Architecture of higher education in Poland in the context of sustainable development

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The beginning of the 21st century was in Poland a period of intense investment activity in the development of infrastructure for higher education. University campuses have the potential to become an excellent model of architecture and urban planning with ideal symbiosis of learning and working, residence and recreation. Ecology issues must have value of moral imperative and are an expression of social responsibility for politicians, teachers and the media, as opinion-forming centres. By virtue of this mission, universities should therefore be interested in promoting sustainable architecture to minimize adverse effects on the environment and to shape ecological society. But many campuses of polish universities do not develop perfectly. Developed on the city suburbs they do not support the idea of compact city and the process of re-urbanization. Often there is a lack of application of the principles of sustainable development. We see ad hoc method of developing campuses, tendency to suburbanization, waste of space and public funds, too little concern for the environment and not enough renewable energy. Institution of higher education must develop in accordance with the principles of sustainable development. This is the direction specified, as a priority, in the European economy and it’s profitability to private companies. Universities as institutions that use public funds for its functioning and development, are obliged to the rational management, with attention to Social Affairs and future generations.

Keywords: architecture, higher education, university, sustainable development

Introduction

The beginning of the 21st century was in Poland a period of intense investment activity in the development of infrastructure for higher education. This was in large part due to the entry of Poland into the EU in 2004 and thanks to the influx of EU funds. During 2004-2015 more than 160 new, academic architectural investments were built (Figure 1).

Architecture of higher education campuses has been an interest of the authors since 1998. It was the subject of his own diploma project "The urban-architectural concept of the University of Bydgoszcz" (1st prize in the SARP competition no 856 in the team: A. Duda, H. Zubel, P. Aniśko, P. Żabicki), as well as multiple projects and completed buildings at the time of employment in Kuryłowicz & Associates (from 2000 to the present). Since three years, the author explored architecture of universities as a doctoral student, making study tours in Poland and Europe.

University campuses have the potential to become an excellent model of architecture and urban planning with ideal symbiosis of learning and working, residence and recreation. Ecology issues must have value of moral imperative and are an expression of social responsibility for politicians, teachers and the media, as opinion-forming centres. By virtue of this mission, universities should therefore be interested in promoting sustainable architecture to minimize adverse effects on the environment and to shape ecological society. Does this happen? In the world yes (Figure 2), in Poland—no.

Definitions

Characteristics of sustainable development are described in the literature by Chmielewski [1], Stangel [2], Baranowski [3], Stawicka-Walkowska [4] Drapella-Hermansdorfer A. [5] and others. For example, J.M. Chmielewski [1] writes that a sustainable architecture:

- limiting the territorial growth of cities (urban sprawl) and supplement the existing urban tissue, the balance between the spaces fitted and unbuilt (...), maintaining a continuous open green systems as areas of ecological and recreational activities, reducing car traffic and the promotion of public transportation and cycling (...), minimizing waste production (...), the use of high-quality, durable and environmentally friendly building materials, recycling, savings in water management, a restrictive energy savings derived from non-renewable sources, production of energy from alternative sources (...).

- The concept of sustainable development means a rational, cost-effective and efficient management of resources. Sometimes comes down to sustainable development to take care about the environment, but the demands of the Green stem from the basic postulate of reasonable care for the basic resources for the operation and development of societies. The term resources is very high capacity; in respect of these are for example, space, raw materials, energy and capital, but also the so-called, human resources, social capital or time (the inhabitants of). [2]

Assessment methodology

Assessment of urban planning and architecture should be carried out according to specific criteria and methodologies. List of different methods and tools for quality are provided by E. Niezabitowska and D. Masy [6]. Despite the large amount of evaluation methods, it should be noted that none of them is universal enough to cover all aspects of the impact of a Uni-
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University Campus on the environment and human beings. That is why the author of this text has developed his own qualitative assessment methodology of higher education investment, which (among others) consists of: location criteria (urban planning), the criteria for land use, aesthetic criteria, spatial and functional-performance criteria, technical-material criteria, behavioural criteria and socio-economic criteria. Conclusions in this work are formulated on the basis of the analyses and assessments using the above criteria. The intention of this article is not a description of the methodology but rather my observations on its basis and the search for the causes of specific architectural results.

Observations

Ad hoc method of developing campuses

Studying the typology of urban campuses in Poland, it must be noted that most of them are formed by an uncoordinated grouping based to meet the ad hoc needs of the University. Such campuses do not create relationships between the buildings, or the identity of the place, but also does not work correctly.

An example might be a Baltic campus of the University of Gdańsk: the architecture of several objects is at a high level, however, the entire campus makes depressing impression extensively, unimaginative and erratically furnished space (Figure 3). Campus clearly arises on the basis of meeting the immediate needs of the University (plan ‘ad hoc’). Additional buildings were established as separate investments in the free spaces of the campus. There isn’t coherent and clear vision of urban planning on a Baltic campus UG.

A tendency to suburbanization

Many University decision makers remains committed to the creation of the extensively built-up academic enclaves, extracted from the structure of city. It’s the result of the still alive idea of Modernists, widely criticised by contemporary urban planners. A tendency to suburbanization in the short term beneficial for investors (cheaper land) in the longer term, increases infrastructure and social costs.

Examples of high-growth suburban campuses are:

- Morasko campus of the University of Poznan,
- III Campus of the Jagiellonian University in Krakow,
- New campus of the University of Białystok (Ciolkowskiego street)
- Kortowo campus of the University of Warmia and Mazury in Olsztyn,
- Koszalin University of Technology campus,
- Rzeszów University of Technology campus.

The negative impact of moving university from downtown to suburban areas is visible in Poznan (Figure 4):

- now a large part of the city collapsed, scarred sites empty partners, anemic domain street life and increasing vacancy rates. More frequent are so discussions on the meaning of decomposition of the scientists on the periphery. Indeed, it will be difficult to revive in the future the heart of the city without the most spontaneous and dynamic groups: students and academics (...). [8]

In Western Europe the revitalization of neglected or industrial districts is the result of comprehensive planning activities. In Poland it is a rather exuberant process driven by the availability of lower-priced properties or land and the current needs of the University. Suburbanization is in opposition to the contemporary idea urban and sustainable development.

Poor quality of public space

Public spaces for many of the Polish campuses are neither interesting nor encourage for leisure time. Visible is the lack of the idea of management of public spaces between buildings dominated by parking lots for cars and lawns.

An example a dominance of car parks in a public space might be a Morasko campus of the University of Poznan which is very picturesque, surrounded by greenery, surrounded by a forest but at the same time, main axis of the campus is a string of huge parking lots between the buildings (Figure 4).

In Poland, generally, less weight than on European campuses devoted a small architecture and green. Green areas have a look as a naturalistic rather than designed.

Often, there is no link between the public space of the campus and the public space on its outside. A very important problem in the use of the campus for the urban community is that exist the fence around the campuses. For example: the fence in Bałtycki campus of University of Gdańsk is closed at 22. It becomes inglorious standard on our college campuses. It is a thing unprecedented in modern European campuses.

Too little concern for the environment and not enough renewable energy

In Poland only a few individual objects deserves to be called environmentally friendly, unfortunately. Still not enough is use heat recovery items, production of renewable energy, smart control systems devices, green roofs. Although there are first signs improve: the Jagiellonian University project is obtaining renewable energy from the Sun and reduce energy consumption. Project called Construction of an integrated system for the collection and distribution of energy generated from renewable sources in the III Campus UJ obtained co-financing from the EU budget. There were installed photovoltaic systems, solar collectors for heat energy and modernized lighting (conversion of the LED). The use of renewable energy solutions and the modernization of lighting, has brought material benefits and environmental: saving financial resources and reducing emissions in this annoying carbon dioxide into the atmosphere. Unfortunately, such investment is still insufficient.

Causes

Crisis of the spatial policy

Urban planning was marginalized by successive political authorities, local government and the university authorities.

The dominant doctrine in spatial politics is liberalism: it’s the market decides in most investment and so on the actual land use. Market mechanisms (...), does not improve governance and the quality of the space, does not improve the functioning of urban structures also. [7]

Headache of modern Polish cities is also the lack of local land-use plans. In 2014, only 25% of the surface area of the Polish
had important local land-use plans. Crisis planning policy creates in many cases a lost opportunity to use investment to improve the value of space of the city.

**Design & build for lowest cost.**
Bad influence on Polish campuses have formal legal conditions based on public contract act, especially: the selection of designers by the criteria of lowest cost and the model of the investments by public universities. Design and build tender, which seem to be attractive for the investor, in their effect, the campuses have become a collection of random buildings realized under the dictation of the low-budget and design with a focus on ‘value engineering’ (Figure 5). Universities are not spent enough time (and money) on analysis study which causes bad urban planning campuses.

Too rarely are organized design competitions for campuses or university buildings.

**Universities structures**
Public Universities have complicated structures. Large autonomy of faculties causes lack of strategic vision for the development of the whole University. Often, campus spaces are divided into fragments for departmental investments, without due attention to the field of urban planning as a whole. In effect buildings are not related to urban development and the space between objects becomes an accidental result. Space is a neglected resource in Poland.

**Lack of awareness of universities managers**
Leading world universities publish annual reports on practices for their sustainable development and the effects of their use (Figure 6). Unfortunately, none of the Polish University does not issue a similar publication.

Polish Universities do not participate in international organizations e.g. (ISCN or AASHE). This confirms that the higher education campuses in Poland are not interested in the exchange of information and best practices in order to achieve sustainable business campuses.

Polish Universities do not implement management systems like EMAS (Eco-Management and Audit Scheme) which means that universities are not optimally managed.

If the University wants to be attract for students the way to do this is to make the campus and its buildings, attractive. That’s why many of universities employ famous architects or organise competitions to identify the most valuable projects.

**Conclusion**
Urban planning of modern Polish campuses should be criticized for:

- ad hoc method of developing campuses.
- lack of attention to the public space (focusing activity on construction of the buildings volume),
- lack of application of the principles of sustainable development,
- lack of spatial strategy consistently (on the basis of a coherent urban design campus in conjunction with the city).

Sources of adverse trends of urban planning are among others:

- crisis of the spatial policy,
- lack of local plans and the lack of proper coordination between investment plans and the cities,
- lack of awareness of urban decision makers (academic and urban) leading to a lack of consistently implemented spatial strategies for Polish universities,
- defective law acts, which leads to a waste of public money on projects that do not pursue the public interest.

Institution of higher education must develop in accordance with the principles of sustainable development. This is the direction specified, as a priority, in the European economy and it’s profitability to private companies. Universities as institutions that use public funds for its functioning and development, are obliged to the rational management, with attention to Social Affairs and future generations

**Figures**

Figure 1. Map of investments for higher education—more than 160 new, academic architectural investments were built in the period 2004-2015 [Piotr Żabicki]

Figure 2. Wirtschaftsuniversität Wien (Austria), sustainable, modern campus in the Centre of Vienna [Piotr Żabicki]
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Figure 3. The center of Baltic campus of the University of Gdansk—an example of ad hoc campus. The apparent lack of a comprehensive idea and respect for space [Piotr Żabicki]

Figure 4. Morasko campus of the University of Poznan—an example of suburbanization. Public spaces dominated by parking lots for cars [UAM Archive]

Figure 5. National Centre of electromagnetic radiation, Jagiellonian University in Krakow was established as a result of a ‘design & build for lowest cost’ public contract. The architectural effect is horrid. Proj. ALPINE Construction Poland [Piotr Żabicki]

Figure 6. Selected sustainability reports by the (not Polish) Universities.

References

[1] Chmielewski J. M.: Teoria urbanistyki w projektowaniu i planowaniu miast” Wydawnictwo Politechniki Warszawskiej, Warszawa 2010
[2] Stangel M.: „Kształtowanie współczesnych obszarów miejskich w kontekście zrównoważonego rozwoju”, Politechnika Śląska, Gliwice 2013.
[3] Baranowski A.: „Projektowanie zrównoważone w architekturze”, Wydaw. Pol. Gdańskiej, Gdańsk 1998.
[4] Stawicka-Wałkowska M.: „Budownictwo przyjazne środowisku naturalnemu w aspekcie strategii zrównoważonego rozwoju”, Sekcja Fizyki Budowli Komitetu Inżynierii Ładowej i Wodnej PAN, Łódź 2011.
[5] Drapella-Hermansdorfer A. (red) „Oblicza równowagi: architektura, urbanistyka, planowanie u progu międzynarodowej dekady edukacji na rzecz zrównoważonego rozwoju” Wydawnictwo Politechniki Wrocławskiej, Wrocław 2005.
[6] Niezabitowska E., Masły D. (red): „Ocena jakości środowiska zabudowanego i ich znaczenie dla rozwoju koncepcji budynku zrównoważonego”, Wydawnictwo Politechniki Śląskiej, Gliwice 2007
[7] Kochanowski M.: „ Bardzo krótka historia współczesnych doktryn urbanistycznych” in: „Wybrane teorie współczesnej urbanistyki” ed. Lorens P., Mironowicz I., Akapt-DTP, Gdańsk 2013, p. 250.
[8] Głaz J.: „Nauka a rozwój miasta.” in: Architektura & Biznes nr 262 (05), 2014 p. 44.

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