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Course – HND Quantity Surveying (Year 1)

Module – Commercial Processes and Cost Management (M5X01871)

Assignment Title – Apply a range of estimating techniques in building estimation

Submitted To (Module Tutor) – Dr N Tobin

Submission Date – 19th February 2019

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1.0 Introduction

An estimate is an approximate value for a specific project using the specification, programme and tender documents provided. Estimating for a whole project is done at tendering stage of a project. This is when the clients' Quantity Surveyor sends out the tender documents to contractors to provide a bid for the project. This is done by either sending out to selected contractors, which is called selective tendering or it can be published online or in newsletters etc. This style of tendering is called open tender. There is a final tender style called negotiated tendering which involves a client only going to one contractor and negotiating a price for the project, which is agreed by both parties. (DBW,2018).

1.01 Aim of Report

The aim of this report is to act as a cost advisor for a client, CALA Homes, who are planning to build a 3-bedroom semi-detached property in Townhill, Swansea. My job, as a cost advisor for CALA Homes, a customer of my boss, McLeod + Aiken Cost Consultancy Ltd, is to produce an estimate cost for the proposed building and calculate labour costs for some parts of the work. In my report I will need to discuss the sources of cost data and their limitations.

1.02 Assumptions

As part of my report, the following assumptions have been made.

<u>Description</u>	<u>Assumption</u>
Gross Floor Area (GFA)	As there are no dimensions on the drawings provided, I used the David Wilson Homes website to find the average floor area of houses in the UK. It stated that the average GFA of a 3-bedroom semi-detached house with 2 stories was 96 m ² . I then made an assumption that the loft area is half the area of the first floor, meaning a floor area of 24m ² . This giving the house a

	total floor area of 120m ² (calculation below, figure 1) (DWH,2018)
Building Height	I assumed that the height of the house was 5.7m from ground level to the gutter. This was assumed due to no dimensions on the drawings and was assumed using the website (Sketch below, figure 2) (Ladder Safety, 2018)
Facilitating Works	I have assumed that all facilitating works were completed before my estimate was drafted. As a result, no costs have been allowed for these works.

Location	Floor Area (m ²)	Running Total (m ²)
Ground Floor	48	48
First Floor	48	96
Loft	24	120
	Total	<u>120 (m²)</u>

(Figure 1)



(Figure 2)

1.03 Order of Estimate

In order for me to calculate my estimation, I will be using the New Rules of Measurement 1 (NRM) order of estimate. NRM1 gives guidance on the quantification of building works in order to prepare cost plans and estimates. (RICS,2019). These documents have been produced and developed by the international organisation RICS, which is a quantity surveying and construction professional group.

As the floor area is calculated, the building works for the property can be estimated using similar project costs from previous projects. This is done by obtaining a rate per m² from various cost data sources such as SPONS or BCIS. For this estimate, I will be using BCIS as I will be able to rebase to the location (Swansea) and date (2018) of the project I am estimating. Building Cost Information Service, commonly known as BCIS, is a provider for 'cost and price information to the construction industry and anyone else who needs comprehensive, accurate and independent data' (pbctoday, 2018). When contractor's complete projects they can submit their costs to BCIS to be published, showing the costs for each element of work such as the sub-structure, frame and roof etc. Estimators and Quantity Surveyors can then access this to either base their budget costs for their projects or they can provide an estimation for a similar project for a client, like I will be compiling.

Using the BCIS website, I have found cost data for 2 similar projects which are based in London (built in 2016) and Cumbria (built in 2015). Using the BCIS rebase function, the costs provided have been adjusted to costs in Swansea in 2018. This has been done using building cost indices (index numbers). These figures are issued every three months by Royal Institute of Chartered Surveyors (RICS) indicating the increase or decrease in cost for the exact same materials in different locations. Therefore, these figures will change for different locations in different years.

As a result of the rebase function, the two projects have the following costs for the building works. In my estimation, I will use the average rate of the two projects, as a different specification/foundation/frame may have been specified in all three projects.

Project 1 – 2 Semi-detached houses, Limpsfield Avenue, London

Project 2 – 2 Semi-detached houses, Sawrey, Cumbria

Project 3 – My estimation (1 Semi-detached house, Townhill, Swansea)

NO.	Element	Project 1 (£/ m²)	Project 2 (£/ m²)	Project 3 (£/ m²)
1	Substructure	168.00	158.00	163.00
2A	Frame	0.00	0.00	0.00
2B	Upper Floors	56.00	22.00	39.00
2C	Roof	126.00	139.00	132.50
2D	Stairs	20.00	14.00	17.00
2E	External Walls	222.00	414.00	318.00
2F	External Windows and Doors	140.00	70.00	105.00
2G	Internal Walls and Partitions	46.00	62.00	54.00
2H	Internal Doors	0.00	26.00	13.00
3A	Wall Finishes	0.00	0.00	0.00
3B	Floor Finishes	0.00	0.00	0.00
3C	Ceiling Finishes	0.00	0.00	0.00
4	Fittings and Furnishings	0.00	0.00	0.00
5	Sanitary Appliances	0.00	0.00	0.00
5B	Services Equipment	0.00	0.00	0.00
5C	Disposal Installations	0.00	0.00	0.00
5D	Water Installations	0.00	0.00	0.00
5E	Heat Source	0.00	0.00	0.00
5F	Space Heating and Air Conditioning	0.00	0.00	0.00
5G	Ventilating Systems	0.00	0.00	0.00
5H	Electrical Installations	0.00	0.00	0.00
5I	Fuel Installations	0.00	0.00	0.00
5J	Lift and Conveyor Installations	0.00	0.00	0.00

5K	Fire and Lightning Protection	0.00	0.00	0.00
5L	Communications and Security Installations	0.00	0.00	0.00
5M	Special Installations	0.00	0.00	0.00
5N	Builder's work in Connection	0.00	0.00	0.00
5O	Management of the Commissioning of Services	0.00	0.00	0.00
6A	Site Works	0.00	0.00	0.00
6B	Drainage	49.00	140.00	94.50
6C	External Services	0.00	0.00	0.00
6D	Minor Building Works	0.00	0.00	0.00
6E	Demolition and Work Outside the Site	0.00	0.00	0.00
7	Preliminaries	0.00	0.00	0.00
8	Contingencies	0.00	0.00	0.00
9	Design Fees	0.00	0.00	0.00

Using this data, I can now calculate a full estimation using the gross floor area of my development which is shown below.

NO.	Element	Estimate (£/m²)	Gross Floor Area (m²)	Total Estimate (£)
1	Substructure	163.00	120.00	19,560.00
2A	Frame	0.00	120.00	0.00
2B	Upper Floors	39.00	120.00	4,680.00
2C	Roof	132.500	120.00	15,900.00
2D	Stairs	17.00	120.00	2,040.00
2E	External Walls	318.00	120.00	38,160.00

2F	External Windows and Doors	105.00	120.00	12,600.00
2G	Internal Walls and Partitions	54.00	120.00	6,480.00
2H	Internal Doors	13.00	120.00	1,560.00
3A	Wall Finishes	0.00	120.00	0.00
3B	Floor Finishes	0.00	120.00	0.00
3C	Ceiling Finishes	0.00	120.00	0.00
4	Fittings and Furnishings	0.00	120.00	0.00
5	Sanitary Appliances	0.00	120.00	0.00
5B	Services Equipment	0.00	120.00	0.00
5C	Disposal Installations	0.00	120.00	0.00
5D	Water Installations	0.00	120.00	0.00
5E	Heat Source	0.00	120.00	0.00
5F	Space Heating and Air Conditioning	0.00	120.00	0.00
5G	Ventilating Systems	0.00	120.00	0.00
5H	Electrical Installations	0.00	120.00	0.00
5I	Fuel Installations	0.00	120.00	0.00
5J	Lift and Conveyor Installations	0.00	120.00	0.00
5K	Fire and Lightning Protection	0.00	120.00	0.00
5L	Communications and Security Installations	0.00	120.00	0.00
5M	Special Installations	0.00	120.00	0.00
5N	Builder's work in Connection	0.00	120.00	0.00

50	Management of the Commissioning of Services	0.00	120.00	0.00
6A	Site Works	0.00	120.00	0.00
6B	Drainage	94.50	120.00	11,340.00
6C	External Services	0.00	120.00	0.00
6D	Minor Building Works	0.00	120.00	0.00
6E	Demolition and Work Outside the Site	0.00	120.00	0.00
7	Preliminaries	0.00	120.00	0.00
8	Contingencies	0.00	120.00	0.00
9	Design Fees	0.00	120.00	0.00
			Total =	<u>£112,320.00</u>

As a result, using the average cost of the two projects, rebased to Swansea in 2018, the total estimate the proposed building is £112,320.00. This can now be used by the client as a budget value for the building works for the 3 bedroom semi-detached house.

1.04 Labour Cost

As part of the estimating works, the client requires an estimation for the labour cost for 4 craftsmen to carry out 50 weeks of work, taking into account overheads and any assumptions.

As part of this estimate, I have made the following assumptions:

- All 4 craftsmen are S/NVQ level 3 or above, aged 22 or above and work 39 hours a week (8.00am – 4.30pm Monday to Thursday and 8.00am – 3.30pm on Friday, with a 30 minute un-paid lunch break every day)
- The craftsmen work no overtime and do not require travel and lodge allowances
- The craftsmen work on site after 7th April 2019 (as the pension allowance increases to 3% after 6th April 2019) (FMB,2018)
- No retirement, death, tool or CITB allowances have been made in the estimate
- 2% allowance on total hours worked for inclement weather (FMB,2018)

<u>LABOUR RATES</u>		
Description	Calculation	Total
Total Hours	39 hrs x 50 wks	1,950 hours
Inclement Weather (2%)	1,950 + 2%	1,989 hours
Basic Rate	£12.45/hr x 1,989	£24,763.05
Employers Liability (NI) (13.8%)	£24,763.05 + 13.8%	£28,180.35
Pension (3%)	£28,180.35 + 3%	£29,025.76
4 Craftsmen Total	£29,025.76 x 4	£116,103.05
Holiday Cover (1 day)	£18/hr x 8 hrs	£144.00
Holiday Cover (22 days)	£144.00 x 22 days	£3,168.00
Holiday Cover (4 Craftsmen, 22 days each)	£3,168 x 4 craftsmen	£12,672.00

The above table shows that the labour cost for 4 craftsmen for 50 weeks work equates to £116,103.05 including employer liability (National Insurance contribution), inclement weather and their pension allowances. But the 4 craftsmen will be eligible to 22 days holiday each, which will need to be paid for, plus labour cover would need to be required. Assuming an agency charges £18.00/hour to supply another craftsmen, this will cost the employer an additional £12,672.00. Therefore, the total cost to the employer will be £128,775.05.

1.05 Sources of Cost Data

In order to prepare an estimate, there are many different sources of cost data and information. In my estimate, data collated from BCIS was mainly used as my estimate was based on the floor area of the property. But estimates can be done using information from different sources such as priced bill of quantities from previous projects and quotations from sub-contractors and suppliers. If this is done, the estimator will need to consider the size and type of the project, the current market condition and the contract condition of the project as these may be different to the previous project. (RICS,2018)

Also, priced cost analysis and cost models can be used. These are prepared within an organisation or company, where previous rates and quotations are tabulated against

the actual costs occurred during different previous projects to see if the previous rate used was sufficient or not. If the table shows that the rate was not sufficient, and the organisation lost money when they last used it, the rate is increased.

Whilst using different sources of data there are many points to bear in mind if the estimator/quantity surveyor is inexperienced. For example, many pricing books commonly used by quantity surveyor's, such as SPONS, use rates from projects that are located in London. This rate will not be ideal if the quantity surveyor is producing an estimate for a project which is going to be based in Swansea. As the labour, plant and material rates will be lower in Swansea. Another note the estimator will need to be wary of is using a pricing document/book from previous years. This is because if the document/book is old then the rate may be unrealistic for the current year, in the current market. (NS,PA,SM 2002).

1.06 Conclusion

In conclusion, using BCIS, I estimate that the building costs for the proposed building will be £112,320.00. This estimate can now be used by the client, CALA Homes, to take into consideration for their proposed semi-detached house in Townhill, Swansea.

As mentioned in my report, BCIS is frequently used as a data source due to it having a wide range of data from various locations and dates. This is a benefit as it can re-base a projects costs that was completed in London in 2015, to a proposed project in Swansea in 2019.

Finally, I estimate that the cost to hire 4 craftsmen for 50 weeks would be £128,775.05. This is using the BATJIC standard hourly rate of £12.45 for a 39 hour working week. The employer would also need to take into account the cost of paying the employee's nation insurance, pension and additional time accounted for inclement weather, where the employer will pay the craftsmen for time that the craftsmen is unable to work due to snow/rain etc. Also, the employer would be responsible for paying the craftsmen holiday pay, but replacing the operative for the time that they are away.

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2 Semi-Detached Houses - #32052

➤ Rebased to 4Q 2018 (318; forecast) and Swansea (85; sample 17)

Summary

2 Semi-Detached Houses

Location: Near Sawrey, Cumbria

Date: 15-May-2015

Building cost: £236,591 **rebased**

Cost/m²: £1,417 **rebased**

Floor area: 167m²

Main construction: Brick construction

Storeys: 2

Level of analysis: Elemental 

Detail

Building function: 820.2 - 'One-off' housing semi-detached (3 units or less)

Type of work: New build

District: South Lakeland

Grid reference: SD3795

Postcode: LA22 0LF

Receipt date: 15-May-2015

Base date: 15-May-2015

Project details: Private residential development providing a 2Nr semi-detached houses, a barn conversion into 2Nr semi-detached houses and a detached house with external works.

Complex contract: This analysis forms part of a complex contract. See analyses 33050, 33051

Site conditions: Demolition of existing structures with asbestos removal.

Project tender price index: 310 on 1985 BCIS Index Base

Client: Private

Tender documentation: Bill of Quantities

Selection of contractor: Selected competition

Cost fluctuations: Fixed

Contract breakdown

Measured work:	£848,878	rebased
Prime cost sums:	£0	rebased
Provisional sums:	£92,099	rebased
Preliminaries:	£123,330	rebased
Design fees:	£0	rebased
Risk (client's contingencies):	£24,119	rebased
Contract sum:	£1,088,426	rebased

Building breakdown

Measured work:	£302,326	rebased
Prime cost sums:	£0	rebased
Provisional sums:	£32,800	rebased
Preliminaries:	£43,923	rebased
Design fees:		
Risk (client's contingencies):	£8,590	rebased
Contract sum:	£387,639	rebased

Tender list (lowest first)

£1,088,426 (-)

Accommodation and design features

2Nr semi-detached houses. Insitu concrete foundations and ground slab. Engineered timber joist upper floor. Timber pitched roof with quarry slates. Stone and block cavity walls. Hardwood windows and external doors. Timber stud and block internal walls. Timber stairs. Flush and pine panelled internal doors. Plasterboard and ceramic tile wall finishes. Vinyl floor finishes to wet areas. Plasterboard ceilings. Kitchen fittings. Wood burning stove and back boiler. Sanitaryware. Electrical installation.

Dimensions

Number of units: 2

Credits

Submitted by: Bushell Raven Limited

Elements (BCIS Standard Form of Cost Analysis (2008 revision)) **rebased**

Element	Total cost	Cost per m ²	Element unit qty	Element unit rate	Percent age
1 Substructure	£26,484	£158			7%
2A Frame	£0	£0			
2B Upper Floors	£3,676	£22			1%
2C Roof	£23,181	£139			6%
2D Stairs	£2,448	£14			1%
2E External Walls	£69,161	£414			18%
2F External Windows and Doors	£11,818	£70			3%
2G Internal Walls and Partitions	£10,239	£62			3%
2H Internal Doors	£4,420	£26			1%
2 Superstructure	£124,942	£748			32%
3A Wall Finishes	£7,586	£45			2%
3B Floor Finishes	£2,955	£17			1%
3C Ceiling Finishes	£4,517	£27			1%
3 Finishes	£15,058	£90			4%
4 Fittings and Furnishings	£6,588	£40			2%
5A Sanitary Appliances	£3,778	£22			1%
5B Services Equipment	£0	£0			
5C Disposal Installations	£1,337	£8			
5D Water Installations	£6,747	£41			2%
5E Heat Source	£6,367	£39			2%
5F Space Heating and Air Conditioning	£5,060	£30			1%
5G Ventilating Systems	£3,789	£23			1%
5H Electrical Installations	£7,371	£44			2%
5I Fuel Installations	£0	£0			
5J Lift and Conveyor Installations	£0	£0			
5K Fire and Lightning Protection	£0	£0			
5L Communications and Security Installations	£0	£0			
5M Special Installations	£0	£0			
5N Builder's Work in Connection	£1,654	£10			
5O Management of the Commissioning of Services	£0	£0			
5 Services	£36,103	£216			9%
Building Sub-total	£209,175	£1,252			54%
6A Site Works	£61,576	£369			16%
6B Drainage	£23,283	£140			6%
6C External Services	£17,953	£107			5%
6D Minor Building Works	£0	£0			
6E Demolition and Work Outside the Site	£23,139	£139			6%
6 External Works	£125,951	£754			32%
7 Preliminaries	£43,923	£263			11%
8 Contingencies	£8,590	£51			2%
Total (less Design Fees)	£387,639	£2,321			100%
9 Design Fees	£0	£0			
Total Contract sum	£387,639	£2,321			100%

Specification

Element	Specification
1 Substructure	Insitu concrete foundations. RC slab.
2B Upper Floors	Engineered timber joists. Chipboard flooring. Insulation.
2C Roof	Timber trussed roof with quarry slates. Plastic rainwater goods. 370mm insulation.
2D Stairs	Standard softwood and MDF.
2E External Walls	Natural stone external skin. Block inner skin.
2F External Windows and Doors	Sapele windows, double glazed. Hardwood panel doors.
2G Internal Walls and Partitions	Timber stud partitions. Block internal walls.
2H Internal Doors	Softwood panelled and flush doors.
3A Wall Finishes	Plasterboard and skim on dabs or timber. Ceramic tiles to splashbacks and bathrooms.
3B Floor Finishes	42m2 vinyl floors to wet areas.
3C Ceiling Finishes	Plasterboard and skim.
4 Fittings and Furnishings	Fitted kitchen.
5A Sanitary Appliances	2Nr baths, 4Nr wash basins and 4Nr WC suites. Electric over bath showers.
5C Disposal Installations	Soil and waste.
5D Water Installations	Hot and cold water.
5E Heat Source	Wood burning stoves and back-up boiler.
5F Space Heating and Air Conditioning	Radiator heating.
5G Ventilating Systems	Ventilation.
5H Electrical Installations	Power and light.
5N Builder's Work in Connection	Holes for pipes.
6A Site Works	PCC block and reconstructed slab paving. Insitu concrete retaining and rendered block walls. Timber fencing. Planting.
6B Drainage	Foul and surface water. Hydrobrake.
6C External Services	Water and electricity connections.
6E Demolition and Work Outside the Site	Demolition of existing buildings including grubbing up foundations and drains. Asbestos removal. Gutting of barn.
7 Preliminaries	13.11% of remainder of Contract sum (excluding Contingencies).
8 Contingencies	2.56% of remainder of Contract sum (excluding Preliminaries).

2 Semi-detached Houses, Limpsfield Avenue - #32241

➤ Rebased to 4Q 2018 (318; forecast) and Swansea (85; sample 17)

Summary

2 Semi-detached Houses, Limpsfield Avenue

Location: Wimbledon Park, London SW19

Date: 18-May-2016

Building cost: £286,407 **rebased**

Cost/m²: £1,446 **rebased**

Floor area: 198m²

Main construction: Brick construction

Storeys: 2

Level of analysis: Elemental 

Detail

Building function: 820.2 - 'One-off' housing semi-detached (3 units or less)

Type of work: New build

District: London Borough of Wandsworth (Wandsworth)

Grid reference: TQ2372

Postcode: SW19 6DL

Receipt date: 18-May-2016

Base date: 8-May-2016

Project details: 2Nr 2 storey affordable semi-detached houses together with external works including site preparation, macadam access and parking, PCC paving, fencing, walls, railings, landscaping, drainage and services. 2Nr cycle sheds and 2Nr replacement garages.

Site conditions: Demolish 8Nr council owned garages. Forecourt/garage infill site in residential area with restricted access and working space.

Client: Wandsworth Council

Tender documentation: Schedule of works

Selection of contractor: Competitive

Contract: JCT Standard Building Contract 2011 edition

Contract period (weeks): Stipulated: 38; Agreed: 38

Cost fluctuations: Firm

Contract breakdown

Measured work:	£315,440	rebased
Prime cost sums:		
Provisional sums:	£9,546	rebased
Preliminaries:	£50,949	rebased
Design fees:		
Risk (client's contingencies):	£30,920	rebased
Contract sum:	£406,855	rebased

Accommodation and design features

2Nr 3B4P 2 storey, rectangular on plan, semi-detached houses. Strip foundations. PCC ground floor. Timber upper floor, stairs and pitched roof with artificial slates. Facing brick/block insulated cavity walls. Aluminium windows. Block and metal stud partitions. Flush doors. Plasterboard to walls and ceilings. Vinyl flooring. Fittings. Sanitaryware. LTHW gas central heating. MVHR. Power, light and photovoltaics. Fire detection, door bells and TV. External works. Replacement of 2Nr garages.

Areas

Basement:	0m ²
Ground floor:	105m ²
Upper floors:	93m ²
Gross floor area:	198 m ²

Dimensions

Number of units:	2
Functional units	
No bedrooms (6)	£47,734.47 rebased

No of persons (8)£35,800.86 **rebased****Floor area percentages****1 storey** (5.90%)**2 storey** (94.10%)**Accreditations****Lifetime Homes Compliant****Code for Sustainable Homes: Code 4****Credits****Submitted by:** Wandsworth Council**Client:** Wandsworth Council**Architect:** Wandsworth Council**Quantity Surveyor:** Wandsworth Council**Structural Engineer:** Walter Scott Partnership**Services Engineer:** Wandsworth Council**General Contractor:** HA Marks Ltd

Elements (BCIS Standard Form of Cost Analysis (2008 revision)) **rebased**

Element	Total cost	Cost per m ²	Element unit qty	Element unit rate	Percent age
1 Substructure	£33,154	£168			8%
2A Frame	£0	£0			
2B Upper Floors	£11,090	£56			3%
2C Roof	£25,000	£126			6%
2D Stairs	£4,055	£20			1%
2E External Walls	£43,934	£222			11%
2F External Windows and Doors	£27,706	£140			7%
2G Internal Walls and Partitions	£8,966	£46			2%
2H Internal Doors	£11,620	£59			3%
2 Superstructure	£132,370	£669			33%
3A Wall Finishes	£14,610	£73			4%
3B Floor Finishes	£14,685	£74			4%
3C Ceiling Finishes	£5,433	£27			1%
3 Finishes	£34,728	£175			9%
4 Fittings and Furnishings	£6,557	£33			2%
5A Sanitary Appliances	£2,493	£12			1%
5B Services Equipment	£0	£0			
5C Disposal Installations	£1,871	£9			
5D Water Installations	£4,777	£24			1%
5E Heat Source	£0	£0			
5F Space Heating and Air Conditioning	£7,099	£36			2%
5G Ventilating Systems	£3,710	£19			1%
5H Electrical Installations	£15,114	£77			4%
5I Fuel Installations	£1,701	£9			
5J Lift and Conveyor Installations	£0	£0			
5K Fire and Lightning Protection	£0	£0			
5L Communications and Security Installations	£1,909	£9			
5M Special Installations	£0	£0			
5N Builder's Work in Connection	£2,107	£11			1%
5O Management of the Commissioning of Services	£0	£0			
5 Services	£40,782	£206			10%
Building Sub-total	£247,591	£1,251			61%
6A Site Works	£24,541	£124			6%
6B Drainage	£9,621	£49			2%
6C External Services	£11,286	£57			3%
6D Minor Building Works	£9,199	£46			2%
6E Demolition and Work Outside the Site	£22,748	£115			6%
6 External Works	£77,395	£391			19%
7 Preliminaries	£50,949	£257			13%
8 Contingencies	£30,920	£156			8%
Total (less Design Fees)	£406,855	£2,055			100%
9 Design Fees	£0	£0			
Total Contract sum	£406,855	£2,055			100%

Specification

Element	Specification
1 Substructure	Strip foundations. PCC beam and block ground floor.
2B Upper Floors	Timber.
2C Roof	Low pitch timber trussed gabled roofs with Eternit artificial slate coverings. Aluminium bargeboards, fascias, soffits and gutters.
2D Stairs	Timber straight flight stairs, balustrades and handrails.
2E External Walls	Facing brick and block insulated cavity walls.
2F External Windows and Doors	Grey colour coated double glazed aluminium windows and doors.
2G Internal Walls and Partitions	Block and metal stud partitions.
2H Internal Doors	Painted softwood or flush doors.
3A Wall Finishes	Plasterboard drylining with emulsion. Ceramic tiles.
3B Floor Finishes	Vinyl flooring. Entrance matting.
3C Ceiling Finishes	Plasterboard and emulsion.
4 Fittings and Furnishings	Curtain battens, kitchen units and worktops, hooks. Venetian blinds to WC, kitchen and bathrooms.
5A Sanitary Appliances	Sanitaryware.
5C Disposal Installations	Soil and waste.
5D Water Installations	Pressurised hot and cold water installations.
5F Space Heating and Air Conditioning	Gas combination boilers, LTHW to underfloor heating and radiators.
5G Ventilating Systems	Mechanical ventilation systems with heat recovery.
5H Electrical Installations	Power and light including photovoltaics.
5I Fuel Installations	Gas installation.
5L Communications and Security Installations	Smoke and fire detection. Door bells. TV/satellite installation.
5N Builder's Work in Connection	Builder's work in connection with services.
6A Site Works	Site preparation. Macadam access and parking. PCC paths and paving. Landscaping including turfing rear gardens and hedges. Softwood close boarded fencing to sides and rear, low level walls with railings above to front. Water butts.
6B Drainage	Foul, surface water and land drains including French drains to front elevation.
6C External Services	Utilities.
6D Minor Building Works	2Nr replacement garages to match existing using reclaimed bricks from demolitions. 2Nr sheds for cycle storage.
6E Demolition and Work Outside the Site	Demolish 8Nr council owned garages and 9Nr store sheds. Break-up garage forecourt paving.
7 Preliminaries	15.68% of remainder of Contract sum (excluding Contingencies).
8 Contingencies	9.51% of remainder of Contract sum (excluding Preliminaries).