

Constructing the Built Environment

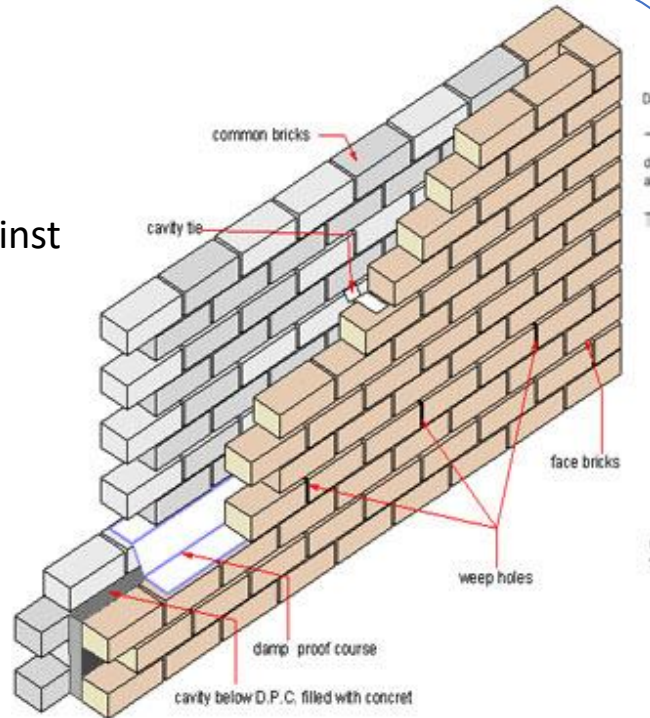
Cavity walls:

- Vertical components which support the roof
- To enclosure and protect against weather

Materials:

stones,
bricks,
concrete block

[What is Cavity Wall Insulation? - YouTube](#)



AC 1.1.1 Buildings and Structures

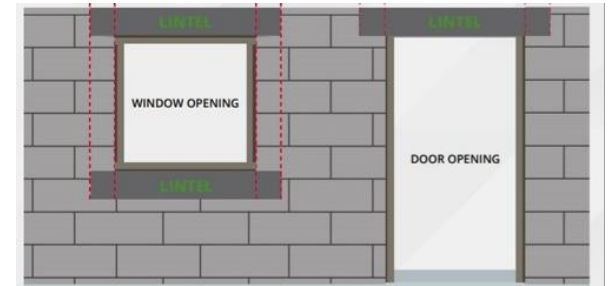


Building Component Parts: The floors, walls, doors/windows. These support, enclose and protect the building structure. [Essential Components of a Building](#)

AC 1.1.2 Infrastructure and Civil Engineering products

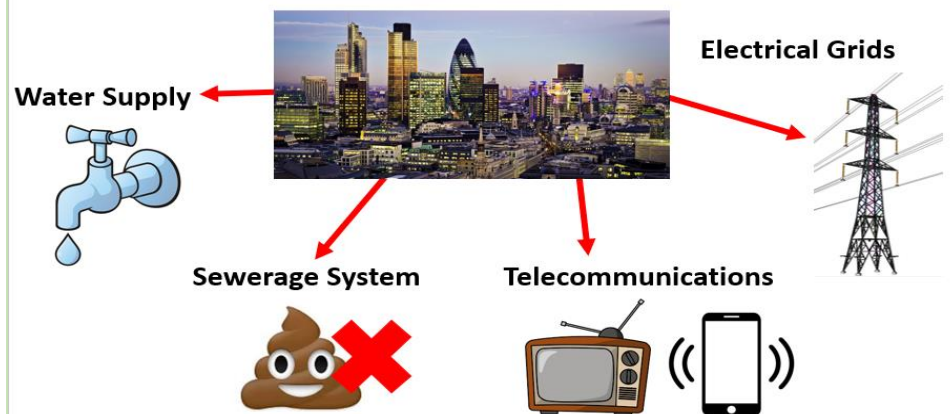
Civil Engineering: Design and construction of built environment systems such as roads, bridges, railways, tunnels
[Civil Engineering](#)

- Lintels are constructed above wall openings.
- They support the weight of the wall over the opening.
- Made from reinforced concrete or a steel lintel bar



Openings: Are built into the walls for ventilation and access to the building (DOORS & WINDOWS)

A successful built environment needs basic facilities



Mechanical Services: Machines in buildings such as escalators, air conditioning, lifts and heating

Which type of building require these services more ?



Architect

Responsible for creating designs for new building and projects.

An Architect does:

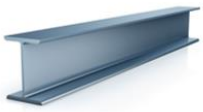



- Talks to clients to understand their needs
- Budget, safety and community requirements for a project
- Meeting building regulations, planning laws and environmental considerations
- Drawing detailed plans and blueprints using computer design programmes

AC 1.1.3 Building services engineering

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AC 1.2.2 Manufacturing

Steel: Is a type of hard, strong metal that is used in many different areas of construction

Structural Steel	Stainless Steel	Light-weight Mild Steel	Profiled Sheeting
Column and beam sections	Fixings and fastenings	Lintels, purlins and rails	Wall and roof cladding
			

Plastic- A man-made material that can be moulded into a shape while soft and set into a rigid form or slightly soft form

PVC is the most common type of plastic used in construction

<p>Water and drainage pipes</p> 	<p>Power sockets and trunking</p> 
<p>Keywords: Hygienic, fire resistant, shaped easily</p>	

Cement: BINDING INGREDIENT IN CONCRETE AND MORTAR


A grey powder made of limestone and chemicals- it sets and hardens when combined with water



Mortar: Mixture of sand, cement and water to stick bricks together



 **CIOB** → Chartered Institute of Building

 **RICS** → Royal Institution of Chartered Surveyors

RIBA  → Royal Institute of British Architects

AC 1.1.4 Professional and managerial roles and responsibilities associated with the built environment sector

AC 1.2.1 Raw material extraction

The Construction Industry extracts fossil fuels and uses them to power machinery and to produce materials

Source	How it is converted into energy	Advantages	Disadvantages
Coal	<ul style="list-style-type: none"> Heat energy and hot gases convert water into steam which powers a turbine to create high-voltage electricity Smaller amounts used as a domestic heat source 	<ul style="list-style-type: none"> Stable, large-scale and high-power electricity generation Relatively cheap to extract and convert Reliable 	<ul style="list-style-type: none"> Coal power plants emit pollution such as carbon dioxide, sulfur, mercury, selenium and arsenic Technologies to reduce coal power plant emissions are expensive Coal mining impacts significantly on the landscape
Oil	<ul style="list-style-type: none"> Processed and split into petroleum products such as petrol, paraffin and diesel In power plants oil is burnt to heat water and produce steam, which propels turbine blades to produce electricity 	<ul style="list-style-type: none"> Stable, large-scale and high-power electricity generation Relatively cheap to extract and convert 	<ul style="list-style-type: none"> Oil power plants are highly polluting Oil exploration impacts on the landscape Oil extraction risks environmental disasters
Gas	<ul style="list-style-type: none"> Burning gas can power turbines, with the waste heat powering a steam turbine Natural gas is used in homes for heating or cooking It has lower emissions than other fossil fuels – its combustion emits carbon dioxide at half the rate of coal 	<ul style="list-style-type: none"> Stable, large-scale and high-power electricity generation Relatively cheap to convert and extract as ready-made fuel Cleaner than coal or oil 	<ul style="list-style-type: none"> Burning gases are highly polluting