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# FOUR EASY QUESTIONS

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Abstract:

Should we teach CAAD? - yes, but why? Answer to this question is clear too. Question three - "when?" - on the 5, 6 and 7 term. Why so late? - it is a compromise because "Architecture is an art" and students of architecture should know how to make a project without computers.

How to teach CAAD? - we should teach haw to use professional computer programs and not programming. We must work out a new manual for architects. It should be constructed in such a way as to correspond to consecutive steps of the architectural design process.

Text:

The Faculty of Architecture in Bialystok is the youngest in Poland. This fact allows for some experimenting in planning the whole course curriculum, as well as in the field of teaching the computer aided architecture design (CAAD).

When cur Faculty came into existence in 1974 we had to answer the following four questions:

1. Should we teach CAAD? If so:
2. Why?
3. When?
4. How?

We answered "Yes" to the first question. Furthermore, we believed that beside CAAD application of System Methods in architecture design should be taught as well.

The answer to the second question is clear, too. But it was not so in 1974. It seemed a very difficult decision then, and many of our colleagues were opposed to it. "Computers will kill architecture because architecture is an art", was their answer.

Both, applying computers to design and introducing System Methods met a very strong opposition. System Methods revealing the background of the designing process would unveil mystery of creating the architectural form. The designing process treated as a "black box" would became a "white box".

Recently the situation has changed somehow, but that does not mean that applying computers to design goes without any objection from the practicing architects. They seem to remember the failure of applying big computers to architecture design in the seventies as a result of inability to have an intellectual cooperation between humans and computers. The architect found it too difficult to operate the big computer. Moreover, the big computers did not create such working conditions the architects had been accustomed to. These were microcomputers that made it possible to use CAAD more effectively.

In 1974-79 students were tought to operate computers starting from the first term. The course comprised 7 term (two hours a week). In 1980-1989 the CAAD course was reduced to 8th and 9th terms only (two hours a week) as a result of the failure to communicate with the computer.

Since the conditions have changed our answers to question 3 have changed as well. To the question "When to teach CAAD and System Methods?", we answer now "CAAD on the 5th, 6th and 7th term and System Methods in Architecture on 8th". Why so late? It is a compromise because "architecture is an art" and students of architecture should know how to make a project without computers.

Now the first problem in Poland is "How to teach CAAD?". In my opinion we should teach how to use personal computer programs and not programming. And now another problem arises: in our Faculty we have not got any software and manuals. We started negotiations with Auto Desk Co. because we would like to buy Auto Cad version 10 (with the Polish text). But we realize that having one program does not

solve the whole problem. Unfortunately, the financial situation of our Department makes it impossible to buy other CAAD systems. And there remains another unsolved problem of the manuals. All the available CAD manuals do not satisfy the needs of our students. I think that a new manual for architects should be written. It should be constructed in a way corresponding to consecutive steps of architectural design process.

The manuals for CAD programs in Poland are written for an unspecified user, and therefore they are too general and complicated for the beginner architect. Most of these manuals describe each option in groups related to the layout of the program clear to the computer programmers but not architects. A manual should present them in the order and grouping reflecting the way they are usually used in architecture design. Group One: options such as GRID, SNSP, LAYER, preparing the computer to work. Group Two: basic options for making hand sketches at the draft stage of the design. The next step of the designing process is making a draft, therefore the following chapter of the manual should contain such options as LINE, POLYLINE, ARC, etc. Introducing dimensions is closely connected with the next step, so the following group of options should be explained here: DIMENSIONS. When the draft has been made we proceed with drawing axonometrics and perspectives which is called visualizing the project. Here options connected with the third dimension are used: 3D DRAWING.

The manual structure should take into consideration the hierarchy connected with the user's knowledge, apart from the hierarchic construction resulting from the designing process. This would mean the necessity of using a concentric system arranged around the basic options. In the consecutive circles these would be developed and completed with new options, thus broadening the user's knowledge. It is an important rule that learning only a few of the first circle options should make a student able to create a complete project.

The above described concept of a manual does not deal with all the problems connected with CAAD teaching. The whole educational process should be considered separately. Two different approaches to CAAD teaching can be observed now. The first means learning the consecutive options and making the separate drawings respectively. The second is to make a simple architectural project and use the options as the specific needs arise. Both of these approaches have their faults and merits. The former's merit is the possibility of evaluating the student's competence of each operation. But this does not guarantee that separately learned options will be properly used by the student in his design. The latter approach does not have the above fault, but an the other hand a longer time is needed for learning the material. Therefore an attempt at joining these two approaches in order to get a

higher effectiveness of learning should be made.

The above considerations do not comprise the whole problem and are just an attempt at introducing and order and systematizing all the efforts connected with CAAD teaching in the Faculty of Architecture in Bialystok Polytechnic.