In the Search of Architectural Concept

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1 ABSTRACT

Single family house is the first strictly architectural design in the syllabus at the Faculty of Architecture, Gliwice, Poland. That means that students – usually for the first time in their lives - have to face the issue of designing a space for a specific function. The common knowledge of how an ordinary single family house looks like only makes things difficult, while the student's first, sometimes even not thoroughly conscious impulse is to copy some well-known examples. But designing is creativity, and creativity means walking off the beaten track. The teacher's role then is to question ready-made solutions. As Peter Zumthor puts it:

"*Practising architecture is asking oneself questions, finding one's own answers with the help of the teacher, whittling down, finding solutions. Over and over again*". [2]

The goal of the paper is to examine the role and usefulness of a draft model in finding and expressing architectural ideas. The basic questions are: what is a "model" in terms of architectural design? What is its role in architectural design education? Are "model" and "maquette" synonyms? What is the difference between manual and virtual model and why is it worth to prepare models in early stages of concept seeking? In what sense may model be an inspiration for design? Searching for answers to these questions is the content of the elaboration, which was inspired by the first year design classes at the Faculty of Architecture.

1 DEFINITIONS

Models and maquettes - representations of building forms - are being used for various purposes: checking statics of the building, examining its function, analysing of the architectural form and, last but not least, communicating with the client. They are easily found among the works of Leonardo da Vinci, Andrea Palladio, Christopher Wren, Antonio Gaudi and lots of architects and designers of all historical ages. One can not complain about lacking detailed definitions of both terms, but the issue is becoming a bit less obvious when it comes to telling the difference between them. So it seems it should be important to start off with clarifying the meaning of these two words.

Generally speaking, a model is a kind of physical representation of a mental concept, created by a system of assumptions, notions and relations between them. Its aim is to show a certain aspect of a reality. According to this definition, the model is an approximation, and there is no demand for the approximation to be complete as it may as well show only some chosen aspects of the issue. The model can use a simplification as long as it allows to describe some feature (aspect) of the reality.

An architectural model is a type of a scale model, a tangible (sometimes also called physical) representation of a structure, built either to study aspects of architectural design or to pass design ideas to clients, committees, and the general public. Architectural models are used by architects for a range of purposes: to study interactions of volumes, to get an idea of how they look from different angles. Models are an efficient method for selling a design, while many people, including developers and would-be house buyers, cannot visualise a design in three dimensions from two-

dimensional drawings, a model may be useful in explaining a complicated or unusual design to the building team, or as a focus for discussion between the design teams such as architects, engineers and town planners. Models are also used as show pieces, for instance as a feature in the reception of a prestigious building, or as part of a museum exhibition (for example scale replicas of historical buildings) [7]. In this paper, the term "model" will be used in order to determine the spatial structure which is being created in the process of designing with the aim to examine interactions of volumes and to check its interactions with the surroundings.

"Maquette", a term of French origin, is often used interchangeably to describe a model. The term maquette is used to describe a very detailed scale model used for marketing and sales purposes, or a scale replica of a historical building. Maquettes present a variety of details of buildings, i. e. window blinds, mouldings and beams, as well as materials used for the façades of buildings: clinker, sandstone, wood, etc. They allow the use of many different components of the surroundings, like benches, pergolas, umbrellas, hand-painted figures, which – together with the architecture of the buildings and the design of the green spaces – provide a real air to a designed investment. The scale of the maquette is selected individually according to the character of the investment and the expectations of the customer.

The aim of this paper is to discuss the role of an architectural model understood as a tool for examining the concept of spatial interactions of volumes of a building. It is then a research tool, used to test ideas in the earliest stages of design. The model is temporary and being constantly improved in the process of designing. The detail is not important. What is important is its dynamism and changeability.

2 MODEL FOR A START

Design of a single family house, carried out in frames of the 2nd semester of studies, is the first strictly architectural task a student is coming across in the course of the architectural education. For the first time in their life they must face the question of designing space for a specific function. The fact that knowledge about how a single family house looks like is universal, doesn't make things easier. On the contrary, it only complicates and hampers the case, because the stud ent is trying, more or less consciously, to copy familiar patterns. It is the role of the teacher to make the student realize that designing is a creativity, requiring leaving well-trodden paths, and questioning ready-made solutions. According to P. Zumthor:

"Young people go to university with the aim of becoming architects, of finding out if they have got what it takes. What is the first think we should teach them?

First of all we must explain, that the person standing in front of them is not someone who asks questions whose answers he already knows. Practising architecture is asking oneself questions, finding one's own answers with the help of the teacher, whittling down, finding solutions. Over and over again" [2]

There is no absolute authority or an infallible teacher in the above description. A teacher of architecture is a person who is provoking the student to ask questions and helping them to find replies. There is also no room for objective right in this description – it probably doesn't even exist. Replies are "one's own", which means that they are subjective. The mos t important thing is the

solution seeking process, which, by the way, is a kind of a never-ending story. The answer which was right yesterday may turn out to be not good enough today.

A continuous process of searching for the answers is the essence of learning. But how is this search supposed to look like with a reference to architecture, or even more specifically, with a reference to designing architecture? Architecture isn't abstract; architecture is tangible and sensory, and thus communing with architecture isn't a purely intellectual experience. It takes nearly all senses to experience architecture. That's why designing architecture (especially in this early stages of learning) must not be nothing but a mental puzzle game. Architecture needs a force of gravity as much as the force of mind, so the best way to start is to build a model. The model building phase should precede drawing scale plans up. P. Zumthor goes even further:

"*The drawing of scale plans also begins with the concrete object, thus reversing the order of "idea - plan-concrete object" which is standard practice in professional architecture. First the concrete objects are constructed; then they are drawn to scale*." [2]

Creating draft models, repeatedly destroyed and altered in the course of consultations, helps to open student's imagination, encourages them to try out the impossible, to dare, to take a risk... It takes time and work to go through a sequence of recurrent trials but it becomes less painful with every next attempt.

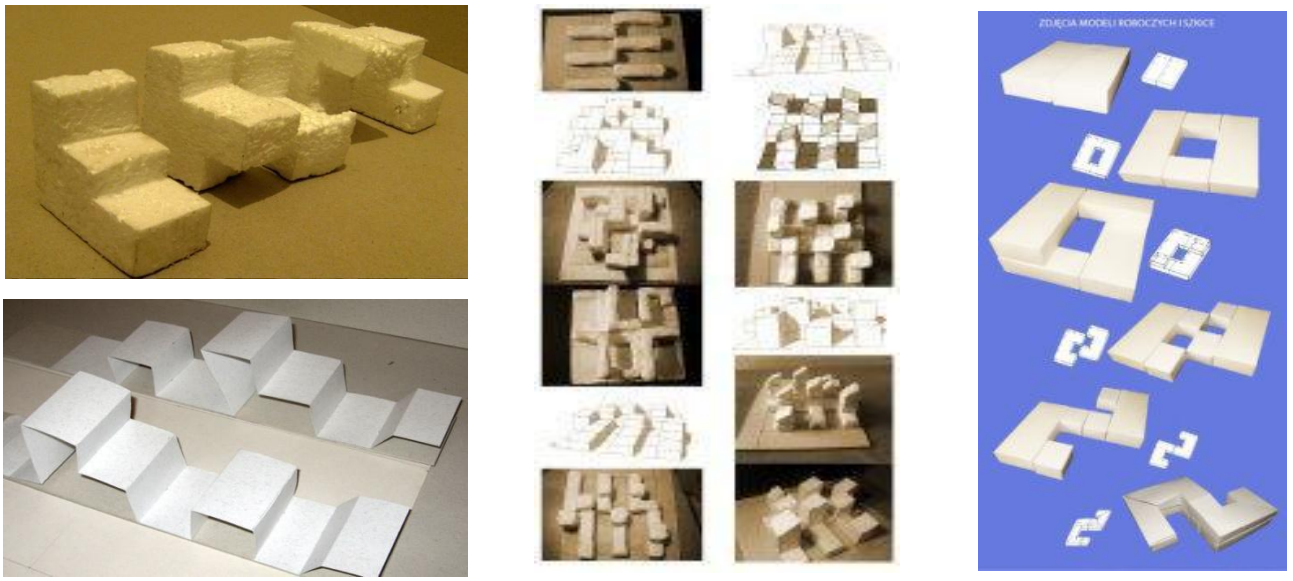

Fig. 1: Designing as a process and early draft models. Works of students: Beata Kłobut, Barbara Kopiec,and Edyta Lazar, supervision Joanna Serdyńska.

3 WHEN PLAY BECOMES WORK

It's much easier to take a risk in play than at work. So why not treat these first efforts of architectural forms' building as games? "*Play becomes party – party becomes work – work becomes play*"[1] was the famous Bauhaus motto. Work and play may be complementary. Johannes It ten's words are still relevant, and the idea is still equally effective after almost one hundred years. "House of toy blocks", "Tetris house", "Sliced house", "Periscope house", "Ribbon house" are the results of such games. The not entirely austere concepts are the best way to ask serious questions about

borders of contemporary architecture. Their authors dare to look somewhere further than they had ever expected. They start to explore unknown lands. Draft models made at this stage allow to accustom oneself with designing the three-dimensional space and to be cognizant of spatial relations occurring in the designed object. The work with the model is extremely important, because it helps to combine well-known toy blocks playing routine with unknown expanse of architecture. It creates a kind of continuity and helps student to personalize their attitude.

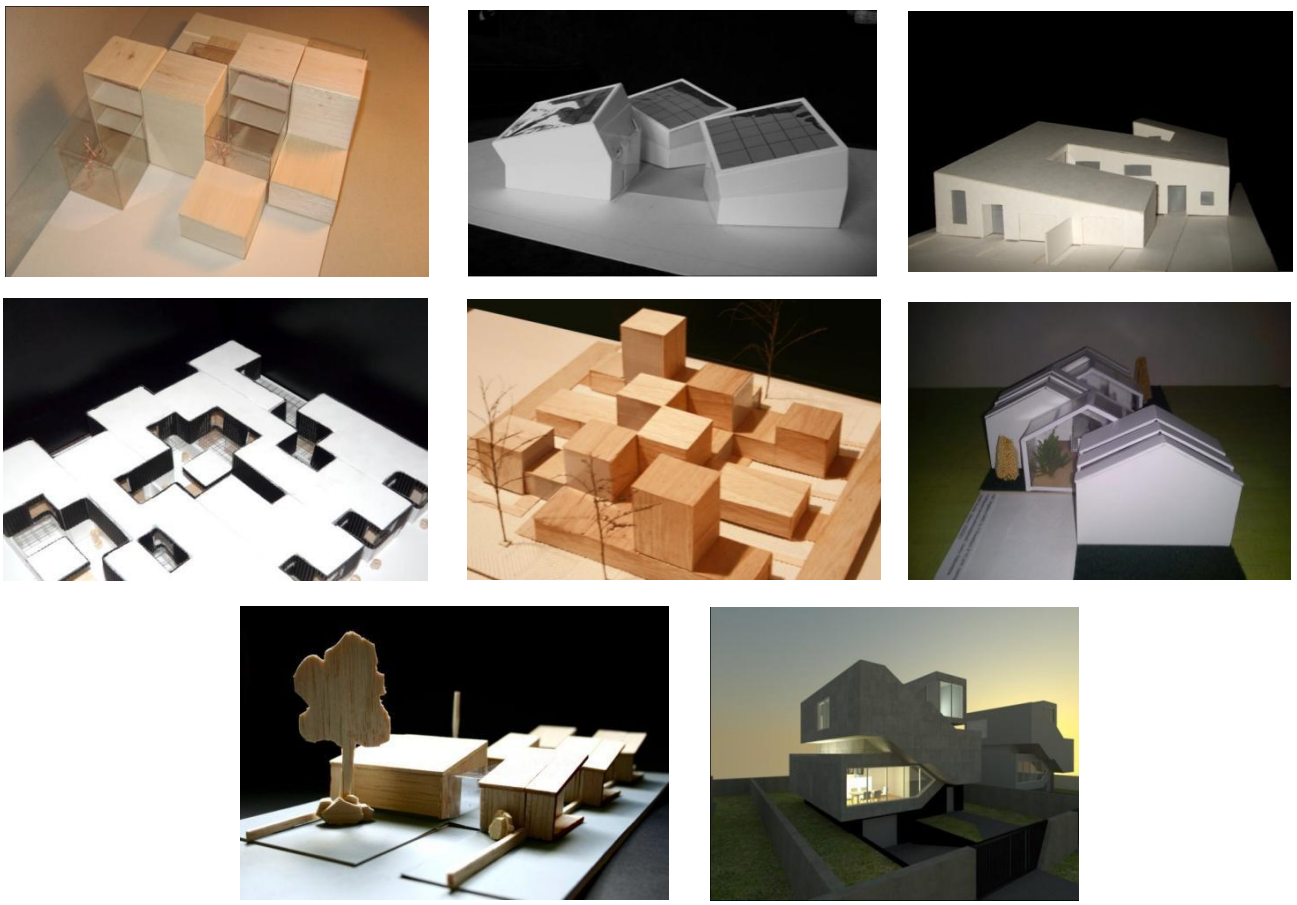

Fig. 2: House of toy blocks 1 (Beata Kłobut); Periscope house (Maciej Górski), Ribbon house (Edyta Lazar), Tetris house (Joanna Grącikowska), House of toy blocks 2 (Barbara Kopiec) Sliced house (Magdalena Gołofit), Fragmented house (Klaudia Ksel) Staircase house (Patrycja Krawiec); supervision Joanna Serdyńska.

4 INTUITION AND METHOD

It is the practice adopted by the Faculty of Architecture, Slilesian University of Technology that students are instructed individually. Their designs are being created in the dialogue with the teacher which might be seen as the distant influence of the Bauhaus teaching methods. There the process of designing was defined by a couple of opposites - "intuition and method" [1]. At the beginning, the student is representing this intuitive side, while searching almost in the darkness for the first ideas. On this stage the teacher's role is to encourage them to be more and more confident in the search, giving restrictions up, opening the mind to a multitude of possibilities. As the result student can

present at least a few solutions to the previously defined design task. Choosing a specific solution is the first phase of teaching the method – the teacher, applying clearly defined criteria, is judging student's proposals, pointing at their merits and demerits. The teacher's role is to help to define design problem again, and to determine the set of questions which require replies.

5 VIRTUAL VS. MANUAL

Model is a tool. Thanks to the model it's possible to understand spatial consequences of design decisions easily. Additionally, the process of model building allows to realize problems which were omitted or unnoticed in the preliminary stage of deliberations. From this point of view, it's meaningless if the model is virtual or manual. The reliable virtual model should be equally good as the manual one. It seems that the student's preferences should be an essential criterion for the choice of one of these two options: manual mode (made of carton, polystyrene foam, modelling clay, balsa...) or virtual mode (taking advantage of one of the 3D modelling programs).

It is important that matter shouldn't limit creativity. The restriction for making the real scale model is connected with student's manual skills and the availability of materials; in the virtual world the quality of the hardware and the proficiency in using the software have great importance. The ability of building manual models is gradually decreasing in today's world; actually it's giving up for preparing virtual models. The rapid progress in the computer industry, the steady increase of computing powers and more and more advanced computer programmes are an offer which is reall y hard to bid.

Manual model building requires materials, tools, ability and time. The model can not be easily altered. And once modified, its return to the previous version takes a lot of effort. A digital modelling doesn't have all these limitations. Computer modelling gives the possibility of making changes in the design in the real time. Making amendments to location, dimension, shape, colour, texture and so on doesn't require creating the next model and needs only “a few clicks of a mouse" Implemented changes aren't irreversible, it is possible to come back to the previous version at any time. Every version can be saved in order to compare it with other variants. The manual model is made in the specific scale. It can be beheld from different sides, but it is always a reduced version of the future building. The virtual model gives the opportunity of seeing it the way a future user will be looking at it.

6 MORE THAN JUST A TOOL

“*One should always keep in mind that an image's priority should be to convey a sense of intended existence, and not absolute reality. What does the project mean to do? What is being communicated? Do I want to go there? One must learn to adapt the “desired” to the “built”, whether by means of light, movement, mystery or other.*“[6]

These words of Andrew Hartness of the Jean Nouvel Studio give the image of the role of virtual modelling in today’s architecture. Digital electronics adopted at present in the design lets the models to be much more susceptible to changes. Virtual modelling is replacing the traditional manual modelling as a faster and less troublesome tool. Andrew Hartness' view on the subject is very characteristic:

"*In the last several years, AJN has also become known for its culturally- and contextually-perceptive architecture as well as for seductive images that accompany end-of-phase presentations. These "sexy", artsy images have proven essential in communicating with the client, in addition to providing a basis for further project development. In the past year AJN has been integrating real-time 3D development into the conceptual phases.* " [6]

In this statement the author pays attention to a few relevant issues: above all, computer (in AJN) isn't only a graphic tool, but a device allowing to obtain better, new, original answ ers. It is possible to find similar statements of other architects, who, for instance, speak about the way of achieving a specific luminosity characteristic to digital visualisations in real life. For A. Hartness, virtual model is not only a basic medium in the communication with the customer; in AJN it's treated as the base of further project development. So a 3D model is already an element of the design process. The idea of including designing 3D in real time in the process of the preliminary concept is becoming understandable in this context. Describing early phase models, A. Hartness speaks of "images d'inspiration", representing the spirit of the project coming from pictures, photographs, text, film - from everything which constitutes the base of the first visualisations. He emphasizes that these images cannot be market fine-tuned; they must reflect the idea of the project, remaining at the certain stage of abstraction.

Fig. 3: Specific luminosity of digital visualisations. Works of Barbara Kopiec and Edyta Lazar; supervision - Joanna Serdyńska.

7 CONCLUSION

The work with the model is one of the essential elements of the designing process. The draft model allows to test the first concepts, to examine spatial relations of the designed structure. The mod el should convey a sense of intended existence of the building. In certain instances, the virtual reality can be the source of inspiration for new spatial and material solutions.

8 REFERENCES

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