The Design Team & Other consultants.

Profession & Business 1

Level 5

Mod Code: M5X01982

The Design Team.

Architect
Quantity Surveyor
Civil Engineer
Structural Engineer
M & E
Health and Safety
Landscape Architect
Interior Designer
Building Control Officer/Private Inspector
Planning Consultant

Ecologist
Highways Consultant
Arboriculturalist
BREEAM SAP
Acoustician
Archaeology
IT
Façade Engineer
Fire Consultant
Party Walls Surveyor

Architect

I Hope we all know what the architect does.

Designer

Contract Administrator

Principle designer – Health and Safety

Client Liaison

Agent

etc

Architectural Technologist

The **Architectural Technologist**, also known as a **Building Technologist**, provides technical building design services and solutions and is trained in architectural technology, building technical design and construction.

Architectural Technologists apply the science of architecture and typically concentrate on the technology of building, design technology and construction.

They can or may negotiate the construction project, and manage the process from conception through to completion, typically focusing on the technical aspects of a building project.

Architectural Technologist

The training of an architectural technologist concentrates on the ever-increasingly complex technical aspects in a building project, but matters of aesthetics, space, light and circulation are also involved within the technical design, leading the professional to assume decisions which are also non-technical.

Most architectural technologists are employed in architectural and engineering firms, or with municipal authorities; but many provide independent professional services directly to clients, although restricted by law in some countries.

A Technologist will usually be accredited to the Chartered Institute of Architectural Technologists. CITB

Quantity Surveyor

A **Quantity Surveyor** (**QS**) is a construction industry professional with expert knowledge on construction costs and contracts.



Quantity Surveyor

Quantity surveyors are the cost managers of construction

A quantity Surveyor, or historically known as an Estimator should be professionally accredited to the Royal Institute of Chartered Surveyors. RICS.

Quantity Surveyor

Traditional QS services

Cost estimating

Cost planning

Cost studies

Cost monitoring and controlling

Measurement

Contracts negotiation

Drafting contract conditions

Procurement advice including tendering strategy

Preparing Bill of Quantities (BOQ) and Tender Document

Contract practice

Valuation of construction work including variations

Assessment of contractor’s claims

Contractual advice

Dispute resolution

Preparing feasibility studies

Advice on cost limits and budgets

Whole life cycle costing

Valuation for insurance purposes

Project management

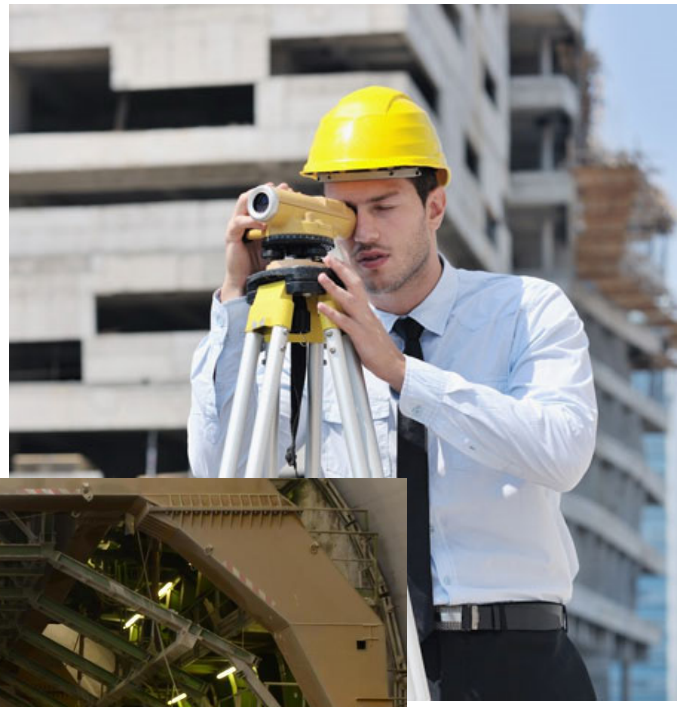
Advice on contractual disputes

Preparation of final account

Preparation of final detailed BOQ

Civil Engineer







Civil Engineer

A **civil engineer** is a person who practices civil engineering – the application of planning, designing, constructing, maintaining, and operating infrastructures.

Civil engineering is one of the oldest engineering disciplines dealing with roads, railroads, airports, bridges, harbours, channels, dams, irrigation projects, pipelines, power plants, and water and sewage systems.

The term "civil engineer" was established by John Smeaton in 1750 to contrast engineers working on civil projects with the military engineers, who worked on armaments and defences. Over time, various sub-disciplines of civil engineering have become recognized and much of military engineering has been absorbed by civil engineering. Other engineering practices became recognized as independent engineering disciplines, including chemical engineering, mechanical engineering, and electrical engineering.

Civil Engineer

Civil engineers usually practice in a particular specialty, such as construction engineering, geotechnical engineering, structural engineering, land development, transportation engineering, hydraulic engineering, and environmental engineering.

Some civil engineers, particularly those working for government agencies, may practice across multiple specializations, particularly when involved in critical infrastructure development or maintenance.

Civil Engineer

Professional associations

The ICE (Institution of Civil Engineers) founded in 1818, represents, as of 2008, more than 80,000 members of the civil engineering profession worldwide. Its commercial arm, Thomas Telford Ltd, provides training, recruitment, publishing and contract services

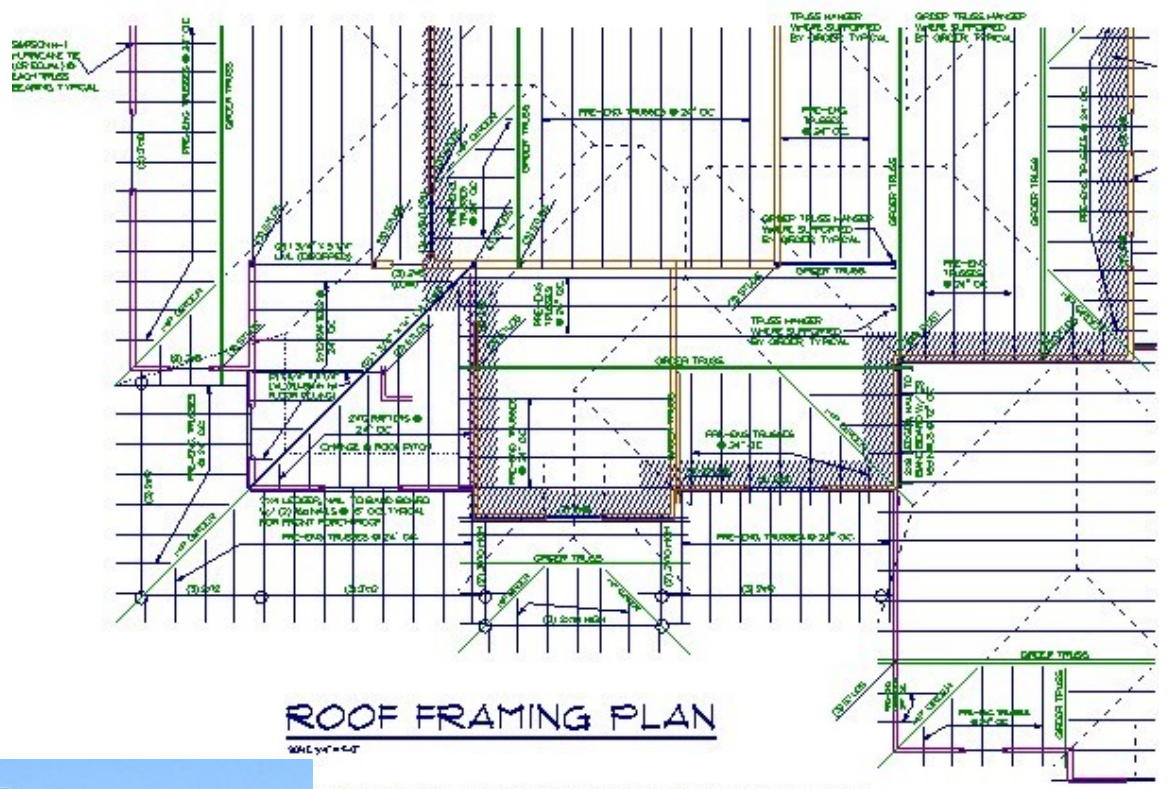
Structural Engineer



Structural Engineer







Structural Engineer

Structural engineers analyse, design, plan, and research structural components and structural systems to achieve design goals and ensure the safety and comfort of users or occupants.

Their work takes account mainly of safety, technical, economic and environmental concerns.

Structural engineering is usually considered a specialty discipline within civil engineering, but it can also be studied in its own right. In the United States, most practicing structural engineers are currently licensed as civil engineers.

In the United Kingdom, most structural engineers in the building industry are members of the Institution of Structural Engineers rather than the Institution of Civil Engineers.

Structural Engineer

Structural engineers ensure that buildings and bridges are built to be strong enough and stable enough to resist all appropriate structural loads (e.g., gravity, wind, snow, rain, seismic (earthquake), earth pressure, temperature, and traffic) in order to prevent or reduce loss of life or injury. They also design structures to be stiff enough to not deflect or vibrate beyond acceptable limits.

The education of structural engineers is usually through a civil engineering degree, and often a master's degree specializing in structural engineering.

Structural Engineer

The fundamental core subjects for structural engineering are:

Strength of materials or solid mechanics

Structural Analysis -Static & Dynamic

Material science and numerical analysis

Reinforced concrete

Composite structure

Timber, masonry and structural steel designs

Health and Safety Consultant

HSE
Health & Safety Executive



Health and Safety Consultant

The **Construction Design and Management Regulations 2015**, also known as **CDM Regulations** or **CDM 2015**, which came into force on 6 April 2015, are regulations governing the way construction projects of all sizes and types are planned.

Replacing Construction (Design and Management) Regulations 2007, CDM 2015 is the latest update to the regulations that aim to improve the overall health, safety and welfare of those working in construction.

These regulations offer a very broad definition of what construction works are- everyone involved in a construction project, including home maintenance and improvement works, has responsibility for health and safety

Health and Safety Consultant



Health and Safety Consultant

The regulations now apply to all clients of construction projects, whether or not a person is acting in the course or furtherance of a business.

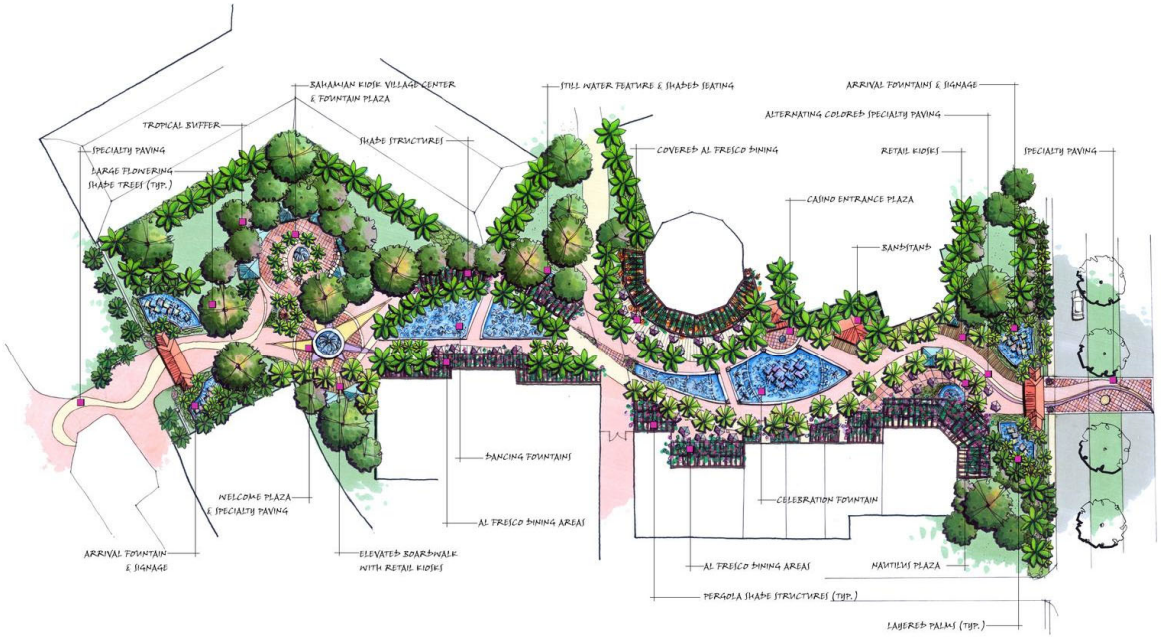
The role of CDM coordinator has been removed and various duties have been recast including client duties and general duties.

A client is required to appoint a **principal designer** as well as a **principal contractor** in any project where there is, or it is reasonably foreseeable that there will be, more than one contractor working on the project.

Landscape Architect



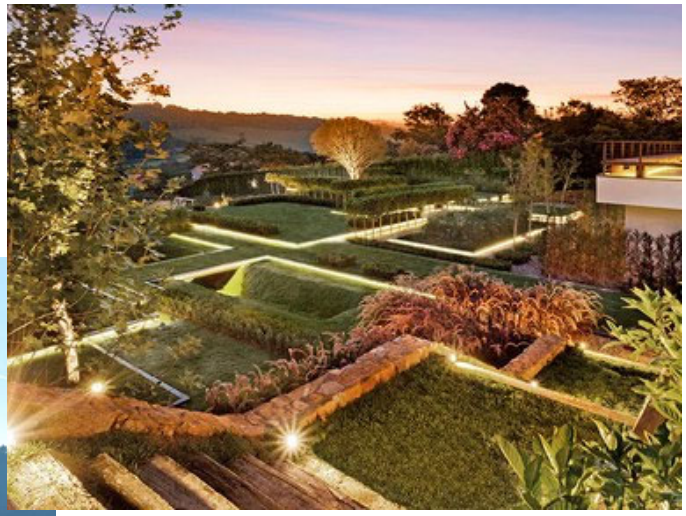
Landscape Architect



Landscape Architect

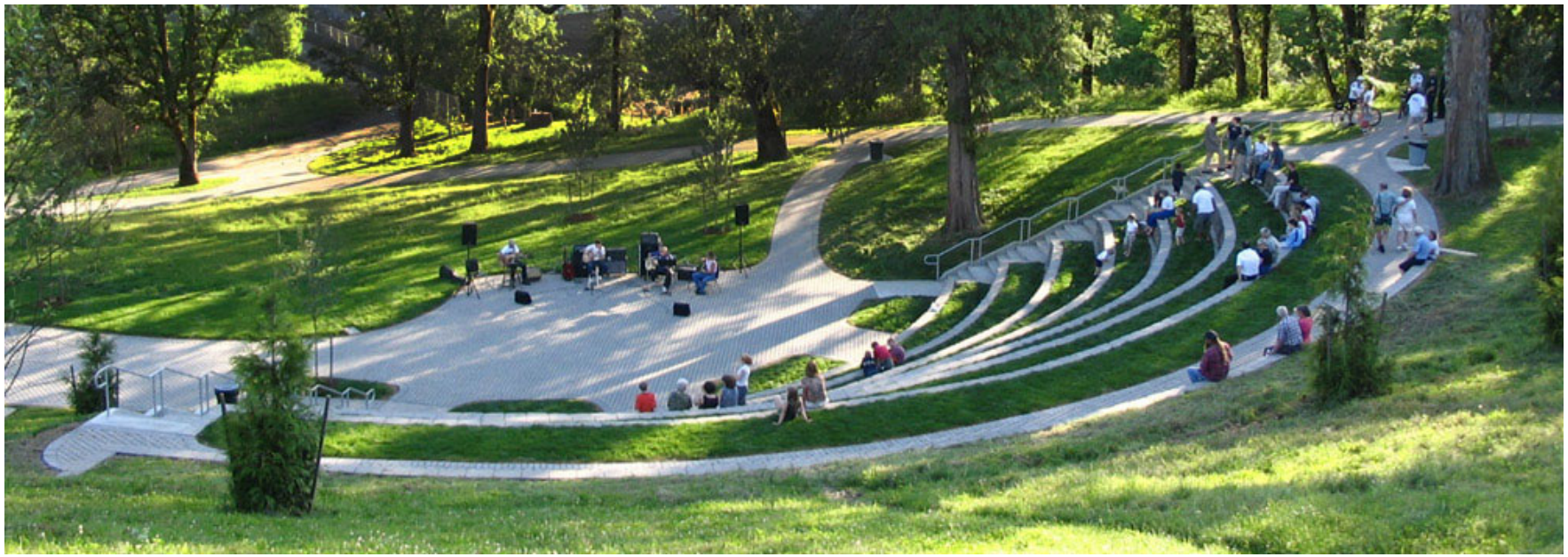


Landscape Architect





Landscape Architect



Landscape Architect



Landscape Architect







Landscape Architect

A **landscape architect** is a person who is educated in the field of landscape architecture.

The practice of landscape architecture includes:

Site analysis

Site inventory

Land planning

Planting design

Grading

Storm water management

Sustainable design

The title landscape architect was first used by Frederick Law Olmsted, the designer of New York City's Central Park.

Landscape Architect

- The **Landscape Institute** is the recognised body relating to the field of Landscape Architecture throughout the UK.
- To become a recognised landscape architect in the UK takes approximately 7 years.
- To begin the process, one has to study an accredited course by the Landscape Institute to obtain a degree in Landscape Architecture or a similar field.
- Following this one must progress onto a Postgraduate Diploma in the field of Landscape Architecture covering the subject in far greater detail such as mass urban planning, construction and planting.
- Following this, the trainee must complete the Pathway to Chartership, a challenging but very rewarding program set out by the Landscape Institute.
- Following this, one is awarded a full Landscape Architect title and becomes a Chartered Member of the Landscape Institute (CMLI.)

Mechanical & Electrical Engineers:

Mechanical engineer:

Designs and specifies the ventilation, heating and cooling systems. Designs the pipework and routes for gas, water, drainage, foul waste until it enters the ground.



Electrical Engineer:

Designs the lighting with input from the interior designer and Architect. Designs power routes and outlets, fire detection, CCTV, public announcement speakers and all other electrical fixings.

Often from the same company as a double act.

Interior Designer



Interior Designer



Interior Designer

Interior design is the art and science of enhancing the interiors of a space or building to achieve a healthier and more aesthetically pleasing environment for the end user.

An interior designer is someone who plans, researches, coordinates, and manages such projects.

Interior design is a multifaceted profession that includes conceptual development, space planning, site inspections, programming, research, communicating with the stakeholders of a project, construction management, and execution of the design.

Interior Designer

An interior designer can be responsible for :

- Kitchen design
- Bathroom design
- Interior décor including colour and pattern
- Furniture design and arrangement
- Lighting
- Floor finishes
- Materials
- IT and audio visual
- Art and Graphic design

Building Control Officer

LABC

Delivering High Quality Building Control Through Local Authorities



NHBC

Building Control Officer

A **building control officer** (**BCO)**, also known as a **building inspector** or **building control surveyor**).

This is a person with the authority to control building work that is subject to the Building Regulations. The title *building control officer* is one predominantly used by local authorities in the UK, which confer the title of *officer* to many of their staff who have regulatory, supervision or enforcement roles.

Many are members of the Royal Institution of Chartered Surveyors (RICS) and chartered building surveyors or chartered building control surveyors, and are members of that RICS Faculty. They practice in either the public or private sector with local authorities or with companies, or as individuals, who are recognised approved inspectors

'Approved inspectors' are bodies or individuals who must be appointed by an organisation designated by the Secretary of State as having the authority to control building work. Surveyors who work for approved inspectors generally do not refer to themselves as *officers*.

Building Control Officer

The main function of building control is to ensure that the requirements of the building regulations are met in all types of non-exempt development. Generally they examine plans, specifications and other documents submitted for approval, and survey work as it proceeds. Most building control surveyors are now actively involved at design stage for many schemes and are acknowledged to provide valuable input at all stages of development.

Many building control surveyors who work for local authorities are involved with other legislation such as safety at sports grounds, dealing with dangerous structures and demolitions, and various development and building matters.

Local authorities have powers under the Building Act 1984 to enforce the building regulations and have work altered or removed that does not comply. These powers have not been conferred on approved inspectors.

Planning Consultant



Planning Consultant



The Local Authority Planner. Public Enemy Number 1.

Planning Consultant

The **Royal Town Planning Institute** (**RTPI**) is the principal body representing planning professionals in the United Kingdom and Ireland.

It promotes and develops policy affecting planning and the built environment. Founded in 1914, the institute was granted a Royal Charter in 1959. In 2012 it reported that it had over 23,000 members.

Planning Consultant

To counteract the local authority planning department and planning committee, a planning consultant can offer the following services:

- Offer guidance and support in planning terms to a development.
- Prepare Design and Access Statements and other supporting planning documents to accompany a planning application.
- Consider responses to planning policy.
- Represent you and your client in planning committee meetings.
- Support a planning application with pre planning application public consultation. (I requirement in Wales)

Ecologist



Ecologist



Ecologist











Ecologist



Ecologist



Ecologist

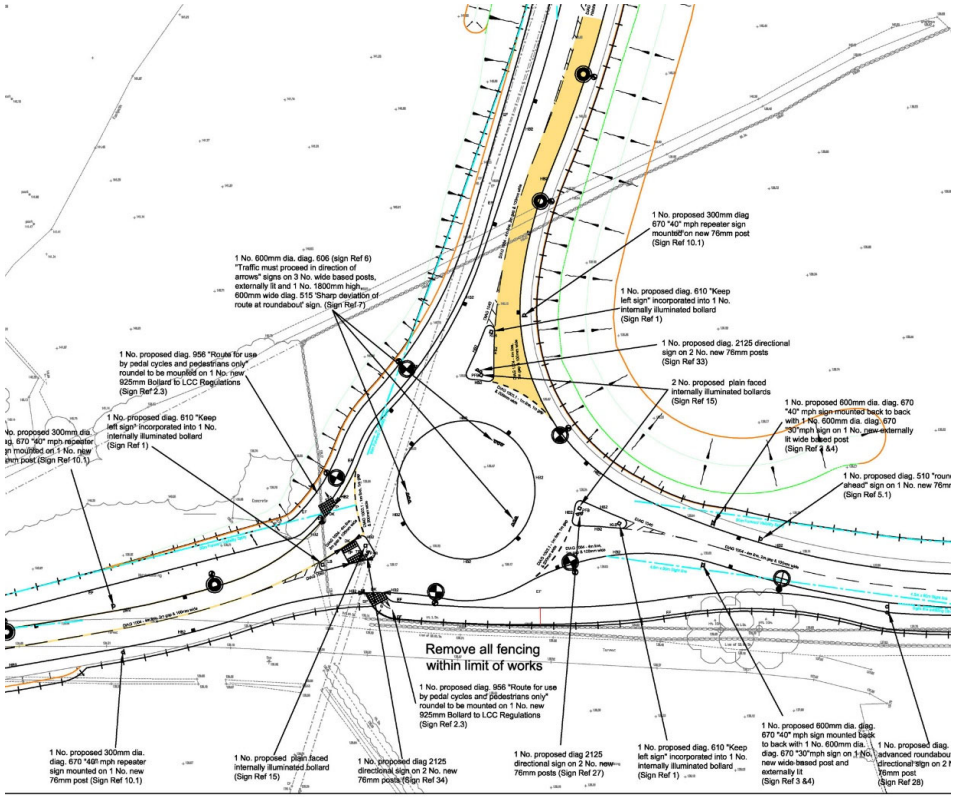
An Ecologist can help with reports including:

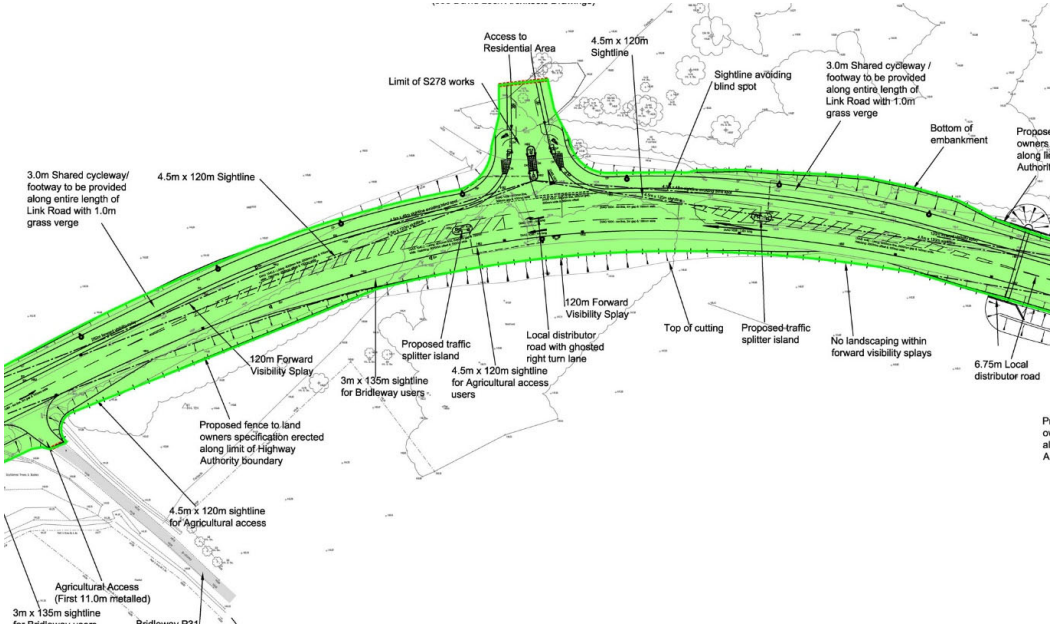
- Bats, Newts, Butterfly, Owls, Insects etc
- Habitats
- Flaura & Fauna
- Wetlands and Grasslands
- Flowers and plants
- Ecosystems and Environment

Highway consultant



Highway consultant





Highway consultant

Highway engineering is an engineering discipline branching from civil engineering that involves the planning, design, construction, operation, and maintenance of roads, bridges, and tunnels to ensure safe and effective transportation of people and goods.

Highway engineering became prominent towards the latter half of the 20th Century after World War II. Standards of highway engineering are continuously being improved.

Highway engineers must take into account future traffic flows, design of highway intersections/interchanges, geometric alignment and design, highway pavement materials and design, structural design of pavement thickness, and pavement maintenance.

Highway consultant

Highway planning involves the estimation of current and future traffic volumes on a road network. Highway engineers strive to predict and analyse all possible civil impacts of highway systems.

Some considerations are the adverse effects on the environment, such as noise pollution, air pollution, water pollution, and other ecological impacts.

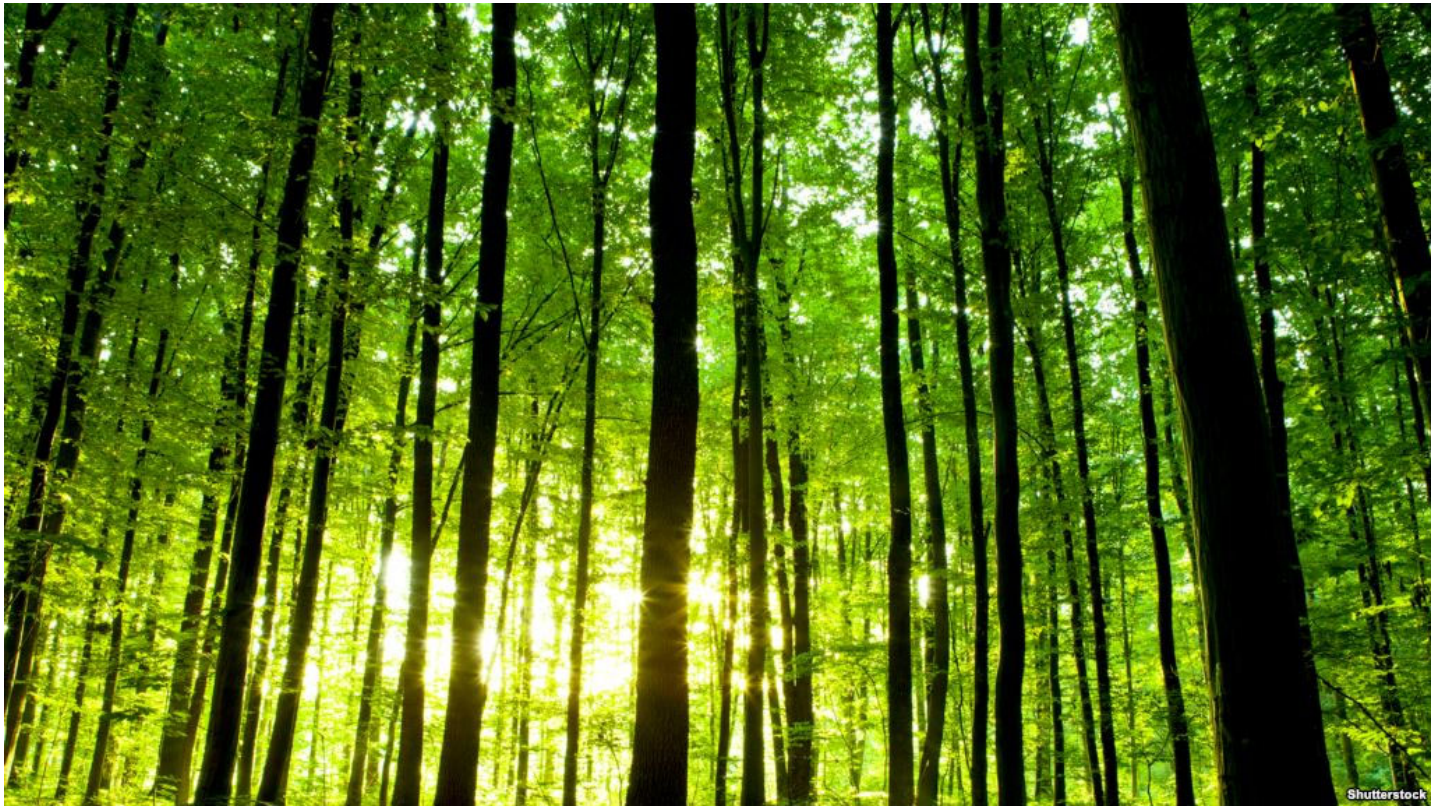
Highway Consultant

Highway systems generate the highest price in human injury and death, as nearly 50 million persons are injured in traffic accidents every year, not including the 1.2 million deaths world wide. Road traffic injury is the single leading cause of unintentional death in the first five decades of human life.

Management of safety is a systematic process that strives to reduce the occurrence and severity of traffic accidents. The man/machine interaction with road traffic systems is unstable and poses a challenge to highway safety management. The key for increasing the safety of highway systems is to design, build, and maintain them to be far more tolerant of the average range of this man/machine interaction with highways. Technological advancements in highway engineering have improved the design, construction, and maintenance methods used over the years. These advancements have allowed for newer highway safety innovations.

By ensuring that all situations and opportunities are identified, considered, and implemented as appropriate, they can be evaluated in every phase of highway planning, design, construction, maintenance, and operation to increase the safety of our highway systems.

Arboriculturalist



Arboriculturalist

An **arborist**, **tree surgeon**, or (less commonly) **arboriculturist**, is a professional in the practice of arboriculture, which is the cultivation, management, and study of individual trees, shrubs, vines, and other perennial woody plants in dendrology and horticulture.

Arborists generally focus on the health and safety of individual plants and trees, rather than managing forests (the domains of forestry and silviculture) or harvesting wood. An arborist's scope of work is therefore distinct from that of either a forester or a logger, though the professions share much in common.

Arboriculturalist

To work near power wires either additional training is required for arborists or they need to be Qualified Line Clearance Arborist or Utility Arborists. There is a variety of minimum distances that must be kept from power wires depending on voltage, however the common distance for low voltage lines in urban settings is 3m.

Arboriculturalist

An arborist's work may involve very large and complex trees, or ecological communities and their abiotic components in the context of the landscape ecosystem. These may require monitoring and treatment to ensure they are healthy, safe, and suitable to property owners or community standards. This work may include some or all of the following: planting; transplanting; pruning; structural support; preventing, or diagnosing and treating phytopathology or parasitism; preventing or interrupting grazing or predation; installing lightning protection; and removing vegetation deemed as hazardous, an invasive species, a disease vector, or a weed.

Arborists may also plan, consult, write reports and give legal testimony. While some aspects of this work are done on the ground or in an office, much of it is done by arborists who perform tree services and who climb the trees with ropes, harnesses and other equipment. Lifts and cranes may be used too. The work of all arborists is not the same. Some may just provide a consulting service; others may perform climbing, pruning and planting: whilst others may provide a combination of all of these services

BREEAM/SAP


BREEAM
AWARDS 2018
delivered by bre
In partnership with ecobuild

BREEAM/SAP



BREEAM/SAP

BREEAM is an assessment using scientifically based Sustainability metrics and indices that covers a range of environmental issues. Its categories evaluate energy and water use, health and wellbeing, pollution, transport, materials, waste, ecology and management processes. Buildings are rated and certified on a scale of 'Pass', 'Good', 'Very Good', 'Excellent' and 'Outstanding'. It is carried out by independent, licensed assessors.

It works to raise awareness amongst owners, occupiers and designers of the benefits of taking a sustainability approach. It helps them to successfully adopt sustainable solutions in a cost effective manner, and provides market recognition of their achievements. It aims to reduce the negative effects of construction and development on the environment

BREEAM/SAP

The **Standard Assessment Procedure (SAP)** is the methodology used by the government to assess and compare the energy and environmental performance of dwellings. Its purpose is to provide accurate and reliable assessments of dwelling energy performances that are needed to underpin energy and environmental policy initiatives.

SAP was developed by the Building Research Establishment (BRE) for the former Department of the Environment in 1992, as a tool to help deliver its energy efficiency policies. The SAP methodology is based on the BRE Domestic Energy Model (BREDEM), which provides a framework for calculating the energy consumption of dwellings.

BREEAM/SAP

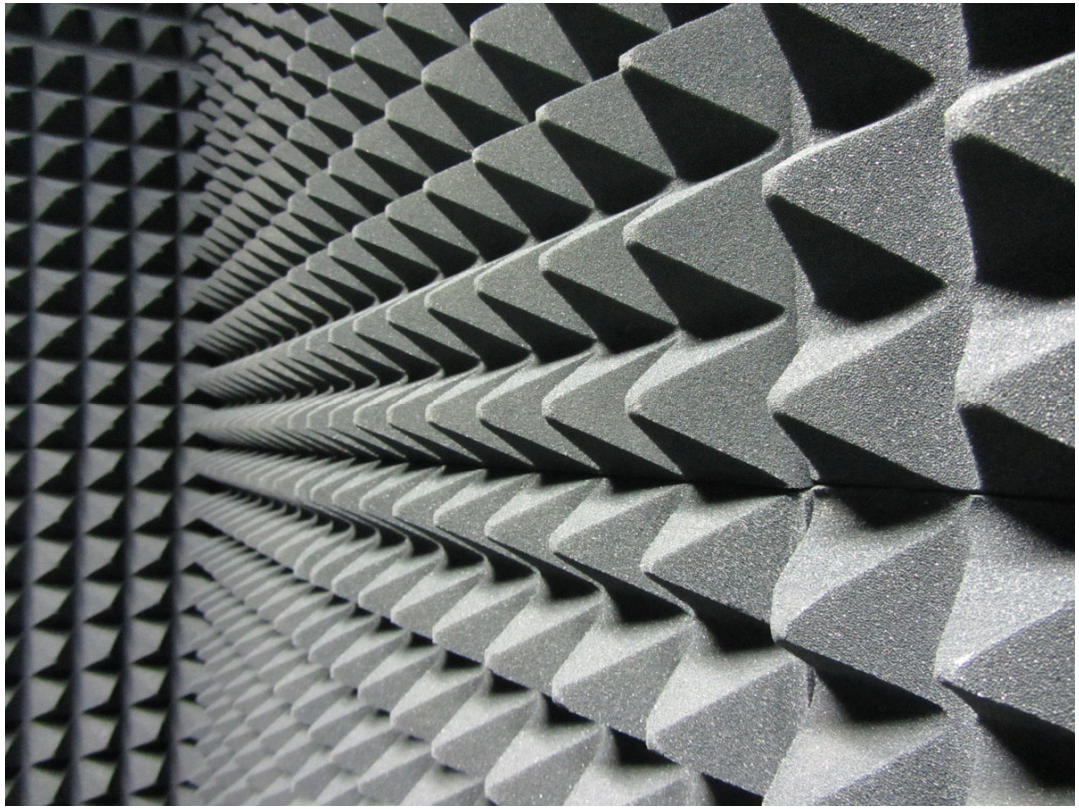
In 1994 SAP was cited in Part L of the Building Regulations as a means of assessing dwelling performance. Reduced Data SAP (RDSAP) was introduced in 2005 as a lower cost method of assessing the energy performance of existing dwellings.
SAP, RDSAP and BREDEM are used to underpin the delivery of a number of key energy and environmental policy initiatives, for example:

Buildings Regulations for England and Wales and the Devolved Administrations
HM Treasury's Stamp Duty exemption for zero carbon homes
Energy Performance Certificates
Code for sustainable homes
Warm Front
Green Deal
Energy Company Obligation
Local Authority stock reporting etc

Acoustician



Acoustician



Acoustician

- **Acoustic engineering** is the branch of engineering dealing with sound and vibration. It is the application of acoustics, the science of sound and vibration, in technology. Acoustical engineers are typically concerned with the design, analysis and control of sound.
- One goal of acoustical engineering can be the reduction of unwanted noise, which is referred to as noise control. Unwanted noise can have significant impacts on animal and human health and well-being, reduce attainment by pupils in schools, and cause hearing loss.
- Noise control principles are implemented into technology and design in a variety of ways, including control by redesigning sound sources, the design of noise barriers, sound absorbers, suppressors, and buffer zones, and the use of hearing protection (earmuffs or earplugs).

Acoustician

But acoustical engineering is not just about noise control; it also covers positive uses of sound, from the use of ultrasound in medicine to the programming of digital sound synthesizers, and from designing a concert hall to enhance the sound of an orchestra to specifying a railway station's sound system so announcements are intelligible.

An acoustic consultant can assist with reports calculated on passage of sound through party walls and floor. Also from adjacent highways or plant.

Archaeologist





Archaeologist



Archaeologist





Archaeologist

- **Archaeology**, or **archeology**, is the study of human activity through the recovery and analysis of material culture. The archaeological record consists of artifacts, architecture, biofacts or ecofacts, and cultural landscapes.
- Archaeology can be considered both a social science and a branch of the humanities. In North America, archaeology is considered a sub-field of anthropology, while in Europe archaeology is often viewed as either a discipline in its own right or a sub-field of other disciplines.

Archaeologist

The discipline involves surveying, excavation and eventually analysis of data collected to learn more about the past.

In broad scope, archaeology relies on cross-disciplinary research. It draws upon anthropology, history, art history, classics, ethnology, geography, geology, literary history, linguistics, semiology, textual criticism, physics, information sciences, chemistry, statistics, paleoecology, paleography, paleontology, paleozoology, and paleobotany.

I.T. Consultant



I.T. Consultant

An IT consultant can assist with the following technical issues:

- WiFi/Broadband
- Computers and Communications
- Audio-Visual
- Business Management and Operations
- Automation
- Vis-com
- Access control

Façade Engineer



Façade Engineer

- Building façades are one of the largest, most important elements in the overall aesthetic and technical performance of a building. Façade engineering is the art and science of resolving aesthetic, environmental and structural issues to achieve the effective enclosure of buildings.
- Specialist companies are dedicated to this niche sector of the building industry and engineers operate within technical divisions of façade manufacturing companies.
- Façade engineers must consider aspects such as the design, certification, fabrication and installation of the building façades with regards to the performance of materials, aesthetic appearance, structural behaviour, weather-tightness, safety and serviceability, security, maintenance and build ability. The skill set will include matters such as computational fluid dynamics, heat transfer through two- and three-dimensional constructions, the behaviour of materials, manufacturing methodologies, structural engineering and logistics

Façade Engineer

Building façades are considered to be one of the most expensive and potentially the highest risk element of any major project. Historically building facades have the greatest level of failure of any part of a building fabric and the pressure for change and adaptation due to environmental and energy performance needs is greater than any other element of a building. As a consequence façade engineering has become a science in its own right.

In the United Kingdom, a professional body associated with the industry is the Society of Façade Engineering. Qualifications in façade engineering recognised by the Society of Façade Engineering and international professional qualifications include the MSc in façade engineering.

Fire Consultant



Fire Consultant

A fire Consultant can assist on a design project from the initial discussions and support design in the compliance of the building regulations and general fire safety.

The Fire Consultant would consider:

Fire strategy

Escape methods

Fire suppression (sprinkler systems)

Smoke detection and alarms

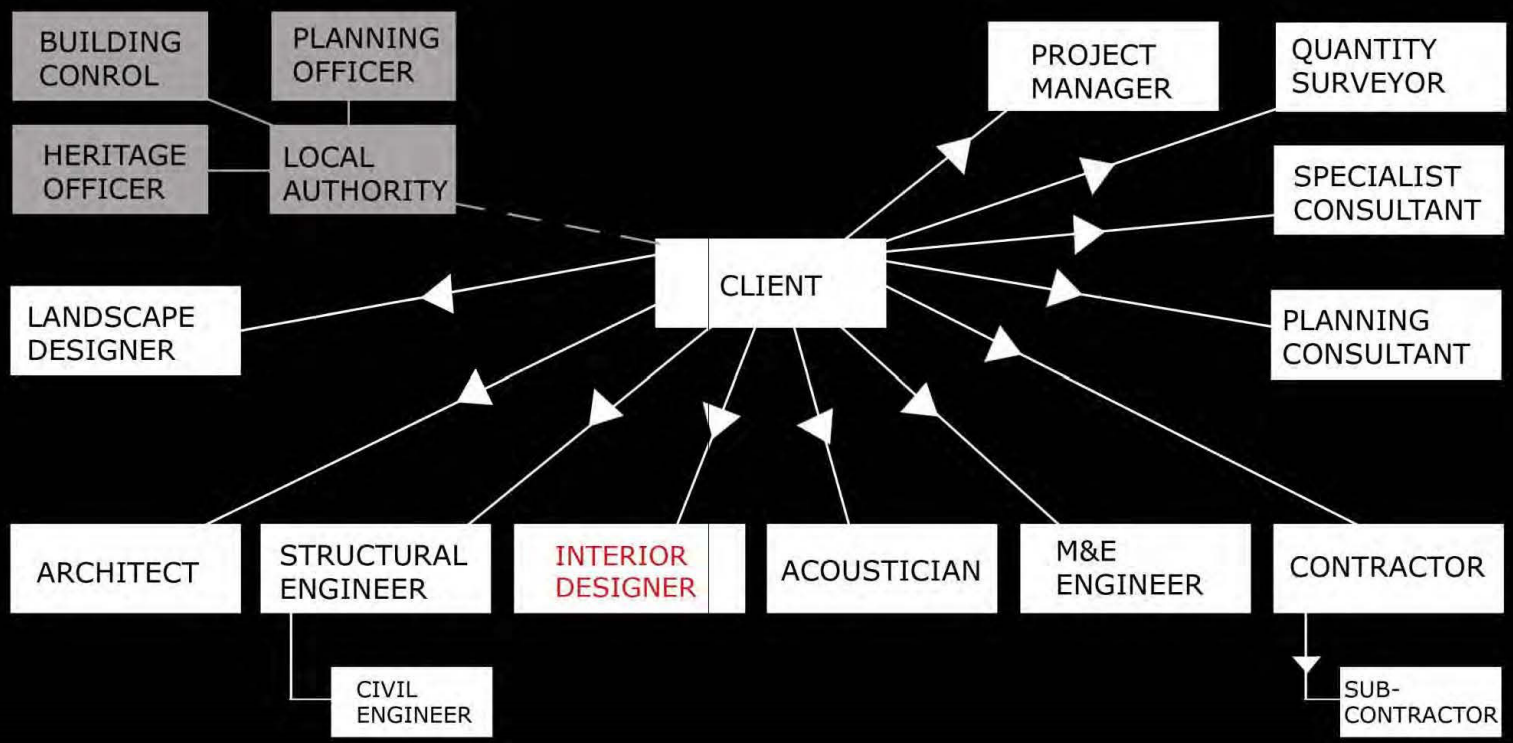
Material spread of flame

Party Walls Surveyor

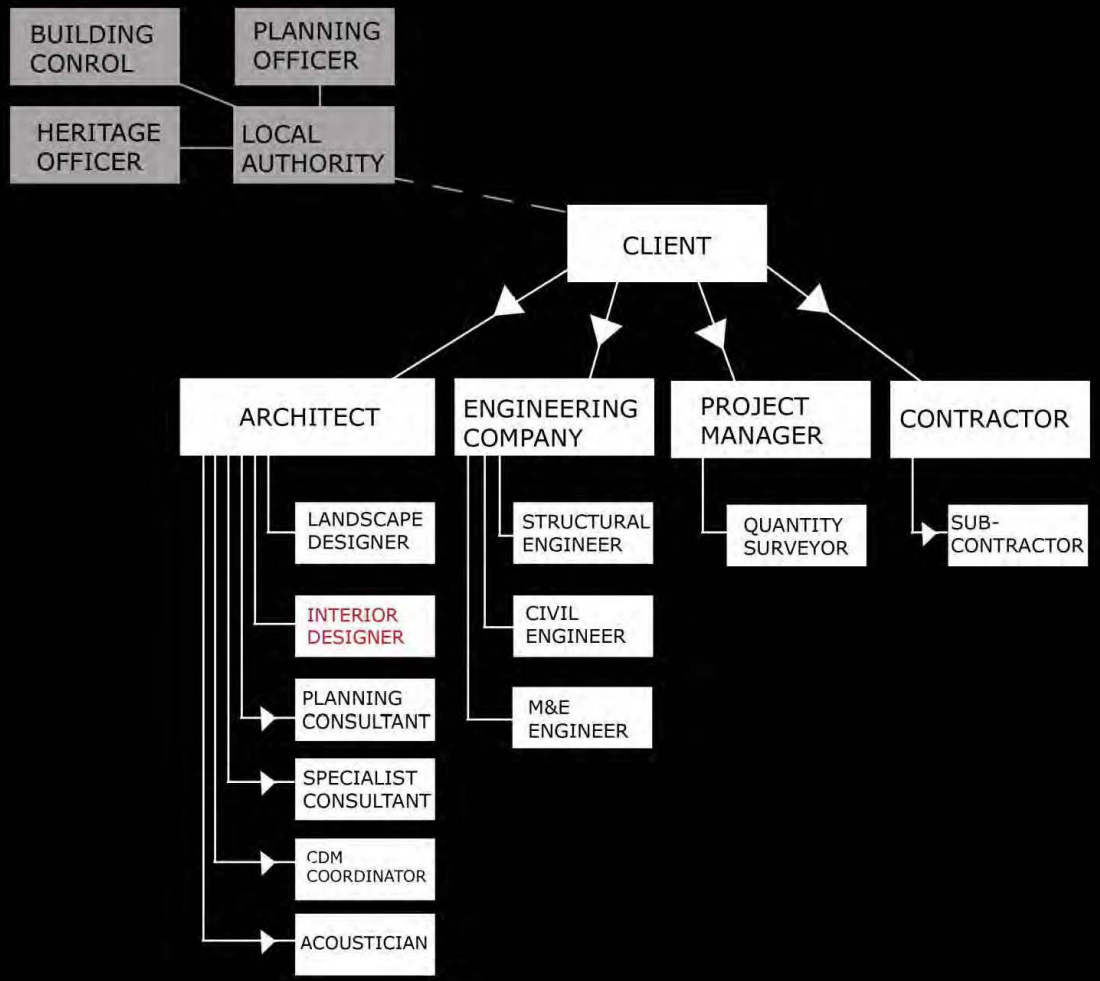
- The **Party Wall etc. Act 1996** introduced a procedure for resolving disputes between owners of neighbouring properties, arising as a result of one owner's intention to carry out works which would affect the party wall, involve the construction of a party wall or boundary wall at or adjacent the line of junction between the two properties or excavation within certain distances of a neighbour's structure and to a lower depth than its foundations.

- A party wall surveyor is generally RISC registered with qualifications in Building Surveying.

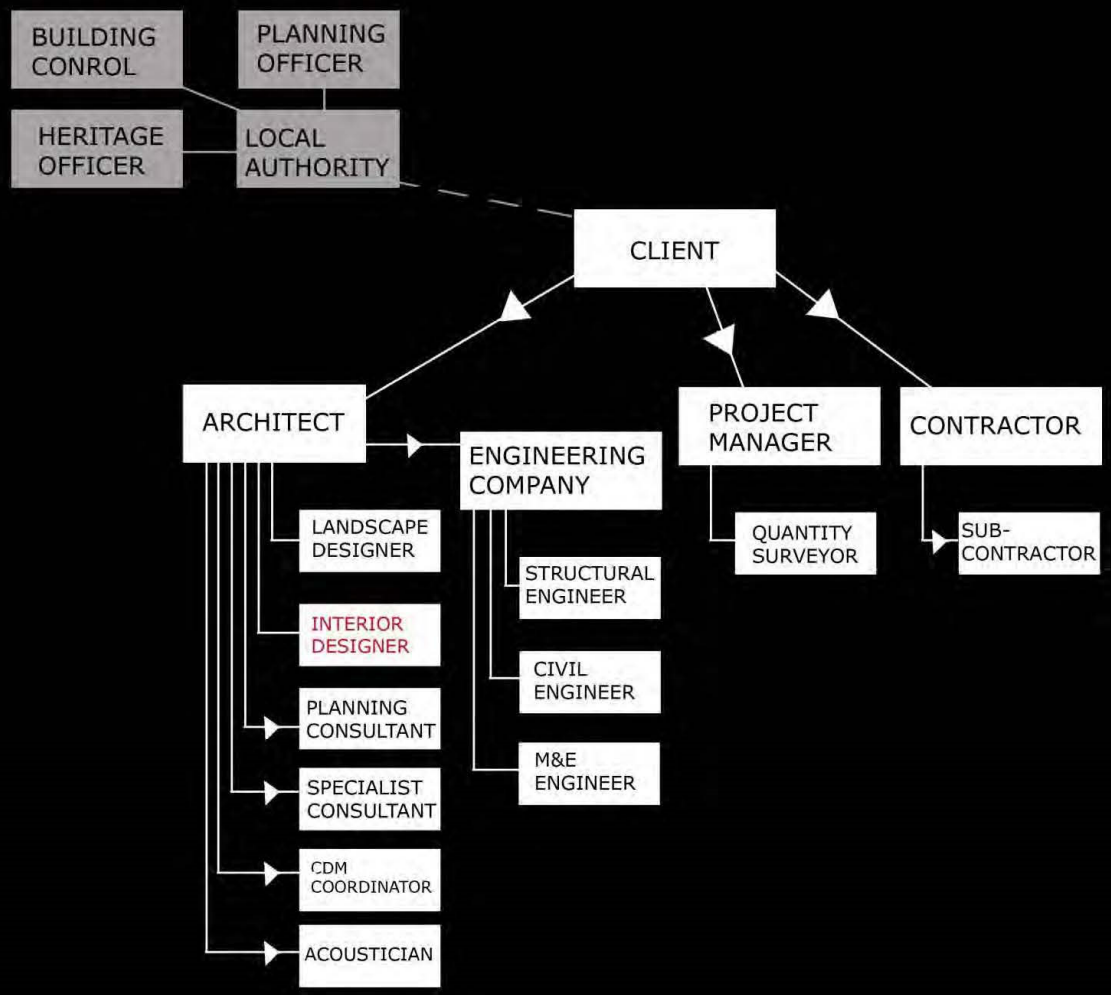
Design Team Structure Example 1



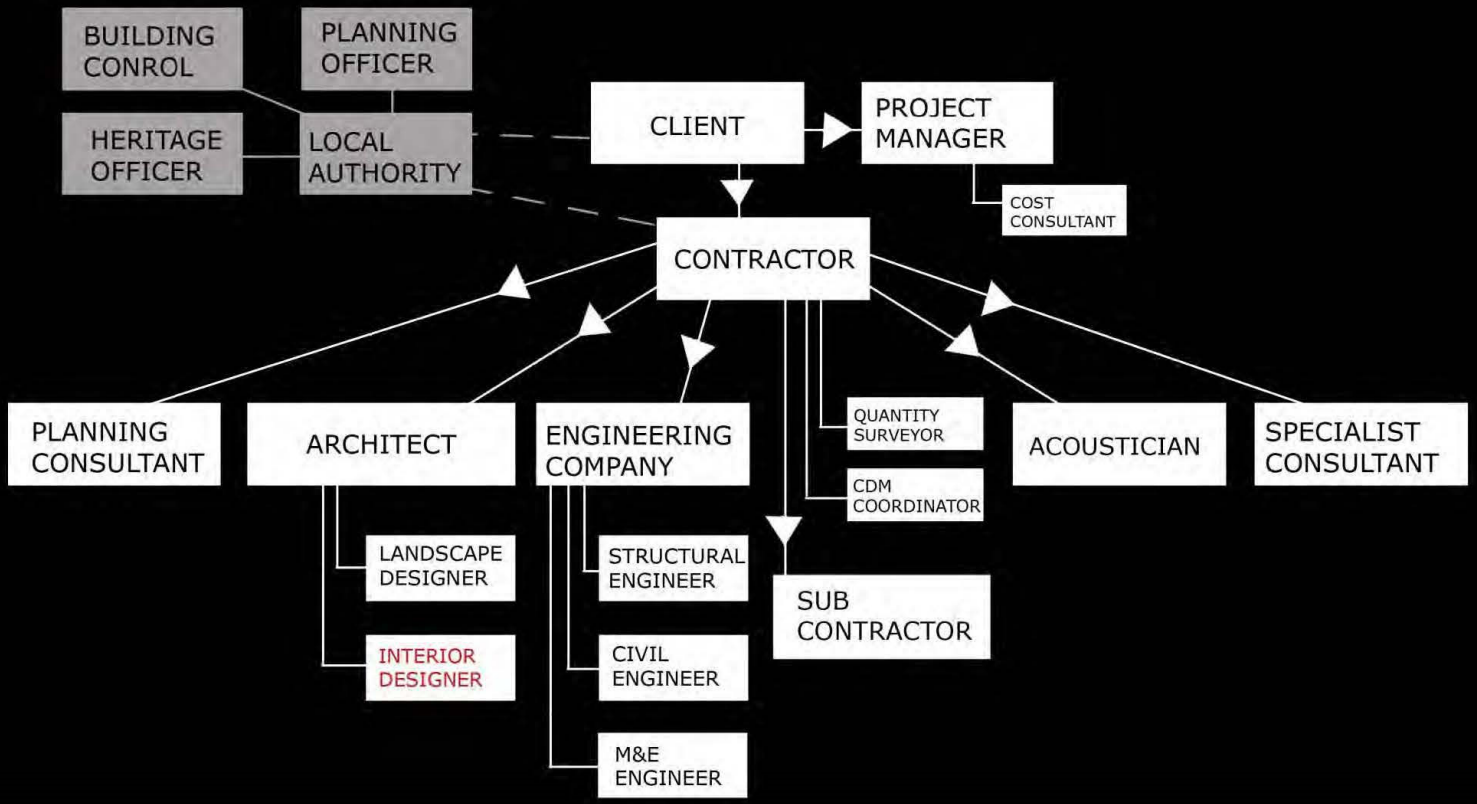
Design Team Structure Example 2



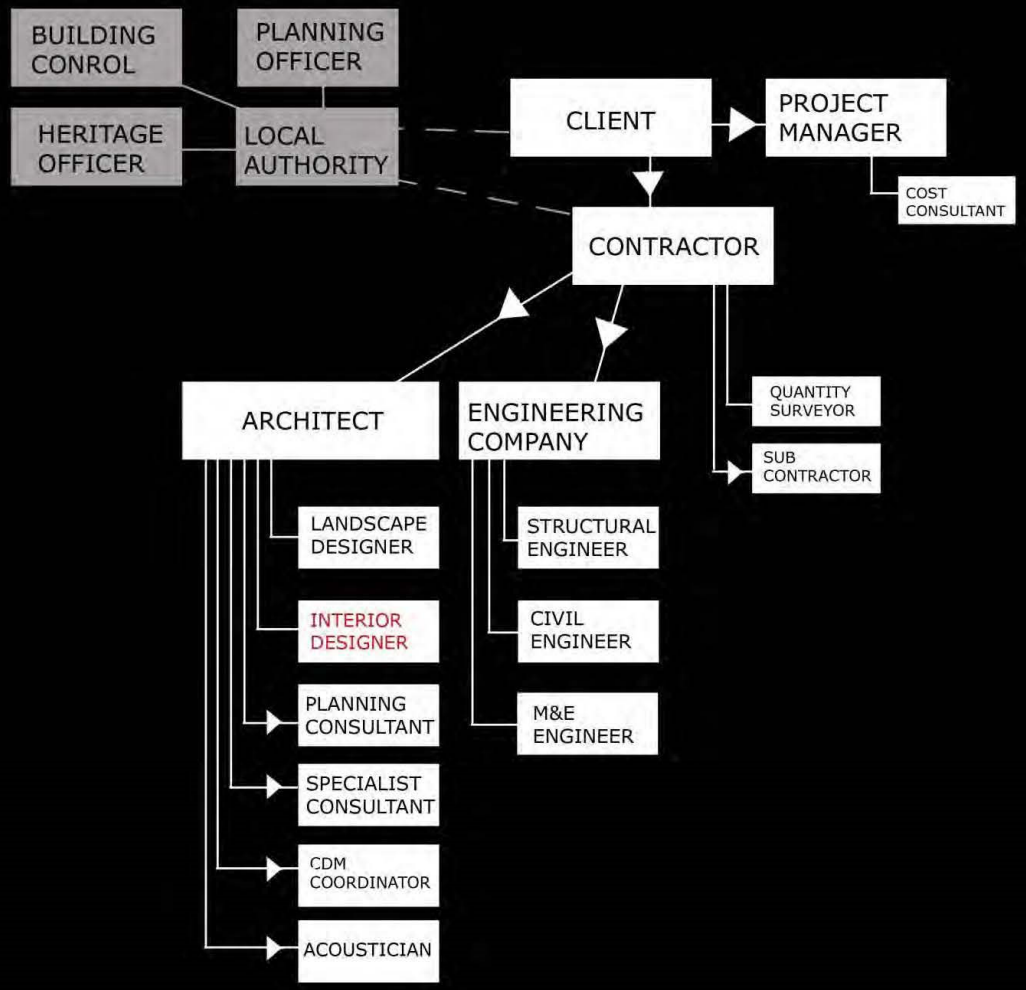
Design Team Structure Example 3



Design Team Structure Example 4 – The usual for me



Design Team Structure Example 5



Design Team Structure Example 6

