CAAD - to teach, or not to teach?

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Usefulness of CAAD in architectural practice is not a matter to discuss. Probably it is very hard nowadays to find an architect practitioner who really believes, that CAAD isn't a useful tool in architectural office. Finding a job after finishing the studies at faculty of architecture isn't easy without knowledge of computer. For us as teachers it is a great challenge. We want our students to be as well as possible prepared for their work. So problem, how to put CAAD into amount of their knowledge is a very important point.

However, computers are nowadays probably the fastest changing element of our reality. Differences between software and hardware used a few years ago and now are sometimes colossal. In spite of the fact, that in the field of using computers in design we are usually ahead of most architects practitioners, I think we are sentenced to be backward contemporary demands. Program of teaching CAAD prepared even with great care and accuracy is obsolete even when it starts. It is impossible to catch up with future.

Which is a right place for CAAD in architectural education? Is it not true, that sometimes we try to teach CAAD by architecture instead of teaching architecture by CAAD?

For many students CAAD is the most natural tool for design, a tool which has replaced pencil and a sheet of paper. Is it our success? I am not so sure. Limitations of CAAD systems are much bigger than pencil's one. Like every sophisticated tool it limits amount of possible solutions. CAAD should not be a fetish!

I think maybe it is not such a stupid idea not to teach CAAD, but let our students find a right place for it like for any other useful tools?

Euphoria ?

Computers came into our life like a very fast running steamy train without asking anyone for permission. They are everywhere, not only at universities and industry. Sometimes it is hard to find a part of our reality without any of them. Their usefulness is undeniable and seems to progress. Our life with computers is easier and pleasant. Computer industry gives us cheaper and more powerful machines every year.

In Poland you can find computers in almost every architectural office. Their number still increases very fast. First they were used mostly as an intelligent typewriter, but soon they came into world of design. CAAD has already had its own place in architectural practice. It is a great chance for young people to find interesting work in architectural office and to be in the "heart of the process". Advertisements about job offers with description "experience with computer required" caused avalanche-like increase of students interested in CAAD. Computer became most wanted tool for young people. Knowledge about how efficiently operate it has become even more valuable.

Teaching CAAD at our Department of Architecture became important and indispensable part of programme of studies. It's effects are seen on every semester exhibition of student's best projects. The future till recently has looked great. However there is a shadow in this land of happiness. Students with CAAD background after finishing their education in our department were too often

becoming only operators of computers. Their job is usually reduced to transforming hand made sketches into computer drawings. It is sad to say, but this is far from architectural design.

Past, Present, Future

I was really impressed, when I saw a picture of the first PC computer in Oxford University presented by J.H.Frazer at this year conference in Bialystok in Poland. This picture was made sixteen years ago. From one hand it was a long time ago, but from the other I suppose most of us started their adventure with architecture before they have seen any CAAD system at all. We are the first generation connected with computer in architectural design.

Computers are the fastest changing element of our times. Let's consider an example. It is almost impossible to imagine cars running two times faster every two years. This year one hundred and fifty kilometres per hour, then three hundred, then six hundred, then with the speed of sound and so on... But even though it seems unbelievable, computer systems are changing in this way. Some of my friends don't want to buy the latest expensive computer to be out of date tomorrow. But it is impossible to wait what will happen.

Increase of power and improvement of CAAD systems is enormous. Every year we can get new and better version of existing software, or quite new product. It is impossible to get to know all of them, but it is even almost impossible to get acquainted with their main new features.

Virtual Reality, MultiMedia and InterNET are rapidly changing human relations with world of computers. Not so long ago they were a sound of the future, now they are getting as popular as TV. Future virtual offices based on the net are something quite natural for some of students spending hours with IRC. Influence of these new techniques on the CAAD and it's philosophy is still at early phase. I really believe revolution in CAAD is still in front of us. Methodology of CAAD is nowadays mainly based on existing traditional methodology and technology of making projects. It needs to be adjusted to this new possibilities and I am sure it will happen.

These changes force us not only to evaluate continuously our own idea of using CAAD, but also to reconstruct idea how and what to teach our students. We are doomed in changing world of CAAD. In this case program of teaching CAAD in our architectural schools, even made with great care and accuracy, will be obsolete just when it starts. What is the sense of teaching yesterdays ideas? No one knows how will CAAD look like in a few years. We can only predict. But is it possible to create such a programme based only on our guesses? To answer this question we need to resolve some other problems.

CAAD, or CAAD?

There are a lot of misunderstanding about CAAD. It is obvious, that students want to know how to operate with this tool for easier and faster project production. They suppose how important point of their education CAAD can be. For years any computer courses in programme of studies has been very popular. We should not be surprised. Design process for students means long hours of sitting at the drawing board. Amount of work spent on making sketches is usually many times bigger then putted into designing itself. Creative work is in minority.

For a student CAAD is simply CAAD. For me there is a difference between CAAD understood as Computer Aided Architectural Drafting, and CAAD meaning Computer Aided Architectural Design. For many students and even architects practitioner there is no difference. I think it is a great mistake. This first meaning for me is not only limited to technical drawings, but also

photorealistic vistas and even animated presentation. For some architects this is all what they need from CAAD. Computer Aided Architectural Design for me should be a design media, which gives us radically new and different point of view on design as transformation of ideas into spatial objects. I don't want to estimate which one is more important in educating students. Both are necessary and we should not forget about this two aspects of using computers in architecture. We have to remember about their difference and we should treat it differently.

The role of the Architect in CAAD system.

We should answer one question without any indecision: should man be a part of CAAD system, or CAAD system should be an extension of architect's creativity and efficiency?

It sounds horrible for me when the only answer for the question: "Why student's design looks like...?" is: "Because I had it already done. In my CAAD software it is impossible or very difficult to do it in different way." These students seems to be slaves of soulless machines. If your tool does not fit your idea, change the tool not the idea. Switching between different software can be a medicine for such problems. There is no CAAD system suitable for every task, but architect should be versatile.

Once a student working in our CAAD laboratory told me that in his opinion an architectural education before getting acquainted with CAAD had been a great lose of time. For him a computer was more natural tool to design then pencil and sheet of paper. He said CAAD should have been the very first thing that student should have been taught.

Teaching CAAD as obligatory part of architectural education can be dangerous. How can we expect individual ways of thinking when software used by our students forces them to go only one way? Such complicated and sophisticated tool can kill their individuality and creativity, while our aim is to preserve and keep it growing.

To teach, or not to teach?

It is good to ask yourself, is it worth to teach CAAD at all?

I haven't the slightest doubt as to important role of CAAD in architectural practice. Now it is to late to imagine architecture without computers. And it is also to late to imagine architectural studies without teaching CAAD. But there is a dangerous possibility that our students will become computer specialists working in architecture instead of architects working with computers. For me the only answer is to put main stress on architecture and it's issues in our courses. CAAD should help our students to solve design problems and to present it's results. The theme of CAAD exercises should be architecture, not CAAD itself. It is a tool and nothing more. It should not tell students how to think and how to design. We shall let them chose their own place for CAAD in their architectural curriculum. It guarantees maximum flexibility and adaptability for architecture of tomorrow. Let their masterworks be their advocate.

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