

## Controversy over the visions of the architectural profession

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**ABSTRACT:** The architectural profession, as with other specialisms, is subject to constant evolution; in this case, as a result of pressures associated with the development of building technologies, digital tools, the paradigm of sustainability and the intensified active participation of other stakeholders in the design process. This leads those in the architectural profession to reassess the character and position of architectural professionals. The way that architects work must gradually change to match the level of competencies of other collaborating professionals. The emerging new vision of the profession must also influence the teaching methods of architecture. The creative imagination traditionally involved in design must be subjected to optimisation by way of mathematical models. A view of architecture was obtained from students at the start of their education through to graduation. Included in the article are first experiences in architecture offices and the future of the profession.

### INTRODUCTION

Rapid developments in technology are changing the character of many professions, including architecture. In the latter case, the main drivers of change are digital tools, the pervasive sustainability paradigm and the intensified active participation of stakeholders in the design process. These developments have resulted in those architects using traditional methods being subject to pressure from within the profession from those that have already, at least partly, adapted to the new challenges.

There are numerous other professions - mainly engineering disciplines - that are in a similar situation. However, those professionals seem to be in a better position than architects. The reason for this is their science- and mathematics-based character which, traditionally, has been absent from architecture as it is associated with an intuitive rather than scientific approach to problem solving. This characteristic of the architectural profession is an obvious drawback compared with engineering.

A dramatic change in the past decades is the compulsory requirement for shaping the space in accordance with sustainability rules, which relate primarily to the built environment. New holistic approaches to architectural design have made essential the involvement of many closely - and even loosely - related professionals in the design process. The ever-increasing complexity of problems requires multidisciplinary discussions, which in turn require the development of new platforms to facilitate such discussions.

It is primarily the architectural profession that has to be modified to accommodate the new methods and procedures leading to better communication with other professionals and stakeholders. To achieve this, the architectural intuitive way of thinking needs to change to be more like the engineering scientific approach. This will enable architects to deliberate on spatial issues in unison with other professionals, to come up with sustainable designs. The platform for mutual understanding seems to be science, which eliminates the intuitive way of thinking. Therefore, many architects, being conscious of this challenge, search for scientifically based solutions for their projects. In practice, this mainly requires the use of mathematical methods in problem solving. Architectural science, a relatively new development, provides strong support to make the architectural profession more science-based.

Noting the above, there are two contradictory strands to the professional approach to architecture and architectural design: the traditional approach and the new vision of the architectural profession.

### TRADITIONAL VISION OF THE ARCHITECTURAL PROFESSION

The traditional vision of the profession is based on the use of experience and intuition as basic features of the methods of architectural design. This is why architecture has not been considered a *science*. Some authors indicate that at

the beginning of the 20th Century architects, unlike professionals in other disciplines, did not strive for architecture to have a scientific character. As Schoen wrote:

*At the beginning of the 20th century professions obtained ... prestige through ... suggesting that practical knowledge becomes professional when the applied instruments used for the solution of problems are based on systematic scientific knowledge [1].*

In architecture, especially emphasised is the dominant role of intuition. However, this is not overwhelmingly accepted within the profession.

The majority of professionals in the field take a position that there are many significant aspects involved in the shaping of space, viz. functional, social, psychological, economic, structural and technical, which must be analysed and allowed for in spatial solutions. Architects mainly have not used scientific methods for problem solving, but rather relied on research outcomes from other related disciplines. This was unavoidable due to the complexity of building systems and assemblies.

However, traditionally, architects were not involved - or even interested - in the research activity in related fields. This is one of the reasons other professionals did not consider architects to be valuable partners in their research activity. Their conviction was that architects merely are artists incapable of seeing buildings as complicated technical systems that require rich technical knowledge. Therefore, these other professionals could not effectively communicate with architects. However, given the complexity of building systems, professionals in architecture cannot be specialists in all complementary fields, due to the large scope of relevant knowledge involved. Their traditional role in design and construction is a co-ordinating activity. It has been repeatedly said that they should know *a little above everything rather than a lot about little*. But in recent decades, the role of the architect increasingly has been modified and their relative ignorance related to auxiliary specialties cannot be sustained.

#### NEW VISION OF THE ARCHITECTURAL PROFESSION

The new vision of the profession is concerned with a much broader spectrum of spatial issues than previously. The holistic approach to architectural design has made essential the involvement of many more related professionals in the design process. In the philosophical sphere, the characteristic feature of the postmodernist approach is *fluid relativity*. Postmodernism questions tradition and, as a consequence, the overriding role of intuition [2]. On the other hand, postmodernism respects scientific research and, as a result, research methods are employed also in relation to art [2]. This ambiguity is characteristic of the postmodernist era. The postmodern attitude represented by Lyotard recognises a pluralistic approach to knowledge - science is not privileged [3].

The position of a large number of architects is that intuition is a basic and superior creative tool. They claim that scientific and mathematical methods cannot be used in architectural design, because it leads to excessive uniformity of spatial forms in the built environment. This opinion collides with the admiration of uniform and homogenous buildings in historic towns as expressed by many, including architects. Uniformity of built complexes is also fostered in the majority of urban plans, and therefore it should not be considered a false idea.

The real problem of the profession, however, is not so much in academic discussions about the old or new approach to architecture, but rather in the position of the architect. The issue is: what should be done to make the architect a real partner for other related professionals and stakeholders? The platform for mutual understanding seems to be science, which eliminates the intuitive way of thinking. An increasing number of architects are convinced about the necessity to find scientifically based solutions for their projects. This requires the use of mathematical methods in problem solving. Helpful in this regard is the development of architectural science, which is a relatively new discipline.

The scientific approach to designing can be found in addressing issues in architectural practice such as: sustainable design; passive design; parametric design; design for disassembly [4]; integrated design [5]; informed design; evidence-based design [6]; adaptive design [7]; and genetic algorithms [8]. This testifies to the great complexity of the new approach to architectural design.

#### THE ARCHITECTURAL PROFESSION FROM THE EDUCATIONAL PERSPECTIVE

The quality of professionals is a product of the educational system. Knowledge acquired during studies and ingrained working habits usually continue into professional practice after graduation. Such is the case for architects. This is why there should be a focus on educational methods in the architectural discipline.

The above two contradictory paradigms for the professional approach to architecture and architectural design, that is traditional and new, have been mirrored in architectural education. The emerging new vision of the profession has influenced teaching methods used in the schools of architecture. However, these schools have, in the majority of cases, perceived the problem much earlier than did architectural practitioners, and managed to move towards the new paradigm in diverse ways.

Presently their education curricula overwhelmingly allow for subjects related to integrated design, energy efficient design and other relevant specialities. This tendency has also influenced the competencies of teaching staff. But, the endeavours of the faculties do not guarantee acceptance of the teaching methods by the students. The crucial task is to make appropriate modifications to the educational systems designed to *produce* a new type of contemporary *conscious* architect. Helpful in this regard can be the attitude expressed by students. In order to obtain their opinion, a set of 10 questions has been produced for the diploma semester students of the Faculty of Architecture at Cracow University of Technology. They were asked about the relationships between three basic aspects of architecture (theoretically of equal weight):

1. art;
2. technology;
3. humanism.

They had to respond to questions about their expectations concerning the character of the study, its curriculum, the profession and its future. The questions and responses follow:

1. *What were your expectations concerning the character of the profession (beginning of study)?*

- art + technology - 50%
- art + technology + humanism - 50%

2. *What were your convictions about the structure of the curriculum (during study)?*

- art + humanism - 33%
- art + technology - 33%
- art + technology + technology - 17%
- art - 17%

3. *What were your convictions about the structure of the curriculum (upon graduation)?*

- art + technology + technology - 50%
- art + technology - 33%
- art + humanism - 17%

4. *Do you feel disappointed with the character of the study relative to your initial expectations?*

- no - 50%
- yes (in high degree) - 33%
- yes (definitely) - 17%

5. *Have you started working in an architecture office during your study?*

- yes - 100%

6. *Which subjects in curriculum should be enhanced in terms of time spent?*

- building technologies and materials - 31%
- computer technologies - 24%
- mechanics + structures - 15%
- building physics - 15%
- law - 15%

7. *What kind of knowledge are you missing (when working in an architecture office)?*

Very much:

- investment process
- building technologies and structures
- building regulations
- team working

Much:

- use of computer programs
- investment costs

- building economics
- sociology

8. *Would you like to change your profession (if you had such a possibility)?*

- no - 33%
- rather not - 50%
- yes - 17%

9. *How do you see the future of the profession of architect and its role?*

Increasing:

- an increase in the role of chief designer

Modified:

- become more humanistic and artistic
- programmers to deal with algorithms and managers of interdisciplinary teams
- increasing role in the management of building investments

Decreasing:

- very bad, lowering of the role in the investment process and in society

10. *How should the profession of architect change?*

- The educational system should be modified to meet the contemporary demands of the building market, so that architects should be better prepared to understand the historical contexts, historical and sociological aspects of the built environment.
- To become more interdisciplinary and be better prepared.
- Higher specialisation and research on high quality architectural solutions to better address environmental problems.
- Higher quality of discussions with clients.
- To help educate society.

The set of questions and students' answers indicate significant discrepancies concerning the expectations about the character of studies and the profession of architecture, as well as about architectural practice.

## CONCLUSIONS

The considerations about the profession of architecture enhanced by the opinions of the diploma year students showed that the changes to which this profession is presently subject has a multi-faceted character. The principal outcomes and recommendations resulting from these deliberations are as follows:

- Architectural design will be dominated by a scientific and mathematical approach.
- Methods of education should be adapted to address the modified character of the profession.
- Students seem to be aware of the discrepancies between the new trends in professional activity and the traditional models of education, which were revealed, before graduation, by their practices in architecture offices.
- Students' opinions about the character of the profession are diversified even upon graduation.

Differences in students' opinions and even in their conflicting statements, can testify to their positive image and maturity in terms of their comprehension of architecture. The profession, having an interdisciplinary character, requires from them open minds and mental flexibility, as well as unorthodox approaches to the discipline. The diverse positions is a good sign for the proper development of practitioners of architecture and their openness in facing contemporary issues in the field of their future activity.

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