

MSc Property and Facilities Management

Management of the Integrated Working Environment



The Building Structure



The Building Structure



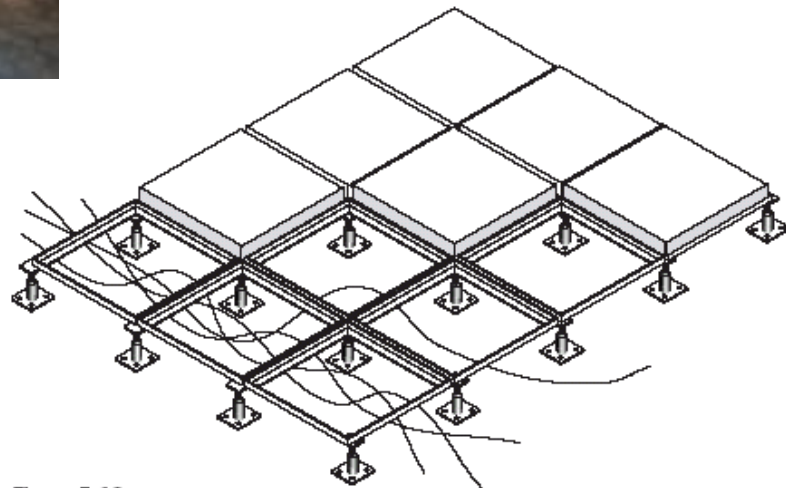
- Some key factors...
Building orientation

Floor plate

Building plan depth

Column grid

Planning grid



Floor Plate



Measures of plate efficiency may be...

Ratio of net internal area to gross internal area (NIA:GIA).

Ratio of net internal area to gross external area (NIA:GEA)

Cost per metre square



Building Plan Depth

Narrow plate

Cellular/two zone planning
Views out
Individual control
Natural ventilation
Natural lighting
Lower energy consumption
Lower CO₂ emission
Lower running cost
Higher capital cost

Wide plate

Open plan/multi zone planning
Internal areas
Constant conditions
Mechanical ventilation
Artificial lighting
Higher energy consumption
Higher CO₂ emission
Higher running cost
Lower capital cost

European model


UK model

American model



Kajima Corporation

Tokyo, Japan

The atrium not only suggests a powerful statement about the prestige of the company, but also provides a meeting place for staff and clients.

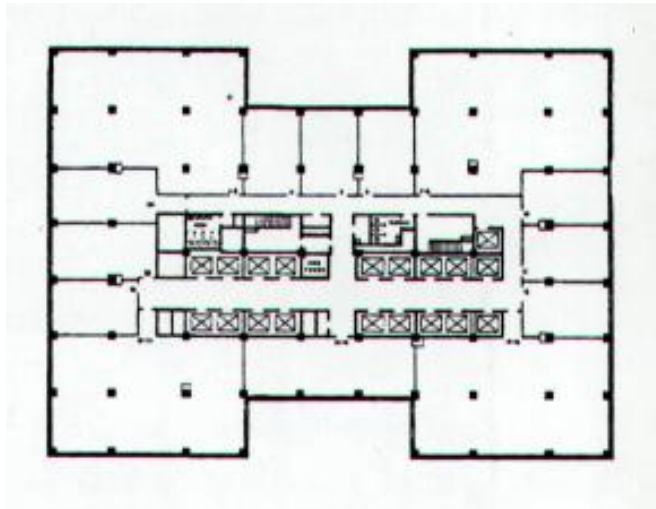
Column/Planning Grid



Column spacing

Construction grid

Services grid



The Building Structure



- Some key factors...

Circulation

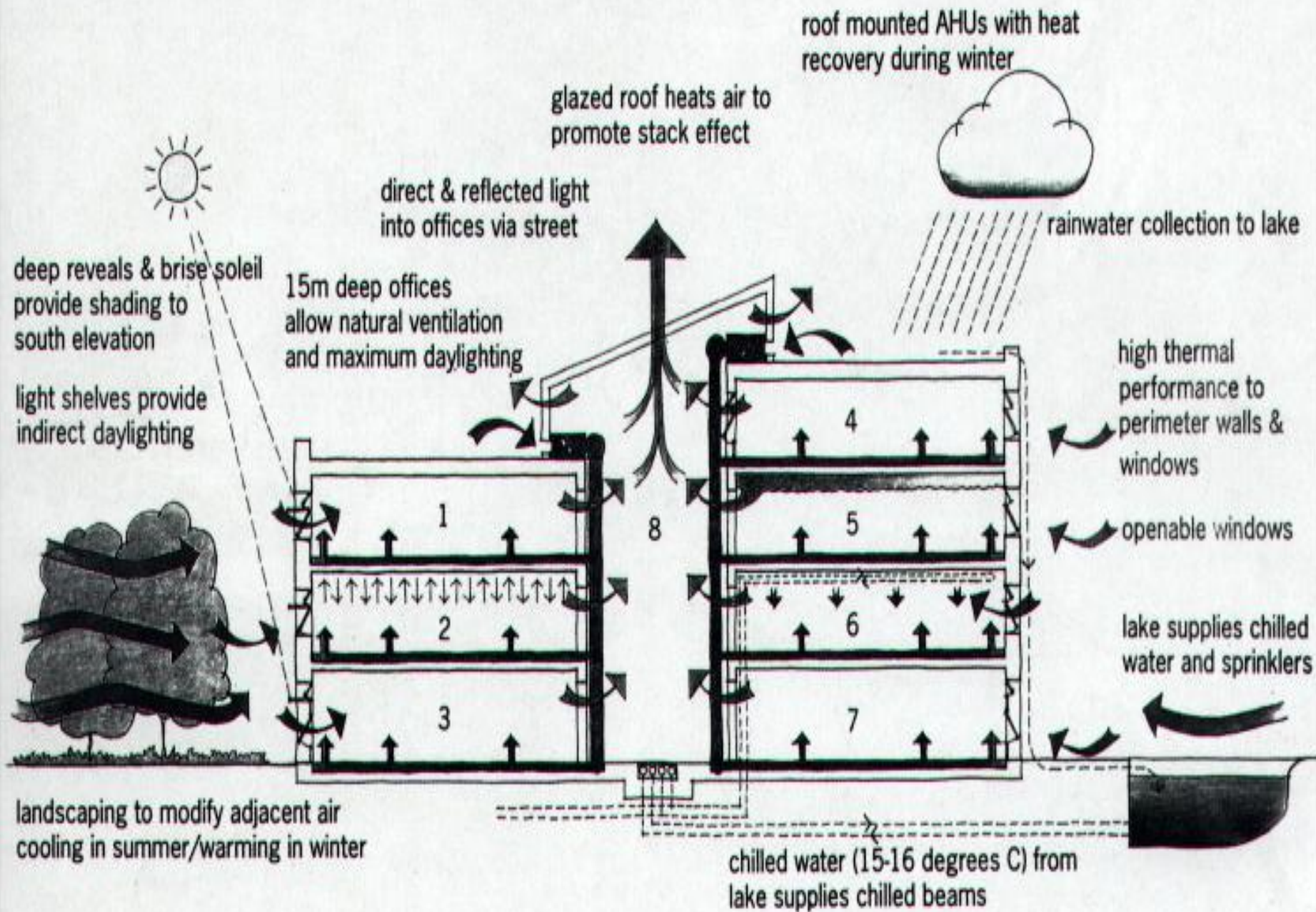
Core elements

Atria

Building section

Structural systems







Modular Construction



The Building Section

Ceiling/lighting zone

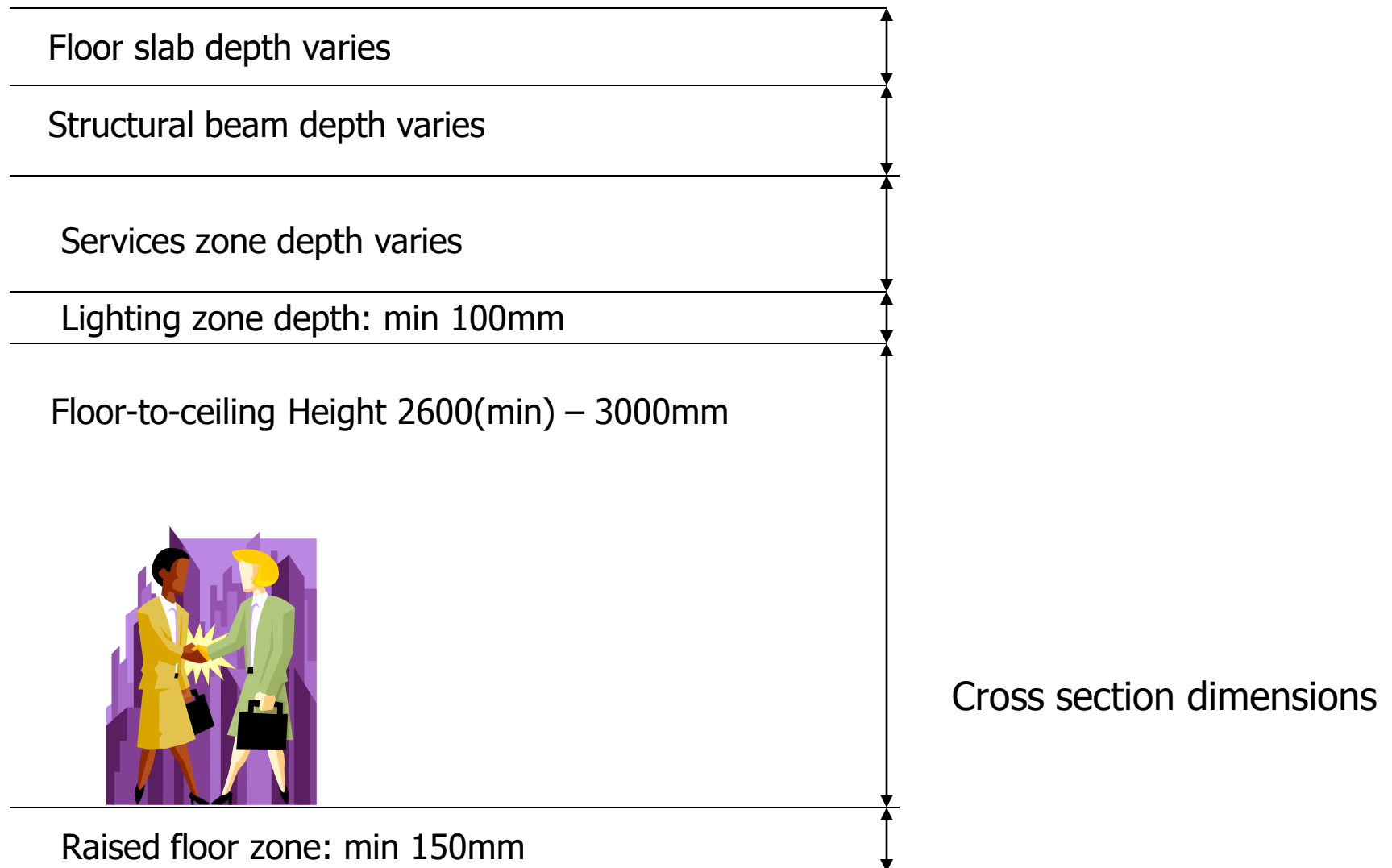
Floor-to-ceiling height



Raised floor

Specialised systems

The internal environment



Structural Systems

- Loadings
- Frame and materials
- Deflections, tolerances and vibration



Structural systems



The Building Structure

- Some further factors
 - Envelope
 - Services systems

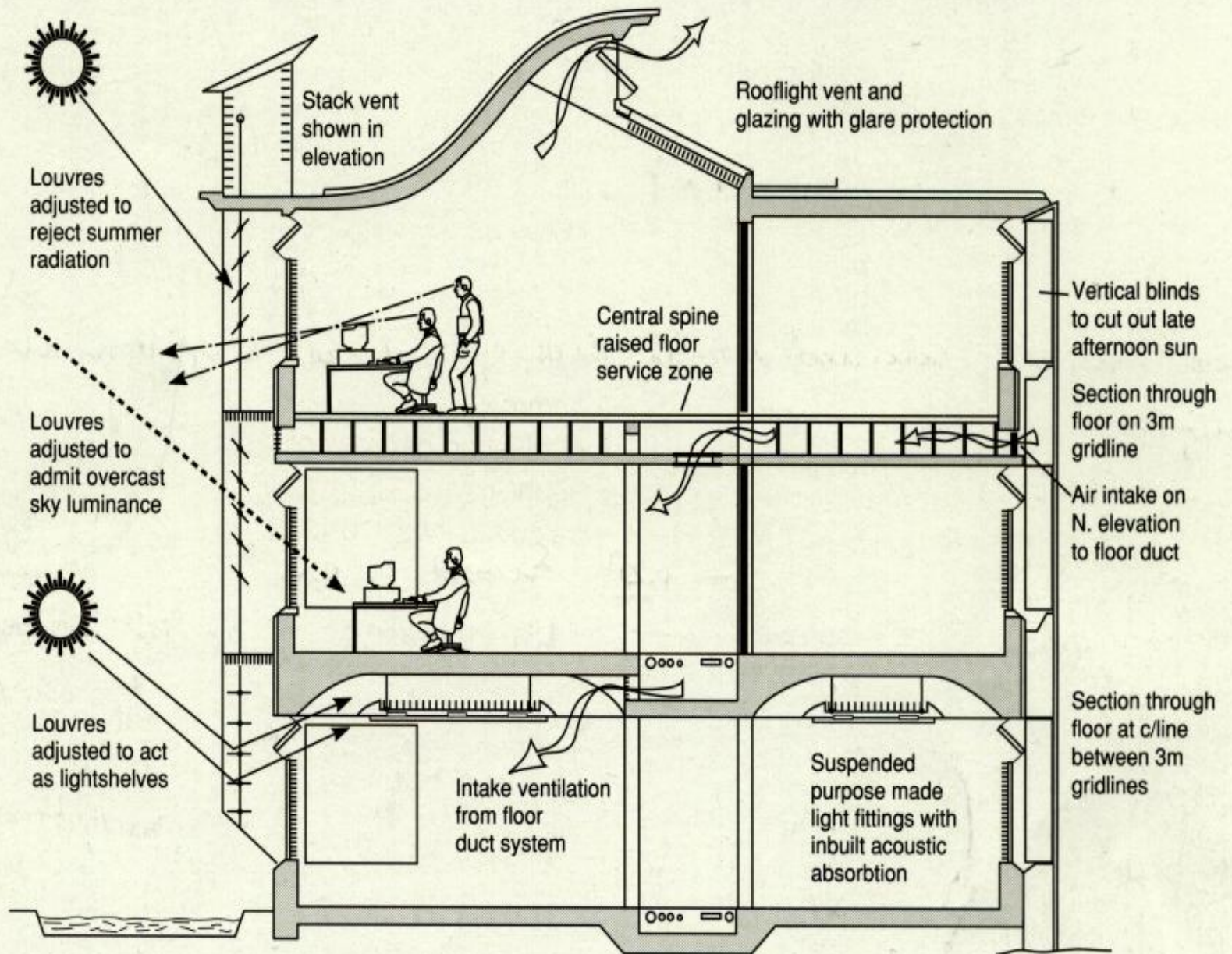


- Finishes
- Others!

What issues would you consider significant when analysing the above?



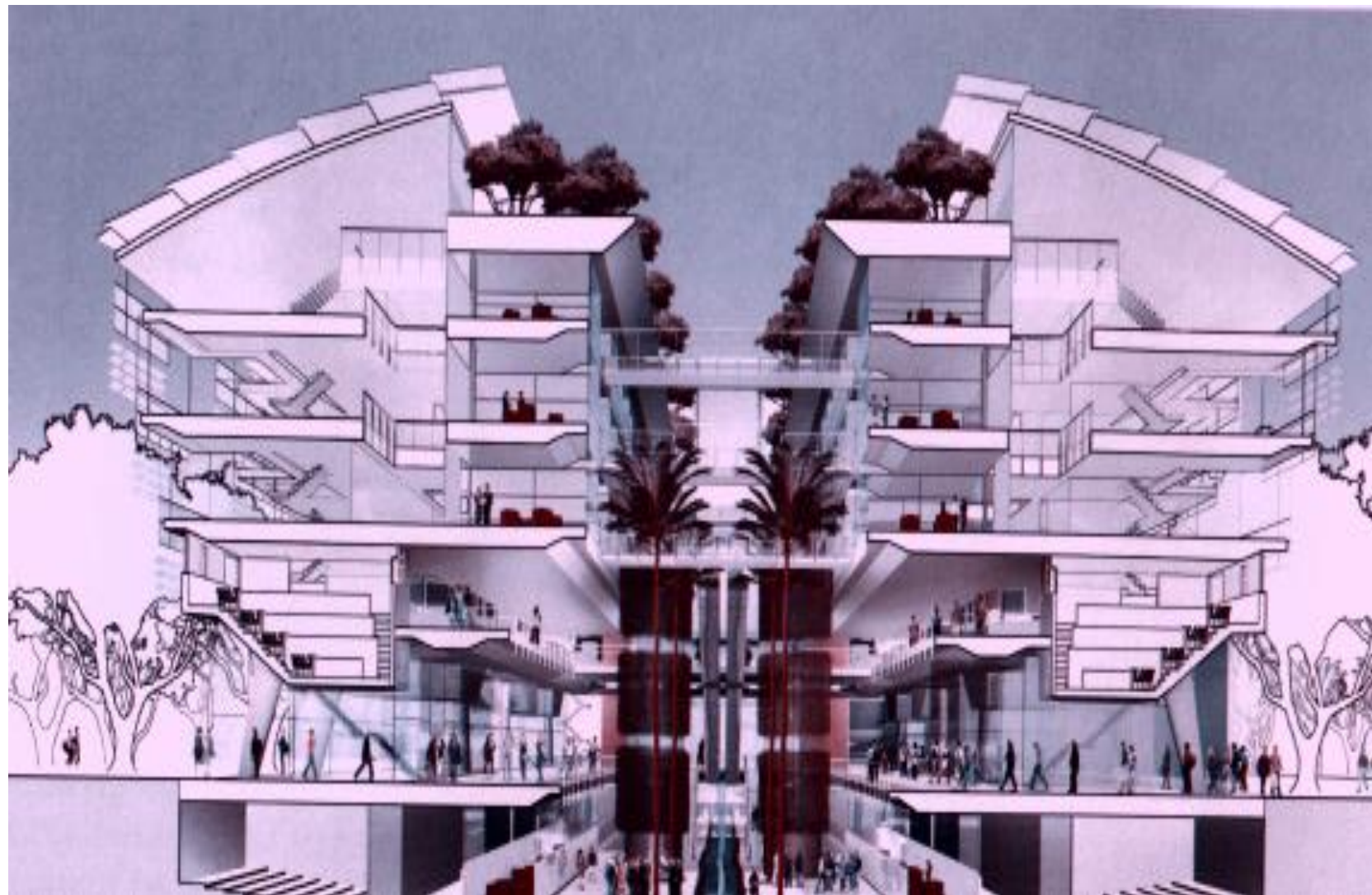
The building structure



An Intelligent Building is:



- a building that is able to respond continuously to the needs of its environments, and its occupants in a cost-effective way.





Eden Project



Beddington Zero Energy Development (BedZED)



Workshop



Select one of the issues raised and put forward solutions to the probable challenges identified

Comment on those key building related issues that will significantly affect decisions you make as a Facilities Manager.



Picture Sources

Powell Williams

Morris and Spottiswood

GSA

Hopkins Architects

Gresham Street

Eden project

Beddington Zero Energy Development

Mayflower Interiors

Armstrong Ceilings

