**History of building construction 2018/2019**

**Lesson 4 Exercises**

*27th March 2019*

**Fill the gaps - Choice of words**

The clear horizontal and vertical lines in Fallingwater may be compared with the formation of the\_\_\_\_\_\_, with the horizontal and vertical of \_\_\_\_\_\_and trees, and with the \_\_\_\_\_\_\_\_\_\_ moving horizontally in the stream (Bear Run) and \_\_\_\_\_\_\_\_\_\_\_\_\_as "falling water" in the form of waterfalls .

Vertically, ground, water, rock

The first story includes a large central \_\_\_\_\_\_\_\_\_\_\_with a kitchen and a\_\_\_\_\_\_\_\_\_\_\_\_\_, two\_\_\_\_\_\_\_, one on the east and the other on the west, and glazed \_\_\_\_\_\_\_\_\_leading down steps to the\_\_\_\_\_\_\_.

Terraces, stream, dining area, living room, hatchway

The \_\_\_\_\_\_above, partly \_\_\_\_\_\_\_(over the terrace), and partly \_\_\_\_\_(over the living room) adds to the theme of the \_\_\_\_\_\_\_\_\_openness of the hatchway. It is open to the sky, and also extends horizontally into the \_\_\_\_\_\_\_\_\_\_\_\_\_, two of the many suggestions of the \_\_\_\_\_\_\_\_\_\_of inside and outside.

Living room, trellis, inside, outside, continuity vertical.

**Glossary**

Sandstone

Bolster

Prop

Trellis

Hatchway

Joist

Mullion

Walkway

Canopy

a) a light frame made of long narrow pieces of wood that cross each other;

b) an opening or a door in the deck of a ship or the bottom of an aircraft, through which goods to be carried are passed;

c) vertical member separating (and often supporting) windows, doors, or panels set in series;

d) one of a series of parallel beams of timber, reinforced concrete, or steel used to support floor and ceiling loads, and supported in turn by larger beams, girders, or bearing walls;

e) short horizontal timber or steel member placed on top of a column to support and decrease the span of beams;

f) a passage or path for walking along, often outside and raised above the ground;

g) a layer of something that spreads over an area like a roof, especially branches of trees in a forest;

h) a type of stone that is formed of grains of sand tightly pressed together, used in building;

i) a piece of wood, metal, etc. used to support something or keep it in position.

**True/False**

One of Wright’s students at Taliesin was the son of a wealthy Pittsburgh family, Edgar Kaufmann jr.

*□ True □ False*

The section of Fallingwater over Bear Run acts as a cantilever, with a fixed and a free one. The fixed one consists of four large bolsters, three of stone masonry and one of reinforced concrete.

*□ True □ False*

In engineering terms a cantilever has a negative bending moment – the load at the free end of the horizontal beam is resisted by compression in the beam’s upper side and by tension in the lower side -.

*□ True □ False*

Many features of Fallingwaterare were designed to maintain a continuity between inside and outside.

*□ True □ False*

Zaha Hadid’s skyscraper in Tribeca, 56 Leonard Street, New York, is also called “Jenga Tower”.

*□ True □ False*

BoscoVerticale (Vertical Forest) is a pair of award-winning residential towers in the Porta Nuova district of Milan, Italy designed by Boeri Studio (Stefano Boeri, Gianandrea Barreca and Giovanni La Varra).

*□ True □ False*

**The plan to save Fallingwater** (“Scientific American”, vol. 283, no. 3, September 2000) By Robert Silman

**Comprehension**

**p. 70**

The methods that Robert Silman used to analyse Fallingwater

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Do you remember how Wright was engaged by Edgar Kaufmann

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The member of the Taliesin studio who collaborated to Fallingwater design

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The cantilever’s behaviour (negative and positive bending, tension and compression, lower and upper)

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The consequence of Wright’s decision to put the concrete slab under the cantilever beams.

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“Oh my God. I forgot the negative reinforcement” explain Glicksman’s exclamation.

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The role of the steel mullions

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 “Fixing Fallingwater”, Robert Silman’s solution

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Silman’s engineers explained what was wrong with Fallingwater design

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One of the best known houses in the history of Modernism is not a house at all, but an elaborate movie set. Created entirely at MGM studios in Culver City, California for Alfred Hitchcock’sclassic film, North by Northwest. In 1958, when the movie was in production, Frank Lloyd Wright was the most famous Modernist architect in the world. His magnum opus, Fallingwater, was conceivably the most famous house anywhere. Hitchcock instructed the set designers at MGM Designers (Robert Boyle, William A. Horning, Merrill Pye, Henry Grace, and Frank McKelvey), to design a house in the Wright style, by its creation, the image of the Vandamm House became an icon of Modernism in architecture.

Similarities and differences between Fallingwater and the vilain’s house used in North to Northwest (at least three)