

Quality Analysis of Polish Universities Based on POE Method - Description of Research Experiences

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Abstract. The paper summarizes the research experiences of the author, related to the pilot quality assessment studies of university buildings and campuses in Poland. The studies are linked by the method Post Occupancy Evaluation (POE). The scope of the quality analyses conducted by the author in University of Silesia in Katowice was the general efficiency assessed from the point of view of organizational and behavioral needs of users. The main research tools of the pilot quality assessment studies carried out by the author was focused on the selected buildings and university campus space. The discussed University of Silesia is currently undergoing changes in its campus. In the beginning of the 21st until nowadays some important buildings of University were erected and opened up. The University authorities are planning new facilities and extension of the campus site. The author's analyses were used for pre-design studies. The analyses gave grounds for students' conceptual designs concerning further growth of the University.

Keywords: University building · Campus · Post Occupancy Evaluation (POE) · Users needs · Higher education · HE

1 Introduction

Poland has been a member of the European Union for ten years. This period has been significant in terms of changes in the school and higher education systems. As a member state, since 2004 university education has been subjected to transformations and university facilities and academic sites modernized to comply with the UE standards. Older buildings have been gradually technically improved, and new facilities constructed—including head offices of faculties and modern libraries. Currently many university campuses are modified. Until recently, university sites were isolated from other urban quarters with an invisible boundary. Research and teaching activities took place mainly in the interiors of university structures and spaces.

Nowadays, this pattern is changing. To develop properly, universities must cooperate with the city, region, industry and foreign partners. The European Union model is based on the assumption of unification, that is the intertwining of the functions that comprise one system.

In Poland the past form of dividing universities into colleges and faculties is still functioning, but in the face of new challenges and tasks the boundaries between separate organizational units are beginning to blur. The most common model of a Polish campus is the site that accommodates the buildings and facilities of one state university. Each building houses the head office of one faculty. The campus area should contain all essential functions that support effective operation of a university (including commercial functions, shops, cafeterias, etc. Leased by private owners). Another, less frequent model is represented by subsidiary divisions of universities located on one area and comprising a campus for several different universities.

2 State of the Research and Substantiation of the Research Theme

The model of universities in Western Europe is an outcome of multitudes of studies and research methods. All activities are supported by specialized institutions or consortia that are commissioned to conduct studies on the strategies of university development [9, 10]¹.

In Poland there are no research projects devoted to this issue, for several reasons, including: insufficient funds for a wide strategic range of such studies, or even local needs analyses of universities, poor awareness of decision-makers about the necessary changes in higher education and the infrastructure (campuses, buildings, equipment), absence of the knowledge of the tools required for such studies and lack of interest in “universities research” on the part of the Polish Ministry of Science and Higher Education. There are only few publications discussing the current needs and problems that Polish universities are facing, for example [5–8] published in English by the author of this paper, Tymkiewicz J. [4], Złowodzki M. [11] and others.

The changes initiated at Polish universities are rather more intuitive than supported by results of analyses. Also, it is difficult to assess their suitability and efficiency. To be effectively transformed, the existing campuses must be analyzed not in terms of their supporting functions (traffic, parking lots, greenery) but in terms of their academic qualities (informal contacts, places for meetings and dialogues) and ergonomically organized space (including the conditions of the internal environment, for example: lighting of the interiors), in compliance with the aesthetic and way-finding needs of their users. The manners in which university space is currently utilized should be examined in order to find the optimal, most effective solutions. Under the conditions prevailing in Poland, the costs of maintenance are especially important. Therefore, the studies on university space should engage building administrators, facility managers and main users: students and university staff. The programming and design of modern functional and spatial solutions

¹ One of such institutions is DEGW, which runs research into the future development of universities and the most efficient models of academic space. www.degw.com.

OECD - Organization for Economic Cooperation and Development, incorporates 34 highly developed democratic countries. Founded Upon the Economic Cooperation and Development Convention signed by 20 states on Dec 14th 1960. Poland has been a member of OECD since 1996. www.oecd.com.

for university facilities should be preceded by in-depth analyses of their functional needs in relation to the organization of the academic processes.

Unfortunately, in Poland such analyses are not conducted. In the absence of “universities research” the author has been making quality analyses of university facilities and sites for many years. The scope of the paper is a recapitulation of the author’s research experiences and results.

3 Scope of the Analyses

The analyses conducted by author at the campus of the University of Silesia in Katowice were focused on evaluating if the examined academic sites support the efficiency and development of the university, and, at the same time, have a positive impact on the working conditions for students and teaching staff, to provide high-quality of the work environment organization. The organizational quality of the facilities and sites of universities are the features of their design and other amenities that support the operations of a given institution or organizational unit. The elements of the organizational quality, including the design solutions in buildings, the infrastructure and equipment, supplemented by other labour resources, should satisfy the organizational needs of the institution,² which is also applicable to the functional and spatial organization of university sites.

The discussed University of Silesia is currently undergoing changes in its campus. In the beginning of the 21st century two new university buildings were erected. In 2012 the Centre for Scientific Information and Academic Libraries at the University of Silesia and University of Economics in Katowice was opened up. The University authorities are planning new facilities and extension of the campus site. The author’s analyses were used for pre-design studies. The analyses gave grounds for students’ conceptual designs concerning further growth of the University.

4 Description of Research Methods and Procedures

The method of analyses used by the author was based on worldwide trends in quality assessment in architecture. POE - Post Occupancy Evaluation [3] is the method of assessing quality criteria of architectural objects (technical, functional, economic, organizational and behavioral quality). The analyses were also based on the author’s experience gained over years of conducting case studies of buildings and university sites in selected scopes.

Despite different ranges of the undertaken studies and types of facilities (buildings and campuses), some research steps were the same. In the case of each of the analyzed building or campus, the research was divided into two stages. The first stage involved the theoretical and organizational preparation of the research team, including:

- Studies on literature concerning the HE issues,
- Collection of the information about the campus or analysed university building,

² The author’s own definition (D.Winncka –Jasłowska).

- Examination of the architectural and construction documentation,
- preparation of drawings and functional analyses, measurements of class rooms and lecture rooms to determine the actual space floor standards per one student;
- Obtaining permission for conducting studies in the building and at the campus and appointing the time of in situ visits;
- Selection of students – surveyors for direct participation in the research, discussion of the methods and scenarios of the surveys, assignment of particular tasks to specific persons.

Stage two involved the performance of the analyses, in the following order:

- Walkthrough with the facility manager to detect the main problems,
- Compilation of the assessment criteria list, the functional, organizational, behavioural and technical quality – in view of the organizational efficiency of the university site/campus;
- Interviews with users (students) conducted, in proportion, in all the buildings of the faculties located at a given campus- focused on the efficiency of the use of space, its functionality, aesthetics and safety;
- The second in situ visit – interviews and questionnaires and further observations (including the ergonomic analysis of class room and lecture rooms, in view of the efficiency of the use of space, its functionality, aesthetics and safety- as subjectively perceived by its users;
- Summary of the results of the interviews.

For a more detailed description of the analyses - see [5–8] and other publications of the author in Polish. A synthesis of the conclusions from the case studies is presented below.

5 Analyses of University Facilities and Campuses Elaborated by the Author

Case study: Campus of the University of Silesia. The University of Silesia in Katowice is one of the two biggest universities in the region (the other one is the Silesian University of Technology in Gliwice). It was founded in 1968 and it grew dynamically in the 1970s. Upper Silesia is the most important industrial region in Poland. The summary of the results of the questionnaires and of the expert's evaluation enabled the formulation of the conclusions that could be used as guidelines for future development of the campus of the University of Silesia (Fig. 1).

At present; however, the collected and elaborated material was only used as the own scientific documentation and as introductory to the project of the development of the campus of a purely academic nature, completed by students as their semester project. The observation of the changes that occurred at the sites of the University of Silesia in Katowice led to the decision about conducting check-up studies on their impact on the functional and organizational quality. The studies were divided into stages corresponding to specific functional, technical, behavioural and aesthetic quality. During stage I the transport and traffic connections between the University and the region were

analyzed, and, in addition, a general inventory of the sites was taken. All objects belonging to the University were identified. The sites were described in a graphic manner and the neighbouring housing quarters that in future could be incorporated to the campus identified. The analysis of the complexity of the functional offer was conducted. The conclusions were formulated on the grounds of the surveys and questionnaires addressed to students of all disciplines.

Stage II concerned technical quality. Technical quality does not only involve the technical condition of the buildings and the infrastructure, but also engineering, technical and technological amenities that should provide safety and ease of use. The first criteria subjected to the analysis were the safety of people and property. The expert evaluation of the fire safety around the buildings was made, with special focus on fire exit routes and evacuation manners. Furthermore, the campus was checked in terms of the compliance with “design out crime” conditions. In addition, the maintenance of the buildings and their surroundings was checked.

Stage III concerned behavioural and aesthetic quality. The assessment criteria were, among others: way-finding, aesthetic perceptions of users, and social integration at the campus.

In the case of university buildings, the analyses were, first and foremost, focused on spaces associated with the teaching and learning processes and social integration. The IT revolution resulted in the emergence of new methods of teaching and learning. In comparison with the past, university space, mainly inside the buildings is nowadays used in a different way. The modes of worked have changed due to the advancement of the internet and mobile equipment. Students need new workplaces for individual studies, and mobile aids, for example notebooks, enable learning to take place anywhere. Hence, public and generally accessible space should be adjusted to support the process. The author’s analyses conducted in university buildings involved the assessments to what extent old type facilities “manage” the functions associated with these new modes of work and how new buildings address “self- learning”.



Fig. 1. Centre for Scientific Information and Academic Library at the University of Silesia in Katowice (Poland). Photo by D. Winnicka-Jasłowska.

Another important issue is the integration of the academic environment. There is a growing awareness of the need for shaping the space of HE buildings to support integration, meetings, team work, formal and informal contacts. The author's analyses entailed both old and new generation university buildings in view of their fulfillment of students' needs and new forms of student activity. Likewise at campus sites, the analyses involved expert methods evaluating the quality criteria and participative method engaging the users of the analyzed buildings.

6 Conclusions

The conclusions give grounds for further, in-depth studies that may lead to the introduction of favourable spatial changes in university facilities and campus sites. The analyses run in the university buildings and at campuses showed that a university must be unified in terms of its buildings and sites. The sites supplement the functions of the buildings and constitute connections, not only in terms of traffic and movement (routes) but, first and foremost, in terms of the functions that supplement the university structure. Apart from many detectable problems and the fact that Polish universities are still in the period of transition, it should be stated that as far as research is concerned, Polish university staff are often leaders in this field. There are many drawbacks of Polish university facilities, yet, they are not obstacles to the development of the research and teaching staff. Polish university graduates have no problems in finding work in Western European countries and overseas. This is a sort of verification of the Polish level of science and higher education, which in the last 25 years has undergone a tremendous scientific, economic, social and technological advancement, followed by changes in university campuses that provide better studying, working and living conditions.

References

1. Fross, K.: Ergonomics in the practice of project architect on selected examples. In: Kurosu, M. (ed.) HCI 2014, Part I. LNCS, vol. 8510, pp. 77–85. Springer, Heidelberg (2014)
2. Masły, D., Sitek, M.: Analysis of natural lighting with regard to design of sustainable office buildings in Poland. In: Stephanidis, C., Antona, M. (eds.) UAHCI 2014, Part IV. LNCS, vol. 8516, pp. 227–236. Springer, Heidelberg (2014)
3. Preiser, W.F.E., Rabinowitz H.Z., White E.T.: Post-Occupancy Evaluation. Van Nostrand Reinhold, NY (1988)
4. Tymkiewicz, J.: The advanced construction of facades. the relations between the quality of facades and the quality of buildings. In: 2nd International Conference on Advanced Construction. Advanced Construction, Kaunas Univ. Technol., Kaunas, Lithuania, 11–12 November 2010, pp. 274–281 (2010). http://alephfiles.rtu.lv/TUA01/000030265_e.pdf
5. Winnicka-Jasłowska, D.: Internet based - study on users' needs. students' functional and spatial needs in facilities of architecture faculties at technical universities in Poland In: Ajdukiewicz, A. (eds.) ACEE Architecture, Civil Engineering, Environment, vol. 1. The Silesian University of Technology, Gaudeo, January 2008

6. Winnicka-Jasłowska, D.: New outlook on higher education facilities. modifications of the assumptions for programming and designing university buildings and campuses under the influence of changing organizational and behavioral needs. In: Ajdukiewicz, A. (eds.) ACEE Architecture, Civil Engineering, Environment, vol. 5, The Silesian University of Technology, Gaudeo, February 2012
7. Winnicka-Jasłowska, D.: Creating a functional and space program for new building of the faculty of the biomedical engineering building. silesian university of technology In: Ajdukiewicz, A. (eds.) ACEE Architecture, Civil Engineering, Environment, vol. 5. The Silesian University of Technology, Gaudeo, March 2012
8. Winnicka-Jasłowska, D.: Ergonomic solutions of facilities and laboratory work-stands at universities. In: Stephanidis, C., Antona, M. (eds.) UAHCI 2014, Part IV. LNCS, vol. 8516, pp. 314–321. Springer, Heidelberg (2014)
9. www.degw.com
10. www.oecd.com
11. Złowodzki, M.: Science and higher education in the era of globalization. their place in work structures and influence on urban architecture. In: Czasopismo Techniczne (Technical Transaction) 3-A(13), 106 (2009). https://suw.biblos.pk.edu.pl/resources/i1/i8/i6/i7/r1867/ZlowodzkiM_NaukaSzkolnictwo