□ FLOOR Constructions

- Materials Takes stretching forces? **YES** - continue
  - Monolithic areas
    - the possible solutions (trough, lighting)
    - thickness vs. span (minimal th.)
  - Support of the construction
    - "sitting on" vs. encastr beam end
    - support reinforcement
    - Subconcrete - load vs. load bearing capacity / noise insulation

- – Historical constructions
  - Steel (Hot rolled - HR)
    - Cambered arch
      - ◊ simple vs. skewback / abutment brick
      - ◊ Standard small brick / panel / filler block
    - Combined with monolithic
  - Monolithic
    - Beam row type – monolithic
    - (Full) monolithic
  - Prefabricated
    - [Beam + filler blocks (discussed)]
    - Panel floor
- – Other building methods
  - Monolithic
    - (tipical)
    - LIFT-SLAB floor elevation technology (for each level)

      attributes: - basic concept:
      - a hungarian invention (1930's SAMSONDI KIS BÉLA)
      - example BME – MENZA cafeteria building
      - well used for closed-in locations where organization is otherwise a problem
      - quick, on-site fabrication
      - free floorplan designation

      construction stages:

      1. after preparation of a proper foundation, the pouring of slab elements on the ground level
      2. common lifting of all slab elements (synchronized hydraulic elevators), placement of ground floor pillars and fixation of the first floor slab, re-location of the hydraulic system
      3. elevation of additional levels, insertion of pillars, fixation of remaining slab units

      bottom slab
    - LIFT-FORM (with multi-level pillars)

      attributes:
      - the process involves the lifting of the complete floor form unit onto the top of high, multi-level pillars (typically steel)
      - the pouring of internal stabilizing core constructions
      - pouring of floors from the top on down
    - Lift-construction
    - "Tunnel formwork"
  - Panel
  - Steel frame

- tensioned steel reinforcement
  - advantages of modern reinforcement technology =
    - smaller, advantageous cross sections
    - higher stability
    - originally bent cross-section becomes excentrically pressured cross-section
    - prestressing of the steel reduces actual tension in the concrete, cracs are reduced
  - stages of the tensioning process, stress curves
  - disadvantage:
    - complex equipment and knowledge requirement
    - man-hour requirements
    - concrete cover protection of the steel is less, increased fire hazard

- LIGHT CONSTRUCTION
  - Timber
    - in-situ
    - prefabricated wall panel
  - Steel