⇒ Building Construction Illustrated (Notes).

- Microclimate, topography, and natural habital → design decisions

* SUSTAINABILITY — Sustainable development
  ↳ Principles, Phase, Resources.

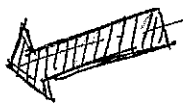
* Green Building — provide healthy environments in a resource-efficient manner using ecologically based principles.

* Building Systems — Structural system (Foundation, Wall.....)
  — Enclosure system (shell / envelope)
  ↳ roof, windows .....
  — Machanical system (essential services)

- Performance Requirements
- Aesthetic Qualities
- Regulatory Constraints
- Economic Considerations
- Environmental Impact
- Construction Pratices

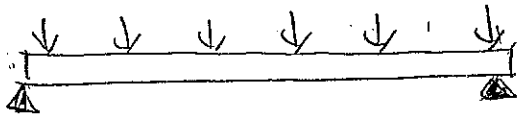
* Loads on Buildings — Static loads
  — Dynamic loads
  — Wind loads
  — Earthquake loads.

* Structural forces — Any influence that produces a change in the shape/movement of a body.

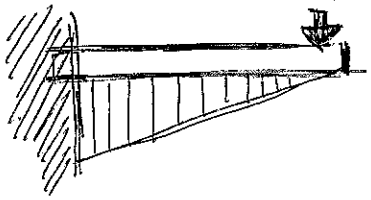


* Beams

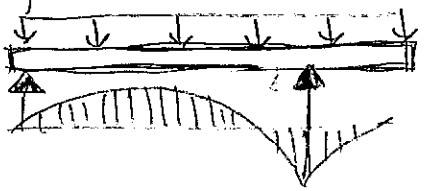
- A simple beam — supports on both ends.



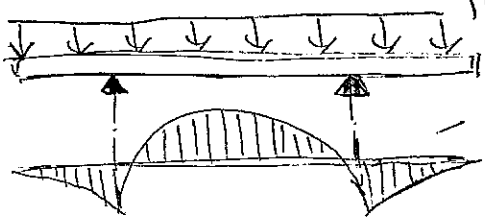
- A cantilever — only one fixed end



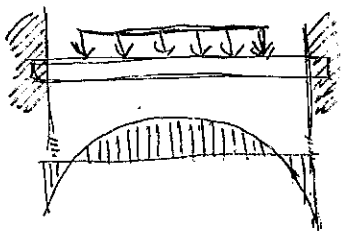
- Over hanging beam — extending beyond one of its support



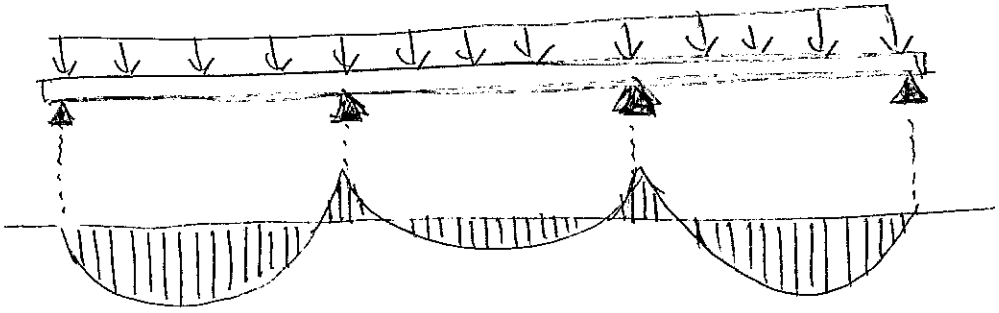
- Double hanging beam — extending beyond both of its supports



- Fixed end beam — both ends restrained against translation & rotation.



- Continuous beam — over more than 2 supports.



✱ Building Materials

└ Life-cycle assessment

↳ Process consists three components =

- Inputs (Raw materials, Energy, Water)
- Life-cycle inventory
- Outputs. (Waterborne effluents, Atmosphere emissions, Solid wastes, Other environmental releases)

✱ Concrete - mixing cement and various mineral aggregates with sufficient water.

↳ Strong in compression.

✱ Steel = refers to any of various iron-based alloys.

↳ used for light and heavy structural framing. (windows, doors, hardware, fastenings)

↳ Combines high strength and stiffness with elasticity.

✱ Nonferrous metals = Contain no iron.

Aluminum, copper, lead are nonferrous metals commonly used.