MACIEJ OLENDEREK*

F. L. WRIGHT'S CONCRETE DETAIL OF ORGANIC ARCHITECTURE AND ITS IMPACT ON CONTEMPORARY CREATORS

BETONOWY DETAL ORGANICZNEJ ARCHITEKTURY F. L. WRIGHTA A JEGO WPŁYW NA WSPÓŁCZESNYCH TWÓRCÓW

Abstract

The contemporary architecture became a sort of synthesis of all Wright's additions to architecture. Organic building materials, such as: wood, brick, stone facing, became a part of the landscape, hiding the modern concrete technology. Subtle connections to the international style became its personification. In this way, whether we like Wright or not, he had a large impact on both the American and world architecture. The method of creating shape, beside the abilities of an outstanding designer to handle the concrete structure, creating aesthetic buildings and details, sleek columns and ornate concrete tracery, concluded in development of an architectural style, which presents the beauty of the concrete structure today. All with keeping Wright's organic philosophy – becoming one with it.

Keywords: F. L. Wright, concrete detail, reinforced concrete pillars, American architecture of the XXth century, contemporary architecture

Streszczenie

Współczesna architektura stała się swego rodzaju syntezą między innymi wszystkich wkładów Wrighta w architekturę. Organiczne materiały budowlane, takie jak: drewno, cegła, okładzina kamienna, stały się częścią krajobrazu, ukrywając nowoczesną technikę betonową. Subtelne relacje ze stylem międzynarodowym stały się jego uosobieniem. W ten sposób, czy zdajemy sobie sprawę z tego w naszym codziennym życiu, czy nie oraz czy kochamy lub nienawidzimy Wrighta, wywarł on głęboki wpływ na architekturę amerykańską i światową. Sposób budowy formy, oprócz zdolności wybitnego twórcy do posługiwania się strukturą betonu, tworzenia pięknych konstrukcji i detali, smukłych kolumn czy finezyjnego ornamentu betonowych przezroczy, skutkował rozwojem stylu architektonicznego, współcześnie eksponującego piękno

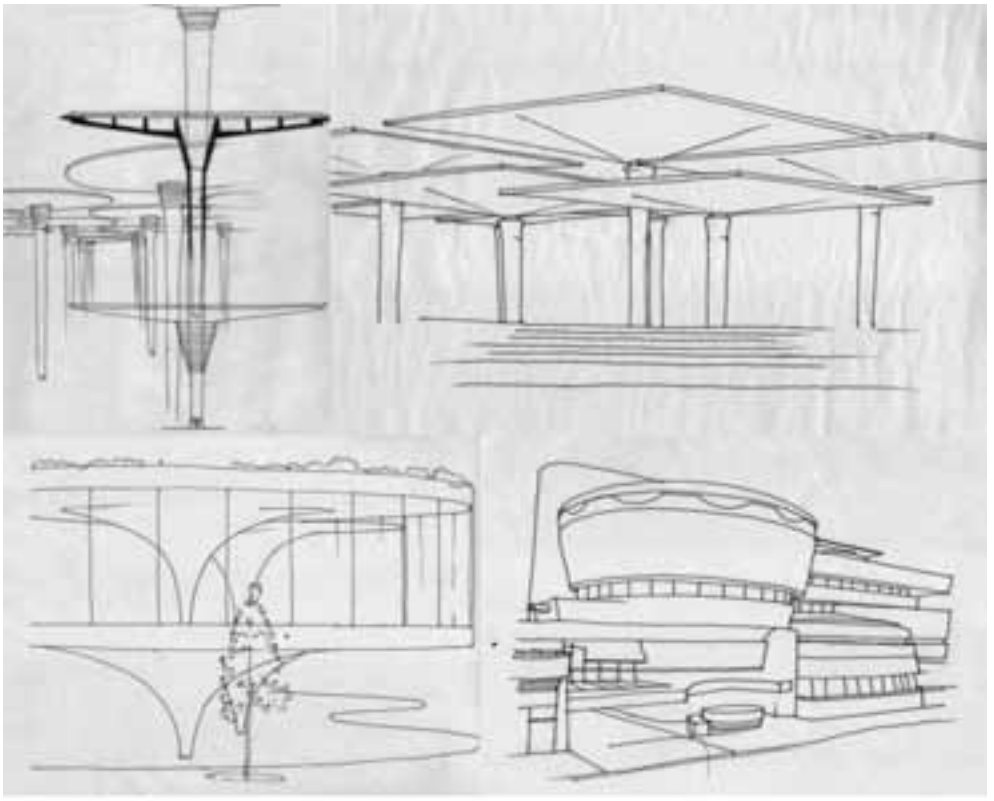
* Ph.D. Arch. Maciej Olenderek, Faculty of Civil Engineering, Architecture and Environmental Engineering, Technical University of Lodz.

struktury betonu. Wszystko to przy zachowaniu filozofii organicznej Wrighta stając się jego częścią.

Słowa kluczowe: F. L. Wright, detal betonowy, słupowe konstrukcje żelbetowe, architektura amerykańska XX wieku, architektura współczesna

The concrete architecture of the previous and current century (shaped as material inspiration) has a rich history, both in Europe and across the ocean. The great self-taught genius creator, Frank Lloyd Wright, joined the annals of history in The Northern United States of America (first half of the XXth century). He and his work on the process of concrete transmutation warrants the highest interest, especially since it dynamically influenced the creators of his time as well as being an inspiration for contemporary top 100 architects. As an architect and a philosopher, he greatly influenced the creation of concrete structures, details in the concrete matter and future destinations to "humanize" this hard material in his wondrous spatial designs. He was a sort of a "wizard" conjuring remarkable spaces from simple mathematical details and new, pioneer constructions, such as new office building for Johnson Wax Building Company in 1936. Frank Lloyd Wright was born in 1867, during a time of imitating the European architecture. During the 70 years of his work, he was a pioneer of changes, which reshaped not only the American architecture but also the rest of the world. Louis Sullivan was his mentor, known as the first real American architect, the author of the principle "Form follows function". As a future American architect, Wright started his career in Chicago. After the Great Chicago Fire, when the city was being rebuilt, architects could demonstrate innovation. Wright turned to nature, highlighting the connection between man and the surrounding space. He designed around a thousand buildings, many of the more visionary ones were never built. The contemporary architects try to pursue his visions (pay homage). He died at the age of ninety and was considered a legend. This famous American was a supporter of using natural resources, such as: wood, stone and brick. He did not shy from concrete or glass. His individualism made him a modern creator, even today. He said: *without romanticism – the architecture would be nothing more than a box with pipes*. In his classes at The Princeton University in 1930, he maintained in his credo, that the cold function of modernist architecture should be discarded in favour of the organic. Wright wrote as he spoke – exuberant and harsh. Instead of teaching about the work methods, he created a tale about The Machine Age, which brings new ways of expanding the humanity, but also the possibility of extinction – mindless imitation of foreign styles. Wright describes architect designs as "servile", faking connections to the classics. He warns America of becoming an "ecumenical camp", producing fast and cheap imitations. Instead of "false architecture", he proposes to use machines to create entire new organic shapes, which are connected to place and time. As an example, he presents the Japanese art, which he knows very well. House should be an expression of freedom. Therefore, it should be created truthfully and on a human scale. He was known for unveiling the nature of the material: stone, brick, wood remained unaltered. He called city a "commercial machine dressed in loud shapes". He saw skyscapers as prisons, which lead people to madness and cause a mass exodus to the countryside. He prophesized that in the age of mobility the concentration of life will not be needed anymore. He believed that man enjoys freedom in space. But he also saw people to be greedy, more interested in having

things than wanting to be free. Wright was a talented speaker – he could create tales as real and original as his buildings. Between 1919 and 1925, he worked in four houses and a kindergarten, located in Los Angeles, using concrete bricks as the main building material. The construction system was described by Wright and others as a unique shape, weaved like cloth and regarded as groundbreaking and modern. It should be noted how he used concrete as an important part of the building aesthetic. After finishing the Hollyhock House and the Imperial Hotel, Frank Lloyd Wright started to create his ideas in concrete. Using the "textile" brick, he designed four houses: Millard House, La Miniatura, Freeman House, Storer House and Ennis House – as a challenge to defeat negative opinions that concrete is the cheapest and the ugliest thing in the construction business. He created buildings based on a concrete modules system, he proved that this material can be as presentable as natural stone. La Miniatura is the first Wright's residence, which was made from "textile" bricks. A house, which was constructed from modular elements, could be disassembled piece by piece and rebuilt somewhere else. There is no doubt that such buildings are an innovative and historical part of his career. This new building system, beside Wright's ability to make something beautiful from raw construction material, validates his expertise and great innovative creativity. Attempting to integrate the Millard House with the earth, he designed it to adhere to a steep gorge, situated it among trees and created bricks from sand, gravel and local minerals. Using textured bricks, he tried to mix the building structure with the colour and shape of trees and slopes. It followed his love for natural materials and his belief that buildings should complement the surroundings. He later said, that the Millard House *belonged to the ground it stood upon*. Bricks were made in wooden moulds with outer patterns and smooth inner texture. They are of symmetrical cross shape with a square in every corner. Wright reinforced bricks with conventional plaster. Prefabricated concrete – "Biltmore Blocks" – designed by McArthur and moulded on site is the "Wright Stuff" used during the Biltmore Hotel construction. Just as Wright's designs contained some sort of geometrical pattern throughout the entire project, so did the Biltmore Blocks. It is said to refract the light. In truth, Wrigth spent four months in 1928 advising on a construction site with the use of the textile brick, similar to the unit brick he used six years before in a number of Los Angeles buildings. However, Wright himself accepted the Millard House with pride. He later said: *I'd rather build this house than the St. Peter in Rome*. After years of bad publicity, the Millard House is regarded as one of Wright's best works. In 1965 the Los Angeles Times Art editor-in-chief, Seidenbaum, wrote about the building and the surrounding area: *this placeis fascinating, since the house still looks modern in an ageing environment (...) even better, the Millard House has no place and time*. In 1969, the Millard House joined the list of 12 most important monuments in Los Angeles, accepted by 10 prominent citizens and architects. In 1980 the New York Times highlighted the fact, that the Millard House is known around the world and is among the few Los Angeles buildings, which became "classic masterpieces of the XXth century". There is a question of how these buildings survived the test of time and the elements? (except for the Millard House, other buildings were made from square bricks, reinforced with an inner system of metal bars). Unfortunately, since they were made before the age of epoxy layers, the bars rusted and the concrete degraded. Therefore the houses were renovated, which took a number of years. Keeping them in good shape costs a lot, but it is worth to maintain the picture of one of the first concrete blocks buildings ever designed. The wondrous concrete traced blocks maintain class for many years. The textile FLW brick designs show how the architect decorates



Ill. 1. Pillar structure for the Johnson Wax Building, author's sketch
Ill. 2. Pillars at Marché de la rue d'Agadir Casablanca, Morocco, author's sketch
Ill. 3. Circle Namics Techno Core buildings in Zürich, author's sketch
Ill. 4. Caisse d'Epargne building in Bordeaux, author's sketch

the surface and subjects it to articulation. Lately some of the state universities are trying to answer the question of block renovation. They work, using the newest advances in chemistry, construction and digital technology to maintain these architectural and historic monuments for as long as possible. In this discussion, not only the historical background matters, but also the production method and the geometry reception. The authors researching the textile brick construction think that it should be examined through digital reshaping (the surface structure modulation), a process, which uses relations between digital data and materials production. Research, production and construction will focus on numerically controlled digital procedures and many currently available modern production techniques. Researching the geometry of historic, textile brick buildings (Frank Lloyd Wright) is to result in renewed discussion about ornamentation and the production process. These designs are researched through experimenting on known geometric brick systems. New materials were used, which allow for the creation of durable moulds, such as: Corain plates, foams of varied density, new steel reinforced concrete technology, latex, plaster made of resin and rubber compounds. The studying, which takes place within the project framework, encompass three-dimensional digital models of single surfaces and objects, shape map form and mirror shapes of the "sandwich" type.

The other designs, which gained worldwide recognition and provided foundations for more daring constructions and the understanding of the building structure is the pillar construction in the Johnson Wax Building (erected in the 1930s) ill. 1. Jonathan Lipman in the book *Frank Lloyd Wright and Johnson Wax Building* (1986) describes the story behind this building, or more accurate a complex of buildings, starting with meetings between the architect and investor. The architect promised to create a building where people work in happiness, surrounded by pine trees and light from above. Even then, Wright as a visionary knew how to create office space. He had to prove that his unique design of a chalice construction, which he borrowed from nature, will not collapse. On a 1:1 scale testing ground he proved the utility and usefulness of this wondrous shape and the building gained a three storey chalice pillars (with varied construction sections to support the weight). This is how an open space car park and fully illuminated office halls came into being. We gained a great and full of light building, which impresses even today. This shows how concrete can be turned into something wonderful when used by a master. The concrete in this construction, smooth and rough surface with detail highlighting the traditional division of columns into the pedestal, core and the top, shows how a creative thought can result in shaping a building full of character, meeting the investor expectations and become whole in the architectural sense (organic material). Currently, we can find many designs inspired by this solution. Another fascinating example of designing concrete ribbons is the Solomon R. Guggenheim Museum in New York. In this well designed building concrete construction go upwards, encompassing the interior (the gallery hall). This ascetic design became a unique object among a lot of steel and glass walls, just as the author wanted. These two buildings fascinate many creators even today.

Almost a century passed since the presented works came into being and we can still see contemporary buildings inspired by these constructions. One of them is a shop – house type of building, reshaped into an apartment, built in Bangkok by Allzone Co. Ltd. (Stefano Mirti in 2011). The front wall is sheltered by a screen of hollow bricks (varied shapes). The architects achieved a light screen, which provides light reflexion (similar to Wright's designs) and, at the same time, protects from too much sun. Wright inspired the creation of a wall protecting

the garden from the foreground of one of the villas designed by a Brazilian architect Leo Romano in 2013. A repetitive concrete screen is used here as well. It can also be treated as an inspiration by the eastern culture. However, the method of construction and sheltering is similar to Wright's walls. There are many such examples all over the world. Another one is a brilliant design of market canopy in Morocco by Jean Francois Zevaco (Marché de la Rue d'Agadir Casablanca, Morocco). ill. 2. It was constructed in 1972 (brutalist architecture) inspired by Wright's works. The author used the concrete texture perfectly (walls, pillars, roofs) which protect the market area from the sun, while at the same time through the varied height of the horizontal levels the sunrays are let in a spectacle of moving bars, which bring out both the fragility and strength of the construction. Another example is a number of new (XXIst century) office space designs – the Mexican display at the 2000 Shanghai EXPO; the design of the Madrid Atocha Train Station (1992); the Maribor Regional Museum (Slovenia) 2010 competition design by the Branzi + Italian Firm 2A+P/A consortium. Another proof of Wright's inspiring pillar creations is the 1st prize in designing utility complex in the Zürich Airport called the Circle by Riken Yamamoto. Namics Techno Core (October 2008) is interesting for a few reasons. ill. 3. Firstly, the lightness of the organic mushroom structure, which seems to grow from the closed ground level. Secondly, the distinct division of function between very hygienic ground level laboratories and completely open second and third floors along with a garden on the roof. The last reason is the surprising Japanese precision in construction. It was finished in only 13 months and consists of prefabricated concrete elements from Taisei Corporation Arup Japan. It is a steel frame with a concrete layer. It makes sense to work with construction as continuous structure layer with very narrow support points. I noticed that the design of this structural system is regarded as being very well balanced. The parts of the Yamamoto design, where the building is based on cages of different diameter and thin slabs, are very similar to the Johnson Wax Building construction by Frank Lloyd Wright – especially the shape resembling a tower office with core and glass facade, floating on the edges of the slabs. A beautiful shape was presented by Jorn Utzon (1954) in his pavilion concept – chalice pillars made of many layers resembling a fountain. An example of inspiring the contemporary designers is the Caisse d'Espargne in Bordeaux, il. 4, France – partially resembling the Guggenheim Museum (New York) exterior style. I suspect this sort of inspiration went too far – however, this proves how strongly Wright's buildings influenced the architect designing in Europe. This building contained a shopping complex and a skating rink (near the Bordeaux city centre). Today the Mériadeck seems neglected. The 1970s architecture, due to the aging of the concrete structures (non-renewable) is becoming unpopular with the local inhabitants.

Wright inspired architecture can also be seen in contemporary designs such as Museum of Technology in Vienna, where the Querkraft Architekten ZT Company created a system of pillars (identical to Wright designs) with a system of illumination and modelled seats for visitors. The whiteness of the pillars, like in the Wax Building, creates a forest of vertical shapes filling the display space. There are also examples of inspiration in Zaha Hadid designs, especially in the pillar setting, drops of the Serpentine Sackler Gallery – it very harmoniously presents light structures composed into the interiors. As usually with this artist, the design is also a work of art (like with Wright designs). Similar pillar and roof illumination approach can be found in the works of Foster or Axel Schultes. A basically identical copy of the Wax Building was used in *Men in Black 3* movie.

To conclude, the great Wright's achievements in designing space through the reshapable concrete material, searching for the key to the alchemist's formula for showing its beauty and basically endless flexibility. Today not everyone treats Wright's achievements as unique – especially concerning concrete bricks, hollow bricks and buildings. I regard such opinions to be wrong and mostly based on the feelings of envy and lack of creativity – lack of flexible imagination to create such works, which beside the popular snobbish approach to architectural design could bring out this unique charm of concrete structures, connected to the scale and human feelings, to what is most important to man and his recipient.

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