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SYMBOLISM AND EMOTIONAL CONTENT CAST IN CONCRETE. MODERN PRECAST CONCRETE AS AN INFORMATION CARRIER

Abstract: Facades of contemporary buildings perform many functions. One of them is the information function. Precast concrete facades can fulfil this function in many ways. The research described in the article focuses on conveying information through the contained symbolism. The research was carried out on completed buildings in various regions of the world, countries with different architectural traditions. The variety of forms and content was aimed at checking how universal concrete is and what possibilities in terms of shaping aesthetics and conveying information are available in pre-fabrication.

Key words: facade of the building, symbolism, precast concrete elements,

Introduction:

Each facade of the building has several functions at the same time. The original function from the time of the first buildings was to protect the interior. To provide protection against weather conditions, dangerous animals and other people. Currently, the number of functions performed by facades has increased significantly. Many of them have additional functions, such as

- ensuring the comfort of users in the interior by equalizing temperatures,
- providing views, ventilation.
- shaping the aesthetics of buildings
- generating energy
- shaping the environment around buildings
- transferring loads (wind - thrust and suction forces, ceilings, equipment)

One of the function, to which architects attach great importance, is the informative function. It is more and more common in contemporary architecture that façades it is not possible to identify the building function by its look. When analyzing selected examples, one can get the impression that the main factors allowing to guess the function are: the scale, the grid of divisions with glazing and the form of the building. In a few cases, the designers were tempted to include details that facilitate the recognition of the function, as it was in case of historical architecture [1].

«The form of the façade, built with the use of appropriate means of expression (scale, proportions, articulations, shapes) has an intense and suggestive effect on the mind of the observer, evoking

emotional states with a specific level» [1]. The architect's task is to select the means of expression to achieve the desired effect. Most often, the aim is to create compositions that foster a feeling of satisfaction, relaxation and pleasure. The means that architects most often use to achieve this goal include: regular rhythms and divisions, well-known local motifs, human scale, natural greenery around the building and on it, soft forms, natural materials. The regular rhythm is to some extent attributed to facades made with prefabricated technologies. It involves the use of repetitive elements. Here, the designer's task may be limited to adopting a modular mesh with appropriate proportions and to develop the form of individual types of components. The article presents a part of research on buildings with facades made of concrete prefabricates in which architects included various emotional content and symbols.

Methodology:

The methodology of the conducted research resulted directly from the selected goals of the paper and the hypotheses. The undertaken research problem required a detailed analysis of the scientific materials, national and foreign, in the form of archives and current publications related to the architecture and construction, such as: articles, monographs, web sites. Also the photographic documentation was used, obtained during the scientific and research trips, photos and drawings published in the journals, industry portals and on websites of the architectural studios.

Facade as an information carrier

Within the examined functions, contemporary facades can: inform about function of the building, contain symbolic elements, references, present the prestige and status of the building, inform about belonging to a cultural circle, inform about time of construction of the object. Research in this paper focuses on the symbolism of the facades, the content it may communicate and the methods of communication.

«Architecture always has and always will send signs to the spectator. The façade as the representational part of the building often is being compared with the human face as the place of the whole body where we can 'read' characteristic or emotional properties of a person. The face 'speaks': even a single change of a muscle alters the whole impression of the face. Metaphorically speaking the façade is like a face – it sends signs to the public as well» [2]. Those signs can be sent in many ways. One of them is by form of the building.

V&A Dundee is a Design Museum designed by an architect Kengo Kuma. In an interview he said: *«My inspiration always starts from the place where the project will be...»* [3]. Design of this building was inspired by the cliffs of the nearby Scottish coastline. Museum is designed as two inverted pyramids covered with precast concrete „planks». One of the precasted concrete elements that were used for finishing the facade does not say anything. It is just a concrete slab that can be used in any building around the globe. But the whole composition of this elements strongly relates to the local landscape, to the rock cliffs of Scotland. The symbolism in this case is implemented in the whole body of the building, in its form.

Another building with the same way of expression is National Museum in Doha in Qatar. Architect, Jean Nouvel, wanted not only to reflect in the design the Quatars ambitions and recent rapid evolution, but he also wanted to connect it to the surrounding desert landscape and sea that have formed life in this region for hundreds of years. He created a building that refers to the mineral formation called the "desert rose", which occurs naturally in the region's sandy soil [4].

Jubilee Church is the third example, where symbolism and emotional content is contained in its entire form. It was designed by Richard Meier, who *«created a ship-like building made of three large curved walls that look like sails and three vertical structures that look like the hull of a boat»* [5]. The curved walls used in the project, reminiscent of sails in the wind, symbolize the «entering» of mankind into the new, third millennium. Self-cleaning concrete was used to make them. The surface should always remain white and clean. It also has a metaphorical meaning.

Arches Boulogne is the apartment block designed by Antonini Darmon. It is a part of a wider redevelopment of the area that used to be Renault car factories. Its name comes from the colonnades that surround all five facades, giving the building a very classical aesthetic. These arches relates to

the design of the old Renault factory buildings. It is a modern interpretation of the architecture that has been here before, casted in white concrete. In this case different approach is noticeable. The symbolism is implemented not in the whole body of a building, not in the superstructure but in each arch, in each precasted element, detail.

The same way of expression was used in the Perot Museum Of Nature And Science designed by Morphosis. The precast concrete facade was made to resemble geological formations. The profiles of protrusions and crevices creates irregular surfaces that form the organic façade. Texture is more dense at the bottom of the cube. It makes building to look like it is dissolving across the vertical dimension [6]. Symbolism, in this case, is also hidden in the unique prefabricated concrete panels, not in the whole structure of the building.

Provincial Archive in Hämeenlinna, in Finland was designed by Heikkinen-Komonen Architects. The building is a storage for historical documents. «*The concrete used on the façades acts both as a graphically attractive surface that reflects the purpose of the building and as a strong and massive enclosure protecting the valuable content*» [7]. Architects created a building with a very simple, functionalistic form, but with a unique facade. The choice of the graphic concrete technology was a means of communication to tell the story of the building. It is to convey passers-by what is stored inside the building. All the symbols, seals, text sections were collected from the documents kept in this archive. They were scanned, processed, digitally composed, casted in concrete and finally assembled on the façade. As in the previous example, references are embodied to the precasted panels not in the form of the building, which is a simple, rectangular solid.

Foquet Barriere is a hotel in the centre of Paris that was designed by Edouard François. In this case, architect copied the façade of a so called Haussmanns tenement house on the Champs-Élysées, flattened it out, dyed it grey and reproduced it in concrete. Heavily processed façade of this building looks like historic one from the distance but from the closer look it is easy to recognise that it is a contemporary facade.

Not only the form of the form of whole building but also details, made of lead-grey concrete, refer directly to the Haussmann-style façades. Both these elements refer to the traditional local architecture, city landscape and perfectly fits the context

Ennis House, designed by famous architect Frank Lloyd Wright, was inspired by Mayan architecture and refers to it also with its form as well as with details. The symbolism and references to the local tradition is very strong in this architecture. Building is made of invented by F.L. Wright Textile Block System [8]. This system consists of concrete blocks, cubes that were prefabricated at the construction site. There are four houses of this kind. Blocks for each one has different symbols. Every detail in this house is reminiscent of a traditional Mayan building. Concrete blocks resembles stone blocks with colour, size and with carvings appearing on its surface. Also the body of the building - façade tectonics, trapezoidal shapes, rectangular openings.

Conclusion:

Summarizing, in the case of façades made of precast concrete elements, the symbolism can be implemented in the entire body of the building. In this case no information can be read from individual panels because they are neutral, like regular brick.

Symbolism can also be included only in individual prefabricated elements. In the material it is made of. Its shape, colour, texture or carvings may carry some information, symbols and references. These two methods can be combined to create facades that work on both levels, on a small and large scale (Figure 1). Form of the building as well as individual prefabricated concrete element send signs to the spectator and give the opportunity for interpretation.

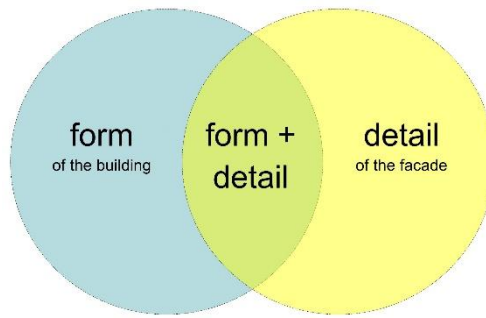


Figure 1: Implementing the symbolism in precast concrete facades (P. Mika)

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