Debate on the Presentations
First Theme, Part I

Chair:
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Maria Voyatzaki
First of all, I would like to remind you of the content and the questions that were raised, going back to the content of contemporary construction teaching and the question of what is new. I am reiterating these things for fairly obvious reasons. People want to get involved in this conversation, not necessarily in relation to what has been said, but also to express their own views on the matter; so when we put together the theme, and we have had different suggestions coming from different angles, there is one practical question that has to be borne in mind: obviously, from what we have heard so far, there are new things that have to be taught; but they have to be fitted into a curriculum with a finite amount of space. The question here is what the corpus of construction knowledge nowadays must be. In other words, do we need to reconsider it at all or just stick to what we have got already? What are the new subject areas? Dimitris Papalexopoulos and our Danish colleagues tackled this radically; but then the question arises as to how, if there is a corpus of construction knowledge that has to exist, the new material is going to be fitted in. And if the new has to be part of construction pedagogy, what place should it have in a school's curriculum? Because, obviously, if we decide that the new and the old should co-exist and have the same weight in a curriculum, then the next question is, what is left, in terms of time and space, to the other subjects that have to be taught in a school of architecture? We could end up teaching nothing but construction for five years. So we have to start thinking about what the new corpus of construction teaching should be, and see what of this should be prioritised, emphasised, and so on.

So that is our theme, and you can relate your questions or positions to what has been presented here.

Joseph Thurrot
I have a question for Dimitri Papalexopoulos. You threw me there a little bit, Dimitri, on a couple of things. One of them was the word 'artefact'. You said that there was a duality, with the artefact being a catalyst as well as an object. And I just wondered if you could explain that again briefly, because I did not quite follow you on that.

Dimitris Papalexopoulos
I cannot explain briefly two major directions of the philosophy of technology. There are two ways of looking at an object. One is as something exterior to the subject, something that can be fabricated and manipulated at will. This leads to the position that computers are something outside us; they are things, so we can use them in a good or a bad way. That is one position – with which, incidentally, I totally disagree. When I said that each society can speak through its artefacts I meant that each society is linked, merged, with the things that it makes. That is a more or less French current in philosophy. The other position I did not argue, because it is a big philosophical discussion and is a question that must be addressed to the whole congress. What I said was that, of the two points, the second one – that is, the artefact as a catalyst of relations, or of sociability – helped me see the question of interactivity and interaction design. That is the whole idea. As a technologist and as a teacher of construction, not as a philosopher or a social science man, I would like to let the object speak and tell multiple stories about how humans use it. Let the object speak. It is a huge debate.

Joseph Thurrot
I gathered that, and I just want to ask how can we possibly think of an artefact as something that is malleable, a catalyst, because surely all artefacts are objects. As architects we make buildings, we make things that are always going to be part of the objective realm; so I really do not understand where the second line of thought is coming from.

Dimitris Papalexopoulos
When I build a house, a building, I build a thing. But I do not decide its materiality: I decide the multiple interrelations that are incorporated into the thing. So I accept that I have a social relation between design, construction and industry. I cannot see mass customisation or industrialisation of the building outside the complex relation of industry and construction, what is fabricated in situ and what is fabricated in the factory. There is a divide, a powerful economic and social divide. So if I let the neutral proposition of a prefabrication system speak, it can reveal the whole set of social, economic and ideological relationships behind it. This is my general position; this is my thinking. I am not a philosopher or a social analyst, but these are my beliefs, following a French tradition of the 70s. A very concrete tradition of thinking about construction.

Joseph Thurrot
Perhaps I will let someone else speak now, but I would like to speak to you later when we have more time.

Dimitris Papalexopoulos
Yes, of course. But let us just mention another paradigm, which is close to digital construction: the constructive approach of Bernard Cache and the way he fabricates different kinds of things using the objectile-subjectile dichotomy within the theory is the same kind of thing.

Henk de Weijer
If I understand correctly, it is as if what you are sitting on is not a seat but a staircase. The staircase is an object, or an artefact, in itself; but when it is used as a place to sit rather than as a staircase, it becomes a catalyst: thus, form becomes a catalyst. There is also a connection with the relationship of form and interpretation. Our colleague from Aarhus was talking about it as a machine or a tool. A tool is an object that catalyses some idea or interpretation, while, as a form, a machine is closer to the idea of an object itself.

Herman Neuckermans
I would like to address a question to Maria Voyatzaki regarding what the corpus of construction education today should be and how it can accommodate the old and the new. That is a really tricky question. I think that what we teach is a window to knowledge, and the focus changes over time; but that does not mean that we can throw out of that window the core of what we teach in construction. In my country, for example, 60% or 70% of building activity has to do with remodelling buildings, converting them to the needs of today. To do this you have to know – as we did –

about ancient and previous technologies. In my view, therefore, it is not difficult to define what is new knowledge and what is old knowledge in construction, because it is a continuum; but, on the other hand, we are limited by time. We have five years – no more – to teach the corpus, even though that corpus is growing continually.

Maria Voyatzaki
So if we accept your assumption, then we have to decide which segments of this continuum are important to teach. We cannot teach everything from, for instance, dolmens onward.

Herman Neuckermans
There is a famous series on construction in the Netherlands, which has gone through some fifteen editions; and if you go back to the last edition but one you will find the – "The Gift of Fundamentals".

Maria Voyatzaki
Yes, but the point is, what do you teach in a limited, finite period of time? That is the main question. I do not disagree that it is a continuum; no one says that this is old and this is new and this is what connects them. But the point is, what do you teach? What do you teach, when so much has to go into five years and construction is given sixteen credits and thirty hours, or whatever it is? This is finite, and this is where we need to find answers.

Herman Neuckermans
I think, from the personal experience of my own school, that it is partly up to the school and partly up to what the design studio requires us to teach; for they are on the cutting edge of architecture, they are always producing new architecture.

Maria Voyatzaki
This is one position.

Herman Neuckermans
Yes, it is; and in the same way I do not think that digital construction can be part of it. You can introduce part of it in the school, but you do not have to cover all that exists between the old and the new. But **my ultimate answer to the question is that courses should teach fundamentals.** It is the face and not the body that changes; the fundamental principles remain. That is my answer to your question. Now I have a question for our Danish colleague, related to the example you presented: what was the theoretical foundation of what you were doing? Secondly, you said that you made a digital model: how did you do that? To me there was a gap in your explanation. How did you get from the concept to the digital model?

Anders Gammelgaard
To answer your question: it could seem as if we were trying to avoid the outer form, or that the students were wishing to do that; but the point of departure was, as in a home study programme, the form potential of this material and exploiting this form potential. So instead of the commonplace of concrete slabs that are just flat, this

material has another potential; and that was what they were pursuing in their project. So theoretically it derived from a tectonic point.

Maria Voyatzaki
I want to go back a step, because Prof. Panagiotopoulos from Thessaloniki wanted to ask a question or make a point, when we were discussing the finite and the old and the new and the continuum.

Nikolaos Panagiotopoulos
I have two questions for Prof. Papalexopoulos. His presentation was a very interesting one, because these issues will come up again and again throughout this meeting. The first question is a statutory one: can we specialise engineers to predict human behaviour so that we can adjust buildings to that? And the second question is: speaking of transfer of information from the designer to industry, does that not sound as if we are using the same tenets as in the building of aeroplanes or cars? Because I strongly doubt that buildings obey the same laws as aeroplanes and cars.

Dimitris Papalexopoulos
To your question on whether one can predict human behaviour, the answer is obviously no. So there is one current interaction design, because mostly the problems are with interaction design. As to how we design an interaction, there is one trend that says that we can predict human behaviour and there is another trend that has the ability to deal with objects that are not strictly defined. It is about the logic of ambiguity. But it is an open question. I think that that is why I place it not in the courses within the architecture curriculum but as a question for research, possibly for a diploma thesis or for post-graduate studies. I think that in the question of interaction design Antonino Saggio has things to tell us; but **we are in the presence of a paradigm that is shifting from needs to desires.** That is something that has occurred in contemporary reality. Also, if we go to industry for that part of interaction design (not for the other, not for airplanes and cars), we will see that there are models that seem to predict behaviour when in fact they provoke it. That means that designing industrial objects today does not mean designing form, but designing also the connections and the possible uses of it, the transformations and the performances. Jeremy Rifkin has described the whole model very well. I do not agree with everything he says, but he has a very clear description of this type of thing.

Regarding the second model, I spoke about what we tend for brevity to call smooth architectures, like what we saw from our Danish colleagues here. I do not know why we have to think like that. Digital does not necessarily mean smooth. We all have cell phones, and right now we are in a rectangular building, not a smooth one; so digital does not necessarily mean smooth. Smooth architectures create smooth objects, and we are finally in a position to build them, and that is a very good thing. So the model is not the car, it is the airplane. It is the Boeing 737, and maybe the shipyards; and this is a new paradigm. I am being very careful here: I am not saying that we have to build architecture like that, I am saying that we have to study what they have done. Surely construction is much more complicated; and I believe that I made it pretty clear in my last slide, where I put forward a sort of dichotomy, saying that we do not have to make a choice between digital and physical. I remember many

years ago that Nikolaos Negropontes, who was also an architect, said that nobody has to answer the question 'either/or': it could be 'both/and'. Thank you.

Anders Gammelgaard
There seem to be two discussions running parallel, so if I may I would like to return to the question Herman posed about the demands that define the future of teaching in construction, because you suggest that these demands come from the architecture offices, which I...

Herman Neuckermans
Not the offices, the design studios.

Anders Gammelgaard
The design studios? Then I misunderstood you, I am sorry. I think that it is true that the design offices can make an impact on the kind of teaching in construction that is carried out; but at the same time the really important thing for any school, for any university, is to have this open space where research into fields that are not immediately useful can go on, so that the question of where the demand comes from is, I think, a very important one.

Dimitris Papalexopoulos
A small comment on the demands of the design studios. I do not believe that the demand is clearly defined. A group of us once said, "let's ask them what they want us to do, and we shall see how they will not answer us". "If we are your servants", we said, "then tell us what to do"; but they do not know what to tell us. Thank you.

Maria Voyatzaki
That is understandable, though; it makes perfect sense. Why should they know the answer?

Henk de Weijer
I think that there are two things involved here. One is the need for investigation, for servile-mindedness: I want to build what you want me to build. But there is also the other side where, just as in politics, there is a need for vision. Take stairs, for instance: if a student gets an exercise in making a staircase in a certain environment, I will ask him first to analyse the situation he sees and is working with, and then to decide what to do, whether he needs a staircase at all, and if so what kind of staircase is needed. Analyse the situation, step outside yourself, and then decide; but also make a statement: you add nothing towards this new analogy if you just make an analysis without the statement. Architects and designers are increasingly asked to make a personal emotional statement.

Ole Vanggaard
I am an engineer from the School of Architecture of the Royal Danish Academy of Fine Arts. It was the words 'smooth architecture' that made me pick up the microphone, because smooth architecture is something that we had earlier, Saarinen with the TWA Airport. I think we have to introduce the teaching of digital tectonics, which

we used to call informational tectonics. I think these things are interesting today because they represent this new era, and architecture has to experience everything new that comes up, even in the simplest things. This has another reality in today's world, because materials and industry and the new design network of experts that work together make it possible to do other things in industrial ways, to create new surroundings around us. This, I think, is a very important thing; and it is also important for us, as teachers in schools of architecture, to understand that this is not just a style. It is something that is related to all the basic facts, it is related to the techniques, it is related to society, and it is linked to the way we talk to each other and communicate.

Anders Gammelgaard
I would just like to make a final remark about the fundamentals in construction teaching, which you mentioned before, Herman. This is the fourth time that I have participated in this workshop, and you are always speaking about how we have to teach the fundamentals in construction; and you said before that in the Netherlands there exists this book, "The Gift of Fundamentals", which has been slowly changing over time. I think that this is a very normative way of thinking, because **it seems to me that the fundamentals of construction are going to be narrowed in the future.** If you see the number of topics that the students have to meet, and we still want to give them a fixed package of construction teaching, then there is simply not enough time. **I think that it is important to be able to let go of this idea of fundamental construction teaching.**

Maria Voyatzaki
I would also like to add something to this. Maybe the fact that a series of books continues and is enriched is not a sign that these people are stuck in the fundamentals, or that the fundamentals are the basic construction tool, especially given the fact that there are young people that are operating and creating public buildings with cantilevers like the MVRDV. I cannot believe that the cantilevers in the MDRDV Wozoco house were designed by someone who had only been looking at the fundamentals in his or her construction education. Marcel Heistercamp has been wanting to speak for the last ten minutes, but first Herman would like to add something more.

Herman Neuckermans
You may have mixed up my comment a little bit. First I talked about the series of books, which has an important content; and then, at the end, as I wrapped up my comments, I wanted to say something about what we should be teaching, and that is when I mentioned the fundamentals. But that has nothing to do with the books; the books are another story. I would also like to say something about what I think we should teach and what we should leave out. First of all, there is no single rule that says that we all have to teach this or that. Schools differ; they differ in the content of what they teach. For example, and I will speak about my school because I know it best, we went to the Bachelor/Masters, and we have a series of courses, starting with mechanics, materials, construction, etc.; but one of our electives is always one full-year course in construction where we just look at whatever is in the air at the time. This is where the actual difference comes in; this is a means of including

things that come up. I do not know whether blocks or digital is most important to teach: I think, for example, that special construction materials like structural glass are also important. These things differ from school to school. I have thirty teachers who have practices, some traditional and others at the cutting edge. The ones at the cutting edge come and make demands of the school and say that as the head of the school I ought to be aware of things that emerge; and when I come to Barcelona, apart from being here at the meeting I can also go to Jean Nouvel; and since I am a teacher of construction I can somehow smell out what is going on these days. I like to be kept informed, and I will probably ponder on how we can incorporate it into our school. So, I repeat, it is an evolving matter; and what we do varies from school to school because it depends on the teacher. But this does not exclude the teaching of fundamentals. The fundamentals are not only how to bend a stair: the fundamentals are about how to make a hole in the wall, and what carries it if it is an outer wall; and then there is the water, and the insulation. These for me are the fundamentals. How we solve these can differ for each one of us.

Marcel Heistercamp
I think **that what we have to teach are attitudes and working methods that can be used to solve architectural problems. I think that there are no new subject areas; there are only new materials, and they that should be used in the ways for which they were designed. What we have to teach, therefore, are elementary principles in building methods, building stability, building technology and building physics.** These are and always will be the core of a well-balanced construction course. Second, new materials and pollution laws are critical when dealing with construction issues. New materials are important and provide new stability dimensions. The objective for which the material is brought onto the market must be part of an elementary principle. Third, it has become possible to calculate highly complex structures, to create and evaluate simulations before we build them; so we are indeed entering a new era.

Constantine Spiridonidis
I have one question for our Danish colleagues. This research project was financed by industry, I suppose?

Karl Christiansen
Yes, partly.

Constantin Spiridonidis
Partly. And the other part?

Karl Christiansen
The other part was financed by the school and by the foundations.

Constantin Spiridonidis
The initiative came from the school? From you as individuals, from your school, or from industry?

Karl Christiansen
Well, actually, the project could be on any sort of material. It was concrete in this case, but the research programme dealing with the industrialised individuality was our choice. It could have been any other industry, but in this particular case the concrete industry offered themselves.

Maria Voyatzaki
So the initial concept of the research project came from education, then.

Karl Christiansen
Yes, it did.

Constantin Spiridonidis
From you as individuals or from the school?

Karl Christiansen
From us personally.

Constantin Spiridonidis
The reason I am asking you this is because I strongly believe that schools of architecture are very conservative institutions when it comes to innovation. I am sure that you see this everyday, too; and it has come up in every one of our discussions these past four years. So that is why I wanted to know if it was a personal interest that someone mobilised in order to be able to develop such a project, or if it was something that is structurally organised through research, an activity of the school that is organised and coordinated within a certain framework. But you gave me the answer, so thank you.

Karl Christiansen
It came from us, and I think it is very important that it should be like that. The school is us, and we are the school; there is no board telling us what to do. The question came from the concrete industry, but we should neither run after these commercial firms nor serve the architectural offices. **What we at the school should be, both when we teach and when we do research, is lighthouses; and industry and practice should navigate around what we light the way for; otherwise we are just servants.** I think that it should be that way around.

Maria Voyatzaki
Karl, have your students ever asked you what your agenda was on this project? Not your agenda maybe, but the agenda of the module, what you were trying to teach them. Do they ever ask you this question?

Anders Gammelgaard
May I answer? Because, yes, it is something that we tell them right from the beginning. We come out very clearly with what we are doing, and with the possibilities and the demands that come from the industry, so nothing is hidden in that interplay between us, the students and the industry. The students benefit, because they are

supported financially and because they have access to industrial techniques, which is also very important. The students are also very interested, because they see themselves in a situation which is not like it used to be, when a lot of architectural research was carried out in the framework of the design offices. This no longer happens, because it is too expensive. The students are very well aware that there is a possibility for a job in the future if while they are studying they get some sort of a connection with these companies. They see this, and the industries see that in the future they will need, at least in the big corporations, architects to guide them and help them towards the kind of research they should be doing and how best to get in touch with the architectural offices. So they see a possibility in that, and they are very interested in this two-way communication.

Karl Christiansen
Actually, though, we have no agenda per se. We do not tell the students what the agenda is, because it is so very broad. The agenda is architecture; and if we want to make architecture we cannot just repeat what was done earlier: we have to do something new, because otherwise it would just be a replica, and to me that would not be architecture. So actually, when we go to the companies, we say that we would like to try to find new ways to make concrete, for instance, but that we cannot predict anything about the results. We do not know if there will be results, but we would like to work on it and we have to work on it. So that is the agenda, and they accept it. And in the same way we tell the students that we do not know where the exercise is going to go, because that depends on their work. And we do not want know, we do specify a certain agenda, because we want something new to show up, for that is the way that architecture progresses.

Maria Voyatzaki
If I ask you, for example, whether you teach conventional brick work in your school, I suspect that the answer would be no. The next question would be how these students will survive when they have to supervise a building site. And the answer would be that they survive just fine. So how does this magic thing happen? How can an architect who is taught this concrete module, but is not taught conventional brickwork, be a good architect in practice? How do you work this magic?

Anders Gammelgaard
Right. We would not teach traditional brickwork, and whereas the material – concrete – is not important, we do teach the technique of casting a steel wall. In terms of brickwork, that would be a full course on stacking, on how things can be stacked: how stones can be stacked, how constructions can be stacked, how bricks can be stacked. Stacking is the idea, but it does not lead to traditional brickwork.

Maria Voyatzaki
Yes, but do not put it so specifically, Anders. I am sure that there is something more generic than that. There is a philosophical attitude to the education of construction here; it is not about stacking, it is not about concrete, it is not about timber, it is not about brickwork. There is something behind it, which is what you have been claiming all these years in these meetings; and that is experimentation, teaching

students how to learn things by doing research by themselves, and basically teaching students how to do research, rather than giving them the answers and having the existing body of knowledge as their only tool. I think that this is what you have been saying all these years.

Anders Gammelgaard
Yes, and in the end, **we teach the students to think for themselves, because that is what they get by a more experimental attitude to the exercises. We do not teach them that there is a norm.** And that is also my reaction to you, Herman, because you said that there is a standard for what they should learn, and I strongly believe that that is a wrong way of thinking, at least in our context, because the fact is that they should always be interested and should retain that interest through their own work, so I do not see any standards, fundamentals or basics.

Karl Christiansen
You all know that the work of architects is double: we never stop studying; and in an architectural institute it is exactly the same. One thing that is happening is that students are being taught that if they learn how to think, how to ask the proper questions, then a moment comes when they can teach themselves. And when they can teach themselves, they may also begin to ask other people questions on how other things can be done in a more traditional way. This happens throughout their education process; and of course it takes time, but life-long learning is part of architectural life.

Ola Wedebrunn
We like to challenge the students. This is the way we operate. We ask them questions to which we do not know the answers ourselves. This is how we talk to the students, continuously asking them questions. We concentrate on one project during the semester, and the students have to learn in relation to this project.

Ramon Sastre
Let us go back to the issue of what is new. This gives rise to two questions: what is new for the students, and what is new for the teachers. Sometimes, when we are teaching, we want to use new exercises or new materials or new anything; but **we have to remember that even the simplest things are new for the students, because they are doing them for the first time. I think it is interesting to think about new things from the teacher's point of view, because for the students everything is new. We have to be aware that everything is interesting in itself, when it is new to us, even when it is just something useful.** They are so excited to receive a lesson on a new plastic or a new complex or a new anything, because everything is new. And it is right that we should change, because we feel different when we teach different exercises every year, instead of always repeating the same ones. But **we also have to be aware that the students, for whom everything is new, sense that the teacher is also participating in their discovery.**

Miltiadis Tzitzas
This discussion is very interesting, but I think that we are focusing on the same

things, because we all teach the same thing with different methods. There are other things that we should also be discussing, since we are from different parts of Europe and in our teaching of construction we have to take into consideration not only new materials, but also certain differences between our countries: in Greece, for instance, earthquakes are a very important factor in construction. Since we are sharing things here, I want to share with you a problem I have as a teacher of construction, and for this I want to go back to two concepts: teaching, and new technologies in teaching. Students are so familiar with digital technology, and I find it very difficult to understand how they can express what is in their minds by just clicking on a mouse instead of drawing it on paper. What I see from the students in my school is that, as they work with plans, they go to 3-dimensional plans very easily, and I doubt that the first years, at least, can understand what is happening. So what I found when I was experimenting with that is that students from the very first year have to start thinking with models and with sections of the buildings; sections in scales 1:50, 1:20, etc. What we achieve with that is that they see the complexity of a model on a 1:50 scale, not of the materials themselves, but learning how to create a model that will not fall down. And in that way, **by using their hands, they are able to express themselves more freely, and when they see their thoughts in a 3-dimensional model they really begin to understand how to build it.**

Maria Voyatzaki
About Miltiadis's point regarding the relationship of students and their hands, I would put it more generally. I would put it as the importance of the relationship that human beings have with their hands, their eyes and their brains, and there will be no one in this room or in the world who doubts the importance of this relationship; but when you say that you do not understand how it is possible to comprehend or create architecture without touching and drawing and sketching, **you have to realise that these students played football from the age of four without kicking a ball, flew a plane at the age of fourteen without ever having been in one, listened to the 110 – if they have a small MP3 player – without changing twenty CDs, talk to their friends without opening their mouths. They are the thumb-generation, well versed in using the finger that has always been considered the least useful of the five; they have terrible handwriting, but they can write, with their thumbs, ten pages that you would take ten years to write by hand. They belong to a different world; they have a different relationship with the screen and the keyboard than we do; so to ask them, to force them, to use tools and means that belong to another generation is like forcing the impossible. You underestimate these new abilities, skills and competences they have to have, this relationship with the screen and keyboard that we do not have.**

Miltiadis Tzitzas
I am not saying that they do not use these skills that they have.

Maria Voyatzaki
To create architecture…

Miltiadis Tzitzas
No, no, no. In the very beginning, when they are very young. I am talking about their attitude, about their way of thinking, about their mindset if you like. This experiment, if I can call it that, is really working, in that they have found something new, something that they have never done before..

Maria Voyatzaki
But, Miltos, going back to our generation's relationship with computers: when I was a student, there were no computers; then when computers did appear I would write something on paper and use the computer as a typewriter, because I could not think while I was keyboarding. Now we compose informal messages on the e-mail quickly, and we do not have to make notes before we do so. But more than that, when we do research we write our thoughts directly on the screen, and there is nothing in between, there is no intermediary. So to make a cake, for example, with your own hands by mixing up the batter is quite nice, and to make models is a nice experience, but the world out there is moving differently and this is exactly what we have to come to terms with.

Ramon Sastre
There is one thing I would like to add. I see the same problem that you are facing also, and as I mentioned before, students who are very capable of drawing 3-D's can easily fool themselves by just making form without going into the form, for the form is based on something more. And your approach of making models is one approach, which is I think effective, but there is another way this can be done, either in 2-D or in 3-D, and this is a structural analysis of what they are drawing and then going into 2-D drawings, maybe even 3-D drawings, but in a different way than the glossy performances that the students prefer, with added depth. So to stay only with form is very interesting, and maybe very helpful, but to go deeper than the form and look for the material cause of form in this way is, I think, helpful.

Maria Voyatzaki
Maybe I misunderstood, but in fact you can work through and fly through a computer model, rather than a physical model. Because you would have to make a physical model that is 1:1 to be able to walk through it and experience it. That is how I see it.

Donal Hickey
I have been listening to the discussion for a while now and I think that the apple still drops following the Newtonian principle, despite the big doubts that you may have; and there are still things that we understand as being truths, like that fire burns or the sun shines, and these are not going to change. I am very impressed by our friends from Denmark in terms of the projects that they spoke of, in terms of exploring concrete. I think that there are students that are immensely capable, and I think that this is a way of learning which is more interesting than just laying down the rules. I once asked my students to give a lecture, and I was quite surprised that they were willing and able to deliver lectures that were as capable as any that I could give. It may have taken them slightly longer to do it, but they covered the rules in

the same way I would have done, explored the ideas in the same way as I would have done; and I find that quite interesting. I am the one with the expertise; but if I was the one teaching new material I would have to go and research it, I would have to learn the techniques. So what are we doing as teachers but teaching ways of navigating? There are tones in navigation. We are exercising their brains in the same way as their tones are exercising that navigation. And my point is just that it is the method of navigating that is much more interesting than what the question is. And if they understand, the question does not matter. They will answer the question that is posed to them by a system of navigating. And **I think that we should teach them how to understand, because if they find a particular way to understand and learn, they can learn anything, particularly in terms of technology.**

Per Ola Wedebrunn
I totally agree with what you say. Students come to us and they are extremely motivated. We are teaching something that they really want to learn. They do not come to us because they have to, they come because they want to; and they like to be there as much as possible – sometimes they stay up all night working on something they find interesting. They are motivated and they are imaginative. And in many ways they are a challenge to us. They come with their cell-phones and the technologies that they handle with such ease, and they make us wonder how we can tackle these new things, because we are used to teaching architecture the way we learned it. So we, too, are developing new ways of learning.

Joseph Thurrot
Kids nowadays may be able to drive a car when they are seven years old and fly a plane when they are fourteen, but I have yet to see a piece of software that can keep you dry in a thunderstorm.

Maria Voyatzaki
That is another skill, Joseph. It is a both/and situation not an either/or.

Joseph Thurrot
We must not forget that architecture is physically embodied in the world…

Maria Voyatzaki
When it is a building, not while it is being composed.

Joseph Thurrot
Are we saying that architecture is something else other than just a building?

Maria Voyatzaki
Architecture is a philosophical attitude, if you want to take it that way.

Donal Hickey
I bought a book recently that was very interesting, called "Requiem for a Staircase". It was about an exhibition that was held here in Barcelona a couple of years ago, on "Staircases through History". Unfortunately the premise of the exhibition was all too

true: it really was a requiem for the staircase, because **contemporary rules in most European countries, and most of the civilised world, would not permit any of the staircases featured in the book to exist. What I would propose is that we have a 'Requiem for Rules': that we try to forget as many rules as possible, to allow the future a chance. You know, I worry. I look around me at various teachers that teach architecture, and they all talk about the rules; and I think that in our time we try to impose too many rules and by doing that we reduce the possibility for new opportunities. So my proposal is that we have a 'Requiem for Rules".**

Dimitris Papalexopoulos
Yes, but rules are very good things – they give you the impression that you have something to fight.

Ole Vanggaard
We mentioned the point of how to navigate. To my mind the future of architecture or of the engineer is not so much to be able to know a great deal about what they are doing but, as was said, to know how to navigate. This, though, raises the problem of how we can navigate within this system, because it is a network of specialists. Architects and engineers have to go to specialists, whether the building is a new one or an old one. So the question in my mind is about the need to reformulate ourselves.