On Truth in True Size
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Ignoring all the discussion whether architecture is art or rather natural science, whether its socio-political task is more important than fulfilment of its purpose, whether ... etc., etc. Beside this I would like to reduce all attempts of definition to the simplest common denominator: Architecture is - unless it wants to be merely conceptual art - three-dimensional and material. Architecture can only fulfil its purpose, can only bear burdens as well as aesthetic contents when all the ideas, upon which it is based, are put into practice, i.e. materialized. This materialization is preceded by a lengthy process: planning. Basically, planning is simply the anticipation of future architectural reality, it formulates instructions, it is the prognosis of a desirable quality (to be striven for). Planning could also be called a prophecy. The statement that something will be or have to be a certain way does not mean that it will also be right that way. The prophet, in our case the architect, might well be wrong, as it is often enough the case. Our environment is disfigured with buildings that might have been well meant but in fact were major mistakes; they are constructed errors, since this very conclusion is often only made when the structure is finished.

Findings that could be drawn from that are hardly transferable to the future, since architecture is prototypical, it is always created anew, it is always a large-scale experiment, the result of which will only be foreseeable after the prototype has been built. Only then does the truth become apparent. For truth is the reflection of reality. But truth is also the assertion of statements on circumstances or things in relation to the congruence of statement and thing. The reality on the other hand is the world of objects and conditions, of things (already) existing independent of wishes and ideas. So how is an architect supposed to find the truth in his planning, when what he is planning (with all the connected expectations) and what he is actually building cannot be examined as to its coherence?

Considering architecture as an investment good and its immense costs, the endeavour to find out the truth about a building long before the topping-out ceremony or the commissioning of a building is understandable. So we simulate it. Drawings that are usually made, models that are built, perspectives, computer animations, pages of descriptive texts are attempts to simulate future reality. They are the reflection of a desired, not an existing, reality; there is no truth attached to them a priori.
There are more and more refined, sophisticated and expressive simulation techniques, they are coming to resemble reality more and more but they cannot yet replace it. What remains is the simulation of reality by reality, by the full-scale model.

Let us now transfer this problem to the training of architects. In addition to the standards of achievement which are usually sought for, universities and other architectural schools should aim at teaching people how to make all the decisions necessary for creating an architectural reality. Decisions in the field of design, construction, function, construction physics, psychology, economy, aesthetics, etc. At universities students are supposed to learn how to make architecture, in reality they only learn to plan architecture. Used to learning about architecture from glossy magazines (it's only the international level that counts), where shift-lens corrected photos and ground plans and sections that are hardly legible because they are conceived as graphics are passed off as reality, students embark on the same road when they create architecture: the way of conception determines the way of reproduction. They learn how to draw sectional drawings that no one will ever see, to build models without interior rooms, to make drawings that develop an artistic life of their own as graphics (where they even might be justified), but are no closer to truth than a literary description of the same object.

We are penetrating deeper and deeper into art the task of which is not to reflect the existing visible but to make new things visible. Art as a medium of recording reality ceased to exist long ago. I know very well that contact with art is the source from which architecture gains its power, and I am well aware that no architect can do without the aforementioned instruments of presentation and simulation, so I do not oppose these facts, but the exclusivity of their occurrence, I oppose the conception that there is no need for looking for alternatives which could take us nearer to the truth. However, there is one alternative, it is working in true size.

So what I am doing at my University, is to show the students how to design, construct and how to build architectural things. Constructing alone would mean restriction to the craft, planning alone is the method of approaching the phenomenon of building as it is usually done at architectural schools. I start out from the fact that building is the creation of architecture, and that this is a process which is not finished with the determination of aesthetic qualities, it rather begins there. Therefore I offer my students what will become their proper and most important task as future architects, namely planning and building and thus proving that the considerations, decisions, instructions and design formulations were right.
The prototype becomes constructed reality, an evaluation instrument, unmistakable proof of truth (of course there are numerous other goals of teaching that can be striven for and achieved by working in real contexts. The connections between material, construction and form, the expansion of product-oriented thinking by process-oriented thinking, the understanding by touching and much more - but this is not our topic here today).

In practical life the idea of true size building as a method of simulation has its limits, of course: dimensions speak against scale and costs against logic. Nobody would seriously contemplate building a hospital, an administrative building or an airport on a 1:1 scale just for the sake of truth; a hospital room, an
office unit or a cluster of check-in desks anytime. A lot was simulated on the computer for Norman Foster's high-rise building in Frankfurt which embarks on new roads of intelligent construction, but a complete three-storey section, including the very sophisticated facade, was still built, as a prototype, as a field of experiment, as a proof of truth. The same applies to studies. As I've mentioned before, I am against any type of exclusivity, also in this case. It would be stupid to base architectural studies on the examination of reality. But at least once during their studies, all students should be offered the possibility to experience the metamorphosis of their ideas into real reality and to draw their experience from the antagonism that materialization opposes to imagination. It is not so important whether the reality is restricted to a chair or refers to a house. In the spirit of exemplary learning, which is based on the understanding that it is no longer possible to learn everything, but only the principal, the exemplary and the typical, I advocate that handling true size should be tried once and that the experience can be transferred to other situations.

In true size a rectangle with a broken line becomes a room with an opening, two crossed lines become a wooden joint, a zone with dotted symbols becomes a concrete element where formwork must be erected and dismantled, etc. A model turns into tangible space that should not only fulfil its purpose as best it can, but - perhaps even more important - should trigger feelings.

Even if the finished product is the instrument for truth finding, the fact that the production of constructional reality must be preceded by a process is important. And so the cycle between reality and truth closes: The thought of analysis requires reality, the thought of synthesis requires truth. Building reality means building for truth. As part of the university course “experimental building” I realized a great number of projects in recent years, using a wide range of materials and pursuing different aims. All of these projects were designed, planned and built by us. We built pieces of furniture and stage sets, exhibitions and bridges, emergency shelters and an amphitheater.

Each work we realized confirmed the accuracy or, in some cases, the inaccuracy of our decisions and definitions, never hesitating to tell the truth about it, downright and unambiguously. The following figures will illustrate this statement, adding a visual dimension to the purely verbal.
Fig. 3  Bridge made of roof battens, span: 8 metres (The truth about efficiency).

Fig. 4  Dome made of corrugated cardboard (The truth about light).
Fig. 5  Chair made of ....... (The truth about a material).

Fig. 6a-b  Residential building instead of slum (The truth about the bottom line).
Fig. 7  The truth about detail.

Fig. 8a-b  Residential piece in Übelbach, modern technology in multi-storey residential building (The truth and nothing but the truth).
Fig. 9 Building with clay (The truth about ourselves).