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To cite this article: Justyna Borucka and Bartosz Macikowski 2017 *IOP Conf. Ser.: Mater. Sci. Eng.* **245** 082058

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Teaching Architecture – Contemporary Challenges and Threats in the Complexity of Built Environment

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Abstract. The complexity of the modern built environment is a problem not only of architectural and urban issues. This issue extends to many other disciplines as well as covering a wide range of social engagements. The idea of writing this paper is generally initiated by the debate which took place in Gdańsk on 22.01.2016, and was prepared in order to meet representatives of the four circles of interest within the architectural sphere: universities, professional architectural organisations and associations, architectural practice (professionals running their own studios, managing projects and leading construction) and local social organisations active in city of Gdańsk. This paper is a comparison of the results of this discussion in relation to the policy and methodology of architecture teaching on the University level. Teaching architecture and urban planning according to the present discussion needs to be improved and advanced to meet the increasing complexity of both disciplines. Contemporary dynamic development of cities creates the necessity of engaging multiple stakeholders, participants and users of architecture and urban space. This is crucial to make them conscious of sharing responsibility for increasing the quality of living in the built environment. This discussion about architectural education is open and has the nature of an ongoing process adapting to a changing environment and is in fact a constant challenge which brings questions rather than simple answers. Transformation of architecture and urban planning, and consequently its education are increasingly entering into the related fields, especially into the professional practice and social environment. The question of how to teach architecture and urban planning and educate users of urban space should take place in the context of a wide discussion. This interdisciplinary debate seems to be a crucial and challenging step towards improving the future education of architecture and urban planning leading to a better life in the city.

1. Introduction

The complexity of a contemporary built environment concerns not only architecture and urban planning issues but is also settled on the crossroads of many other disciplines. Contemporary problems concerned with architecture and urban planning become constantly a more complex matter. This complexity is not only concerned with the amount of involved disciplines but also with the interactions among them and among other related disciplines, fields of knowledge or participants and users of the space in question. There is also another factor concerned with above mentioned complexity. The development and a changes in cities nowadays is characterized by a dynamism not known before in all of history. This brings an increase in demands, and the necessity of including multiple new participants, also taking into account issues not known or experienced ever before. This



also means radical growth in the shared responsibility for the creation of the shape of a built environment. This responsibility for relations in terms of increasing the quality of living in an urban environment becomes a play (or game) where balancing among the economic, social, aesthetic or cultural reasons needs to be controlled. This however, requires cross-border competence of many disciplines.

The natural consequence of this process is the discussion about teaching and education in architecture, which is present in various environments: academic, social, political and professional institutions and organizations. Also natural is the diversity concerned with the specificity of different countries, their geographical contexts or cultural backgrounds. There is probably no single and universal solution or answer to the question: How to teach architecture? We need to consider that this is a challenge in the form of a constantly changing process. There is a need to look for a proper diagnosis which will allow the formulation of well-constructed questions, in order to get appropriate answers. The question how to teach architecture is one of the key important challenges for the universities and other responsible institutions. In order to teach an architect or urban planner we need first to ask about the contemporary role and the “identity” of the architect. Who - or what - he/she is? [Figure 1]



Figure 1. “The architect’s identity crisis, as seen by Rock.” Source: David Rock, *What He Is?* Graphic, *Architecture Review*, Dec.1997, vol.1210, p.11, 1997

The drawing of David Rock, printed in *Architectural Review* in 1997 (at this moment President of RIBA), is a graphic illustration of the complex issues regarding the crisis of an architect’s identity presented in David Rock’s RIBA inaugural address entitled: “*What he (architect) is?*”. The drawing presents the figure of a man made of stamps. Each stamp is an inscription of a different discipline, skill or responsibility expected from an architect. Among them we can find: *planning, research, art, law, design, cost, psychology, arbitration, organization, supervision, landscape, technology, legislation, sociology, negotiation, management, creation, regulations, oration, plumbing, specifications, teaching, engineering, ventilation, etc.* This drawing had been made in the 90’s.[1] Today this list can be extended by adding new disciplines and responsibilities. We could read this simple graphic as a powerful metaphor of the complexity of the profession of the architect. Nowadays, it is important not only to ask, “What the architect is?”, but also: “How do we perceive

the role of the architect in contemporary world,” and “How to teach architecture?” The complexity of the role, makes the architect “sentenced” to being a coordinator among specialists. The architect will never be able to have the specific knowledge of the specialists engaged in the complex process of creation of urban and architectural space. However, he must be capable to lead a dialogue with all of them. He has to coordinate the whole process, solving problems in a creative, synthetic way, which also is concerned with the position of arbitrator and supervisor of the design and construction process.

Upon this arises the fundamental questions: How to educate architects in an age of increasing amounts of information and developing knowledge; How to train them so that they are able to communicate at a professional level with the multitude of specialists present in increasingly complex planning processes or building investments. The problem becomes more complicated when considering that the architect is in a profession of public trust. The architects and planners are responsible for the public good like: space (landscape, urban space, public buildings), culture and heritage. It means that this profession demands particular ethical responsibilities. It means the quality of an architect's work cannot be measured only by efficiency and economical success, but also within the quality of public space, quality of social life and the quality of culture.

2. Debates and discussions about teaching architecture

Discussing how to teach architect is not a new issue. However, the problem is that today's times require a special mobilization in this field. Currently (since 2007) more than half of the population of the globe lives in cities. The growth of cities demands a new approach in their rational transformation, but first there is a need to understand their complexity to have the ability to improve the quality of life in the city. Teaching architecture and urban planning according to the present discussion also needs to be improved and advanced to the increasing complexity of the already built environment and of the development of related disciplines. Contemporary dynamic growth of the population in cities brings the necessity of balancing the roles of multiple stakeholders, participants and users of the urban space. This requires new control tools for balancing the needs, for sharing the responsibility, for the quantity and quality concerned with growth and development. This is crucial to make all the space users and creators conscious of sharing responsibility for the increase in the quality of living in a built environment. The discussion about architectural education is (and probably always will be) open and has the nature of an ongoing process adapting to a changing environment. In fact it is a constant challenge which brings on questions rather than simple answers.

The idea of writing this paper is generally initiated by the debate which took place in Gdańsk in 22.01.2016, and was prepared in order to meet representatives of the four circles of interest within the architectural sphere: universities, professional architectural organizations and associations, architectural practice (professionals running their own studios, managing projects and leading construction), local authorities and social organizations active in city of Gdańsk. This was one of the first meetings in this context and the discussion in relation to the policy and methodology of architecture teaching on the university level.

2.1 The initial debate: SARP “Debata Kanciastego Stołu - O Nauce i Edukacji Architektury” (The Key Table Debate about Science and Education in Architecture)

As it was written on the invitation for the debate which took place with the Association for Polish Architects (SARP o. Wybrzeże), this debate – “*The Key Table Debate about Science and Education in Architecture*” (“*Debata Kanciastego Stołu*”) – concerned the education of architects and urban planners in the field of their professional work and social communications as well as the social education of their beneficiaries – the users of the space, to promote their expectations and needs to the planners / creators and authorities in spatial area management.[2] The discussion concentrated on the problem of teaching and education, but in relation and from the perspective of four different circles of

interest. The debate was the meeting of these different groups of interests. The idea and the leading text of the debate was the invitation to work out the methods of an interdisciplinary effort to balance the process of education to give the most appropriate response to the demands of society and to professional architectural practice. Due to the presence of representatives of the local authorities, the discussion in context of architectural teaching and education had been enriched by such administrative and legal references.



Figure 2. “*Debata Kanciastego Stołu - O Nauce i Edukacji Architektury*” [“*The Key Table Debate about Science and Education in Architecture*”] in Association of Polish Architects (SARP) seat in Gdansk conducted on 22.01.2016, Photo by P.W.Kowalski

2.2 Description of the event: Debate + exhibition

This first debate in the Pomeranian District was organized by the Association of Polish Architects (Stowarzyszenie Architektów Polskich SARP oddział Wybrzeże) in partnership with the Academy of Fine Arts in Gdańsk, (also with the patronage of the National Chamber of Polish Architects). The debate was also connected with the exhibition of architectural and urban projects by the students of the Academy of Fine Arts in Gdańsk made in the Studio of professor Jacek Dominiczak. This gave all the right context to the debate. The idea of the debate was to meet representatives of different circles involved in the process of creation of architecture and public space in the contemporary city context. In keeping with this concept (and also due to the spatial arrangement of the place of the meeting, around a big square table), the representatives of the four circles of interest were gathered – four pillars of the architectural world. The architectural organizations and associations were represented by the Association of Polish Architects (SARP), an organization with a 120 year tradition and the National Chamber of Polish Architects – Pomeranian District (POIA). The next side of the table was occupied by representatives of the most known Pomeranian architectural studios. Their point of view was important because they had very specific expectations concerned with the competences of young architects. They also have contact with the professional practice, which is always very consequent when verifying the results of education. The third side of the table was represented by the academic teachers represented by professors of the Faculties of Architecture, Gdańsk University of Technology,

the Academy of Fine Arts in Gdańsk and the Sopot University of Applied Science. They played a crucial role in this discussion being specialists for broadening the problem and finding the solutions. The fourth side was represented by the representatives of the local authorities and social organisations active in Gdańsk and representing local communities in the field of urban planning and architectural issues in the city. It is important to mention that those organizations are active in building relations not only with the local authorities but are also cooperating in many initiatives like architectural competitions, workshops, etc. with the Faculty of Architecture of Gdańsk University of Technology. A Key Table was promoted as a starting point for reflection upon what stage is architectural education in Poland, in particular in the Pomeranian Region.

2.2.1 Introduction of the participants : descriptions + postulates In general, the discussion exposed numerous misunderstandings related to mutual attitudes and expectations. They occur largely due to the lack of knowledge about the specifics of expectations

and the requirements for each of the parties represented in the discussion. Architectural organizations are generally responsible for managing the architectural profession as well as representing architects “outside”, e.g. with the local and state administrative authorities, taking care for the quality of good practice. The activity of architectural organisations are concerned with very specific interests which are positioned among three aspects: commitment to the professional architectural environment, obligations towards the investor and obligations towards society. All of these aspects are listed in the code of professional ethics of architects. This provides insight into one of the perspectives represented during the debate, which pose the problem of how to teach prospective architects not only during the study process, but also maintain a lifelong learning process.

During the debate four points of views were presented: The first perspective was formulated by representatives of architectural studios. Their expectations centred upon two main aspects. One of them was the quality of preparation of the young, graduate architects for work in the office. This aspect arose from complaints mostly concerned with the lack of professional practice of young architects when entering the job market and expectations that they will immediately be full-fledged employees, which for obvious reasons were unreachable. In today's world of ever more complex technological, architectural, urban and social problems, standardized study programs can only offer general preparation to this professional practice. Furthermore, the above-mentioned expectations of some employers points to a lack of non-standard, creative capabilities of young architects. They say: “we will teach them to work in our office but we need open, creative, architects capable of working in a team with specific 'soft skills' which allows them to bring a specific spirit of uniqueness into architectural design.” This seems to be a fundamental difficulty in meeting such different expectations. Both together are difficult to fulfil. These problems can occur due to the specificity of Polish universities (also post-socialistic countries)[3] which still can take some teaching standards inherited from the previous political system, even though they fulfil the frames of the Bologna System,[4] which guarantee general preparation for a broad spectrum of issues concerned with architectural education in Europe.

The second perspective was formulated by academic teachers. They pointed out that the curricula changed compared to the programmes from former decades. They said that nowadays there are new

disciplines involved in the curricula like sociology, ecology, economy and many others. The teachers were also aware of the growing amount of students, which in the case of the Faculty of Architecture at the technical university in Gdańsk, compared to the 1980s, had tripled while the length of study still covers 10 semesters (both Bachelor and Master studies). The old system of education for obvious reasons became inefficient.



The third perspective was represented by architectural organisations and associations (SARP, POIA) which by their very nature, focused on standards and proper function of the profession on the market. Their statutes, however, included the promotion of the life-long education of their members. The Pomeranian Chamber of Architects fulfilled these tasks. One of its competencies is to give opinions on curricula of the faculties of architecture of the Pomeranian universities. In addition, the Pomeranian Chamber of Architects (POIA) is active in promoting knowledge about architecture aimed at primary and secondary level schools.[5] This does not mean, however, that this is an easy task, mainly because of the limited interest of these schools.[6] This is therefore insufficient and will produce the effects that will be seen in the long run.

The fourth perspective was described by local social organisations active in the city of Gdańsk which were invited to the debate. It must be mentioned that the city movements during recent years in

Poland became very active. This is a consequence of many mistakes made during the process of

political transformation in the last decades, especially because of neglect in urban planning which was caused by a liberal approach to the economical transition of the Polish system [4]. This was the

reason for such phenomena like urban sprawl, inefficiency of infrastructure, incidental uncontrolled

spatial growth of the cities, lack of quality of public space, etc. The city movements nowadays have more visible power and representation of city inhabitants. In fact, the organisations present at the debate were really satisfied with the cooperation from the universities, and cooperation from the students. This is mainly visible in debates with local societies, during student's workshops with inhabitants of some particular districts, or architectural student's competitions. This point of view was kind of a surprise during the debate, because this was the only one opinion with a positive message. This kind of practical experience with the participation of students, teachers and recipients of architecture is an interesting direction in the reorientation of forms of education from the purely theoretical (lecture based) way of education towards active and engaging experience related to real problems.

These four presented perspectives briefly show the outlines of the complexity of the contemporary problem in architecture education. Yet, this is hardly touching the problem because this paper does not include a description in a detailed way of the whole difficulty in matching the needs and expectations and possibilities which are available within the framework of the contemporary architectural education system.

2.3 Similar discussions: good examples for debate /for the future solutions

The Key Table was only a starting point for reflection on what stage architectural education in Poland is – and specifically concerning the Pomeranian Region, within the scope of activity of the

POIA, SARP and other local organizations. The academic teachers present at the meeting

representing all architecture schools in the region, played a crucial role in this discussion because their voices were essential and played a vital role for the finding of solutions for the future.

But the discussion about “How to teach architecture?” nowadays is going on constantly not only at the Polish regional and national level. The importance of the issue has been recognised in the different contexts and in similar discussion from many other architectural entities all over Europe.

2.3.1 Professional organisations and their activities On the international debate about education in architecture there are active such organisations as: The Architects' Council of Europe, European Network of Architects Competent Authorities and other international professional consortiums dealing with various initiatives. For instance, among the activities of the Chambers of Architects of Visegrad Countries, there are annual Meetings of the Visegrad Group Architects. During the recent conference organised in Poland (Katowice, 20- 22.04.2017) entitled: Youth in Architecture (Młodzi w Architekturze) there were the following problems posed: How do we see the target of the architectural education system – as the continuation of the Bologna System or the return to the unified master's degree program? What should be the relationship between theoretical and practical-design studies? How should professional internship and training be organized, their time, place and their supervision? How to organize the application for the professional licence for architects after graduation, the form and scope of exams?[7]

2.3.2 European Association for Architectural Education EAAE as a platform for discussion. One of the good examples of such a platform for discussion is the European Association for Architectural Education (EAAE) – a non-profit organization established to promote "*the exchange of ideas and people within the field of architectural education and research throughout Europe.*" [8] Comprising the framework of this organization are acting academies of science and education. This

is a very important activity since architectural education in Europe has many shapes and has been explored from several perspectives. There is a need for a holistic approach to the many problems and

scattered information. Therefore, the EAAE Academy of Education aims to gather and discuss the existing experience of architectural education and is the perfect body to initiate new research objectives in architecture. The mission of the Education Academy within the EAAE association is to establish "*a platform for collection, exchange and dissemination of knowledge and experience on architectural education. Moreover, such a platform will offer a mutual inspiration through sharing and discussing good-practices and thought-provoking concepts.*"[8] A wide range of actions within the EAAE reach out to consolidate the common position regarding educational issues. Through on-line talks, exhibitions, seminars, workshops, conferences and joint research projects, the Education Academy meets its main goals, which are:

- “ *_Mapping the kaleidoscopic field of architectural education in Europe and globally;*
- _Identifying concepts regarding the intentions and position of architecture education, and how they relate to the changing role and profession of the architect;*
- _Discussion and tracing of pedagogies which respond to these educational aims;*
- _Identifying conditions, circumstances and challenges faced by institutions and educators, seeking to ensure diversity, vigour and responsiveness within an architectural education;*
- _Considering how best to gather current information about our EAAE partners;*
- _Identifying members who are or wish to be active in researching architectural education;*
- _Forming an open and collegiate community – an academy of education;*
- _Considering what actions and activities might best support the development of the Academy;*
- _Considering how to engage with the missing component – the student.*"[8]

Within this organization's works, debates, workshops, and meetings crucial matters in the educational area of the architecture field are deeply discussed. Among others, the series called

Meeting of Heads of European Schools of Architecture is the most influential forum in the architectural university environment.[9,10]

What is more, *Transactions on Architectural Education* are widely presented in the series of EAAE publications. They offer a selection of papers and discussions from conferences, workshops and

Summer schools dealing with discussion of the crucial matters of the educational area within the architecture field, undertaking, among others, topics such as: *New Priorities of Schools of Architecture in the Era of Uncertainty, or Educating Architects, Towards Innovative*

Architecture. [11,12]

Key questions are also elaborated upon within the research projects. One such activity within the Educational Academy was an Erasmus+ project entitled: “*Confronting Wicked Problems: Adapting Architectural Education to the New Situation in Europe.*”

The starting point of the project refers to current burning problems and is a trial to recognize that architecture as educational, as well as a discipline and profession, should be re-developed to unlock its potential for problem solving and innovation in the new economic and social environment. This new norm posits that the basics of knowledge, teaching methods and models are passed on in education and architectural reality. There is a great demand for diversification in both education and practice. This norm aims to strengthen university graduates in order to meet this standard and hence social and employment needs.

2.3.3 Activities within the universities; Workshop and seminars within the EU programs However, a similar discussion can be found not only during the debates and programs within European Institutions but also in experimental fields at the university level. Various interdisciplinary workshops, Intensive Programs, and summer schools conducted in international consortiums of European universities are perfect examples of such discourse. Those experiments have taken into consideration different aspects, such as widening the perspective for future architects and urban planners. The *Sensing the City* IP programme worked out solutions and new methods adopted to a phenomenology approach and implemented them in the educations of future architects within the consortium of the universities involved. Another example was on site experimenting and a practical workshop as a way of rediscovering one of the oldest teaching methods conducted within the *Structure in Building Culture* IP Programme. In this case the 10 years experience from these workshops, and sharing on site practical contact and observation of the material has become a great contribution to the panel discussions and the conference’s special sessions conducted in an interdisciplinary environment.[13]

One of the recent platforms of discussion, where the University of Gdansk is involved, is the program BeInterBaltic (Strategic Partnership Programme within Erasmus+). The program was established in the consortium of Baltic Region universities (Hafen City University Hamburg, Technical University of Denmark in Copenhagen, Royal Academy of Fine Arts Copenhagen, Chalmers University of Technology in Gothenburg, Tallinn Technical University, Aalto University in Helsinki, and Gdańsk University of Technology). The idea of the program points out the need of non-standard thinking in education to build the competence required to solve contemporary architectural problems, and to understand those complex issues. To meet these requirements, education and practice should support the development of interdisciplinary capacities and promote an innovative approach in the sphere of participation. The aim of the project is to develop and test innovative methods and forms of education on an interdisciplinary basis concerned with the built environment. The partnerships between participating universities in the Baltic Sea Region is designed to create new teaching methods and educational formats for the built environment in order to equip students with interdisciplinary and inter-cultural competences and abilities. [14]

All those discussions provide a very creative impulse for improvement of education of architecture in Poland.

3. State of the art: how is the teaching architecture now???

The standards of academic education after Poland's entry to the European Union were accommodated to European standards regulated by the Bologna System. Also, in Poland the number

of questions already internationally discussed by presenting experiences, views and approaches to consider problems, conflicts, dilemmas, obstacles and contradictions are actual. These are:

"_What is the impact of the Bologna process on the contemporary profile of schools of architecture in Europe?

_What is the impact of the Bologna process on the various systems of studies in Europe?

_What is the impact of the Bologna process on the contents of studies?... "[9]

The Bologna system offers, in general an advantage of an opportunity to raise and equal the level of education by the system of ECTS, which provides the possibility of exchange between students and

teachers and opens a chance for sharing good practices. This is on one hand good because the standards are regulated, but on the other hand the specificities of some universities and some special profiles of some faculties could be also limited. The Bologna System should open the chance for flexibility in education, being given into hands of students. The key point of the system is that the student is expected to make a choice and decide upon the personal profile of education during two levels of study. The Bachelor level should be responsible for basic and general education. The Master level should offer a space for individual decisions accustomed to the skills and preferences of the particular student. Unfortunately, in Polish reality the Master studies often means repetition and deepening of the previously acquired general knowledge of Bachelor studies, rather than giving the students more options and flexibility within the curriculum, thereby providing opportunities for specialized paths and adaptation to the expectations of the constantly changing market and also realizations of students' personal and professional ambitions.

3.1 Wrong direction in education or unrealistic expectations towards graduates / Bologna Process

Nowadays, it must be clearly underlined that there is no possibility to teach architecture on a level acceptable to the market, within the whole spectrum of architectural knowledge. The process of specializations is the necessity of the times. That is why the student must be aware (already during the study process) of opened possibilities and different professional directions. The Bologna System, regardless of its progressive concept, also brings disadvantages which can influence the quality of architectural education which from its nature should have a synthetic character. The reduction of the length of studies and easier graduation standards (which in the case of other disciplines is advantageous) according to the complex and multidisciplinary nature of architecture seems to be a flaw. The fragmentation of knowledge which offers a broadening of the spectrum of specialisation loses the "generalist" orientation needed in architectural education. This requires answering the question of whether the extension of the length of studies is a chance for better quality of education, or should it be done by different methods like self-education, etc. This is the real question: should we be able to educate an architect during the time of study period, or should we rely on their further education continued during the time of professional practise with the support of architectural offices (employers), and professional organisations and associations. The answer is even more difficult when comparing the system of awarding professional qualifications (architectural licences) which in different countries can differ radically.

3.2 *Specialization or interdisciplinary?*

Nowadays, we are standing on a crossroads between specialisation or interdisciplinary in architectural education. This is a paradox since the profession of the architect sits atop the hierarchy of the design and realisation process, and practically from its definition should demand skills of synthetic thinking, and acting. Is the interdisciplinary and interdisciplinary education a chance and solution for the architects? First we should ask whether architectural education already is not interdisciplinary enough, and whether we really should be more interdisciplinary. This is the question of whether interdisciplinary is not a kind of “myth” and empty promise.

The question of the future role of an architect is open and the answer to this question, “how to teach?” is of key importance for further speculations. The dynamic growth of IT technologies (eg. BIM) can shortly lead us towards a moment where the hitherto role of an architect as the supervisor and the coordinator of the investment process is gone. It is easy to imagine that soon the IT technologies will offer integrated design possibilities which shift the architect from his supervisory position and open, at the same time, the space and demand for deeper specialisation.

4. Conclusions

This Key Table interdisciplinary debate in Gdańsk is one of multiple debates which during many years took place all over the world. This attempt to compare the results of the above-mentioned discussions brings us to certain general conclusions. The quality of the outcomes seems to be a crucial and challenging step towards improving future education in architecture and urban planning. The question of how to teach architecture and urban planning should be addressed not only to the students of architecture but also to the all users of the living space and should take place in the form of a wide, interdisciplinary discussion, leading to better life in the cities. Any discussion should take into account the specifics of the increasing number of disciplines within the architectural domain. It should be assumed that there will be no single, binding answer. Architectural education will be a continuous process of striving for the highest possible quality of education at a given moment and with given conditions. This seems to determine the need to open the possibility of a multi-directional and flexible choice for universities and students. The strategy should take four aspects into account which could be described as: watch, react, discuss, and adjust. This indicates that architectural education will be a constantly dynamic process demanding sensitivity towards civilisation changes. Proper evaluation or even prediction of the directions of these changes will define the directions of architectural education.

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