4. Construction Systems of Hall Buildings

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Construction Systems of Hall Buildings

- **Hall buildings** allow the creation of free spaces with little or no internal support. The characteristic feature of hall buildings is a large ground plan and a relatively small height.
- The hall object can also include internal built-in floors with different height requirements: Two-storey x Large-scale halls x Combined monoblocks.
- Hall objects are used especially for: **cultural x sports x manufacturing and storage x traffic purposes**.
- In most cases, hall objects have a split supporting function and cladding.

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Bending Construction Systems

- The basic element is a bend-loaded, simply inserted or interlocking element that transmits primarily vertical loads.
- **Plate system -** are made up of different types of boards (with reinforced ribs, cellars…
- **Trusses system -** consists mainly of the roof trusses (beam elements) deposited on the columns, beams or walls.
- **Frame systém -** transfers the frame bending moment to the frame stand as a result of the rigid connection.

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Compressive Construction Systems

- If the arc shape or flat structure designed in the shape of the load pressure line, the structure transmits pressure loads.
- **Arc structural systems -** designed for buckling pressure in combination with a bend.
- **Flat compressive construction systems – vaults -** are loaded with buckling pressure and bending
- **Flat compressive construction systems – shell -** have a small structural thickness and the bending loads are transmitted only to a limited extent.
- **Rod structural system -** have to a certain extent similar effects as a flat construction of the same shape.
- **Folded slab structure system -** is formed from flat triangular elements creating a rigid spatial system

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Tensile Construction System

- The tensile construction system includes suspension systems, pneumatic systems and suspended systems.
- **The suspension systems -** may be truss, panel, cable and membrane structures.
- **Pneumatic systems -** are carried by overpressure of the internal air.
- **Suspended systems -** the principle of the **suspended system** is the suspension of the roof beam by means of bars anchored to pressed pilots, arcs or frames, etc.

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