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USE OF FORGOTTEN TRADITIONS OF ROMAN THERMS TO CREATE INNOVATIVE FACILITIES

WYKORZYSTANIE ZAPOMNIANYCH TRADYCJI TERM RZYMSKICH W CELU TWORZENIA INNOWACYJNYCH OBIEKTÓW

Abstract

An innovative approach to the topic of building the objects of the future, especially in the public area, requires combining fields and solutions. Often, a time travel to traditional solutions is enough to see a chance for development, or at least a mutation. Although modern people are 15 centuries apart from the fall of The Baths of Caracalla, there can be made the thesis that: Ancient Baths remain an unsurpassed model of modern recreational facilities of public interest. Use of ancient patterns should strive as a modern mutation using new means of expression and technique. The examples of West Edmonton Mall, Termy Saturna in Czeladź, Water Park Tychy and the Nowa Gontynka Fabryka Wody in Szczecin clearly show the disproportion in the value of investments, which has a direct impact on the scale and function. The indicated differences confirm that modern objects do not have such a rich functional range as their ancient prototype.

Keywords: Karakala Baths, water parks, education, Tychy Water Park, gamification

Streszczenie

Innowacyjne podejście do tematu budowy obiektów przyszłości, zwłaszcza w obszarze publicznym, wymaga łączenia dziedzin i rozwiązań. Częstokroć wystarczy podróż w czasie do tradycyjnych rozwiązań, aby dopatrzeć się szansy na rozwój, a przynajmniej mutację. Choć współczesnych ludzi dzieli 15 wieków od chwili upadku Term Karakala można postawić tezę, iż: Antyczne Termy pozostają niedoścignionym wzorcem współczesnych obiektów rekreacyjnych użyteczności publicznej, które to powinny dążyć do wykorzystania antycznych wzorców, jako współczesna mutacja wykorzystująca nowe środki wyrazu i techniki. Na przedstawionych przykładach West Edmonton Mall, Term Saturna w Czeladzi, Wodnego Parku w Tychach jak i Fabryki Wody Nowa Gontynka w Szczecinie wyraźnie widać dysproporcję wartości inwestycji, co ma bezpośrednie przełożenie na skalę i zakres funkcjonalny. Wskazane różnice potwierdzają, że współczesne obiekty nie posiadają tak bogatego zakresu funkcjonalnego jak ich antyczny pierwowzór.

Słowa kluczowe: Termy Karakala, parki wodne, edukacja, Wodny Park Tychy, grywalizacja

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1. INTRODUCTION

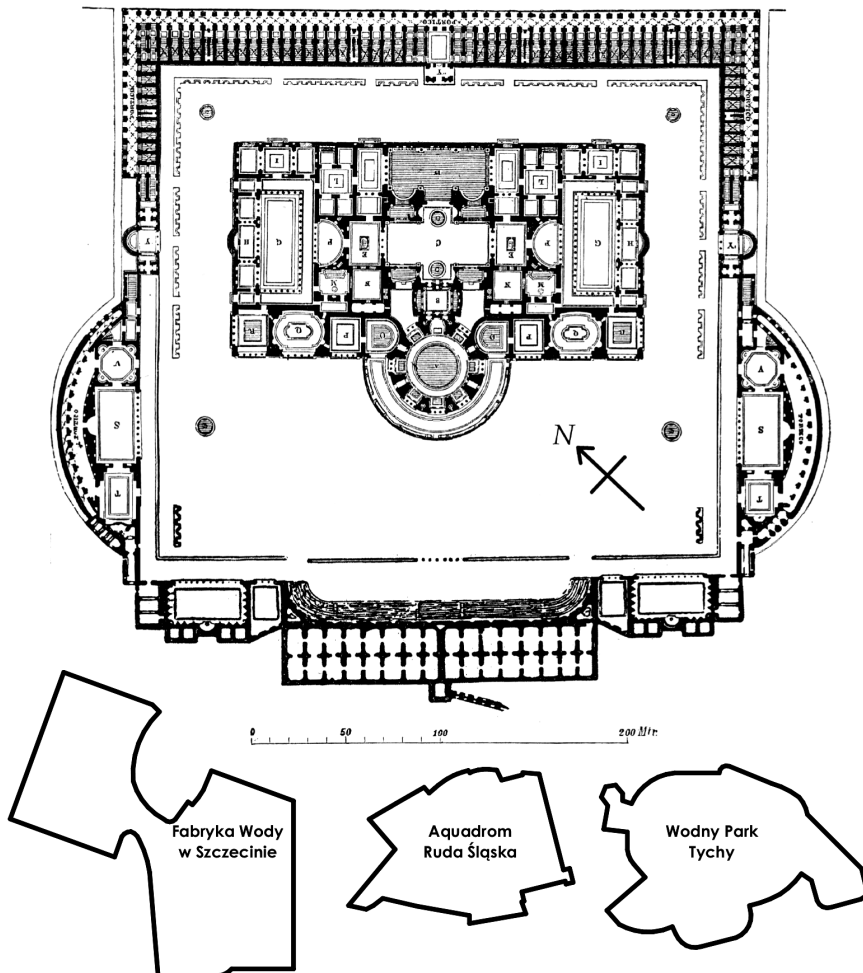
An innovative approach to the topic of building the objects of the future, especially in the public area, requires solutions that go beyond common patterns. In the quest to achieve new quality, it is worth introducing to your workshop the principle of combining various fields and solutions already known or forgotten from old history. Due to constant social changes in the way of life, work or even rest, reinterpretation of known solutions can bring a new fresh look at the issue. Often, a time travel to traditional solutions is enough to see the great opportunities hidden in the ancient world. Contemporary public facilities focused on recreation only today are slowly gaining the functionality and features of objects from the ancient period, such as The Baths of Caracalla in Rome. The scale and momentum shock even today despite the technical possibilities of the modern world. Today's sauna, wellness and SPA facilities as well as Water Parks stand out significantly from their predecessors. This is a growing pursuit in our lives, excessive stress, internet mobility, alienation, loneliness, which are affecting contemporary society more and more. By using ancient solutions, combining them with modern techniques and needs, it is possible to create new architectural permutations that will better respond to contemporary needs. This continuation of tradition, due to blurring in time, can be a source of new ideas, the beginning of an analysis of needs: past, present and future. In view of the above, one can put forward the thesis that: The Ancient Baths remain an unsurpassed model of modern recreational public facilities, which should strive to use ancient patterns as a modern mutation using new means of expression and technique.

2. TRADITION – MINE OF KNOWLEDGE

The experience of the ancient period makes it possible to analyze the effects of adopted architectural solutions, especially in the social field through the prism of needs and expectations. Using the phd studies of DeLaine J. Design and construction in Roman imperial architecture: the Baths of Caracalla in Rome, we also get the opportunity to verify the impact of such an investment on the residents, public space and urban planning. The Baths of Caracalla were built far from the traditional city center, even today tourists are heading here as a second choice, as another sightseeing loop. This is due to the fact that the investment was located south of the Aventine Hill and west of Via Appian outside the Porta Capena gate. It was deliberate action to direct public attention to this area of the city. To make it flourish. DeLaine J. research indicates the indicate the scale of the venture, the level of complexity of engineering solutions and architectural designs. This reflects the peak moment in the history of the Roman Empire. As a result of this verification, one can also notice the comprehensiveness of the functional and formal solutions that have been lost throughout history. The best example of such a situation is the detachment of the educational part (library, reading room, gymnasiums, discussion rooms, meeting points of philosophers) found in Roman Therms from modern Aquapark facilities. At the present they use only the recreational and relaxation aspect. Also, many accompanying functions that are present in today's facilities in a simplified or significantly reduced form the past prototypes. For example sports zone. Exercises, team games and competitions were held there in the ancient Baths. Currently, this sport is limited to the sports pool, where water competitions are held. Some facilities are equipped with gyms or squash courts, and it can be considered a functional maksimum.

2.1. THE BATHS OF CARACALLA IN NUMBERS

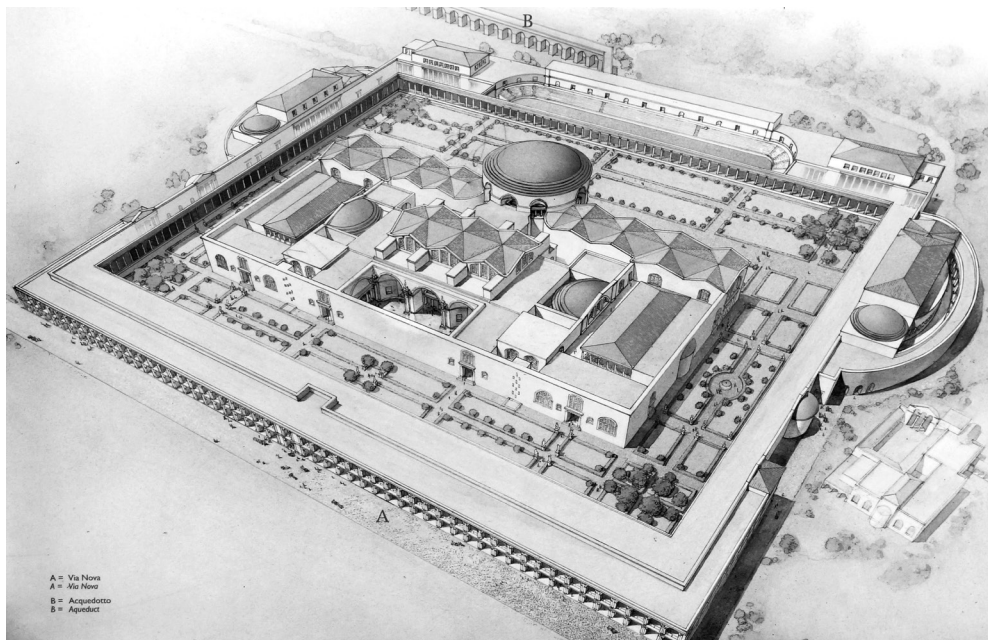
The Baths of Caracalla were built in Rome, in the years 206 to 235 n. Based on the comparison of the Baths of Caracalla projection scheme and the outlines of the views of Polish aquapark equivalents (Water Factory in Szczecin – in progress until 2023, Ruda Śląska Aquadrome opened in 2012, Water Park Tychy opened in 2018), presented in drawing 1, the impressive scale of the assumptions can be seen. Although modern objects use the surface more because they are multi-storey, the object is still overwhelming with its scale. It should be noted that modern facilities are intended for a similar number of visitors (at the same time they hold about 1,500 people in the case of investments in Ruda Śląska, 2,000 people – Tychy Aquapark, after planned 3,000 people at the Water Factory in Szczecin).



III. 1. Schematic projection of the ruins of the Therms Karakalla with outlines of aquaparks in Szczecin, Ruda Śląska and Tychy in the corresponding scale, Source: <https://upload.wikimedia.org/wikipedia/commons/a/af/Caracalla-Grundriss2.jpg> (access: 25.06.2019)

2.2. THE BATHS OF CARACALLA FEATURES – FUNCTIONS AND SCALE

The thermal baths were a multifunctional object. They provided various social needs with the basic purpose of maintaining personal hygiene and wellness, relaxation and rest. These facilities were adapted to the development of physical culture, in particular to play all kinds of team games. Derived solutions from the culture of Greek gymnasiums allowed the Romans to entertain and keep in shape. After intensive physical exertion, there was time to calm down and use some care. The cleansing process began by oiling the body and scratching dirt and removing sweat. Then the body was heated and cooled using appropriate hot rooms, steam rooms and troughs with cold and warm water. The massages were the culmination of a stay in baths. These rooms had heating and cooling systems. For this purpose, a long-distance aqueduct Aqua Nova Antoniniana was built, supplying 18 water tanks. Satisfaction with being in a given place was so great that it revived the local community, becoming a fashionable place to be or do politics. The baths were free, which allowed the plebeian community to enjoy it on a par with patricians. After experiencing physical rest, there was time for spiritual and philosophical development. Thanks to the efforts of Julius Caesar, libraries were located in places such as therms, which were also available for plebes. In The Baths of Caracalla, the use of libraries and reading rooms for learning or contemplation was natural. Further services that were provided as part of the complex were the improvement of health and beauty. In the same place, you could use the services of a hairdresser, pull out teeth or sew wounds, make corrections that today could be considered a form of plastic surgery. The final touch of baths offer was numerous stores. All this affected not only the development of the district, but also the impression on the merchants. In effect they discussed the achievements of the Empire



III. 2. Perspective view of Baths of Caracalla, information board in front of the Baths – photo of the board own resources

emphasizing their power, strengthening the image on the international forum. The Baths of Caracalla, their construction and completion are at the same time the greatest achievement of this Emperor (construction began by Septimius Severus in 216 CE). On average, 13,100 people worked on the construction, and the cost estimated by DeLaine J. was estimated at 1.2 billion denarii (which weighed 3.9 grams of pure silver, and the valuation from 07.06.2019 was \$ 0.53 per gram), which in translation for the modern value of silver it is close to \$ 2.5 billion. Finishing works lasted until 235 CE.

2.3. THE BATHS OF CARACALLA – THE FALL AND OBLIVION

Baths functioned until the sixth century, considered one of the seven wonders of Rome. In 537, during the war with the Goths, Vitiges Ostrogoths circled Rome. To force the inhabitants to submission, they destroyed the aqueduct of Aqua Nova Antoniniana. The lack of water, as well as the large distance of the thermal baths from the inhabited parts of the city led to a total collapse of The Baths of Caracalla. In the following years, up to the seventh century, the area was used as a pilgrim cemetery. Most of the buildings were destroyed during the 847 earthquake. In the 12th century it was decided to use the ruins as a building material for the needs of churches and other buildings emerging in the city.

In the Middle Ages, most large centers of this type were abandoned or completely destroyed. The facilities used were small, accessible to a narrow group of people. The approach to bathing depended largely on the culture that influenced the further development or loss of hygiene. The functions of the Baths of Caracalla have been separated for centuries into smaller units of public facilities with single tasks. Ablutions took place as part of religious rituals at mosques and synagogues (mikvah). Recreational and hygienic functions were limited to the state of early modern times, where they completely disappeared. Replaced with the form of powdering and perfuming, they have contributed to the spread of disease, wreaking havoc on society.

2.4. SOCIAL REVOLUTION – A NEW BEGINNING

It was not until the XVIII century that the social hygiene culture slowly began to rebound and restoration of the old thermal conditions began. It was only thanks to Queen Anna Stuart, who promoted sea bathing, that seaside and spa spas began to arise. Along with the French Revolution, the hygiene revolution began, and with it the implementation of increasingly multifunctional facilities. Another impulse was the resumption of organizing the Olympics. This translated into the popularization of sport. Sports clubs were established, which were initially based on natural water – rivers and lakes, gradually changing into more organized forms of outdoor pools. In the following years, the rules of sport competition in swimming pools were introduced, and at the same time there was emancipation of women. This translated into their greater social and sports activity. With the end of World War II, the free world developed consumerism, and with it the attitude to social needs. In the 70s and 80s of the twentieth century, the first multi-functional facilities were created that offer a wide range of services. With the arrival of the shopping center era, the largest aquapark and shopping center in Canada West Edmonton Mall is created

with a total value including all modernizations exceeding \$ 1 billion. In Poland, with the fall of communism and social development at the dawn of the new millennium, multifunctional facilities, small municipal swimming pools, noisefully called “aquaparks”, began to appear. However, their size, directly proportional to the expenses, was only a substitute for ancient prototypes. Only the second decade of the 21st century brought for Polish baths the implementation of solutions from traditional Roman culture. Many modern facilities finally received expansion of functions.

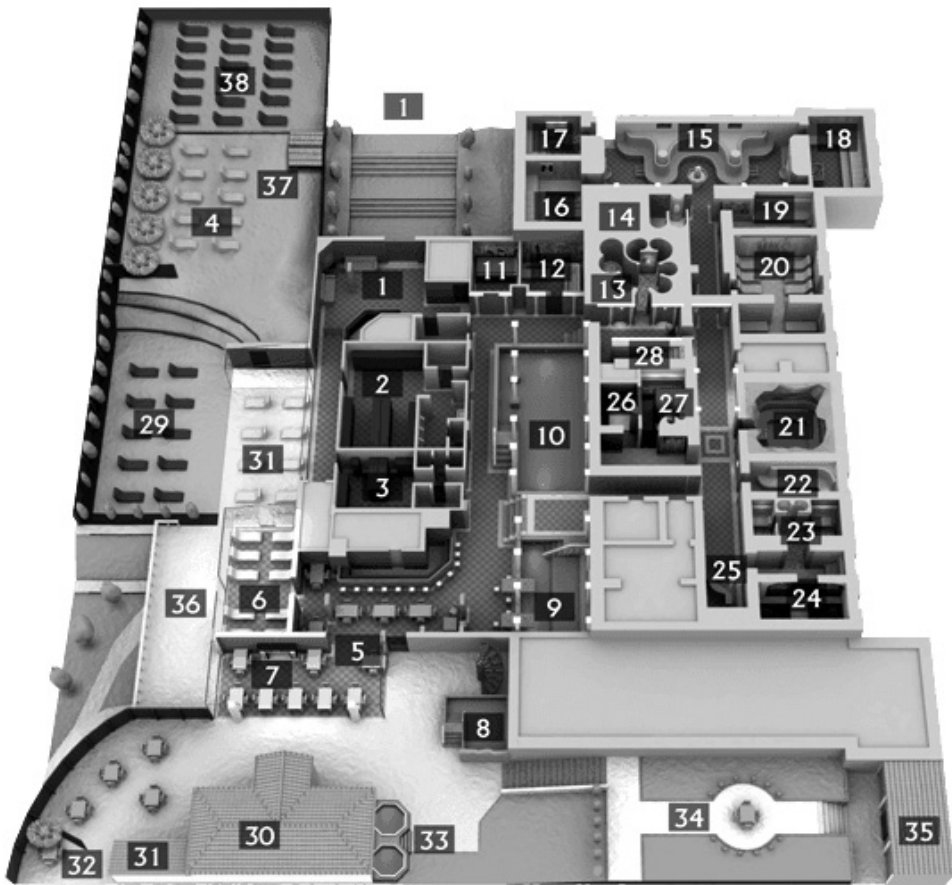
3. FOLLOW-UP

Antique patterns, forgotten for centuries, are beginning to return with more and more in-depth research on the life and construction of the Roman Empire. Contemporary realizations are beginning to refer to the prototype, which is undoubtedly the Caracal Baths, both in scale and functionality, with reflects in budget. In Poland, at the beginning of the new millennium, intensive development of sports, recreation and relaxation infrastructure began. Aquapark, wellness and SPA investments appear in various forms and scales to meet the social needs of the 21st century civilization.

3.1. REFERENCE TO ANTIQUE TRADITION IN CZELADŹ „ROMAN BATHS SATURN PALACE”

The “Roman Baths – Saturn’s Palace” functioning in Silesia in Czeladź town are unique in the country. First, their functional program and name refer to the ancient traditions of Rome. Secondly, that it is not a new object, but revitalized and adapted with a completely different function. Earlier in this place was the main building of the management of the “Saturn” mine (in April 1, 1899 sold to the “Saturn” Mining and Industrial Society founded by a group of the largest city Łódź industrialists including the Scheibler family). In 2010, referring to the tradition of the place and the idea of Roman Baths, the facility was changed into a hotel and conference center with a sauna and swimming pool complex. The styling design and form strongly adapts to the restrictions associated with revitalization, the imposed shape of the building, limited private funds and the fact that the sauna is mainly located in the underground. Considering these factors, one should be optimistic about this loose attitude to the architectural form and focus more on functional issues that derive so much from ancient traditions. The complex’s offer is adapted to the current market needs, and apart from saunas and the accompanying cooling zones and swimming pools, it also includes a wellness & SPA zone, beer baths and a fitness club. The basis for the whole assumption were the engravings of Pompeii Therm. In the Palace of Saturn we will find many rooms, whose purpose and names are taken from Roman baths. The complex includes, among others: apodyterion, frigidarium, tepidarium, calidarium and laconium, of which the first four existed in the Baths of Caracalla. Just like in an antique building, we have the opportunity to undergo massages and biological regeneration, including individual baths in goat milk or the aforementioned beer baths. However, it should be emphasized that although there is a gym in the building, traditional names such as the palaestra, ephebeum or xystum (non-roofed areas) have not been used here. Combining exercise rooms is a relatively new

trend in pool facilities in Poland – the beginning of the new millennium. Users and investors unaware of the achievements of the ancient world are very cautious about such an “innovative” approach. To meet the expectations of customers, the facility also borrows traditions from other cultures in the form of Hammam and Rasul baths. Saturn’s Palace is many times smaller in scale than its ancient prototypes, yet it seeks to use tradition. What distinguishes today’s projects from those of the past is primarily the lack of facilities focused on sports activities, which constituted a significant part of the complex, as well as completely skipping the educational part. An important part of The Baths of Caracalla were libraries, discussion rooms, meeting points for philosophers.



III. 3. Plan of the Roman Baths – Saturn’s Palace in Czeladź, source: <http://www.termyrzyskie.pl/static/b24/2018/07/1-53a3b8d.png> (access: 27.09.2019)



Ill. 4. Internal pool in the Roman Baths – Saturn’s Palace in Czeladź, source: <http://www.termyrymskie.pl/static/b24/2018/07/1-202c541.jpg> (access: 27.09.2019)

3.2. USE OF ANTIQUE FUNCTIONAL SOLUTIONS – EDUCATION

In 2018, after 8 years of intensive design and construction works, the Water Park Tychy was opened. This is the first aquapark object that, utilizes ancient ideas, combines recreational and sport functions with an educational part in a new setting. Sports facilities and libraries, as well as discussion rooms, existed side by side in the facilities of the Karakala Baths. These

places constituted a window on the world of ideas and access to knowledge, and were a place where high-quality information could be found. Currently, the need is reversed. We live in a world of information, but now the question is the quality of this information and its source. That is why society in the 21st century needs places where the quality of knowledge is at its highest level more than ever. At the same time, the data received have to be collected in easy way and have to be simple to assimilate. Available for all ages. These places are supposed to inspire people for further research and pursuit of truth. This is how the Educational Center – Water Academy in Tychy project was created.

These noble ideas originated in the ancient world are so distant to modern people and have been so forgotten that they aroused the aggression of people associated with the museum environment. Probably for so long recreational and educational functions have remained apart from each other that the current combination of them seems an oxymoron and too far-reaching “innovation”.

4. MODERNITY

The experience acquired through tradition and the use of this knowledge by continuing these good practices enables us to further combine modern technologies and ancient functionalities. As a result, interesting mutations arise that may indeed constitute a revolution in architecture.

4.1. TYCHY WATER PARK – EDUCATION 3.0

The beginning of an innovative approach to education is the first use in the world of gamification of architecture in the Aquapark facility in the Water Park Tychy. This is one of the methods of learning through play. The definition of gamification is the use of mechanisms from computer games for situations that are not games. These methods have been used for several years in the field of marketing as well as scientific research and analysis. In the Tychy Aquapark, the entire park has been turned into an “Indiana Jones” adventure type story, in search of hidden clues that lead us to the treasure – which, in addition to knowledge and fun, is a reward in the form of discounts for the next entry. Various passive and active devices are located inside the recreation and sports zone. They provide over eighty thousand solutions, which is to ensure individuality of the game and low chances of repeating the same adventure. You can participate in the game alone, in single mode or with family, friends in multiplayer, in two variants. You can participate in the game as part of a cooperation or competition against individual team members. This approach ensures reaching the largest number of recipients with different motivators, as Tkaczyk writes in his book. The game has a story line based on saving the earth in the face of an ecological disaster, which contributes to the educational effect. This solution is important in terms of strengthening interpersonal relationships, which in the era of smartphones are so reduced. Many people are alienated, lonely because of the isolation of people. Other reasons are excessive time spent in the network – in the so-called an individual world, far from what’s happening here and now. Digital solutions are tangled here with analogue ones, they increase the need for cooperation, and thus support the creation of interpersonal relationships. Users have the opportunity to experience time together. During the research on the effectiveness

of gamification of architecture used in the Tychy Water Park on a group of selected users, the influence of this attraction on the development of interpersonal relationships as well as the increase in activity by over 50% in relation to the object that was not equipped with architecture gamification – Aquadrom Ruda Śląska was demonstrated. These are only the first studies on a small group, however, they indicate potential trends and development opportunities.

4.2. WATER FACTORY – FURTHER EVOLUTION

“Water Factory – New Gontynka” is an investment in Szczecin in progress, which is scheduled to be completed in 2023. The tender for the investment implementation ended with the selection of an offer for nearly \$ 130 million. The functional assumption is developed by the ideas of The Baths of Caracalla, and at the same time initiated innovations and modifications initiated by the Wodny Park in Tychy. The permutations used in the facility in relation to its predecessors relate primarily to the approach to education. Similarly to the ancient prototype, this time scientific spaces are seamlessly interwoven with developed sports and recreation zones. The facility has a public area, which flows in the form of a watercourse through the centre of the establishment, emulating the river embankment like “Wąły Chrobrego” constituting a visiting card and meeting place for city residents. This contemplative and green zone enables rest and reflection. It is planned to build an educational path in the open air in accordance with the standards of the Washington National Air and Space Museum with points of the solar system located along the long side of the National Mall and Jefferson Street. SW. Already in the connector that joins the two wings of the building, in the form of a suspension bridge over the river, we will find the first educational attractions. There will be a sports, entertainment and educational zone on the “right wing”. Closer to the entrance there is a climbing wall, fitness zone, gyms and squash courts and a recreation area in the form of a bar. Further on, there is the entrance to the Educational Centre spread over seven levels, accessible from a spirally descending pavement – called the “whirlpool of knowledge”. On the area of 4,500 m² there were 6 thematic zones, a space for special experiments, didactic and lecture rooms. In the “left wing” of the building there are swimming pools, recreational and sports as well as a three-level sauna with a wellness and SPA zone. In addition to massages, users will have the opportunity to take advantage of therapeutic baths, beer baths and Hammam and Rasul. This part of the building has a basement, in which, apart from the entire pool and ventilation technology, there is space for educational discoveries. The intention of this zone is to show visitors the process of water treatment, obtaining energy through cogeneration. Using 3D mapping technology, it is possible to show the entire workflow of these devices, just like it does in “EC1” education center in Lodz. Architecture gamification was applied in the Water Park Tychy. However, this time in “Water Factory” the game is strongly connected with both the water park and educational center and the city with local architecture and legends. According to the idea of learning through play, children and entire families have the opportunity to learn the history of the place, as well as experience an adventure solving tasks and puzzles in various fields. This is to show the rightness in the approach of interdisciplinary human development and the practical use of knowledge. In the absence of it, it is possible to “meet” her in the educational centre next door.



Ill. 5. Visualization of the Water Factory – Nowa Gontynka project in Szczecin, own sources

5. CONCLUSION

The synergy of functions shown on the examples of the Tychy Aquapark as well as the Water Factory in Szczecin shows the rightness in using the traditions and thoughts of previous generations, even if they were a millennium away from our time. The attractiveness and popularity of the Saturn Term in Czeladz show how beneficial the alliance of ancient methods of achieving relaxation and rest with other cultures and sauna techniques can be. It can be hypothesized that if the Empire did not collapse, the Romans would probably also combine the experiences of other cultures through adaptation or capture, as was the case in art and architecture.

The examples presented confirm the thesis: The Baths of Caracalla remain an unsurpassed model of modern public facilities in the field of relaxation, recreation and education. In all these centuries past experience has been lost. The ideas of recreation and education in one complex are so distant that the re-use of this solution is met with great resistance from the museum and educator community.

Another aspect is the economic issue. As calculations by DeLaine J. show, there is a big financial difference between contemporary and ancient realizations, which has a direct impact on the scale and functional scope. Even the largest aquapark in the world cannot compare with the thermal springs of Rome. They were once objects erected also for political purposes showing the strength of the empire, testifying to the strength of the ruler, as well as the centre of life of the inhabitants. The Baths of Caracalla provided the diverse, very broad needs of the Romans and were provided free of charge by the state. Today, the needs have not changed, on the contrary, they have been strengthened. Stress and constant rush shorten our lives and degrade its quality. At the same time, various 21st century civilization diseases, such as obesity or depression, are accumulating. Thanks to the experience of ancient term and modern technologies, it is possible to mutate these good solutions and create further permutations.

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