DESIGNING IS INFORMATION AND EMOTION

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What is designing?

Designing is a creative action aiming at solving of a problem. It includes various activities. "One who designs IMAGINES ONESELF this or that; THINKS (not affirms) it to be this and that, and then he thinks again it to be in a different way; MOTIVATES, that if it is done in this way, it would be so and so, and if in that way - differently again; EVALUATES, if in such and such a case it would be right or wrong, and in what a way, to what a degree, and in what a case it would be better; and finally - CHOOSES, that is decides to act in this, not in a different way to succeed in one's object." [T. Kotarbinski, 1986].

It could be stated that designing is a procedure of working out the problems. The point of that procedure is to transform the input data (information about what is demanded) into the system documentation (thing) accomplishing the task. While designing we would like to reach our goal in a certain (reliable) way. The reliability of the inference is secured by one of the rules of logic - "MODUS PONENDO PONENS", which is based on the scheme :

if **A** then **B**
but **A**
---
thus **B**

eg.: from the premises: if it is Sunday today "A", and IT IS Sunday today
we draw the conclusion: it is Monday tomorrow "B".

This is the base of the DEDUCTIVE STRATEGY OF DESIGNING, i.e. such in which the conclusion is logically drawn from the premises. Concluding deductively we always do it in a reliable way. This does not mean, unfortunately, that we always come to the true inference. It can come out to be false if only one of the premises were false. To have the

true conclusion it is necessary for all the premises to be true. Thus it specifies the extremely important role of the quantity and quality of information in the process of inferring. Analysis and the use of information in concluding, and in our case, in the designing process, requires for the data bases to be created, with the possibility of their manifold searching. This creates the structure of the designing process, evidently not explaining the morphology of the process. The morphology constitutes of the logical sequence of functions (stages), and their fulfillment leads to the creation of the technical documentation of the design. Generally the morphology can be presented as follows [E.V. Krick, 1969]:

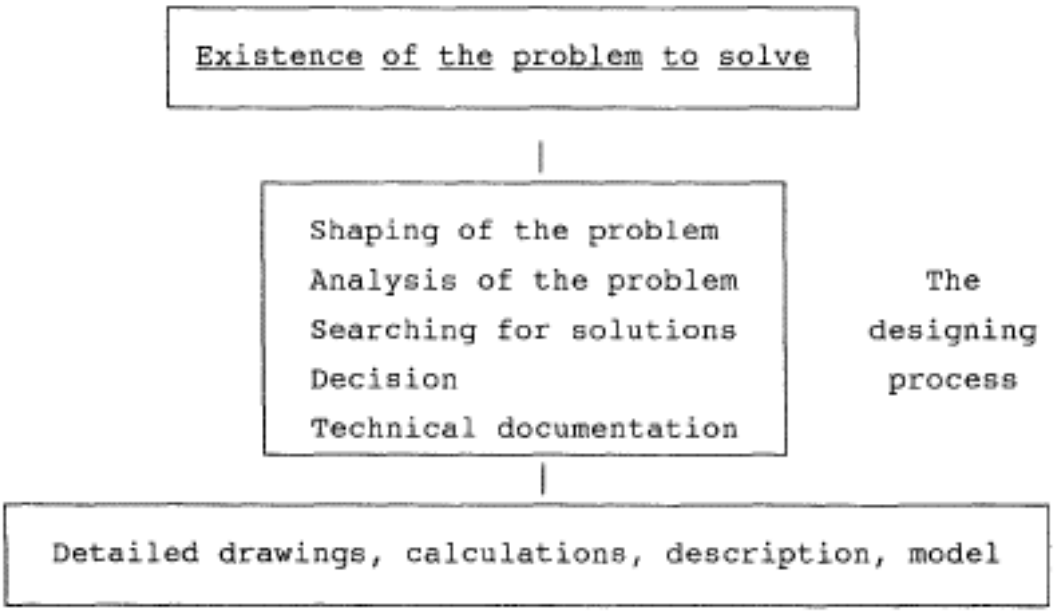


Fig. 1.

The considerations as to the morphology of the designing process are necessary to be only very general. This is conditioned by the fact that in practice almost every designing process has a different structure. That is why the discussion of the most common strategy (THE DEDUCTION STRATEGY) presented below would be to a considerable degree a very general one.

The deductive strategy can be presented in a diagram [J.M.Ullman, Z.Pininski 1975].

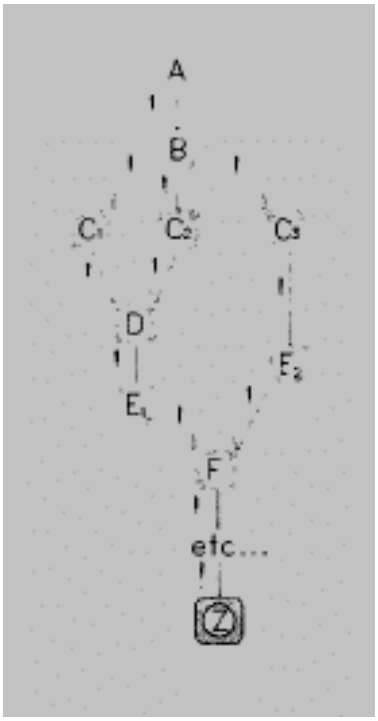


Fig. 2.

A....Y - subsequent stages (steps) of the project. Each of these steps includes the constantly growing set of information which is given, processed and created (supplemented) and it is the base for next stages to be created, processed and completed.

Z - the final form of the project.

The subsequent stages result from the preceding steps in a reliable way and the designing is crowned with the reliable final form "Z" The designing process is a multistage and multilevel course of information processing [Sielicki A., Jeleniewski T., 1980]. This can be presented on a simple model (see Fig.3.), which is composed of the data bases elements and the operation blocks "operator" (they perform

adequate procedures). Every block of data is attributed to the suitable operation block. Just like in the former scheme the data block can be submitted to the "preparation" or "completion" operations. This is done on the basis of information from the DESIGNER - "U l". In the operation block the designer performs the algorithmical or heuristic conversion of the input information. It is transformed into the output information transmitted to all the subsequent data blocks. The procedure in the operation block starts in the moment of crossing some "critical" information threshold. The designer evaluates the completeness and usefulness of the information for a given operation.

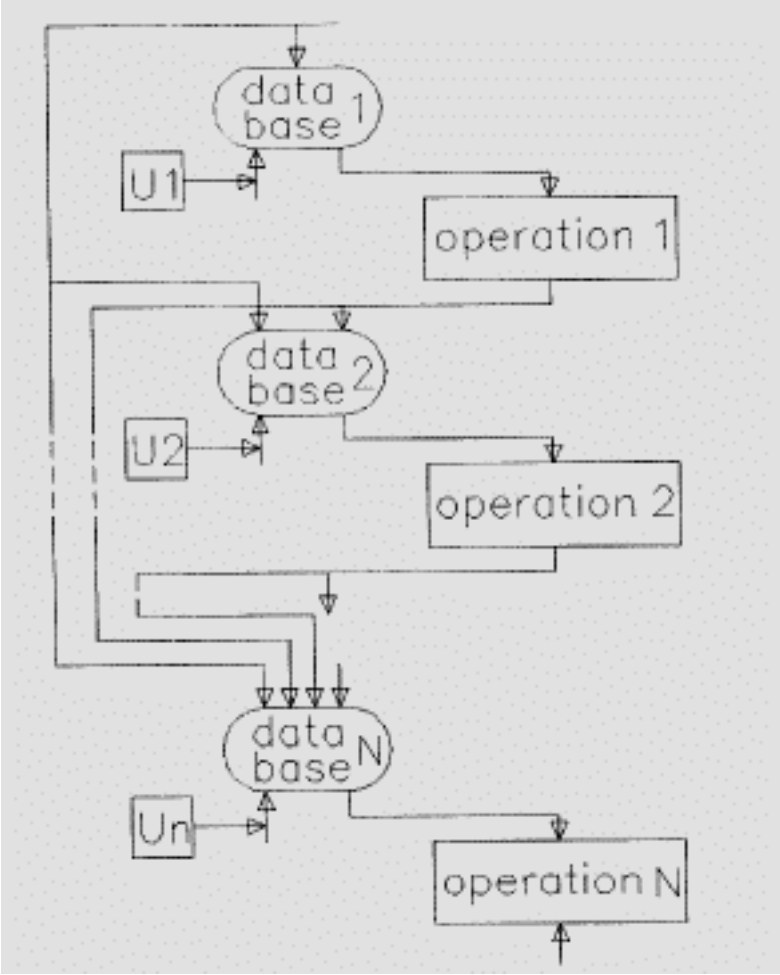


Fig. 3.

The opinions can be either utilitarian or emotional. [T. Kotarbinski, 1986]. The first appear when "valuable" means as much as "suitable for this and that", "needed for this and that to be created". The second are when "valuable "means" nice", "beautiful" or "ugly". There are often aesthetic opinions with some utilitarian appearances,too. For example "Cornflakes are good," can mean that they are nutritious and healthy but it can also mean that they are good because I like them. We have here the "projection" of one's emotion on the thing. As to the emotional opinions, the question arises if they are true or false. This is after all of great importance for the process of inference designing. Assumption that one opinion is true and reasonable and the other false causes serious doubts.

We are not going to answer these and the like questions here, because we are not in the possession of the well prepared tools.

The above shown deduction strategy of designing is the reliable one if only all the premises are true. But is it possible, especially in the light of what has been said about the evaluations, and particularly taking into account the sense of the last sentence from the former paragraph?

That is why in the contemporary methodology of the architectural designing more attention should be paid to the designing process based on the identification of the theoretical model formulated a priori. Designing is after all the creative action of a man with the gift of creativity. It is the individual property of the man who, thanks to his innate disposition, special perceptivity, intuition and fluency of thoughts, can find all the grains of truth in the complicated reality of the world.

The mentioned features condition the creative activity of a man. [A.Koestler, 1964].

Such an approach to the designing process has been defined by A.Moles in the most accurate and concise way - "FIRST I

HAVE GOT - THEN I FIND".
In logic it is called the REDUCTION inference, in which the premises are drawn from their effects. The reduction inferences are not reliable, though. This is caused by the fact that one assumes as a conclusion something taken as a basis for the premises. Veracity of the premises does not ensure the truthfulness of the conclusion but makes this truthfulness only probable.
/E.g. I am sitting in my room and reading a book. At one moment I stop reading, approach the window, and I see that the street is wet. This observation leads me to the conclusion that it must have rained while I have been reading. As we see the premise was "the street is wet" [A], and the conclusion was opinion "it must have rained" [B]. It is evident that [B] does not result from [A]. The street could be wet because it has been washed by a sprinkler./

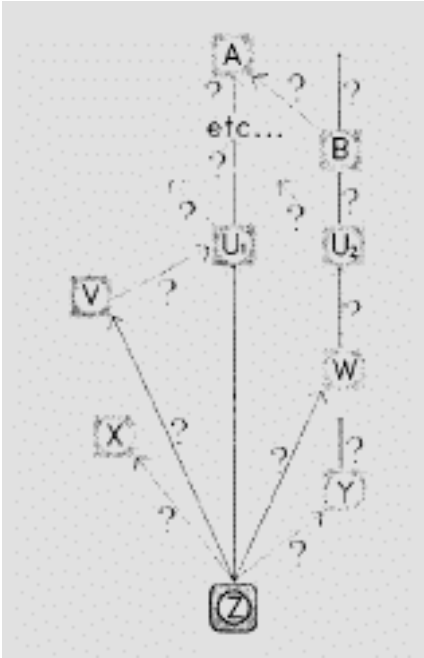
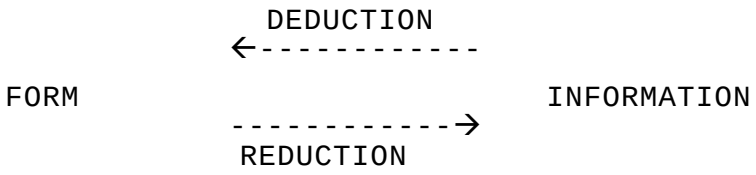


Fig. 4

Translating it into the terms of the architectural designing methodology, this means that for the final shape

"Z" taken initially /eg. as a result of the heuristic illumination the search for the states/ stages, sets of information takes place. Not necessarily should it be the search for their whole set or full chronology. Part of that information would be INTUITIVELY or methodically reduced. The PROBABLE "preceding" states are matched to the "following" ones. This happens in the deceptive logical situation up to the point of the suitable filling up of the given shape "Z" by the relevant set of information.
In the REDUCTIVE STRATEGY the designer, driven by emotions, looks for the information suitable for his imagined form. In the deductive strategy, on the other hand, the designer transforms the information from the data bases to obtain the demanded form.



So different place of the information in the designing process must naturally cause the demand for a different kind of information (?) or, what seems more probable, a different way of its organization (arrangement, hierarchy and access).
In the reductive strategy the data base should contain the same information as in the deductive strategy, and in addition it should also "be able to learn". While creating the form the designer as if gathers the suitable data base at the same time.

In Polish situation this is probably the only possible solution as to the studies on the town-planning schemes. This results from the fact that the urban data bases practically do not exist. Data base creation is usually possible only after the work on the project has been already started. Such a situation appeared during the works on Ciechanowiec centre designing made by the team of architects under my management.

The project creation process has been shown in the appendix to the discussed paper.

SUMMARY AND DOUBTS

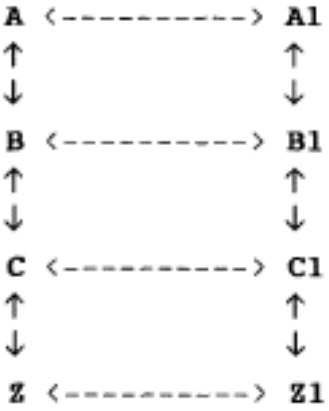
"...every human being is simultaneously a poet and an engineer [...]. Only step by step do we learn to understand what we lose trying every day to be ONLY and EXCLUSIVELY "sensible", ONLY "scientific", ONLY "logical", ONLY "reasonable", ONLY "practical", ONLY "responsible"". [Maslow A. H.]

In the previous research creation is treated as a PROCESS and presented in the form of linear diagrams, according to the linear theory. And in this moment a question arises -

What if creation is not a process but an ACTION, as the non-linear theory maintains?

An ACTION in which the sequence of particular functional components is of no crucial importance? Variety of means is used in the creation process. They function on different levels, not even on one plane (nor on one line).

The creation activity is MULTIPLANAR. Not only are the values of separate variables related within their own limits but also between the particular variables. The structural diagram of this system can be presented as follows:



That is why the place and function of both information and emotion understood in such a way needs closer examination.

A P P E N D I X

Stage I COMMISSION - obtaining of the commission for Ciechanowiec centre project preparation.

Stage II PROBLEM - The problem examination; recognition of the needs of both the local authorities and the inhabitants. The town's council demanded the development conception, which would bring the changes. The inhabitants, on the other hand, wanted minimal changes to occur because that would affect the existing property structure.

Stage III - EXAMINATION - genius loci (the spirit of the place) - metaphysical, magical. A walk in the rain, a walk in the sun. Information gathering (photos, video film).

Stage IV - EMOTIONAL EXPERIENCE - emotional estimation of the existing state. The answer to the question "WHAT ?" (what do we want to achieve?) is possible and needed to get.

Stage V - ILLUMINATION - active awaiting, sketching, discussions, and simultaneous creation of the data base, which contains three-dimensional computer model of the Ciechanowiec centre. This increases and accelerates the emotional experience which is the basis of illumination. We get the answer to the question " HOW ?".

Stage VI - CREATION - forming of the shape in the most traditional way - in our mind.

Stage VII - VISUALIZATION - precise design propositions, attempts of the objective evaluation, checking if the decisions taken are proper (and their possible corrections), graphic presentation of the project idea, making the investor believe that the decisions taken were right.

In all the stages we paid special attention to the integration of our actions, both concerning creation of the form as well as forming of the data base and the coordination of the creative actions of the team members.

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