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Museum of the Second World War in Gdansk as an Example of Contemporary Design Trends in Museum Buildings

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Abstract. At a time when history gives us one of the last opportunities to confront our knowledge of World War II, with the knowledge of people living in those days, there are buildings created with strong transmission not only architectural, but also of a great emotional load. At the same time, when the political system does not forbid to speak openly about the past period, and the technology allows you to create structures, about which we could only dream of even several dozen years ago, and objects such as the Museum of the Second World War in Gdansk are designed. In this paper are presented the current trends shaping the museum facilities, with the example of the Museum of the Second World War. The diversity of forms, materials and technology makes it impossible to establish a single standard for this type of public buildings, and that makes each of these objects unique. At the same time, it is possible to identify some common spatial treatments noted in the sector of architecture devoted to exhibitions and commemoration. The Museum of the Second World War is a newly created structure, in the design of which the authors used advanced technology (which allows the implementation of its ideas) in order to meet the ever-growing needs of users. The popularity of museums depends on many factors, such as the type and form of the offered exhibitions, the transfer of information and emotional value, location of the building and adaptation of the facility to the users' needs, which differ in many respects (age, the efficiency of perception, education or wealth).Given that museums are usually buildings that have noticeable form in the urban landscape, the paper will describe how to set up the idea, and later its implementation, impact on urban space. Additionally, for some time exhibitions and architecture surrounding them have become a tool for the promotion of towns, regions, or even the whole countries. The fact is that the exhibitions are visited not only by local residents but also by tourists. If the museum is well integrated into the urban spatial structure (landscape), it has a good chance to become one of the symbols of the city. Additionally, it can promote creating and deepening the sense of identity of the local users‘ public space.

1. Introduction

More than seventy years after the official conclusion of war movements in Europe, we have one of the last chances to confront our knowledge of World War II, with the knowledge of those, who lived in those times. It is now that an exhibition of great emotional load and huge respect for the history of the place is being created. At the same time, when political moods in Europe are favourable for open talks about past periods, and when the available technology lets us create constructions and buildings that until recently existed only in the imagination of designers, the Museum of the Second World War in Gdańsk was created. This object is important for visitors, as its exposition attempts to objectively

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present the history connected to World War II. By contrast, for the city of Gdańsk, the museum is a contemporary contribution to shaping its modern image, following the global trend in which new museum buildings are an important element in popularizing the city.

2. Museums– then and now

The history of museums as objects that expose important things to given communities goes back to ancient times. It was meant to serve as a political tool to create and sustain proper image of rulers, by displaying war trophies to the public –it shows their power, bravery and strength [1]. Even in ancient times history was used as a tool to explain many difficult phenomena, like political entanglements or personality patterns. Historical knowledge helped to justify the current state of many things [2].

In the 19th century, access to museums was limited. Usually only scientists were able to use them, rarely citizens. Since the 20th century, however, the possibility to view the exhibition has become more widespread. That availability is attributed to the idea of a museum as a stable non-profit organization, in service to the community and its development, which is widely available [3].

Nowadays, museums have primarily educational and cognitive character. Nevertheless, they are also responsible for their collections and further research. Additionally, those places are used as a marketing tool, to promote the city, region and even the country to wide audience.

In March of 2017, there were 676 museums in Poland [4]. This number classifies Poland at the lowest place in the European Union in terms of the number of museums per 100 thousand residents [2]. Although Poland doesn't have many museums, Poles are quite happy to visit them. In the year 2015, as many as 33.3 million of people visited Polish museums [5]. Amongst the most popular were historical museums (6.3 million) and artistic museums (7.9 million) [5].

An important question arises, about the place of history in social live and the way it is presented. The high number of visitors suggests, that they are indeed needed. This is one of the main reasons why local government units, as the authorities leading and supervising the activities of most Polish museums (80.1% in 2015 [5]) are inclined to appoint such new facilities.

3. Trends in designing museums and increasing popularity

Museums, next to the amusement parks, are the most visited tourist attractions in the world. An ever increasing tendency of attendance can be seen in those kind of facilities. In 2012, the number of visitors in the 20 largest European museums was 71,5 million [6]. There is a noticeable increase in interest in museum offers in Poland, which is gradually taking place after the crisis of 1989-92. In 2011 there were 25 million visitors in Polish museums [7]. Those facilities direct their offers to specific type of recipients, ones that're willing to experience *higher culture*. Stable growth in interests in these types of places proves that the level of education is increasing and that the financial status as well as social aspirations improves.

This fosters the development of museum institutions, and consequently the emergence of new museum buildings. They are part of a worldwide trend to popularize exhibitions and museum buildings that are now an important part of urban landscapes.

3.1. Attractive ways of exhibiting collections

An important factor in dissemination of museums and in making them more accessible is a change in the way that exhibitions are organized. Many facilities abandon the passive model for the active model. More emphasis is placed on a creative way of guiding the visitors around the organized exhibition. The tool, that makes it easier, is changing the way that collections are displayed, from one that distances the viewer from it for one that makes him feel like the creator. The negative effect of this change is that the museums oscillate between the seriousness of the exposure and the entertainment the recipient expects. In this way, the boundary between high and popular art is blurred [8]. The advantage of expositions in narrative museums is their wide range of impact. They affect not only the sense of vision, but they also involve hearing, smell, touch, and in some cases even taste. In addition, more and more frequently used action to provide even more variety, is moving away from

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strictly set visiting paths, to allow the visitors to decide in which order they want to view the exhibits [9]. *The use of compositions of various stimuli creates a very strong impression and experience among visitors, builds a unique "atmosphere" of the exhibition* [10].

3.2. Taking diverse visitors needs into account

Modern museums and the ways in which they can be toured, are usually planned while taking into account the expectations of the visitors whose presence is related to three aspects: personal, social and physical [11]. The experience and context of each visitor is different, based on their education, expectation associated with the area in which he or she is located, and previous life experiences. The social context has a big impact on the reception of the exhibition itself - it's really important who is accompanying the visitor during the visit, and the point in time and space in which the visit is taking place. The physical aspect relates strictly to the building itself, its adaptation to the needs of the user and the atmosphere of the place.

3.3. Wide audience availability

More and more museums are starting to fulfil an important social function outside of educational roles- an animator for the elderly and the disabled. That's why, nowadays, such objects are designed with particular attention to the specific needs of all visitors. In Poland, the necessary condition for admission of an architectural project to be implemented is its adaptation to the needs of the disabled.

Architectural solutions to facilitate the movement are elevators, ramps, and special handles. Exhibitors use elevators and lifts to facilitate viewing of exhibits by people with disabilities. For blind and visually impaired people, horizontal signs (guiding paths, notes, warning signs), descriptions written in Braille, and audio books are used. In order to ensure that the deaf and hearing impaired people can fully receive the exhibition, there is a possibility to visit the facility together with a sign language translator. There are also accurate descriptions of the sounds that appear in specific exhibit locations. Also the toilet spaces are adapted to the needs of this group of users.

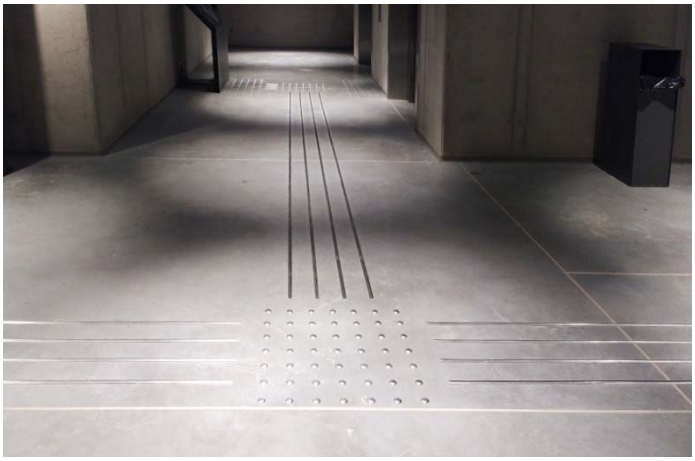

Figure 1. Horizontal signs in main hall on -3 level

3.4. Attractive facility architecture

For some time already, many similarities can be observed between the museums buildings and urban city layouts. It comes to borrowing the spatial solutions from cities in order to organize the interiors of public buildings (patterns taken based on aesthetics and communication). At the same time, museums which until recently focused only on displaying the exhibitions, nowadays adopt ever more interesting architectural forms, and thus play a significant role in the landscape of the city. They become a kind of exposition in the city tissue. Currently, the search for interesting solutions is not only focused on the interiors - actions begin to appear, which serve the purpose of creating a catchy and alluring outer body that draws the attention of potential visitors. These activities do not come only to establishing the

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aesthetic and formal canon of a modern museums, as it was in the 19th century. Nowadays it is about searching for forms that will be noticeable in the landscape of the city as dominant [12].

3.5. Neighbourhood of different cultural facilities

Building a variety of museum facilities of various themes in the city elevates its prestige and gives it the opportunity to make it an important cultural center. A competition between cities in terms of investing funds in other public utility objects can be noticed. They are often located relatively close to each other (new museums are being built next to 19th century museums). Decision to build new facilities can be made to: enlarge the exhibition space, reorganize the old museum, improve the functionality, or give new architectural expression to the group of cultural facilities. Occurrence of various public buildings (especially those aimed at the promotion of high culture) next to each other, aims to emphasize the dedication of one function (in this case cultural) of a given area of the city [12].

4. Museum of the Second World War in Gdańsk

4.1. History

1st of September, 2008, prof. dr hab. Paweł Machcewicz was appointed to the position of the plenipotentiary for the Museum of the Second World War in Gdansk, two months later the Minister of Culture and National Heritage, signed a regulation establishing the said museum [13]. In September of next year, a foundation act was signed for the museum [14] and in October the contest for the main exhibition project was settled. Winning design was submitted by studio *Tempora* S.A. From Belgium, thanks to the presentation of the concept of spatial exposure, rich in scenography forms and originality of exhibition solutions [15].

1st of September, 2010, the international architectural competition was settled. Its main premise was adjusting the building exteriors to the concept chosen a year before. The proposed spatial solution also had to take into account the near vicinity of the museum. 129 entries from around the world were submitted. An international jury consisting of outstanding architects and urban planners decided to award the first place to the concept presented by the Studio Architektoniczne *Kwadrat* [16].

4.2. From conception to realization

The work on executive project consisted mainly of refining many details of the architectural concepts that was created for the competition. The drawings and visualizations presented the solids of the museum and functional layout of the whole object based on program requirements, but did not touch on many issues needed to be solved at the stage of executive design.

Approximately 100 people from different industries were involved in the design process. The construction industry in particular had big involvement in this project. The proposed concept of the building and its location in difficult hydrotechnical conditions required the participation of specialists from many branches and precise construction solutions. A particular technical problem was the solution of the underground parts, which had to take into account high soil loads and high level of groundwater at the same time.

4.3. Archaeological works

Given the location of the site on which the museum was to be built, in the conservation area and within the boundaries of historical monuments, the pre-construction phase was to carry out an archaeological survey. A pavement of Grossegasse street from before World War II was discovered there, it was collected and later used as a part of the exhibition.

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Figure 2. A pavement of Grossegasse street from before World War II used as a part of the exhibition

4.4. Works on construction foundations

In August of 2012, after finishing the archeological research the construction work begun. Excavation work needed for placing building foundations turned out to be no easy task, because the level of groundwater reached up to 2m below the ground level. In the first phase of ground works, it was necessary to properly prepare the area by making a trench on the entire target depth and securing it with slit walls about 1 m thick. Technology used during the excavation included the use of anchors to stabilize the foundation walls and the gradual dredging of the excavation, and then creating a concrete cork which was a horizontal element closing its bottom [17].

The partially excavated area was flooded with groundwater, the force of which was used to support the crevice walls. The creation of a water tank allowed for placing two water barges on it, which continued to mine the ground from the bottom of the excavation, and then helped to seal the tub. The foundation works lasted a year, and the finished concrete casket finally had a thickness of 5m [18].

4.5. Construction works and exhibition preparation

After the water was pumped out, second stage of construction begun, which consisted of elevating the main part of the museum, i.e. 6 underground and 8 above ground storeys in characteristic shape of a tower.

During the construction work, even before creating ceilings it was necessary to already place the largest exhibitions inside (like a tank) and building maintenance equipment (i.e. ventilation unit) in the underground part intended for the main exposure.

Figure 3.Visitors watching the exhibited tank, installed before the completion of structure

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4.6. Safety and user comfort

Architectural and construction project, created by the *Kwadrat* workshop employees (main designers: Jacek Droszcz and Bazyli Domsta) required the cooperation with representative from many branches. Solutions using specialized technology required, for example, a cinema room, library, and catering facilities.

An important issue throughout the design process was the safety of future users. Public utility buildings are not without a reason a subject to a number of restrictive regulations, such as the issue of evacuation from a building where the life or health of the occupants is at risk.

The difficulty of solving the whole process of evacuation in the building of the Museum of the Second World War was the quantity and complexity of connections between different parts of the whole building. The museum complex consists of two above ground buildings: the upper one - the tower and the lower one with the administrative part of the hotel, which are connected with the underground part with the exhibition and the garage. In order for the building to meet all evacuation requirements, 9 emergency staircases were built. This required a special study on the mobility of all facility users, especially disabled people.

4.7. Area around the building

In the first version of the land development project, the area around the building was only to be lined with granite cubes. There were no elements of small architecture or greenery designed for the place. Due to changes in the construction project involving the removal of ventilation canals from the underground part of the building, successive changes were made to the land development project. Finally, due to the appearance of mechanical ventilation and air intake and an issue of a considerable heating of the square, the authors proposed additional space for the tree pots and a lawn of 600 m^2.

Figure 4. The area around the building – before final changes were made

4.8. Building architecture

The winning project was named “silent project” by the authors. Its main goal was to create suitable mood for the presented topic. The building itself is supposed to invoke strong emotions in the visitors [19]. The main premise of the design was renouncement of the daylight for exhibitions. Adjusting to those demands, designers placed most of the exhibits underground (as much as 80%). Also the main entrance to which the monumental staircase leads is located 4.5 m below the ground level to introduce visitors to the atmosphere of the presented exhibition.

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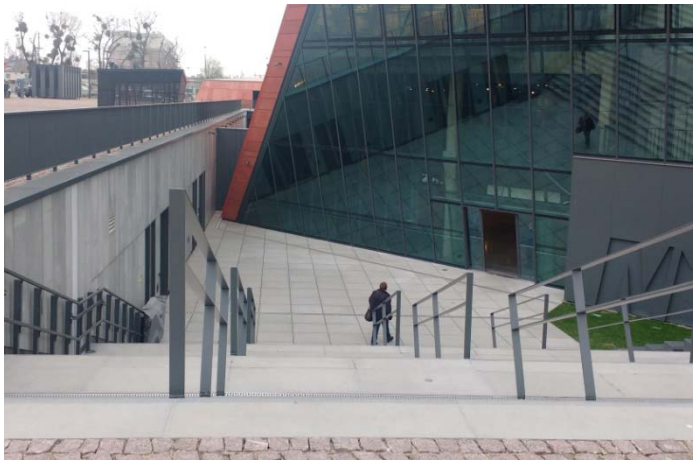

Figure 5. The main entrance located 4.5 m below the ground level to introduce visitors to the atmosphere of the presented exhibition

In the original design, the building solid, which is located above the terrain level - a tower in shape of leaning prism with triangular base and height of about 40,5 m in the highest points [19], was supposed to be finished with architectural concrete. However, due to unfavourable climatic conditions, designers decided to use prefabricated, dyed in mass concrete slabs, 1.2x3 m in size. Brick coloring of the façade was used intentionally - the designers cared to refer to the character of the former city of Gdańsk and the once predominant red brik buildings. The above-ground part, despite its proportionally small share in the usable area, has become (due to its height) a dominant feature, a landmark in the landscape surrounding its space and a new symbol of Gdańsk [20]. In this section, among others, a library, lecture, conference rooms and a cinema can be found. The highest level has a cafe and a restaurant overlooking the panorama of Gdańsk.

The functional solutions proposed in the architectural project were meant to symbolically connect the past, the present, and the future. Each of these elements was reflected in the individual parts of the building. The area symbolizing the past is below the ground, the present is represented by the square around the building, and the future is reflected in the aboveground part of the structure.

Figure 6. View from the other side of the river to the Museum of the Second World War

5. Exhibition of the Museum of the Second World War inGdańsk

The Museum of the Second World War- the largest historical museum in Poland - was designed by architects, but throughout the process of its creation, its interiors and exhibitions were attended by historians, scenographers, architects, and thousands of people who donated their family memorabilia and shared their memories.

Objects offered to the museum make the whole exhibition more authentic; they bring out big

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emotions from visitors and at the same time, are a testament to those past times. It's also thanks to them, that the museum attracts so many visitors.

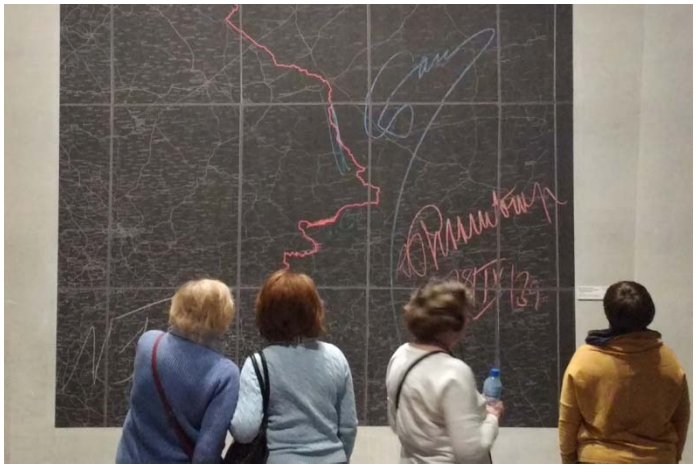

Figure 7. Visitors looking at the map showing the delimitation of the interests of the USSR and III Reich on the territory of the Second Polish Republic from 28.09.1939

The creation of the Museum of the Second World War, was accompanied by the idea of creating an institution, that could show the Second World War by connecting the Polish perspective with experiences from all European nations [20]. Main exhibition, placed on the lowest level - 14m under the ground, has an area of almost 5 thousand square meters. It consists of three narrative blocks: *Road to war, The terror of war,* and *Long shadow of war*. Everything was divided into 18 thematic sections - this is very evident not only through exhibitions, but also with the arrangement of the rooms corresponding to this assumption. There are 2 thousands exhibits and 240 multimedia posts [21]. *Thanks to them, visitors can browse archived photographs and movies, watch the reports of eyewitnesses of those events, get acquainted with interactive maps presenting military battles, or changes of state borders during World War II* [22]. On the main exhibition ground, there is a space displaying the daily life during World War II and an exhibition for children under the age of 12.

The theme of the exhibition itself was a key issue for this whole investment. It was meant to convey the pain and suffering of regular people by showing concrete examples of individuals instead of just showing the triumph of allied forces and victorious war. Shortly before museum opening, there was a dispute taking place between the Polish government and museum authorities over this assumption. Eventually, however, the original concept prevailed.

6. Conclusions

Designers of the exhibitions and building structure, which were created in recent years, had a difficult task before them. Society and city leader's expectations towards newly created public utility buildings are ever more increasing. Right now, it's not enough for the building structure to be attractive and alluring, the exhibition itself needs to have interesting exhibits.

Designers, in order to attract as much visitors as possible, are more inclined towards creating active exhibitions which interact with users. Exhibits were moved from glass cabinets towards more open places, where visitors can thoroughly view, touch and sometimes even interact with them.

The building itself must comply with many different regulations, from which the most important one is adjusting its structure and functional layout to the exhibition for which it is created.

A whole project has to be adapted to the needs of all its recipients, those who are fully fit and those with different disabilities. You cannot discriminate anyone; every resident has the right to use all of the public utility objects equally. For this purpose, various regulations are created such as those recorded in technical conditions. But the world is changing faster than our legislation. For this reason, conscious designers must be very knowledgeable about the world around them and the people who will be the recipients of their work.

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A very important design issue is to skilfully incorporate building structure into spatial context. There may be many different reasons to do so. Sometimes the main premise is to integrate the structure with already existing buildings; other time the purpose is to formally accentuate the object against the back of existing urban tissue. Nevertheless, every decision must be based on a solid and carefully thought through concept with proper supporting arguments.

It is also important to note that a museum exhibition, especially with historical background, has to be objective. If the government triestoni fiddle or interfere with the subject matter of the exhibition, museums become just another propaganda instrument, not an institution that can educate the public.

An example of the Museum of the Second World War in Gdańsk shows, that the current state of construction technology we have at our disposal allows us to create very complex buildings, located in difficult technical conditions and in demanding locations. It's also an example of how important the cooperation of many professionals from different fields and industries is. Currently, architects, especially in such large scale projects is no longer a demiurge, his role is to create an idea, make key decisions, and coordinate work on the evolution of the project.

Projects such as the Museum of World War II, clearly indicate that beside their educational and scientific role, they become an important element influencing the growth of tourism in the region and actively contribute to promoting it as well as the city itself.

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