"Concreting the environment"

Exposed concrete
- Internal composite structure hidden
- Surface’s texture = formwork
Concrete

- Formwork and concrete texture
Concrete

Concrete material

- Cement
- Water
- Aggregates (fine and coarse)
Concrete

Concrete material

- Cement
  - Extraction and breaking-down
  - Mixing and crushing, drying → dust
  - Heating → clinker
  - Grinding, sometimes adding of mineral substances
Reinforced Concrete

- Concrete for compression, steel for tension
- Steel at maximal bending moments
- Compacting

Image by MIT OCW.
Concrete building elements

- Beams

Image by MIT OCW.
Concrete building elements

- Beams
- Columns
- Arches
- Slabs
Concrete building elements

- Beams
- Columns
- Arches
- Slabs
- Plates

Image by MIT OCW.
Concrete building elements

- Beams
- Columns
- Arches
- Slabs
- Plates
- Shells
Concrete

- Main reference for lecture contents:
  - “Constructing Architecture” by Deplazes: pp. 56-76

- Additional readings relevant to lecture topics:
  - "Fundamentals of Building Construction" by Allen:
  - "Building Construction Illustrated" by Ching & Adams:
    chapters on concrete