

## Role of public space in designing complex urban structures

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**ABSTRACT:** The aim of this article is to present the main assumptions about design studios as held in the Faculty of Architecture at Gdańsk University of Technology (FA-GUT), Gdańsk, Poland, adapted to the development of key competencies in the urban planning of complex urban structures. One of these competencies is the design of public spaces. The main goal of the studios was to deliver knowledge of the role of public spaces in the design of complex urban structures. During the studios, students learned the need for a systematic approach with various specialists in improving the quality of urban structures. An overview is given of the findings from the urban design studios held, as well as the competencies gained by students. The major conclusion is that teaching the ability to design public spaces connecting urban structures gives students opportunities to better understand complex urban circumstances, as well as offering new challenges in urban planning.

### INTRODUCTION

Shaping public spaces is one of the main elements in the design of modern cities. Public spaces, understood as a specific core of the city, also determine its quality. Public spaces are said to be the specific *genetic codes of the city*, the basic carrier of culture, which consolidates the shape of space [1]. At the same time, public spaces are subject to rapid changes. Public space is a relevant topic in the agenda and practice of cities. Delivering better public spaces should be understood through the prism of planning, because planners have a critical role to play in the creation and shape of public spaces. This role manifests itself in two distinct ways. First, planners often are the initiators of public space projects, recognising the need for new or regenerated public spaces. Second, planners are the guardians of how public spaces come into being through regulatory processes [2].

The role that public space and its transformations play in a modern city requires that it be included in urban design teaching courses. Studios are undertaken in the Faculty of Architecture at Gdańsk University of Technology (FA-GUT) in Poland, to familiarise students with the design of public space. The main goal of these studios is to educate about the role of public spaces in the design of complex urban structures. Thanks to this, students have a broader knowledge of shaping and revitalising public space as one of the main elements of a modern city.

### ROLE OF PUBLIC SPACE IN THE CONTEMPORARY CITY

Public spaces are the places of interaction, socialisation and represent the society and its culture [3]. A well-designed and functioning public space is the essence of the city and is the centre of urban life. It is widely known that, without great public places there would be no great cities. Throughout history, the role of public space has changed because of the profound changes made to cities during the industrial and technological revolution. These changes have modified the way people access and engage in public domains [4].

Despite many changes, public space is still the centre of social life. Depending on the role they play in the city, they can be informal street corners but also impressive city squares. These public spaces play an important role as the centre of social life. On a smaller scale, they can be simply places of rest and respite from the hustle and bustle of the city [2]. The traditional role of the square as a gathering and social place has evolved in its uses and interactions. Streets, parks and plazas today accommodate the public in different ways. What in the 1990s was labelled a *non-place* [5] today is seen as *new-place* [6].

From the 1980s, the issue of public spaces began to play an increasingly important role in urban design. Not only appearance and form (physical transformation) has mattered, but also economic, political and cultural issues. Urban design as a process of shaping the city has played an important role in creating a built environment with

significant political, economic and cultural dimensions, which go beyond appearances, limited scope and scale, and simply physical transformation [7].

Public spaces play an important role in shaping urban environment and are a vital ingredient of successful cities. It is important for local governments to invest in public space, because:

- *Public space equals quality of life*
- *Public space supports the economy*
- *Public space contributes to a sense of civic cohesion and citizenship*
- *Public space fosters social and cultural interaction*
- *Public space enhances safety*
- *Public space improves health and well-being*
- *Public space increases mobility*
- *Public space improves the environment.* [8].

According to a Project for Public Spaces, successful public places have four main features: they are available and connected; people in them are involved in various activities; the space is comfortable and has a good image; and they are socially valuable. Accessibility relates to the connection of a given place with the surrounding areas, both visually and physically. Activity is associated with the need to develop various types of activities in a given place that will encourage people to appear in the place.

The issue of comfort and image is associated with many factors, such as: the ability to choose a place to sit, cleanliness, safety, appearance and magic. The social aspect of the place will refer to people connecting to the area, with interactions within it. Thanks to spending time in a given space, positive meetings, conversations, people are feeling part of a community and show greater attachment to places associated with it.

When designing public spaces, many aspects of a modern city should also be considered, including resilience and sustainable development. The quality of public spaces should be related to the need to respond to climate change challenges [9]. The introduction of natural elements, such as earth, greenery, water and climate are important in shaping a friendly and healthy living environment [10].

## DESIGN STUDIOS IN URBAN DESIGN AT GUT

Responding to the challenges facing architects and urban planners, staff at the Department of Urban Design and Regional Planning at the FA-GUT are involved in various research and development projects associated with urban development and regeneration. The issues include planning for urban regeneration of areas in small- and medium-sized towns (with public participation); planning for development and transformation of public spaces, as well as redesigning the suburban areas; researching issues and problems associated with transformation of brownfields (including discussions on issues in heritage preservation and identity management). Moreover, additional areas of research are the exploration of the theory of revalorisation (or revaluation) of towns and urban historical structures, as well as social aspects of urban design.

Many educational courses are offered at the Department of Urban Design and Regional Planning. They range from the history of town planning and urban design theory and practice (design studios) through to master planning, spatial development up to public participation, revitalisation programmes and sociology, the economy and environmental issues.

The Faculty of Architecture at Gdańsk University of Technology runs different design courses, such as:

- **Urban Design I - Urban Composition.** This course is an introduction to urban design. Students become acquainted with basic issues of work at a bigger scale, open space-creation, compositional aspects, variety of forms and functions. Different tasks, readings and exercises develop students' sensitivity to space, scale, composition and some basic rules of urban design.
- **Urban Design II - Housing Estate.** This is housing as the basic form of city structure, its primary function and the first step in the complexity of urban design. Relatively small scale, it allows for coverage of a wide scope of issues, from compositional to technical requirements of different forms of housing, traffic and greenery.
- **Urban Design III - Downtown Development and District Centre Development.**
- **Urban Design IV - Urban Planning.** This is a course conducted in the sixth semester of studies (engineering level). Students acquire knowledge of the circumstances and challenges of contemporary urban planning, based on the sustainable development concept. Theoretical information and case studies illustrating different problems are presented during the lectures. They are supported by the design studio and seminars.

During the design studio students make an urban project of the chosen district of a big city. They are asked to make a complex analysis (regional, transport, existing land use, environmental, cultural, landscape), a vision of development and the master plan. Students solve specific problems, such as sustainable transport, waterfront

revitalisation, landscape planning of public spaces, describing the examples of good practice from all over the world and discussing their suitability in a specific space and circumstances.

The course is focused on helping students to understand and recognise the main urban circumstances, problems, needs and challenges, and helping to apply this knowledge. The knowledge gained during the course enables students to understand contemporary urban planning.

Case study of an Urban Design III - Downtown Development and District Centre Development:

One of the examples of a design studio considering issues of public space design were classes under Urban Design III, for Erasmus groups. In the course, design methodologies were explored that aim at bringing new meaning to public space, contributing to the lives of people in an urban environment. The course focused on informed reviews and discussion of design practices and critical discourse.

An urban studio held was a part of a module with components, as follows:

1. Urban Design III connected with the ability to design urban complex downtown structures.
2. Theory of Urban Design, the main aim of which was to familiarise students with knowledge of the basic issues of modern urban planning, including the problems of transformations of downtown structures.
3. Sociology of Space, the aim of which was to familiarise students with the trends of changes in the space of a modern city, with emphasis on sociocultural factors.

The learning outcomes from the module were:

- developing the urban concept of downtown buildings with public space;
- solving the most common problems related to the profession of the architect, correctly identifying and resolving dilemmas related to this profession, performing risk assessment and assessing the effects of activities;
- having basic knowledge of contemporary urban planning, including sustainable development issues;
- performing social and cultural analysis of the urban environment; understanding the interdisciplinary context of space-shaping;
- having knowledge in the planning and implementation of urban interventions.

The design focus for Urban Design III was the Zaspas district in Gdańsk or, more precisely, the former runway, which is important, because of the further development of this part of the city. The Gdańsk-Zaspas district stretches between Dolny Wrzeszcz and Przymorze. It is dominated by large, multi-family blocks of flats. The district is distinguished by a characteristic hexagonal urban plan, one of the most interesting in what is called the *Tri-City*. In addition to monumental residential buildings, the Gdańsk-Zaspas district is also full of green spaces and is relatively close to the sea.

Zaspas, as one of the largest *plattenbau* settlements (*plattenbau* refers to a large, prefabricated concrete slab building) in Poland, was built in the 1970s and 1980s and designed by the architects R. Hordyński, S. Grochowski and T. Opic. It was designed according to the principles of modernistic urban planning, and the idea was to create a self-sustained place for living. The settlement was developed on the grounds of a former airfield, which gave architects many spatial, functional and composition options. The district was to be an exemplary investment, which was to illustrate the urban thought of that time. Unfortunately, it also displayed the growing problems of the prevailing system.

Throughout the 1980s and 1990s, Zaspas struggled with social, economic and spatial problems. To address such problems, local activists introduced art into the neighbourhood as a specific tool of revitalisation. At present, the district is looking for solutions related to the revitalisation of public spaces. One of the main problems of the district is the insufficiently designed core of public spaces that would bond the space and give it new meaning. Admittedly, the district has many open green spaces, which are one of its potentials, but they lack the proper character and role they should play in the district. That is why the tutors of the course (Magdalena Rembeza and Roman Ruczyński) have chosen this area as the key for transformations and discussions of the revitalisation of public space.

The design studio has been divided into three main stages: the analytical stage; the vision; and final concept with detailed public space solutions. A combination of residential and service functions was assumed for the project, where proportions between individual elements were selected after careful analysis of the spatial context and based on the specific design problem. The project was to result in a concept for developing the area, with a proposal for a new multi-functional building structure in a specific spatial context and with detailed urban parameters.

The analytical stage consisted of analysis of a selected part of the city. The project stage was related to shaping a housing and service complex, with rich public space. The project was devoted to the problem of including a housing and service development complex in the urban context as part of the process of reurbanisation and revitalisation of the district, with an emphasis on design of a public space (Figures 1 and 2).



Figure 1: Final design project. A link throughout Zaspá (Source: project by E. Spinu and Sz. Mańkowski).



Figure 2: Detailed design of public space (Source: project by the students, J.I. de Navarre Garcia, J. Guzman Redon Vicente and L.C. de la Rose Beuville).

It was important for students to work on models during the design studio. Models enable students to better understand their project. There are three basic types of model: conceptual, working and presentation [3].

Conceptual models were used during the initial design stages to explore the designer's initial ideas. Working models were used during design development to enhance understanding of spatial relationships. Finally, the presentation models represented the final design solutions. *While models are a long-established method of representing architectural and urban form, they raise issues concerning the realism-reality gap* [3].

Before the studio, the criteria for evaluation were selected. These were:

- Attendance is obligatory, as well as finalising tasks.
- Final mark consists of the sum of project and seminar mark.
- Project evaluation is based on the quality and complexity of the final design.

Working on the integration of urban and environmental solutions students developed original concepts. Among them were projects that presented new concepts for spatial development in an interesting way, with a special emphasis on public space. The best projects showed an integration of existing and designed space through the arrangement of public space, the role of which was revitalisation (of the space). Some projects incorporated attractors in the form of various functions (e.g. commercial, cultural, entertainment). In others, the creation of new connections was represented, to minimise existing barriers. The inclusion of sport and art as elements of public space also played an important role in students' designs. Public spaces are important in promoting a healthy lifestyle and encouraging various activities (Figures 3 and Figure 4) [11].



Figure 3: Final presentation of students' designs (Source: Author's images).



Figure 4: Group members led by tutors M. Rembeza and R. Ruczyński (Source: Author's images).

## CONCLUSIONS

Public spaces form part of the design of complex urban structures, especially in contemporary cities. Today, it is difficult to imagine well-functioning cities without properly designed public spaces, which is why teaching students about them is important. The design studio gives students the opportunity to develop correct city designs, which later can be implemented in practice. It is here that new ideas are tested and future solutions may be born. Moreover, teaching students the ability to design public spaces connecting urban structures gives them much-needed opportunities to better understand complex urban environments, as well as new challenges in urban planning.

Giving students knowledge through teaching them that public spaces are one of the basic elements that make up a city is associated with a holistic approach to design. *In any design process, there is a danger of narrowly prioritising a particular dimension - aesthetic, functional, technical or economic - thus isolating it from its context and from its contribution to the greater whole* [3]. All these dimensions meet in the public spaces of cities and this is most important in changing spaces into desired places. Careful design is needed to reconcile the demands of needs. Moreover, *...an understanding of the relationship between people (society) and their environment (space) is essential in urban design* [3].

## REFERENCES

1. Bielecki, C., *Gra w Miasto*. Warszawa: Fundacja Dom Dostępny (1996) (in Polish).
2. Carmona, M., Principles for public space design, planning to do better. *Urban Design Inter.*, 24, 1, 47-59 (2019).
3. Carmona, M., Tiesdell, S., Heath, T. and Oc, T., *Public Places Urban Spaces, The Dimensions of Urban Design*. (2nd Edn), Architectural Press (2010).
4. Ghel, J., *Cities for People*. Washington, Covelo, London: Island Press, (2010).
5. Auge, M., *Non-Places: Introduction to an Anthropology of Supermodernity*. (J. Howe, Trans.). London: Verso (1995).
6. Bravo, L. and Guaralda, M., An open access forum for the discussion and advancement of research about public space. *The J. of Public Space*, 1, 1, 1-4 (2016).
7. Madanipour, A., *Urban Design and Public Space. International Encyclopedia of the Social and Behavioral Sciences*. (2nd Edn) (2015).
8. Andersson, C., Public Space and the new urban agenda. *The J. of Public Space*, 1, 1, 5-10 (2016).
9. Nyka L. Bridging the gap between architectural and environmental engineering education in the context of climate change. *World Trans. on Engng. and Technol. Educ.*, 17, 2, 204-209 (2019).
10. Haupt, P., Design with nature and design for the people - the principles of architectural education. *World Trans. on Engng. and Technol. Educ.*, 16, 1, 70-74 (2018).
11. Kostrzewska, M. and Rembeza, M., Health by art: the remedial role of artistic installations in public space. *Proc. 5th SGEM Inter. Multidiscipl. Scientific Conf. on Social Sciences and Arts*, Florence, 207-214 (2018).