

MACIEJ OLENDEREK\*

# FROM INTUITIVE TO RATIONAL DESIGN FROM THE END OF THE 20<sup>th</sup> CENTURY AND INTO THE 21<sup>st</sup> – A FEW OBSERVATIONS FROM AN ARCHITECT’S PROFESSIONAL AND TEACHING EXPERIENCES

---

## OD PROJEKTOWANIA INTUICYJNEGO DO RACJONALNEGO NA PRZEŁOMIE KOŃCA XX WIEKU I POCZĄTKU WIEKU XXI – KILKA UWAG Z PRAKTYKI ZAWODOWEJ I DYDAKTYCZNEJ ARCHITEKTA

### Abstract

The contemplations of a professional architect, teaching the ethics of the occupation, how to qualify creativity, is only a rational look at the process of building space possible? On the basis of forty years of experience, the author contemplates the selected notable international style architects: Frank Lloyd Wright, Ludwig Mies van der Rohe, Zaha Mohammed Hadid and Jean Nouvel. Modern commercialization and the necessity for compromise can only be regarded as rational actions. The current economic opportunism seems to be particularly reprehensible in architecture. Popular parametric design is in a sense intuitive activity of the electronic “brain”, only becoming realistic through the filter of experience. Intuition is something beautiful and unique – architecture should be the same. Intuition is treated more often as something from the borders of faith and magic than an evolved skill of the brain.

*Keywords: intuitive design, rational design, architecture*

### Streszczenie

Rozważania architekta-praktyka, nauczyciela etyki zawodu, o tym, jak kwalifikować twórczość – czy możliwe jest jedynie racjonalne spojrzenie na proces budowania przestrzeni? Na podstawie czterdziestoletnich doświadczeń autor rozważa drogę twórczą wybranych wybitnych przedstawicieli zawodu, reprezentantów stylu międzynarodowego: Franka Lloyda Wrighta, Ludwiga Miesa van der Rohe, Zahy Mohammed Hadid i Jeana Nouvela. Drogę polegającą na kierowaniu się wskazaniem intuicji, a przez doświadczenie dochodzeniu do racjonalnych trafnych rozwiązań. Współcześnie komercjalizacja i konieczność podejmowania kompromisów dają się jedynie określić jako działania racjonalistyczne. Obecny koniunkturalizm wydaje się być w twórczości architektonicznej szczególnie naganny. Cieszące się popularnością projektowanie parametryczne to w pewnym sensie intuicyjne działanie „mózgu” elektronicznego, jedynie przez filtr doświadczenia podlegające racjonalistycznemu urealnieniu. Intuicja przecież jest czymś pięknym, niepowtarzalnym i architektura taka być powinna. Częściej traktowana jako obszar z ograniczania wiary i magii niż kreowana w toku ewolucji zdolność mózgu.

*Słowa kluczowe: projektowanie intuicyjne, projektowanie racjonalne, architektura*

---

\* Ph.D. Arch. Maciej Olenderек, Department of Architecture and Urban-Planning, The Faculty of Civil Engineering, Architecture and Environmental Engineering, Technical University of Lodz.

Designing is an activity based mostly on instinctual and intuitive reactions of our brain. These activities depend on rational analysis – an involuntary reaction, evolved during the development of our species. Intuition is an ability, which correlates subjective and objective view of the surroundings – acting outside of time. Our consciousness connects the past, present and future at the same time. The designing architect achieves inspiration and revelation, acting in a perfect world. It is where he finds all answers to the creative process. All of us could quickly synthesize problems with establishing function or searching for shapes. Thanks to intuition, as architects, creators of space, we can go forward, to new shapes, drawing inspiration from outside of time and place. Similar issues take place during deciding space while designing. Thanks to our intuitive perception of the world, we can find answers and information which are difficult to explain empirically. Having intuition provides subconscious answers, which due to previous experiences may not seem logical, but after an in depth analysis prove to be accurate. All of these effects are gained due to our patience, faith in our strengths, concentration or diligence. Intuitive design was especially evident between the 19th and 20th centuries. In order to maintain the “shape sensibility” even today, we must focus on our visions, adapt our activities, mindset and behaviour. Experience gained during years of practice should be treasured. Another project will allow the designer to develop and take another creative step, realized thanks to imagination, intuition, which is timeless and contains both past and future. Currently, the overwhelming number of styles, trends and philosophies of various designers as well as many answers requires a plan. As creators, we instinctively feel we don’t have to follow the plan closely, or it would limit our creative acts and hamper the flow of creative energy. Following our intuition will allow us to act creatively in every direction. Situations pushing us towards our goals are especially evident during competition or working with students on open creation. We avoid routine, mechanical actions. The brightest architects of the 19th and 20th centuries used intuition. I propose to review the actions of selected space creators: Frank Lloyd Wright, Mies van de Rohe, Zaha Hadid and Jean Nouvel. Let us investigate their careers – from their beginnings as young architects to many years later when they gained experience.

Frank Lloyd Wright was characterized by two maxims: *Architecture is the triumph of human imagination over materials, methods, and men, to put man into possession of his own Earth. It is at least the geometric pattern of things, of life, of the human and social world. It is at best that magic framework of reality that we sometimes touch upon when we use the word order.; Every great architect is – necessarily – a great poet. He must be a great original interpreter of his time, his day, his age*<sup>1</sup>. He started as a self-taught man, a genius student. As an assistant at a design studio, when drawing his space ideas he relied heavily on intuition until the end of his career. First at Madison High School and then at the University of Wisconsin – he took two terms in Ground Engineering. In Chicago, Wright was hired as a draftsman. One of the articles from “Look” magazine describes a situation in 1957, when Wright had to testify in court as a witness, he called himself “the greatest living architect in the world”. He had this right – having designed in his 70-year-long career over a thousand wonderful objects – from which many became canonical in the world’s architecture. His “organic architecture” philosophy promoted buildings in harmony with the environment. He promoted simplicity in structure and decoration as well as the exhibition of the true material properties, according to their usage. Wright did not shy from decoration but used nature as inspiration. He regarded

---

<sup>1</sup> [www.theartstory.org/artist-wright-frank-lloyd.htm](http://www.theartstory.org/artist-wright-frank-lloyd.htm)

himself as the main if not the only one modern architecture practitioner. At every occasion he discussed with Le Corbusier and Walter Gropius (creators of the international style in Europe), whose creations he regarded as derivative instead of innovative. One of his greatest designs is the Larkin Company Headquarters. Built in the middle of an industrial complex, situated around a large rectangular gallery atrium, which surrounded it like a gothic cathedral space. He hated historic styles, even though the building was described as a work temple, with simple space divided with columns providing a feeling of clarity and enlightened order. The illumination from the upper skylight transforms the interior into an ethereal, spirit raising place. All of his beautiful shapes were created with intuitive research. Rational design was used to create a method characteristic of his creative personality. Rationalism is used in his design for mathematical calculations to defend innovative ideas. He never shaped his visions mechanically – he saw every project individually – as well as the design process, location or functional problems, drawing from nature and the surroundings. The beauty created by Wright are unique shapes and spatial plans, always coming from his intellectual, intuitive potency. It is good to remember, that during his best years, there was no computer aided design, which mostly robbed us of modern ways of identifying truly independent artists.

Another creator and representative of the international architecture, a declared modernist is Mies van der Rohe. His creative road is dealing with the building structure, to achieve full clarity and simplicity. Born in Germany, he was educated in Gewerbeschule (Aachen). He worked for an influential architect, Peter Behrens, who taught Le Corbusier. After World War I he returned to work and he made his debut with a vision of a glass skyscraper, during the 1921 competition. He was a member of a radical artistic organization, the Novembergruppe and later he joined the Bauhaus movement. He broke the old face of architecture, by creating constructions which were called a “modern miracle” – glass, metal and stone, such as the Barcelona Pavilion for the 1929 International Expo in Barcelona, Spain. At the end of the 1930s Mies emigrated to The United States, where he built many known modernistic wonders, such as: Lake Shore Drive Apartments or the Seagram Building. We are still in awe of his timeless creations because of his design philosophy: *I have tried to make an architecture for a technological society*, he told the *New York Times*. *I wanted to keep everything reasonable and clear—to have an architecture that anybody can do*<sup>2</sup>. Two representatives of the 20th century – Zaha Hadid, a genius and unique person in the circle of the European architecture and Jean Nouvel, a French architect. Why are they so essential in discussing whether intuitive or rational architecture is the best choice? They have a gift of combining these two approaches to create wonderful buildings and complexes.

Zaha Hadid was an Iraqi-British architect, who became the first Arab woman to be awarded the Pritzker Architecture Prize. Considered a pioneer in modern avant-garde architecture. Born in Baghdad, she studied mathematics at The American University of Beirut, before moving to London. She became a British citizen and started her own architectural practice, which was very successful. Her innovative designs and experimentation with shapes was highly recognized around the world. Her first awarded designs, theoretical works and distinctive graphics greatly influenced the architectural avant-garde. Her love was mathematics and the ability of logical arrangement of reality was her hallmark. This rational design was not devoid of intuitive, based on experience, Arabic view of the shape. She said that the right

---

<sup>2</sup> [www.biography.com/people/ludwig-mies-van-der-rohe-9407940](http://www.biography.com/people/ludwig-mies-van-der-rohe-9407940)

context to receive her works is feminism. However, our subconscious never forgets shapes that we lived or we still live around and can be seen in designs, which is beyond our control. In 1994 her design – for the Cardiff Bay Opera House in Wales – was selected. This made her famous but the building was not approved for construction. She created many wondrous buildings, interiors or industrial shapes, always using algorithms to achieve the best effect. She also worked as a professor at the Universitat für Angewandte Kunst in Vienna as well as Columbia University. Her last works were strongly shaped and adapted to the surroundings. However, near the end of her life, she tried to design outside of the computer. She always sketched her visions, but the final works point at the help of electronic brains. The fascination with the intuitive process remained till the end of her career.

Jean Nouvel on the other hand is consumed by visions of new ideas and testing the borders of accepted standards. He claims that the past should be investigated and used, should connect modern technology with modernism and decorative tradition. The architect tries to find the missing space module in every design, treating the context not only as a copy but as a supplemented contrast – with the wind, sky colour, trees. He claimed that the building doesn't have to be beautiful – context and light are most important. These two main aspects of his designs were subconsciously absorbed from the architecture and landscape in the south of France, where he grew up. He claims, there is no a priori style, there is interpreted context, culture, place, program and client. To create a building for an architect requires finding contrasts and structures, which will create spaces. Merging pure art with utility is a habit after spending time among theatrical and movie scenography. In “El Croquis” in 2002 he said: *Scenography for me is a relation between objects* – therefore a crucial part of architecture. Architecture and movie art are closely related in his work, since they are defined in the time and movement dimension. His career starts after a won competition, which gives him access to studying without the entrance exam, which proves using intuitive architecture. After finishing his studies, he designs scenography for the Paris Biennale (for 15 years), he acts through the intuitive power of the intellect. Like Zaha Hadid, he also wins the Pritzker Architecture Prize. His design for the Barcelona Torre Agbar skyscraper – an excellent example of high-tech architecture – draws the eye with its uncommon, dynamic silhouette. It is a mix of intuitive design, experience and subconscious use of the existing Barcelona patterns (Antoni Gaudi) as well as the rational approach of a genius architect, searching for the newest solutions to fulfill the client's program. Nouvel acted in a similar manner in Paris or Vienna.

The examples of these four great architects provide us with a view of designing from the turning point of centuries to the next computer revolution of the beginning of the 21st century. They present designing full of vision and intuition, without which we would be condemned to become a machine. Designing with intuition we are given answers to many construction problems. Intuition keeps sending us information, always guiding us to a better road, what to do to focus on the best solution, to open new design possibilities. This ability is gained from the culture we were brought up in, which our brain learned subconsciously. Many inventions came to be due to this ability: radio, electric light, television. Our intellect can logically connect facts and phenomena, just as intuition acts quickly and spontaneously. Philosophers claimed that because of intuition we can see the real truths – not only mathematics – but morality as well. During university teaching, just like in the workroom, leading new architecture adepts, we try to teach them to “train” and develop intuition through honesty, cooperation and their own experiences. With this method the “eureka” effect often takes place, which causes positive emotions

from the joy of creation. However, intuition is based on general examples from our past – we usually do not trust new visions, since the brain does not believe in the unproven. Using this experience wisely on the other hand, will provide us with a fresh look at the design. When we gain basic data about new project, the brain searches and connects various pieces of information – this takes place outside of the consciousness. If he finds the correct solution, we think we have it at the tip of the tongue. It must of course move to our consciousness to put it on paper. This requires to trust our intuition, using the full “force” of the brain – to trust Descartes’ conviction in the independence and self-reliance of the mind in search of the truth. He wrote in *The Discourse on the Method: The most widely shared thing in the world is good sense, for everyone thinks he is so well provided with it that even those who are the most difficult to satisfy in everything else do not usually desire to have more good sense than they have...*<sup>3</sup>. This approach is connected to egalitarianism, which recognizes the cognitive subject and the way to true solutions on equal terms. If we were only guided by knowledge from the mind, our future would not be much different than our past. Therefore, a rational design process must take place as well. It also gives us almost endless creative possibilities. Guided by the maxim of Stefan Żeromski: *Good stands higher than beauty*, we achieve the effect of magnificent architectural vision supported by economic logic. After using intuition to “analyse” the design topics, we decide to make our visions real with rational design, with the help of computer “brains”. Rationality concerns not the results but our decisions. An important advantage of such a design process, apart from the ability to define needs, is management – from best to worst. Utility is one of the most important qualities in designing. Ethics demand to protect society from nonsense and falsehood. Rational design does not recognize dogmas or authority, therefore authors have a freedom to search for new creations. This is how Edgar Morin and Anne Brigitte Kern define rationality: *True rationality is open to a dialogue with the resisting reality. Like a pendulum it functions endlessly between logic and empirical experience; it is the result of debate, not an attribute of the idea system. The mind which ignores the existence of subjective emotions, life – is irrational. One must be aware of the importance of myth, feeling, love, remorse, which should be treated rationally*<sup>4</sup>. There are the so-called “masters” among rational thinkers, who in their own minds are the oracle, the source of the only and true knowledge. They do not accept any polemics, advice or discussion. It is a very dangerous trait, emerging from years of experience, achievements and stature. They often destroy, with the aid of the country, the development of new talents. A true rationalist demands dialogue, criticism, confrontation of arguments. Without such valuable attitudes, our culture will be in a serious crisis. After all, according to Protagoras from Abdera: *The useful truth is higher*<sup>5</sup>. To sum up, there is a need for coexistence of various design methods. The idea is born in the head and instinctively first sketches of the project take place. Later help comes from the inborn gift of creating, with all kinds of extrasensory experiences. Rational focus on the other hand, helps us to create the best solution for the society. In the end, using the newest technology, we have almost the best solution. Let us not design according to “piecework”, this negative phenomenon that is popular nowadays. In order to achieve a unique creation, certain qualities are always needed: calmness, intellectual approach to beautiful shape and its utility.

---

<sup>3</sup> R. Descartes, (Kartezjusz), *Rozprawa o metodzie*, Fundacja Nowoczesna Polska, reprodukcja cyfrowa wykonana przez Bibliotekę Narodową z egzemplarza pochodzącego ze zbiorów BN.

<sup>4</sup> [https://pl.wikipedia.org/wiki/racjonalizm\\_swiatopogladowy](https://pl.wikipedia.org/wiki/racjonalizm_swiatopogladowy)

<sup>5</sup> [www.retoryka.cdu.pl/files/far3\\_art](http://www.retoryka.cdu.pl/files/far3_art)

## References

- [1] Bosoni G., *Jean Nouvel architecture and design*, Skira, New York, 1998.
- [2] Descartes R., (Kartezjusz), *Rozprawa o metodzie*, Fundacja Nowoczesna Polska, reprodukcja cyfrowa wykonana przez Bibliotekę Narodową z egzemplarza pochodzącego ze zbiorów BN.
- [3] Kotarbiński T., *Myśli o dobrej robocie*, Biblioteka Towarzystwa Krzewienia Wiedzy Praktycznej, Ludowa Spółdzielnia Wydawnicza, Warszawa 1962.
- [4] Mertins D., Schumacher P., *Zaha Hadid*, Guggenheim Museum, New York, 2006.
- [5] Rada Architektów Europy, *Europa i architektura jutra*, Stowarzyszenie Architektów Polskich, SARP, Warszawa 1998.
- [6] Schulze F., *Mies van der Rohe. A critical biography*, University of Chicago, 1985.
- [7] Secrest M., *Frank Lloyd Wright Biography*, University of Chicago, 1992.