



CASE 1 : SINGLE FAMILY HOUSE

Building

Component

Technical

Course

Aim of the Course:

- Discovery of Building component in Denmark & China
- Understanding of basic building component for single family house
- Improve Technical english in building sector
- Serving the technical skill attached to construction technology

Content:

- Foundation
- Flooring
 - Solid ground floor/Ground support floor
 - Suspended ground floor/story partitions
 - Upper suspended floor/story partitions
- Walls:
 - Basement wall
 - External wall: heavy / light
 - Load bearing Internal wall
 - Non-loading bearing Internal wall
- Windows
- Doors
- Roof
- Building service

Foundation:

DEFINITION:

- Base of the building
- Connection between the house and soil

FUNCTION:

- Provide a solid, secure and stable platform that will support and transfer the loads from the structure evenly through the sub-soil.

Foundation:

TYPE:

- Direct foundation
- Indirect foundation

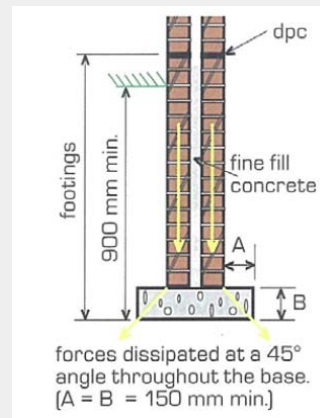
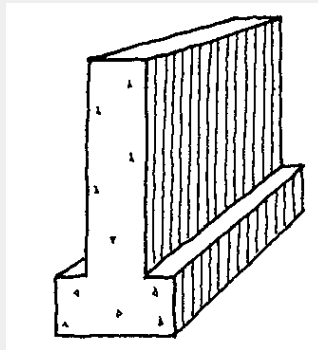
MATERIAL:

- Made from concrete(a mixture of cement,sand and aggregate)
- Can be reinforced with steel bar or mesh

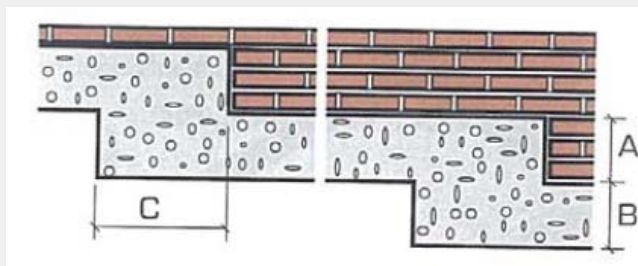
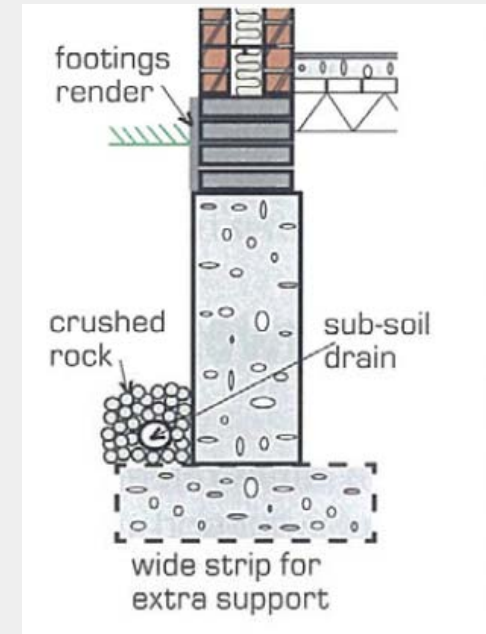
Foundation:

Direct foundation:

- Rest directly on the subsoil



single family house



Stepped foundation is step foundation for use on sloping site.

Foundation:

Direct Foundation:



Fig 1 : Raft foundation

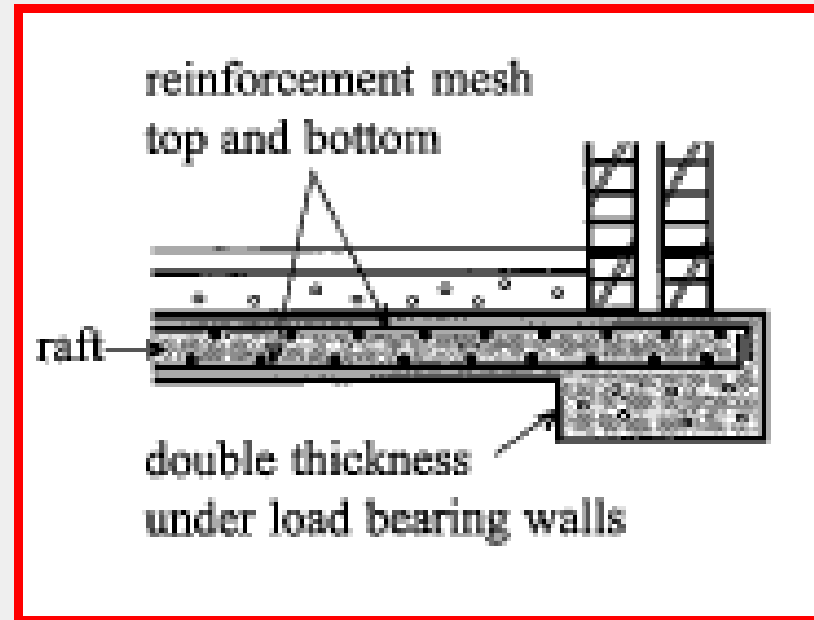


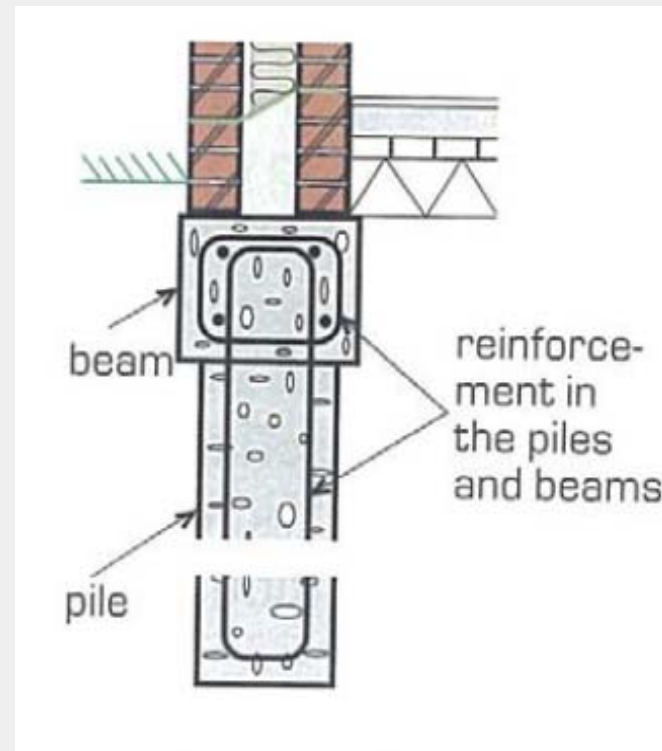
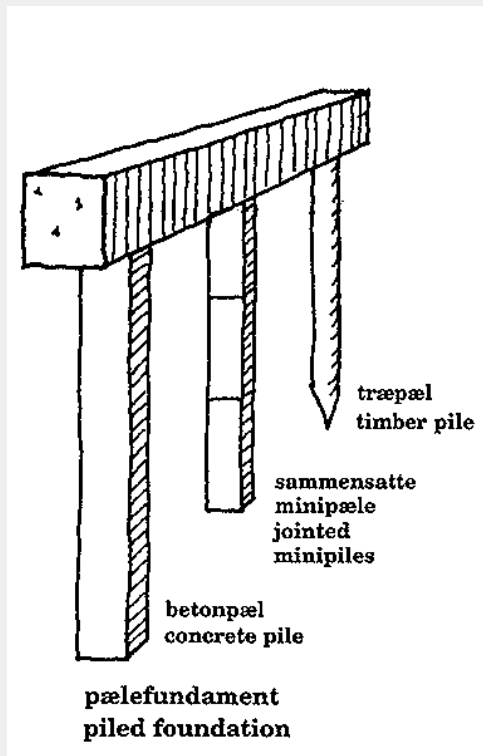
Fig 2 : Cross section raft foundation

- Poor soil and natural ground
- Lightly loaded

Foundation:

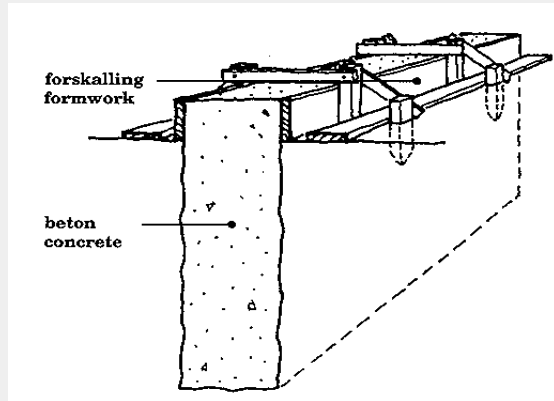
Indirect foundation:

- Foundations are carried out by piles

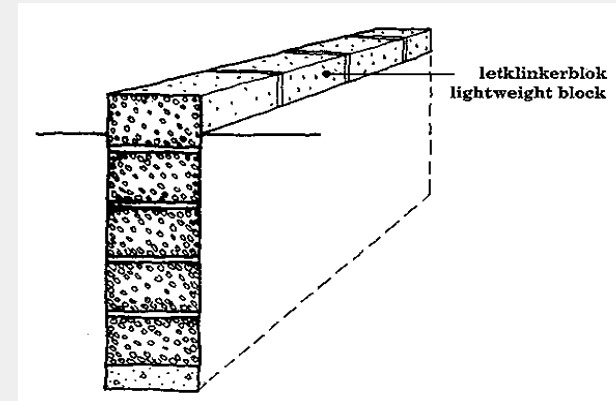


Foundation :

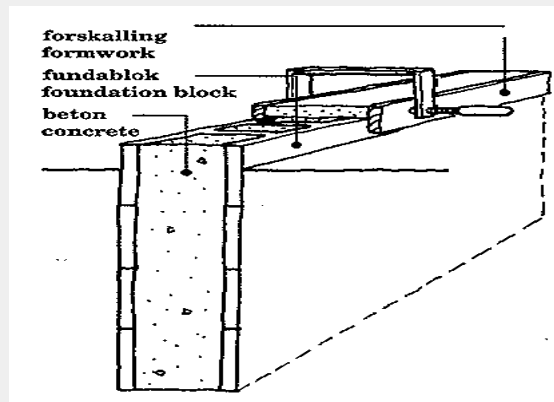
Material:



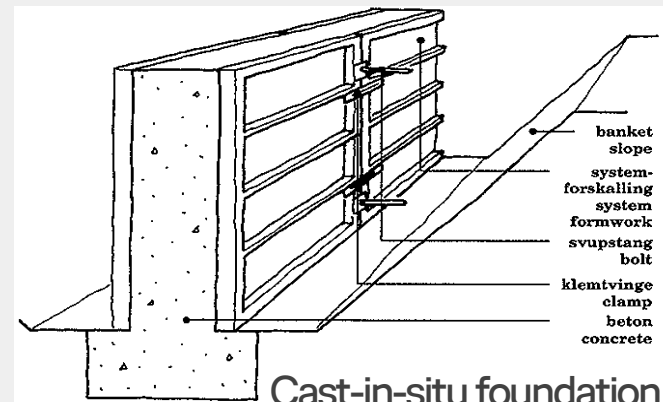
Trench-fill foundation



Light weight blocks



Foundation blocks



Cast-in-situ foundation
in system formwork

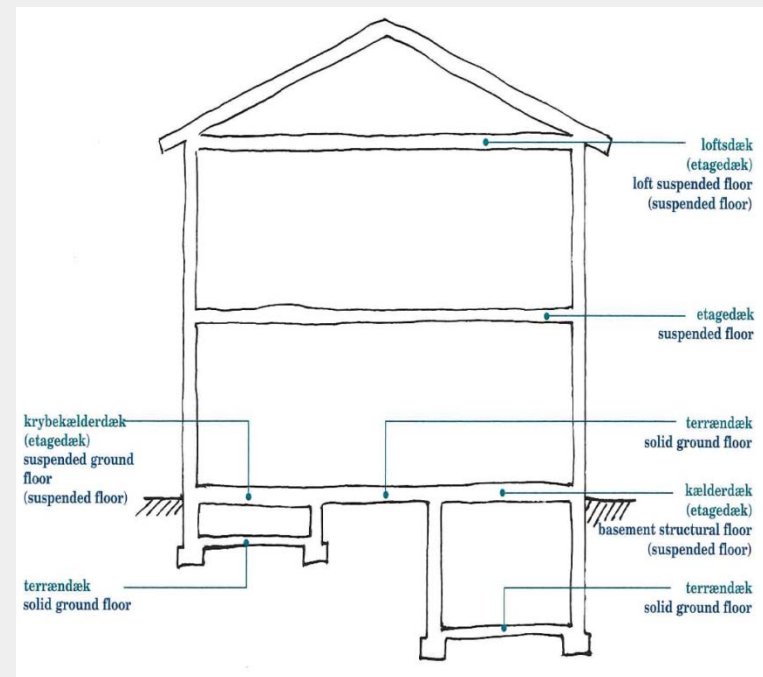
Flooring:

DEFINITION:

- Floor construction resting directly on the ground
- A floor form the division between two levels

TYPE:

- Solid ground floors
- Suspended ground floors
- Upper suspended floors



Flooring-Solid ground floor/ground supported floor:

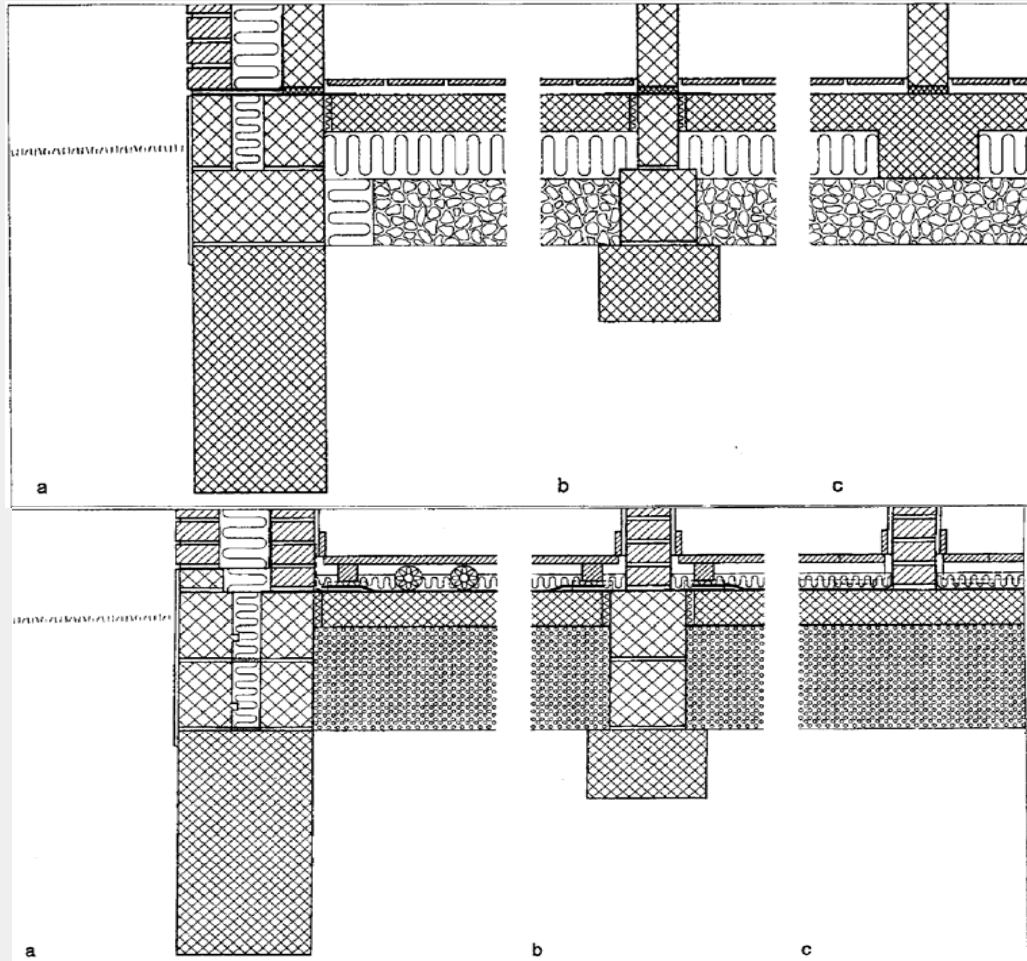
FUNCTION:

- Shall be insulated against ingress of moisture and loss of heat
- Shall be sealed in order to prevent the ingress of air containing radon

MATERIAL:

- Capillary breaking layer
- Light weight clinker floor blocks or polystyrene insulation slab
- Heating insulating layers
- Concrete slab
- Floor finishes

Flooring-Solid ground floor/ground supported floor:



a. Radon penetration is avoided by suspending bitumen felt across the edge insulation groove and bonding it to the concrete slab.

b. load-carrying wall stand on top of the internal foundation

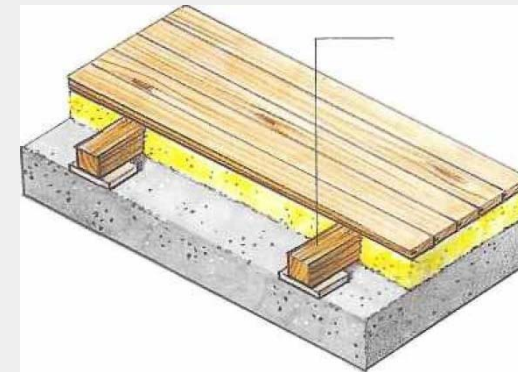
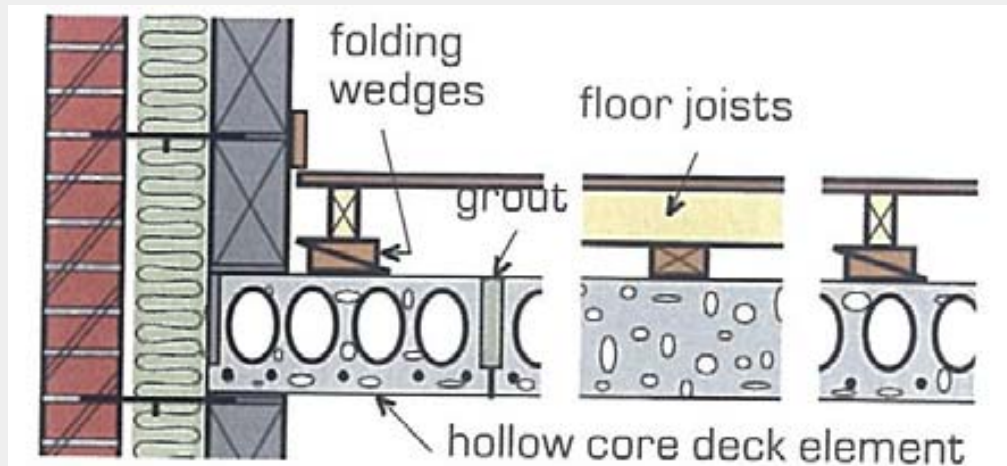
c. a non load-carrying internal wall and the latter is directly on the capillary breaking layer,

a. Clinker concrete blocks with an insulation layer in the middle is broken the cold bring through the upper part of foundation

b. load-carrying wall stand on top of the internal foundation.

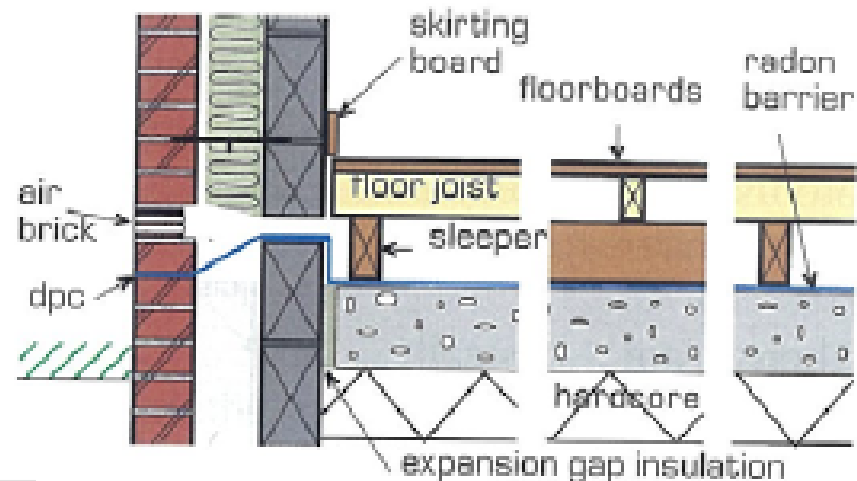
c. a non load-carrying internal wall and the latter is directly on the capillary breaking layer,

Flooring-Suspended ground floor/storey partition



Construction:

- Floor (suspended floor/non suspended floor)
- Concrete deck element(hollow deck /concrete slab)
- Hardcore insulation with needs ***Need adequate ventilation and prevent the damp conditions.***



Flooring-Upper suspended floor/storey partition

Solid: In large buildings, concrete deck elements very often provide the main flooring structure. (similar with suspended ground floor)

Timber:

- The end of joists must be supported by load bearing walls.
- Normally to be built into the walls
- Alternatively use metal fixing

