**History of building construction 2017/2018**

**Lesson 9 Exercises**

*16th May 2018*

**Glossary**

Bracing

Bolt

Rivet

Skeleton Frame

Cast iron

Wrought Iron

Curtain wall

Spandrel wall

a) a piece of metal like a screw without a point which is used with a circle of metal ( like a nut) to fasten things together;

b) Structural elements installed to provide restraint or support (or both) to other members, so that the complete assembly forms a stable structure;

c) In a tall building of steel-frame construction, an exterior wall that is non-loadbearing, having no structural function;

d) A short pin, of a malleable metal with a head at one end used to unite two metal plates by passing it through a hole in both plates and then hammering down the point to form a second head;

e) a hard type of iron that does not bend easily and is shaped by pouring the hot liquid metal into a mould;

f) A commercially pure iron of fibrous nature; valued for its corrosion resistance

and ductility;

g) A type of steel construction, usually for buildings of considerable height, in which the loads and stresses are transmitted to the building foundation by a framework of steel columns and beams that support the walls;

h) In a multistory building, a wall panel filling the space between the top of the window in one story and the sill of the window in the story above.

**Who is the author…**

«The frame has come to possess a value for contemporary architecture equivalent to that of the column for classical antiquity and the Renaissance.»

*Mies van der Rohe, Colin Rowe, Sigfried Giedion*

«It is the opinion of some leading architects of Europe and America that it is entirely practical to eliminate masonry by using metal mullions , as in the Bauhaus. Or, if one desires to have solid walls for architectural effect, one may use metal panels between the mullions.»

Robert Davison, Le Corbusier, Walter Gropius

**True or False**

Tall buildings functioned as giant, vertical cantilevers, firmly anchored at the base, with a distributed load of wind over their entire surface.

*□ True □ False*

“Wrought” and “cast” referred to the methods of aluminium production, but also to chemical content.

*□ True □ False*

Wind bracing became an important part of structural frames as a matter of course in the boom of 1890–91 in Chicago.

*□ True □ False*

A riveted connection doesn’t offer any stiffness or reliability.

*□ True □ False*

Ludwig Mies van der Rohe(1886-1969) was a German-born architect known as the leader of the International Style.

*□ True □ False*

Commissioned in 1954 and completed in time for the corporation’s centennial in 1958, the Seagram Building stands as an important landmark not only in Mies’s career and the story of the Seagram company, but also in the history of British architecture.

*□ True □ False*

**The Chicago Frame and the Dilemma of the Wall** (*Contemporary Curtain Wall Architecture*, Princeton Architectural Press, New York, 2011, pp. 10-23) By Scott Murray

**Comprehension**

p.11

In his essay Colin Rowe underlined the universal theme of the frame structure, describe its primary features

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Why is the skeleton frame considered an “architectural dilemma”?

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p. 12

The Chicago School: architects and buildings

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p. 16

The development of the iron application as delineated by Kenneth Frampton

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The origins of the standard I beam shape

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p. 17

The list of the buildings that anticipated the modern curtain wall system (New York and St.Louis)

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p.18

The effect of the frame on the bearing wall considering the position and the openings

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p.19

Describe the “vernacular language of the curtain wall” in Fagus Building (W.Gropius and A.Meyer)

Describe the curtain wall concept

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p. 22

The “most striking elements” of the Bauhaus workshop building

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Engineering and architecture in the XXth century buildings

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