

RETREAT FROM SUPERFICIALITY IN ARCHITECTURE

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Abstract. The main aim is to present academic two-level method of design, called "theoretical modeling architecture" (TMA). It means the syllabus of design teaching that is strongly supported by the theory of architecture. The elaborated method results the higher number of students' projects, that are related to the cultural heritage.

Key words: theory, architecture, design, modeling, cultural heritage

1. Introduction

The pressure exerted on the contemporary scientific world is aimed at strengthening cooperation between an education and an industry. There is a limited ability to implement industrial projects in the field of architecture in comparison to other purely technical departments. This results a premature start of professional work activity for architects, who do not want to remain on the sidelines of a business. Early professional activation, despite a number of advantages, makes the student projects excessively focused on the functional aspects and imposing on it an attractive instant visual effect. This kind of a design is most commonly adapted from international magazines or websites and it is not intellectually linked to specific project situation. Moreover, the project may be done at the expense of searching for cultural values and historical references. This cause the risk of superficiality in architecture in the humanistic point of view.

1.1. Aspects of design education

Some research prove that above half of architecture students appreciate communication skills, but below quarter declare that creative thinking (high imagination) is the required feature for a successful architect (Yalçın, Ulusoy, 2015). The most effective communication tools of the profession and education are the expression techniques, because they develop the skills of fast thinking and early delivery of visuals of the images from the mind (Özker, 2014). Different stages of design education should be associated with different learning styles, as long as the design studio process consists of four learning activities: experiencing, doing, reflecting and thinking (Demirbas, Demirkan, 2003). According to the general idea of learning styles, the "intuitive students" are those who prefer to learn theories and concepts to details and avoid routine approach (Jensen, 1987). Research at the University of Guelph shows that landscape architecture students are generally

intuitive-thinking types (Brown, Hallett, Stoltz, 1994). That may suggest this kind of susceptibility is common for architecture and interior architecture students as well.

Moreover certain British research suggests that architectural education must respond the social, technological and information changes. That is why the students during their architectural education have to gain adaptable, flexible abilities taking to the account the increasing numbers of careers that have a marginal connection with construction industry (Nikol, Pilling, 2000). Cross-disciplinary and first of all effective approach seems to be desirable. There are also some problems that refer to students' expectations. Selected Norwegian research suggest that student satisfaction approach may lead to more market-oriented perspective (Wiers-Jensen, Stensaker, Grøgaard, 2002). However interdisciplinary projects sometimes have to face a students' passive resistance because they potentially do not fit expected character of future professional work. The training of a resourcefulness in untypical design, research and business situations is appreciated rather in mature stage of education.

1.2. Proposed educational solution

The programme called "Theoretical Modeling Architecture" (TMA) is being carried out, for example, at the Institute of Architecture and Urban Planning at the Lodz University of Technology. It is implemented in the basic and obligatory curriculum for students at master programme that means mature stage of design education.

1.3. The aim

The pressure exerted by the contemporary world architecture makes the inevitable globalization process seems

also in this field. Some world-renowned architects such as Wolfgang Prix from the group Coop Himmelb(l)au openly claim that „there are two types of architecture: the global high architecture and regional architecture, which fills in the gaps and mainly responds to local demands and sometimes anticipates high architecture's form vocabulary. [...] Global architecture is about artistic statements" (Prix, 2000). This opinion draws first choice, the student has to take. However, the purpose of this paper is not to suggest whether the students should concentrate on the universalism, or the regional aspects. The point of interests is a **conscious and non-accidental designing** of an architectural form. The final aim of the article is to present TMA programme as the potential way to reach the target.

2. Programme

The programme has been being developed for over a dozen of years. The computer techniques as well as international innovative educational trends support its evolution.

2.1. History of the thought

Teaching supported by TMA is currently carried out on the two subjects "Form and Colour in Architecture" and "Ergonomics with Bionics". The programme was started by Adam Fołtarz in 1998 at the Lodz University of Technology. The view of the founder assumes that we discover the immanent characteristics of the object on the background in the terms semantically avoiding superficiality (Fołtarz, 2011). The idea of the course is based on encouraging the student to contextualised treatment of the topic. The modification of course idea between 2012 and 2014 and its current form results from the analysis of programmes of leading architectural schools in Europe.

2.2. Theoretical context of the creative process

Contemporary research states that creativeness in architecture consists of two kinds of cognitive processes: exploratory and generative ones (Hakak, Boloria, Venhari, 2014). It is extremely important to emphasize both and transfer them to design final process. TMA also supports the theory of “cultural sustainability”. It is underpinned by a definition of architecture that is sensitive to and encompassing of cross-cultural contexts and values (Memmott, Keys, 2015). Some research suggests that multicultural exposure increases creative approach (Leung, Maddux, Galinsky, Chiu, 2008) and that stands motivation for intercultural design.

2.3. Computer techniques

The main advantage of using new technologies in art education is represented by the involving of the students in activities and situations of learning that are in opposition with their ideas and previous conceptions (Munteanu, Goghiu, Gorghiu, 2014). However the freehand drawing techniques are also welcome as long as they conduce to humanistic aspects. Otherwise the computer visualization helps to demonstrate a difference between sunlight and artificial light illumination for particular object. Most common is also the “mixed use” technique. Some renderings are covered with the sketches and then scanned together. That allows connecting electronic precision with light freehand style.

2.4. Weaknesses of the programme

The SWOT-analysis proved that the strategy has some weaknesses as well. The TMA programme requires the expansion of the two elements that would achieve high results of the training in the

field of architecture that is aimed at enriching the cultural heritage.

1. The first comprehensive problem of the educational system is the inability to experience the examples of executed architecture by the student. The curriculum does not provide with the possibility of exploring the buildings and other structures, which can be determined by certain ideas. The activity called “architectural traveling” is the one of the basis of French architectural education system. (Cysek, 2011). According to personal experience of the author of this paper, also the educational system for architects in Belgium is supported by “in situ” research.

2. The second problem is the access to the students’ international exchange, although it is already partly solved. Over the past years, there is remarkably increased interest in, inter alia, the Erasmus programme. Even though the exchange is not directly linked to the TMA, while it undoubtedly improves its outcomes.

3. The structure of the course

The structure of TMA is based on two stages (called S1 and S2).

First half of the semester the stage S1 is executed. Preliminary task for a student is to create some point of inspiration. Any kind of issue is accepted, the material as well as the theoretical. The first step is designing the theoretical architectural model. It is often called “Architecton” according to series of works by Kazimir Malevich.

However, **the theoretical model definitely may not represent any particular function.** It definitely must not be any kind of proposition for the real architecture. The main idea is to ensure conditions for creation of an original form, that is not limited by technical and

law aspects, however some architectural association are requested. Every student is obliged to ensure the abstract (non-functional) nature of her or his theoretical model.

Stage S2 is booked for the second half of the semester. The task is to design the conceptual project of the building or another architectural object in particular location. The five plots located in the city centre are determined by the tutor. For every plot the parameters, the overall dimensions, the adjacent buildings, the existing infrastructure are unique and they require different approach. **None of the lots allows using the previous theoretical model as a shape of the building**, so the student is induced to think about totally different mass of the designed object.

The main difficulty for student is to ensure the continuation of the predefined idea cross the stages (S1 and S2) from inspiration to final architecture project. The point is ability to trace the intellectual path through design process, instead of visual straightforwardness.

The design studio is supplemented by lecture cycle. The course is focused on theory of the architecture, while the relations with the art are emphasised.

4. Exemplary tracks and motifs

Different students' approaches are recognizable. A few examples which are not endemic types can be presented below. It is symptomatic, that no tracks are predefined or imposed and every single time student finds his or her solution for particular situation. The teacher assumes the position of tutor, who:

- helps in finding an inspiration;

- suggests what kind of theoretical knowledge should be gained or extended;
- supports the process of transferring the thought into an abstract three-dimensional model (that means the final step of stage S1)
- finally helps to design building for particular plot in the city centre that is inspired by previous stage but also that is subordinated to any rules and limits (stage S2).

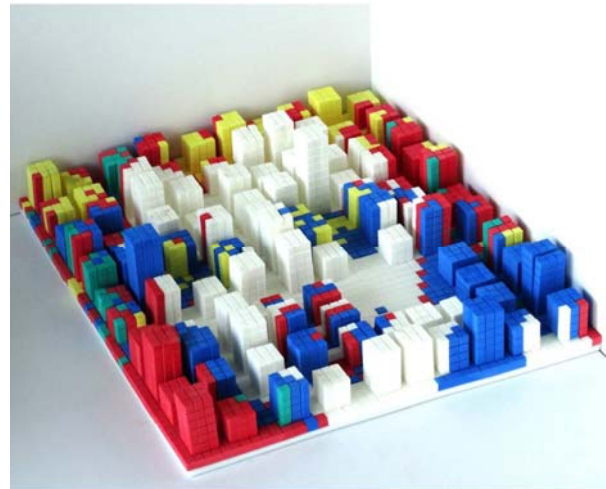


Fig. 1. Aleksandra Kwaśniak, abstract theoretical virtual model

Source: author's archive

4.1. Pop and commercial culture

First example is student's project inspired by pop-art, the visual art movement. The world-famous portrait of Marilyn Monroe painted by Andy Warhol was transfigured in pixels. The theoretical model was made of foam cubes. The dimension of every single element is 1cm. The model resembles high-density urban layout like Manhattan (Fig. 1). The association between metropolis and consumptive lifestyle is the keynote for the next level. The chosen topic for stage S2 was therefore advertising agency. The method of "pixelization" used in phase S1 was the design solution for the façade. The changeable LED structure generate different views that can potentially reflect

encoded weather condition forecasted for the following day, as well as some economic factors. The ever changing surface is the key for the functional architecture.

4.2. Historical references

Another example stands the sort of historical synthesis. The coffee bean inspiration led the author to the motive of mediaeval trade routes. The keystone between the inspiration and the theoretical 3-dimensional model was an ogive (Fig. 2).



Fig. 2. Katarzyna Kluska, abstract theoretical three-dimensional model
Source: author's archive

This historical detail is most commonly identified with the gothic architecture. The discrete element was made of transparent polymer walls filled in with white globules symbolizing the dispersed goods (like coffee beans). Multiplying of the simplified arch motif in the rhythm gives the character of contemporary architecture although it is still only theoretical model, not particular functional architecture.

4.3. The line

There are also some organic associations recognizable in students TMA projects (Fig. 3).

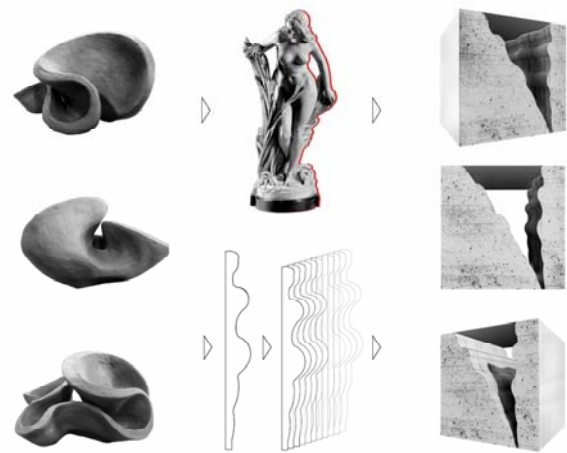


Fig. 3. Agnieszka Jaśkiewicz, diagram: track from the inspiration point to the theoretical model

Source: author's archive

The starting point for the concerned project was student's work realized during preceding sculpture course. Biological association led to neo-Baroque aesthetics. The key-shape was generated from work of art by Albert Ernest Carrier-Belleuse. Multiplied curve line was confronted with the radical shape of a cube as the negative. The concrete was selected as a texture to emphasis the radical nature of the geometrical shape (Fig. 3). The building with its façade (Fig. 4) designed to step S2 was obviously different shape as it was determined by particular situation in the city (the plot, location, law regulations, master plan, etc.). However the idea of line multiplication was saved as the track of the project.



Fig. 4. Agnieszka Jaśkiewicz, design for the façade
Source: author's archive

Finally organic association may lead to geometrical form.

4.4. The rhythm

The primary role of a rhythm in architecture is undoubted (Rasmussen, 1964). The project refers to the fortuitous number theory.

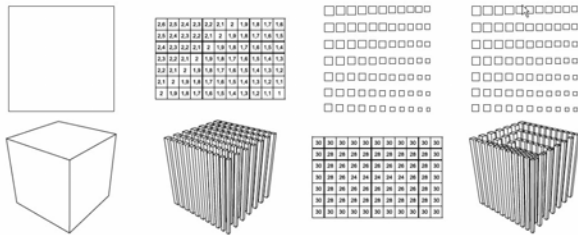


Fig. 5. Matylda Wasiljew, diagram: track from the inspiration point to the theoretical model
Source: author's archive

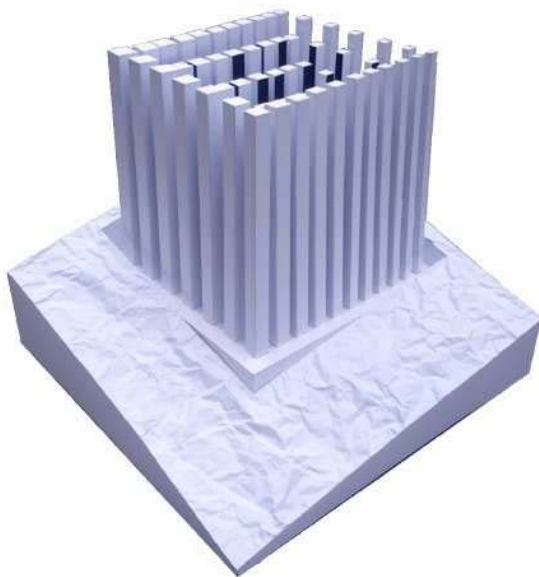


Fig. 6. Matylda Wasiljew, abstract theoretical three-dimensional model
Source: author's archive

The conception refers also to the classical roots, as long as ancient architects were definitely interested in proportions (e.g. Golden Section). Opposite to this point of view the student's project refers to randomness. The rows of columns create an association with ancient building although it is still only a theoretical

abstract model (out of any particular function).

It is the sort of formal experiment that is to verify whether the drawn numbers can generate an interesting abstract architectural composition (Fig. 5). The cube is the base of a model as it was used in previous example. The tests have shown that the established proportions are satisfactory, provided that the external cube-shaped frame is preserved (Fig. 6).

4.5. Problem of light

As the one of the preferred method of presentation is the visualization of the same object in the sunlight and in the artificial illumination. The aim is to prove that the designer is able to think about object in the impressionistic way using the expressionistic motif. Some research reflects idea that some structures are original not as an object, but instead they are some kind of material manifestation of some peculiar processes (Roudavski, 2015). The project that represents this kind of approach is led out from theoretical model (Fig. 7) that consists of rectangular-section tubes with a strong accent of yellow.

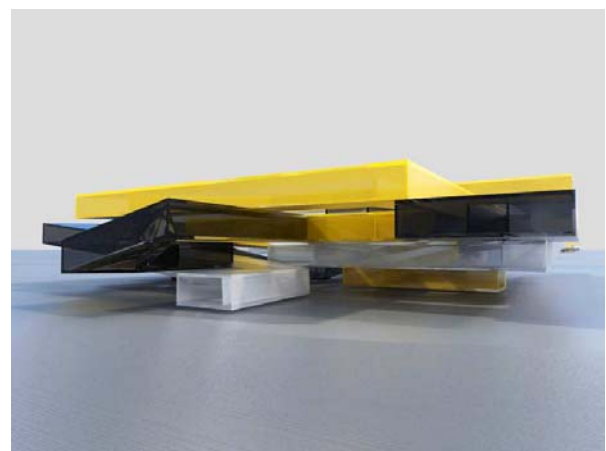


Fig. 7. Magdalena Kornacka, abstract theoretical virtual model
Source: author's archive



Fig. 8. Magdalena Kornacka, project of the clothes store, the natural light exposition
Source: author's archive



Fig. 9. Magdalena Kornacka, project of the clothes store, the artificial light exposition
Source: author's archive

The idea gently refers to Wassily Kandinsky's expressionistic theory of

colours. As usually the shape of the designed building (the clothes store) is not a literal copy of theoretical model. The experiment of presentation in the sunlight (Fig. 8) versus artificial light (Fig. 9) proved that different color layout fits particular daytime. Inversion of expressive yellow motif is desirable in the situation of presence and absence of the sunlight.

4.6. Expression

In some cases the motivation for particular design can be an expression. Some anatomic issues like nervous system structure can inspire the artistic statement. The idea of nervous breakdown evoked deconstruction design association (Fig. 10). Decomposition is most often interpreted as a contemporary form of Expressionism. As far as destruction may stand the only esthetical value of the expressional architectural composition (Serafin, 2014), the author's idea was to create the feeling of pain as a kind of damage. Additive manufacturing (the technique of laser three-dimensional printing) was used for creating the dynamical form that forces its way through the transparent cube. The grid on the surface of the solid emphasizes the contrast between the expressive dynamics and the static geometry.

5. Additional reflections

Contemporary architecture seems to be dominated by the cosmopolitan point of view. The embarrassing problem seems to be a dehumanization of the architecture that is excessively focused on visual aspects (Pallasmaa, 2005). However in some cases regional approach leads to marking some aspects typical to particular country in the composition. Designers have to consider that disseminating the architecture in

national point of view may stay in opposition to implementation of positivist ideas in architecture (Torre, 2002). Similarly to the architecture the contemporary foreign language studies distinguish concepts between education and training, while also highlighting the paradigm wars of the positivistic and naturalistic point of view (Uzun, 2012). According to this thesis the architectural

education could also meet this kind of discourse.

Furthermore, the knowledge about art and artists' inspiration increases the curiosity and it influences the quality of a final design product (Kuloglu, Yavuz, 2015). Art education also refers to responsibility of making the sort of connection.

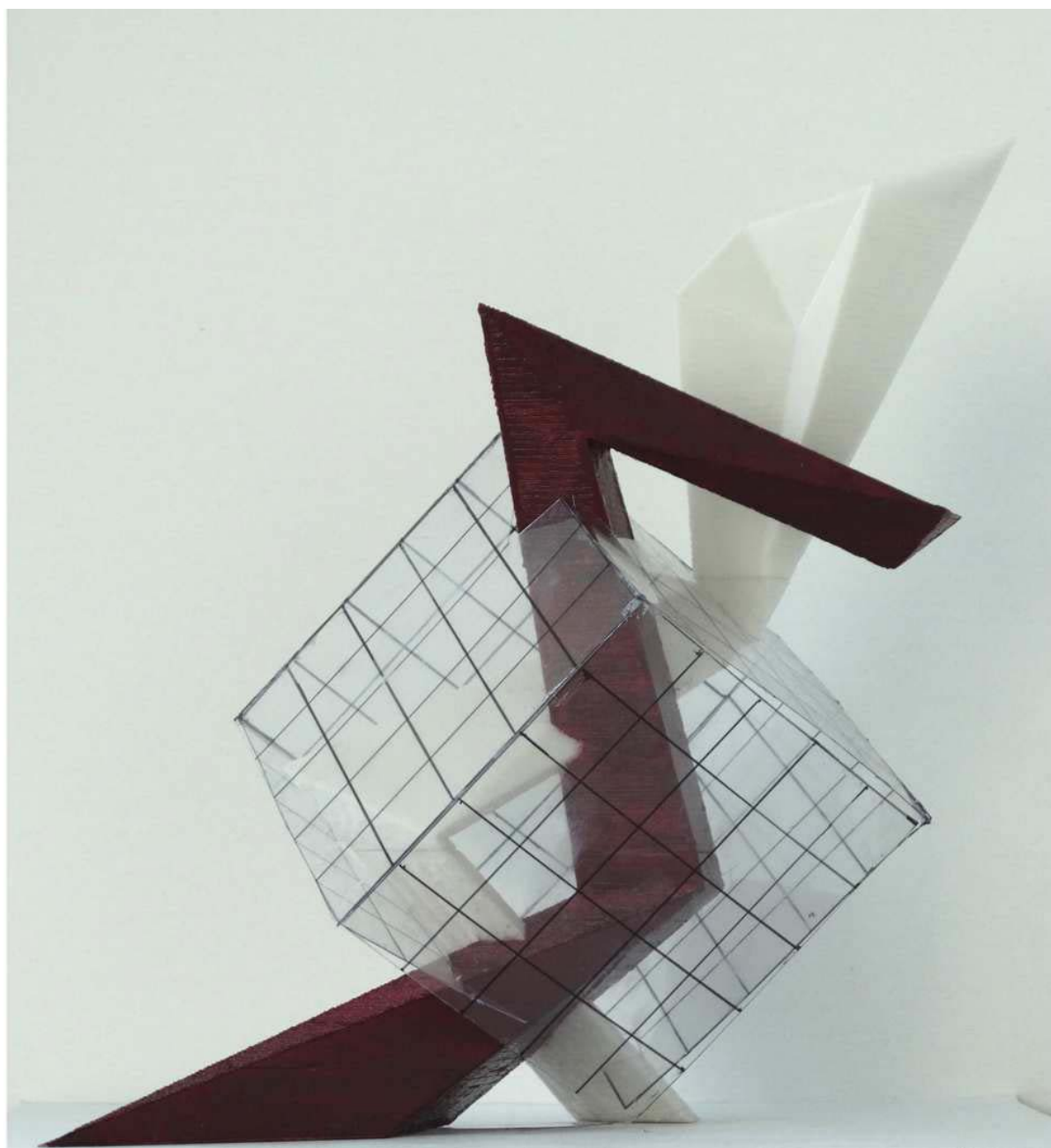


Fig. 10. Grażyna Kuźnik, theoretical virtual model
Source: author's archive

This means the link between the new architectural substance and city heritage in the meaning of social and cultural authenticity (Mihaila, 2014). Positivistic approach as well as cultural heritage preservation seems to be timeless aspect of contemporary architecture in spite of selected educational method.

6. Conclusions

The TMA programme is a circumstance for expanding knowledge and to avoid adapting fashionable forms that are not result of personal intellectual process. Completed courses prove that many extremely different students' approaches are involved. Using TMA method potentially accelerated range of design solutions is created for one particular initial situation.

There are some expected benefits of the implementation of TMA programme in study curriculum:

- sensitivity to the intellectual value of architecture;
- increased ability to abstract thinking;
- focusing on architecture that is dedicated to the particular place and situation;
- development of the expression techniques.

Educational experience proves that courses with TMA increase variety of design solution for particular situation compared to traditional approach.

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