

BEATA MAKOWSKA

ORCID: 0000-0002-1221-9216

Cracow University of Technology, Poland

RENZO PIANO'S PROJECTS – HUMANISM AND AVANT-GARDE

PROJEKTY RENZO PIANO – HUMANIZM I AVANGARDA

Abstract

The paper analyzes selected design projects by Renzo Piano, which in an innovative way respond to changes in the world and ecological problems. The aim of the work is to emphasize the significance of Piano's work, who managed to create his own language in architecture, which understands the current needs, as well as people's desires and dreams. The research results justify the conclusions that his projects express avant-garde ideas and they are an attempt to create better buildings and places to live.

Keywords: avant-garde in architecture, humanism in architecture

Streszczenie

Praca analizuje wybrane realizacje Renzo Piano, które w nowatorski sposób odpowiadają na zmiany zachodzące na świecie i problemy środowiska. Celem pracy jest podkreślenie znaczenia twórczości Piano, któremu udało się stworzyć własny język w architekturze rozumiejący współczesne potrzeby, ale także pragnienia i marzenia ludzi. W wyniku badań wyciągnięto wnioski, że jego realizacje są nośnikiem awangardowych idei i próbą tworzenia lepszych budynków i miejsc do życia.

Słowa kluczowe: awangarda w architekturze, humanizm w architekturze

1. INTRODUCTION

Renzo Piano, born in 1937 in Genoa, is one of the leading architects, who constantly influences contemporary architecture. The architect combines modern technology and art in his creative work, he also follows new discoveries in science. Being highly open-minded and daring in putting innovative ideas into practice, he is characterised by humanistic approach in design and avant-garde thinking.

The Renzo Piano's projects are discussed in several publications. The architect is the author of two books devoted to his works – the first one published in 2017, entitled *Renzo Piano. The Complete Logbook 1966–2016*¹ and the second one published in 2004 entitled *On Tour with Renzo Piano*². He presents there the most important design ideas of his buildings (Renzo Piano Building Workshop).

¹ R. Piano, *Renzo Piano: The Complete Logbook 1966–2016*, Thames and Hudson, London 2017.

² Idem, *On Tour with Renzo Piano*, Phaidon, London 2004.

The series of the books concerning Renzo Piano's projects were also written by Peter Buchanan³. Another author of publication devoted to his works, entitled *Piano. Complete Works 1966–Today*⁴ published in 2021, is Philip Jodidio. There are also publications presenting specific Piano's projects, incl. *SNFCC in Athens Fri. Chaos and Culture: Renzo Piano Building Workshop and the Stavros Niarchos Foundation Cultural Center in Athens*⁵, written by Victoria Newhouse. Preliminary sketches of the SNFCC project, photos of models, technical documentation, photo documentations of construction stages, as well as photos of the completed project and its details are presented in this book.

This paper analyzes selected design projects by Renzo Piano, which in an innovative way respond to changes in the world and environmental problems. The aim of the work is to emphasize the significance of Piano's work, who managed to create his own language in architecture, which understands the current needs, as well as people's desires and dreams.

The adopted traditional research method (literature research, study of photographs, *in situ* research of selected buildings) made it possible to present major buildings and carry out a comparative analysis (6 significant objects built in the period 1972–2021). The examples of projects were selected in order to illustrate his avant-garde and humanistic approach to design.

2. AVANT-GARDE – MODERN TECHNOLOGIES AND WAY OF THINKING

The process of identification of design concepts led Renzo Piano to apply innovative technologies. Every single project was unique, the architect shaped building in an individual and ingenious way.

One example of the innovative technology is the Pompidou Centre (project by Renzo Piano and Richard Rogers, 1972–1977), which like an alien spaceship landed in the heart of Paris. The steel structure in this project has ensured visual and structural unity. It emphasizes the function of the building – open to everyone cultural center, which has nothing to hide (Ill. 1–3). The characteristic Beaubourg structure makes use of the *gerberettes*, which perform the role of supporting beams – “This massive, visible set of structural components removes the requirement for internal support and thus enables the creation of huge open spaces”⁶. The outside row of columns in the building, rather than having to hold up the trussed beam, instead hold the *gerberette* down, becoming tension ties. The weight of the floors is transferred to the outside of the structure and slender diagonal cross bracing increases its lateral stability. The purposeful use of double boom beams was to extract visual effects. Cast steel was used with full awareness of the role of space between elements. The structure introduces light to the interior and exposes connectors and size of the individual elements.

³ P. Buchanan, *Renzo Piano Building Workshop*, vol. 1, Phaidon, London 1999; *idem*, *Renzo Piano Building Workshop*, vol. 2, Phaidon, London 1999; *idem*, *Renzo Piano Building Workshop*, vol. 3, Phaidon, London 2000; P. *idem*, *Renzo Piano Building Workshop*, vol. 4, Phaidon, London 2007.

⁴ P. Jodidio, *Piano. Complete Works 1966–Today*, Taschen, Köln 2021.

⁵ V. Newhouse, *Chaos and Culture: Renzo Piano Building Workshop and the Stavros Niarchos Foundation Cultural Center in Athens*, Monacelli Press, New York 2017.

⁶ <http://www.rpbw.com/project/centre-georges-pompidou> (access: 24.05.2022).

Piano's projects provide also good lighting for the interiors of the buildings in modern and innovative way. A building which perfectly illustrates this aspect of his work is the Menil Art Collection Museum in Houston (project by Renzo Piano, 1980–1986). The investor wanted the collection of artworks to be admired in natural light – “with all its shifting moods through the day and season. To this end, a special ‘solar machine’ was built with Ove Arup and Partners, to evaluate the light’s behaviour at various angles, the mechanics of the multiple refractions, and options for the filtration of UV rays”⁷. An optimum profile of the roof was created, ensuring limited access of daylight ‘moving along’ in the interiors. What was also important to achieve was the elegant shape of the recurring construction element and the grainy and delicate texture of the surface as well. The roof above the profile was made of glass. The surface of bright profiles reflects light, which prevents it from falling directly on paintings, and thus potentially causing damage. The concepts of the project was to consciously control the availability of natural light to appreciate the true colours of paintings and the textures of sculptures. Works of art which are not currently on display are stored at the basement level in complete darkness.

An innovative approach and a way of thinking are also visible in the Science Museum in Amsterdam (designed by Renzo Piano RPBW, 1992–1997) – Nemo (New Metropolis Science and Technology). The building has a ship shape with the oxidised green coloured copper cladding and it is situated in the old port area (Ill. 3–6). It is an educational place for children and teenagers, as well as a space for interdisciplinary exhibitions, film screenings and performances. The interior of the building is frugal and simple. It emphasises the viewers’ attention mainly on the exhibited works. Natural light penetrates the open central space of the building due to its proper orientation⁸. The observation deck facing the city is situated on the roof of the museum. The interactive structures are installed there, which interact with wind, sunlight and water. The visitors can experience and observe the laws of physics in practice in this museum. The innovative and fun NEMO Museum’s form attracts the attention and curiosity of young people.

3. HUMANISM – AN ATTEMPT TO CREATE BETTER BUILDINGS AND PLACES TO LIVE

The Pompidou Centre in Paris, previously mentioned, was supposed to be a building open to everybody and a ‘living’ structure. According to Piano, cultural buildings should arouse people’s curiosity and not overwhelm them. Thanks to its structural flexibility, the user becomes an important participant and an actor in the mutable space of the building. This is a proof of the architect’s deeply humanistic intention. The nearby square is a meeting place for those who wish to observe dancers, performing against the background of the facade of the building, reminiscent of a huge screen. On the other hand, observing people moving within the Pompidou Centre becomes in itself a sort of performance for the onlookers at the square. An important aspect of Piano’s works is designing buildings that foster the creation and integration of human communities.

The Stavros Niarchos Foundation Cultural Center SNFCC in Athens (project by Renzo Piano RPBW, 2009–2017) is another interesting complex built to improve people’s quality of

⁷ <http://www.rpbw.com/project/the-menil-collection> (access 24.05.2022).

⁸ <http://www.rpbw.com/project/nemo-national-center-for-science-and-technology> (access: 24.05.2022).

life. The architect designed here also a park on the roof, which establishes a spatial dialogue with the Acropolis hill. SNFCC becomes a social focal point of the local community, bringing its cultural and health benefits. It is one of the leading examples of projects where environmental sustainability is assured across three levels: design and construction, operation, positive effect on the local ecosystem and social welfare (Ill. 7–9). Thanks to these advantages it received prestigious LEED Platinum certificate. The ecological aspects of sustainability performed in the SNFCC contribute to improvement in the quality of air, the renewal of biodiversity and also stability of the climate in the neighbourhood. The high-quality buildings and park contribute to the improvement of the quality of urban space and of residents' lives⁹. It also contributes to the increased value of the neighbouring areas in the Kallithea district and its revitalization. According to Renzo Piano's belief, the beauty of plants and architectural form have the therapeutic power for visitors of the park and SNFCC. The sports activities organized here contribute to the improvement of human health and help to promote a healthy lifestyle. Area restoration, solar panels and water efficiency are some of ecological aspects of this project. SNFCC's sustainable development strategy is also to educate and raise awareness among visitors. This interdisciplinary project plays an important role in popularizing the cultural and natural heritage of Greece. It tells a story about the identity of the people living in this area¹⁰. The multifunctional park is designed to create a deep link between nature and society according to urban political ecology.

Similarly, the construction of a new skyscraper in London aims to revitalize the Southwark district near the banks of the River Thames. The Shard (designed by Renzo Piano RPBW, 2004–2012) refers to the typical elements of old London's panorama – a mast of a historic ship or a soaring tower. The word 'shard' in English means a piece of broken glass, metal or stone with very sharp edges. It is a very appropriate name because the form of the building consists of eight glass parts, which reflect light in various ways. Innovative two-layer, naturally ventilated facades with internal blinds were developed here. They react automatically to outside changes in light intensity. The building is 310 meters high and has 73 floors, where house offices of prestigious companies, luxury apartments and commercial facilities are located. Taking care of the residents' comfort, a swimming pool, as well as restaurants, viewpoints and winter gardens have been designed there. Natural ventilation of winter gardens is ensured by opening vents located in the gaps between individual parts of the building. This intense and sustainable building development relies on the proximity of public transportation. It discourages individual car use and helps to reduce traffic congestion in the city¹¹.

4. ORIGINAL LANGUAGE IN ARCHITECTURE

Renzo Piano creates timeless nature of structures. His approach to design is characterized by a profound exploration of a problem, understanding of *genius loci*, search for new solutions and experiments with materials. The architect's projects are characterized by sensitivity to

⁹ B. Makowska, *Practical Functioning of a Sustainable Urban Complex with a Park – the Case Study of SNFCC in Athens*, Sustainability, 2021, No 13 (9), pp. 1–24.

¹⁰ <http://www.rpbw.com/project/stavros-niarchos-foundation-cultural-center> (access: 24.05.2022).

¹¹ <http://www.rpbw.com/project/the-shard> (access 24.05.2022).

existing architectural values and local tradition as well as combination of traditional materials with modern technology. Piano designs beautiful and useful forms for people and he is an animator of social progress. According to the rules of humanism, he creates spaces where people celebrate the community. Giving a unique meaning to the designed spaces is extremely valuable for local communities. The common places – *topos* (*tópos koinós* in Greek) – thanks to their elusive values become important for people¹². Surrounding buildings are full of visual and poetic inventiveness – they are a play with light, water and transparency. The architect's intention is building beauty that makes cities better places to live – “Universal beauty is one of the few things that can change the world... This beauty will save the world, even one person at a time”¹³. Apart from searching for the elusive beauty, his designs are also useful – they are significant elements of local communities responding to their needs. For Piano, it is important that the building ‘lives’, has a long-term future and serves for next generations. The buildings are also a part of a larger composition of space and cities, they take advantage of its beautiful views in designed interiors. That is why they often have viewing terraces, which optically connect interiors with the surroundings. They do not overwhelm the existing architecture with their scale and do not obscure the green areas. When building in a historic city, an architect can't change too much. According to Piano, changes should be made gradually – “Cities, especially the old ones, are like human bodies, they are very sensitive and they can be easily hurt. You have to change them with their own potential and their inner energy. It is an extremely delicate operation and I love to work in such atmosphere”¹⁴. Careful understanding of a place (*topos*) and people's needs makes his projects the humanistic forms. The architect's constant readiness for changes in the design process allows people to submit their comments during the construction and correct errors. Public participation is an important aspect of his work's method – “You cannot be an architect without constant and humble research of reality, without talking to people who will live in a specific place. The building is not an ornament – it conducts a constant dialogue with the surroundings. You have to pay attention to this scenery”¹⁵. Piano is intimately involved in each stage of the building's development – from its concept and masterplan to its construction and details.

The architect believes that his work lacks any repeatable distinctive features, and that each project is a separate problem that requires a practical solution and individual approach¹⁶. Although it is difficult to clearly define the style of Renzo Piano, Peter Buchanan called Piano's attitude towards technology and his continuing evolution during design process natural architecture¹⁷. It is also characterized by broad range of innovation – technological, material (testing prototype elements) and sustainability. This innovation was possible thanks to fruitful cooperation with many outstanding specialists. In 1971, Piano founded the Piano & Rogers studio with Richard Rogers, he also cooperated with the best constructors, including Ove Arup and Peter Rice – Renzo Piano compares working with him to a continuous game

¹² V. Newhouse, *op. cit.*, pp. 54–57.

¹³ *Renzo Piano – rzemieślnik i artysta*, Rozmowa z Renzo Piano, Sztuka architektury, 1.01.2000, <https://sztuka-architektury.pl/article/4719/rzemieslnik-i-artysta> (access: 11.05. 2022).

¹⁴ *Ibidem*.

¹⁵ *Renzo Piano: włoski geniusz nowoczesnych technologii*, Westwing, <https://www.westwing.pl/inspiration/trendy/architekci/renzo-piano/> (access: 11.05.2022).

¹⁶ R. Piano, *Renzo Piano: The Complete...*

¹⁷ P. Buchanan, *Renzo Piano Building Workshop*, vol. 2, Phaidon, London 1999, p. 210.

of ping-pong and to guessing-games¹⁸. In 1981, the famous Renzo Piano Building Workshop RPBW was founded, which has branches in Paris, Genoa and New York.

Piano is an architect who knows the permanent value in architecture. He creates works that attract attention and will last longer with people. His undefinable style is characterized by both pragmatism and idealism. According to Piano, architecture is the most idealistic field of human activity, because it concerns people, dreams, utopias and changing the world. It encompasses both science, technology, geography, typography, anthropology, sociology, history and art as well. This multiplicity of fields makes architectural creativity a very complex process. Creating good and durable buildings is also a way of telling a story.

The architect believes also that there are many similarities between architecture and music –

They seem so distant – the first one is the most physical of all arts, the other one – the lightest and most immaterial – but they are very close in the sense that both music and architecture to a great extent depend on discipline, order – sometimes even geometric – and they stick to this order. And although you sometimes go against this order and break it, you still need it.¹⁹

The relationship between architecture and music presents the Auditorium building – Parco della Musica in Rome (designed by Renzo Piano RPBW, 1994–2002). A complex of three auditoriums centered around the inner courtyard of the amphitheatre were designed here. The largest of the halls – Sta Cecilia – can accommodate over 2,500 people, and the amphitheatre – about 5,000. The auditoriums are located in characteristic ‘beetles’, which are covered with metal, interlocking plates made of glued laminated wood²⁰.

5. SUMMARY

The research results justify the conclusions that the design projects by Renzo Piano are a medium of avant-garde ideas and an attempt to create better buildings and places to live. The awareness of contemporary ecological problems forced the necessity to use high-quality modern technologies in buildings designed by Renzo Piano Building Workshop. Sustainable forms and spaces are appreciated by people and professional juries. Piano’s constant curiosity, his perseverance and need to experiment during the design process are great values and abilities to respond to contemporary challenges. The architect’s work seems extremely important, constantly avant-garde and relevant in our times.

¹⁸ K. Barry (ed.), *Traces of Peter Rice*, The Lilliput Press, Dublin 2017, p. 24.

¹⁹ *Renzo Piano – rzemieślnik i artysta, op. cit.*

²⁰ <http://www.rpbw.com/project/parco-della-musica-auditorium> (access: 24.05.2022).



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Ill. 1–2. The Pompidou Centre in Paris – view from the Eiffel Tower (photo by the author, 2009).

Ill. 3–6. The Museum of Science in Amsterdam (photo by the author, 2012).

Ill. 7–9. The SNFCC in Athens (photo by the author, 2019).

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Author's Note

Assoc. Prof. Beata Makowska, PhD, DSc, Arch.

She completed studies at the Faculty of Architecture of Cracow University of Technology. Since 1989 she has worked at the Division of Drawing, Painting and Sculpture at the Faculty of Architecture CUT. In 2003, she received her Doctorate degree in the science field, in 2016, she has prepared her habilitation thesis. She has published two monographs and over hundred articles in peer reviewed journals and proceedings (including 21 abroad conferences). The research topics of the publications concern architecture from the turn of the 19th and 20th centuries and the period of modernism, arts in architecture and architectural drawing. She showed her drawings, paintings and photos at several individual exhibitions in Krakow and at sixty collective exhibitions (including 26 foreign exhibitions).

bmakowska@pk.edu.pl