

KLAUDIUSZ FROSS¹

DUBAI – MODERN ARCHITECTURE AS AN EXPRESSION OF ECONOMIC SUCCESS

DUBAJ – NOWOCZESNA ARCHITEKTURA WYRAZEM SUKCESU EKONOMICZNEGO

Abstract

The topic of the chapter is expert observational and qualitative research in the field of contemporary architectural objects in Dubai, implemented by the author in September 2018. Dubai is an unusual place associated with the desert. Looking at what has happened in the last few decades in Dubai, it can be said that nothing is impossible. An enormous civilizational leap has taken place in the Arab Emirates. There, you can see how good financial prosperity and prestigious architecture go hand in hand. Dubai is a place where economic success is expressed in construction and architecture. The number of new facilities is unusual and impressive. Many innovative ideas have been created here. The king of buildings is still the world's highest Burj Khalifa (828 m). But, as we know, it is not the end of challenges that the authorities and investors in Dubai are taking. Currently, there is an even higher Creek Tower (1,350 m). Thus, according to the author, Dubai can now be called the world capital of modern architecture. The photographs included in the monograph chapter were taken by the author.

Keywords: architecture, modern architecture, quality research, Dubai

Streszczenie

Tematem rozdziału są przeprowadzone eksperckie badania obserwacyjne i jakościowe w zakresie współczesnych obiektów architektonicznych w Dubaju zrealizowane przez autora we wrześniu 2018. Dubaj to niezwykle miejsce związane z pustynią. Patrząc na to co wydarzyło się w ostatnich kilkudziesięciu latach w Dubaju można powiedzieć, że nie ma rzeczy niemożliwych. W Emiratach Arabskich dokonał się olbrzymi skok cywilizacyjny. Tutaj można zauważyć jak dobra prosperita finansowa i prestiżowa architektura idą w parze. Dubaj to miejsce gdzie sukces ekonomiczny wyrażony jest w budownictwie i architekturze. Ilość realizowanych nowych obiektów jest niezwykła i imponująca. Powstało tu wiele nowatorskich pomysłów. Królem budynków jest nadal najwyższy na świecie Burj Khalifa (828 m). Ale, jak wiemy to nie koniec wyzwań jakie podejmują władze i inwestorzy w Dubaju. Obecnie buduje się jeszcze wyższy Creek Tower (1350 m). Tak więc zdaniem autora właśnie Dubaj można obecnie nazwać światową stolicą współczesnej architektury. Ujęte w rozdziale monografii fotografie wykonał autor.

Słowa kluczowe: architektura, architektura nowoczesna, badania jakościowe, Dubaj

¹ Assoc. Prof. Ph.D. D.Sc. Arch. Klaudiusz Fross, Faculty of Architecture, Silesian University of Technology, klaudiusz.fross@polsl.pl; ORCID 0000-0002-0013-7619

1. INTRODUCTION TO THE ANALYSIS

The following chapter is an individual description of issues concerning modern architecture found in Dubai, on the basis of a study excursion as well as observatory and qualitative research performed in 2018. The Built Environment constitutes a surrounding created by humans in the form of buildings, constructions and their complexes (agglomerations, cities, the countries, estates etc.), together with the whole technical infrastructure and land development.² Dubai makes for a special place which, in turn, constitutes an unusual congregation of various architectonic objects as well as bold and innovative ideas that could be realized. It is a unique place in this world, which is not only worth seeing but also worth investigating into for its architectonic and urban phenomena. It simply constitutes an obligatory research field, both for architects and students of architecture. Built thanks to great efforts as well as high-level consistency in taking decisions and actions, this place constitutes a built environment which is sensational on a global scale. Apart from impressive and modern architecture, one should take a closer look at Dubai's social and economic phenomena. In this chapter, the author focuses exclusively on architectonic issues, leaving the remaining matters to other researchers. Due to the fact that all the investments and design actions must be based on knowledge, and not only on building related regulations, records kept in spatial plans, requirements set out by the investor, locational analyses, it is therefore a good idea to look closely into the architectonic facilities together with their surroundings, as well as conduct observations of the manner in which users use those facilities, and how they behave. Moreover, due to the fact that all users know everything about the buildings, they are able to assess them through their constant use. This is why both the built environment and their users constitute a research field and a potential repository of knowledge, information on buildings, their strengths and assets as well as their problems and disadvantages. This knowledge should be gained using familiar research methods and techniques³ so that they could be used in the process of designing.⁴

2. METHODOLOGY OF QUALITATIVE ASSESSMENTS OF THE BUILT ENVIRONMENT

In order to proceed to architectural assessments, one should first shortly discuss the methodology of research. It is common knowledge that through qualitative research and by using universal methods and techniques of assessing objects, their chosen elements (e.g. specific zones, rooms, facade), the external surrounding as well as the opinions of users, one can obtain professional knowledge about programming and designing. The research into the built environment in Dubai was based on author's own methods of performing qualitative and observatory assessments, and was described in a work published by the author: *Badania jakościowe w projektowaniu architektonicznym na wybranych przykładach* (translation: qualitative research in architectonic design based on chosen examples).⁵ The author has

² According to K. Fross, *Qualitative Research in Architectonic Design Based on Chosen Examples*, Silesian University of Technology, Gliwice 2012.

³ See the author's own methods and techniques of qualitative assessments described in works published by the author.

⁴ *Ibidem*.

⁵ *Ibidem*.

been applying assessment techniques worked out during practice “in 7 steps”.⁶ Views of the author in the scope of assessing buildings have been described in articles,⁷ which constitute a complementation of the theoretical foundations. It should be mentioned that Polish literature connected with qualitative assessments has in recent years been enriched thanks to multiple new works which constitute a collection of methodology and examples of their use. An important and, at the same time, obligatory source of knowledge for researchers involved in qualitative research is the book written by Niezabitowska E.⁸ It constitutes a valuable position which described the full set of available research methods and techniques that can be used in architecture. Experience of the author in the scope of assessing buildings and in the scope of applied methodology was presented in numerous publications, authored and co-authored by: K. Fross, A. Sempruch: *The qualitative research for the architectural design and evaluation of completed buildings – part 1 – Basic principles and methodology*;⁹ K. Fross, A. Sempruch: *The qualitative research for the architectural design and evaluation of completed buildings – part 2 – Examples of accomplished research*;¹⁰ K. Fross: *Projektowanie ergonomiczne z wykorzystaniem badań jakościowych (ergonomic design using qualitative research)*;¹¹ K. Fross: *Badania jakościowe w planowaniu, programowaniu, projektowaniu oraz ocenie inwestycji (qualitative research in the planning, programming, designing and investment assessment)*;¹² K. Fross, D. Winnicka-Jasłowska, A. Gumińska, D. Masły, M. Sitek: *Use of qualitative research in architectural design and evaluation of the built environment*;¹³ D. Masły, M. Sitek, K. Fross: *The impact of solar radiation on the quality of buildings: research methods*;¹⁴ K. Fross, K. Ujma-Wąsowicz, A. Gumińska: *Teaching of architectural design – first steps. Driving course design methodology*.¹⁵ In

⁶ *Ibidem*.

⁷ K. Fross, *Badania jakościowe w planowaniu, programowaniu, projektowaniu oraz ocenie inwestycji*, *Builder*, 2015, no. 6, pp. 14–17; K. Fross, *Wirusy architektury. Co wolno architektom? Czy ładny – to wystarczy? Projektowanie jakościowe w oparciu o wiedzę, potrzeby i priorytety – standard i obowiązki* [in:] B. Komar (ed.), K. Fross (vol. ed.), *Badania interdyscyplinarne w architekturze: BIWA 2. Monografia konferencyjna*, T. 1, Zagadnienia interdyscyplinarne, Wydział Architektury Politechniki Śląskiej, Gliwice 2017, pp. 7–18.

⁸ E. D. Niezabitowska, *Metody i techniki badawcze w architekturze*, Silesian University of Technology, Gliwice 2014.

⁹ K. Fross, A. Sempruch, *The qualitative research for the architectural design and evaluation of completed buildings. Part 1 – basic principles and methodology*, *Architecture Civil Engineering Environment*, 2015, no. 3, pp. 13–19.

¹⁰ K. Fross, A. Sempruch, *The qualitative research for the architectural design and evaluation of completed buildings. Part 2 – examples of accomplished research*, *Architecture Civil Engineering Environment*, 2015, no. 3, pp. 21–28.

¹¹ K. Fross, *Projektowanie ergonomiczne z wykorzystaniem badań jakościowych* [in:] J. Charytonowicz (ed.), *Ergonomia w architekturze i urbanistyce. Kierunki badań w 2014 roku*, Polskie Towarzystwo Ergonomiczne PTerg. Oddział we Wrocławiu. Wrocław 2014, pp. 37–45.

¹² K. Fross, *Badania jakościowe w projektowaniu...*, *op. cit.*

¹³ K. Fross, D. Winnicka-Jasłowska, A. Gumińska, D. Masły, M. Sitek, *Use of qualitative research in architectural design and evaluation of the built environment*, *Procedia Manufacturing*, 2015, Vol. 3, pp. 1625–1632.

¹⁴ D. Masły, M. Sitek, K. Fross, *The impact of solar radiation on the quality of buildings: research methods* [in:] M. Antona, C. Stephanidis (eds.), *Universal Access in Human-Computer Interaction. Access to the Human Environment and Culture*. UAHCI 2015, Springer, Cham 2015, pp. 322–331.

¹⁵ K. Fross, K. Ujma-Wąsowicz, A. Gumińska, *Teaching of architectural design – first steps. Driv-*

a magazine titled “Builder”, one could find an article devoted to the re-development of large panel estates: *Badania jakościowe – wstęp do udanej rewitalizacji (qualitative research – an introduction to successful re-development)*.¹⁶

As a worthy addition, one should also read scientific publications by authors who belong to the Silesian School of Qualitative Research,¹⁷ namely: E. Niezabitowska, A. Niezabitowski, K. Fross, M. Bielak-Zasadzka, D. Winnicka-Jasłowska, J. Tymkiewicz, A. Bugno-Janik, D. Masły, M. Sitek as well as new propagators of the scientific approach to design: A. Gumińska, A. Szewczenko, I. Benek, M. Tomanek, K. Ujma-Wąsowicz. These include habilitation works, chapters described in monographs and lectures held in the scope of qualitative research, at national and international conferences, seminars and scientific gatherings: AHFE, HCI, OKE, BIWA, TUP, PAN, INTERFACES, BUILDER, FORUM BUDOWNICTWA, DREAM SILESIA.¹⁸ Due to the fact that majority of buildings found in Dubai are office buildings, one should also refer to a book written by D. Masły.¹⁹ In the scope of research methodology in architecture, one should also become familiar with literary works by E. Niezabitowska and D. Masły.²⁰



Ill. 1. “The Red Desert” and a panorama of Dubai showing the 828 meter-high Burj Khalifa

ing course design methodology [in:] 6th World Conference on Learning, Teaching and Educational Leadership, WCLTA 2015, Paris 2015, pp. 29–31.

¹⁶ K. Fross, *Badania jakościowe – wstęp do udanej rewitalizacji*, Builder, 2015, no. 4, pp. 78–79.

¹⁷ They constitute 20 years of experience (1997–2017).

¹⁸ Methodology as well as literature-based works available in that scope were described in detail in an article: *Wiedza drogą do architektury. Projektowanie z wykorzystaniem badań – Design by Research (knowledge, the road to architecture. Design by research*, included in a monograph at XVII International Scientific Conference titled: *Definiowanie przestrzeni architektonicznej (defining architectonic space)*, published by Cracow University of Technology, 2018. A subjective statement made by the author, a European citizen, whose views are different to those of native residents who are accustomed to harsh conditions.

¹⁹ D. Masły, *Jakość budynków biurowych w świetle najnowszych metod oceny jakości środowiska zabudowanego*, Silesian University of Technology, Gliwice 2009.

²⁰ E. Niezabitowska, D. Masły (eds.), *Oceny jakości środowiska zbudowanego i ich znaczenie dla rozwoju koncepcji budynku zrównoważonego*, Silesian University of Technology, Gliwice 2007; E. D. Niezabitowska, *Metody i techniki badawcze w architekturze*, op. cit.; E. D. Niezabitowska, *Research Methods and Techniques in Architecture*, Routledge, New York 2018.

3. DUBAI – AN AMAZING PLACE AND ITS ARCHITECTURE

At the beginning it was agreed that Dubai is a fantastic place which had always been associated with a desert (Ill. 1). It spreads over difficult living conditions making re-development of building investments hard. The local population had to get used to such conditions and adapt themselves over the centuries spent in that area. Just like in the past, difficulties encountered today still apply when building new investments. At present, accessibility of new technology enables convenient functioning in that extremely difficult climate. The region is full of adverse conditions, such as high temperature, lack of water or green spaces as well as sandstorms. An additional problem, when it comes to erecting buildings, especially the high ones, is the fact that there is a 30 cm layer of sand. Another problem is that it cannot be used for construction. There are many more problems which constitute part of the whole investment context. Despite unfavorable natural conditions, the Arab Emirates, especially Dubai mainly thanks to its natural resources (crude oil), proper management and clear vision, are currently undergoing an incredible economic development. At present, the Emirates are considered to be the financial and tourist hub. In the Arab Emirates, in only a few decades there has been an enormous civilizational leap. On the basis of research and observations, one might say that a positive financial prosperity and prestigious architecture go hand in hand. Dubai is a place where economic success manifests itself through architecture. The number of new investments being realized is as amazing as it is impressive. Having observed what has happened over the last few decades in Dubai, one might say that impossible is nothing. For many years Dubai has been astounding everyone all over the world with more and more modern and innovative ideas. There have also been many innovative ideas, such as the one and only seven-star hotel in the world (Burj Al.-Arab), artificial islands called “Palms”, an indoor ski slope, Dubai Marina, the highest building in the world – Burj Khalifa, standing 828 m high, etc. That is not the end of the challenges, that is definitely not everything. Dubai aspires to remain the hub of world’s architecture for years to come. At present, there is another, even higher, building being built, namely the Creek Tower (1,350 m). A building featuring a dazzlingly beautiful and slender shape of a “spear” with shroud stays. (Ill. 8).

4. THE CAPITAL OF GLOBAL ARCHITECTURE

What if someone asked where the capital of contemporary architecture was today? The answer would not be easy as there are many a place around the world where ambitious and innovative architectonic facilities are being built. Many cities compete in that respect. The competition for the title of the world’s capital of architecture is fierce. Shanghai and Singapore are definitely in the title contention. Japan is currently experiencing a temporary downturn, but it is Tokyo where the highest television tower was built – the Sky Tree (Ill. 2), handed over in 2012. The building stands 634 m tall and towers over the China’s Canton Tower by 34 m. Available to tourists, the observation terraces were placed at the height of 350 m and 450 m above the ground. Osaka is also a worthy mention with buildings such as: Umeda Sky Building (Ill. 2), it comes in the form of a gate with an observatory giving onto a flowing garden, at 173 m, this building is higher than Warsaw’s InterContinental

by 9 m, by comparison, the Palace of Culture and Science stands at 231 m. There are also European cities such as London which also develop in an excellent way. Paris with its La Defense district gave up its crown many years ago. And what about the USA? After all, it was the architecture of the great American cities that gave rise to the skyscrapers and paved the way for the architecture of financial hubs. It is interesting to know how the place of the development of contemporary architecture is undergoing geographical changes. It is also interesting to know that there is some competition between countries, cities or buildings. Architects and engineers involved in ambitious challenges set by investors take part in that race. It could be said that it is difficult to maintain the top position in that contention. For years, Dubai has led the way in the field of civil engineering and architecture, and it has been constantly developing. Due to its high importance for the development of contemporary architecture and its perfect setting to display power, Dubai may today be called the contemporary capital of architecture.



Ill. 2. Umeda Sky Building in Osaka, the TV Sky Tree tower in Tokyo, the “leaning” towers of Bologna

5. IS IT POSSIBLE TO EXPRESS ECONOMIC SUCCESS THROUGH ARCHITECTURE?

If anyone wished to take a look at a photograph taken 60 years ago, showing Abu Dhabi, a village out on a desert (1960), then one would certainly see an unusual civilization leap, an unbelievably accelerated development expressed by civil engineering and architecture (Ill. 3). Architecture constitutes an image that shows the quality of life. It is a manifestation of economic and technological growth. Of course, under the term of architecture, one will definitely find various elements. The answer to the question raised earlier is crystal clear, just like in case of New York, Hong-Kong, Singapore, etc. It is architecture that helped build up the image of those places. It is mainly the towering buildings that make for the great success. Thanks to Manhattan, a place where the concentration of money and skyscrapers go together, high buildings are associated with great success in the minds of all users. Although, the height of the buildings was rather due to the price and the division of land property, the competition for the title of the highest building soon became the decisive factor. That phenomenon may be observed in many a city in the USA as well as in the capitals of Europe. Although it is common knowledge that prestigious buildings do not need to be towers, the easiest way to show power is through the height of a building. In the history of architecture, the height of

the building was a sign of power, prestige and wealth. Pyramids, gothic cathedrals, Italian stone towers (e.g. in Bologna and Modena, Ill. 2) bear witness to that fact. The height was also a sign of technological development, modern materials and solutions used to erect buildings, for example the Eiffel Tower in Paris.

Another element is the color of gold. Golden details, the color of glass or even complete facades, they all constitute reference to tradition as well as a manifestation of prestige and wealth. Golden facades of buildings or the characteristic roofs of the aboveground metro serve as an example of the above.

An enormous civilizational leap which took place in Arab Emirates has been clearly marked in civil engineering. Therefore, the positive financial prosperity is an equivalent of prestigious architecture. The number of new investments being realized is as amazing as it is impressive. Despite the fact that thousands of buildings have already been erected, construction cranes are part of the landscape as this is still an enormous construction site, and with an ongoing battle with the desert environment, the success which has already been achieved is even greater. One may say that if there is vision and ample financial resources, then there should not be any problems with the completion of interesting projects. To make a crude comparison, Petersburg and Venice were built in equally difficult conditions. Relentless determination as well as ample means make everything feasible.



Ill. 3. Abu Dhabi in 1960 and today (2018)

6. TRADITION AND MODERNITY

Dubai presents a diverse architecture. A vast majority of buildings are towering office buildings concentrated along the main street (Ill. 5) as well as complexes such as: Dubai Marina (Ill. 9). Another group consists of hotels, condominiums as well as residential districts. Dubai has the potential to attract investors as well as people who wish to establish their headquarters there, or just have luxurious apartments or villas by the sea. One can find an incredible variety in terms of the shape of office buildings. These include modern and historicizing forms as well as ones that are similar to already famous and completed facilities found in Europe and all over the world. The majority of those facilities constitute elements of globalist architecture. Of course, there are also buildings which relate to the traditional Arab architecture. Arab themes are more popular inside the facilities, for example, inside shopping centers (Ill. 6, 7).

Traditional architecture is deeply rooted in the culture of native residents. Nevertheless, the economic success has resulted in a desire to possess (and transfer into the mother land) newest technological solutions. Buildings that appear in Dubai could well serve as ornaments in numerous European financial centers. Great architects create their pieces of art there and each time they try to capture the imagination of investors or users. In the Emirates, wonderful conditions were created for the freedom of design. Competition between architects as well as buildings is visible everywhere, which helps to achieve better and more modern solutions.

The popular wind tower (Ill. 4) which constitutes an important part of the natural system of cooling down facilities, is an element used with great enthusiasm by contemporary architects. Also, arches or the Arabian openwork constitute a catalog of inspiration for designers.



Ill. 4. Traditional and contemporary reference to the form of the wind tower, Abu Dhabi, Dubai 2018

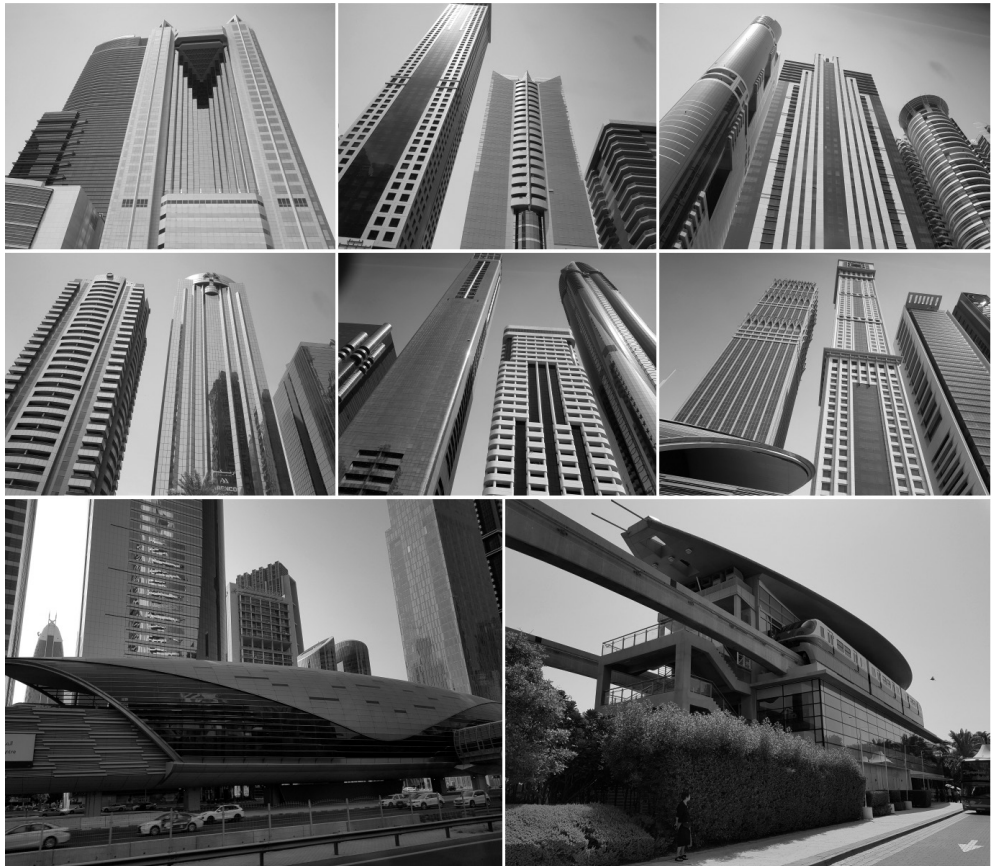
7. SUMMARY AND CONCLUSIONS

On the basis of research and observations, one might say that positive financial prosperity and prestigious architecture go hand in hand. Dubai is a place where economic success manifests itself through architecture. With ideas, vision and determination, coupled with financial means, one can put fantastic ideas into practice and astound everybody with innovative constructions. In such cases, obstacles which are brought about by natural environment do not matter. Still, one should always follow the rules and manage the built environment wisely as it requires permanent supervision and care due to difficult environmental conditions. Permanent supply of power and water mainly for cooling purposes constitutes the foundation of existence and the condition upon which farther development is possible. Forward thinking is

also important together with proper management of resources, creation of sufficient conditions for farther development and acquisition of energy from renewable sources (photovoltaic farms built on the desert).

It is possible to determine general features of Dubai's architecture. These features include:

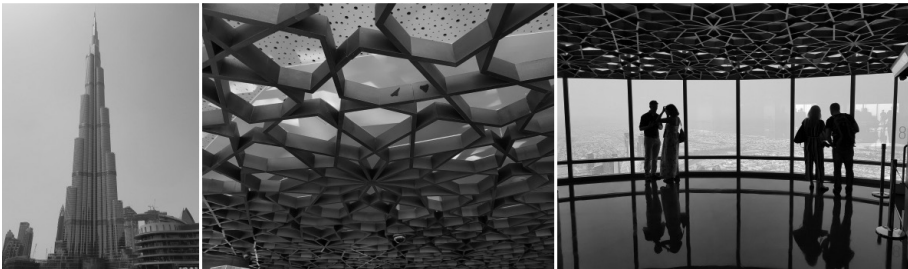
- globalist features but with native characteristics resulting from the need to exhibit success (main street office buildings in the center),
- one which keeps native and traditional elements made visible mainly on the inside (e.g. at shopping centers),
- numerous innovative and bold executions and implementations (e.g. residential palms),
- trendsetting e.g. the only 7-star hotel in the world (Burj Al-Arab),
- a feature which breaks down technical constraints (the highest building in the world – the 828 m Burj Khalifa and Creek Tower which will be erected and will reach up to 1,350 m above the ground),
- a feature that delights people with ideas, urban planning and the scale of the enterprise (e.g. Dubai Marina),



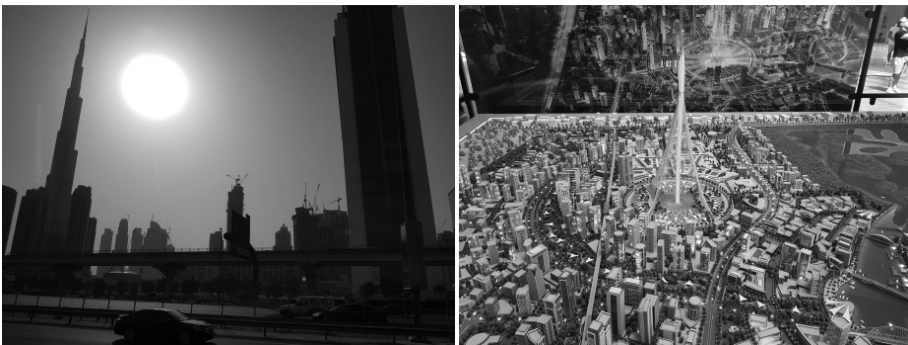
Ill. 5. Office buildings in the main street. Above-ground Metro station in the center and on the “palm”, Dubai 2018



III. 6. Traditional and contemporary reference to the interior – renovated historic part and a contemporary shopping center, Dubai 2018



III. 7. Openwork ceilings inside Burj Khalifa, Dubai 2018



III. 8. Burj Khalifa (828 m) dominates among other buildings. The Creek Tower under construction (1,350 m), Dubai



III. 9. Dubai Marina



III. 10. Interesting shapes of facilities e.g. Burj Al.-Arab, the Frame, Dubai

- a feature which attracts attention and interest (e.g. the artificial ski slope, the “Frame Museum”),
- a feature connected with the strategy of urban planning (a clear and logical plan of the city and its development trends, III. 11).
- wealth in architectonic form (e.g. Burj Al.-Arab sail, the Frame, a spherical office building which belongs to an engineering office etc., III. 10).

Interesting and attractive modern architecture yields a new quality. Attractive architectonic facilities are becoming an important marketing element of the place. They are a sign of development, success and prestige. They attract users, tourists and other investors. Through modern architecture prestige, development and success can be expressed. Modern architecture makes for the image of the place. Its appearance and nature have got an enormous significance for



III. 11. View of Dubai from Burj Khalifa

the assessment of the place. Moreover, attractive facilities and public spaces are the best form of advertising and promotion of the city. Spectacular buildings which often become icons of a given place are of psychological significance to the society and are also important for the image of the city. One should always remember about the users – they are the true users of the buildings and only they can assess them.

Due to the scope of the investment and the artistic freedom expressed in ambitious architectural solutions, Dubai may today be called the capital of contemporary architecture.

References

- [1] Antona M., Stephanidis C. (eds.), *Universal Access in Human-Computer Interaction. Access to the Human Environment and Culture*. UAHCI 2015, Springer, Cham 2015.
- [2] Charytonowicz J. (ed.), *Ergonomia w architekturze i urbanistyce. Kierunki badań w 2014 roku*, Polskie Towarzystwo Ergonomiczne PTerg. Oddział we Wrocławiu. Wrocław 2014.
- [3] Fross K., *Badania jakościowe w planowaniu, programowaniu, projektowaniu oraz ocenie inwestycji*, Builder, 2015, no. 6, pp. 14–17.
- [4] Fross K., *Badania jakościowe – wstęp do udanej rewitalizacji*, Builder, 2015, no. 4, pp. 78–79.
- [5] Fross K., *Qualitative research in architectonic design based on chosen examples*, Published by Silesian University of Technology, Gliwice, 2012.

- [6] Fross K., *Wirusy architektury. Co wolno architektom? Czy ładny – to wystarczy? Projektowanie jakościowe w oparciu o wiedzę, potrzeby i priorytety – standard i obowiązki* [in:] B. Komar (ed.), K. Fross (vol. ed.), *Badania interdyscyplinarne w architekturze: BIWA 2. Monografia konferencyjna*, T. 1, Zagadnienia interdyscyplinarne, Wydział Architektury Politechniki Śląskiej. Gliwice 2017, pp. 7–18.
- [7] Fross K., Sempruch A., *The qualitative research for the architectural design and evaluation of completed buildings. Part 1 – basic principles and methodology*, Architecture Civil Engineering Environment, 2015, no. 3, pp. 13–19.
- [8] Fross K., Sempruch A., *The qualitative research for the architectural design and evaluation of completed buildings. Part 2 – examples of accomplished research*, Architecture Civil Engineering Environment, 2015, no. 3, pp. 21–28.
- [9] Fross K., Winnicka-Jasłowska D., Gumińska A., Masły D., Sitek M., *Use of qualitative research in architectural design and evaluation of the built environment*, Procedia Manufacturing, 2015, Vol. 3, pp. 1625–1632.
- [10] Masły D., *Jakość budynków biurowych w świetle najnowszych metod oceny jakości środowiska zbudowanego*, Silesian University of Technology, Gliwice 2009.
- [11] Niezabitowska E. D., *Metody i techniki badawcze w architekturze*, Silesian University of Technology, Gliwice 2014.
- [12] Niezabitowska E. D., *Research Methods and Techniques in Architecture*, Routledge, New York 2018.
- [13] Niezabitowska E., Masły D. (eds.), *Oceny jakości środowiska zbudowanego i ich znaczenie dla rozwoju koncepcji budynku zrównoważonego*, Silesian University of Technology, Gliwice 2007.

Author's note:

Dean of the Faculty of Architecture of the Silesian University of Technology. Head of the Department of Design and Qualitative Research in Architecture. Design promoter using qualitative research and the architect-researcher model. He presents a managerial approach in designing. He developed his own methods of pre-project tests using qualitative tests of objects with a similar function and verification tests after completion of the object.