ANNA SZCZEGIELNIAK*

RESIDENTIAL ARCHITECTURE BY MVRDV – ORIGINALITY OR UTILITY?

ARCHITEKTURA MIESZKANIOWA WG PRACOWNI MVRDV – ORYGINALNOŚĆ CZY UŻYTECZNOŚĆ?

A b s t r a c t

In the following paper residential buildings designed by a Dutch architectural office were analysed in order to compare their utility versus the originality. The architects from the MVRDV group are known for their nonstandard, bold solutions to standard housing architecture problems such as natural light access, shadowing, intensity, intimacy for the inhabitants or combining the housing with different functions. In their work it can be noticed that the search for a useful solution can lead to originality in the form and that treating standard architectural problems with a nonstandard attitude can result in an intriguing architectural solution.

Keywords: housing architecture, modern architecture, originality, utility, MVRDV

S t r e s z c z e n i e

W artykule przeanalizowano realizacje budynków mieszkalnych holenderskiej pracowni MVRDV pod kątem użyteczności oraz oryginalności ich rozwiązań funkcjonalnych i formalnych. Architekci z grupy MVRDV znani są z nietypowych, odważnych rozwiązań architektonicznych, za pomocą których mierzą się z typowymi dla architektury mieszkaniowej problemami, takimi jak: doświetlenie światłem dziennym, przesłanianie, intensywność zabudowy, zapewnienie intymności mieszkańcom czy łączenie funkcji mieszkalnej z inną uzupełniającą w zabudowie śródmiejskiej. W realizacjach MVRDV można zauważyć, że dążenie do użyteczności w architekturze może jednocześnie prowadzić do oryginalności formalnej, a nietypowe potraktowanie typowego problemu może dać w efekcie intrygujące rozwiązanie architektoniczne.

Słowa kluczowe: architektura mieszkaniowa, architektura współczesna, oryginalność, użyteczność

* MSc. Eng. Arch. Anna Szczegielniak, Department of Building Engineering and Architecture, Faculty of Building Engineering and Architecture, Opole University of Technology.

1. INTRODUCTION

For a long time, architects and theoreticians have been wondering about what features of architecture prove its quality – is this beauty, utility or durability (Vitruvius)? As the years went by, people's views, visions and needs were changing, as well as their life habits, and therefore architecture evolved alongside. In the past, the durability of the architecture played a significant role – buildings were expensive, the construction process took many years – sometimes even hundreds – so no one could afford to allow buildings to lose their meaning. At the beginning of the 20th century, the utility of buildings gained significance along with modernistic ideas. A building had to meet people's needs and form followed function (the famous "form follows function" by Louis Sullivan). By the end of the 20th century, along with developing technology, modern materials and computer aided design, people started becoming fascinated with form and originality of buildings (post modernistic ideas) and utility was not as important as before. And how about now?

2. CONTEMPORARY CHALLENGES OF RESIDENTIAL ARCHITECTURE

Residential architecture plays a highly significant role because it meets people's basic and primal need, which is shelter from danger and other environmental factors. It is the most common form of architecture. The majority of buildings that surround us are residential buildings in which people spend most of their time. Therefore, residential architecture designers bear a huge responsibility. It seems that utility plays the most significant part in residential architecture. A residential building has to be designed in such a way that it fulfils the basic requirements of the inhabitant (to guarantee shelter, execution of basic activities such as sleeping, resting, eating, maintaining family relations, etc.). It has to be adjusted to the location in which it exists (daylight, location in relation to points of the compass, matching with existing buildings, shadowing adjacent buildings); made in accordance with the times in which it is developed (technological possibilities, economy of the solution, material ecology, people's current habits)[1].

Depending on the typology and scale of residential land development, architects have to cope with various issues or the same issues are of various significance and location. Detached houses are most often small and developed in agreement with an individual investor who will be the future occupant. The most common issues in single-family residential architecture are related to location (form and size of the land, location in relation to points of the compass, urban context (neighbourhood), landscape). Whereas multi-family houses are most often built without any participation of future occupants and the architect has to be able to design a structure which should be flexible and versatile to meet the

[1] M. Białko, *Housing needs of the contemporary societies,* [in:] przestrzeń i FORMA – scientific journal 17_2012 Publisher: Polish Academy of Sciences, Department in Gdańsk, Komisja Kształtowania Przestrzeni Polski Północnej, Faculty of Civil Engineering and Architecture, Institute of Architecture and Urban Planning, West Pomeranian University of Technology in Szczecin, Szczecińska Fundacja Edukacji i Rozwoju Addytywnego „SFERA", Szczecin 2012, p. 66–68 (retrieved from: http://www.pif.zut.edu.pl/pif19.php, date of access: 23.05.2016).

requirements of a wide group of people. Issues within multi-family residential architecture are related to: combining functions (residential and supplementary); location in town (in relation to other buildings, distance to the centre of the town); access of daylight to all flats and their ventilation; creation of an intimate area for occupants (distances from neighbour's windows, entrances to flats); identification with the flat within a large building; the necessity of ensuring parking spaces; fire safety issues (related to, e.g. evacuation of people from larger buildings of multiple levels).

Originality in terms of residential architecture can be reflected in the originality of form (e.g. type and method of using materials, non-standard shape of the building, non-standard details – windows, balconies, strange proportions, inspirations by forms which are not related to residential architecture), function (combining functions not matching to each other, untypical location of typical functions) or structure (using a structure which has never been used in residential typology, e.g. bridge structures, large spans, long supports) and also the originality of urban layouts (locations which are uncommon of residential architecture, innovative reinterpretation of the well-known urban systems).

3. RESIDENTIAL ARCHITECTURE BY MVRDV

This text analyses several residential buildings designed by the Dutch architects from the MRVDV group in order to see how the issues encountered during the residential architecture design process influence solutions which are original in terms of form, structure and functionality.

The Netherlands, as one of the smallest and most densely populated European countries, faces many problems, such as a high degree of urbanization, a high percentage of immigrants (especially from former colonies), high land prices, and small construction plots. The country's geographical location generates such conditions as proximity of water (constituting almost 20% of the whole area of the country) or flat terrain (over 25% of the country is located below sea level). Difficult conditions, being a country with a highly developed economy and high income per capita – all stimulate architecture in the Netherlands to create new trends and to look for out-of-the-box solutions to modern social issues and to be an example for other European countries[2].

The MVRDV architectural studio is one of the most renowned and awarded Dutch architectural offices. The executions of their residential solutions are extraordinary, and stand out from other designs with similar functions. MVRDV was founded in Rotterdam in 1993 by three Dutch architects: Winy Maas, Jacob van Rijs, and Natalie de Vries. The architects of this group combine practical design with a search for new architectural ideas and theories. For this purpose they created The Why Factory group[3]. Such an approach to designing and solving architectural problems allows them to be observed from various perspectives and to analyse them from various angles.

---

[2] M. Głuchowski, *Trends in forming of modern residential multifamily architecture on example of chosen realisation from Amsterdam*, Technical Transactions 7-A/2012, issue 29, year 109, Publisher of Cracow University of Technology, Kraków 2012, p. 48.

[3] www.mvrdv.nl

Ill. 1. Didden Village (photo: Szczegielniak A., 2008)
Ill. 2. Balancing Barn (retrieved from: www.mvrdv.nl, date of access: 23.05.2016)
Ill. 3. Mirador (retrieved from: www.mvrdv.nl, date of access: 23.05.2016)
Ill. 4. WoZoCo (photo: Szczegielniak A., 2008)

3.1. ANALYSIS OF SELECTED SOLUCTIONS

This article includes the analysis of the following residential buildings: three detached houses (Didden Village – flat redevelopment; Balancing Barn – detached house; Double House Utrecht – semi-detached house), three multi-family buildings (WoZoCo – gallery building with flats for elderly people; Silodam and Mirador – multi-family residential buildings of mixed typology) and multifunctional building with prevailing residential function (Market Hall).

Didden Village

Didden Village (ill. 1.) is a redevelopment of the flat in the form of a superstructure over an existing building in the centre of Rotterdam. The project was realized in 2006. Redevelopment was executed in the form of two small houses with inclined roofs surrounded by a balustrade. Two smaller combined houses contain children's bedrooms. The larger one contains the parents' bedroom and all of them are surrounded by a terrace with pots with greenery, benches and an external shower set. Everything is covered with layer of blue polyurethane[4]. All these things due to the composition of detached houses and streets between them make it look like a "village" on the roof. It is an interesting and original idea for intensification of land development in densely populated city centres. Such an approach to the urbanization issue shows that non-standard locations can be used for residential buildings by, e.g. trying to utilize unused roofs and creating a city inside the city. An additional advantage of such a solution is the proximity of the city centre which eliminates the necessity of owning a car and the availability of all media allowing the costs of erection to be reduced. Didden Village is characterized by an original form (village-like forms contrasting with urban location, intense colour) and an unusual location.

Balancing Barn

Balancing Barn (ill. 2) is a residential building in Suffolk, Great Britain purposed for holiday rent. It has the form of a simple building with a plan of elongated rectangle covered by a gable roof. The singularity of the Balancing Barn lies in its location. The plot on which it is located has a scarp and considerable difference in height. Half of the building rests on the higher part of the plot and the other half balances (hence its name) over the lower part of the plot. Such a special location enables the plot to be used in an optimal way and enables better contact with the surroundings. A person entering the building is located on the ground level and can observe the lawn, but when he enters the hanging part of the building, he suddenly finds himself on the first floor level from which he can the observe tops of trees. Moreover, a floor in the hanging part allows windows to be located in it. It provides the possibility of observing nature from all directions (windows in walls, roof windows and floor window)[5].

---

[4] *Ibidem*.

[5] www.mvrdv.nl

The façade was covered with aluminium sheet. It is a formal action which makes the traditional form of the house more modern and makes it original despite its simple shape. The surroundings are reflected in the shiny surface which automatically adopts their colours. Also, the structure of the building is original. The hanging part is light and the resting part is heavy and counterweights the former. This allowed supports to be dispensed with and leave the volume hanging over the ground.

Double House Utrecht

The Double House in Utrecht is an example of the semi-detached house. It is located in Utrecht suburbs near a street with a beautiful park[6]. Usually the semi-detached house is identified with lower standards. The shared wall is justified due to economic (lower costs of erection and usage) and urban (possibility of erecting two flats on one plot) factors, but the proximity of neighbours is an obvious disadvantage. The Double House is a building which breaks those stereotypes. It meets the requirements of two families, each flat is different and has a different plan (usually semi-detached houses are two identical flats which are a reflection of each other) suited to the individual needs of the householders. Both flats overlap – they interchangeably take up more space on different levels. Neither of these buildings could exist as a standalone object in this form. The original approach to the well-known semi-detached house resulted in a building with well solved function and visually attractive form.

Mirador

Mirador (ill. 3) is a multi-family building built in the years 2001–2005 in Madrid. The classic quarter system (a building with a square plan surrounded by a closed courtyard) was untypically located in the vertical plane (the building surrounds a "hole" in the façade). A centrally located patio became a large opening in the façade (original form and function) cropping the view of the Guadarrama Mountains and serves as a shared area for householders which helps to integrate[7]. Raising the building vertically has its economic justification due to the smaller area occupied within the plot. Communication areas inside the building have been highlighted with bright red. Red elevators, stairs, corridors and galleries form an interesting three-dimensional labyrinth (original form) and divide the large volume of the building into smaller parts. Various groups of flats were emphasized on the facade by various colours of lining, and sizes and composition of windows. The building looks like a collage made of many smaller structures. It does not overwhelm with its magnitude and enables householders to identify with it better (it is easy to find "your" window on the facade) and to have a stronger sense of affiliation. The composition and size of the perforations are not accidental – it was matched to particular flats (their depth, number and size of rooms, etc.).

---

[6] *Ibidem*.

[7] www.mvrdv.nl

Silodam

Silodam is a multi-family building built in the years 1995–2003 in Amsterdam, containing of 157 flats of various types, offices, service and public areas. The diversity of heights (flat heights vary between 2.7 to 3.6 metres and depth from 9 to 20 metres), types of flats (1, 2 or even 3 floors), and types of external areas (balconies, loggias, roof terraces, atria) are revealed in a diverse facade[8]. Flats of identical types were located next to each other, grouped and emphasized in the form of a particular facade material and windows (similarly as in the Mirador building). Dividing the building into groups of flats of similar function and structure facilitated staging of the construction process which was scheduled over several years. The building is neither proportional nor beautiful in the common meaning of the words. It looks like a pile of shipping containers, which is not typical for residential architecture, but perfectly suits the character of the place (original form)[9]. It is a "modern silo – a modern interpretation of the local, historical harbour"[10]. It is also probably a modern reinterpretation of the modernistic idea of Le Corbusier's "machine for living". The fact that the building is supported on piles in water (original location) enables the problem of a lack of area in densely populated city centres to be solved.

WoZoCo

WoZoCo (ill. 4.) is one of the most well-known buildings by the Dutch architects, built in 1997 in Amsterdam's Osdorp district. It contains flats suited to the needs of elderly people. The majority of flats (87) inside the building were designed in the form of units oriented on the south side and accessible from a glazed gallery located on the north. However, the investor wanted to create a building for 100 flats. The size of the plot made it impossible to enlarge the building by its length and urban regulations limited its height. The architects decided to "glue" the remaining 13 flats from the north side of the building in the form of hanging structures enabling the building to be oriented and lit from east and west[11].

A common architectural problem of lighting the flats with daylight and orienting the building in relation to points of the compass on a narrow plot was solved with the use of an atypical form. Due to a clever structural solution (truss supports), the hanging cubes of the additional flats seem to deny gravity. The facade was covered with wood cladding, while balconies of various sizes have balustrades made of colourful glass. The presence of large balconies enables elderly residents to spend time outside or growing plants[12]. Various colours on the balustrades give the possibility of identification with the building and make the elevation

---

[8] *Ibidem.*

[9] M. Galas, *The new space in the city,* Technical Transactions z. 15. Architecture z. 6-A, Publisher of Cracow University of Technology, Kraków 2008, p. 307.

[10] E. Szpakowska, *Narrative residential architecture,* Housing Environment Journal, title of the issue: „Dom i osiedle jutra" Part. 2, issue 12, 2013, p. 162.

[11] www.mvrdv.nl

[12] B. E. Gronostajska, *Playing with colours in senior architecture – removing barriers,* Technical Transactions z. 8-A 2015, Wyd. Politechniki Krakowskiej, Kraków 2015, p. 63–65.

look interesting and funny. The building not only meets investor's expectations, and creates a high quality residential space for elderly people, but also has a unique form.

Market Hall

Market Hall is one of the latest MVRDV projects. The building was commissioned in 2014. It is an original combination of residential and commercial function. The building is located in the very centre of Rotterdam next to the Blaak railway station, in a place where an open-air fair has taken place for many years. Changes in legal regulations forced the construction of roofs over places where meat and fish was sold for hygienic reasons. Therefore, the idea of creating a large roofed market hall has emerged. Flats were located in the external thick "wall" and they surround the hall from the sides and from above. Windows in rooms (living rooms and bedrooms) are directed outside. This guarantees sufficient lighting by daylight. The windows in kitchens, dining rooms and additional rooms are directed towards the market hall. This gives householders the possibility of observing life inside. The large ceiling of the hall was completely painted with plants, fruit and vegetables[13]. It is a great example of combining functions which do not match with each other (flats and retail) and an example of introducing flats to city centres in order to make land development denser and diversify its function. It also helps to prevent the emptiness of these areas in the afternoon and evening hours.

4. SUMMARY – UTILITY OR ORIGINALITY?

The structures designed by MVRDV are very original and have non-standard functional or material solutions. Based on the analysis of the examples presented in the article, it can be concluded that the originality of MVRDV's projects is not only the result of searching for formal or structural novelties or a desire to shock or surprise the viewer. Szpakowska states that MVRDV's buildings (e.g. Silodam) intrigue, attract, force to think, experience and have an element of tension[14]. Originality in the case of MVRDV is the result of searching for utility and the most suitable solution for design issues. Such architecture requires creative thinking, not getting into a routine, and searching for non-standard solutions. Problems and limitations resulting from external conditions should be perceived not as a design obstacle, but as an inspiration. Attempts to combine elements which do not match each other can result in creating a building which is both functional and formally intriguing. The architecture created by MVRDV is one answer to the needs of contemporary people, adjusts itself to local conditions, and possibly shows new paths of research.

Maria Misiągiewicz defines the originality of architecture as innovation, astonishing shape but also adjustment to a particular location[15]. Originality in architecture considered in this way seems to have a positive meaning and turns out to be contrary to repeatable, typical architecture

---

[13] www.mvrdv.nl

[14] E. Szpakowska, *Narrative residential architecture,* Housing Environment Journal, title of the issue: „Dom i osiedle jutra" Part. 2, issue 12, 2013, p. 162.

[15] M. Misiągiewicz, *Meandr of astonishment in modern architecture,* Technical Transactions z. 13. Architecture z. 6-A Publisher of Cracow University of Technology, Kraków 2007, p. 103.

made without thinking about wider analysis of reasons, needs or context. According to Krystyna Strumiłło the true value is in originality which is an expression of aesthetics, not a form which exists only to be surprising[16]. Original architecture is one which is not only a means of expression but which is an answer to the essential problems of today's world and is a result of searching for utility. Andrzej Tokajuk writes that a form without an idea will never be beautiful or original[17]. Originality allows the architecture to have a stronger impact, to be remembered, creates new ideas and is probably that which distinguishes architecture from construction engineering.

References

[1] Białko M., *Housing needs of the contemporary societies,* [in:] przestrzeń i FORMA – scientific journal 17_2012 Publisher: Polish Academy of Sciences, Department in Gdańsk, Komisja Kształtowania Przestrzeni Polski Północnej, Faculty of Civil Engineering and Architecture, Institute of Architecture and Urban Planning, West Pomeranian University of Technology in Szczecin, Szczecińska Fundacja Edukacji i Rozwoju Addytywnego „SFERA", Szczecin 2012, p. 301–322 (retrieved from: http://www.pif.zut.edu.pl/pif19.php, date of access: 23.05.2016).

[2] Galas M., *The new space in the city,* Technical Transactions z. 15. Architecture z. 6-A, Publisher of Cracow University of Technology, Kraków 2008.

[3] Głuchowski M., *Trends in forming of modern residential multifamily architecture on example of chosen realisation from Amsterdam*, Technical Transactions 7-A/2012, issue 29, year 109, Publisher of Cracow University of Technology, Kraków 2012.

[4] Głuchowski M., *Lasting and passing of architecture on the example of European realization of multifamily architecture residential*, Technical Transactions z. 14. Architecture 4-A2, Publisher of Cracow University of Technology, Kraków 2011.

[5] Gronostajska B.E., *Playing with colours in senior architecture – removing barriers,* Technical Transactions z. 8-A 2015, Wyd. Politechniki Krakowskiej, Kraków 2015.

[6] Misiągiewicz M., *Meandr of astonishment in modern architecture,* Technical Transactions z. 13. Architecture z. 6-A Publisher of Cracow University of Technology, Kraków 2007.

[7] Mozas J., Fernandez Per A., *Densidad – nueva vivienda colectiva / Density – new collective housing*, a+t ediciones, Vitoria-Gasteiz, 2006.

[8] Wojtkun G., *Standards of contemporary housing*, [in:] przestrzeń i FORMA – czasopismo naukowe 17_2012 Publisher: Polish Academy of Sciences, Department in Gdańsk, Komisja Kształtowania Przestrzeni Polski Północnej, Faculty of Civil Engineering and Architecture, Institute of Architecture and Urban Planning, West Pomeranian University of Technology in Szczecin, Szczecińska Fundacja Edukacji i Rozwoju Addytywnego „SFERA", Szczecin 2012, p. 301–322 (retrieved from: http://www.pif.zut.edu.pl/pif17.php, date of access: 23.05.2016).

[16] K. Strumiłło, *Originality of forms in modern architecture*, Technical Transactions z. 15 Architecture z. 7-A2, Publisher of Cracow University of Technology, Kraków 2010, p. 364.

[17] A. Tokajuk, *Beauty, originality, kitsch and second category aesthetics in contemporary architecture*, Technical Transactions R. 104, z. 6-A, Publisher of Cracow University of Technology, Kraków 2007, p. 442.

[9] Strumiłło K., *Originality of forms in modern architecture*, Technical Transactions z. 15 Architecture z. 7-A2, Publisher of Cracow University of Technology, Kraków 2010.
[10] Szczegielniak A., *„Why so serious?" – the joke as a means of expression in architecture*, Technical Transactions z. 13. Architecture z. 6-A Publisher of Cracow University of Technology, Kraków 2015.
[11] Szpakowska E., *Narrative residential architecture,* Housing Environment Journal, title of the issue: „Dom i osiedle jutra" Part. 2, issue 12, 2013.
[12] Tokajuk A., *Beauty, originality, kitsch and second category aesthetics in contemporary architecture*, Technical Transactions R. 104, z. 6-A, Publisher of Cracow University of Technology, Kraków 2007.
[13] www.mvrdv.nl (date of access: 23.05.2016).