Introducing
to the construction technology

- techné (grecian) – profession
- logos (grecian) – doctrine *

- **The know-how of the building industry**
- **The knowledge of the make of buildings**

The technology is the science of the industry

- Method and the implementing of the works

- sequence,
- circumstances ,
- phases of the works.

The construction technology covers:

- The way to make buildings

  These methods must to be the

  - most economical
  - most appropriate

Basic terms

Parts of the construction work process *

- Technological processes
- Workflow
- Actions
- Action items
- Movements

Basic terms

- Technological processes*
- **The result is a part of the building**
- (substruction,
  load-bearing structure)

Basic terms

- Workflow*

- **In the same time**
- **On the same workplace**
- **With same professional qualifications**
- **With the same tools**

Basic terms

- Actions*

- **Eg: making of framework tables**

Basic terms

- Action items*

- **The timeperiod of the actions it can be controlled with timer**

- **Cutting**
- **Nailing**

Basic terms

- Movements*
  - **The smallest part of the action**
    - **Raise**
    - **Bend**

Basic terms

Technology

is the sum of **all work process** regarding to **one work activity.** The **know-how** of the construction.

Work activity

Is the **basic element** of the construction, closed technological interval.

Steps of planning the technologies of construction processes

Defining the task

1. Building = the sum of all building construction elements
2. Constructing the building = constructing all building construction elements

Defining the way of realisation = technologies

1. Selecting technology for each building constr. element
2. Defining the order of technologies = time sequence
3. Defining and covering

Planning the technologies

Building processes

- Construction of substructure
  - Excavating
  - Creating foundation

- Construction of superstructure
  - Formwork
  - Concrete reinforcement
  - Concreting
  - Masonry works (load bearing walls)

Planning the technologies

- Priorities in planning the time sequence

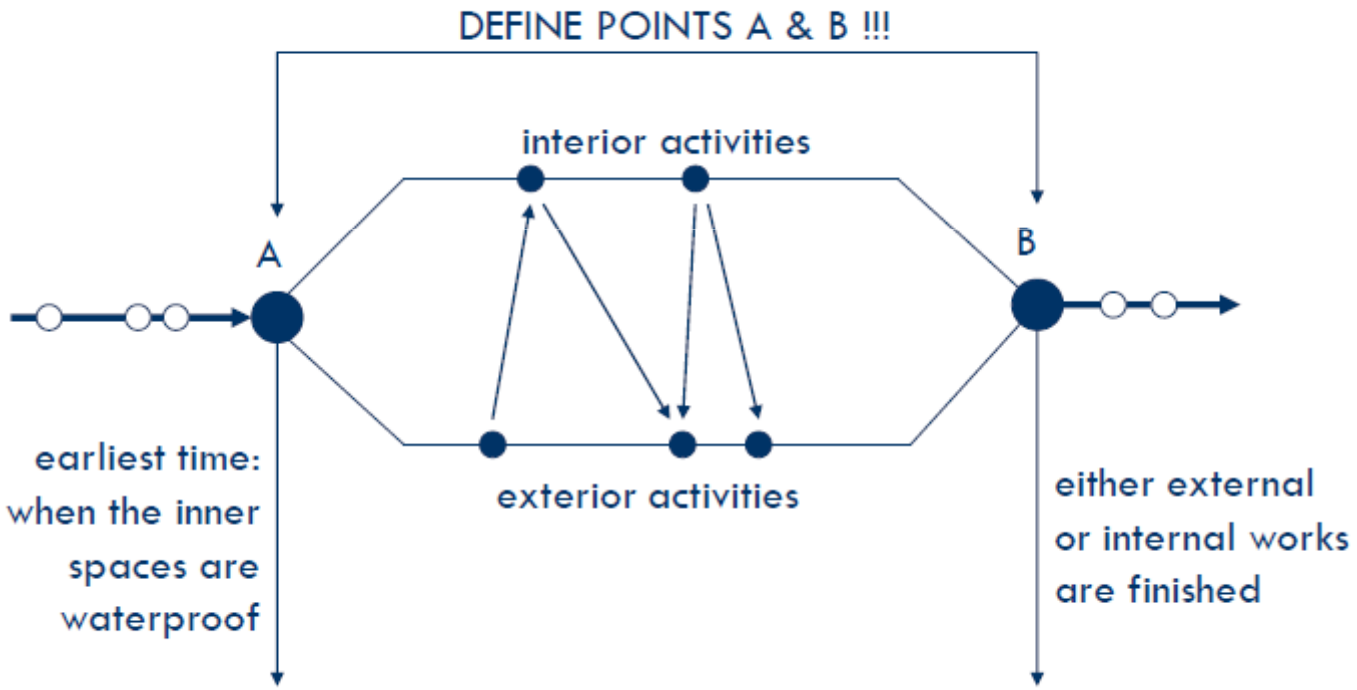
  Deadline (scheduling)
  Costs (e.g. minimising the costs, or cash-flow)
  Site organisation

- Limitations

  Protecting finished parts
  Allowing adequate working space
  Technological intervals (e.g. solidifying of the concrete)

Planning the technologies

- Time sequence of the activities



Claims for educated personnel

Technical staff:

architect, civil engineer, mechanical-engineer, electrical-engineer, landscape architect, transportation engineer

(design, construction, quantity surveyor, etc.)

Economy staff:

economist, economy specialist engineers and jurists

(cost calculation, cost-control, financial scheduling, cost-strategy etc.)

Legal personnel lawyers, attorneys

Consultants institute-specialist, technology-specialist, etc.

Skilled worker mainly building trades, **general foreman (construction manager)**

CONSTRUCTION

The participants

- **Client**
- **Architect (designer)**
- **Contractor**

} **directly involved**

- Consultant
- Project manager, **construction manager**
- Quality surveyor (supervisor)
- Maintainer, facility manager
- User

- Bank
- Authorities
- Public services

CONSTRUCTION

Client

Individual / firm / institute

- What is the aim of the project?

(financial or social benefit)

- What kind of financial sources are available?

(private capital, bank loan, grants, etc.)

-How has been the other participants selected?

(What legal commitments are?)

CONSTRUCTION

Consultants

economy, investment, technology, architecture, real estate development, law etc.

individual / firm

- *for feasibility*
- *for the whole project*
- *for single tasks*

CONSTRUCTION

Designers – architectural plan types

architect
+
co-operators:
structural designer
installation designer
electric designers
landscape architect
fire protection consultant
++
monument specialist
calculation specialist
etc.

outline planning consent

planning consent/ building permit
construction plan

Site (organization) plan

CONSTRUCTION

Contractor

General construction management

Turnkey project

Project manager

hired by the client, responsible for the firm the connection and for the information transport between the participants

Quality surveyor

a single firm or a firm with sub-contractors

depends on the capacity
and the specialization of the firm

most PM crews have technician and economist specialist staff as well

CONSTRUCTION

Authorities

- Hungarian National Public Health and Medical Officer Service (ÁNTSZ)
- local fire department
- local municipality – building department
- National Inspectorate for Environment, Nature and Water
- National Office of Cultural Heritage (KÖH)

Public Services / Utilities

- public services for electricity
- gas works
- water works
- sewage works
-local chimneysweep service

Bank