FACTFILE:
GCSE
CONSTRUCTION AND THE BUILT ENVIRONMENT

UNIT 1: INTRODUCTION TO THE BUILT ENVIRONMENT

Rewarding Learning

Careers and Team

Unit
Unit 1: Introduction to the Built Environment
Purpose of FactFile?
To give a basic understanding of the building team which includes the design team, construction team and regulators.
Specific Learning Outcomes supported by the FactFile?
Students should be able to: demonstrate knowledge and understanding of the main technical, managerial and professional occupations in the construction industry, and identify the main roles for each occupational area: **architecture:** • architect; • architectural technologist; and • landscape architect. **engineering:** • civil engineer; • structural engineer; and • building services engineer. **planning and management:** • site manager; • contracts manager; • programmer; • buyer; and • health and safety officer. **surveying:** • building control officer; • building surveyor; and • quantity surveyor.
Target audience? Student? Teacher? Both?
Both.
How the FactFile supports development of Key Stage 4 Statutory skills?
Supports the development of Communication Skills: Talking & Listening, Writing and Reading. Working with Others and Self-Management.

Every building begins in the mind of one person:

- Family Home;
- Development of apartments/flats;
- Shops to sell goods;
- Factory for manufacturing;
- Church/Chapel;
- Leisure centre.

The initial ideas start in the mind of one person recognising a need and deciding to do something about it. In most cases other people will soon become involved, e.g., family etc. Soon the innovator will seek professional advice to help translate the initial ideas into a completed building.

The Architect

Traditionally the person with the idea (client) will generally turn to the architect. The architect will be employed by the client to act as his agent, to ensure that the client is provided with a building which will satisfy his needs. To achieve this, the architect with the approval of the client, has to make a series of choices.

1. The building will have to satisfy the functional requirements of the occupants. **(Function)**
2. The building has to be attractive to look at. **(Aesthetics)**
3. The building will require a suitable structural form, appropriate finishes, and services. **(Technology)**

Other decisions the architect will have to make surrounding:

- Cost to construct;
- Running costs of the building;
- Future building use;
- Maintenance costs;
- Minimise fire damage;
- Noise transmission;
- Thermal heat loss;
- Interpretation of the building regulations;
- Management of project.

As well as possessing the multitude of talents outlined above, the architect should also possess the ability to work as a member of a team. As already stated the architect is likely to be the designer and will lead the design team. He will rely on the help of other team members to translate his ideas into a finished building.

The four main groups involved in the design and construction of a building are:

1. The client
2. The design team
3. The contracting team
4. Statutory Authorities

In groups discuss who you would assume to be in each group?

The Client

Can be known as the building owner, or known as the employer. The role of the client is to tell the architect or architectural technologist his requirements, commission the works and either directly or indirectly 'employ' and pay everyone on the project.

The Design Team

Architect

To act as client's agent in the design and supervision of the building, advising and guiding him as necessary, from the initial idea through to the finished project. His / her work will include the preparation of the design and drawings and obtaining statutory approvals.

Architectural Technologist

Will work in partnership with the architect, particularly in the field of architectural technology including contract procedures and administration. Sometimes they will be responsible for the design, and will act as design team leader.

Architectural practices may use other staff with various designations, such as technicians, assistants and draughtsperson.

Clerk of Works

Is generally employed directly by the client but acts as the architect's representative on site. The responsibilities of the clerk of works are limited to that of an inspector, without the power to issue instructions on his own authority.

Quantity Surveyor

Is employed by the client as his own or the architect's advisor on anything relating to the cost of the job, including preparing the bill of quantities, checking tenders, and carrying out valuations of costs during the progress of the project.

Consulting Structural Engineer

Is employed by the client to assist the design team in relation to the structural elements in the building.

Resident Engineer

Acts as the structural engineer's representative on the site.

Building Services Engineer

Carries out a similar role to the structural engineer, but in respect of the building engineering services, namely; lighting, heating, drainage etc.

Landscape Architect

Is employed to take responsibility for the landscaping around a building.

Interior Designer

In some prestige buildings, or where the client has special requirements for the internal décor, an interior designer is sometimes employed.

Other Consultants

Occasionally the expertise of a specialist consultant will be required, such as an acoustic engineer in the case of a cinema or concert hall.

The Contracting Team

Contractor

The contractor is employed by the client, on the advice of the architect, to construct the building in accordance with the drawings and other information prepared by the design team.

Site Manager

Is sometimes called the site agent and is employed by the contractor to control the work on the site.

Contracts Manager

Employed by the contractor, generally to run a number of contracts. The contracts manager is the site manager's immediate supervisor and may on a large contract be permanently resident on the site and be given the title of project manager.

Site Engineer

The site engineer is responsible for setting out and controlling the accuracy of the building.

General Foreman

Is responsible for the day-to-day running of the site. The site manager generally makes contact with the site operatives through him.

Surveyor

The surveyor prepares interim valuations and final accounts and measures work for subcontractors and bonus payments.

Estimator

Prices tenders and is involved with the cost aspects of contracts, especially during the pre-contract period.

Planner

The planner is responsible for planning and scheduling all aspects of the contractor's programmes.

Trade Foremen

They will be in charge of a squad of bricklayers, carpenters, plumbers etc.

Site Operatives

They are the site workforce, including trades people, apprentices and labourers.

Suppliers

Suppliers have the responsibility for supplying materials or components used by the contractor in the building, such as the supply of windows.

The Regulators

Building Control officer

The building control officer has the responsibility for ensuring that the building is constructed in accordance with the building regulations, which should mean that when the building is completed it will not be a danger to the health and safety of the occupants. The role may also be undertaken by an approved inspector who is either a private individual or employed by the local council.

Town Planning Officer

The town planning officer is responsible for ensuring that the building is appropriate for the area in which it is built and is of acceptable appearance.

Health & Safety at Work inspectors

These inspectors have two main roles:

1. To ensure that the construction site is a safe place of work.
2. To make certain that buildings which will be workplaces when completed will meet the requirements of all safety, health and welfare legislation.

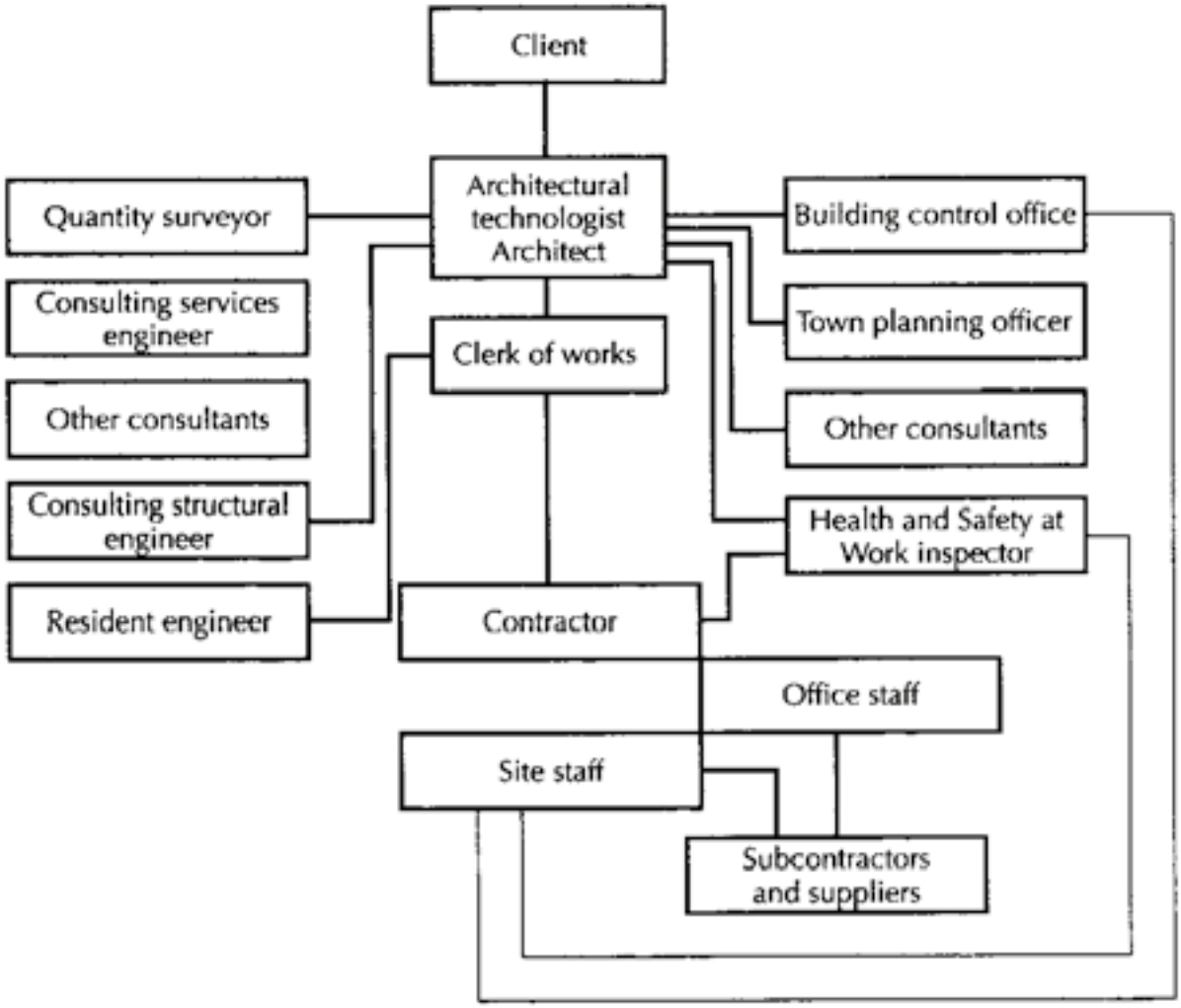
Other Authorities

On some projects the architect will need to meet with the fire authority to confirm that the design will provide adequate means of escape in the event of fire, and on other contracts there will be a need to consult with authorities such as the gas, water and electricity companies.

Summary of the Main Roles:

Most people involved in the building process can assume one of four main roles. These are:

1. To provide the demand and the money.
2. To design the building or help in the process.
3. To help build the project.
4. To ensure that the building complies with the prevailing legislation and regulations.



Student Activity 1

Sketch out the organisational chart for the building team and indicate the design team, construction team and regulators using different colour codes.

Student Activity 2

Research the job roles mentioned above and list the salary and qualifications required.
Present a PowerPoint presentation on findings to peers.