1. Introduction to Building Construction

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Basic Terminology

- **Civil engineering** means the art of construction or science or the constructional doctrine.
- **Building construction** is the production sector.
- **Architecture**
  - is, in the narrower sense, a building art that produces works
  - In the widest contemporary conception, architecture also includes the formation of the entire environment by artistic means.
- **The construction** is a summary of supplies of building materials, materials, parts and works.
- **Building structures** can be defined as structures, whose larger part is located on the earth's surface.

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Basic Terminology

- **Maintenance** reduces the degree of degradation of structural elements, usually involves the renewal of protective surface coating.

- **Modernization** is an increase in the utility value of a building or its part without changing the purpose. The goal is to improve the standard of use.

- **Reconstruction** is to restore an object or its part into the original condition with the utmost emphasis on preserving the original appearance and design solution.

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Basic Terminology

- **Building object** is spatially coherent or technically individual purpose-built part of the construction.
- **The building** is a set of building structures creating a spatial structure.
- **Basic requirements for building construction:**
  - Architectural requirements (Urbanistic x Operational x Aesthetic)
  - General requirements for building safety and use
  - Resistance to external influences
  - Requirements for the well-being and quality of the indoor environment
  - Technology requirements
  - Economic requirements
  - Environmental requirements

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Modular Coordination

- Basic rules for modular co-ordination of dimensions in construction are laid down in ČSN 73 005 (1990).
- **The module**, labelled M, is the agreed length unit used to determine and coordinate dimensions in construction.
- **The basic (metric) module** - M = 100 mm.
- **The derived modules -** the enlarged module x the reduced module
- **The composability** is a property of spatial parts of objects that allow them to be sorted, assembled, and deployed.
  - The coordinate dimension - the element occupies theoretically
  - The basic dimension - is the size prescribed for the element production.

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Typification and Prefabrication in construction

- **Typification** is a process aimed at selecting a limited number of system building elements and technologies.
  - **Elemental typification** includes the manufacture of individual building components.
  - **Object typification** involves the complex solution of whole building structures or parts thereof,
- **Dimension unification** allows universal use of the same elements mass-produced for different purposes.
- **Prefabrication** is the production of structural components or parts thereof outside the site of their use (site).

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