting trees, including nursery stock and semi-mature trees. 14 Excavating and back filling tree pits. 15 External prefabricated plant/tree containers. 16 Support wires for climbers, tree stakes, tree guards, wrapping, labelling, and other protection of trees, shrubs and plants. 17 Planting reed beds and the like. 18 Woodland planting. 19 Tree surgery, thinning and pruning. 20 Applying anti-desiccants. 21 Watering, before end of defects liability period, period for rectifying defects or maintenance period. 22 Protecting new planted areas with temporary fencing, boards, tarpaulins, and the like.	1 Clearing existing site vegetation (e.g. shrubs and undergrowth), including disposing of arisings (included in sub-element 8.1.1: Site clearance). 2 Taking down trees, including grubbing up tree stumps and roots and disposing of arisings (included in sub-element 8.1.1: Site clearance). 3 General site contouring and adjusting levels (included in sub-element 8.1.2: Preparatory groundworks). 4 Internal planting (included in sub-element 4.3.1: Internal planting). 5 Tree grilles (included in sub-element 8.2.1: Roads, paths and pavings). 6 Seeding and turfing (included in sub-element 8.3.1: Seeding and turfing). 7 Green roofs and roof gardens (included in sub-element 2.3.2: Roof coverings). 8 Planting to green roofs/roof gardens (included in sub-element 2.3.2: Roof coverings).
	2 Planting reed beds: details to be stated.				
	3 Hedges: details to be stated.	m			
	4 Trees: details to be stated.	nr			
	5 Woodland planting: details to be stated.	m^2			
	6 Tree surgery, thinning and pruning: details to be stated.	nr			
	7 Maintenance work to plants and shrubs and planting beds: details, including time period (weeks), to be stated.	m^2			
	8 Maintenance work to trees: details, including number of occasions and time period (weeks), to be stated.	nr			
	9 Maintenance work to hedges: details, including time period (weeks), to be stated.	m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				23 Maintenance work specified to be executed during the defects liability period, period for rectifying defects or maintenance period (i.e. as distinct from making good defects), including weeding and pruning. 24 Replacement planting. 25 Sundry items. 26 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Irrigation systems **Definition:** Piped water supply systems to landscape planted areas or crop planted areas providing a water supply for growing purposes.	1 Irrigation systems: details to be stated.	m^2	C1 The area measured for irrigation systems is the surface area of land serviced by the system. C2 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C3 Work outside the curtilage of the site is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project) C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Pipelines, including pipeline fittings and ancillaries. 2 Storage tanks and vessels. 3 Chemical storage vessels. 4 Chemical dosing equipment. 5 Nutrient treatment and equipment. 6 Outlet pipes and nozzles. 7 Painting, anti-corrosion treatments and coating systems to storage tanks and vessels, pipelines and the like. 8 Builder's work in connection with land drainage. 9 Sundry items. 10 Testing and commissioning. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Mains water supply (included in sub-element 8.7.1: Water mains supply). 2 General power installations to external plant and equipment (included in sub-element 8.7.4: Electricity distribution to external plant and equipment). 3 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Testing of installations.	%			
	3 Commissioning of installations.				

Element 8.4: Fencing, railings and walls

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Fencing and railings **Definition:** Fencing and railings and the like to prevent access to or from an area, or to provide light or noise screening, with associated gates.	1 Fencing: details, including height (m), to be stated. 2 Railings: details, including height (m), to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C5 Curved work is to be described and identified separately. C6 Work outside the curtilage of the site is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Timber, metal and concrete fencing systems, including all system components. 2 Railings. 3 Noise/light screening, including systems applied to fencing. 4 Gates and gate posts associated with fencing, and railings. 5 Security gates and gate posts associated with fencing, and railings, including mechanical and electrical operating equipment, guide rails and the like. 6 Ironmongery for gates. 7 Fencing to provide light or noise screening, including systems attached to fencing. 8 Excavating, concreting and backfilling holes for posts and the like. 9 Fixing railings to concrete and masonry. 10 Painting, coating and preservative treatments. 11 Sundry items. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Balustrades and handrails to external steps (included in sub-element 8.2.1: Roads, paths and pavings). 2 Balustrades and handrails to external ramps (included in sub-element 8.2.1: Roads, paths and pavings). 3 Hedges (included in sub-element 8.3.2: External planting). 4 Masonry walls and screens (included in sub-element 8.4.2: Walls and screens). 5 Masonry walls and screens with timber infill panels (included in sub-element 8.4.2: Walls and screens). 6 Retaining walls (included in sub-element 8.4.3: Retaining walls). 7 General low voltage (LV) power installations to security gates (included in sub-element 8.7.4: Electricity distribution to external plant and equipment).
	3 Gates: details to be stated.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Walls and screens **Definition:** Non-retaining walls and screens and the like to prevent access to or from an area, or to provide light or noise screening, with associated gates.	1 Walls: details, including height (m), to be stated. 2 Screens: details, including height (m), to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C5 Work outside the curtilage of the site is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Masonry walls and screens (e.g. brickwork, blockwork and stonework) including foundations, reinforcement and design joints. 2 Masonry walls and screens with timber infill panels, including foundations. 3 Trench and pit excavations. 4 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works). **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction risk allowance for the extra cost of disposing of contaminated material. 5 Disposal of surface water and ground water. 6 Consolidating and compacting formation level to receive foundations. 7 Blinding. 8 Piers, including reinforcement. 9 Pier caps. 10 Copings and the like. 11 Gates and gate posts associated with walls and screens. 12 Security gates and gate posts associated with walls and screens, including mechanical and electrical operating equipment, guide rails and the like. 13 Ironmongery for gates. 14 Sundry items. 15 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Retaining walls (included in sub-element 8.4.3: Retaining walls). 2 General low voltage (LV) power installations to security gates (included in sub-element 8.7.4: Electricity distribution to external plant and equipment).
	3 Gates: details to be stated.	nr			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Retaining walls **Definition:** Retaining walls which are not an integral part of the building.	1 Retaining walls: details, including height (m) above ground, to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C5 Work outside the curtilage of the site is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Concrete retaining walls, including reinforcement, formwork and design joints. 2 Fixings cast into or fixed to concrete retaining walls to retain masonry walls (e.g. brickwork, blockwork and stonework) facing wall. 3 Masonry facing walls to concrete retaining walls (e.g. brickwork, blockwork and stonework), including reinforcement and design joints. 4 Masonry retaining walls (e.g. brickwork, blockwork and stonework) including reinforcement and design joints. 5 Crib walls, including timber (including preservative treatment) and precast concrete headers and stretchers, and combined units; and sand and gravel filling. 6 Gabions, including steel mesh cages/mattresses and wiring together, graded stone filling and filter membranes. 7 Reinforced earth, including reinforcement layers (e.g. steel, polymeric and geotextile), selected fill material, anchors and soil nails, mesh to support soft landscape facing, concrete, timber facing and the like. 8 Other types of retaining structure. 9 Piles associated with external retaining walls (individual, continuous and steel sheet), including piling mats and platforms (installing and removing), piling rigs, cutting off excess lengths of piles or steel sheet piles, cutting out concrete to tops of piles and preparing pile heads and reinforcement, and pile tests. 10 Trench and pit excavations, including earthwork support (including insertion and extraction of steel sheet piling if used). 11 Excavating below ground water level.	1 Retaining walls which form an integral part of the building (included in sub-element 1.3.1: Basement retaining walls or sub-element 1.3.2: Embedded basement retaining walls, as appropriate). 2 Soft landscape work associated with retaining structures, including provision of topsoil, preparation of topsoil, seeding and turfing and planting (included in sub-elements 8.3.1: Seeding and turfing and 8.3.2: External planting, as appropriate).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				12 Disposal of excavated material, including tipping charges and landfill tax (including inert, non-hazardous and hazardous material where not to be carried out as facilitating works). **Note**: Where no contamination/remediation strategy report exists, an allowance is to be made within the construction *risk allowance* for the extra cost of disposing of contaminated material. 13 Disposal of surface water and ground water. 14 Consolidating and compacting formation level to receive foundations. 15 Blinding. 16 Weep holes. 17 Land drainage forming an integral part of the retaining wall. 18 Copings and the like. 19 Sundry items. 20 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Barriers and guardrails **Definition:** External vehicle and pedestrian barriers and guardrail systems with associated gates.	1 Vehicle restraint systems: details to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Vehicle restraint systems, including parapets. 2 Pedestrian restraint systems, including parapets. 3 Vehicle and pedestrian control barriers and gates not associated with fencing. 4 Excavating, disposal of excavated material, concreting and backfilling holes for posts and the like. 5 Fixing barriers and guardrails to concrete and masonry. 6 Painting, coatings and the like. 7 Sundry items associated with the provision of barriers and guardrails. 8 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Vehicle protection barriers (included in sub-element 8.2.1: Roads, paths and pavings). 2 Vehicle bump rails and the like (included in sub-element 8.2.1: Roads, paths and pavings).
	2 Pedestrian restraint systems: details to be stated.				
	3 Vehicle and pedestrian control barriers and gates: details to be stated.	nr			

Element 8.5: External fixtures

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Site/street furniture and equipment **Definition:** Furniture and equipment designed for use externally, but excluding items provided by a statutory undertaker.	1 Component: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work outside the curtilage of the site is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Gates, where not part of fencing, railings, walls, screens, barriers or guardrails. 2 Turnstiles. 3 Bollards, including removable and collapsible. 4 Seats, benches, tables. 5 Litter bins, grit bins, dustbins (including continental bins). 6 Poster display units, notice boards. 7 Cycle stands. 8 Directional signs, including reflective traffic signs. 9 Flagpoles. 10 Sports and play-ground equipment, including safety mats. 11 Other furniture and equipment to be used externally. 12 Minor footbridges. 13 Clothes drying fittings. 14 Bus stops, bus shelters, telephone boxes/booths, post boxes and road signs where not the responsibility of a statutory undertaker. 15 Sculptures and other works of art external to the building envelope. 16 Site/street furniture and equipment which act as transformation devices (i.e. generate energy). 17 Other site and street furniture and equipment.	1 Road crossings, including associated warning signs (included in sub-element 8.2.1: Roads, paths and pavings). 2 Cycle stands which are an integral part of pavings (included in sub-element 8.2.1: Roads, paths and pavings). 3 Tree grilles (included in sub-element 8.2.1: Roads, paths and pavings). 4 External prefabricated plant/tree containers (included in sub-element 8.3.2: External planting). 5 Gates where an integral part of fencing, railings, walls, screens, barriers or guardrails (included in element 8.4: Fencing, railings and walls, as appropriate). 6 Items which are the responsibility of a statutory undertaker (e.g. street lighting, bus stops and shelters, telephone boxes/booths, post boxes and road signs). 7 Illuminated traffic signs (included in sub-element 8.7.9: External street lighting systems). 8 External illumination/lighting systems (included in sub-element 8.7.9: External street lighting systems).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				18 All builder's work in connection with installing site/street furniture and equipment, including excavating, disposal of excavated material, concreting and backfilling holes for posts and the like, fixing devices, and fixing furniture and equipment in place. 19 Painting, coating and preservative treatments. 20 Sundry items. 21 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
2 Ornamental features **Definition:** Ornamental water features or the like.	1 Water features: details to be stated. 2 Other features: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Work outside the curtilage of the site is to be described and identified separately. C3 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Water features and the like. 2 Builder's work in connection with installing water features or the like. 3 Sundry items. 4 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Drainage installations (included in sub-element 8.6.1: Surface water and foul water drainage). 2 Mains water and power supply (included in sub-elements 8.7.1: Water mains supply; 8.7.2: Electricity mains supply; or 8.7.3: External transformation devices, as appropriate). 3 Testing and commissioning of external services (included in sub-element 8.7.13: Testing and commissioning of external services).

Element 8.6: External drainage

Note: Where testing and commissioning is required to be measured under element 8.6: External drainage, the terms shall include the following works:

1 Testing includes:

(1) Air tests

(2) Water tests

(3) Dyes required for testing

2 Commissioning includes:

(1) Commissioning, including preliminary checks, setting systems and installations to work and regulation thereof, and commissioning records

(2) Temporary operation of drainage to employer's requirements

3 Setting all drainage installations to work after completion of commissioning.

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Surface water and foul water drainage **Definition:** Foul water and surface water drainage systems, below ground and above ground, from first manhole beyond the enclosing walls of the building, the sewer connection, or other outfall (e.g. on-site sewage treatment facility).	1 Connections to statutory undertaker's sewers: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all branches, fittings and the like. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Connection to statutory undertaker's sewer or sewers. 2 Trenches for pipework, including excavation, earthwork support, backfilling and disposal of surplus material. 3 Pipeline and pipeline fittings. 4 Granular beds and surround, concrete beds, cradles, haunchings and surrounds, and foamed concrete backfill. 5 Supports for above ground drainage, including earth embankments. 6 Connections to manholes and the like. 7 Connections to above ground soil stacks, sanitary appliances and wastes. 8 Connections to ancillary equipment and systems (e.g. pumping stations and sewage treatment vessels). 9 Gullies and gratings, including road gullies and gratings. 10 Rodding and access points. 11 Prefabricated channels (i.e. in roads, paths and pavements). 12 Interceptor traps and fresh air inlets, and air release and wash out valves to pressure pipelines. 13 Inspection chambers, manholes and catch pits, including channels benchings, step irons, access covers and other accessories. 14 Soakaways. 15 Retention/storage tanks and vessels. 16 Cesspools and septic tanks. 17 Petrol interceptor units. 18 Packaged pumping stations. 19 Outfalls/outlet headwalls.	1 Above ground soil stacks, wastes and the like (included in sub-element 5.3.1: Foul drainage above ground). 2 Groundwater pressure relief drains to basement retaining walls connected to the drainage system, i.e. fin drains, filter drains and blanket drains (included in element 1.3: Basement retaining walls). 3 Sustainable urban drainage schemes (SUD) (included in sub-element 8.6.2: Ancillary drainage systems). 4 External on-site waste water or sewage treatment facilities (included in sub-element 8.6.2: Ancillary drainage systems). 5 Laboratory/industrial waste drainage (included in sub-element 8.6.3: External laboratory and industrial liquid waste drainage).
	2 Drainage runs; below ground: details, including depth of trench (m) and nominal size of pipe (mm), to be stated.	m			
	3 Drainage runs; above ground: details, including height above ground (m), nominal size of pipe (mm), to be stated.				
	4 Prefabricated channels: details, including nominal size, to be stated.				
	5 Manholes and the like: details, including depth (m), to be stated.	nr			
	6 Alterations to existing external drainage systems: details to be stated.				
	7 Work to existing manholes or the like: details to be stated.				
	8 Clearing existing drains: details to be stated.	nr/m			
	9 Sealing redundant drains: details to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
	10 Filling disused manholes or the like: details to be stated.	nr		20 Connections to sewers, where not statutory undertaker's sewers. 21 Connections to ancillary drainage systems. 22 Painting, anti-corrosion treatments and coating systems to drainage above ground. 23 Builder's work in connection with external surface water and foul water drainage. 24 Alterations to existing external drainage systems. 25 Work to existing manholes or the like. 26 Clearing existing drains. 27 Sealing redundant drains, including filling entire length of drain with foam concrete or the like. 28 Filling disused manholes. 29 Testing and commissioning of external surface water and foul water drainage. 30 Sundry items. 31 Testing and commissioning. 32 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
	11 Testing of installations.	%			
	12 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Ancillary drainage systems **Definition:** Systems with a storage tank or vessel for the reception of foul water and sewage at one level, for transfer by pump to drains or sewers at a higher level; sewage treatment systems to meet local special needs where it is necessary to treat human or animal sewage to render it safe for discharge into the statutory undertaker's drainage system; and sustainable urban drainage schemes.	1 Pumping stations: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 The area measured for sustainable urban drainage schemes is the surface area of land served by the scheme. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Work outside the curtilage of the site is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C7 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Pumping stations. 2 Ejector stations. 3 Storage/retention tanks and vessels (e.g. concrete and proprietary), including supports, forming protective bunds and the like. 4 Sewage treatment systems, including receivers or storage vessels and treatment vessels (e.g. concrete and proprietary), control components and monitoring equipment. 5 Enzyme systems. 6 Sustainable urban drainage schemes (SUDS). 7 Control components located externally. 8 Monitoring equipment located externally. 9 Painting, anti-corrosion treatments and coating systems to ancillary drainage equipment and systems. 10 Builder's work in connection with the provision of ancillary drainage equipment and systems. 11 Sundry items associated with the provision of ancillary drainage equipment and systems. 12 Testing and commissioning. 13 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Packaged pumping stations (included in sub-element 8.6.1: Surface water and foul water drainage). 2 General low voltage (LV) power installations to ancillary drainage systems, including cables, excavating and backfilling trenches and the like (included in sub-element 8.7.4: Electricity distribution to external plant and equipment). 3 Connections from drainage pipeline to system (included in sub-element 8.6.1: Surface water and foul water drainage). 4 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)).
	2 Ejector stations: details to be stated.				
	3 Storage/retention tanks and vessels: details to be stated.				
	4 Sewage treatment systems: details to be stated.				
	5 Enzyme systems: details to be stated.				
	6 Sustainable urban drainage schemes: details to be stated.	m^2			
	7 Testing of installations.	%			
	8 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 External chemical, toxic and industrial liquid waste drainage **Definition:** Laboratory/industrial waste drainage, from the external face of the external wall to point of disposal.	1 Drainage runs; below ground: details, including depth of trench (m) and nominal size of pipe (mm), to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all branches, fittings and the like. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C5 Work outside the curtilage of the site is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C7 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Trenches for pipework, including excavation, earthwork support, backfilling and disposal of surplus material. 2 Pipework and pipework fittings. 3 Granular beds and surround, concrete beds, cradles, haunchings and surrounds, and foamed concrete backfill. 4 Supports for above ground drainage, including earth embankments. 5 Connections, tanks and the like. 6 Storage tanks and vessels. 7 Settlement tanks. 8 Effluent treatment plant. 9 Dosing equipment. 10 Sterilisation equipment. 11 Connections to equipment. 12 Control components located externally. 13 Monitoring equipment located externally. 14 Painting, anti-corrosion treatments and coating systems to drainage pipelines. 15 Builder's work in connection with external laboratory and industrial liquid waste drainage. 16 Sundry items. 17 Testing and commissioning. 18 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Laboratory and industrial liquid waste drainage from external face of the external wall to the building to appliance or equipment (included in sub-element 5.3.2: Laboratory and industrial liquid waste drainage). 2 Testing and commissioning of external laboratory and industrial liquid waste drainage (included in sub-element 8.6.5: Testing and commissioning of external drainage installations).
	2 Drainage runs; above ground: details, including height above ground (m) and nominal size of pipe (mm), to be stated.	m			
	3 Equipment and plant: details to be stated.	nr			
	4 Testing of installations.	%			
	5 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Land drainage **Definition:** Disposal systems for the drainage of waterlogged ground.	1 Drainage runs; below ground: details, including depth of trench (m) and nominal size of pipe (mm), to be stated.	m	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all branches, fittings and the like. C3 The area measured for drainage blankets is the surface area of land serviced by the blanket. C4 The area measured for land drainage to parklands is the surface area of parkland. C5 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C6 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C7 Work outside the curtilage of the site is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C9 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Filter drains, with or without pipes. 2 Fin drains, with or without pipes. 3 Mole drains. 4 Trenchless drains. 5 Pipe drains, including fittings. 6 Drainage blankets (e.g. comprising layer of aggregate, porous pipes and upper/lower geotextile pipes). 7 Trenches for pipework, including excavation, earthwork support, backfilling and disposal of surplus material. 8 Pipework and pipework fittings (to point of disposal). 9 Granular fill and surrounds. 10 Geotextile filters and trench linings. 11 Silt traps, silt trap manholes and the like. 12 Soakaways. 13 Storage tanks and vessels. 14 Outfalls/outlet head walls. 15 Builder's work in connection with land drainage. 16 Clearing existing ditches, channels and the like. 17 Sundry items. 18 Testing and commissioning. 19 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Groundwater pressure relief drains to basement retaining walls connected to the main underground drainage systems to point of disposal (included in element 1.3: Basement retaining walls). 2 Testing and commissioning of land drainage (included in sub-element 8.6.5: Testing and commissioning of external drainage installations).
	2 Manholes and the like: details, including depth (m), to be stated.	nr			
	3 Drainage blankets: details to be stated.	m^2			
	4 Land drainage to parkland: details, including centres of main runs (m) and laterals (m), to be stated.	ha			
	5 Testing of installations.	%			
	6 Commissioning of installations.				

Element 8.7: External services

Note: Where testing and commissioning is required to be measured under element 8.7: External services, the terms shall include the following works:

1 Testing includes:

(1) Testing equipment and consumables

(2) Calibration

(3) Site installation tests

(4) Static testing, including testing records

(5) Performance testing, including performance test records

(6) Fuels required for testing

2 Commissioning includes:

(1) Commissioning, including preliminary checks, setting systems and installations to work and regulation thereof, and commissioning records

(2) Temporary operation of equipment to employer's requirements

(3) Fuels required for commissioning

3 Setting all mechanical and electrical services and installations to work after completion of commissioning (initial operation)

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Water mains supply **Definition:** Piped water supply systems bringing water from the statutory undertaker's mains to point of entry into building. Including distribution to external user points (e.g. to external plant and equipment) and fire hydrants.	1 Connections to statutory undertaker's water main: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 For connections to external plant and equipment, the number of draw-off points is to be stated. C3 The length of linear components measured is their extreme length, over all branches, fittings and the like. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Descriptions shall include the amount of any PC Sum included in the unit rates applied to the item. C6 Work outside the curtilage of the site is to be described and identified separately. C7 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C8 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Connections to statutory undertaker's water main. 2 Water main from statutory undertaker's mains to water meter, including pipelines and pipeline fittings, excavation and backfilling trenches, ground anchor blocks, and the like. 3 Connections to external plant and equipment. 4 Mains water supply and distribution of water supply to external plant and equipment), including pipelines and pipeline fittings, excavation and backfilling trenches, ground anchor blocks and the like. 5 Water meters, where not provided by the statutory undertaker, including chambers and enclosures. 6 Fire hydrants. 7 Trace heating. 8 Thermal insulation. 9 Constructing stop valve surface boxes. 10 Rainwater harvesting systems external to the building, including collection pipelines. 11 Grey water systems external to the building, including collection pipelines. 12 Sundry items. 13 Testing and commissioning. 14 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Piped water supply systems from point of entry into building to appliances and equipment within the building (included in sub-element 5.4.1: Mains water supply). 2 Piped water supply systems to distribute cold water from point of storage to user points within the building (included in sub-element 5.4.2: Cold water distribution). 3 Rainwater harvesting systems internal to the building (included in sub-element 5.4.2: Cold water distribution). 4 Grey water systems internal to the building (included in sub-element 5.4.2: Cold water distribution). 5 Irrigation (included in sub-element 8.7.10: Irrigation systems). 6 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Connections to external plant and equipment: details to be stated.				
	3 Service runs: details to be stated.	m			
	4 Rainwater harvesting systems: details, including the number of collection points (nr), to be stated.	nr			
	5 Grey water systems: details, including the number of collection points (nr), to be stated.				
	6 Testing of installations.	%			
	7 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Electricity mains supply **Definition:** The distribution of high voltage (HV) electricity from statutory undertaker's supply to an on-site transformer station; the distribution of low voltage (LV) electricity from the on-site transformer (or other supply intake) to the main switchgear panel within the building; and external installations for providing electricity, including emergency or standby generation plant.	1 Connections to statutory undertaker's electricity main: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Connections to statutory undertaker's electricity main. 2 Distribution of HV electricity to on-site transformer, including cables, excavating and backfilling trenches and the like. 3 Transformer sub-stations, including packaged sub-stations. 4 Distribution of LV electricity to main switchgear panel within the building, excavating and backfilling trenches and the like. 5 Constructing draw pits, including access covers. 6 Marker tape, cover tiles and other special protection for electrical cables. 7 External electricity generation plant, including emergency or standby generation plant. 8 Sundry items. 9 Testing and commissioning. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 LV distribution from, and including, main switchgear panel to area distribution boards and/or sub-distribution boards (included in sub-element 5.8.1: Electrical mains and sub-mains distribution). 2 Protective compounds, connected with transformer substations and the like (included in sub-element 8.7.12: Builder's work in connection with external services). 3 Electric generation installations within the building (included in sub-element 5.8.5: Local electricity generation systems). 4 Fuel storage and distribution in connection with external electricity generation plant (included in sub-element 8.7.7: External fuel storage and piped distribution systems). 5 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 6 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Service runs: details to be stated.	m			
	3 Transformer sub-stations: details to be stated.	nr			
	4 External electricity generation installation/ plant: details to be stated.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 External transformation devices **Definition:** Systems using the natural elements (i.e. wind and sun) to generate energy.	1 Wind turbines: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C3 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Wind turbines, where external to the building. 2 Photovoltaic devices, where external to the building. 3 Solar collectors, where external to the building. 4 Other transformation devices. 5 Generators in connection with transformation devices. 6 Distribution of LV electricity to main switchgear panel within the building, excavating and backfilling trenches and the like. 7 Constructing draw pits, including access covers. 8 Marker tape, cover tiles and other special protection for electrical cables. 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Wind turbines, photovoltaic devices and other transformation devices which are an integral part of the building (included in sub-element 5.8.6: Transformation devices). 2 Heat pumps (included in element 5.5: Heat source). 3 Ground source heating (included in element 5.5: Heat source). 4 Solar collectors which are an integral part of the building (included in sub-element 5.8.6: Transformation devices). 5 Site/street furniture and equipment (e.g. playground equipment and sculptures) which act as transformation devices (included in sub-element 8.5.1: Site/street furniture and equipment). 6 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 7 Builder's work in connection with external transformation devices, including bases (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Photovoltaic devices: details, including surface area of units (m^2), to be stated.				
	3 Other transformation devices: details to be stated.				
	4 Testing of installations.	%			
	5 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
4 Electricity distribution to external plant and equipment **Definition:** Sub-circuit power installations from sub-distribution boards to external equipment terminating at socket outlets, fuse connection units and other accessories, including final connections to permanent mechanical and electrical plant and equipment, external features (e.g. water features) and the like.	1 Connections to external plant or equipment: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 General low voltage (LV) power installations to external plant and equipment, including cables, excavating and backfilling trenches and the like. 2 LV switchgear and distribution boards, where not included as part of the sub-mains distribution. 3 Uninterruptible power supply (UPS) installations and the like, specific to external plant and equipment. 4 Cables and wiring, including support components from sub-distribution boards to fuse connection units and the like. 5 Conduits and cable trunking, including all fittings and support components. 6 Earthing and bonding components. 7 Constructing draw pits, including access covers. 8 Marker tape, cover tiles and other special protection for electrical cables. 9 Fuse connection units and other outlet accessories. 10 Final connections to equipment (e.g. to pumping stations and ejector stations). 11 Separate power installations to specialist mechanical and electrical equipment (e.g. to sewage treatment plant). 12 Final connections to specialist mechanical and electrical equipment where not carried out by the equipment installer. 13 Sundry items. 14 Testing and commissioning. 15 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 General power installations within building (included in sub-element 5.8.2: Power installations). 2 General power installations to external water features and the like (included in sub-element 8.5.2: Ornamental features). 3 General power installations to external security systems (included in sub-element 8.7.8: External security systems). 4 General power installations to external illumination systems (included in sub-element 8.7.9: External street lighting systems). 5 Final connections to specialist mechanical and electrical equipment where carried out by the equipment installer. 6 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 7 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Connections to external equipment: details to be stated.	m			
	3 Service runs: details to be stated.				
	4 Testing of installations.	%			
	5 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
				Note: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	
5 Gas mains supply **Definition:** Piped natural gas supply systems taking gas from the statutory undertaker's mains to gas meter; and taking liquefied petroleum gas (LPG) from external storage vessels to distribution point, including mains gas supply and distribution of gas supply to external user points (e.g. to external plant and equipment).	1 Connections to statutory undertaker's gas main: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Connections to statutory undertaker's gas main. 2 Gas main from statutory undertaker's mains to point of mains connection within building, including pipelines and fittings, excavating and backfilling trenches and the like. 3 Connections to external plant and equipment. 4 Mains gas supply and distribution of gas supply to external plant and equipment, including, pipelines and fittings, excavation and backfilling trenches. 3 Governing stations. 4 LPG installations, including storage bottles and containers, pipelines and fittings to gas distribution point in building. 5 Sundry items. 6 Testing and commissioning. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Gas distribution pipelines from point of mains connection within building to user points within building (included in sub-element 5.9.1: Gas distribution). 2 Protective compounds, fencing, storage racks associated with LPG installations (included in sub-element 8.7.12: Builder's work in connection with external services). 3 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Service runs: details to be stated.	m			
	3 Governing stations: details to be stated.	nr			
	4 Testing of installations.	%			
	5 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
6 Telecommunications and other communication system connections **Definition:** Connection of telecommunications systems, cable television, and other communication systems from statutory undertaker's or other service provider's supply to the main distribution point within the building.	1 Telecommunication connections: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Connections to statutory undertaker's or service provider's supply. 2 Distribution of telecommunications, cable television, and other communication systems, including wiring to main distribution point within building, including cables, excavating and backfilling trenches and the like. 3 Constructing draw pits, including access covers. 4 Marker tape, cover tiles and other special protection for electrical cables. 5 Sundry items. 6 Testing and commissioning. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Telecommunications systems, cable television, and other communication systems distribution from main distribution point within the building to user points within building (included in sub-element 5.12.1: Communication systems). 2 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Cable television connections: details to be stated.				
	3 Other communication connections: details to be stated.				
	4 Service runs: details to be stated.	m			
	5 Testing of installations.	%			
	6 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
7 External fuel storage and piped distribution systems **Definition:** Storage tanks and vessels external to building, and piped supply systems distributing oil, petrol or diesel from storage tanks or vessels to entry point within building or to external plant and equipment.	1 Fuel storage and piped distribution systems: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The length of linear components measured is their extreme length, over all obstructions. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C6 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Oil, petrol and diesel.. 2 Storage tanks and vessels not supplied in connection with heat source installations. 3 Proprietary supports forming an integral part of the storage tank/vessel unit. 4 Off-site painting/anti-corrosion treatments. 5 Connections to external plant and equipment. 6 Distribution pipelines, and pipeline fittings, from storage tank or vessel to plant or equipment being served, above ground and below ground, including excavating and backfilling trenches and the like. 7 Pipeline components/ancillaries (e.g. valves and pumps). 8 Thermal insulation. 9 Off-site painting/anti-corrosion treatments. 10 Meters. 11 Monitoring equipment. 12 Sundry items. 13 Testing and commissioning. 14 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Storage tanks and vessels and distribution pipelines within the building (included in sub-element 5.9.2: Fuel storage and piped distribution systems). 2 Supports not integral to the storage tank/vessel (included in sub-element 8.7.12: Builder's work in connection with external services). 3 Bunds and the like to fuel storage/tanks and vessels (included in sub-element 8.7.12: Builder's work in connection with external services). 4 On-site painting of storage tanks and vessels, supports and pipelines (included in element 5.14: Builder's work in connection with services). 5 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 6 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Service runs: details to be stated.	m			
	3 Testing of installations.	%			
	4 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
8 External security systems **Definition:** External observation and access control installations and the like.	1 Surveillance equipment: details of each type of system to be stated.	item/nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where components are to be itemised, the number of key elements comprising the component are to be identified, described and enumerated within the description of the component. C3 The length of linear components measured is their extreme length, over all obstructions. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Work outside the curtilage of the site is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C7 State if external security systems included with building security systems (cross-reference to sub-element 5.13.2: Security systems). C8 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Surveillance equipment (e.g. CCTV). 2 Security detection equipment. 3 Security alarm equipment. 4 Gate access control systems. 5 Gate entry systems (audio and visual). 6 Security lights and lighting systems. 7 Other security systems. 8 Cables/wiring interlinking components of external security systems, including excavating and backfilling trenches, protection and the like. 9 Camera poles and the like, including excavating, concreting and backfilling holes for poles and the like. 10 General power installations to external security systems, including cables, excavating and backfilling trenches and the like. 11 Constructing draw pits, including access covers. 12 Marker tape, cover tiles and other special protection for electrical cables. 13 Sundry items. 14 Testing and commissioning. 15 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Internal observation and access control installations and the like (included in sub-element 5.12.2: Security systems). 2 Security gates, including mechanical and electrical operating equipment, guide rails and the like (included in element 8.4: Fencing, railings and walls, as appropriate). 3 Building management systems and other control systems (included in sub-element 5.12.3: Central control/building management systems (BMS)). 4 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Security detection equipment: details of each type of system to be stated.				
	3 Security alarm equipment: details of each type of system to be stated.				
	4 Gate access control systems: details of each type of system to be stated.	nr			
	5 Gate entry systems: details of each type of system to be stated.				
	6 Security lights and lighting systems: details of each type of system to be stated.	item/nr			
	7 Other security systems: details of each type of system to be stated.				
	8 Service runs: details to be stated.	m			
	9 Testing of installations.	%			
	10 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
9 External street lighting systems **Definition:** External illumination systems, including lighting to pedestrian areas, paths and roads, and illuminated traffic signs.	1 External lighting to pedestrian areas: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C3 Work outside the curtilage of the site is to be described and identified separately. C4 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C5 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 External lighting, columns, poles, bollards, and masts, luminaires and lamps, cables, lighting to external surfaces/areas. 2 Fixing luminaires and lamps to building fabric. 3 Illuminated traffic signs. 4 General power installations to external illumination systems, including cables, excavating and backfilling trenches and the like. 5 Constructing draw pits, including access covers. 6 Marker tape, cover tiles and other special protection for electrical cables. 7 Luminaires and lamps. 8 Lighting control points. 9 Painting and anti-corrosion treatments to poles, bollards, masts and the like. 10 Sundry items. 11 Testing and commissioning. 12 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Lighting fixed to the exterior of the building supplied as part of the interior lighting system (included in sub-element 5.8.3: Lighting installations). 2 Security lights and lighting systems (included in sub-element 8.7.8: External security systems). 3 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 External lighting to paths: details to be stated.				
	3 External lighting to roads: details to be stated.				
	4 Illuminated traffic signs: details to be stated.				
	5 Testing of installations.	%			
	6 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
10 Local/district heating installations **Definition:** Local/district heating installations, including heat source.	1 Heat source associated plant and equipment: details to be stated.	item/nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where components are to be itemised, the number of key elements comprising the component are to be identified, described and enumerated within the description of the component. C3 The length of linear components measured is their extreme length, over all obstructions. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Work outside the curtilage of the site is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project). C7 The percentage additions for testing and commissioning are to be applied to total cost of the items comprising the sub-element. A single combined percentage addition can be applied to cover the costs of both testing and commissioning.	1 Externally located heat source (e.g. boiler plant), including ancillary plant and equipment. 2 Instrumentation and control components to heat source. 3 Heat distribution pipelines from heat source to point of entry into building, including pipelines, pipeline fittings and ancillaries (e.g. valves and pumps). 4 Heating ducts and access covers to local/district heating pipelines. 5 Instrumentation and control components to heating systems. 6 Thermal insulation. 7 Sundry items. 8 Testing and commissioning 9 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Internally located heat source (e.g. boiler plant), including ancillary plant and equipment (included in element 5.5: Heat source). 2 Heat distribution pipelines from point of entry into building to heat emitter or other equipment (included in element 5.6: Space heating and air conditioning, as appropriate). 3 Fuel supply (included in sub-element 8.7.5: Gas mains supply or sub-element 8.7.7: External fuel storage and piped distribution systems, as appropriate). 4 Boiler houses and the like (included in sub-element 8.8.2: Ancillary buildings and structures). 5 Builder's work in connection with external services (included in sub-element 8.7.12: Builder's work in connection with external services).
	2 Service runs: details to be stated.	m			
	3 External heating ducts and duct access covers: details to be stated.				
	4 Testing of installations.	%			
	5 Commissioning of installations.				

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
11 Builder's work in connection with external services **Definition:** Sundry builder's work associated with the installation of water, gas, electricity, heating, ventilation above ground drainage, telecommunications and other services.	1 Ducts and the like: details to be stated.	nr/m	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where components are to be itemised, the number of key elements comprising the component are to be identified, described and enumerated within the description of the component. C3 Where the linear length of a component is to be measured, the length measured is its extreme length, over all fittings and the like. C4 Where a percentage addition is to be applied, the percentage addition is to be applied to the *cost targets* for sub-elements 8.7.1 to 8.7.11 inclusive as appropriate. Each system is to be identified separately. C5 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C6 Work to existing buildings is to be described and identified separately. C7 Work outside the curtilage of the site is to be described and identified separately. C8 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Ducts and the like for external mains services. 2 Supports to external storage tanks, vessels and the like. 3 Fuel bunds and the like to storage/retention tanks and vessels. 4 Protective compounds, fencing, storage racks associated with LPG installations and the like. 5 Protective compounds, connected with transformer substations and the like. 6 Bases for services equipment, including for transformation devices (i.e. wind turbines, photovoltaic devices and the like). 7 On-site painting or anti-corrosion treatments of mechanical services equipment, including fuel storage tanks and vessels, pipelines and the like. 8 Forming/cutting holes, mortices, sinkings, chases and the like, including making good. 9 Pipe ducts, sleeves and the like. 10 Trench covers, duct covers and frames. 11 Stopping up and sealing holes. 12 Fire resistant stopping, including fire sleeves. 13 Identification labelling and colour coding of services installations and systems. 14 Other builder's work items in connection with external services. 15 Sundry items. 16 Testing and commissioning. 17 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Trenches for buried pipelines, cables and ducts, including excavation, earthwork support, backfilling, beds and surrounds (included in element 8.6: External drainage or element 8.7: External services, as appropriate). 2 Cover tiles, identification tapes and other special protection for services (included in element 8.7: External services, as appropriate). 3 Constructing draw pits, including access covers (included in sub-element 8.7.2: Electricity mains supply, sub-element 8.7.3: External transformation devices, sub-element 8.7.4: Electricity distribution to external plant and equipment, sub-element 8.7.6: Telecommunications and other communication system connections, sub-element 8.7.8: External security systems, sub-element 8.7.9: External street lighting systems, as appropriate). 4 Heating ducts and access covers to local/district heating pipelines (included in sub-element 8.7.11: Local/district heating installations).
	2 Supports to external storage tanks, vessels and the like: details to be stated.	item/nr			
	3 Fuel bunds and the like to storage/retention tanks and vessels: details to be stated.				
	4 Protective compounds, fencing, storage racks associated with LPG installations and the like: details to be stated.				
	5 Protective compounds, connected with transformer sub-stations and the like: details to be stated.				
	6 Bases for services equipment: details, including size, to be stated.	nr			
	7 Other builder's work in connection with external services: details to be stated.	%			
	8 Testing of installations.				
	9 Commissioning of installations.				

Element 8.8: Minor building works and ancillary buildings

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
1 Minor building works **Definition:** Refurbishment of, and alterations to, existing separate external small ancillary buildings, including overhauling existing mechanical and electrical plant and equipment.	1 Refurbishment of existing ancillary buildings: details, including GIFA (m^2), to be stated.	item/nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 Where components are to be itemised, the number of key elements comprising the component are to be identified, described and enumerated within the description of the component. C3 The area measured is the gross internal floor area (GIFA), measured using the rules of measurement for ascertaining GIFA. C4 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C5 Work outside the curtilage of the site is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Refurbishment (including alterations) of existing separate external small ancillary buildings (e.g. boiler houses). 2 Overhauling existing mechanical and electrical plant and equipment (externally located). 3 Repairs to existing fences, railings, walls, screen walls and retaining walls. 4 Works arising out of party wall awards/agreements. 5 Other minor building works to ancillary buildings. 6 Sundry items. 7 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Repairs to existing roads, paths and pavings (included in element 8.2: Roads, paths and pavings). 2 Repairs to existing grassed areas (included in sub-element 8.3.1: Seeding and turfing). 3 Alterations to existing external drainage systems (included in sub-element 8.6.1: Surface water and foul water drainage). 4 Work to existing manholes or the like (included in sub-element 8.6.1: Surface water and foul water drainage). 5 Clearing existing drains (included in sub-element 8.6.1: Surface water and foul water drainage). 6 Sealing redundant drains, including filling entire length of drain with foam concrete or the like (included in sub-element 8.6.1: Surface water and foul water drainage). 7 Filling disused manholes (included in sub-element 8.6.1: Surface water and foul water drainage).
	2 Overhauling existing mechanical and electrical plant and equipment: details to be stated.				
	3 Repairs to existing fences, railings, walls and screen walls: details to be stated.	nr/m			

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
2 Ancillary buildings and structures **Definition:** Separate external small ancillary buildings and structures, including specialist structures.	1 Minor ancillary building – built: details, including GIFA (m^2), to be stated. 2 Minor ancillary building – prefabricated/ proprietary: details to be stated.	nr	C1 Where components are to be enumerated, the number of components is to be stated. C2 The area measured is the gross internal floor area (GIFA), measured using the rules of measurement for ascertaining GIFA. C3 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C4 Work outside the curtilage of the site is to be described and identified separately. C5 Work arising out of party wall awards/agreements is to be described and identified separately. C6 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Boiler houses. 2 Substation buildings or housings, where not supplied and installed by the statutory undertaker. 3 Fuel storage buildings and the like. 4 Specialist structures (e.g. external cooling towers). 5 Bicycle stores. 6 Prefabricated/timber workshops, sheds, stores and the like. 7 Guard huts and the like. 8 Canopies to external areas. 9 Other ancillary buildings. 10 Sundry items. 11 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Fuel bunds and the like to storage/retention tanks and vessels (included in sub-element 8.7.12: Builder's work in connection with external services). 2 Protective compounds, fencing, storage racks associated with LPG installations and the like (included in sub-element 8.7.12: Builder's work in connection with external services). 3 Protective compounds, connected with transformer substations and the like (included in sub-element 8.7.12: Builder's work in connection with external services).

Sub-element	Component	Unit	Measurement rules for components	Included	Excluded
3 Underpinning to external site boundary walls **Definition:** Inserting additional foundation support under and around existing foundations within existing buildings, including boundary walls.	1 Underpinning to external site boundary walls and the like: details to be stated.	m	C1 The length of underpinning measured is the extreme length. C2 Other cost significant components are to be described and identified separately. Such components are to be measured by area (m^2), linear measurement (m) or enumerated (nr) separately in accordance with the rules of measurement for this sub-element. C3 Curved work is to be described and identified separately. C4 Work arising out of party wall awards/agreements is to be described and identified separately. C5 Contractor designed work is to be described and identified separately. **Note**: Where the contractor is only responsible for designing specific elements and or components of the building project (i.e. not the entire building project).	1 Underpinning to external site boundary walls. 2 Preliminary trenches and underpinning pits, excavation and earthwork support. 3 Temporary supports. 4 Disposal of excavated material. 5 Cutting away existing projecting foundations and the like. 6 Preparing existing work to receive pinning up of new work. 7 Concrete, including reinforcement and formwork. 8 Masonry (brickwork, blockwork and the like). 9 Sundry items. 10 Where works are to be carried out by a subcontractor, subcontractor's preliminaries, design fees, risk allowance, overheads and profit. **Note**: Allowance to be made within unit rate applied to element or component for subcontractor's preliminaries, design fees, risk allowance, overheads and profit.	1 Underpinning to walls which are an integral part of the new building or rehabilitated building (included in sub-element 1.1.3: Underpinning).

Group element 9: Main contractor's preliminaries

Group element 9 comprises the following elements:

9.1 Employer's requirements:

9.1.1 Site accommodation

9.1.2 Site records

9.1.3 Completion and post-completion requirements.

9.2 Main contractor's cost items:

9.2.1 Management and staff

9.2.2 Site establishment

9.2.3 Temporary services

9.2.4 Security

9.2.5 Safety and environmental protection

9.2.6 Control and protection

9.2.7 Mechanical plant

9.2.8 Temporary works

9.2.9 Site records

9.2.10 Completion and post-completion requirements

9.2.11 Cleaning

9.2.12 Fees and charges

9.2.13 Site services

9.2.14 Insurance, bonds, guarantees and warranties.

Note: Where the unit of measurement for a component or a sub-component has been given as 'per week', a week shall mean a period of 7 calendar days irrespective of public holidays.

Element 9.1: Employer's requirements

Sub-element 9.1.1: Site accommodation

Component	Included	Unit	Excluded
1 Site accommodation	Site accommodation for the employer and the employer's representatives where separate from main contractor's site accommodation, including: – 1 Site offices. – 2 Sanitary accommodation. – 3 Welfare facilities. – 4 Foundations to site accommodation. – 5 Temporary drainage to accommodation. – 6 Temporary services. – 7 Intruder alarms.		Site accommodation, furniture and equipment, telecommunication and IT systems for the employer and the employer representatives where an integral part of the main contractor's site accommodation (included in element 9.2: Main contractor's cost items, as appropriate).
	1 Bringing to site and installing, including all temporary drainage, services and intruder alarms	item	
	2 Charges	per week	
	3 Maintaining (minor repairs)		
	4 Cleaning		
	5 Adaptations/alterations during works	item	
	6 Dismantling and removing from site, including rectifying any damage		
	7 Off-site rented temporary accommodation	per week	
	8 Rectifying damage to off-site rented temporary accommodation	item	
2 Furniture and equipment	Furniture and equipment for the employer and the employer's representatives where separate from main contractor's site accommodation. For example, desks, chairs, meeting table and chairs, cupboards, kettles, coffee maker, photocopier and consumables.		
	1 Bringing to site and installing	item	

Component	Included	Unit	Excluded
	2 Cleaning	per week	
	3 Charges		
	4 Dismantling and removing from site	item	
3 Telecommunication and IT systems	Telecommunication and IT systems for the employer and the employer's representatives where separate from main contractor's site accommodation, including telephones, fax machines, photocopier, computers, printers and consumables. 1 Purchase charges	per person (nr)	
	2 Hire charges	per person per week (nr)	
	3 Consumables	per week (nr)	

Sub-element 9.1.2: Site records

Component	Included	Unit	Excluded
1 Site records	1 Operation and maintenance manuals (paper and electronic copies on CD Rom/DVD/USB).	item	
	2 Compilation of health and safety file (if required by main contractor – paper and electronic copies on CD Rom/DVD/USB)).		
	3 Web-based documentation project management systems for the collation, review and delivery of critical operation and maintenance requirements; commissioning; asset; and other facilities management-related information, and health and safety file: – Programme software and installation – Hardware (e.g. computers. Monitors, printers, etc)	nr	
	– Uploading data and initial implementation and training of building management team by system provider	item	1. Attendance on system provider by main contractor (included in sub-element 9.2.9.2: Web-based documentation management systems).

Sub-element 9.1.3: Completion and post-completion requirements

Component	Included	Unit	Excluded
1 Handover requirements	1 Training of building user's staff in the operation and maintenance of the building engineering services systems.	item	
	2 Provision of spare parts for maintenance of building engineering services.		
	3 Provision of tools and portable indicating instruments for the operation and maintenance of building engineering services systems.		
2 Operation and maintenance services	1 Operation and maintenance of building engineering services installations, mechanical plant and equipment and the like during the defects liability period, period for rectifying defects, maintenance period or other specified period (i.e. additional services to that normally required by the contract).	per week	1 Ongoing maintenance of internal and external planting (included in sub-element 4.3.1: Internal planting and sub-element 8.3.2: External planting, as appropriate).

Element 9.2: Main contractor's cost items

Sub-element 9.2.1: Management and staff

Component	Included	Unit	Excluded
1 Project specific management and staff	Main contractor's project specific management and staff such as: 1 Contractor's project manager.	per week (number of staff by number of man hours per week by number of weeks)	1 External design consultants (included in group element 11: Project/design team design fees). 2 Security staff (included in sub-element 9.2.4: Security).
	2 Construction manager.		
	3 Supervisors, including works/trade package managers, building services engineering managers/co-ordinators and off-site production managers.		
	4 Health and safety manager/officers.		
	5 Commissioning manager – building engineering services.		
	6 Planning/programming manager and staff.		
	7 Senior/managing quantity surveyor.		
	8 Project/package quantity surveyors.		
	9 Procurement manager.		
	10 Design manager and staff (where contract strategy is design and build).		
	11 Project engineers.		
	12 Environmental manager.		
	13 Temporary works design engineers.		
	14 Materials management staff (e.g. storeman).		
	15 Administrative staff, including secretary, document controllers, finance clerks and the like.		
	16 Other management and staff.		

Component	Included	Unit	Excluded
2 Visiting management and staff	Main contractor's visiting management and staff such as: 1 Managing director, regional director, operations director, commercial director and the like.	per week (number of staff by number of man hours per week by number of weeks)	1 Visiting management and staff for which an allowance has been made within the main contractor's overheads (included in element 10.1: Main contractor's overheads).
	2 Quality manager.		
	3 Contract/commercial manager.		
	4 Health and safety manager.		
	5 Environmental manager/consultant.		
	6 Other visiting management and staff.		
3 Extraordinary support costs	1 Legal advice costs (i.e. solicitors).	item	1 Extraordinary support costs for which an allowance has been made within the main contractor's overheads (included in element 10.1: Main contractor's overheads).
	2 Recruitment costs.		
	3 Team building costs.		
	4 Other extraordinary support costs.		
	5 Day transport.	per week (number of days per week by number of weeks)	
	6 Personnel transport (i.e. transportation of work operatives to site).		
	7 Temporary living accommodation (e.g. long/medium term accommodation costs).	per week (number of staff by number of days by number of weeks)	
	8 Subsistence payments.		
	9 Out-of-hours working.		

Component	Included	Unit	Excluded
4 Staff travel	Costs associated with off-site visits such as: 1 Visits to employer and consultants' offices.	nr (number of occasions)	
	2 Visits to subcontractors' offices/works.		
	3 Overseas visits.		
	4 Accommodation charges and overnight expenses.		

Sub-element 9.2.2: Site establishment

Component	Included	Unit	Excluded
1 Site accommodation	Main contractor's and common user temporary site accommodation such as: – offices – conference/meeting rooms – canteens and kitchens – drying rooms – toilets and washrooms – first aid room – laboratories – workshops – secure stores – compounds, including containers for material storage – security control room – stairs and office staging – Employer's accommodation, where an integral part of the main contractor's site accommodation. Type and extent of accommodation to be provided to be stated, with each type separately quantified:		1 Employer's accommodation, where not an integral part of the main contractor's site accommodation (included in sub-element 9.1.1: Site accommodation). 2 Temporary bases, foundations and provision of drainage and services to temporary site accommodation (included in component 9.2.2.3: Builder's work and temporary services connections to site accommodation). 3 Service provider's charges for temporary services (included in sub-element 9.2.12: Fees and charges). 4 Rates for temporary services (included in sub-element 9.2.12: Fees and charges).
	1 Purchase charges.	nr	

Component	Included	Unit	Excluded
	2 Hire and purchase	per week	
	3 Delivery of temporary site accommodation to site, erection, construction and removal.	item	
	4 Temporary accommodation made available by the employer.	per week	
	5 Intruder alarms.	item	
	6 Land/property rental where site accommodation located off-site.	per week	
	7 Alterations and adaptations to site accommodation, including partitioning, doors, painting and decorating, and the like.	item	
	8 Relocation and alterations of temporary accommodation during construction stage.		
	9 Reinstating temporary site accommodation to original condition prior to removal from site.		
	10 Removal of site accommodation and temporary works in connection with site accommodation.		
2 Temporary works in connection with site establishment	1 Temporary bases and foundations for site accommodation, including maintenance, removal and reinstatement of all disturbed existing surfaces on completion of the works.	m^2	1 Provision of temporary services to site establishment (included in sub-element 9.2.3: Temporary services). 2 Provision of temporary drainage to site establishment (included in sub-element 9.2.3: Temporary services). 3 Hoardings, fans, fencing and the like to site boundaries and to form site compounds (included in sub-element 9.2.4: Security (Hoardings, fences and gates).
	2 Connections to temporary service, including maintenance, removal and reinstatement of all disturbed existing surfaces on completion of the works.	nr	
	3 Connections to temporary drainage including maintenance, removal and reinstatement of all disturbed existing surfaces on completion of the works.		
	4 Temporary site roads, paths and pavings (including on-site car parking), including maintenance, removal and reinstatement of all disturbed existing surfaces on completion of the works.	m^2	
	5 Temporary surface water drainage to temporary site roads, paths and pavements, including maintenance, removal and reinstatement of all disturbed existing surfaces on completion of the works.	m	

Component	Included	Unit	Excluded
3 Furniture and equipment	1 Workstations for staff, including maintenance.	per person (nr)	1 Telephone and fax installations (included in sub-element 9.2.3: Temporary services). 2 Computers and IT associated equipment (included in component 9.2.2.4: IT systems).
	2 General office furniture, including maintenance.	item	
	3 Conference/meeting room furniture, including maintenance.		
	4 Photocopiers, including purchase/rental, maintenance and other running costs.	nr	
	5 Canteen furniture, including maintenance.	item	
	6 Canteen equipment, including purchase/rental, maintenance and other running costs.		
	7 Floor coverings, including maintenance.		
	8 Water dispensers, including purchase/rental, maintenance and other running costs.		
	9 Heaters, including maintenance of heaters.		
	10 Other office equipment, including maintenance.		
	11 Removal of furniture and equipment.		
	12 Maintenance furniture and floor covering.		

Component	Included	Unit	Excluded
4 IT systems	1 Computer hardware, including purchase/rental, installation, initial set up, maintenance and running costs, such as: – desktop computers and laptop computers – CAD stations – server and network equipment – printers and plotters – other computer system hardware. 2 Software and software licences.	per person (nr)	1 Computer and printer consumables (included in component 9.2.2.5: Consumables and services). 2 Document management, including electronic data management systems (EDMS) (included in component 9.2.2.6: Brought in services).
	3 Modem lines, modems and connections (i.e. email and internet capability).		
	4 WAN lines and connections (if on WAN).		
	5 Line rental charges.		
	6 Internet/website addresses.		
	7 Internet service provider (ISP) charges.		
	8 Line calls charges.	per week (number of staff by number of weeks)	
	9 IT support and maintenance.	per person (nr)	
5 Consumables and services	1 Stationery.	per week	
	2 Computer and printer consumables (e.g. ink cartridges).		
	3 Postage.		
	4 Courier charges.		
	5 Tea, coffee, water bottles and the like.		
	6 First aid consumables.		
	7 Photocopier consumables (e.g. paper and toners).		
	8 Fax consumables (e.g. paper and toners).		
	9 Drawing printer consumables (e.g. ink cartridges).		

Component	Included	Unit	Excluded
6 Brought in services	Services outsourced by the main contractor such as: 1 Catering.	per week	
	2 Equipment maintenance.		
	3 Document management, including electronic data management systems (EDMS).		
	4 Printing (purchasing), including reports and drawings.		
	5 Staff transport.		
	6 Off-site parking charges.		
	7 Meeting room facilities.		
	8 Photographic services.		
7 Sundries	1 Main contractor's signboards.	item	
	2 Safety and information notice boards.		
	3 Fire points.		
	4 Shelters.		
	5 Tool stores.		
	6 Crane signage.		
	7 Employer's composite signboards.		

Sub-element 9.2.3: Temporary services

Component	Included	Unit	Excluded
1 Temporary water supply	1 Temporary connections.	nr	
	2 Distribution equipment, installation and adaptations.	item	
	3 Meter charges.	per week	
2 Temporary gas supply	1 Gas connection.	nr	
	2 Distribution equipment, installation and adaptations.	item	
	3 Charges.	per week	
	4 Bottled gas.		
3 Temporary electricity supply	1 Temporary connections.	nr	
	2 Temporary electrical supply for tower cranes.	item	
	3 Charges – power consumption for site establishment.	per week	
	4 Charges – power consumption for the works.		
	5 Distribution equipment, installation and adaptations.	item	
	6 Attendance.	per week (number of man hours per week by number of weeks)	
	7 Uninterrupted power supply (UPS).	item	
	8 Temporary substation modifications.		

Component	Included	Unit	Excluded
4 Temporary telecommunication systems	1 Landlines (including connection and rental charges), including: – telephone and fax lines – ISDN lines.	per week	1 Fax consumables (included in component 9.2.2.5: Consumables and services).
	2 Telephone and facsimile equipment (including connection and rental charges), including: – PABX equipment – handsets, including purchase or rental – fax machines, including purchase or rental – installation of equipment – maintenance of equipment.		
	3 Mobile (cellular) phones, including: – mobile phones, including purchase or rental and connection charges – spare batteries – mobile phone charges.		
	4 Telephone charges, including: – telephone call charges – fax charges – fax and telephone consumables.		
	5 Radios (including purchase or rental charges), including: – base set – handsets and chargers – repairs and maintenance – licences – spare batteries.		

Component	Included	Unit	Excluded
5 Temporary drainage	1 Temporary mains.	nr	
	2 Septic tanks.		
	3 On-site treatment plant.		
	4 Holding tanks.		
	5 Sewage pumping.		
	6 Distribution pipework, etc.	item	
	7 Drainage installation and adaptations.		
	8 Disposal charges (i.e. rates).	per week	
	9 Disposal costs (i.e. tanker charges).	per week (number of collections per week by number of weeks)	

Sub-element 9.2.4: Security

Component	Included	Unit	Excluded
1 Security staff	1 Security guards (day and night).	per week (number of staff by number of man hours per week by number of weeks)	1 Security staff accommodation (included in sub-element 9.2.2: Site establishment).
	2 Watchmen (day and night).		
2 Security equipment	1 Site pass issue equipment.	item	
	2 Site pass consumables.		
	3 CCTV surveillance installation, including cameras		
	4 Temporary vehicle control barriers.	nr	
3 Hoardings, fences and gates	1 Perimeter hoardings and fencing and the like to site boundaries and to form site compounds.	m	
	2 Access gates, including frames and ironmongery.	nr	
	3 Painting of hoardings, fencing, gates, and the like.	m	
	4 Temporary doors.	nr	
	5 Modification to line of hoarding and fencing during construction.	item	
	6 Dismantling and removal of hoarding, fencing, gates, and the like.	m	

Sub-element 9.2.5: Safety and environmental protection

Works required to satisfy requirements of CDM Regulations.

Component	Included	Unit	Excluded
1 Safety programme	Works required to satisfy requirements of CDM Regulations. 1 Health and safety manager/officers.	per week (number of staff by number of man hours per week by number of weeks)	1 Health and safety manager/officers (included in sub-element 9.2.1: Management and staff). 2 Welfare facilities (included in sub-element 9.2.2: Site establishment).
	2 Safety audits, including safety audits carried out by external consultant.	nr	
	3 Staff safety training.		
	4 Site safety incentive scheme	item	
	5 Notices and information to neighbours.		
	6 Personal protective equipment (PPE), including for employer and consultants.	per set (nr)	
	7 Personal protective equipment (PPE) for multi-service gangs.		
	8 Fire points.	nr	
	9 Temporary fire alarms.		
	10 Fire extinguishers.		
	11 Statutory safety signage.	item	
	12 Nurse.	per week (number of staff by number of man hours per week by number of weeks)	
	13 Traffic marshals.		
	14 Temporary traffic lights.	per week (number of sets by number of weeks)	

Component	Included	Unit	Excluded
2 Barriers and safety scaffolding	1 Guard rails and edge protection (e.g. to edges of suspended slabs and roofs), including supply, erection, maintenance and dismantling on completion of the works	per week/item	1 Debris netting/plastic sheeting provided as part of access scaffolding (included in sub-element 9.2.8: Temporary works). 2 Fan protection provided as part of access scaffolding (included in sub-element 9.2.8: Temporary works).
	2 Temporary staircase balustrades (i.e. to new staircases during construction), including supply, erection, maintenance and dismantling on completion of the works		
	3 Lift shaft protection, including supply, erection, maintenance and dismantling on completion of the works		
	4 Protection to holes and openings in ground floor slabs, suspended slabs and the like, including supply, erection, maintenance and dismantling on completion of the works		
	5 Debris netting/plastic sheeting, including supply, erection, maintenance and dismantling on completion of the works		
	6 Fan protection, including supply, erection, maintenance and dismantling on completion of the works		
	7 Scaffold inspections.	per week (number of inspections by number of weeks)	
	8 Hoist run-offs, including supply, erection, maintenance and dismantling on completion of the works	per week/item	
	9 Protective walkways, including supply, erection, maintenance and dismantling on completion of the works		
	10 Other safety measures, including supply, erection, maintenance and dismantling on completion of the works		

Component	Included	Unit	Excluded
3 Environmental protection measures	1 Control of pollution	per week/item	1 Environmental manager/consultant (included in sub-element 9.2.1: Management and staff).
	2 Residual control of noise		
	3 Environmental monitoring		
	4 Environmental manager/consultant	per week (number of staff by number of man hours per week by number of weeks)	
	5 Environmental audits, including safety audits carried out by external consultant	nr (number of occasions)	

Sub-element 9.2.6: Control and protection

Component	Included	Unit	Excluded
1 Surveys, inspections and monitoring	1 Surveys.	item	1 Environmental monitoring (included in sub-element 9.2.5: Safety and environmental protection).
	2 Topographical survey.		
	3 Non-employer dilapidation survey.		
	4 Structural/dilapidations survey adjoining buildings.		
	5 Environmental surveys.		
	6 Movement monitoring.		
	7 Maintenance and inspection costs.		

Component	Included	Unit	Excluded
2 Setting out	1 Setting out primary grids.	item	
	2 Grid transfers and level checks.		
	3 Maintenance of grids.		
	4 Take over control and independent checks (i.e. on change of subcontractors).		
	5 Instruments for setting out.		
3 Protection of works	1 Protection of finished works to project handover.	item	
	2 Protection of stairs, balustrades and the like works to project handover.		
	3 Protection of fittings and furnishings works to project handover.		
	4 Protection of entrance doors and frames works to project handover.		
	5 Protection of lift cars and doors works to project handover.		
	6 Protection of specifically vulnerable products to project handover.		
	7 Protection of all sundry items.		
4 Samples	1 Provision of samples.	item	
	2 Provision of sample room.		
	3 Mock ups and sample panels.		
	4 Testing of samples/mock ups, including testing fees.		
	5 On site laboratory equipment.		
	6 Mock ups of complete units (e.g. residential units, student accommodation units, hotel accommodation and the like).		

Component	Included	Unit	Excluded
5 Environmental control of building	1 Dry out building.	item	
	2 Temporary heating/cooling.		
	3 Temporary waterproofing, including over roofs.		
	4 Temporary enclosures.		

Sub-element 9.2.7: Mechanical plant

Component	Included	Unit	Excluded
1 Generally	Common user mechanical plant and equipment used in construction operations.		Plant and equipment used for specific construction operations, such as: 1 Earthmoving plant (included in group element 1: Substructure, group element 8: External works, or group element 9: Facilitating works, as appropriate). 2 Piling plant (included in group element 1: Substructure or group element 8: External works, as appropriate). 3 Paving and surfacing plant (included in group element 8: External works). 4 Wheel spinners and road sweepers (included in component 9.2.11.2: Maintenance of roads, paths and pavings). 5 Access scaffolding (included in sub-element 9.2.8: Temporary works).
2 Tower cranes	Type of craneage to be provided shall be stated; with each type separately quantified.		

Component	Included	Unit	Excluded
	1 Hire charges (type of tower crane to be stated, including type and length of jib, and lifting capacity)	per week	1 Temporary electrical supply to tower crane (included in sub-element 9.2.3: Temporary services).
	2 Crane operator.	per week (number of operators by number of man hours per week by number of weeks)	
	3 Overtime for crane and operator.		
	4 Piles for tower crane bases including installation and removal on completion of the works (size of base in m^2, and number of piles supporting base, to be stated).	nr (number of bases)	
	5 Temporary bases and or ground anchors for tower cranes, including installation, maintenance, removal and reinstatement of all disturbed surfaces on completion of the works (size of base in m^2 to be stated).	m^2	
	6 Ties	per week	
	7 Connections to temporary electrical supply	nr	
	8 Bring to site, erection, test and commission		
	9 Periodic safety checks/inspections	per week	
	10 Dismantling and removing from site	nr	
	11 Other costs specific to tower crane such as: – chain pack and sundries – relief operator – banksman – man cage	item	
	12 Temporary voids in building structure for craneage, hoists and the like including filling voids after removal. **Note**: Where tower crane is sited within building structure, the completion of works in connection with the building structure and fabric shall be measured in accordance with the measurement rules for the specific types of work required (e.g. infilling of voids within suspended floor construction shall be measured in accordance with element 2.2: Upper floors).	nr	
3 Mobile cranes	Type of craneage to be provided shall be stated; with each type separately quantified:		

Component	Included	Unit	Excluded
	1 Mobile crane hire charges, including driver/operator charges (type of mobile crane to be stated)	per week (number of days hired per week by number of weeks)	
	2 Attendance.	per week (number man hours per visit, or day hired, by number of days hired per week by number of weeks)	
	3 Other costs specific to mobile crane hire.	nr (cost per visit)	
4 Hoists	Type of hoist to be provided shall be stated; with each type separately quantified: 1 Goods and passenger hoists, including protection cages and embedment frames.	per week	1 Temporary services to hoist installations (included in sub-element 9.2.3: Temporary services).
	2 Hoist bases.		
	3 Bringing to site, erecting, testing and commissioning.	nr	
	4 Dismantling and removing from site.		
	5 Protection systems.	per week	
	6 Hoist operator, including overtime.	per week (number of operators by number of man hours per week by number of weeks)	
	7 Beam hoists.	per week	
	8 Periodic safety checks/inspections.		
	9 Other costs specific to temporary hoist installations.		

Component	Included	Unit	Excluded
5 Access plant	1 Fork lifts.	item	
	2 Scissor lifts.		
	3 Loading platforms.		
	4 Maintenance of mechanical access equipment.		
	5 Other costs specific to mechanical access equipment.		
6 Concrete plant	1 Concrete plant.	per week	1 Temporary services to concrete plant (included in sub-element 9.2.3: Temporary services).
	2 Plant operator.		
	3 Overtime for plant and operator.	per week (number of operators by number of man hours per week by number of weeks)	
	4 Bases for concrete plant, including installation, maintenance, removal and reinstatement of disturbed surfaces on completion of the works (size in m^2 to be stated).	nr	
	5 Power connections, including cabling and statutory undertaker's charges for temporary connection to their supply.	nr/per week	
	6 Bringing concrete plant to site, erecting, testing and commissioning.	nr	
	7 Maintenance of concrete plant.	per week	
	8 Dismantling and removing from site.	item	
7 Other plant	1 Small plant and tools.	per week	

Sub-element 9.2.8: Temporary works

Component	Included	Unit	Excluded
1 Access scaffolding	Common user access scaffolding (type of access scaffolding to be specified): – access scaffolding to elevations, lift shafts and the like, including fans, mesh screens – structural scaffolding (e.g. to party walls) – birdcage scaffolding – cantilever access scaffolding – staircase platforms – primary loading platforms – travelling access platforms.	Per week	1 Scaffolding specific to works packages (included in appropriate element or sub-element). 2 Scaffold inspections (included in sub-element 9.2.5: Safety and environmental protection).
	1 Bringing to site, erecting and initial safety checks.	item	
	2 Hire charges.	per week	
	3 Altering and adapting during construction.	item	
	4 Dismantling and removing from site.		
2 Temporary works	Common user temporary works: – support scaffolding and propping – crash decks – temporary protection to existing trees and/or vegetation – floodlights.		1 Temporary works design (included in sub-element 9.2.1: Management and staff). 2 Temporary bases, drainage and services to site accommodation (included in sub-element 9.2.2: Site establishment). 3 Temporary roads, paths and pavement, including on-site car parking (included in sub-element 9.2.2: Site establishment (Builder's work in connection with site accommodation)). 4 Hoardings, fans, fencing and the like to site boundaries and to form site compounds (included in sub-element 9.2.4: Security (hoardings, fences and gates). 5 Temporary earthwork support basement excavations (included in sub-element 1.2.1: Basement excavation). 6 Temporary props and wallings to support contiguous bored pile wall of basement excavations (included in sub-element 1.3.2: Embedded basement retaining walls or sub-element 8.4.3: Retaining walls, as applicable). 7 Traffic management, including traffic marshals and temporary traffic lights (included in sub-element 9.2.5: Safety and environmental protection).
	1 Bringing to site, erecting and initial safety checks.	item	
	2 Hire charges.	per week	
	3 Altering and adapting during construction.	item	
	4 Dismantling and removing from site.		

Sub-element 9.2.9: Site records

Component	Included	Unit	Excluded
1 Site records	Unless otherwise indicated, costs associated with the following shall be deemed to be included in management and staff costs: 1 Photography: – camera purchase – consumables – printing and presentation	item	
	2 Works records: – progress reporting – site setting out drawings – condition surveys and reports – operation and maintenance manuals – as-built/installed drawings and schedules – co-ordinating, gathering and compiling health and safety information and presentation to CDM co-ordinator – compilation of health and safety file (if required)		
2 Web-based documentation management systems	2 Attendance on system provider.	per week (number of operators by number of man hours per week by number of weeks)	

Sub-element 9.2.10: Completion and post-completion requirements

Component	Included	Unit	Excluded
1 Testing and commissioning plan	Costs associated with the following shall be deemed to be included in sub-element 9.2.1: Management and staff costs: 1 Preparation of Commissioning Plan.	item	1 Testing and commissioning of services (included in group element 5: Services and or group element 8: External works, as appropriate.
2 Handover	Unless otherwise indicated, costs associated with the following shall be deemed to be included in sub-element 9.2.1: Management and staff costs: 1 Preparation of Handover Plan.	item	
	2 Training of building user's staff in the operation and maintenance of the building engineering services systems.		
	3 Provision of spare parts for maintenance of building engineering services.		
	4 Provision of tools and portable indicating instruments for the operation and maintenance of building engineering services systems.		
	5 Pre-completion inspections.		
	6 Final inspections.		
3 Post-completion services	1 Supervisory staff (employer/tenant care).	per week (number of staff by number of man hours per week by number of weeks)	
	2 Handyman.	item	
	3 Minor materials and sundry items.		
	4 Insurances.		
	5 Other post-construction staff.	Per week (number of operators by number of man hours per week by number of weeks)	

Sub-element 9.2.11: Cleaning

Component	Included	Unit	Excluded
1 Site tidy	1 Cleaning site accommodation – internal, including cleaning telephone handsets, other office furniture and equipment and window cleaning.	per week	
	2 Periodic maintenance of site accommodation, including redecoration (internal and external).		
	3 Waste management, including rubbish disposal (including compactor visits; skips and waste bins; roll-off, roll-on waste bins) and other disposal.		
	4 Pest control.		
2 Maintenance of roads, paths and pavings	1 Maintenance of temporary site roads, paths and pavements.	per week	
	2 Maintenance of public and private roads, including wheel spinners and road sweepers.		
3 Building clean	1 Final builder's clean.	item	

Sub-element 9.2.12: Fees and charges

Component	Included	Unit	Excluded
1 Fees	1 Building control fees, where not paid by the employer.	item	1 Building control fees, where paid by the employer (included in group element 11: Project/design team fees). 2 Oversailing fees, where paid by the employer (included in group element 11: Project/design team fees). 3 Building scheme registration fees or similar fees, where paid by the employer (included in group element 11: Project/design team fees).
	2 Oversailing fees, where not paid by the employer.		
	3 Considerate Constructors' Scheme fees (or alternative scheme operated by local authority).		
	4 Building scheme registration fees (e.g. NHBC Buildmark) or similar fees, where not paid by the employer.		
2 Charges	1 Rates on temporary accommodation.	per week	1 Statutory undertaker's charges in connection with permanent services to the building (included in element 8.7: External services, as appropriate). 2 Statutory undertaker's charges in connection with temporary services (included in sub-element 9.2.3: Temporary services).
	2 Licences in connection with hoardings, scaffolding, gantries and the like.	item	
	3 Licences in connection with crossovers, parking permits, parking bay suspensions and the like.		

Sub-element 9.2.13: Site services

Component	Included	Unit	Excluded
1 Temporary works	1 Temporary works which are not specific to an element.	item/nr/m/m^2/m^3	1 Temporary screens (included in sub-element 7.1.1: Minor demolition works and alteration works). 2 Supports to small openings cut into existing walls or after removal of internal walls or the like (included in sub-element 7.1.1: Minor demolition works and alteration works). 3 Temporary or semi-permanent support for unstable structures or facades, i.e. structures not to be demolished (included in sub-element 7.4.1: Facade retention).
2 Multi-service gang	1 Ganger.	per week (number of staff by number of man hours per week by number of weeks)	
	2 Labour.		
	3 Fork lift driver.		
	4 Service gang plant and transport.		

Sub-element 9.2.14: Insurance, bonds, guarantees and warranties

Component	Included	Unit	Excluded
1 Works insurances	1 Contractors 'all risks' (CAR) insurance.	item	
	2 Contractor's plant and equipment insurance.		
	3 Temporary buildings insurance.		
	4 Terrorism insurance.		
	5 Other insurances in connection with the works.		
	6 Insurance premium tax (IPT).		
	7 Allowance for recovery of all or part of insurance premium excess.		

Component	Included	Unit	Excluded
2 Public liability insurances	1 Non-negligence insurance.	item	
	2 Professional indemnity insurance.		
	3 Insurance premium tax (IPT).		
	4 Allowance for recovery of all or part of insurance premium excess.		
3 *Employer's* (*main contractor's*) liability insurances	1 Management and staff, including administrative staff.	item	
	2 Works operatives.		
	3 Insurance premium tax (IPT).		
	4 Allowance for recovery of all or part of insurance premium excess.		
4 Other insurances	1 Employer's loss of liquidated damages.	item	
	2 Latent defects cover.		
	3 Motor vehicles.		
	4 Other insurances.		
	5 Insurance premium tax (IPT).		
	6 Allowance for recovery of all or part of insurance premium excess.		
5 Bonds	1 Tender bonds (if applicable).	item	
	2 Performance bonds.		
6 Guarantees	1 Parent company guarantees.	item	
	2 Product guarantees, insurance backed.		
7 Warranties	1 Collateral warranties.	item	
	2 Funder's warranties.		
	3 Purchaser's and tenant's warranties.		
	4 Other warranties.		

Group element 10: Main contractor's overheads and profit

Group element 10 comprises the following elements:

10.1 Main contractor's overheads

10.2 Main contractor's profit

Element	Included	Excluded
1 Main contractor's overheads	1 Generally, the costs of head office set up and administration proportioned to each contract by the main contractor.	1 Visiting management and staff for which an allowance has been made within the main contractor's preliminaries (included in component 9.2.1.2: Visiting management and staff). 2 Extraordinary support costs for which an allowance has been made within the main contractor's preliminaries (included in component 9.2.1.3: Extraordinary support costs).
2 Main contractor's profit	1 The amount of net profit that the main contractor needs to achieve.	

Group element 11: Project/design team fees

Group element 11 comprises the following elements:

11.1 Consultants' fees

11.2 Main contractor's pre-construction fees

11.3 Main contractor's design fees (Note: Only applicable where a main contractor-led design and build contract strategy is to be used.)

Note: Where the unit of measurement for a component or a sub-component has been given as 'per week', a week shall mean a period of 7 calendar days irrespective of public holidays.

Element 11.1: Consultants' fees

Component	Included	Unit	Excluded
1 Project team and design team consultants' fees **Note**: Where design liability is to be transferred to the main contractor (i.e. where a design and build or other contractor-led design strategy is to be used) and all, or some, of the consultant's within the design team are to be novated, the balance of the consultant's fees due after novation has occurred are to be transferred from element 11.1: Consultant's fees to element 11.3: Main contractor's design fees. See element 11.3: Main contractor's design fees.	**Note**: Percentage applied to the 'Works Cost Estimate'; or item if actual fees known) 1 Professional adviser. 2 Project manager. 3 Contract administrator. 4 Employer's agent. 5 Architect. 6 Quantity surveyor/cost manager. 7 Building services engineer(s). 8 Structural engineer. 9 CDM co-ordinator. 10 Interior designer. 11 Landscape architect. 12 Infrastructure engineer. 13 Drainage engineer. 14 Construction/logistics/sequencing advisor.	% or item	1 Additional other consultant's fees in connection with risk (included in Group element 13: Risks, as appropriate).

Component	Included	Unit	Excluded
2 Other consultants' fees	**Note**: Percentage applied to the 'Works Cost Estimate'; or item if actual fees known) 1 Measuring surveyor (i.e. to carry out topographical survey of site; to verify ground levels/contours, physical features, existing boundaries, adjacent properties and site access). 2 Drainage and utilities surveyor (i.e. to trace and locate existing drainage and other services, both underground and above ground, on or near the site, including, water, electricity, telecommunications, data lines and oil/fuel pipelines; advising on extent of existing utilities). 3 Geotechnical engineer (e.g. trial pits, boreholes and borehole logs, geology of site, including underground workings, laboratory and soil tests, groundwater observation and pumping tests, and geophysical surveys). 4 Environmental consultant (e.g. environmental audits, contamination surveys for asbestos, methane, toxic waste, chemical waste and radioactive substances; and preparation and management of remediation strategy/action plan). 5 Ecologist. 6 Arboriculturist (i.e. to survey and provide advice on trees and the like). 7 Party wall surveyor (i.e. to prepare party wall notices and awards/agreements). 8 Rights of light surveyor (e.g. rights of light agreements). 9 Asbestos consultant. 10 Acoustics consultant. 11 Facade consultant. 12 Facade access consultant. 13 Lift consultant. 14 Fire consultant. 15 Building control consultant. 16 Traffic consultant (e.g. to examine traffic records, take traffic count, advise on traffic patterns, carry out computer simulation of existing traffic flows, delay analysis and advise on noise levels).	% or item	1 Additional consultant's fees in connection with risk (included in element 13: Risks, as appropriate). 2 Physical archaeological investigation works, i.e. excavation works in search of artefacts and the like (included in sub-element 0.5.1: Archaeological investigation). 3 Relocation of reptile/wildlife and the like (included in sub-element 0.5.2: Reptile/wildlife mitigation measures). 4 Physical investigation works in search of unexploded devices, i.e. excavation works in search of unexploded devices (included in sub-element 0.5.3: Other extraordinary site investigation works). 5 Site investigations, procured by main contractor as part of pre-construction services (included in element 11.2: Main contractor's pre-construction fees). 6 Work arising out of party wall awards/agreements (included in sub-element 8.8.1: Minor building works, as appropriate). 7 Intrusive investigations for toxic or hazardous materials, e.g. asbestos (included in component 11.1.3: Site investigation fees).

Component	Included	Unit	Excluded
	17 Invasive weeds specialist (e.g. to survey the site for Japanese Knotweed). 18 Sustainability consultant (to advise on renewable technologies and sustainability issues). 19 Archaeologist (e.g. to examine existing records and archaeological remains – desktop study). 20 Environmental assessment method assessor (e.g. BREEAM or Code for Sustainable Homes). 21 Facilities manager (e.g. to advise on operational and maintenance matters). 22 Value engineering facilitator. 23 Risk management facilitator. 24 Building surveyor (i.e. to carry out structural/ dilapidations survey of adjoining buildings; and carry out condition surveys). 25 Unexploded devices consultant (e.g. to research and advise on possibility of unexploded bombs on site). 26 Photographer (i.e. to carry out a photographic survey of the site). 27 Specialist contractors/consultants (e.g. early advice on viability of ground source heating). 28 Other specialist consultants (to be stated).		
3 Site investigation fees	1 Site investigation. 2 Geotechnical investigation. 3 Trial pits. 4 Pile probing. 5 Intrusive investigations for toxic or hazardous materials (e.g. for asbestos-containing materials). 6 Other site investigations (to be stated).	item	1 Removal of toxic or hazardous materials, e.g. asbestos (included in sub-element 0.1.1: Toxic or hazardous material removal).

Component	Included	Unit	Excluded
4 Specialist support consultants' fees	1 Planning consultant (i.e. to advise on planning matters and facilitate planning process). 2 Political consultants (i.e. to assist with planning application). 3 Letting agents (e.g. advice on market needs, advice on design proposals and selling). 4 Legal advice – property (e.g. to advise on ownership of site, restrictive covenants, easements, boundaries, party wall agreements, highway agreements, local authority agreements and air rights). 5 Legal advice – construction (e.g. to advise on construction contracts, warranties, financial protection measures and the like). 6 Legal advice – environmental. 7 Tax specialist – (e.g. to advise on VAT, availability of capital allowances and recovery thereof, tax relief in respect of land remediation and other specialist tax matters). 8 Grants advice (e.g. to advise on availability of grants for construction works). 9 Other specialist support consultants (to be stated).	item	

Element 11.2: Main contractor's pre-construction fees

Component	Included	Unit	Excluded
1 Management and staff fees	Management and staff, such as: 1 Project director. 2 Project manager. 3 Construction manager. 4 Commercial manager. 5 Quantity surveyors. 6 Procurement manager. 7 Planning/programming manager and staff. 8 Design manager. 9 Temporary works design engineers. 10 Works package managers. 11 Building services engineering managers/co-ordinators. 12 Health and safety manager. 13 Secretary/administrative support. 14 Other pre-construction management and staff.	per week (number of staff by number of man hours per week by number of weeks.	
2 Specialist support services fees	1 Legal advice (i.e. solicitors). 2 Specialist subcontractor advice/participation. 3 Geotechnical investigations, procured by main contractor as part of pre-construction services. 4 Site investigations, procured by main contractor as part of pre-construction services. 5 Other pre-construction support services.	item	

Component	Included	Unit	Excluded
3 Temporary accommodation, services and facilities charges	1 Offices, including rental of temporary office space. 2 Service provider's charges for water, electricity and gas. 3 Rates. 4 Furniture and equipment, including workstations. 5 Office equipment, including photocopiers. 6 Telecommunications, including internet and intranet access. 7 IT systems, including hardware, printers, plotters and the like. 8 Office consumables. 9 Cleaning. 10 Other costs associated with the provision of pre-construction accommodation, services and facilities. 11 Reinstating accommodation to original condition on completion of pre-construction services.	per week	
4 Main contractor's overheads and profit	1 Main contractor's overheads and profit associated with pre-construction services. **Note**: Percentage applied to the total estimated cost of elements 1: Management and staff fees, 2: Specialist support services fees, and 3: Temporary accommodation, services and facilities charges	%	

Element 11.3: Main contractor's design fees

Component	Included	Unit	Excluded
1 Main contractor's design consultants' fees **Note**: Where design liability is to be transferred to the main contractor (i.e. where a design and build or other main contractor-led design contract strategy is to be used) and all, or some, of the consultants within the design team are to be novated, the balance of the consultants' fees due after novation has occurred is to be transferred from element 11.1: Consultants' fees to element 11.3: Main contractor's design fees.	**Note**: Percentage applied to the 'Building Works Estimate'; or item if actual fees known) 1 Architect. 2 Building services engineer(s). 3 Structural engineer. 4 Interior designer. 5 Landscape architect. 6 Infrastructure engineer. 7 Drainage engineer. 8 Site investigation services (by specialist subcontractor or consultant). Other design consultants or specialist services. **Note**: The gap between the design and consultancy services required by the contractor and those covered by the services of the novated design team need to be considered; with an allowance made for any gaps in (i.e. an allowance for gap in design and consultancy services provision.	% or item	

Group element 12: Other development/project costs

Group element 12 comprises the following elements:

12.1 Other development/project costs

Note: Where the unit of measurement for a component or a sub-component has been given as 'per week', a week shall mean a period of 7 calendar days irrespective of public holidays.

Element 12.1: Other development/project costs

Component	Included	Unit	Excluded
1 Land acquisition costs	1 Costs in connection with land acquisition.	item	
2 employer finance costs	1 Costs in connection with funding of building project.	item	
3 Fees	1 Planning fees.	item	1 Building control fees, where paid by the main contractor (included in sub-element 9.2.12: Fees and charges). 2 Oversailing fees, where paid by the main contractor (included in sub-element 9.2.12: Fees and charges). 3 Building scheme registration fees (e.g. NHBC Buildmark) or similar fees, where paid by the main contractor (included in sub-element 9.2.12: Fees and charges). 4 Considerate Constructors' Scheme fees (or alternative scheme operated by local authority). Paid by main contractor (included in sub-element 9.2.12: Fees and charges). 5 Other fees in connection with licences, permits and agreements, where paid by the main contractor (included in sub-element 9.2.12: Fees and charges).
	2 Building control fees, where not paid by the main contractor.		
	3 Oversailing fees, where not paid by the main contractor.		
	4 Fees in connection with party wall awards.		
	5 Fees in connection with rights of light agreements.		
	6 Building scheme registration fees (e.g. NHBC Buildmark) or similar fees, where not paid by the main contractor..		
	7 Fees in connection with other agreements between the employer and neighbours to facilitate the building project.		
	8 Other fees in connection with licences, permits and agreements, where not paid by the main contractor.		

Component	Included	Unit	Excluded
4 Charges	1 Adoption charges in connection with highways.	item	
	2 Maintenance costs in connection with highways.	per week	
	3 Adoption charges in connection with services (e.g. sewers, water, electricity and gas).	item	
	4 Maintenance costs in connection with services.	per week	
5 Planning contributions	1 Direct financial contributions in connection with planning consent (e.g. Section 106 and Section 278 contributions in the UK).		1 Building works subject to a planning contribution which forms an integral part of the building project (included in the appropriate group element, element or sub-element).
	2 Environmental improvement works.		
6 Insurances	1 Insurance for the works – existing buildings.	item	1 Insurance for the works – new buildings, where insurance taken out by the main contractor (included in sub-element 9.2.14 Insurance, bonds, guarantees and warranties).
	2 Insurance for the works – new buildings, where insurance taken out by the employer.		
	3 Other insurances in connection with the works.		
	4 Insurance premium tax (IPT).		
7 Archaeological fieldwork	Fees and charges in connection with fieldwork carried out by an archaeologist.	item	1 Physical works in connection with extraordinary site investigations carried out by the main contractor for a specialist, including temporary works and attendance (included in sub-element 0.5.1: Archaeological site investigation works).
8 Other specialist fieldwork	1 Fees and charges in connection with fieldwork carried out by a specialist	item	1 Physical works in connection with extraordinary site investigations carried out by the main contractor for a specialist, including temporary works and attendance (included in sub-element 0.5.3: Other extraordinary site investigation works).
9 Decanting and relocation costs	1 Temporary relocation costs.	item	
	2 Fit-out of temporary accommodation.		
	3 Rents and other running costs.	per week	
10 Fittings, furnishings and equipment	1 Fittings, furnishings and equipment which do not form part of a building contract.	item	1 Fittings, furniture and equipment which form part of a building contract (included in group element 4: Fittings, furnishings and equipment).
11 Tenant's costs/contributions	1 Tenant's costs.	item	
	2 Tenant's contributions.		

Component	Included	Unit	Excluded
12 Marketing costs	1 Launch event.	item	
	2 Site based advertising (e.g. sales hoardings).		
	3 Show unit/marketing suites (i.e. separate or within building to be built).		
	4 Operating costs associated with show unit/marketing suites.	per week	
	5 Marketing literature.	item	
13 Other employer costs	1 Other employer costs in connection with the building project (to be stated).	item	

Group element 13: Risks

Group element 13 comprises the following elements:

13.1 Design development risks

13.2 Construction risks

13.3 Employer change risks

13.4 Employer other risks

Note: Typical causes of risks that should be considered under these elements are listed in the tables below. The risks that might arise from these causes can then be identified and the cost implications to the project should any of the risks materialise be estimated (i.e. the risk allowance required to manage and resolve the each risk should it materialise). The lists are not meant to be definitive or exhaustive, but are merely a guide. The lists can be used to prompt the employer and other project team members.

Element 13.1: Design development risks

1 Inadequate or unclear project brief.
2 Unclear design team responsibilities.
3 Unrealistic design programme.
4 Ineffective quality control procedures.
5 Inadequate site investigation.
6 Planning constraints/requirements.
7 Soundness of design data.
8 Appropriateness of design (constructionability).
9 Degree of novelty (i.e. design novelty).
10 Ineffective design co-ordination.
11 Reliability of area schedules.
12 Reliability of estimating data:
– changes in labour, materials, equipment and plant costs; and
– inflation (i.e. differential inflation due to market factors and/or timing).
13 Use of provisional sums (i.e. do not give price certainty).

Element 13.2: Construction risks

1 Inadequate site investigation.
2 Archaeological remains.
3 Underground obstructions.
4 Contaminated ground.
5 Adjacent structures (i.e. requiring special precautions).
6 Geotechnical problems (e.g. mining and subsidence).
7 Ground water.
8 Asbestos and other hazardous materials.
9 Invasive plant growth.
10 Tree preservation orders.
11 Ecological issues (e.g. presence of endangered species).
12 Environmental impact.
13 Physical access to site (i.e. restrictions and limitations).
14 Existing occupancies/users.
15 Restricted working hours/routines.

16 Maintaining access.
17 Maintaining existing services.
18 Additional infrastructure.
19 Existing services (i.e. availability, capacity, condition and location).
20 Location of existing services.
21 Relocation of existing services.
22 Statutory undertakers (i.e. performance).
23 Uncertainty over the source and availability of materials.
24 Appropriateness of specifications.
25 Incomplete design.
26 Weather and seasonal implications.
27 Industrial relations.
28 Remote site.
29 Competence of contractor and subcontractors.
30 Health and safety.
31 Ineffective quality management procedures.
32 Phasing requirements (e.g. occupation and decanting).
33 Ineffective handover procedures.
34 Disputes and claims.
35 Effect of changes/variations on construction programme.
36 Cumulative effect of numerous changes/variations on construction programme.
37 Defects.
38 Accidents/injury.

Element 13.3: Employer change risks

1 Specific changes in requirements (i.e. in scope of works or project brief during design, pre-construction and construction stages).
2 Changes in quality (i.e. specification of materials and workmanship).
3 Changes in time.
4 employer driven changes/variations introduced during the construction stage.
5 Effect on construction duration (i.e. impact on date for completion).
6 Cumulative effect of numerous changes.

Element 13.4: Employer other risks

1 Project brief:
- End user requirements.
- Inadequate or unclear project brief.
- Employer's specific requirements (e.g. functional standards, site or establishment rules and regulations, and standing orders).

2 Timescales:
- Unrealistic design and construction programmes.
- Unrealistic tender period(s).
- Insufficient time allowed for tender evaluation.
- Contractual claims.
- Effects of phased completion requirements (e.g. sectional completion).
- Acceleration of construction works.
- Effects of early handover requirements (e.g. requesting partial possession).
- Postponement of pre-construction services or construction works.
- Timescales for decision making.

3 Financial:
- Availability of funds.
- Unavailability of grants/grant refusal.
- Cash flow effects on timing.
- Existing liabilities (i.e. liquidated damages or premiums on other contracts due to late provision of accommodation).
- Changing inflation.
- Changing interest rates.
- Changing exchange rates.
- Changes in taxation (e.g. VAT).
- Unsuitable contract strategy.
- Incomplete design before construction commences.
- Unconventional contract strategy.
- Unconventional tender action.
- Amendments to standard contract conditions and/or supplementary contract conditions.
- Acceptance of use of provisional sums (i.e. do not give price certainty).
- Liquidation/insolvency of main contractor.
- Liquidation/insolvency of consultant.
- Delay in payment.

4 Management:

- Unclear project organisation and management.
- Competence of project/design team.
- Unclear definition of project/team responsibilities.
- Inadequate or no risk management strategy.
- Ineffective or no cost control procedures.
- Inadequate or no design review procedures.
- Ineffective or no procedures for procurement.
- Ineffective or no time control procedures.
- Ineffective change control procedures (for both pre-construction and construction stages of building project).
- Ineffective reporting systems.
- Phasing of decanting and occupation.

5 Third party:

- Requirements relating to planning (e.g. public enquiries, listed building consent and conservation area consent).
- Opposition by local councillor(s).
- Planning refusal.
- Legal agreements.
- Works arising out of party wall agreements.
- Requirements relating to existing rights of way, rights of light, way leaves and noise abatement.
- Requirements relating to listed buildings and/or conservation areas.
- Requirements relating to sites of scientific interest (SSI).
- Requirements relating to environmental impact assessments.
- Requirements relating to social matters (e.g. pressure groups and local protests).
- Public enquiries.

6 Other:

- Insistence on use of local work people.
- Availability of labour, materials and plant.
- Statutory requirements.
- Market conditions.
- Political change.
- Legislation.
- Force majeure.

Group element 14: Inflation

Group element 14 comprises the following elements:

14.1 Tender inflation

14.2 Construction inflation

Element	Included	Unit	Excluded
1 Tender inflation	1 Inflationary price increases during the period from the estimate base date to the date of tender return.	%	1 Unexpected price increases associated with particular materials or products or the impact of major projects sapping resources (home and abroad); particular specialist, works, trade, work package, and labour-only subcontractors; or other countries buying major quantities of raw materials (included in element 13.4: Employer's other risks). 2 Unexpected changes in market conditions (included in element 13.4: Employer's other risks).
2 Construction inflation	1 Inflationary price increases during the period from the date of tender return to the mid-point of the construction period.		

Appendices

Appendix A:	Core definition of gross internal area (GIA)
Appendix B:	Commonly used functional units and functional units of measurement
Appendix C:	Core definition of net internal area (NIA)
Appendix D:	Special use definitions for shops
Appendix E:	Logic and arrangement of levels 1 to 3 for elemental cost planning
Appendix F:	Information requirements for formal cost plans
Appendix G:	Template for elemental cost plan (based on level 1 codes)
Appendix H:	Template for elemental cost plan (based on level 2 codes)

Appendix A: Core definition of gross internal area (GIA)

The definitions and diagrams in this appendix are reproduced from the *RICS Code of Measuring Practice* (6th edition).

Core definitions: gross internal area

2.0 Gross Internal Area (GIA)

Gross Internal Area is the area of a building measured to the internal face of the perimeter walls at each floor level (see note GIA 4).

Including

2.1 Areas occupied by internal walls and partitions

2.2 Columns, piers, chimney breasts, stairwells, lift-wells, other internal projections, vertical ducts, and the like

2.3 Atria and entrance halls, with clear height above, measured at base level only

2.4 Internal open-sided balconies, walkways, and the like

2.5 Structural, raked or stepped floors are to be treated as a level floor measured horizontally

2.6 Horizontal floors, with permanent access, below structural, raked or stepped floors

2.7 Corridors of a permanent essential nature (e.g. fire corridors, smoke lobbies)

2.8 Mezzanine floor areas with permanent access

2.9 Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above the main roof level

2.10 Service accommodation such as toilets, toilet lobbies, bathrooms, showers, changing rooms, cleaners' rooms, and the like

2.11 Projection rooms

2.12 Voids over stairwells and lift shafts on upper floors

2.13 Loading bays

2.14 Areas with a headroom of less than 1.5m (see APP 6)

2.15 Pavement vaults

2.16 Garages

2.17 Conservatories

Excluding

2.18 Perimeter wall thicknesses and external projections

2.19 External open-sided balconies, covered ways and fire escapes

2.20 Canopies

2.21 Voids over or under structural, raked or stepped floors

2.22 Greenhouses, garden stores, fuel stores, and the like in residential property

Applications

(when to use GIA)

APP 4	**Building cost estimation** – GIA is a recognised method of measurement for calculating building costs
APP 5	**Estate agency and valuation** – GIA is a basis of measurement for the marketing and valuation of industrial buildings (including ancillary offices), warehouses, department stores, variety stores and food superstores. For the avoidance of doubt the basis of measurement should be stated
APP 6	**Rating** – GIA is the basis of measurement in England and Wales for the rating of industrial buildings, warehouses, retail warehouses, department stores, variety stores, food superstores and many specialist classes valued by reference to building cost (areas with a headroom of less than 1.5m being excluded except under stairs)
APP 7	**Property management** – GIA is a basis of measurement for the calculation of service charges for apportionment of occupiers' liabilities
APP 8	**New homes valuation** – a modified version of GIA is an accepted basis of measurement for the valuation and marketing of residential dwellings, particularly in new developments (see NSA on page 32)

Notes

(how to use GIA)

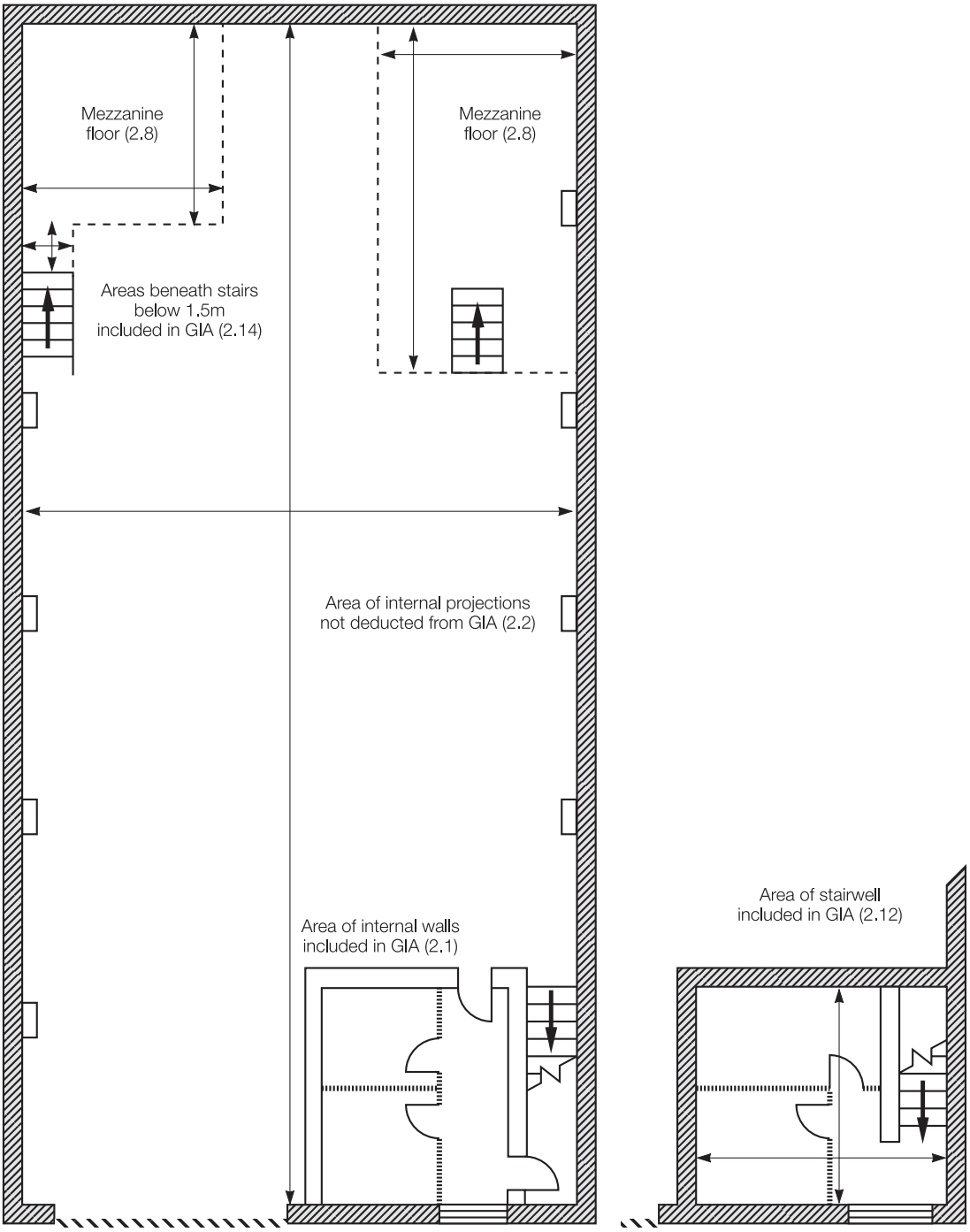
GIA 1	**Diagrams** – diagrams C and D illustrate how to apply GIA
GIA 2	**Separate buildings** – GIA excludes the thickness of perimeter walls, but includes the thickness of all internal walls. Therefore, it is necessary to identify what constitutes a separate building
GIA 3	**Advice** – apart from the applications shown, GIA tends to have specialist valuation applications only. Valuers and surveyors who choose this definition for marketing purposes must have regard to the provisions of the *Property Misdescriptions Act* 1991 and *Property Misdescriptions (Specified Matters) Order* 1992 (see Introduction on page 1)
GIA 4	**Internal face** – means the brick/block work or plaster coat applied to the brick/block work, not the surface of internal linings installed by the occupier
GIA 5	**Lift rooms, etc.** – the items covered by 2.9 should be included if housed in a roofed structure having the appearance of permanence (e.g. made of brick or similar building material)
GIA 6	**Level changes** – the presence of steps or a change in floor levels is to be noted
GIA 7	**Voids** – attention is drawn to the exclusion of voids over atria at upper levels (see 2.3) and the inclusion of voids over stairs, etc. (see 2.12). Where an atrium-like space is formed to create an entrance feature and this also accommodates a staircase, this does not become a stairwell but remains an atrium measurable at base level only

Supplementary definitions: Gross internal area

The following definitions have been adapted from the BCIS *Standard Form of Cost Analysis*, (4th edition)

1 Areas of open ground floors and the like shall be excluded.
2 Walkways across an atrium at upper levels shall be included in the measurement of upper floors.
3 Areas in the roof space intended for use with permanent access shall be included in the gross internal area – measured to the internal face of the enclosing wall, or, where the extremities of roof space are used, the roof space at floor level.
4 Re-entrant balconies, i.e. open sided balconies within the predominant line of the eternal wall should be treated as open sided balconies and excluded.

Diagram C – Example of appropriate dimensions for GIA defined industrial/warehouse unit



Ground Floor **First Floor**

Diagram D – Example of appropriate dimensions for GIA defined industrial/warehouse unit

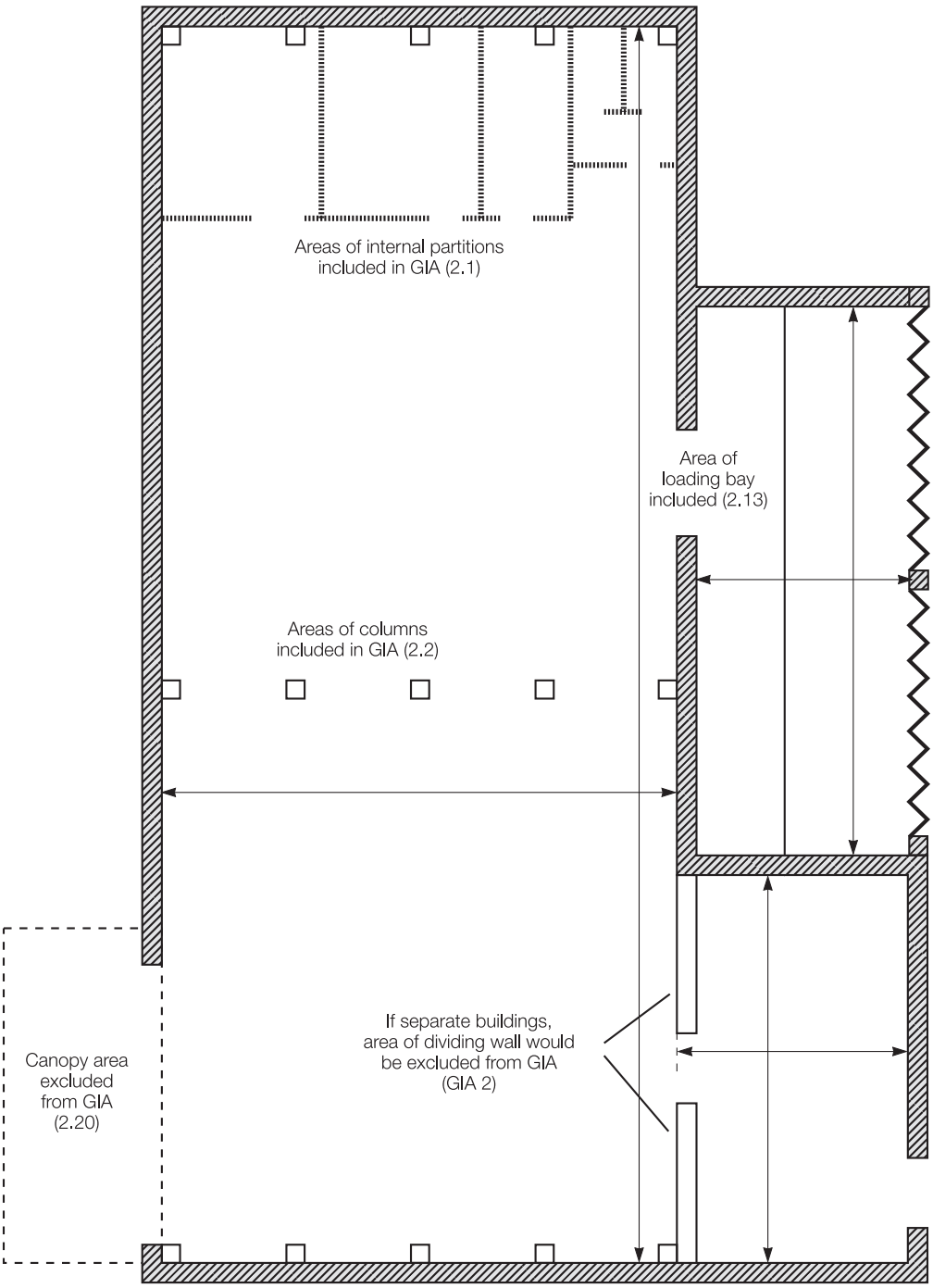
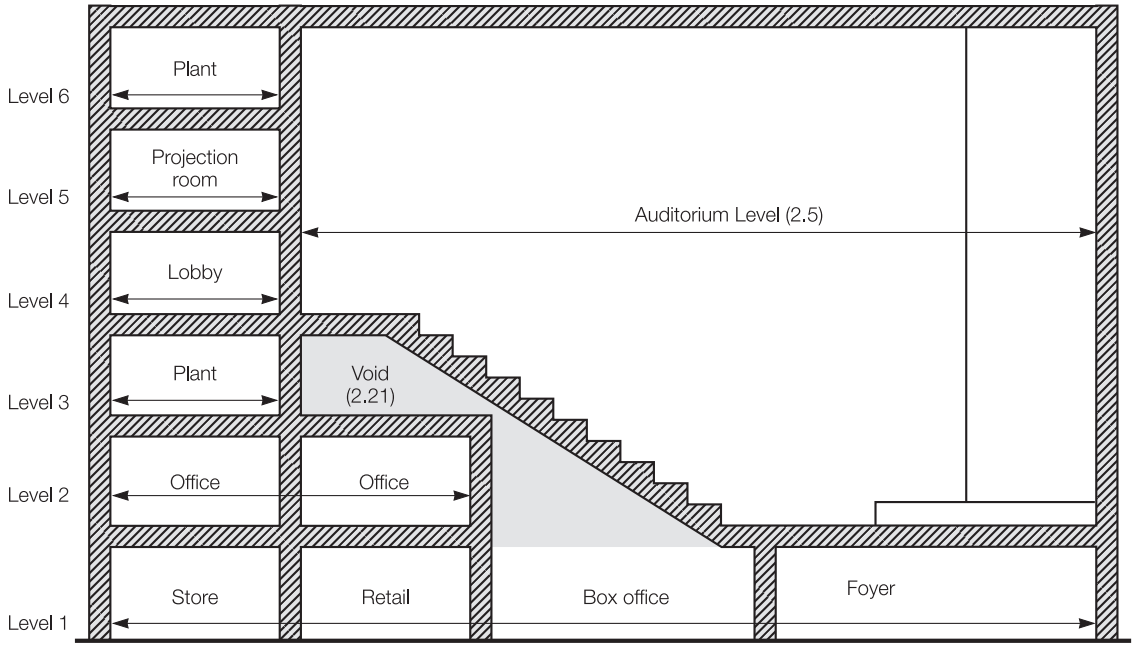
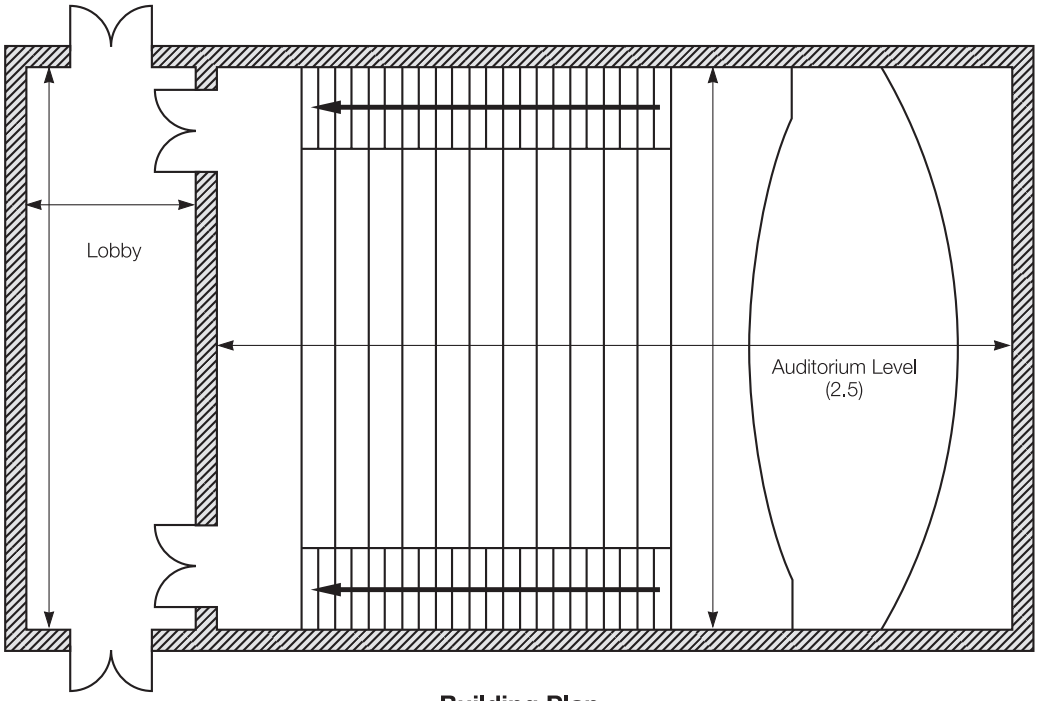


Diagram M – Example of appropriate dimensions for GIA floor area defined at each level – Leisure facilities

[Note: Numbers in brackets are cross references to the Core definitions: gross internal area.]



Building Section



Building Plan

Appendix B: Commonly used functional units and functional units of measurement

Function	Functional unit of measurement
Car parking	
Car parking	per car parking space
Administrative facilities	
Offices	per m^2 of net internal area (NIA)
Commercial facilities	
Shops	per m^2 of *retail area* (m^2)
Department stores	per m^2 of *retail area* (m^2)
Shopping centres	per m^2 of *retail area* (m^2)
Retail warehouses	per m^2 of *retail area* (m^2)
Industrial facilities	
Factories	per m^2 of net internal area (NIA)
Warehouses/stores	per m^2 of net internal area (NIA)
Livestock buildings – farms (pig pens, milking parlours and the like)	per animal
Residential facilities	
Houses (private developer and affordable)	per house type (based on number of bedrooms)
Bungalows (private developer and affordable)	per bedroom
Apartments/flats (private developer and affordable)	per apartment/flat type (based on number of bedrooms)
Hotels/motels	per bedroom
Hotel furniture, fittings and equipment	per bedroom
Student accommodation	per bedroom
Youth hostels	per bedroom
Religious	
Churches, chapels, temples, mosques and the like	per pew or per seat
Education, scientific, information facilities	
Schools	per child or per student
Universities, colleges and the like	per student
Conference centres	number of places
Health and welfare facilities	
Hospitals	per bed space
Nursing homes	per bed space
Doctors' surgeries	per doctor consulting room
Dentists' surgeries	per dentist workspace
Protective facilities	
Fire stations	per fire tender space
Ambulance stations	per ambulance vehicle space
Law courts	per courtroom
Prisons	per cell

Function	Functional unit of measurement
Recreational facilities	
Theatre	per seat
Cinemas	per seat or per screen
Concert halls	per seat
Restaurants	per seat
Squash courts, tennis courts and the like	per court
Football stadia	per seat

Appendix C: Core definition of net internal area (NIA)

The definitions and diagrams in this appendix are reproduced from the *RICS Code of Measuring Practice* (6th edition).

Core definitions: net internal area

3.0 Net Internal Area (NIA)

Net Internal Area is the usable area within a building measured to the internal face of the perimeter walls at each floor level. (See note NIA 3)

	Including		Excluding
3.1	Atria with clear height above, measured at base level only (but see 3.11)	3.11	Those parts of entrance halls, atria, landings and balconies used in common (see 3.1 and 3.2)
3.2	Entrance halls (but see 3.11)	3.12	Toilets, toilet lobbies, bathrooms, cleaners' rooms, and the like
3.3	Notional lift lobbies and notional fire corridors	3.13	Lift rooms, plant rooms, tank rooms (other than those of a trade process nature), fuel stores, and the like
3.4	Kitchens	3.14	Stairwells, lift-wells and permanent lift lobbies
3.5	Built-in units, cupboards, and the like occupying usable areas	3.15(a)	Corridors and other circulation areas where used in common with other occupiers
3.6	Ramps, sloping areas and steps within usable areas	3.15(b)	Permanent circulation areas, corridors and thresholds/recesses associated with access, but not those parts that are usable areas
3.7	Areas occupied by ventilation/heating grilles	3.16	Areas under the control of service or other external authorities including meter cupboards and statutory service supply points
3.8	Areas occupied by skirting and perimeter trunking	3.17	Internal structural walls, walls enclosing excluded areas, columns, piers, chimney breasts, other projections, vertical ducts, walls separating tenancies and the like
3.9	Areas occupied by non-structural walls subdividing accommodation in sole occupancy	3.18(a)	The space occupied by permanent and continuous air-conditioning, heating or cooling apparatus, and ducting in so far as the space it occupies is rendered substantially unusable
3.10	Pavement vaults	3.18(b)	The space occupied by permanent, intermittent air-conditioning, heating or cooling apparatus protruding 0.25m or more into the usable area
		3.19	Areas with a headroom of less than 1.5m
		3.20	Areas rendered substantially unusable by virtue of having a dimension between opposite faces of less than 0.25m. See diagram E
		3.21	Vehicle parking areas (the number and type of spaces noted)

Applications

(when to use NIA)

APP 9 **Estate agency and valuation** – NIA is the basis of measurement for the valuation and marketing of the following types of buildings:
– Shops and supermarkets;
– offices; and
– business use (except those in APP 5)

APP 10 **Rating** – NIA is the principal basis of measurement for rating of shops including supermarkets, offices, business use (except those in APP 6), and composite hereditaments

APP 11 **Property management** – NIA is a basis of measurement for the calculation of service charges for apportionment of occupiers' liability

Notes

(how to use NIA)

NIA 1 **Usable area** – an area is usable if it can be used for any sensible purpose in connection with the purposes for which the premises are to be used

NIA 2 **Diagrams** – diagrams E, F, G, H, K, and L illustrate how to apply NIA

NIA 3 **Internal face** – means the brick/block work or plaster coat applied to the brick/block work, not the surface of internal linings installed by the occupier

NIA 4 **Full-height glazing** – where there is full-height glazing, measurements should be taken to the glazing unless elements of the window structure or design render the space substantially unusable.

NIA 5 **Advice** – when dealing with rent reviews or lease renewals, the exclusions are generally intended to relate to the premises as demised. Unless otherwise indicated by statutory provision or the terms of the lease, it will not normally be appropriate to exclude demised usable space which has been subsequently converted by a tenant to any of the exclusions listed

NIA 6 **Level changes** – the presence of steps or a change in floor levels is to be noted for valuation and marketing purposes

NIA 7 **Restricted headroom** – when marketing on an NIA basis it may be appropriate to identify floor areas below full height but above 1.5m

NIA 8 **Perimeter trunking** – when marketing on an NIA basis reference to the inclusion of perimeter trunking may be appropriate in order not to mislead

NIA 9 **Corridors** – whether or not a wall defining a corridor is structural or permanent (see 3.15 and 3.17), is a matter of fact. It depends upon the circumstances of the particular case. When marketing on an NIA basis reference to the inclusion of corridors may be appropriate

Diagram E – Example of appropriate dimensions for NIA floor area defined purpose designed offices

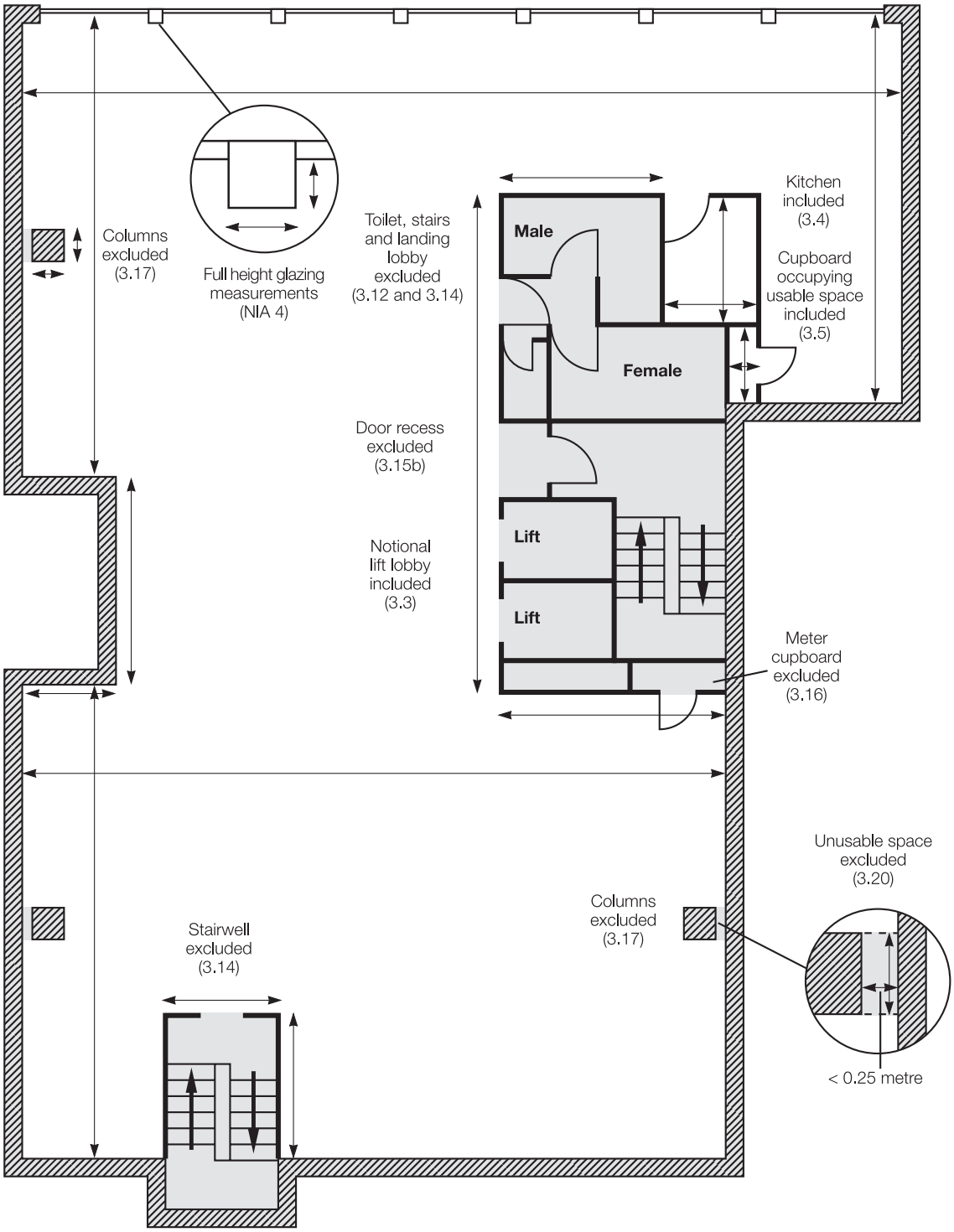


Diagram F – Example of appropriate dimensions for NIA floor area defined offices converted from dwelling house

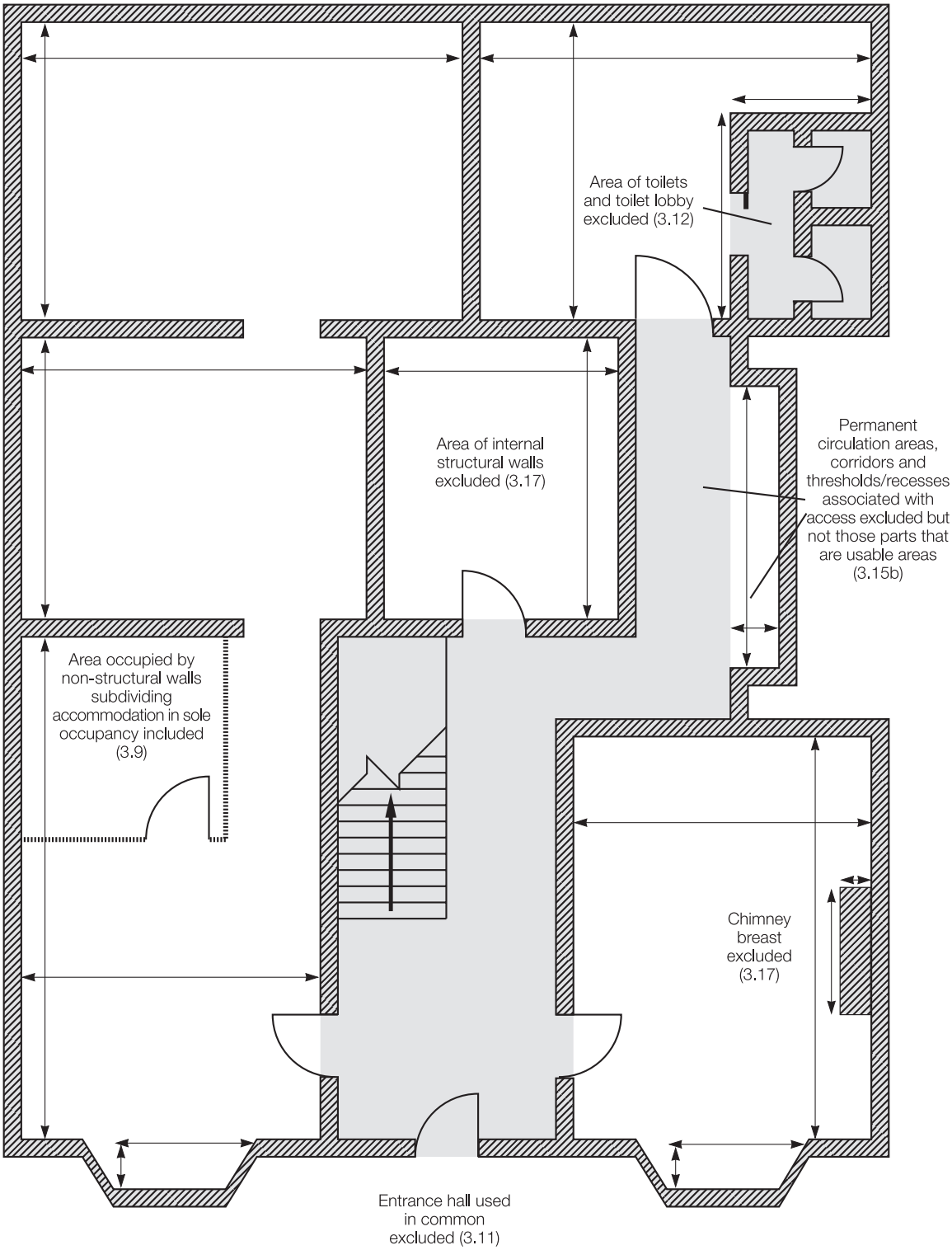


Diagram G – Example of appropriate dimensions for NIA floor areas defined offices (open plan) multiple occupation

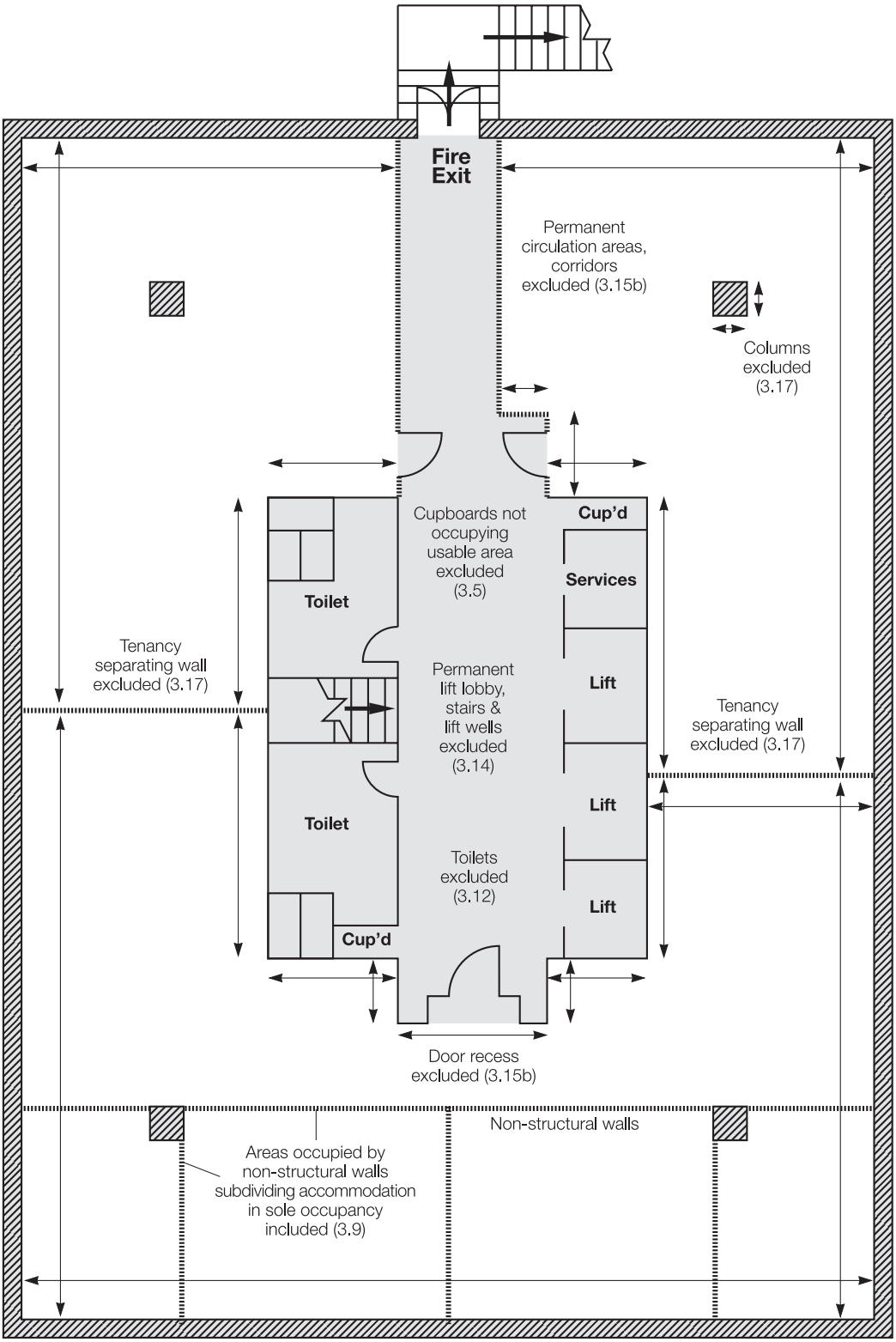
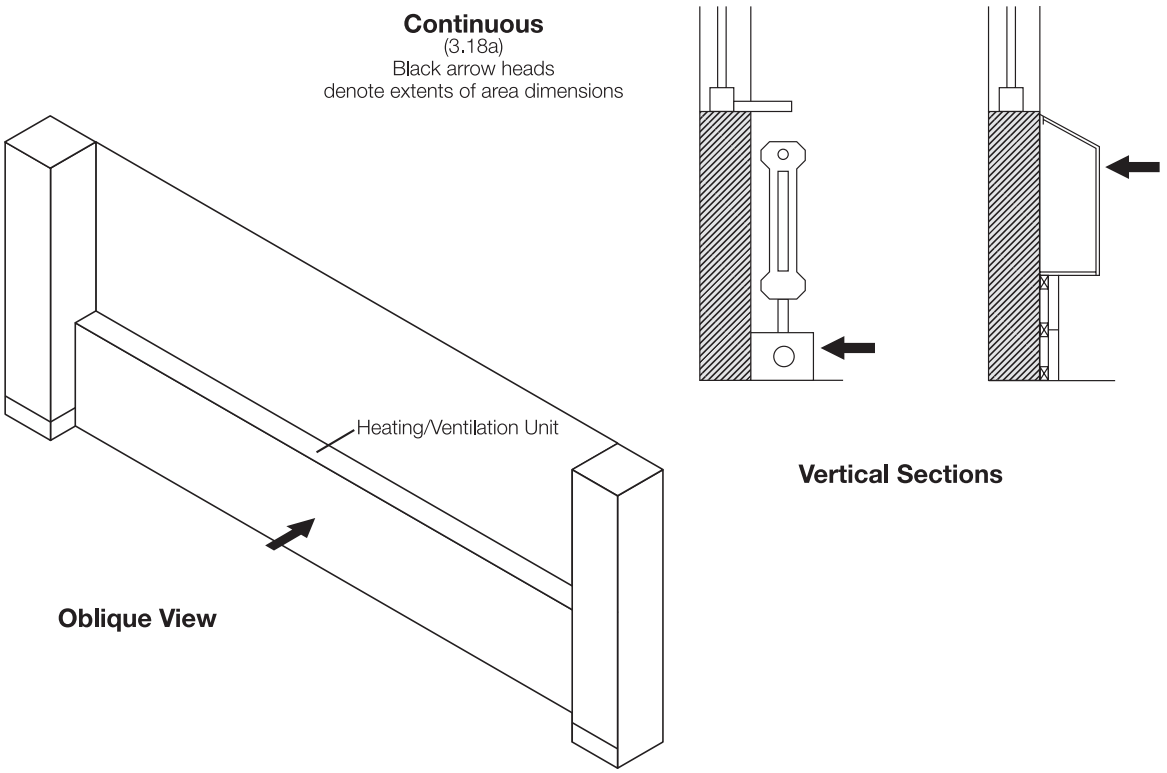
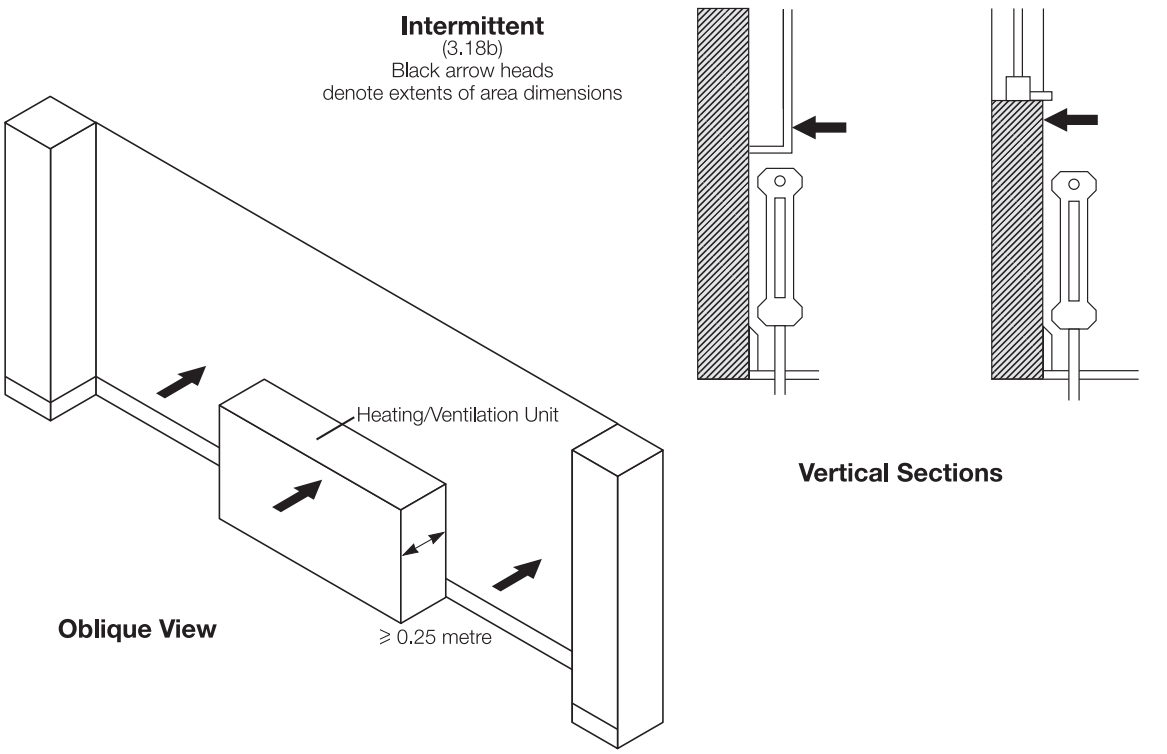


Diagram H – Net Internal Area (NIA) – Examples of appropriate points from which to measure in respect of various types of heating installations





Appendix D: Special use definitions for shops

The definitions and diagrams in this appendix are reproduced from the *RICS Code of Measuring Practice* (6th edition).

Special use definitions: Shops

16.0 Retail Area (RA)

The retail area of the shop is the Net Internal Area (NIA)

	Including		Excluding
16.1	Storerooms and ancillary accommodation formed by non-structural partitions, the existence of which should be noted	16.3	Storerooms and ancillary accommodation formed by structural partitions
16.2	Recessed and arcaded areas of shops created by the location and design of the window display frontage	16.4	Display cabinets which should be identified separately

17.0 Storage Area (StoA)

The NIA of a shop which does not form part of the RA (see 16.0) and which is usable exclusively for storage purposes

18.0 Ancillary Areas (AA)

All NIA not included in RA and StoA but capable of beneficial use

19.0 Gross Frontage (GF)

The overall external measurement in a straight line across the front of the building, from the outside of external walls, or the centre line of party walls

20.0 Net Frontage (NF)

The overall external frontage on the shop line measured between the internal face of the external walls, or the internal face of support columns

	Including		Excluding
20.1	The display window frame and shop entrance	20.2	Recesses, doorways or access to other accommodation

21.0 Shop Width (SW)

Internal width between inside faces of external walls at front of shop or other point of reference

22.0 Shop Depth (SD)

Measurement from the notional display window to the rear of the retail area

Including

22.1 The thickness of the display window (or any support structure)

23.0 Built Depth (BD)

Maximum external measurement from front to rear walls of a building at ground level

Applications

(when to use)

APP 19 **Estate agency and valuation** – RA is the basis of measurement for the valuation and marketing of shops and supermarkets

Notes

(how to use)

RA 1 **Diagrams** – diagrams E to H, K and L illustrate how to apply NIA; diagrams K and L are specific to shops

RA 2 **Zoning** – the use of zones when assessing the values of shops is a valuation, not a measurement, technique. Consequently it is not part of this Code. Market custom shall prevail

RA 3 **Display window** – location for the purpose of assessing GEA, GIA or NIA, in the case of shop property where the display window forms the non-structural 'fourth wall', its location should be assumed to be at the forward-most point at which a shop display window could be installed

AA 1 **Ancillary areas** – include staff rooms, kitchens, training rooms, offices, and the like

GF 1 **Return gross frontage** – to be measured in the same way as Gross Frontage

NF 1 **Return net frontage** – to be measured in the same way as Net Frontage

NF 2 **Display windows** – the existence and nature of display windows and integral shop fronts are to be noted

SW 1 **Shop width** – if the shop width is not reasonably constant throughout the whole sales area, then this should be stated and additional measurements may need to be provided

ShD1 **Notional display window** – the notional display window is to be assumed placed at the forward-most point at which a shop (see RA 3) display window could be installed

ShD2 **Shop depth** – if the depth is not reasonably constant throughout the whole sales area, then this should be stated and additional measurements may need to be provided

ShD3 **Building line** – the position of the building line is to be noted

Diagram K – An example of NIA in practice in a retail context

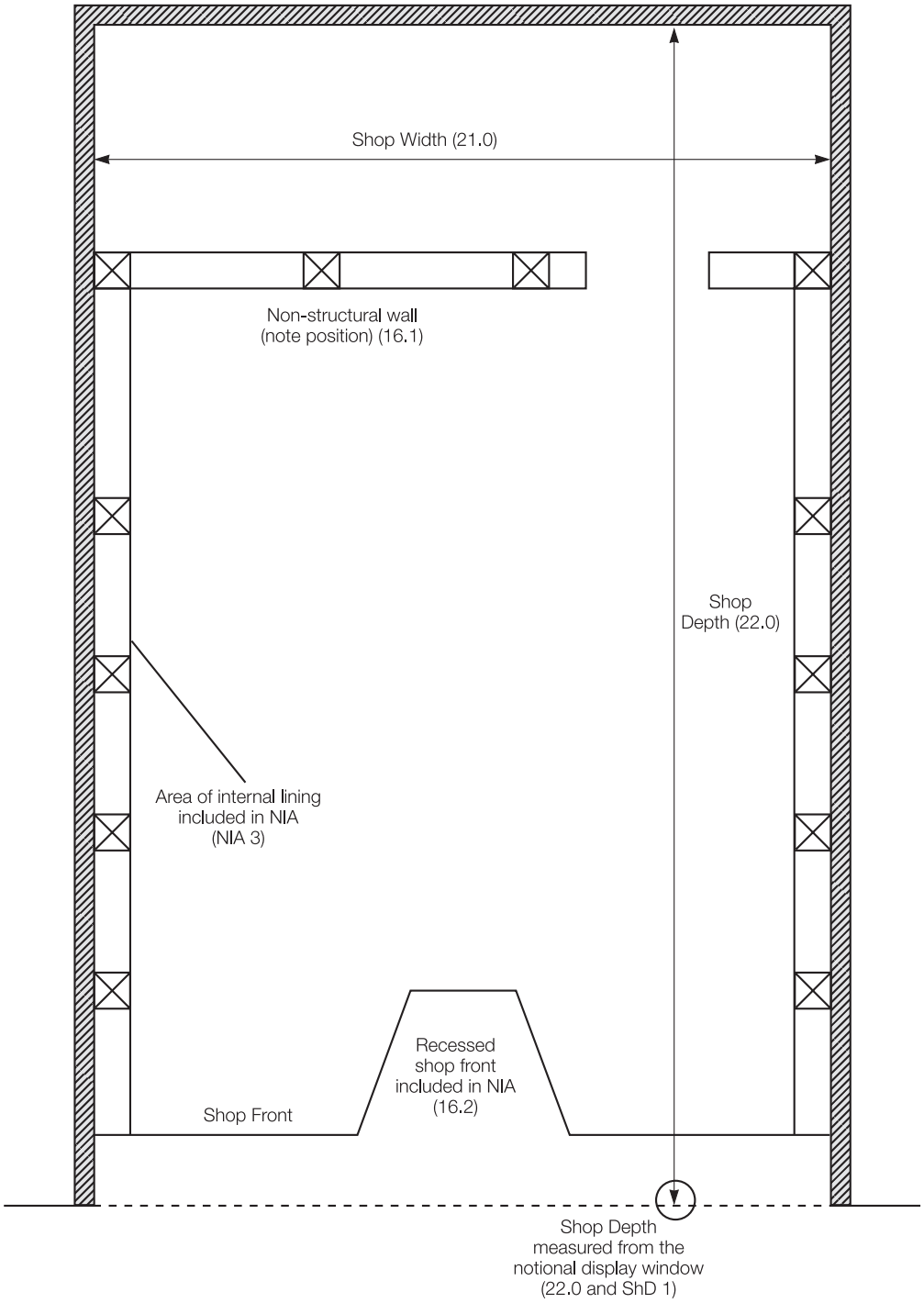
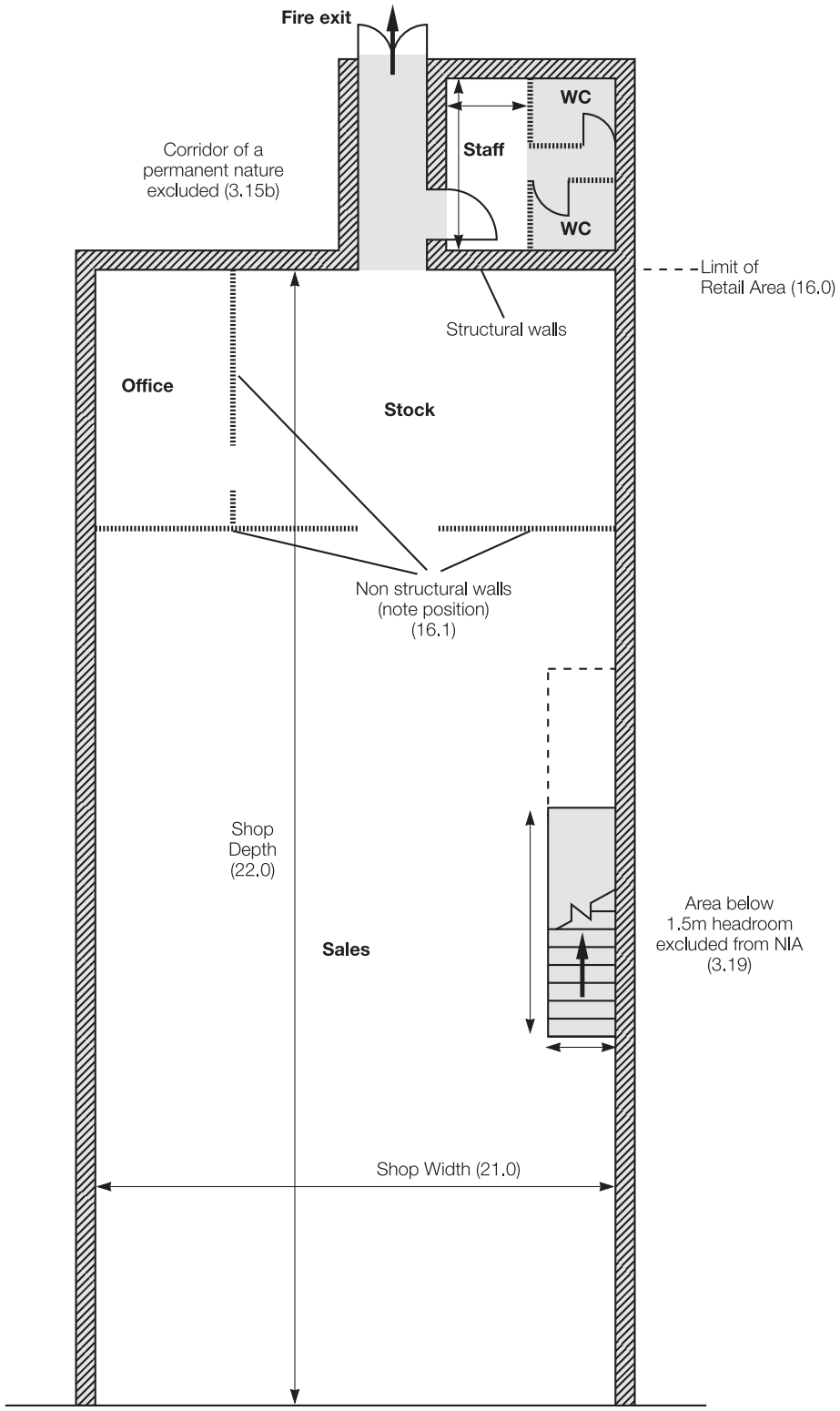


Diagram L – An example of NIA in practice in a retail context



Appendix E: Logic and arrangement of levels 1 to 3 for elemental cost planning

LEVEL 1 Group element	LEVEL 2 Element	LEVEL 3 Sub-element
0 Facilitating works	1 Toxic/Hazardous/contaminated material treatment	1 Toxic or hazardous material removal
		2 Contaminated land
		3 Eradication of plant growth
	2 Major demolition works	1 Demolition works
		2 Soft strip works
	3 Temporary support to adjacent structures	1 Temporary support to adjacent structures
	4 Specialist groundworks	1 Site dewatering and pumping
		2 soil stabilisation measures
		3 Ground gas venting measures
	5 Temporary diversion works	1 Temporary diversion works
	6 Extraordinary site investigation works	1 Archaeological investigation
		2 Reptile/wildlife mitigation measures
		3 Other extraordinary site investigation works
1 Substructure	1 Substructure	1 Standard foundations
		2 Specialist foundations
		3 Lowest floor construction
		4 Basement excavation
		5 Basement retaining walls
2 Superstructure	1 Frame	1 Steel frames
		2 Space frames/decks
		3 Concrete casings to steel frames
		4 Concrete frames
		5 Timber frames
		6 Specialist frames
	2 Upper floors	1 Floors
		2 Balconies
		3 Drainage to balconies
	3 Roof	1 Roof structure
		2 Roof coverings
		3 Specialist roof systems
		4 Roof drainage
		5 Rooflights, skylights and openings
		6 Roof features
	4 Stairs and ramps	1 Stair/ramp structures
		2 Stair/ramp finishes
		3 Stair/ramp balustrades and handrails
		4 Ladders/chutes/slides
	5 External walls	1 External enclosing walls above ground level

LEVEL 1 Group element	LEVEL 2 Element	LEVEL 3 Sub-element
		2 External enclosing walls below ground level
		3 Solar/rain screening
		4 External soffits
		5 Subsidiary walls, balustrades and proprietary balconies
		6 Facade access/cleaning systems
	6 Windows and external doors	1 External windows
		2 External doors
	7 Internal walls and partitions	1 Walls and partitions
		2 Balustrades and handrails
		3 Moveable room dividers
		4 Cubicles
	8 Internal doors	1 Internal doors
3 Internal finishes	1 Wall finishes	1 Wall finishes
	2 Floor finishes	1 Finishes to floors
		2 Raised access floors
	3 Ceiling finishes	1 Finishes to ceilings
		2 False ceilings
		3 Demountable suspended ceilings
4 Fittings, furnishings and equipment	1 Fittings, furnishings and equipment	1 General fittings, furnishings and equipment
		2 Domestic kitchen fittings and equipment
		3 Special purpose fittings, furnishings and equipment
		4 Signs/notices
		5 Works of art
		6 Non-mechanical and non-electrical equipment
		7 Internal planting
		8 Bird and vermin control
5 Services	1 Sanitary installations	1 Sanitary appliances
		2 Sanitary ancillaries
	2 Services equipment	1 Services equipment
	3 Disposal installations	1 Foul drainage above ground
		2 Chemical, toxic and industrial liquid waste drainage
		3 Refuse disposal
	4 Water installations	1 Mains water supply
		2 Cold water distribution
		3 Hot water distribution
		4 Local hot water distribution
		5 Steam and condensate distribution
	5 Heat source	1 Heat source
	6 Space heating and air conditioning	1 Central heating
		2 Local heating
		3 Central cooling
		4 Local cooling
		5 Central heating and cooling
		6 Local heating and cooling
		7 Central air conditioning

LEVEL 1 Group element	LEVEL 2 Element	LEVEL 3 Sub-element
		8 Local air conditioning
	7 Ventilation	1 Central ventilation
		2 Local and special ventilation
		3 Smoke extract/control
	8 Electrical installations	1 Electrical mains and sub-mains distribution
		2 Power installations
		3 Lighting installations
		4 Specialist lighting installations
		5 Local electricity generation systems
		6 Earthing and bonding systems
	9 Fuel installations	1 Fuel storage
		2 Fuel distribution systems
	10 Lift and conveyor installations	1 Lifts and enclosed hoists
		2 Escalators
		3 Moving pavements
		4 Powered stairlifts
		5 Conveyors
		6 Dock levellers and scissor lifts
		7 Cranes and unenclosed hoists
		8 Car lifts, car stacking systems, turntables and the like
		9 Document handling systems
		10 Lift and conveyor systems
	11 Fire and lightning protection	1 Fire fighting systems
		2 Fire suppression systems
		3 Lightning protection
	12 Communication, security and control systems	1 Communication systems
		2 Security systems
		3 Central control/building management systems
	13 Specialist installations	1 Specialist piped supply installations
		2 Specialist refrigeration systems
		3 Specialist mechanical installations
		4 Specialist electrical/electronic installations
		5 Water features
	14 Builder's work in connection with services	14 Builder's work in connection with services
6 Prefabricated buildings and building units	1 Prefabricated buildings and building units	1 Complete buildings
		2 Building units
		3 Pods
7 Work to existing buildings	1 Minor demolition works and alteration works	1 Minor demolition and alteration works
	2 Repairs to existing services	1 Repairs to existing services
	3 Damp-proof courses/fungus and beetle eradication	1 Damp-proof courses
		2 Fungus/beetle eradication
	4 Facade retention	1 Facade retention
	5 Cleaning existing surfaces	1 Cleaning existing surfaces

LEVEL 1 Group element	LEVEL 2 Element	LEVEL 3 Sub-element
		2 Protective coatings to existing surfaces
	6 Renovation works	1 Masonry repairs
		2 Concrete repairs
		3 Metal repairs
		4 Timber repairs
		5 Plastics repairs
8 External works	1 Site preparation works	1 Site clearance
		2 Preparatory groundworks
	2 Roads, paths, pavings and surfacings	1 Roads, paths and pavings
		2 Special surfacings and pavings
	3 Soft landscaping, planting and irrigation systems	1 Seeding and turfing
		2 External planting
		3 Irrigation systems
	4 Fencing, railings and walls	1 Fencing and railings
		2 Walls and screens
		3 Retaining walls
		4 Barriers and guardrails
	5 External fixtures	1 Site/street furniture and equipment
		2 Ornamental features
	6 External drainage	1 Surface water and foul water drainage
		2 Ancillary drainage systems
		3 External chemical, toxic and industrial liquid waste drainage
		4 Land drainage
	7 External services	1 Water mains supply
		2 Electricity mains supply
		3 External transformation devices
		4 Electricity distribution to external plant and equipment
		5 Gas mains supply
		6 Telecommunications and other communication system connections
		7 External fuel storage and piped distribution systems
		8 External security systems
		9 External/street lighting systems
		10 Local/district heating installations
		11 Builder's work in connection with external services
	8 Minor building works and ancillary buildings	1 Minor building works
		2 Ancillary buildings and structures
		3 Underpinning to external site boundary walls
9 Main contractor's preliminaries	1 Employer's requirements	1 Site accommodation
		2 Site records
		3 Completion and post-completion requirements
	2 Main contractor's cost items	1 Management and staff
		2 Site establishment
		3 Temporary services

LEVEL 1 Group element	LEVEL 2 Element	LEVEL 3 Sub-element
		4 Security
		5 Safety and environmental protection
		6 Control and protection
		7 Mechanical plant
		8 Temporary works
		9 Site records
		10 Completion and post-completion requirements
		11 Cleaning
		12 Fees and charges
		13 Site services
		14 Insurance, bonds, guarantees and warranties
10 Main contractor's overheads and profit	1 Main contractor's overheads	
	2 Main contractor's profit	
11 Project/design team fees	1 Consultants' fees	1 Project/design team consultants' fees
		2 Other consultants' fees
		3 Site investigation fees
		4 Specialist support consultants' fees
	2 Main contractor's pre-construction fees	1 Management and staff
		2 Specialist support services fees
		3 Temporary accommodation, services and facilities charges
		4 Main contractor's overheads and profit
	3 Main contractor's design fees	1 Main contractor's design consultants' fees
12 Other development/project costs	1 Other development/project costs	1 Land acquisition costs
		2 Employer finance costs
		3 Fees
		4 Charges
		5 Planning contributions
		6 Insurances
		7 Archaeological works
		8 Other specialist fieldwork
		9 decanting and relocation costs
		10 Tenant's costs/contributions
		11 Marketing costs
		12 Other employer costs
13 Risk	1 Design development risks	
	2 Construction risks	
	3 Employer change risks	
	4 Employer other risks	
14 Inflation	1 Tender inflation	
	2 Construction inflation	

Appendix F: Information requirements for formal cost plans

This appendix comprises a list of the key information required to enable preparation of formal cost plans.

1 Formal Cost Plan 1

To enable preparation of Formal Cost Plan 1 (at *RIBA Work Stage* C: Concept or *OGC Gateway* 3A: Design Brief and Concept Approval), key information will be required as follows.

(a) **From the employer:**

(i) Confirmation of the cost limit (i.e. the authorised budget). Where alternative cost options were reported to the employer, confirmation of the preferred design/development option and *cost limit* is required.

(ii) Confirmation of the project/design brief, including statement of quality and 'fit-out' requirements.

(iii) Confirmation of programme, including timetable of critical events (including timetable for design, construction start date, construction time, construction completion date and required occupation dates).

(iv) Confirmation of requirements in respect of:

- procurement strategy, including phasing of construction works, temporary access requirements and the like;
- contract strategy;
- phasing, including requirements relating to decanting, temporary access and the like;
- facilitating works, including demolition, preparatory site works, and early infrastructure works (e.g. mains services connections and roadworks);
- treatment of project/design team fees;
- insurances;
- approach to dealing with other development/project costs (e.g. Section 106 contributions, party wall works and decanting costs);
- planning contribution requirements (e.g. and Section 106 and 278 requirements) required to be incorporated in the building design and/or building works contract(s);
- treatment of employer's risks;
- treatment of inflation;
- treatment of Value Added Tax (VAT); and
- other considerations (e.g. approach to dealing with capital allowances, land remediation allowances and grants).

(v) Post-completion requirements.

(vi) Authority to commence the next *RIBA Work Stage* or proceed to the next *OGC Gateway*.

(b) **From the architect:**

(i) Concept design drawings to a suitable scale, comprising:

- general arrangement plans (for all floors, including basement levels, and roofs);
- general elevations (with materials clearly annotated);
- general sections;
- external landscaping – general arrangement plan(s);
- plans of key building functions;
- detailed elevations showing construction of external walls, roofs, ground floor construction and upper floor construction;
- sketches showing key details/interfaces (e.g. interface between curtain walling system and structure, balconies and the like);
- concept design for rooms and common areas; and
- site constraints plan.

(ii) Schedule of gross external areas (GEA), gross internal floor areas (GIFA), and net internal areas (NIA – i.e. usable area for shops, supermarkets and offices) and site area (SA).

(iii) Outline specification information, including:

- specification/design intent for all main elements;
- statement of required quality;
- outline specification for components, materials and finishes;
- acoustics/vibration requirements;
- outline performance criteria for main element;
- schedule of finishes; and
- details of alternative specifications.

(iv) Room data sheets.

(v) Schedules of key fittings, furnishings and equipment.

(vi) Strategies, including:

- environmental/sustainability (in conjunction with the mechanical and electrical services engineer), including:
  - measures to achieve required environmental rating;
  - Building Regulations requirements;
  - sustainability requirements and assumptions;
  - renewable energy requirements and assumptions;
  - employer's specific requirements;
- car parking, including motorcycles and bicycles;
- vertical movement (in conjunction with the mechanical and electrical services engineer);
- information technology (IT);
- fire;
- acoustics;
- security;
- DDA (Disability Discrimination Act);

- window cleaning;
- refuse/waste disposal;
- public art;
- conservation/listed buildings and the like (if applicable); and
- other important aspects of the building project.

(vii) Reports, including:

- archaeological assessment/report (desktop study);
- measured survey (i.e. topographical survey).

(viii) Phasing and outline construction methodology.

(ix) Definition of 'fit-out'.

(x) Risk register/log.

(c) **From the mechanical and electrical services engineer:**

(i) Concept design drawings to a suitable scale, comprising:

- general arrangement for each main system;
- schematic diagrams for each major system;
- plant room layouts, including roof plant layout;
- single line diagrams showing primary service routes; and
- typical layouts of landlord's areas, service areas and cores.

(ii) Outline specification information, including:

- mechanical services;
- electrical services;
- transportation systems (e.g. lifts, hoists and escalators);
- protective installations;
- communication, security and control systems;
- special installations;
- plant/equipment schedule (for primary plant/equipment);
- approximate duties, output, and sizes of primary plant/equipment;
- schedule of cost significant builder's work in connection with mechanical and electrical engineering services installations/systems; and
- details of alternative specifications.

(iii) Strategies, including:

- environmental/sustainability (in conjunction with the architect), including:
  - measures to required environmental rating;
  - Building Regulations requirements;
  - sustainability requirements and assumptions;
  - renewable energy requirements and assumptions;
  - employer's specific requirements.
- vertical movement (in conjunction with the architect); and
- removal/decommissioning of existing plant and or equipment.

(iv) Reports, including:

- survey of underground services.

(v) Identification of requirements for any abnormal mechanical and electrical engineering services installations/systems.

(vi) Details of utilities services connections, including:

- connections;
- upgrading requirements; and
- diversions.

(vii) Methodology for facilitating works (i.e. early provision of mains services to site).

(viii) Risk register/log.

(d) **From the structural engineer:**

(i) Reports based on desktop studies, including:

- environmental contamination (Phase 1 audit – i.e. to establish the nature of any subsurface contaminated soil and/or groundwater);
- geotechnical properties; and
- bombs.

(ii) Reports based on fieldwork, sampling and analysis (where commissioned by the employer), including:

- environmental contamination (Phase 2 audit): and
- geotechnical properties.

  Note: Fieldwork comprises trial pits, auger holes, window samplers, boreholes, probing and the like.

(iii) Environmental risk assessment.

(iv) Advice on ground conditions.

(v) Concept design drawings to a suitable scale, comprising:

- general arrangement;
- frame configuration.
- layout of shear walls, core walls, columns and beams;
- sections;
- foundation layouts, including pile (and pile cap and ground beam) layouts;
- sections, showing ground slab construction, basement wall construction, pile caps construction and the like; and
- indicative drainage solution.

(vi) Formation and excavation levels.

(vii) Outline specification information, including:

- specification/design intent for all main elements;
- outline specification for components and materials;
- structural performance criteria (e.g. design loadings);
- pile sizes, including indicative lengths;
- statement on strategy for integration of mechanical and electrical engineering services with structural components; and
- details of alternative specifications.

(viii) Estimates of reinforcement content for all reinforced concrete components.

(ix) Mass of steelwork in steel framed structures.

(x) Methodologies for:

- facilitating works, including demolition, preparatory site works, and early infrastructure works (e.g. roadworks and drainage);
- temporary works;
- alterations; and
- drainage (indicative solution).

(xi) Risk register/log.

2 Formal Cost Plan 2

To enable preparation of Formal Cost Plan 2 (at *RIBA Work Stage* D: Design Development or *OGC Gateway* 3B: Detailed Design Approval), key information will be required as follows.

(a) **From the employer:**

(i) Confirmation that Formal Cost Plan 1 prepared at *RIBA Work Stage* C: Concept, or *OGC Gateway* 3A: Design Brief and Concept Approval, is acceptable.

(ii) Confirmation of any preferred alternatives given in cost report for Cost Plan 1.

(iii) Confirmation of the project/design brief, including statement of quality and 'fit-out' requirements.

(iv) Confirmation of programme, including timetable of critical events (including timetable for design, construction start date, construction time, construction completion date and required occupation dates).

(v) Confirmation of requirements in respect of:

- procurement strategy, including phasing of construction works, temporary access requirements and the like;
- contract strategy;
- phasing, including requirements relating to decanting, temporary access and the like;
- facilitating works, including demolition, preparatory site works, and early infrastructure works (e.g. mains services connections and roadworks);
- treatment of project/design team fees;
- insurances;
- approach to dealing with other development/project costs (e.g. Section 106 contributions, party wall works and decanting costs);
- planning and Section 106 and 278 requirements required to be incorporated in the building design and/or building works contract(s);
- treatment of employer's risks;
- treatment of inflation;
- treatment of Value Added Tax (VAT); and
- other considerations (e.g. approach to dealing with capital allowances, land remediation allowances and grants).

(vi) Post-completion requirements.

(vii) Acceptance of any other matters within the cost report for Cost Plan 1.

(viii) Authority to commence the next *RIBA Work Stage* or proceed to the next *OGC Gateway*.

(b) **From the architect:**

(i) Detailed design drawings to a suitable scale, comprising:

- general arrangement plans (for all floors, including basement levels, and roofs);
- general elevations (with materials clearly annotated);
- general sections;
- external landscaping – general arrangement plan(s);
- plans of key building functions;
- detailed elevations;
- detailed sections, showing construction of external walls, roofs, ground floor construction and upper floor construction;
- drawings showing key details/interfaces (e.g. interface between curtain walling system and structure, balconies and the like);
- detailed floor plans, showing the layout of rooms and common areas.

(ii) Updated site constraints plan.

(iii) Schedule of gross external areas (GEA), gross internal floor areas (GIFA), and net internal areas (NIA – i.e. usable area for shops, supermarkets and offices) and site area (SA).

(iv) Updated outline specification information, including:

- specification/design intent for all main elements;
- statement of required quality;
- outline specification for components, materials and finishes;
- acoustics/vibration requirements;
- outline performance criteria for main element;
- schedule of finishes; and
- details of alternative specifications.

(v) Updated room data sheets.

(vi) Updated schedules of key fittings, furnishings and equipment.

(vii) Updated strategies, including:

- environmental/sustainability (in conjunction with the mechanical and electrical services engineer), including:
  - measures to achieve required environmental rating;
  - Building Regulations requirements;
  - sustainability requirements and assumptions;
  - renewable energy requirements and assumptions;
  - employer's specific requirements;
- car parking, including motorcycles and bicycles;
- vertical movement (in conjunction with the mechanical and electrical services engineer);
- information technology (IT);
- fire;
- acoustics;
- security;

- DDA (Disability Discrimination Act);
- window cleaning;
- refuse/waste disposal;
- public art;
- conservation/listed buildings and the like (if applicable); and
- other important aspects of the building project.

(viii) Updated reports, including:

- archaeological assessment/report (desktop study); and
- measured survey (i.e. topographical survey).

(ix) Updated phasing and outline construction methodology.

(x) Updated risk register/log.

(c) **From the mechanical and electrical services engineer:**

(i) Detailed design drawings to a suitable scale, comprising:

- general arrangement for each main system;
- schematic diagrams for each major system;
- plant room layouts, including roof plant layout;
- single line diagrams showing primary service routes; and
- typical layouts of landlord's areas, service areas and cores.

(ii) Updated outline specification information, including:

- mechanical services;
- electrical services;
- transportation systems (e.g. lifts, hoists and escalators);
- protective installations;
- communication, security and control systems;
- specialist installations;
- plant/equipment schedule (for primary plant/equipment);
- approximate duties, output, and sizes of primary plant/equipment; and
- schedule of cost significant builder's work in connection with mechanical and electrical engineering services installations/systems.

(iii) Updated strategies, including:

- environmental/sustainability (in conjunction with the architect), including:
  - measures to achieve required environmental rating;
  - Building Regulations requirements;
  - sustainability requirements and assumptions;
  - renewable energy requirements and assumptions;
  - employer's specific requirements;
- vertical movement (in conjunction with the architect); and
- removal/decommissioning of existing plant and or equipment.

(iv) Identification of requirements for any abnormal mechanical and electrical engineering services installations/systems.

(v) Details of utilities services connections, including:

- connections;
- upgrading requirements;
- diversions; and
- quotations from statutory undertakers.

(vi) Updated methodology for facilitating works (i.e. early provision of mains services to site).

(vii) Updated risk register/log.

(d) **From the structural engineer:**

(i) Reports based on fieldwork, sampling and analysis (where commissioned by the employer), including:

- environmental contamination (Phase 2 audit).
- geotechnical properties.

  Note: Fieldwork comprises trial pits, auger holes, window samplers, boreholes, probing and the like.

(ii) Environmental risk assessment.

(iii) Updated advice on ground conditions.

(iv) Detailed design drawings to a suitable scale, comprising:

- general arrangement;
- layout of shear walls, core walls, columns and beams;
- frame configuration.
- foundation layouts, including pile (and pile cap and ground beam) layouts;
- sections, showing ground slab construction, basement wall construction, pile caps construction and the like; and
- indicative drainage solution.

(v) Formation and excavation levels.

(vi) Updated outline specification information, including:

- specification/design intent for all main elements;
- outline specification for *components* and materials;
- structural performance criteria (e.g. design loadings);
- pile sizes, including indicative lengths;
- statement on strategy for integration of mechanical and electrical engineering services with structural components;
- details of alternative specifications.

(vii) Updated estimates of reinforcement content for all reinforced concrete components.

(viii) Mass of steelwork in steel framed structures.

(ix) Updated methodologies for:

- facilitating works, including demolition, preparatory site works, and early infrastructure works (e.g. roadworks and drainage);
- temporary works;
- alterations; and
- drainage (indicative solution).

(x) Risk register/log.

(e) **From the specialist consultants:**

(i) Design development drawings.

(ii) Outline specification information.

3 Formal Cost Plan 3

To enable preparation of Formal Cost Plan 3 (at *RIBA Work Stages* E: Technical Design and F: Production Information and *OGC Gateway* 3B: Detailed Design Approval), key information will be required as follows.

(a) **From the employer**

(i) Confirmation that Formal Cost Plan 2 prepared at *RIBA Work Stage* D: Design Development, or *OGC Gateway* 3B: Detailed Design Approval, is acceptable.

(ii) Confirmation of any preferred alternatives given in cost report for Cost Plan 2.

(iii) Confirmation of the project/design brief, including statement of quality and 'fit-out' requirements.

(iv) Confirmation of programme, including timetable of critical events (including timetable for design, construction start date, construction time, construction completion date and required occupation dates).

(v) Confirmation of requirements in respect of:

- procurement strategy, including phasing of construction works, temporary access requirements and the like;
- contract strategy;
- phasing, including requirements relating to decanting, temporary access and the like;
- facilitating works, including demolition, preparatory site works, and early infrastructure works (e.g. mains services connections and roadworks);
- treatment of project/design team fees.
- insurances.
- approach to dealing with other development/project costs (e.g. Section 106 contributions, party wall works and decanting costs);
- planning contribution requirements (e.g. and Section 106 and 278 requirements) required to be incorporated in the building design and/or building works contract(s);
- treatment of employer's risks;
- treatment of inflation;
- treatment of Value Added Tax (VAT); and
- other considerations (e.g. approach to dealing with capital allowances, land remediation allowances and grants).

(vi) Post-completion requirements.

(vii) Acceptance of any other matters within the cost report for Cost Plan 2.

(viii) Authority to commence the next *RIBA Work Stage* or proceed to the next *OGC Gateway*.

(b) **From the architect**

(i) Final design drawings to a suitable scale, including:

- final plans/layouts;

- elevations;
- sections;
- location drawings;
- assembly drawings; and
- component drawings.

(ii) Updated site constraints plan.

(iii) Schedule of gross external areas (GEA), gross internal floor areas (GIFA), and *et internal areas* (NIA – i.e. usable area for shops, supermarkets and offices) and site area (SA).

(iv) Final specification information, including:

- specification/design for all main elements;
- statement of required quality;
- final specification for components, materials and finishes;
- acoustics/vibration requirements;
- final performance criteria for main element;
- schedule of finishes; and
- details of alternative specifications.

(v) Final room data sheets.

(vi) Final schedules of key fittings, furnishings and equipment.

(vii) Final strategies, including:

- environmental/sustainability (in conjunction with the mechanical and electrical services engineer), including:
  - measures to achieve required environmental rating;
  - Building Regulations requirements;
  - sustainability requirements and assumptions;
  - renewable energy requirements and assumptions;
  - employer's specific requirements;
- car parking, including motorcycles and bicycles;
- vertical movement (in conjunction with the mechanical and electrical services engineer);
- information technology (IT);
- fire;
- acoustics;
- security;
- DDA (Disability Discrimination Act);
- window cleaning;
- refuse/waste disposal;
- public art;
- conservation/listed buildings and the like (if applicable); and
- other important aspects of the building project.

(viii) Updated reports, including:

- archaeological assessment/report (desktop study); and
- measured survey (i.e. topographical survey).

(ix) Final phasing and outline construction methodology.

(x) Updated risk register/log.

(c) **From the mechanical and electrical services engineer:**

(i) Detailed design drawings to a suitable scale.

(ii) Final specification information, including:

- mechanical services;
- electrical services;
- transportation systems (e.g. lifts, hoists and escalators);
- protective installations;
- communication, security and control systems;
- specialist installations;
- plant/equipment schedule (for primary plant/equipment);
- duties, output, and sizes of primary plant/equipment; and
- schedule of cost significant builder's work in connection with mechanical and electrical engineering services installations/systems.

(iii) Final strategies, including:

- environmental/sustainability (in conjunction with the architect), including:
  - measures to achieve required environmental rating;
  - Building Regulations requirements;
  - sustainability requirements and assumptions;
  - renewable energy requirements and assumptions;
  - employer's specific requirements;
- vertical movement (in conjunction with the architect); and
- removal/decommissioning of existing plant and or equipment.

(iv) Details of utilities services connections, including:

- connections;
- upgrading requirements;
- diversions; and
- quotation from statutory undertakers.

(v) Final methodology for facilitating works (i.e. early provision of mains services to site).

(vi) Updated risk register/log.

(d) **From the structural engineer:**

(i) Reports based on fieldwork, sampling and analysis (where commissioned by the employer), including:

- environmental contamination (Phase 2 audit); and
- geotechnical properties.

  Note: Fieldwork comprises trial pits, auger holes, window samplers, boreholes, probing and the like.

(ii) Updated environmental risk assessment.

(iii) Updated advice on ground conditions.

(iv) Final design drawings to a suitable scale, including:

- general arrangement;
- layout of shear walls, core walls, columns and beams;
- frame configuration;
- foundation layouts, including pile (and pile cap and ground beam) layouts;
- sections, showing ground slab construction, basement wall construction, pile caps construction and the like; and
- final drainage solution.

(v) Formation and excavation levels.

(vi) Final specification information, including:

- specification/design for all main elements;
- final specification for components and materials;
- structural performance criteria (e.g. design loadings);
- pile sizes, including indicative lengths; and
- statement on strategy for integration of mechanical and electrical engineering services with structural components.

(vii) Updated estimates of reinforcement content for all reinforced concrete components.

(viii) Mass of steelwork in steel framed structures.

(ix) Final methodologies for:

- facilitating works, including demolition, preparatory site works, and early infrastructure works (e.g. roadworks and drainage);
- temporary works;
- alterations; and
- drainage.

(x) Updated risk register/log.

(e) **From the specialist consultants:**

(i) Final design drawings to a suitable scale.

(ii) Final specification information.

Appendix G: Template for elemental cost plan (condensed – based on level 1 codes)

Cost plan no. **Project title:**

GIFA: ……m²

COST CENTRE	GROUP ELEMENT/ELEMENT	COST/M² OF GIFA	TOTAL COST OF ELEMENT (TARGET COST)
		£	£
	FACILITATING WORKS AND BUILDING WORKS		
0	Facilitating works		
1	Substructure		
2	Superstructure		
3	Internal finishes		
4	Fittings, furnishings and equipment		
5	Services		
6	Prefabricated buildings and building units		
7	Work to existing buildings		
8	External works		
	SUB-TOTAL: FACILITATING WORKS AND BUILDING WORKS (A)		
9	Main contractor's preliminaries (B)		
	SUB-TOTAL: FACILITATING WORKS AND BUILDING WORKS (including main contractor's preliminaries) (C) [C = A + B]		
10	Main contractor's overheads and profit (D)		
	TOTAL: BUILDING WORKS ESTIMATE (E) [E = C + D]		
	PROJECT/DESIGN TEAM FEES AND OTHER DEVELOPMENT/PROJECT		
11	Project/design team fees (F)		
12	Other development/project costs (G)		
	TOTAL: PROJECT/DESIGN TEAM FEES AND OTHER DEVELOPMENT/PROJECT COSTS ESTIMATE (H) [H = F + G]		
	BASE COST ESTIMATE (I) [I = E + H]		
13	TOTAL: RISK ALLOWANCE ESTIMATE (J)		
	COST LIMIT (excluding inflation) (K) [K = I + J]		
14	TOTAL: INFLATION ALLOWANCE (L)		
	COST LIMIT (excluding VAT assessment) (M) [M = K + L]		
16	VAT ASSESSMENT		excluded (See Note)

1. Base date of cost plan: …….

2. All transfers are to be to/from the risk allowance cost centres and balanced by an equal but opposite adjustment to the risk allowance cost centres.

Note: Value Added Tax (VAT) in relation to buildings is a complex area. Therefore, it is recommended that VAT be excluded from *order of cost estimates*. It is recommended that specialist advice is sought on VAT matters to ensure that the correct rates are applied to the various aspects of a building project.

Appendix H: Template for elemental cost plan (expanded – based on level 2 codes)

Cost plan no. **Project title:**

GIFA: ..... m²

COST CENTRE	GROUP ELEMENT/ELEMENT	COST/M² OF GIFA	TOTAL COST OF ELEMENT (TARGET COST)
		£	£
	FACILITATING WORKS AND BUILDING WORKS		
0	**Facilitating works**		[insert summation of all sub-elements]
0.1	Toxic/hazardous/contaminated material removal		
0.2	Major demolition works		
0.3	Specialist groundworks		
0.4	Temporary diversion works		
0.5	Extraordinary site investigation works		
1	**Substructure**		[insert summation of all sub-elements]
1.1	Substructure		
2	**Superstructure**		[insert summation of all sub-elements]
2.1	Frame		
2.2	Upper floors		
2.3	Roof		
2.4	Stairs and ramps		
2.5	External walls		
2.6	Windows and external doors		
2.7	Internal walls and partitions		
2.8	Internal doors		
3	**Internal finishes**		[insert summation of all sub-elements]
3.1	Wall finishes		
3.2	Floor finishes		
3.3	Ceiling finishes		
4	**Fittings, furnishings and equipment**		[insert summation of all sub-elements]
4.1	Fittings, furnishings and equipment		
5	**Services**		[insert summation of all sub-elements]
5.1	Sanitary installations		
5.2	Services equipment		

5.3	Disposal installations		
5.4	Water installations		
5.5	Heat source		
5.6	Space heating and air conditioning		
5.7	Ventilation		
5.8	Electrical installations		
5.9	Fuel installations		
5.10	Lift and conveyor installations		
5.11	Fire and lightning protection		
5.12	Communication, security and control systems		
5.13	Specialist installations		
5.14	Builder's work in connection with services		
6	**Complete buildings and building units**		[insert summation of all sub-elements]
6.1	Prefabricated buildings and units		
7	**Work to existing buildings**		[insert summation of all sub-elements]
7.1	Minor demolition works and alteration works		
7.2	Repairs to existing services		
7.3	Damp-proof courses/fungus and beetle eradication		
7.4	Facade retention		
7.5	Cleaning existing surfaces		
7.6	Renovation works		
8	**External works**		[insert summation of all sub-elements]
8.1	Site preparation works		
8.2	Roads, paths, pavings and surfacings		
8.3	Soft landscaping, planting and irrigation systems		
8.4	Fencing, railings and walls		
8.5	External fixtures		
8.6	External drainage		
8.7	External services		
8.8	Minor building works and ancillary buildings		
	SUB-TOTAL: FACILITATING AND BUILDING WORKS (A)		
9	**Main contractor's preliminaries (B)**		[insert summation of all sub-elements]
9.1	Employer's requirements		
9.2	Main contractor's cost items		
	SUB-TOTAL: FACILITATING AND BUILDING WORKS (including main contractor's preliminaries) (C) [C = A + B]		
10	**Main contractor's overheads and profit (D)**		[insert summation of all sub-elements]
10.1	Main contractor's overheads		
10.2	Main contractor's profit		
	TOTAL: BUILDING WORKS ESTIMATE (E) [E = C + D]		
	PROJECT/DESIGN TEAM FEES AND OTHER DEVELOPMENT/PROJECT		
11	**Project/design team fees (F)**		[insert summation of all sub-elements]
11.1	Consultants' fees		

11.2	Main contractor's pre-construction fees		
11.3	Main contractor's design fees		
12	Other development/project costs (G)		[insert total cost of element]
	TOTAL: PROJECT/DESIGN TEAM FEES AND OTHER DEVELOPMENT/PROJECT COSTS ESTIMATE (H) [H = F + G]		
	BASE COST ESTIMATE (I) [I = E + H]		
13	Risks		
13.1	Design development risks		
13.2	Construction risks		
13.3	Employer change risks		
13.4	Employer other risks		
	TOTAL: RISK ALLOWANCE ESTIMATE (J)		
	COST LIMIT (excluding inflation) (K) [K = I + J]		
14	Inflation		
14.1	Tender inflation		
14.2	Construction inflation		
	TOTAL: INFLATION ALLOWANCE (L)		
	COST LIMIT (excluding VAT assessment) (M) [M = K+ L]		
15	VAT ASSESSMENT		excluded (See Note)

1. Base date of cost plan: …….

2. All transfers are to be to/from the risk allowance cost centres and balanced by an equal but opposite adjustment to the risk allowance cost centres.

Note: Value Added Tax (VAT) in relation to buildings is a complex area. Therefore, it is recommended that VAT be excluded from order of cost estimates. It is recommended that specialist advice is sought on VAT matters to ensure that the correct rates are applied to the various aspects of a building project.

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nrm 1

RICS new rules of measurement

NRM 1: Order of cost estimating and cost planning for capital building works

The *RICS new rules of measurement* (NRM) is a suite of documents issued by the RICS Quantity Surveying and Construction Professional Group.

The rules have been written to provide a standard set of measurement rules that are understandable by all those involved in a construction project. They provide advice and best practice guidance to RICS members involved in the cost management of construction projects worldwide.

This volume, NRM 1: *Order of cost estimating and cost planning for capital building works*, provides fundamental guidance on the quantification of building works for the purpose of preparing cost estimates and cost plans. Direction on how to quantify other items forming part of the cost of a construction project, but which are not reflected in the measurable building work items, is also provided – i.e. preliminaries, overheads and profit, project team and design team fees, risk allowances, inflation, and other development and project costs.

NRM 1 is the 'cornerstone' of good cost management of construction projects – enabling more effective and accurate cost advice to be given to clients and other project team members, as well as facilitating better cost control.

Although written primarily for the preparation of order of cost estimates and cost plans, the rules will be invaluable when preparing approximate estimates.

In addition, the rules can be used as a basis for capturing historical cost data in the form required for order of cost estimates and elemental cost plans, thereby completing the 'cost management cycle'.

These rules provide essential guidance to all those involved in, as well as those who wish to be better informed about, the cost management of construction projects.

The second edition of NRM 1 strengthens the link between methods of measurement and how building projects are now procured, and provides a common elemental and cost breakdown structure applicable to all stages of measurement.

The *RICS new rules of measurement* are based on UK practice but the requirements for a coordinated set of rules and underlying philosophy behind each section have worldwide application.

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