

Summary of the doctoral dissertation entitled:
"Gamification of architecture in the design of public utilities
on the example of selected water parks "
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The subject of the dissertation is the gamification of architecture. Gamification is a new concept (Nick Pelling in 2003). It has been specified as the possibility of using mechanisms that mobilize players in situations or areas of life that are not games. An example is "Foldit" by Seth Cooper and Adrien Treuille. The goal of the game is to collapse the structure of selected proteins, which allows you to win with dangerous diseases and create innovation. The representative of gamification in architecture is the Fun Theory 1 project, concerning the metro stairs in Odenplan in Stockholm. The idea of the project was to encourage passers-by to an active lifestyle. Thesis: "Gamification of the architecture of aquapark facilities meets selected social needs in the scope of: strengthening interpersonal relationships, improving health and education development". The research showed that the thesis was correct. The potential for architecture gamification is large, and the analyzes carried out using the available gamification models (according to the Yu-kai Chou - octalysis formula) indicate a very initial phase of these social techniques used in existing facilities. Many gamification incentives that could significantly improve the reception and effectiveness of these techniques have not yet been implemented. This work sets the nearest development directions as well as further fields for research to obtain more accurate data enabling the improvement of the field.

The dissertation is based on 5 studies:

First study was performed in terms of urban factors affecting the strengthening of interpersonal relationships, improvement of health and development of education on selected examples. The results indicate that the selected examples of objects are very similar to each other. In this way, the urban impact was considered neutral.

Second study was performed as verification of quality standards of selected aquapark facilities. The results indicate that objects with gamification significantly improve health.

Third study was performed as questionnaires of two types in number close to 500. The first was carried out in front of the existing selected water parks, after users left the facility. Study checked: age, education, how to get to the object, or knowledge about the water parks themselves. Another group of questions concerned the feelings of users, as well as preferences regarding the way of spending free time, people with whom this time is spent. The second questionnaire was based on a selected group of users.

The fourth study was performed as monitoring of the behavior of a selected group of users, the frequency and use of attractions in the facility with gamification and without this functionality. The results of the research confirmed that statistically people using architecture gamification spend their time twice as actively inside the aquapark. However, it should be noted the technical limitations that limited the scale of the study to eight people.

The fifth study was performed as collecting data from a multimedia game in the Tychy Water Park, which allows verification of conclusions from previous tests. The system records the activity of players, as well as in conjunction with ESOK (Electronic Customer Service System) and data from Google Maps managed to set the number of players visiting by hour. Game time, game type or amount of winnings. These data indicate that the main group of players are children and parents. Such conclusions result from the increase in the number of players playing on all days off, especially during holidays, holidays and vacations. The quantitative jump during the holidays is greater than the increase in attendance at the facility. At the same time, in September, Tychy Water Park recorded only a slight decline in popularity compared to July and August, while the number of users of the game "Mission H2O" dropped drastically and was similar to March or October. Another evidence is also the decline in users after 7 pm, where according to the statistics of attendance at the facility there is an increase, and often rush hour.