

11th Meeting of Heads of European Schools of Architecture

New Responsibilities of Schools of Architecture

Preparing Graduates for a Sustainable Career in Architecture

EAAE Transactions on Architectural Education no 44

Editors: Constantin Spiridonidis | Maria Voyatzaki | Pierre von Meiss

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Responsibilities of Schools of Architecture for a sustainable career of their graduates

Host: Center for Mediterranean Architecture

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Despite the attempt to transcribe with accuracy the debates from the workshop, the editors wish to apologise in advance for any inaccuracies of the interventions of individuals that could be attributed to the quality of recording.

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The organization of this event would be a much more difficult task without the moral and financial support of the School of Architecture, Aristotle University of Thessaloniki and its Head Nikos Kalogirou, whom we deeply thank.

Special thanks go to Miss Laura Koniordou for her hard work in transcribing and transforming the spoken content into formal and comprehensive text. Our gratitude must be expressed to the impeccable work that Pierre von Meiss offered to the present volume not only with his constructive comments but with his actual editing of a great part of it in his usual academically rigorous style.

Special thanks go also to the architect Manos Zaroukas for his work on the graphic design of the cover of the volume and to graphic designer Dimitris Apostolidis for the page layout of the volume.

Last but not least, we thank all the participants of this event not only for their faith in our efforts but also for their lively presence, constructive comments, participation in fruitful debates, and determination without which the materialization of our effort would be impossible.

Constantin Spiridonidis

Maria Voyatzaki

Preface

The 11th Meeting of Heads took place in Hania, Crete, Greece, between 6 and 9 September 2008 and was entitled “New Responsibilities of Schools of Architecture: Preparing Graduates for a Sustainable Career in Architecture”. Like all previous meetings, it is addressed to those who are responsible for managing the academic issues of schools of architecture – Rectors, Deans, Heads, Academic Programme Coordinators - or their representatives.

During the 10 previous meetings we tried to critically follow the developments of the European Union policies in higher Education and their impact on Architectural Education. In the debates that took place at our previous meetings we listened carefully to the positive as well as the negative reflections on the changes in architectural education in Europe and around the globe. We carefully mapped the points of convergence and divergence, the tendencies and dynamics, the particularities and differentiations. Inquiries on issues related to architectural education in Europe yielded valid qualitative results which could be used to draw a picture of the particularities of the European profile of education, but primarily the knowledge acquired in this way could be used to learn from others and to understand ourselves. We tried to reconsider what we should do about our schools in this new and increasingly-changing social and financial context. We tried to redefine the aims and objectives we will set and what strategies we must adopt to ensure their fulfilment. We tried to investigate how we will reform and reconstruct our educational structures, how we will update the content of the studies we offer and towards which direction we have to reconsider our teaching methods and strategies. Our main interest was oriented towards the system and the content of architectural education in Europe.

For the 11th meeting we made a shift of our focus from the educational structures to the graduates of our institutions. The aim of this relocation of our interest is to investigate the impact on the education we actually offer which includes some new characteristics of the graduates’ profile that have emerged from the new conditions of contemporary social cultural and professional context. Transparency, flexibility, adaptability, development, individualisation, self-sustainability, innovation, continuity, life-long learning, mobility... are some of the notions that, in our days, constitute imperative values in the profile of our graduates and claim new responsibilities from our schools regarding the education they must offer.

In this era of individuality and of personalized practices the education of the architect becomes increasingly open to individual approaches, to personal options, to particular orientations, to idiosyncratic perceptions of architectural practice. There no longer exists a precise profile around which schools can define and organise their teaching strategies. At the same time our educational system is moving progressively from an input (knowledge)-based education to an output (competences)-based one, that demands an increasingly clearer description of a graduate’s profile. In light of these new conditions, a new responsibility is emerging for the schools of architecture:

What profile will a school design for its graduates? Which competences will structure it? How open will it be? Which will be the flexibilities of the students? Which educational structures can produce such a profile? What teaching strategies must be applied? Are there any good-practice examples?

The accreditation - evaluation - quality assurance mechanisms implemented by the institutional frameworks of the different countries, explicitly or implicitly, indicate, point out or even impose to schools of architecture, a certain profile of the graduate. Through suggestions, recommendations, instructions or other comments schools of architecture are, to a greater or lesser extent, directed in the specific architect's profile that the accreditation system is built upon.

Do the existing accreditation mechanisms reflect the contemporary trends in architecture? Do they promote an architect's profile, which is compatible with the current needs of the professional practice? Are they able to absorb creatively the changes happening in architectural thinking and practicing? Are they flexible enough to incorporate new pedagogical aspects and educational strategies?

In a rapidly changing world and in the fast-changing conditions of professional practice, the education of architects needs to ensure the competences that will keep architectural knowledge up-to-date and to reinforce the capacity of the architect to be adaptive to the new conditions and circumstances. In this context, new teaching objectives appear and new pedagogical directions have to be developed in order to ensure this adaptability. New responsibilities for the schools of architecture emerge from these circumstances for which our collective work can develop innovative approaches, means, systems and methods.

How can we ensure that the knowledge of our graduates will be self-sustained? How can we organise our educational system in order to be adaptive to the life-long learning perspective? Which forms of collaboration between schools can be developed on this subject? How can schools follow up the career of their graduates and contribute to its sustainability? Are there any good practice examples which could be disseminated?

Do your schools have already implement or are planning to implement life-long learning programs for their graduates?

The majority of academic and professional world have already accepted the necessity of a seamless relationship between education and practice. There are already some initiatives on the level of representative bodies (ACE-EAAE) but schools are very remote in establishing strong, permanent, efficient and clear objective-oriented collaborations. New responsibilities are emerging for schools of architecture out of this situation. As the lifelong learning perspective becomes a core issue in the educational strategies the relationship with the professional bodies can become a central issue in the framework of the above strategies.

Which kind of initiatives can schools take in order to ensure a continuum from education to practice? Which competences do they have to look at? For which purpose and perspective? Which forms of collaboration can ensure the above competences? Are there any good examples of good practice?

The new Directive is in operation since last autumn. Now the recognition of diplomas is mainly based upon the professional bodies and the EU services. Schools have to protect the academic

ethos of their curricula through new lines of collective action, initiatives and measures. New responsibilities are emerging for the schools of architecture to ensure their graduates the conditions to work as architects in other European Countries and to define the contemporary standards for a European curriculum in the perspective of the eventual change of the 11 points of the Directive.

In the case of an eventual change of the directive, which could be the issues that are considered as necessary to be incorporated into or eliminated from the existing list of the 11 points?

In this volume of the proceedings we present all the interventions and debates taken place during the event. We expect that we are offering useful material for further reflection, contemplation and criticism.

Constantin Spiridonidis

Maria Voyatzaki

Opening Session

Maria Voyatzaki, Thessaloniki, Greece

On behalf of the European Association for Architectural Education and the European Network of Heads of Schools of Architecture I welcome you all to this lovely city and to the 11th Meeting of Heads of Schools of Architecture.

The contractual period of the European Network of Heads of Schools of Architecture, the European Commission-funded programme that has enabled us to hold this meeting year after year, expires this month. It would be very hard to hold this meeting without the help of this programme, so I am sure you understand how delighted we are to be able to announce that the contract has been renewed for another three years, which means that we can keep coming back till 2011. Welcome, and I hope you have a productive stay and a wonderful professional experience.

Constantin Spiridonidis, Thessaloniki, Greece

Needless to say it is a very great pleasure for us to have you all here for the past eleven years. Your continuing presence here is what encourages us to persevere in our efforts to create a milieu for debate on issues related to architectural education.

I would like to start by saying a few words about the very interesting geography we have in this meeting. We have one school of architecture from Argentina, seven from Belgium, two from Chile, two from the Czech Republic, one from Colombia, one from Cyprus, one from Brazil, one from Bolivia, two from Denmark, one from the Dominican Republic, two from Finland, nine from France, three from Germany, three from Greece, two from Hungary, one from Iceland, two from Ireland, three from Italy, one from Liechtenstein, one from Lithuania, four from the Netherlands, four from Norway, two from Peru, four from Poland, three from Portugal, one from Romania, one from Slovakia, one from Slovenia, three from Spain, one from Sweden, five from Switzerland, three from Turkey, six from the United Kingdom and two from the United States. Also with us there is a significant representation of the professional bodies, including the president of the Architects' Council of Europe and the president of the American Institute of Architects.

In the last ten years our task and thus the main concept of the meetings was to investigate what is happening, to understand ourselves, what we are doing and thinking, and to understand what others are doing and thinking so as to better understand ourselves. We tried to create the conditions for a debate that would help us define the European reality – the tendency is to always try to classify something as national or international, but in Europe we are trying to define an intermediate state, namely the 'European'. For years our efforts were oriented towards the possibilities of mapping what we have, what we think and what we expect. Now most of us agree that it is time for action; for initiatives, results and directions that will help schools take the necessary measures that will enable them to secure their position in this new situation emerging in Europe and imposed by the European policies. This is why the title of the meeting this year focuses on the new responsibilities schools face as a result of these new conditions in which they exist. The idea is to develop the dialogue in directions that could help the schools make decisions and take actions which will help them become better adapted in this new situation emerging in the European higher architectural education area.

We will have the possibility to discuss more about this tomorrow, so I would like to close this short welcoming address by saying that I hope you have an enjoyable stay and a fruitful exchange during your time in Hania.

Per Olaf Fjeld, Oslo, Norway

There is always a pressure; I will almost say it is a generous act to enter this place. It is something that not only belongs to the horizon that follows us outside, and that has a precision that will always follow us, but every time we go back one senses that there is some sort of a difference. Whether it is related to the difference in architecture itself, the way we think about it, or whether it is life in general, something happens in this place, and that is a very generous gift. Thinking back on the eleven years within that aspect of change, it is an enormous thing that it has been going on for eleven years in the same place, and I want to thank Maria Voyatzaki, Constantin Spiridonidis, the Centre for Mediterranean Architecture and the town of Hania for the generosity they always extend to us.

Every year in some way or the other we are able to put bits and pieces together in such a way that we are making a stronger and stronger synthesis on architectural education; in other words, every year we understand it in more depth or we understand different aspects of it in more depth. You know the line from the Beatles' song "In My Life", that goes "In my life I've loved them all"? It is something like that one feels when one comes back and sees all the people that have supported these events over and over again. So I want to thank you all for coming, whether this is your first time here or your eleventh. We will have some good sessions. Welcome to Hania!

Nikolaos Kalogirou, Thessaloniki, Greece

Dear friends and colleagues, I would like to welcome you all to this 11th Meeting of Heads of European Schools of Architecture here in the friendly Centre for Mediterranean Architecture of Hania. As Maria said, this meeting has been held under the auspices of our university, of our school of architecture, for the past eleven years, and it has brought us together again and again to constructively discuss the future of architectural education in Europe and the new conditions resulting from the present directives and policies proposed by the European Union. In this expanded community student and professional mobility obliges us to correlate or even standardise our criteria for the evaluation of student and professional profiles. Our schools now face new responsibilities in educating their students in a way that will assure a sustainable career in a rapidly changing world. Our School of Architecture is part of the Aristotle University of Thessaloniki, which is one of the biggest universities in Greece. It has approximately 1,200 students and over 100 faculty members. It has always played an active role in this meeting, coordinating the discussion on a large number of topics, problems and issues that emerged from the development of European architectural degrees, the mapping of architectural education in Europe and the relationship between architecture, architectural education and the profession. In our school we strongly believe that while a diversity of approach towards these new European policies related to higher education is of course to be expected, the issues that arise cannot be resolved solely through the initiatives of political institutions, parties, or state apparatuses. We believe that European schools of architecture should play a leading role in formulating a new profile of European architectural education and we support any initiative in that direction.

I would like once again to thank Dino Spiridonidis and Maria Voyatzaki for their ongoing commitment to the organisation of this meeting. I wish you all a productive and constructive dialogue that will help us think of new ideas for closer cooperation between the European schools of architecture. Thank you.

Zoi Karamanu-Rodolaki, Hania, Greece

I am very happy to be both: a professor at the Thessaloniki School of Architecture and the Head of the School in Hania. It is the first time that this meeting is under the auspices of the Technical University of Crete. The repetition every year of this meeting in Hania in the first week of September has become an institution for us, important not only to us and to our schools, but also to Hania, to the Centre for Mediterranean Architecture and the Municipality. Although there are no official representatives here tonight, all the local media, newspapers and tv stations have been speaking about our meeting since yesterday, as of course has our school.

The school of architecture that I represent is one of the six schools of architecture in Greece. The Ministry has announced the creation of two more, one in the University of Western Macedonia and the second in the University of Ioannina, but until then we are still the youngest school in Greece – it has been exactly five years since the admission of the first students and we are preparing to give out our first diplomas at the end of this academic year.

The School of Architecture of the Technical University of Crete together with the School of Architecture of the Aristotle University of Thessaloniki support this event because from the very beginning we were persuaded of its importance. On behalf of my school I welcome all of you and in particular our dear guests. I thank all of you for your participation and though there is no doubt about the success of our meeting, I hope our sessions will attempt to direct our discussions and suggestions towards creative conclusions and future perspectives with regard to the profile of the architect, the development of satisfactory relationships with the professional body, the recognition of our diplomas and of course with regard to our own responsibility towards all these new responsibilities this meeting will try to approach.

Maria Voyatzaki, Thessaloniki, Greece

Last but not least, I would like to convey to you a warm welcome on behalf of the Art Director of the Centre for Mediterranean Architecture, Dimitris Antonakakis, and the Chair of the Centre for Mediterranean Architecture and Vice Mayor of the city of Hania, Aris Papadogiannis, who due to professional commitments are unfortunately unable to be here.

What is extraordinary about this meeting is that this year there are many participants from Latin America. For us it is a real honour to have them travel such a distance in order to be with us. We were able to formalise their presence here through a network of Heads of Schools of Architecture, the ENHSA Latin America. I would especially like to thank them for being with us.

Keynote address

Fabio Gramazio
Mathias Kohler

Towards a Digital Materiality*

Technical University of Zurich
School of Architecture
Zurich
Switzerland

* This article/paper was first published
in Branko Kolarevic and Kevin Klinger (editors),
*"Manufacturing Material Effects:
Rethinking Design and Making in Architecture"*,
London: Routledge, 2008.

The digital revolution had an unquestionable impact on contemporary architecture; it has changed the ways in which architecture is conceived, built, mediated, and used. This evolution has only just begun, and it is still too early to predict the long-term consequences for the architectural discipline. Already, a whole spectrum of polemical views on digital technology – ranging from unbridled enthusiasm, at one extreme, to reactionary fear, at the other – have dominated the debate and divided the professional community. Due to its intangible nature, the digital realm is generally misconstrued as being antagonistic to the analogue or physical realm. Our intention is to unite these seemingly opposing realms.

Since its foundation in 2000, *Gramazio & Kohler* has been exploring digital realities within architecture, working with the firm conviction that the digital paradigm will inevitably redefine the discipline. Human intelligence allows architects to take design decisions on complex issues using associative capacities and experience, yet unlike computers, humans are unable to process large amounts of discrete data. By understanding the fundamental concepts of digital logics and mastering its processing techniques, we expand our capacity to integrate information into the design process without losing control over it. The architect is engaged in the selection of relevant architectural parameters and the definition of subsequent rules and processes. The construct is created by a system that is entirely defined by the architect.

One of the most radical consequences of the digital revolution is the computer-controlled fabrication machine. As decades of artificial intelligence research have shown, a physical body is a precondition for every kind of intelligence. Architecture cannot be reduced to a conceptual, geometric, or mathematical phenomenon. Artificial “intelligence” in architecture can only manifest itself through a tectonic logic and a physical, material “body.” The application of a fabrication machine in architecture allows a direct coupling between information and construction. In digital fabrication, the production of building parts is directly controlled by the design information. This seamless link between data and material, design and building, dissolves the apparent incongruities between digital and physical realities and allows a new constructive understanding of the discipline. Thus, these issues are the primary focus of our research in the Department of Architecture at the *Swiss Institute of Technology* (ETH) in Zurich.

Robotic Additive Fabrication

In order to investigate the consequences of informing designs with the logic of physical materials and vice versa, we opened a research laboratory at ETH for the digital fabrication of full-scale prototypes and non-standard building parts (DFAB). For our first experiments, we chose a standard industrial robot. Its extreme flexibility, both in terms of the software that controls it and its physical capacities, allows us to program its movements and design the actual construction tools it selects for operations. For us, it is a veritable “personal computer” for construction. With this robot, we investigated the logic of *additive* fabrication, using the most elementary architectural building block – the brick. The resultant projects, described below, confirm that digital logic, both in design and fabrication, will lead to profound changes in architecture, blurring and ultimately dissolving the boundaries between analogue and digital realities. We stand at the very threshold of an exciting development and believe that we should, as architects and authors of design information, actively lead this process towards a new, contemporary, and integral understanding of architecture that is relevant to our age.

Mtable

The *mTable* table series project, completed in 2002, enabled us to examine the consequences of customer interaction when designing non-standard products. In the process, interesting questions emerged: How much responsibility is the customer able to assume? How much does he or she want to assume? Who ultimately is the author? To what extent does the co-designer identify with the product? What consequences does this development have on architecture?

With *mTable*, we created a table (figure 1) that customers can co-design. Modern communications and digital production technologies were used for its customized design and fabrication: we declared the mobile cell phone to be a personal design tool, and examined how it can be utilized to assist the individual to co-design his or her physical environment.

The design principle is simple. Customers choose the size, dimensions, material, and color of the table from their cell phone display (figure 2). Next, they place deformation points on the underside of the table and “press” them (figure 3); these points then “break through” the surface, creating holes with extremely thin edges, turning the table’s top and underside into two distinct “landscapes” (i.e. topographies). The program on the cell phone then verifies that the table with holes is structurally feasible.

Using a mobile phone is an enjoyable and inventive way to control the future physical shape of the table. The phone display’s low resolution and a deliberately simplified interface make customers focus on the most essential design features. As soon as the customer is satisfied with the design, he or she transmits the parameters that define the table as a simple series of numbers to the web-based platform at *mshape.com*, where the designed table can be seen in high resolution, and compared with the designs by other customers (figure 4). Following the placement of the order, the table is cut by a computer-controlled milling machine (figure 5) directly driven by the data (parameters) transmitted from the mobile phone. The virtual three-dimensional model is transferred to the physical material.

The openings in the table top, the curved edges, and spectacular underside (figure 6) lend every table a unique quality. Admittedly, different tables are only unique on the surface, as they all share a common formal and conceptual origin. Still, each table is a result of the customer’s decisions



Fig. 1

The *mTable* designed using a mobile phone and digitally fabricated.

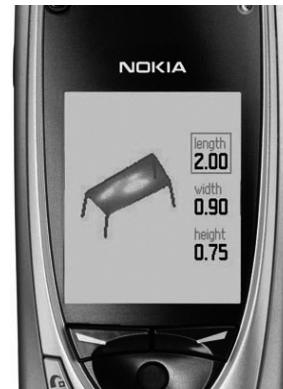


Fig. 2

mTable: dimensioning the table using a mobile phone.



Fig. 3

mTable: creating the deformation points and holes in the table’s surface.

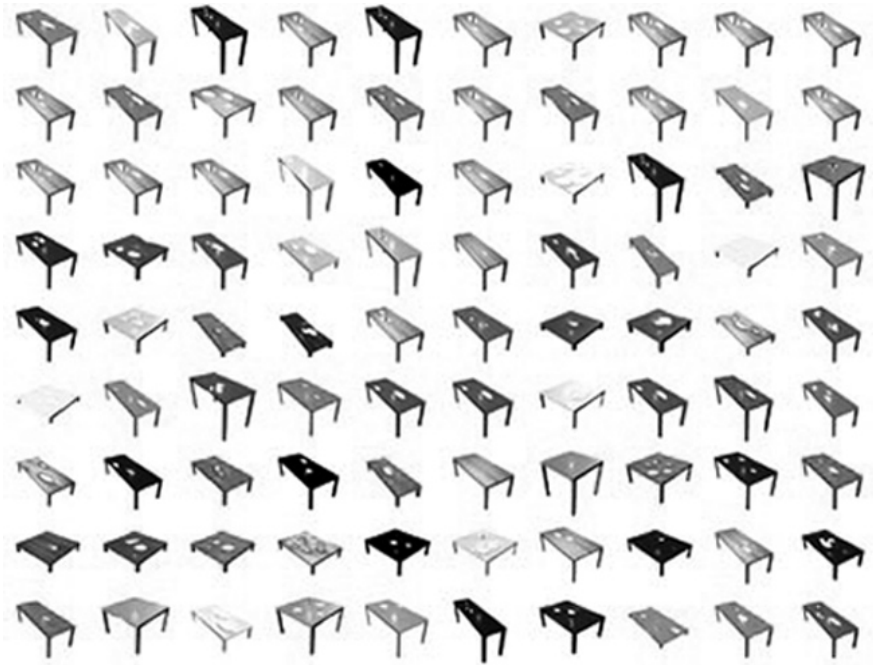


Fig. 4

mTable: many different designs can be produced effortlessly.



Fig. 5

mTable: the CNC milling machine produces the table "landscape" based on the data transmitted from a mobile phone.

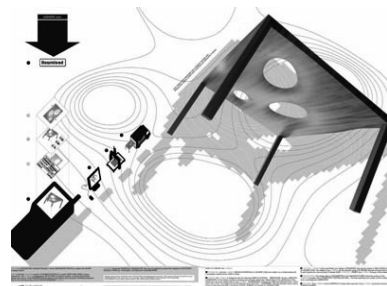


Fig. 6

mTable: each table features opening in the top, curved edges, and a spectacular underside.

and variations on a design pattern. Together, the tables form an entity – the *mTable* design family (figure 4).

The *mTable* project changes the task of designing form to defining the *rules of a design system*. The design concept and the formal consequences are carefully embedded in the software that provides a framework within which the customers can develop their own creative strategies, thus giving them control over the ultimate outcome of the design – the form. By deciding for themselves if and where the holes are placed, they assume partial respon-

sibility for the aesthetic appearance, and functional efficiency of the tables. The designer, however, still retains control over which decisions are delegated to the customers and how freely they can intervene. This blurs the distinctions between designer and the customer, as the customer becomes a co-designer.

“The World’s Largest Timepiece”

The project for the *Christmas lighting* on Bahnhofstrasse in Zurich, Switzerland (2005)¹, is based on a winning entry in a competition that called for a contemporary interpretation of the lighting installation designed over thirty years ago by Willi Walter und Charlotte Schmid. Their project was described as “distinctive, generous, unique,” and these were qualities the new design was naturally expected to incorporate.

We designed a continuous band of lights with a dynamically changing pattern (figure 7). The main premise behind the time-based light installation is that light is not static, but fundamentally dynamic in nature. Light can now be used as a highly flexible and interesting information medium, due to contemporary digital technology that can provide control over its intensity. By changing its appearance during the Advent season, “The World’s Largest Timepiece,” as the installation is called, accentuates the passing of time and creates a constantly changing “lightscape” on Bahnhofstrasse, and provides every visitor with a truly unique experience.

The installation is conceived as a single illuminated line running from the railway station to the lake, emphasizing the urban “boulevard” atmosphere of the Bahnhofstrasse and accentuating its two slight, yet distinct turns in direction as it negotiates the heart of downtown Zurich (figure 8). Its simple, linear course turns the band of light into a visual backbone of the city. The vertical shaft of light in the middle of the street contrasts with the surrounding building façades and points upward to the night sky.



Fig. 7

Christmas lighting on Bahnhofstrasse in Zurich, Switzerland (2005).

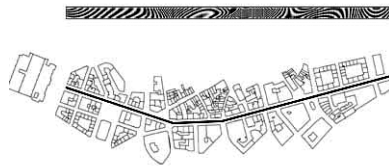


Fig. 8

Christmas lighting: a visual backbone of the city.

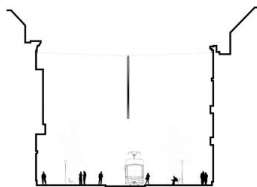
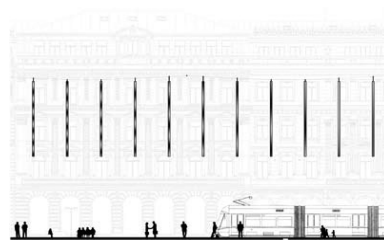


Fig. 9a,b

Christmas lighting: a section and an elevation drawing.



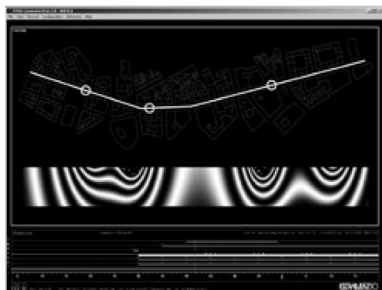


Fig. 10

Christmas lighting: interface of the XMAS Generator software.



Fig. 11

Christmas lighting: manufacturing of tubes using woven glass fibers.

Depending on where the viewer is standing, the *Christmas lighting* can either look like a slick series of individually lit tubes or a glowing, constantly changing curtain of light.

The installation consists of 275 tubes of light, each 7m high, and placed at 4m intervals (figure 9a,b). Each light tube has 32 small LED bulbs and contains the electronic equipment necessary to regulate 256 brightness levels within each bulb. There are 8,800 LED bulbs in the 1km-long band of light. The intensity of each bulb can be controlled in real time, using custom-made software written in C++ called *XMAS Generator* (figure 10). Approximately 26,000 lines of code were necessary for the creation of this software. Different light patterns were generated and transmitted to the light tubes via an optical databus at the rate of 17 times per second.

The changing patterns of light are generated by an algorithm controlled by the dates associated with the holiday season and the street activities that were recorded using sensors. An increase or decrease in the number of visitors affects the character of the lighting patterns and the frequency of change. Hence, the light patterns not only reflect the passing of time, but also the daily activities on the street itself. In this way, each passer-by can alter the street's ambience by influencing the lighting patterns. In a form of collective interaction the *Christmas lighting* becomes the city's inner timepiece, and creates an unpredictable, dynamic, and immaterial architecture, similar to clouds in the sky.

Each of the 7m-long tubes had to illuminate in all directions, withstand wind and water, and be lightweight. We had to find a sufficiently rigid material for the shell of the tubes that allowed the transmission of light; a supporting aluminum core would have created unattractive shadows on the outer shell and thus compromised the effect. After several trial and error experiments, we stumbled upon the manufacturing technique for woven glass fibers used in high-tension insulation, in which glass fibers are soaked in resin and spun around a mandrel (figure 11). We were fascinated by the additive logic of this process. The winder controls the stacking of the fibers via two computer-coordinated movements. A sliding carriage drives the wound glass fibers back and forth along the spinning mandrel. This creates an extremely stable multi-layered shell. The stacking winder and the number of tiers and overlaps determine the flexural rigidity and torsional stiffness, as well as the transmission of light.

The bands of glass fibers are woven into a rhombus structure: the thick areas are responsible for the stability of the structure, and the slender necks create optical brilliance. In order to optimally join both light diffusion and rigidity, we developed software that simulates the

fabrication process, enabling us to test weaving variations with different bandwidths, angles, and tiers. Using more than thirty physical prototypes, we tested effective optical qualities such as brilliance, light transfer, and surface structure for both night and day conditions. We also tested wind resistance. The final tube was 7m long and 15cm in diameter; its shell was only 2 mm thick. It weighed less than 23 kg, including lighting and control technology. An intense involvement with the computer-operated production process allowed us to integrate two normally incongruent requirements into one single material, and thus implement for the first time wound glass fibers for lighting on this scale.

Gantenbein Vinery Facade

The new service building for the *Gantenbein Vinery* in Fläsch, Switzerland (2006), was already under construction when *Bearth & Deplazes Architects* invited us to design the façade (figure 12).² The building had three stories: a cellar for storing the wine barrels, a large fermentation room for processing grapes, and a terrace-like lounge for wine-tasting and receptions. The fermentation hall had to be windowless, because constant temperatures and subdued lighting are required to ferment the grapes properly. To provide natural lighting despite these preconditions, we designed a façade in which the bricks were laid with gaps between them to allow daylight to enter the fermentation hall (figure 13). The façade itself has two layers: outside, the masonry layer functions as sun protection, light filter, and temperature buffer; inside, polycarbonate panels protect against wind.

We decided to imbue the façade with a pattern that looked from afar like a basket filled with grapes (figure 12). To create this effect, we designed an information generation process that produces an impression of a precisely controlled result by applying purely systematic chance. We interpreted the *Bearth & Deplazes'* concrete frame structure as a massive basket, and filled it with abstract balls (the "grapes") that varied in diameter (figure 14). The balls fell into a virtual container via digitally simulated gravity, until a specific density was reached (figure 15). The elevation images of the digital "basket" were then used to create the "grape-like" brick wall patterns (with gaps), using an automated layout process (figures 16a,b).

The brick wall patterns are three-dimensional. Bricks are rotated slightly, and thus reflect light differently, resulting in slightly different tonal values on the surfaces (figure 17). In this way, bricks function like pixels that form the "grapes" image pattern on the façade, and thus brand the identity of the vineyard. Unlike a



Fig. 12

The new service building for the Gantenbein Vinery in Fläsch, Switzerland (2006).



Fig. 13

Gantenbein Vinery: interior of the fermentation hall.

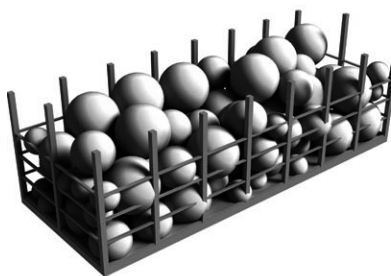


Fig. 14

Gantenbein Vinery: a "basket" filled with "grapes."

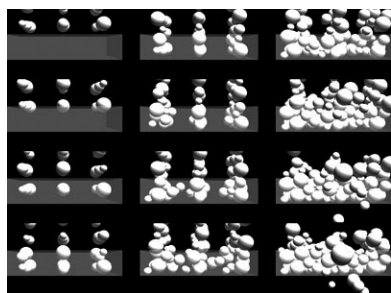


Fig. 15

Gantenbein Vinery: the falling "grapes."

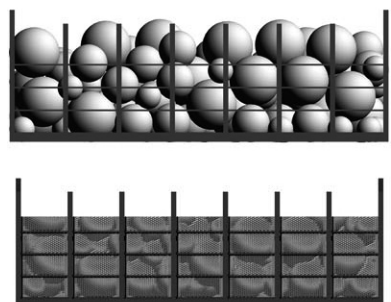


Fig. 16 a,b

Gantenbein Vinery: elevation images of the digital "basket" were used to create the "grape-like" brick wall patterns.

two-dimensional image, however, there is a subtle interplay between plasticity, depth, and color in a three-dimensional brick pattern, producing not one but many material effects that constantly shift during the course of the day (figure 9.18). The result is a dynamic surface that possesses a sensual, textile softness.

On closer view, the walls reveal a materiality that resembles stonework, and one is surprised that the soft, round form is actually composed of individual, orthogonal, hard bricks (figure 18). The façades appear as solidified dynamic forms, whose shallow three-dimensional depth invites the viewer's eye to wander. Once inside, the transparency of the brick wall surface becomes evident. The daylight creates a mild, yet luminous atmosphere in the fermentation hall (figure 9.13); the design intent becomes manifest through the subtle light modulation by the gaps between the bricks. The superimposed image of the landscape glimmers through in various ways.

A three-dimensional brick façade, therefore, is far more *affective* than a two-dimensional image. To create subtle visual and tactile effects, bricks were rotated in two counter-directions, with a maximum deflection of 17° (figure 19). Each façade was balanced, so bricks would progressively rotate as much in one direction, as in the other.³ Where there is no visible "grape" (meaning where a gap is created in the virtual "basket"), bricks are in a neutral position and thus form a simple running bond.

The construction technology we developed at the ETH enabled us to lay each brick precisely using an industrial robot⁴ (figures 20a,b). Not only did the robot lay the bricks, it applied a special bonding agent onto each brick (figure 21) rather than traditional mortar. With this new digitally driven, additive production method, we were able to construct each wall differently, so that each would possess the desired light and air permeability,⁵ and thus create the overall pattern that covered the entire façade. We designed 72 different brick wall panels using a computer program created expressly for that purpose. The program generated the production data directly from the design data and calculated the exact rotation for each of the 20,000 bricks that comprise the 400 m² façade. The bricks were then laid out automatically by the robot according to programmed parameters, at prescribed angles and at exact intervals.

Because each brick is rotated differently, every single brick has a different and unique overlap with the brick underneath. We had to find a method of applying the bond-

ing agent so that it fits precisely every overlap (all of which were dimensionally unique) and, at the same time, distributes the adhesive evenly. Working closely with an engineer from the brick manufacturer, we devised a strategy whereby four parallel bonding agent paths could be applied at pre-defined intervals to the center axis of the wall panel. This strategy allowed us to attain consistent dimensions. Load tests performed on the first manufactured prototypes revealed that the bonding agent was so structurally effective that the reinforcements normally required for conventional prefabricated walls could be completely eliminated.

Manufacturing 72 façade panels was a big challenge, both technically and in terms of deadlines. Due to the advanced stage of construction, we only had three months to complete the design and production before installation on-site. Because the robot could be directly driven by the design data, we were able to work up to the last minute on the façade design, while developing simultaneously the production method.⁶ In the end, the façade panels were produced over just two weeks (with the robot working double shifts!). They were then transported by truck to the construction site and installed by a crane (figure 22). The procedure was developed in collaboration with a brick manufacturer who, as an industry partner, was subsequently able to take on the system guarantee on our manufactured panels.

Perforations

What is the spatial effect and architectural significance of a perforation in a wall, in the form of a diagonal, round hole? Openings regulate the amount of light and air that enters a building. Moreover, by allowing one to look into or out of the building, they also create visual relationships between the interior and exterior. Qualities such as dimension, position, depth of a reveal, and geometry determine their architectural expression. The complexity is heightened if an opening (i.e. a perforation) passes through a wall at a non-orthogonal angle; the reveal's visual presence is emphasized and the wall acquires more depth. Besides formal qualities, the number and arrangement of the holes also affect the architectural effect of a perforation.

Today, complex, perforated architectural components can be created using digital design methods. In contrast to industrially manufactured elements, such as a punched perforated metal sheet, the digitally designed perforations do



Fig. 17

Gantenbein Vinery: the brick wall patterns are three-dimensional.

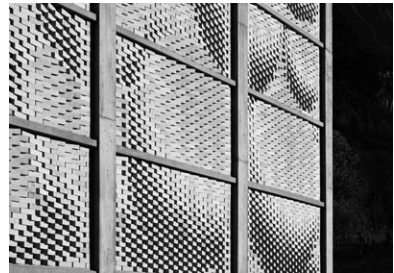


Fig. 18

Gantenbein Vinery: rotated bricks function like "pixels" that form the "grapes" image pattern on the façade.

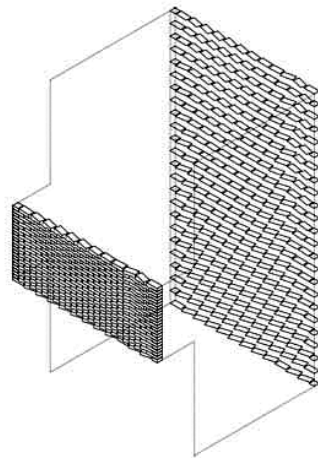


Fig. 19

Gantenbein Vinery: the bricks can be progressively rotated in two counter-directions.



Fig. 20a,b

Gantenbein Vinery: the bricks were laid in a layer-by-layer fashion by an industrial robot.

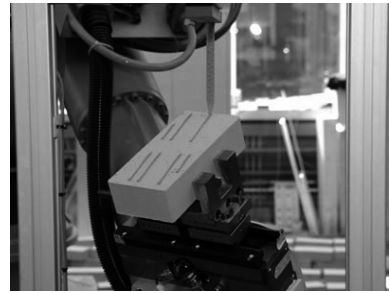


Fig. 21

Gantenbein Vinery: the robot also applied the bonding agent to the bricks.

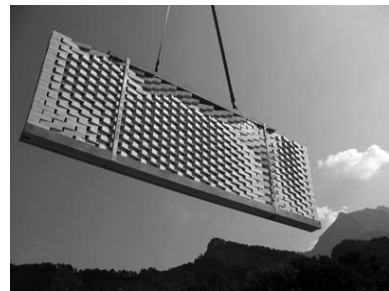


Fig. 22

Gantenbein Vinery: the wall panels were installed on-site by a crane.

not need to be based on a repetitive, regular grid. The individual openings can be different in shape or diameter, and the material can be perforated not only orthogonally, but also at different angles through the surface. Moreover, given that each element can have a unique pattern of perforations, larger constructs made of different perforated components, such as façades, can be designed without repetition.

What is the best way to design using a large number of openings? What would it mean if each individual opening was at a different angle to the surface? In several elective courses⁷ at the ETH in Zurich, the students were asked to examine the spatial potential of highly perforated wall elements. These wall elements had to be developed using innovative digital tools, which we encouraged to be seen as more than simple technical aids to manage geometric complexities. In each course, students produced full-scale prototypes of perforated wall panels, concentrating on the materialization and development of a self-devised production technique. Designing with large amounts of information – and “informing” the material in the process – required the development of computational tools as an integral element of the design process. The students altered and expanded the digital tools in an agile, creative manner, based on the feedback attained through the iterative processes of design and production.

In the “oblique hole” course (*Das schiefe Loch*), students had to allocate 2,000 holes over an irregular polygonal volume (figure 23). The objective was to examine the architectural

potential of spatial perforations produced by distributing a large amount of circular openings in an irregularly shaped form. The production tool was a milling spindle mounted on a robot hand; the robot's ability to drill holes at any angle to the surface expanded the design possibilities from merely distributing the holes to also defining their direction. Various algorithmic tools for distributing the holes had to be developed, as it was impractical to process such a large number of perforations with conventional computer-aided design (CAD) technology. The digitally generated design data was translated into production data for the robot by a custom-developed post-processor. The production data for each individual hole consisted of its position in space and a vector that described the tool's drilling path through the material (figure 24).

Surprising architectural artifacts were created despite the fact that design options were intentionally limited to a single hole (i.e. drill) size of 10mm in diameter. It was the thickness of the material, which transformed a supposedly two-dimensional job into a complex three-dimensional design task, that revealed the project's full architectural potential. Orienting fields of holes towards a certain point in space caused the physical depth of the material to collapse into an abstract, almost immaterial surface when seen from a particular vantage point. The openings created new spatial and visual paths between the interior and exterior that were independent of the volume's physical geometry. For the viewer moving about the room, the three-dimensional nature of the perforations changed the effects of the architectural volume.

The exploration of perforations continued in the "perforated wall" (*Die perforierte Wand*) course. The students examined the potential of "informing" large Styrofoam panels (1 x 2 m in size) with a large number of round holes; the panels were considered full-scale components of a larger wall or façade design (figure 25). As in the previous project, the holes could be defined using five different parameters: the X and Y position on the wall, the "alpha" *directional* ("deflection") *angle vector* into the wall mass, the "beta" *cut-out angle* around the central axis of the hole, and the *radius* of the hole. The holes were distributed using dynamic force fields of attraction and repulsion, in which parameters defining the location and intensity of the forces could be interactively changed. The holes could produce different perforation patterns on two sides with the use of "target" points to define the "deflection" of the holes. We also used

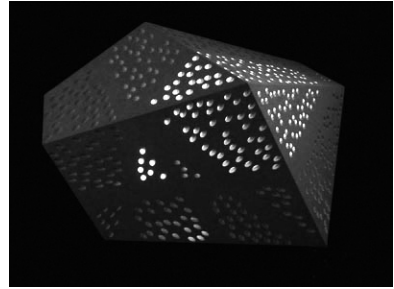


Fig. 23

The "oblique hole" project: 2,000 holes were created in an irregular polygonal volume.



Fig. 24

Simple robotic drilling inscribes the digital architectural information into the material.

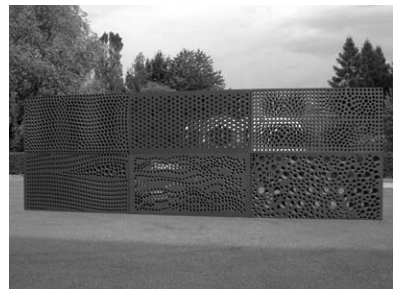


Fig. 25

The "perforated wall" panels.

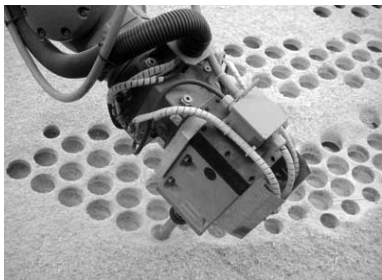


Fig. 26

Cutting of the formwork boards for the perforated wall.



Fig. 27a,b

Completing the formwork by inserting standard pipes into the holes.

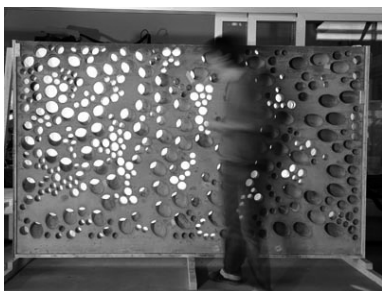


Fig. 28

Perforated panels were tested for their load-bearing capacity.

the custom-developed “color mapping” tool that translated the red, green, and blue (RGB) values associated with pixels in a chosen image into the “alpha” *directional vector*, the “beta” *cut-out angle*, and the *radius* of the hole, respectively. Working with images provided the students with an intuitive and direct way to “inform” the material.

With another group of students, we worked on developing a method to cast a large (3 x 2 m in size) perforated wall in cement. We used a robot to cut the geometric extensions of the holes into the formwork boards (figure 26), in order to transfer the perforation information onto the concrete formwork. After assembling the formwork, standard plastic pipes were inserted into the holes as block-outs (figure 27a,b). The design information was thus indirectly transferred to the material via the formwork design.

Manufacturing the formwork presented a particular challenge, because, due to the irregularly distributed holes and the narrow breadth of the web, neither a conventional reinforcement, nor a mechanical re-densification of the concrete was possible.⁸ Also, we were unable to use the self-compacting steel-fiber concrete that had recently been developed by the *Institute for Building Materials (Institut für Baustoffe)* at the ETH Zurich. After a successful casting, we used various load tests (figure 9.28) to check the structural effectiveness of the wall element. We tested wall elements with different densities of perforations and demonstrated that even highly perforated walls could be used as bearing walls in a building structure. We also demonstrated that the load-bearing capacity can be locally controlled with a density of perforations and the deflection of the holes. Our prototypes revealed the multiple architectural potentials of a perforated wall. By moving from Styrofoam to concrete, we created not only complexly “informed” concrete panels with some very interesting potential for light and sight modulation (figures 29a,b), but also produced actual load-bearing, structural components.

The Programmed Wall

A key assumption underpinning our work is that new digital technologies of design and production will influence the architectural definition of building components. Our research interests are not limited to the technology only. Examining the robotic additive fabrication of brick wall panels, we asked our students to explore social and cultural implications of that technological possibility.⁹ What does it

mean to digitally fabricate a brick wall using a robot rather than a person? A robot is not only quicker, more precise, and more productive, but it also enables complex designs that are impossible for a human to build with that level of accuracy. The robot does not need an optical reference or an identifiable pattern in order to lay bricks precisely. It also allows complex walls to be built without relying on repetition.

We chose to work with bricks, because a brick is perhaps the most highly developed module in building history. For over 9,000 years, human hands have optimized the brick's dimensions, proportions, weight, and material. The sequencing, the joint detail and the type of bonding agent used determined the specific structural qualities and appearance of the brick wall. Despite the long history and well-established traditions in the building industry, the brick walls today aren't nearly as ubiquitous as they were not long ago; the brick is now mainly used as a single-layered facing on a building. Due to the high cost of labor, walls today are mostly made of large, industrially manufactured blocks or reinforced concrete.

If the brick walls are too expensive because of the high cost of labor, to continue working with this material, the assembly of brick walls could be programmed and automated. A wall made of brick is subject to the rules of mathematics, meaning the relationships (i.e. connections) between the bricks, and can be described by an algorithm and therefore, "programmed." In turn, digital production allows direct translation of computer programs into physical artefacts. A robot can build a wall: it can lay each brick in the exact prescribed position, at the exact angle, and at the exact interval, as described by the author of the program, i.e. the designer. The robot can also position each brick differently with no additional time and effort, which is not possible for humans (figures 30a–c).

New spatial and architectural possibilities open up with "programmed" brick walls. Continuous, procedurally controlled variations of the position and rotation of each brick could create flowing transitions between open and closed areas. Some walls can be formed three-dimensionally by bricks receding or projecting out of the surface plane of the wall; even if the bricks are laid on one plane, the wall can still appear three-dimensional. Structural patterns, plasticity, and transparency can change dramatically depending on where the viewer is standing or the angle of light (figure 31).

The appearance of the wall is not only affected by a purely surface effect, but by its *depth*. The qualities of this third dimension cannot be designed two-dimensionally or described pictorially. The geometry of the walls has to be programmed, i.e. algorithmically, procedurally defined; it can only be experienced in physical space in time, through movement of the body through space.

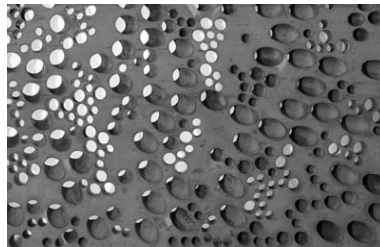
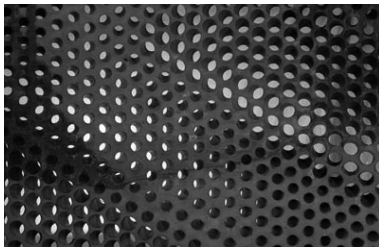


Fig. 29 a, b
Perforated panels cast in concrete.

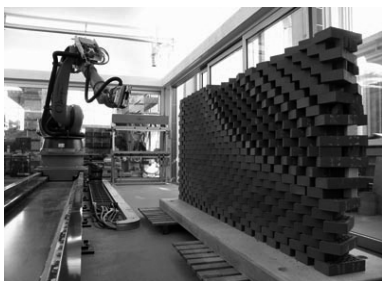


Fig. 30 a-c

The robot producing one of the “programmed walls” brick by brick.

We asked students to design a “different” brick wall and to produce it using the industrial robot in our research lab. The wall had to be 3m in length and 2m in height (containing about 400 bricks). Students developed algorithmic design tools to define the spatial disposition of the bricks according to procedural logic. These tools drew upon the knowledge that the layout of a brick wall is based on a system of rules that describe the sequence of operations needed to build a wall. A brick is laid next to another brick, shifted, and perhaps rotated until the end of a row is reached. The next row is then shifted by half of the brick width, and the previous procedure repeated, and so on, until the desired height is reached. When programming, this process can be described with two nested loops, one for the horizontal direction and one for the vertical direction (figure 32).

Students examined different brick bonding schemes along with various criteria for brick laying, stability, and overall bonding effect. First, they manually tested the feasibility of the concepts (figure 33). Afterwards, they transferred their findings to a simple computer script, which they could expand and redefine through an iterative, step-by-step process. The students did not design a geometric system, but rather constructive logics that created an architectural form by organizing material in space and this directly provided the production data for the robot.

In the end, the walls – products of a digital, highly rationalized, design process and built by a robot – contain both the archaic presence of the material as well as the differentiated qualities of their procedural design. Adding information created a new, different kind of a brick wall, of previously unknown forms coming from a familiar and trusted element of the construction industry (figures 34a,b).

Screens

The German writer Kurt Tucholsky once said, “A hole is where there is nothing.”¹⁰ Around the hole is a material from which it has been carved. If the holes (i.e. perforations) increase in size, a grid structure develops in the material between the holes and the attention shifts from the holes to the resulting mesh-like structure or screen.

Screens are a common and rich architectural device that can separate spaces, while maintaining a certain visual (and often audible) transparency. In contrast to glass, screens have a strong spatial presence and offer great potential for

variation in material, color, texture, etc. The architectural definition of the screen mesh, i.e. its width, alignment, and form, can guide the eyes' glance, obstruct it selectively, or allow full views.

Grid-like structures make the structural depth of a building layer tangible. According to where they are positioned, hybrid structures like screens can assume other functions, such as *passive shading* (sun protection) on façades. Screens have been used throughout the history of architecture by very different cultures; they have developed in many different ways due to a wide variety of available technological means. As an example, consider the screens in Islamic religious architecture: highly perforated grid structures separate women from the main room of prayer. Besides a purely ornamental value, these highly sophisticated devices allow observation of the events in the main prayer hall without the viewers being seen.

Our work with screens is in many ways a continuation of the previous experiments with the perforated walls – with a shift in focus from the openings to the material remaining between them (figure 9.35). We asked students to produce full-scale prototypes (2 x 1 m in size) in styrofoam.¹¹ We also varied the forms of the openings, i.e. we didn't limit the explorations to the round holes only. With the help of algorithmic tools, we were able to manipulate the contours, dimensions, angles, and the sequence of openings, which could take any regular or irregular form (figures 36a–e). Moreover, in addition to being at an angle to the surface, the openings could also be distorted three-dimensionally, meaning that the front and the back of the screen-wall element could be different in appearance.

Conclusion

The projects presented express our empirical approach to the physical and constructive reality of architecture as well as our understanding of the digital as a tangible and sensual reality. We believe that a truly substantial discussion on “digital architecture” can only arise from built projects that physically manifest the underlying logic of this technology. We want to know how it looks, feels, smells, sounds and how much it costs. To do this, we adopt a strategy of operating in small steps and experiments, finding ways (or creating them if necessary) of integrating this technology into projects we are actually building, testing their architectural potentials as well as their limits in terms of



Fig. 31
Different “programmed walls.”

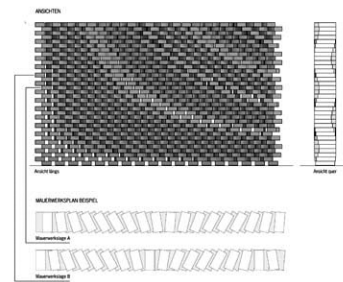


Fig. 32
This “programmed wall” is defined by two nested loops, one for the horizontal direction and one for the vertical direction.



Fig. 33
The concepts were first tested manually.

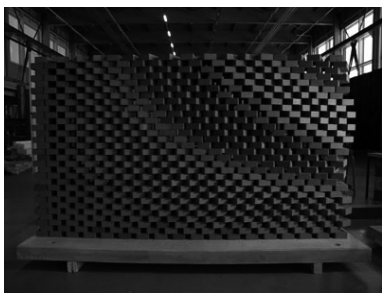


Fig. 34 a, b

A different kind of a brick wall.



Fig. 35

The robot cutting holes to produce a screen.

technological and economic feasibility. We work, whenever possible, at full scale, using the real materials and construction methods. This provides us with substantial feedback for our design process, both at a conceptual and technological level and allows us to understand the real consequences of digital technologies on architecture.

The beauty and power of digital technology lies in its universality and its generic quality. Binary data is an abstract entity that can contain anything we want. We consider it a new raw material in our hands that we can creatively manipulate in an infinite variety of ways with a degree of complexity we would not dare attempt by hand. It is like a brick, its generic nature does not impose one given architectural form but rather offers the potential for an infinite variety on a given theme. Programming thus becomes an open and self-evident exploratory technique like sketching and model building.

While the technology necessary to change from mass-produced serial parts to mass-produced custom parts certainly does exist, and is thriving in other industries, it is not yet available to architects. This is largely because architecture-specific interfaces for digital fabrication do not yet exist. If we want to take full and creative advantage of the amazing technological possibilities at our hands and finally fuse the seemingly separate worlds of analog construction and digital design data we have to get involved in the conception of these interfaces and directly link the design data, we produce and the machines that are actually able to fabricate architecture in both directions, technically and conceptually. We should be able to “get our hands dirty,” so to speak, and proactively develop a technological *savoir faire* that directly relates to the way architecture is conceived, processed, built and used today. Technology needs to be demystified and (re)integrated into the architectural discipline, not just as a source of inspiration but as an integral part of the professional vision.

The fundamental architectural potential of the “digital materiality” we have been describing here remains of course to be explored through more built projects and at larger scales. One can still question whether or not the deterministic and rational nature of digital logics really is compatible with the creative and subjective practice of architectural design. Our work attempts to dispel this doubt and we hope that our projects will convince others who will in turn make their own contributions to this effort. Indeed, we feel that our own experience proves that digital technologies do not

contradict the architectural process. If we understand its nature and use it as a complementary tool to our intuition and intelligence, digital technology will unleash its systematic, aesthetic, and poetic potential.

Notes

- 1 The project's clients were Zurich's Bahnhofstrasse Association and the Electric Utility Company of the City of Zurich.
- 2 The project's clients were Martha und Daniel Gantenbein. The façade was designed in cooperation with *Bearth & Deplazes Architects*.
- 3 Despite the relatively slight deviation from linearity, the human eye could detect even the finest rotations with the subtlest light reflection, making them architecturally readable.
- 4 The wall panels for the Gantenbein vineyard were manufactured within the framework of a pilot project at our research facilities at the ETH in Zurich.
- 5 While we were testing the interior of the space using prototypes, we realized that it would be difficult to read the design if the openings between the bricks were too large. For this reason, we laid the bricks as close as possible, so that the gap between two bricks at full deflection was nearly closed. The eye reads this as maximal contrast value.
- 6 The robotic brick-laying production method was initially developed for an elective course entitled "The Programmed Wall." We had to optimize it for the 400m2 façade, so that the production time and the quality of the elements could be guaranteed. Besides further developing the picker arm and the feeding chute, this mainly involved developing an automated process to apply the two-component bonding agent. We installed a pneumatic, hand-held, hot glue gun as a fixed external tool onto the robot, linked its activation mechanism with an interface to the robot's control unit, and integrated the application of the bonding agent into the automated process.
- 7 The courses were: *Das schiefe Loch* (The oblique hole) elective course offered in the winter semester in 2005/2006 academic year, *Die perforierte Wand* (The perforated wall) elective course offered in the summer semester in 2006, and *Die perforierte Wand* (The perforated wall) graduate elective course, also offered in the summer semester in 2006.
- 8 There were other difficulties too: the forces resulting from the pouring of concrete had to be dealt with by geometrically complex braces in the formwork.
- 9 These themes were explored in the "programmed wall" (*Die programmierte Wand*) graduate-level elective course, offered in the winter semester in 2005/2006 academic year and also during the seminar week in 2007 at the *Domoterra Swissbau Lounge*.

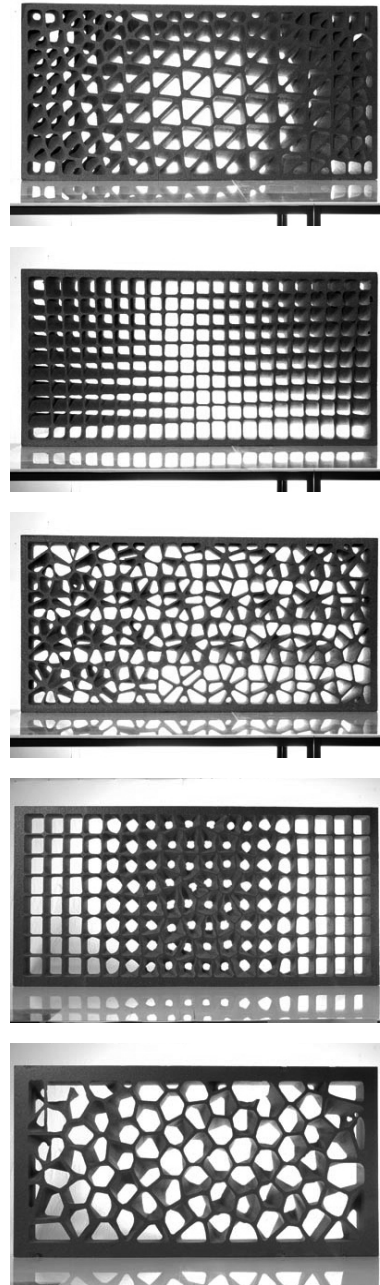


Fig. 36 a-e

The different screens designed with algorithmic tools and produced with robotic cutting.

- 10 Kurt Tucholsky, *Gesammelte Werke*, edited by Mary Gerold-Tucholsky and Fritz J. Raddatz, vol. 3, Reinbeck bei Hamburg: Rowohlt, 1961, p. 804 (original 1931).
- 11 The screens were first explored in the “disintegrated wall” (*Die aufgelöste Wand*) elective course offered in the winter semester of the 2006/2007 academic year; the explorations were then continued in an elective course during the summer semester in 2007, when we asked the students to design a safety fence that surrounded the construction site for the new Science City Campus at the ETH Zurich.

New Responsibilities in Designing Competitive Profiles of Architects

In this era of individuality and of personalized practices the education of the architect becomes increasingly open to individual approaches, to personal options, to particular orientations, to idiosyncratic perceptions of architectural practice. There no longer exists a precise profile around which schools can define and organise their teaching strategies. At the same time our educational system is moving progressively from an input (knowledge)-based education to an output (competences)-based one, that demands an increasingly clearer description of a graduate's profile. In light of these new conditions, a new responsibility is emerging for the schools of architecture:

What profile will a school design for its graduates?

Which competences will structure it?

How open will it be?

Which will be the flexibilities of the students?

Which educational structures can produce such a profile?

What teaching strategies must be applied?

Are there any good-practice examples?

Chair: **Constantin Spiridonidis**, Thessaloniki, Greece

Introductory panel:

David Porter, Head, Mackintosh School of Architecture, Scotland

Karl-Otto Ellefsen, Dean, Oslo School of Architecture, Norway

Marvin Malecha, Dean, College of Design North Carolina State University, President-elect of AIA

Spyros Amourgis, President, Hellenic Quality Assurance Agency for Higher Education, Greece

Frid Bühler, Chairman, Association for the Accreditation of Schools of Architecture (ASAP), Germany

Constantin Spiridonidis, Thessaloniki, Greece

I would like to welcome those of you who were not here yesterday evening, and once again to thank all of you for coming to Hania, a rather distant destination, if you compare it to other, more central destinations in Europe, and for supporting the efforts we are making to structure this debate on architectural education. It has been about three or four years now that, we have begun to discuss and formalise the fact that we are experiencing significant changes in the domain of higher education, that a new paradigm is emerging out of the different reforms happening around the world. I am speaking on an international level rather than merely a European one, because this is the message coming from all points of the earth: that we are dealing with new approaches, new conceptions and new considerations about education, first in higher education in general and then, more specifically, in architectural education. In all previous meetings we tried to formalise some aspects of these new conceptions, new approaches and new understandings of educating architects. One of the focal points, or one of the codified descriptions of these new conceptions is the competences-based approach that we have been discussing in this room for several years now. Of course I do not want to return to the same discussion, but I would like to mention that in the past three years this event has produced a kind of product that is supported by the European Commission.

Last year, the work that we did with this competences-based logic or approach in higher architectural education was taken into account by the Commission and in the framework of the Tuning Project the Commission asked that a committee of about ten people be set up to evaluate it. This material is going to be published by the European Commission as a reference point for the formulation of this new approach or paradigm in architectural education. Of course we are still far from having a coherent view on this. It is very significant that a step has already been made, a consciousness/awareness has already been raised throughout the European schools of architecture and of course we have a lot of work to do in order to formalise this consideration, to make it more coherent and more concrete.

In this logic the agenda of our eleventh meeting tries to direct our attention to the responsibilities of schools of architecture. As I already mentioned yesterday, this is something that we have discussed in one way or another before, but it has never been the focal point of our discussion in terms of the question of defining the responsibilities of the schools in the rapidly changing world of education, architectural education, cultural, social and economic life. We have tried to encompass with the issue of responsibility a number of themes, which are more or less those that we had the opportunity to approach and to discuss in the previous meetings. The first is the profile of the graduate; the second is the life-long learning conditions and permanent education of our graduates, regarding which the schools have to accept significant responsibilities; the third is the burning issue of the relationship between education and the profession, which we have already discussed at length in previous meetings but which we would now like to see from the viewpoint of the schools; and the fourth is the responsibilities of the schools with regard to the existing institutional framework, and more specifically the European Directive.

Concerning the profile of the architect, it is more or less commonly agreed that there have been significant changes in the last few years as we are experiencing an increasingly individualised conception of architectural production. We accept that there are many differences and many different understandings today about what a profile of a graduate is, and all the schools of architecture are busy thinking about what the main characteristics of such a profile should be. In our

previous discussions we introduced the idea of competences as a tool to describe this profile. We considered that competences are a means that give us the possibility to describe some characteristics of a graduate, a certain profile, and that the definition of these is a responsibility that falls to the schools. If it is up to the schools to define this profile in terms of competences then the question is, what kind of curricula could assure this profile and what kind of teaching practices have to be developed in order for this profile to be created?

The discussions that we had in previous years showed that there are two main schools of thought. One tends towards a general education aiming at the profile of a generalist architect on the basis of which one can develop some specialised professional activities. On the contrary, many schools of architecture have already implemented in their curricula a more specialised orientation in their education, which means that different profiles are created through different courses that the schools offer to their students. With these different views and directions in mind, the question then becomes, on what basis do the schools have to decide the direction they will follow?

The other interesting point that we can observe is that the educational system in our schools is based on, and organised according to, a logic where what we are interested in as teachers, programme coordinators, heads, is what we will offer our students. That is to say, our main concern in conceiving the curricula and organising our teaching practices, in choosing which subjects we teach and which subjects we emphasise more than others, is what we give our students. In contrast, the accreditation-evaluation-assessment mechanisms are more or less structured on the basis of what the graduates are able to do. Evidently there is a contrast between the logics along which the curricula are organised and the logics along which the curricula are assessed and evaluated. Evaluation mechanisms more or less work with lists of competences, and a typical case is the American system where the national accreditation board has produced a list of competences that the students have to cover in order for their diploma to be accredited, while the schools organise the curriculum always on the basis of what they will offer. As discussed the difference in conception tends to be overcome in practice. The new approach will review all this existing tradition. Therefore the question now becomes, how will we restructure our educational system on the basis of a predefined profile of the graduate?

This is the background logic of this first session. The idea is to look at the profile schools want or expect or dream of offering their student and the profile of the architect that emerges from the accreditation, evaluation and, generally speaking, the external control mechanisms that the schools are obliged to deal with. Are these profiles compatible? Is there a continuity between the one and the other? Is there a persistent dialogue between those mechanisms so that a continuity could be assured and an agreement, if possible at a European level, could emerge in order to assure a more coherent, stable and systematically organised offer on the part of the schools and understanding on the part of the other mechanisms?

These are more or less the questions that we want to address, and in order to facilitate our discussion on this subject we invited a number of people who have the experience and the knowledge to make a contribution in this direction. Three members of our panel are educators, responsible for schools of architecture and therefore responsible for the academic issues of their schools. One member of the panel is part of the accreditation mechanism, and therefore has the responsibility of structuring the mechanisms of accreditation, evaluation and assessment of the curricula and of the education offered by the schools. I think that it is very

important to initiate such a discussion in order to hear both sides, which is something that we avoided in previous meetings. Finally, the fifth member of the panel is involved with both sides of the issue. I am sure that the ideas they will present and discuss will produce a fertile ground for the discussion and debate that will follow.

David Porter, Glasgow, United Kingdom

I assume that by accreditation we are talking about professional accreditation, and I will say few things about professional accreditation in relationship to outputs or competences and also in relationship to the profile that schools have. In the British system professional accreditation is done through the Royal Institute of British Architects, and for a very long period schools have invited that body to come and validate their programmes within a professional sphere. It is a form of accreditation that I have experience of on both sides. That is to say, as a head of school I invite the RIBA to visit my school and accredit it, but I also sit on a RIBA accreditation panel; from both sides I am critical of this system, but I am pleased to say that the current president of the RIBA is also critical of the system and is willing to engage in discussion with the British heads of schools on improving it.

I think that for there to be a satisfactory relationship with the profession around accreditation there has to be an understanding, if you like, maybe even a contract about what education can achieve as well as what it should achieve. We joke back home about the demand that our profession seems to have for us to be rather like IKEA, that is to say that we deliver to architectural offices student graduates that are flat-packed and who by lunch-time can be assembled and operational in the office. We joke about this and have done so for about ten years, but beyond joking about it, we have not done much about deciding that if this is not a reasonable expectation what is a reasonable expectation? There is no real understanding back home that makes for any intelligent discussion across that boundary. I think that the work that has been done here – and I refer you to the document that you now all have, and the work on competences – looks at what the profession can expect of competences, what the schools can expect of competences and what the graduates can expect of competences, so that we can move to a position where there are generic properties that you can expect from our graduates. For those who have not read it, we are not talking about the ability to fill in a certain procedural form in terms of applying for planning permission, we are talking about competences such as the capacity for analysis and synthesis, problem-solving, etc. We are talking about high-level competences; and it should be possible, although it is a long-term project, to actually agree that this is the sort of territory that the profession and the schools could talk about. A problem arises here with regard to mobility, and the question is how one can get from these general principles to the local application of them. If you believe, and I still do believe, that a part of architectural education is about learning a craft, then it is necessary not just to know about general principles: you actually need to know how to make it happen, how to make it happen locally and in specific circumstances. For example, a student coming to my school from Oslo will learn something about what it takes to build something in Glasgow, not Oslo. So we cannot only deal with those general attributes, we have to deal with the specifics and we cannot deal with all of them. Students can learn how to get into the detail in certain circumstances but we cannot cover all the detail in five years. This territory needs to be mapped out in a kind of contract between the profession and education. So those are my first two points; that we

need a contract with the profession and that we need to establish a kind of balance between the global principles and the specifics that make architecture possible.

The other two points I want to make come again from my experience of the British system. I took over the Mackintosh School of Architecture in 2000, and within about six weeks a group of people came from the Royal Institute of British Architects. What these people do is look at the work of our students, particularly the design portfolios, against agreed criteria. These criteria are an elaboration of the EU Directive and what they have done is that they have taken the eleven points and in various places have added on bits to them in a way that I would say has not yet really been intelligently thought through. So that is what they look at us against. However, these people are architects, they have got ideas about architecture and they bring those to the school. So you get feedback, some of which is really quite anecdotal, what they feel about architectural education, and which is not terribly useful – maybe interesting, but not very useful. What I remember about the visit in 2000 is that there was a certain point in the second day of the visit when I felt, since two of the panel members had studied in London in the 1970s, that I was being compared with what they remembered as students in a different city in a different period, and I felt like saying, “By the way, this is Glasgow and this is the year 2000”.

So how do you get from the interpretation of criteria or competences in a way that is unhelpful to a way that is helpful? I think the only way around that is that each school does not just have a profile, which in a sense maps out what it does. It also has to have an aspiration about what it wants to do. Because if as a school you say that this is what we want to do, it gets them out of saying, by the way why can't be like London in the 1970s? They actually have to look at what you want to do and offer help and helpful comments, saying that if that is what you want to do you ought to think about doing certain things. They can come in with helpful advice, but it has to be against what we set as an objective for ourselves, and that set of objectives of course has to be not just the set of objectives of the head of school, that has to be the set of objectives that the members of the school understand.

The final point, and this is to me one of the frustrations within the system I operate in, is that if you had an accreditation system that was working well you would have an overview, which is what I think we are trying to do here, trying to get an overview of what is happening in Europe. My own professional body has been visiting schools for a hundred years and yet I go to conferences where statements are made like, “Well, of course, there is no urban design taught in schools of architecture in the UK” or “Sustainability is not being taught”, which are completely untrue. You'd think that if every four years every school is visited we could collect that information together and be able to say specifically that within the UK sustainability is dealt with in broadly three ways, a, b and c; that urban design is a topic that is more important in some schools than others and it is dealt with in different ways; and we could map out that territory. At the moment – and I think in our system this is partly due to a lack of understanding of the need for it and perhaps partly to the lack of resources – we have a process which is to do with policing but does not release knowledge that is useful either for helping to improve individual schools or for getting an understandable overview of what is happening.

A final point I want to make is that the system I am in is parochial; the schools are visited by British architects. The interesting thing is that when I choose examiners to come into my school they may be British, but they may be from somewhere else, and there is one sitting in this room right now. I truly think that any accreditation system in an increasingly globalised world that is worth its salt would not just be locally practice-based. It would have to extend beyond that.

Karl-Otto Ellefsen, Oslo, Norway

The Scandinavian situation is completely different. Our system has always been based on a mutual understanding between the profession and the schools. We discuss, we have visits, but they have never attempted to test us. I think this is the situation in Finland, Sweden and Denmark, as well as Norway. We know that things are changing, but we have not seen it yet. So having no experience like David's, I have to go about this in another way and what I will try to do is put forward a few examples of what is happening.

My first example is from a recent experience I had. I was on an evaluation board for a new school in Finland. It is a government institution, a university far up north in Oulu. They wanted to start a new school of architecture. The Committee accepted their draft. It is very interesting to see their aspirations and their profile. What they want to do is to take their natural surroundings and the industries in their area as a point of departure, to merge with industrial ambitions and develop a school of architecture that is definitely international. They cannot be bothered with accreditation to start with. What they are interested in is their ability to compete internationally for the best teachers and the best students. That was the only discussion. I found that the aspirations as they were put on paper were very illustrative of how an architectural school of today is working.

What is happening in schools of architecture at the moment is of course that there is a lot of specialisation occurring – there are Master's in everything, it seems. This has also been a part of the British system for a long time, but it is not the case in the rest of Europe. There are MAs in architectural theory, in architectural communication, in property development, and in many other things, which means that there is a kind of specialisation within the degree system that we did not have a few years back. What this also means is that students graduating from this system fit different profiles.

My last point is related to the school I work in myself, the Oslo School of Architecture, and how we deal with these things. In a way our view is that there are three different sets of interests in this field. The first are the interests of the schools in Europe, our school included. Having observed the situation in architectural education in Europe over the years I think that the situation that exists now is very healthy – although perhaps being so closely involved in what is happening I am not able to see clearly. We are very popular, the schools of architecture are very popular, there is quite a lot of experimentation going on, and related to that, I think that what we saw from the ETH Zurich yesterday, though of course an extremely good example, is not atypical; quite a lot of these things are happening. What is interesting though is how education on a higher level has merged with research in an educational situation that we really feel that the profession or people from the profession sometimes cannot grasp. Things are happening, things are developing and that is the situation in the schools.

Moving on to what is happening in the profession, there is a discussion in Scandinavia now concerning the idea that professional organisations are losing members. The professional organisations are also in a very strange situation with regard to the global labour market that is developing and the fact that in big Scandinavian architectural firms some fifty percent of employees are not Scandinavians. This is typical, particularly of Denmark, because that is where the largest firms are. There seems to be a new situation in the professional organisations. They are losing power and they do not have the same grasp of the situation as before.

Then you have the third part, the institutional part, the government need for control in a situation like this. Like David Porter, who talked generally about this and the problems in the British system, I will describe how we are trying to handle it at the Oslo School of Architecture. If I tried to analyse what we are doing (and perhaps this was not as clear to me before I started thinking about what I was going to say today), I would say it is this: I think we are trying to develop a BA which gives a very strong knowledge input and which gives basic skills. I do not think that this BA is very much different from what is happening in most schools of architecture. We are putting very much into our BA and then when it comes to the MA we give people complete freedom to develop their direction. We look upon people as individuals and allow them to develop their own path until they go to the diploma. They all end up with diplomas that are, or at least aim to be, very experimental, very much research-oriented and very different. Of course, if somebody from an accreditation board came to inspect our diplomas, they might well ask, "Is this a school of architecture?", but I think that this is actually a rather typical example of what is happening and, as I said before, I think that it is a healthy situation. Our way is to put all our efforts into giving a very strong knowledge-base in the BA, and it might be that this was the intention of the Bologna agreement, I don't know, but it might be that the real intention of the Bologna agreement was to give a professional basis in the BA and to allow almost complete freedom in the development of the MA. That is the way we handle it at the moment anyway, and we are interested to see how it will evolve in the years to come.

Marvin Malecha, Raleigh N.C., USA

Certainly the situation in the United States is different. We have what I could call layers of accreditation and recognition.

But let me begin by explaining my situation because I am in a rather interesting place at the moment. I have been president of the Association of Collegiate Schools of Architecture, so I have had that experience; I have served in the National Council of Administration Boards, so I have had that experience; I have been a board member of the National Architectural Accrediting Board, so I have had that experience; and now I am the president-elect of the American Institute of Architects. The best way to describe my position is that I went from being a chicken in the chicken coop to being the fox arriving in the morning.

The American Institute of Architects has 90,000 members and an annual operating budget of \$ 61,000,000 to advocate on behalf of the profession in the United States a whole variety of programmes from continuing professional development to lobbying the National Congress for legislation. It is a broad sweep and certainly one of the things that we have responsibility for is interacting on the subject of accreditation.

Now, to come back to my day job, I am the Dean of a College of Design, with a school of architecture within it. The National Architectural Accrediting Board visits us to accredit our architecture programme, but the accreditation process is mostly viewed with somewhat of a cynical eye because the Provost and Chancellor receive some fifty accreditation agencies at various programmes in the universities, so when you think of it as five-year terms it means that a Provost has between one or two accreditation teams arriving in his or her office every month. Because of this every five years we also have a team appointed by the university for an internal assessment of performance. Then, we are also required for specific programmes to have independent peer reviews. Our relationship with the community is such a case, what

we call community extension and engagement, and we have independent peer reviewers for that, and we also have independent peer reviewers for our research activities.

As you can see, in the United States we have something called 360° evaluation, which is a little bit like having somebody coming to tell you how you are doing almost every day, and when you have six academic programmes like I have in our college the fact is that when the architects are not coming, the landscape architects are coming, when they are not coming the industrial design society is coming, when they are not coming the graphic designers are coming and when they are not coming somebody is coming to take a look at our animation or textile design programmes. We are constantly being besieged by accreditation. That is an American context; I am not advocating that for you, that is just the reality I am faced with, which has evolved over some seventy, almost a hundred years, in the United States.

The architecture accreditation process in the United States is guided by the American Institute of Architects, the National Council of Architectural Registration Board, which is responsible for licensure and has representatives on its board from the American Institute of Architecture Students and the Association of Collegiate Schools of Architecture, as well as public members invited from outside the profession. This is the group that organises the accreditation process in the United States. It has many, many layers, it is a check and balance system. Then every five years the entire accreditation document undergoes reassessment, and this happens to be the year when there is a major discussion underway about the accreditation model in the United States – Dino, actually, has participated in some of those meetings – and so we are preparing for that again.

I would say that the big issue on the table right now in the United States, and I can tell you that I have been busily e-mailing colleagues of mine while sitting in these meetings, is called the intern development programme and is another step in all of this. What it means is that once they have graduated from an accredited school of architecture students must go through the intern development process, essentially 5,600 hours of timed experience working in offices (actually it is a bit more than that, it is 7,200 hours, but you can accomplish some of it before you graduate from school). Since this programme has had mixed success, there has been considerable debate and argument about why it is not succeeding as it should. So the argument now has a lot to do with what we mean by preparative experience: what is the relationship between the profession and internship and between the schools and internship? So it is a very complicated situation.

Then there is also the incredible transformation underway in the offices, and this is the part that really is quite striking. I brought a document along that we can make a copy of if any of you are interested – one of the nice things in my role as president-elect of the AIA is that I have access to documents that usually an educator would not get his hands on. I can pretty much ask for anything I want now and get it. On 7 and 28 February this year, two webinars were held. There were no educators involved in these webinars, which I find interesting. The first was on using research in your design practice and the second was on conducting research in your design practice. There were approximately 1,000 participants and they made a survey that demonstrates quite amazingly the extent to which research is linked today with design in architecture. An example of the type of questions asked is, “Have you had a client ask you for a specific research-based design?” or “Have you had a client ask you to research a specific question that will impact the design?” Eighty-six percent of the attendees, that is some 860

people, said yes. So this informs us of something very interesting that is evolving in practice. The survey goes on to demonstrate some really incredible things having to do with evidence-based decision-making in design.

Subsequent to that I have also had the opportunity to engage in some other interesting discussions. Many things in America are determined by attorneys, unfortunately we are a litigious society. However, now we are also finding that clients are beginning to bring litigation against architects for their claims with regard to the performance of buildings. So for example if you say that you are going to have 30% better performance in energy outcomes in your building and after benchmarking you only have 15%, you are likely to be financially liable against your contract for that promise, and that is changing things dramatically in terms of what the profession can promise and the evidence that is necessary to fulfil those promises in their contracts. We have this lead-rating system having to do with sustainability and energy performance and we are promising in some cases that we will have 40% or 50% better energy performance in a building, which means that the client then expects that you will have 40% or 50% percent better energy performance in that building. That is one of the reasons why the profession in the United States is suddenly becoming very interested in the kind of work that you would normally associate with research.

I could go on for a long time, but I want to bring this to a close. So the big discussion between the profession and the licensing boards right now has to do with our people prepared to enter practice. The question is, which practice are we preparing them to enter? Are we preparing them to enter the practice that is more research- and outcomes-oriented? Are we preparing them to enter the practice that demands the traditional skills of an architect? What are we preparing these young people to do? It is interesting that we have now come to a kind of a place where we are defining this as the culture of practice. What is the culture of practice? Where does practice come from? What is the history of practice? What is the history of ethics in practice? A big discussion around the American Institute of Architects has been about what our ethics policy is, what our ethics statement for the AIA is. What do we do to prepare individuals to practise in an international arena?

The American Institute of Architects has established three very strategic initiatives, the first one being sustainability – at least that is what it is called at the moment, but in fact, I am leading the long-range planning group and we are redefining that as “environmental well-being and human health”. The second one is integrated project delivery, BIM, building information modelling, which is really being developed into something called the socialisation of information that involves web-based management and is a whole other way of practising. The third one we call diversity, meaning who is practising, but really it deals with human capital and we have already heard about human capital and moving across international borders, where people are being hired from and how, and how these large offices are being operated. So those three things really bring us down to the culture of practice and how people are prepared to enter practice, what they understand to be the history of practice, how they know that this is something they want to do with the rest of their lives, how they make progress towards becoming a registered architect and of course, as in any association, how they then translate that into joining the American Institute of Architects; the latter is also part of my new role as president-elect, to increase our membership – apparently 90,000 members are not enough.

The point is that all of these things are tied together for us. So this notion of evidence-based practice, of the culture of practice, is becoming a major discussion because it will guide what

the accreditation outcomes are. I will tell you that from the position of the National Council of Architectural Registration Boards that it is a very conservative point of view. To be honest, they would like us to think of ourselves as producing a product, whereas the educators are actually doing what we are doing here, thinking about knowledge-based architecture and architectural education. But somehow in between these is the American Institute of Architects, and we know that practice is transforming dramatically and we know that the people in practice are transforming and we know that we can look at the large offices in the United States and that they are no longer service-providers. They do not even talk about themselves as service-providers anymore; they talk about themselves as learning organisations, inventing new building types, inventing new relationships and new ways of practising across international borders. For example, my daughter is a young architect working in Chicago for Perkins & Will and at any given moment it is just as likely that she will be working on a project that is in Chicago as it is that will be working on a project that is in Dubai or in Japan or in the Philippines. The large offices are working across international borders this way; and I am sure that this is happening internationally, because Perkins & Will, after all, is owned by a Dubai-based holding company and is not an American firm in that sense, although its main offices are in Chicago.

So I think that what we are mostly looking at now is what this culture of practice is and how we define it. It is not just teaching architectural practice anymore, because how do we do that? I mean, we really do not know whom to prepare for; and I think that this is the challenge to accreditation as well.

Spyros Amourgis, Athens, Greece

I would like to make a couple of comments about the process first and then I want to sort of pose some questions or challenges that must be seen first with regard to the universities in general and then with regard to architecture in particular. Because it is not a simple matter you know, the curricula depend on many factors in terms of their own development and evolution.

Regarding the process: first of all, the ENQA, the European Network for Quality Assurance, which produced the guidelines for this process, does not set a standard and so is not comparable. It is not the Shanghai process, which is nonsense, but really, taking the papers that a university produces today? Tomorrow half of the faculty might have gone to MIT, or Harvard, or Heidelberg, wherever! It is sort of an instant snapshot of a university from a certain point of view. The role of the university is to educate and to contribute to the development of knowledge, so the first task is to examine what do we actually do in terms of educating people. The process of ENQA is based on four criteria. The first has to do with the curriculum, the aims of the curriculum and how well it is designed to satisfy those aims, that it is not comparable with other curricula, that it allows flexibility and freedom, and that naturally goes down all the way to the content of the courses. The second deals with how a specific curriculum is being delivered, the teaching and the effectiveness of teaching. The third has to do with the quality of the faculty from the point of view of professional work or research work – and again the process does not come and evaluate the actual production of the faculty or the quality of the faculty, they simply come and say “How do you internally assess and evaluate each other in terms of this criterion?” and then comment on whether you are strict enough or not in your self-assessment. The fourth basically looks at the services, the overall services that the students receive.

Both the accreditation and the criteria aim always at setting a minimum – the maximum cannot be defined and should not be defined. As an example I will tell you what they asked me when I took the licence exam in the United States. I was a licensed architect in Greece but when I went to teach in California I felt it was also my duty to become a licensed architect there, even though I had no intention of setting up a practice there. So when I took my licence exam I was told that all the state wanted was to make sure that I could design safe buildings – that was the minimum. Marvin can correct me if I am wrong, perhaps my knowledge of this is outdated, but I just wanted to illustrate that we should not put so much emphasis in terms of the criteria of accreditation because they are the minimum criteria. Apart from my experience in overseeing the Greek universities, I had the pleasure of visiting the faculty in Lausanne, I was invited to teach at the AA in London and then of course I was for some time at the Polytechnic of Athens before I went to the US, where I spent most of my time in California, and from my perspective I see some changes and some issues that are affecting us all.

The first is the large number of students and the effect this has. When only twenty students entered the Polytechnic of Athens in the early 50s, obviously there was a selection process in place that was picking up the most exceptional young people – exceptional in terms of intelligence, the ability to think critically and to be imaginative perhaps, criteria like that. The moment you increase the numbers the more the percentage breakdown follows the rest of society, intelligent/less intelligent, and this means that all this time we have had a drop of quality in terms of the human element that we receive. The same applies also to the faculty as a whole. Such large numbers is one issue that has to be addressed in higher education institutions in general, not only in architecture programmes.

The second is that there are social changes that we turn a blind eye to, if you like. In the 1950s and the 1960s, mostly up to the mid-1960s, most young people were raised by their mothers; traditionally, within a family, the husband worked and the wife looked after the children. I am not trying to set down any labels or any taboos, but the bottom line is that the young were catered to by their own family. Later, with both parents working, the children were entrusted to outsiders, pre-school, elementary school, high school, all the way to the university. So who was taking care of their personality development? Is it part of our role at the university level to contribute towards that, or not? Till then, also, literacy in Europe, although different from country to country, was not what it is today. At that time people were still educated, if you like, by popular wisdom, tradition, traditional values and so on. So, what we had were illiterate people whose personalities were rather well formed. This situation has been reversed now: we have people who are very knowledgeable but not necessarily well-formed personalities. Therefore, I think that the university now does have a certain responsibility with regard to personality or character development.

When I was in California, I had a case, where a student, a very talented young man, came back after he graduated to ask for an appointment with me. The reason I thought he wanted to see me was to get some advice on where to go for graduate studies, but after twiddling his thumbs he finally said to me, “I have a question: I am working now and I hear the words professional and professionalism, what do they mean?”. It was very touching because he told me he was the first one in his family who had ever gone through elementary education. His father was a poor worker, an immigrant. When I was studying in England the issue of professionalism and one’s role in society was very important.

A third issue is the effect of information technology, not in regard to the specialised things we saw yesterday, but in more basic teaching. For example, we have people who teach information subjects year after year, adding or improving a little bit, quite often falling asleep themselves while they teach. But students have access to the Internet, so we could change and use information technology so that there is more initiative on the students' part and less spoon-feeding on ours. Then, there are other subjects that do need human contact and personal supervision and attention, like design, which cannot be taught otherwise. So information technology can drastically change some ways of teaching and perhaps also can capitalise much more on the human element.

A fourth issue has to do with employment trends. Brussels keeps telling us that people in the future may change jobs as many as eight times. Some will move deeper into their area, in which case they will need some additional courses, and life-long learning is a programme supported by Brussels that will provide seminars and so on (in some countries they do already) to help people attain that specialised further knowledge without necessarily having to do a full MA or PhD. Others will move to a different area and will need other kinds of specialised knowledge. Marvin mentioned what is happening in the large corporations and I want to add that the bosses, the people at the top of the architectural firms are not really architects anymore but salesmen, negotiators, administrators, and what they need is to know more about human resources and about their management.

These, as I said, were some general things I wanted to point out. Now, more specifically, in the architectural curricula we have seen a proliferation of MAs, a proliferation of directions. I mentioned earlier the large numbers of students in schools of architecture: do you think that all students that enter an architecture programme are designers? Are architects, in the full sense of the word, people who are capable of synthesising and producing a building or designing parts of the human environment, imaginative innovators? Not really, just a percentage of those people can do that. For the majority, if we take the definition that the English gave in the Robbins Report during the first expansion of the British universities in the 60s, an undergraduate degree is how to learn known knowledge and use it; a post-graduate degree is how to learn to contribute to knowledge through research. So this is an issue that we need to define in terms of what architecture is. Is it science? Is it one of the humanities? Is it a social science? Because some of the curricula get heavier and heavier, with intercultural relations and studies, understanding this and understanding that, which of course are very valuable subjects, but they are things that talented people, the ones who are really in the forefront of architecture, will continue to educate themselves or will expand their knowledge through their personal interests anyway. So we really do not need to fit them all into the curricula, sometimes stuffing them to such an extent that we have 120 courses offered. I mention this because I know programmes like that that, programmes that were actually forced at some point to reduce the number of courses to less than 100.

The basics in architecture are to learn from technology, structures, materials, performance, specifications and performance of materials, from history, which used to cover all this area of humanities and social sciences – you know even traditional and old writers like Gideon, for example, or Pevsner, would link them with social evolution, with society's developments – and anybody who is interested in a specific area will take extra courses in that area or read more in that area, and so they do not need to be overloading the core curriculum. The primary core courses are those that we know traditionally, and that is not going to change.

The goals and the outcomes of learning; or in the form of a question, what do we expect from these people? We torture a lot of students, and often in my experience faculties are themselves judged by the quality of the design of the students' work as opposed to how well the students are learning by applying good practices, best practices. We learn by precedent in architecture. We have no theory, we have no method. We are not talking about structures where we have theorems of physics telling us how to calculate and so on. I know some of you may disagree but at least allow me to have that point of view.

Another issue also is that we hear a lot about the star architects, that they are gurus who dictate culture – do architects dictate culture or do architects interpret culture and contribute to the development of a culture?

I am not answering, I am just putting forward some questions...

Frid Bühler, Constance, Germany

I suppose my presence on this panel is linked to my position as the chairman of the architects' branch of ASAP, which is an association for the accreditation of architecture and planning studies, founded in 1992 following the UIA's Beijing declaration about architects' education and as a result of the changes in the legislation about universities in Germany according to the Bologna process. The original thing about this association is that for the first time in Germany practitioners and teachers were joined together – half from academia and half from the profession. This way, ASAP became a platform for discussion of all the topics that were mentioned here, and sometimes these discussions became very serious and very heavy going. We have contracts with the agencies that are responsible for evaluating architects and curricula, and we define the criteria – we wrote a manual that is very similar to the UIA manual where we set down the criteria – and we nominate the peers. Nearly seventy-five percent of German schools are evaluated this way. Not all peer reviewers are German: actually, some of them are in the auditorium now – Pierre Von Meiss, Vladimir Slapeta, Stephen Maeder; it is a principle of our validation system that there is at least one peer from outside Germany.

The story of ASAP is a story of success, because the change in the system was new, and to undergo the process of evaluation was a challenge for the schools; they used it as a means to examine study reform and to discuss how to educate the students following the principle from input-oriented to output-oriented education. About ten years later a new discussion came up in Germany, the impetus of the first days was gone and accreditation had become business as usual. It was no longer a challenge to change things, a challenge to think about the fundamentals of the education of an architect. So the Deans' conferences decided unanimously to look for and to discuss a new system, an additional system, a separate system running beside accreditation more akin to the constant external evaluation of the schools that is happening in the US, a parallel evaluation that forces the schools to discuss their philosophy of education.

A second problem we discovered is that the normative rules accompanying accreditation use a minimum standard, which is not necessarily very low but is at a lower level than it could be to be useful for the schools. This depends on the combination of practitioners on the one side and academic staff on the other. So, as I said, the schools no longer see accreditation as an instrument for quality assurance. This challenge of an additional evaluation aspect in accreditation is very new and this is what we can expect to be the direction of the discussion

in the next years in Germany. Actually, this is a proposal that I would like to put on the table, if I may, if this group here could try to formulate criteria for validation that go further than the minimum standards of accreditation.

Two results for the schools are very important to my understanding. The one is quality assurance and the second is to give the students or the deans of the faculties a better position within the framework of the big universities, speaking in terms of money and in terms of other things that architects need which are a little bit different to what other professions in the universities need. I think the best thing would be if we could find a collective way of acting in Europe, a set of criteria that are open enough to react to the changes in the field of education and the changes in the field of practice, which my colleagues before me mentioned.

Discussion

Jean-François Mabardi, Leuven, Belgium

First question: Accreditation procedures protect who and what from whom and what? Who is protecting us from accreditation professionals? Do we have to be accredited on their terms? That is the first question; the second one I think is more important and that is, how much do the accreditation procedures cost, not only in terms of Euros or dollars but also, and most of all, in terms of energy and time? Specifically: academic energy and time, which is better spent improving education.

Does the procedure of accreditation increase the critical thinking processes of institutions or of individuals? Do they increase the self-assessment processes?

Pierre Von Meiss, Lausanne, Switzerland

I would like to suggest, after having listened to all of you and having looked at your questions, that one of the things which is sort of missing is a working paper –and maybe this should be done after the conference – that really defines the present procedure of this passage from university to practice in the different European countries, and to what practice.

What is the state-of-the-art? How does it function in Germany? Or even in each German "Land", because there do exist different procedures within the same country. How does it function in France, in Italy and in Spain? Because now, with the kind of mobility of professionals we have, this same question arises again and again. A systematic survey has to be conducted – and I think that it could be done within ENHSA. It should not be limited to institutions' research projects, but include what people are striving for.

Constantin Spiridonidis, Thessaloniki, Greece

Probably the new version of this project will give us the opportunity for a more systematic mapping of the processes from education to the profession, and I agree it is something we need more and more. The last survey we made on the state-of-the-art was at the beginning of this project, six years ago.

Peter Gabrijeljic, Ljubljana, Slovenia

To the discussion about the competences I would like to add one very serious question concerning the relationship between research and professional skills. We have never seriously discussed or defined what research in architecture is. Many promise a confrontation with our state agencies financing research, because a lot of the schools all over Europe are state universities or somehow controlled by the state. Our research work is being evaluated by different other disciplines like chemistry, biology and so on. I think that we have lost our identity in research, in surveying, which was based on learning by doing, which also implies researching by doing.

The lecture by Matthias Kohler and Fabio Gramazio showed us such an approach and why this is so essential for our schools. At the moment it seems that half the staff are researchers, but researchers, in my opinion, without a scientific orientation to research. There now exists a big tension between those two wings in our schools. I think that the design project should be a research project too, without being exclusive. We should define that fact and go through the procedure in Europe to recognise that fact. This should be very helpful for the state schools

and I think that in the future we should associate those two wings in the school in a common project. I think that this kind of combination of scientific- and practice-oriented research would be fruitful.

Karl-Otto Ellefsen, Oslo, Norway

In relation to Jean François Mabardi's very polemic-type questions, and I do sort of go with his attitude. In order to be more constructive in the discussion and to take a position on the issues, it is important to begin by saying that evaluation and accreditation can be seen as two different ways. During the last ten years all schools we have been in the process of evaluating themselves intensively. We do it on an international basis, bringing in examiners, making contacts in conferences like this one, bringing critical people into our school, examining what we are actually doing. We are concerned with two different kinds of markets: the first market is that we want our skill to be at a high academic level, and the second is that we want our candidates to be competitive on the professional market. We spend a lot of money on evaluation.

Of course any serious person in education accepts accreditation. The government pays an enormous sum of money for accreditation, and if you are a private school the students pay an enormous sum of money for it; Of course we accept the question of control: they have to control us in some way. But for me it boils down to the question of the aim of accreditation, and the most important thing is to set a minimum standard. I do not believe in big bureaucratic systems trying to develop the schools and trying to force accreditation to be included in the evaluation. Then it is only interesting in one sense and that is when we are talking about what is termed as 'system evaluation'.

You do not go into the subject part of it, but you control our system. Of course I accept that. A government body can come into our school and say, "Does your quality system work?" That is also a good question, but I think it is important for us to look at the different roles of accreditation and evaluation. Accreditation is a question of control, a question of professional development.

David Porter, Glasgow, United Kingdom

I would like to agree with Karl-Otto Ellefsen and then I want to return to Jean-François Mabardi's questions, which I think were very provocative. Evaluation and peer review are the important things. All of us are here at least partly because we believe in the value of peer review. Accreditation systems are useful to the degree to which they provide peer review. Of course they also put us in a position where we have to look at ourselves in order to prepare ourselves to be looked at by others, which is also useful. It does take a lot of time and it does cost a lot, but that should be part of the process of continuous improvement.

I want to come back to the question of protection that was raised, because with professional accreditation there is a notion of the protection of the consumer, although I am not sure what that means. Most of the questions around protection are to me rather absurd, I mean, whom we are protecting? How we are protecting? In terms of the mobility of architectural graduates and practising architects, there are two situations. My wife is an architect and she has a practice in London where she employs a small number of staff. At the moment several of them are English, but she has one person from Ireland, not very far away; she has someone from Pakistan, who studied in the British system; she has someone from Poland, who studied in the Polish system; and she has someone from Mexico, who studied in the Mexican system. Does she need protection from these people? No. They send a CV, she invites them for an

interview, they bring a portfolio, they talk and then she decides whether they will fit into the office and whether they have a reasonable range of skills, etc. She can make that judgement; she does not need a government to make that judgement. For the person from Mexico she has to get a work permit; that is easily done. So at the level of graduates there is no problem whatsoever. Now at the level of protection of practices – I used to practise as an architect, and I spent a period practising in the Netherlands, where we had to work with Dutch architects, of course (I didn't speak Dutch, I do not understand Dutch building regulations, and quite simply we would not have been insured to do the project unless we did work with a Dutch architect). It seems to me if a client in any country wants to take on someone who comes from the outside and does not know the local conditions and hires them to build a building, I assume for a cheaper price, then they have to appreciate the risk they may run. All of this is being dealt with at the government level. It is actually a fool's problem. So I think the question of protection is very important and I think protection is in a way a fool's concept. The interesting things are improvement and peer review.

Marvin Malecha, Raleigh, N.C., USA

I am going to give Jean-François Mabardi a sort of American answer on the question of cost. The average accreditation visit in real dollar costs is \$25,000-35,000. But if you start to factor in staff time, overhead benefits, salary time, what a firm would call opportunity time, in the sense that the people involved could be doing something else, the cost of an accreditation visit goes up over \$100,000. In terms of actual distraction, if you want to use the word distraction, from the kinds of things you are talking about, it is substantial. For example, when we know that a landscape architecture accreditation team will be arriving in the spring of this coming year we have to begin making facility arrangements so that they have the proper exhibit spaces, the student work has to be held, the forms have to be filled out, the syllabi all have to be updated according to the forms of the accreditation teams, and that again is a substantial effort. Is that an entire distraction? Not necessarily because there are some benefits from forcing the faculty to be accountable to someone outside the school; Certainly in our system the Dean has a certain level of accountability, but I can get a lot more accountability when I know an accreditation team is coming. So there are some benefits from it, but in real cost terms I know that if I factor it all in it would be about \$120,000 for a typical accreditation team to arrive on our campus, in real costs, hard money plus benefits.

Who and what is it protecting from whom and what? In the United States, in order for an accreditation agency to act as an accreditation agency it has to achieve a status from a national group. So there is an accreditation group of accreditation groups, believe it or not, and that way we are protected against accreditation groups arriving on campus with capricious standards. That is one level; secondly, the National Architectural Accrediting Board has oversight from the American Institute of Architects – we have three board members, the National Council of Registration Boards has three board members, the students will have three board members (they have two right now), the American Collegiate Schools of Architecture has three board members, and there are also public members. Essentially, this means that these activities are overseen by members of what we call collateral organisations. So that is in response to the question of who is protecting us from the accreditation mechanism.

Now in the United States that is a real concern, because if a school loses its accreditation it means that its graduates cannot sit for the professional licence, which means that those stu-

dents will never achieve licensing, which means you are essentially out of business. So if some standard comes through that cannot be met then that school could be out of business. Going on a reduced term in the eyes of your administration generally means that the head of the programme will lose his or her job. Because usually university chancellors do not like the loss or the reduction of accreditation, so if bad things start to happen or if you have an accreditation team that is capricious, then things are difficult. It is not often that an accreditation team is capricious but, having sat on the National Architectural Accrediting Board, I can tell that we did have occasions where teams would arrive on campus with an agenda of their own and we had to go back in to correct what happened during that accreditation visit. Once, the chair of an accreditation team arrived at a private school that had a very high annual tuition and announce to a group of students – because one of the things they do is meet with students – that he just did not see that what they were paying for their education was worth what they were getting at that school. So you can imagine what happened next. These students were paying \$40,000 a year tuition, and here was somebody, the chair of the accreditation team no less, saying that what they are getting at the school is just not worth the tuition value. As you can imagine all hell broke loose.

Then, of course, because there is such student mobility from state to state the parents feel as though they need some protection. The parents who are sending their dear children to us want to have some stamp of approval by somebody besides the school itself, so that is another level.

Now to go to Pierre von Meiss's remarks, the state-of-the-art of passage from the university to practice is a subject of deep passion for me. I think it is the essence of the debate in America right now. The intern development programme is supposed to be that passage. The National Council of Registration Boards believes that the schools are not are not fulfilling their responsibility in this area. They want to require that certain courses be taken that they would deliver the materials for inside the universities. That violates the separation of church and state, so to speak, but they are of a mind that they must require these things and require that students take these courses prior to their third year in school. So there is a huge fight looming on the horizon, and of course they expect the profession to be on their side in this fight - and that is what I have been doing all my e-mailing for, because I do not support that. But the point is that I do believe such a study would be very valuable to us at this moment in time.

Spyros Amourgis, Athens, Greece

The process in Europe started because of the European higher education area, which means that graduates from one country can go to another country, mobility and so on. So there is a cost, Jean-François Mabardi, about this whole process, which interestingly enough our estimate in Europe puts it at about €20,000, which is close enough to the cost in the US if you convert it to dollars. Then there are the indirect costs, as you pointed out, of preparations and so on. But there is a distinct difference between how the universities operate in the US and how they operate in Europe, and it has to do with traditions. Up to a certain point, almost all the universities in Europe were state-supported, or established by the state or government, so initially at least there was no issue of accreditation. Some processes had begun to be established - in the UK, for example, I know this had started, but only internally. The point is that the emphasis in Europe has always been essentially on self-evaluation. This is where the difference is between the American universities and the European ones: the European ones retained an ivory tower

attitude and instituted no collective, continual process of self-evaluation. In the US universities there has always been a lot more pressure and emphasis on year-to-year reappraisals of the services given, etc., so in a way it is simply formalising at some point, or summarising, what has been happening during the four or five years that have lapsed since the last appraisal. In Europe it is a relatively new experience, and in some countries it is a completely new experience; in some cases we face difficulties because of "who-are-you-to-tell-me-what-to-do?-I-am-the-specialist"-type attitudes. In the collegiums, when they sit at the end of the year, there is a kind of tiptoeing around the fire. So this is actually the real value, that it gets them in the process of being in a dynamic, in a dynamic state where they can sit down and say "Why did we have so many students fail this course this year? What's happening? Do we still need to be teaching materials the way we have been doing all these years? Maybe we can hand them a manual and let them look at several sites and simply test them at the end?" There are issues like this that are now arising, and they are the result of changing attitudes.

Now there is a fine line between accreditation and academic freedom, because accreditation sets certain standards that in some ways place limitations on universities. In Europe the academic freedom we have is that we can say, "I have this curriculum, because I think that this is the best way to educate architects". As I said, the European Network of Quality Assurance guidelines say that you are evaluated according to your target, so it is not competitive. So you will say then openly and honestly that this degree is not accredited professionally but if you want to become accredited, if you want to get a licence, there are some additional courses in the curriculum and it may take someone half a year longer to finish or they can take those courses through a professional organisation. This, theoretically, is possible. So there is no question of limiting academic autonomy in terms of setting up a curriculum, but it can be also articulated in terms of professional requirements, and the one does not exclude the other.

Marvin Malecha, Raleigh N.C., USA

We had a question about the relationship between research and professional education. There is a publication that my university adopted as policy that I would recommend to you on this. It was produced by the Carnegie Foundation and the author is Ernest L. Boyer and the name of the book is *Scholarship Reconsidered*, and it breaks scholarship down into four categories: discovery, which is traditionally what everybody thinks that research is, application, integration and teaching. By breaking it down into those categories we have found that while discovery may not be very friendly towards us - it can be, but generally is not - integration in particular is very friendly towards the practitioner, and the scholarship of teaching is something where we actually, because of our methods in studio, are leading in the university. We have the most progressive teaching methods; in fact, we have the teaching method that everyone is following. So whereas we might not lead in discovery, we can lead in teaching and we can really demonstrate some value in both application and integration. I would highly recommend reading that book, the adoption of which by my university has meant that I have had 100% success in the promotion of faculty to full professor.

Peter Gabrijelcic, Ljubljana, Slovenia

It was not a question of how to define those four possibilities theoretically; it is a question of how to define them formally through the state authorities. Why is this question so important? Because the schools are losing good professors who do not have enough CV points, let's say,

because their ways of research are not recognized officially. This not only a question in my country, but everywhere in Europe. This is where our next efforts should be focused.

Constantin Spiridonidis, Thessaloniki, Greece

I can agree to a great extent with Jean-François Mabardi and the questions he raised, but I also agree with the various answers that were given, which is contradictory. To clarify this mysterious agreement of somewhat opposite things I would like to make a reference to experiences we generated in this room.

Last year we presented the results of the inquiry we conducted on competences, as they were defined by academics and by professionals. When comparing these two different definitions of architectural profiles, a very interesting issue emerged, that the profile of the graduate according to academics is completely different to what professionals expect; different competences characterized the profile for the academics and different competences characterized the profile for the professionals. Each of these bodies expects different things from graduates of schools of architecture, which means that these two worlds have very different conceptions of what the educational system is supposed to create, or to provide. This is a problem. So the question is, what do we have to do? We see that there is a gap and sometimes this gap is very significant; for example, the professionals are primarily concerned with what the graduates are able to do whereas the academics are primarily concerned with what they have to know. Knowledge-related competences are dominant in the one model; capacities and skills appear as dominant in the other. Professionals are very interested in generic competences, while the academics concentrate on subject-specific competences. So we have established that there is a different conception of what we are doing. All of us agree that we have to find links and communication opportunities, but what is the responsibility of the schools? We know very well that at least in Europe there is a long tradition that defines the university and the higher education institution as autonomous institutions that must not be influenced by external bodies, even the profession. In some countries this autonomy not only appears as a moral and ethical dogma but also as an institutional framework that is defined by this autonomy. If the quality assurance mechanisms involve both bodies, it means that there will be some kind of conflict. Over ten years ago this distinction was much clearer: there was academia and there was the profession. The academia decided what it had to do and the profession was a separate, external entity without any significant influence on what was happening in the schools. This was not the case in all European countries, of course, but certainly it was in most. Nowadays this situation has radically changed, and it is continuing to change more and more, so this relationship must be re-examined.

This is why I think that it is very significant to elaborate on and discuss, together, the role of these mechanisms, which are better defined as quality assurance mechanisms than as accreditation mechanisms, because they are different things. The issue is quality; and quality, as is apparent from this discussion, means the capacity of schools to offer diplomas, titles and graduates that are sustainable and able to compete in a new world that is fast changing. This is an issue for the professionals as well as for us academics. This is why I think that it is very significant in the future to try to define means of communication between these two bodies and the accreditation systems/groups so as to find a consensus that will fill the existing gap. The second remark I would like to make relates to Peter Gabrijeljic's intervention and is based on the question of who produces innovation in our days, academia or the profession? New

architectural knowledge is mostly produced by the profession, and less by the universities and schools. Schools are increasingly becoming consumers of knowledge produced elsewhere; they import new knowledge and simply diffuse it. Of course there are exceptions – just to prove the rule – and we had the opportunity to see one of those exceptions yesterday, but how many schools today produce new architectural ideas? Not only do they not produce innovative ideas, but they often close the door firmly against new ideas being produced elsewhere. I sometimes feel that our institutions are becoming very resistant to innovation, to new ideas, to the new spirit. They close the doors in horror to prevent new things and new ideas from coming into the schools. Sometimes, if something penetrates the barrier, usually through the work of students, they are strongly criticized and discouraged for producing something bad that has to be expelled and ostracised.

This is a reality that we have to overcome and this is one of the responsibilities that the schools have to take on board. We have to invest in research and in the production of new knowledge. It is evident that nowadays this cannot possibly happen without the cooperation of the profession, or at least those parties of the profession that produce new knowledge in architecture. So a prime responsibility of the schools is to invest significantly in the domain of research in architecture – to define it, to cultivate it and to promote it. In the present days, for the survival of schools of architecture, it is wise that competitive educational mechanisms are created in collaboration with the professionals, as Marvin Malecha mentioned earlier. There is a possibility of and an opportunity for the schools in Europe to collaborate with each other in order to assure better mechanisms for quality assurance and better conditions for architectural research. This is our responsibility and we have to find the means and the ways in order to achieve it.

Tore Haugen, Trondheim, Norway

You have mentioned quality assurance, accreditation and evaluation, but there is a word that falls somewhere in between these things, and that is ‘benchmarking’. Karl-Otto Ellefsen explained the situation in Scandinavia, where there is no specific system of accreditation and where most schools operate on the basis of self-evaluation. Benchmarking is somewhere between evaluation and accreditation and has as its purpose not only to establish a minimum standard but to examine the quality in comparison to other schools or between countries. This may relate both to studies as well as to schools. The reason I mention it, is that we have recently been asked by our university, at the request of the Ministry, to come up with some way to go into benchmarking, and I have heard that they face more or less the same challenge in Denmark. My question is this if this is something that can be used positively for us? Can something like this be developed over the years?

Marvin Malecha, Raleigh N.C., USA

Actually, benchmarking is used positively. What it amounts to in my case is that the university has identified ten other universities in the US – two of them are what we call ‘aspirational’ and the other eight are what we call ‘peers’ – against which we are supposed to benchmark ourselves. Some of the universities we benchmark against are the University of Minnesota, Penn State, the University of Virginia and Georgia Tech. We say we have this many students and this many faculty members and we make the comparison with what those ten institutions have. I can come to an agreement with my Chancellor and my board of trustees about how we match up against those ten institutions and I actually find that in terms of getting resources

and, frankly, in terms of getting salaries for faculty, I have been very successful; perhaps not so much this year because of the economy, but in the past I was significantly increasing faculty salaries because in comparison to those universities we were not as well paid as we should have been. So there is a whole series of these kinds of things that can be used very positively, which do not relate to the kinds of sticky issues that we have been talking about here but which do help in other ways. For instance, about ten years ago, we were able to make the conditions for teaching much better, because the University of Virginia had a lighter teaching load than we had, and so we were able to benchmark ourselves against the teaching load they had there and reduce the teaching load for our faculty. So those are things that can be used very effectively and that stay out of these rather nebulous and difficult to decide terms of who is doing a better quality of education, because you make the system work better, the facilities work better.

David Porter, Glasgow, United Kingdom

I have changed my view about quality assurance. When I started to become a proper academic I thought it was probably the most boring thing in the whole world. Then I changed my view and now I think that it is very interesting. It is really higher education taking on design principles. I see it as designing; that is to say, when a student produces a project we ask them what they are trying to do, how they have gone about doing it, and then there is some kind of evaluation. When I was a student in the late 60s we benchmarked –we benchmarked against the work of Le Corbusier and Alvar Aalto, that is what we did. It is good designing. I think that it really is taking that spirit of it and saying, well have we benchmarked? Because some benchmarking is quantitative and some is qualitative; where it is appropriate it is qualitative. It is the basis of peer review. Potentially quality assurance is a creative process like designing, and if we find the right benchmarks that help us do what we want to do then benchmarking stops being a bad word.

Sven Felding, Copenhagen, Denmark

I am the Vice Dean of the School of Architecture of the Royal Academy of Fine Arts in Copenhagen. As far as I can see, both in the US perspective that Marvin Malecha presented and even more in the RIBA system that David Porter presented, it is professional skills that dominate in the accreditation process. But a field of academia that provides education based on both research and practice has also a need for candidates with scientific research skills, and I do not hear anyone fighting for a supply of such people to fill the PhD places after they are awarded their Masters. I want to pass this question to the panel.

Per Olaf Fjeld, Oslo, Norway

Just a short remark about who leads the creative process or innovation in architecture, whether it is the profession or whether it is the educators. It is a rather complex question. If I had to guess I would say it is the institutions one way or another. Meaning that the students have different capacity than we have in that they do not necessarily understand the world better but they have an awareness of it. That awareness, if it is a good school, has the capacity to come out in the design project, which then is fed back to the profession. In other words, there will always be a cyclical relationship between the two, and that is the fruitful aspect of it.

Patrice de Rendinger, Bordeaux, France

What we are teaching more than ever before is methods, choices, propositions, critical attitudes and so on. We are more conscious than before that the topics are unique and that the place we are designing and building is unique. If I take the finest project in Freiburg and place it in Bordeaux, it will be a train-wreck, a disaster. On the other hand, we are accepting more and more information coming from the outside – but we accept information, not packages.

About research, and I am afraid I am starting a long discussion now – I do not believe there is any research in architecture; there is research for architecture – and if we put too large a number of confirmed researchers into our universities we run the risk of becoming like monks talking about sex.

Frederick Cooper, Lima, Peru

I wish to add a few words related to something that David Porter and Per Olaf Fjeld said. Of course competences are a useful tool for self-examination, provided the procedure, as Jean-François Mabardi said, does not blur our overall view of what we are concerned with, which is teaching people to learn architecture. I am under the impression that we are forgetting the role of the student. After all, we try to think about competences with regard to students, who are supposed to be the beneficiaries of the system. A student is placed between his conditions as someone who goes into an architectural school to learn, he is then plunged into the professional world, where he will have to work his way up from the bottom. This creates a certain tension, which is what a school of architecture should try and provide. I think that if we try and protect the system of competences, so that they equal the expectations of the profession as to the potential of performance that the student is going to get when he graduates from the school, the students will no longer need to solve these differences themselves to a certain extent. They will have no reason to fight for their position. If we do that, we are going to weaken something that is one of the greatest components of university life, which is exactly that the student himself should try to work out, should try to capitalize on and make use of the oppositions that confrontation requires. If we devise a system of competences, which will demonstrate to us what we have to do so that a student is completely relieved of that tension, we are dangerously reducing the role of university training.

Guido Morbelli, Turin, Italy

I have been closely following the discussion and I am finding it very interesting to hear all the problems that are emerging from the way in which accreditation and evaluation are dealt with in the different countries. However, there is something missing. With each of us coming from different countries, it is difficult for us to understand the real situation, which is basically that there is not one country but many of them. I am afraid that this is leading to a kind of incommunicability between us, because each of us speaks according to a certain background that exists in his or her country and none of us knows very much about what is happening in other countries. Let me suggest that ENHSA conducts a comparative inquiry on how accreditation and evaluation are handled throughout Europe. There is a certain background to all this that depends on the number of students, the number of teachers, the number of schools and the different social, professional and political realities that vary from country to country.

I was led to this idea because of what is happening in Italy. The system of accreditation in Italy, and maybe in other countries as well, is more or less automatic because all the schools are

completely state-controlled and the state cannot admit that some of its schools are bad. The schools have a certain kind of curricula and a grid that must assure a certain number of hours in every kind of teaching, town planning, history, etc. They send their grid to the Ministry and if it is good then the Ministry is satisfied. Nobody really tries to understand what is the real impact of this grid, and of course the grid is slightly different in Palermo and Venice, but for the state they are all equally good.

The issue of evaluation then is also a bit complicated in Italy. In order to become an independent, practising architect one has to pass a state examination, which is handled by a committee of five members. It is not particularly efficient. Once I was present in such a committee and it was rather a disaster since we passed only 25% of the candidates, many of whom had very good scores, 110 cum laude, but in a single day they were not capable of making a very simple project. It would be useful to me and to people from other countries that are in a similar situation to find out how these things are dealt with in countries where the universities do not belong to the state.

Michael Eden, Goetenborg, Sweden

There is tension here, which I think that every school will be aware of, once they allow researchers to enter practical education. It is necessary that there is research in architecture carried out by architects, because otherwise there will be economists or technologists or sociologists or cultural scientists doing research for architects; everyone will take a piece of the pie and will describe us with their system, but there will be no one to see the world in our terms. We, nevertheless, need that.

Karl-Otto Ellefsen could say more about that. We have had a long discussion in the Nordic academy about using the design approach as some kind of mantra of research-by-design. It is possible but it is a new field. The promising thing is that the scientific society is interested in what architects do. It is necessary to have researchers in architectural schools, although not for innovation, it is very good that the innovations are made in practice. The ideal situation would be of course that this innovative capacity is fostered in the school by some kind of research thinking or some sort of awareness, and by the capacity to use that awareness.

Bertrand Lemoine, Paris, France

In France the evaluation or accreditation is made by an independent body of experts nominated by the government, to which every school has to submit its programmes, and you can be accredited for one year, two years or four years. This process is very interesting, not only because it is a way for the schools to have a kind of accreditation for what they propose, but also because the process of building up the programme in order to submit it puts the organisation, its focus, its values and under the microscope. Our school had to go through this process this year and we held about a hundred meetings of committees and working groups and so on to prepare for it. All this has a certain cost, but it also has a value. The value is that we question ourselves on our focus and teaching, on what we propose and on how we elaborate the programme and on what its outcomes are. So I would really like to stress the importance of the process in this regard.

The issue has to do with the criteria on which evaluation is based. This refers not only to accreditation but also to evaluation and benchmarking, as well as to the kind of tension between knowledge-based and competence-based teaching. It is an issue that we constantly have to

face. The second question is, who conducts accreditation? Is it the profession? Is it the academics? Is it an independent body? This of course leads to the question of the tension between the profession's requirements about training architects and the requirements of the independent, or maybe historically independent, universities that try to build up that core of knowledge with research. What do the universities bring to the profession? They bring a lot to the profession. Just think, who is doing all the competitions going on in the world? Well-established firms employing very young architects, and it is these 25- or 27-year-old architects who are actually designing these projects. There is a reciprocal relationship between the academic world and the professional world, and the accreditation process is a very important step for all schools. Of course, it can vary from one country to another, but the process itself is very important because it makes schools re-evaluate their own practice as educational institutions.

Karl-Otto Ellefsen, Oslo, Norway

I just want to make a final comment on what Bertrand Lemoine just recommended. Somebody said earlier that the schools are lagging behind practice. I cannot accept that. Schools have never run very far ahead of practice, but there has always been some kind of relationship between them these past hundred years. In a way the knowledge development in the schools today is more advanced. In some areas we are giving quite a lot of new knowledge to practice. If you look at the last ten years, the advancements have mostly been in the use of information technology in architecture. Quite a lot of institutions are far ahead in that field, so I will not go for the idea that we are lagging behind. Do not forget that we have been discussing the issue of research during the past two decades and we have made a lot of progress. At the moment I feel that research in architecture in quite a lot of schools has risen to a standard where it is interesting also in relation to practice, so I have a somewhat optimistic view on how architectural education and architectural research is developing.

There is something else related to the discussion on accreditation where I disagree with Bertrand Lemoine. I do not see where the dangers are, the traps, in developing this system. My story is a lot like what we heard from La Villette; we have a kind of system of accreditation and government evaluation that makes it possible for the school to develop, and of course we can find many other situations like this. The danger lies in focusing so much on making a genuine and overly ambitious accreditation procedure, perhaps one that could be applied to the whole of Europe, that we start to think that this is the main point of the discussion on the development of the schools. This is very dangerous. Maybe the most important thing in trying to develop the quality of the school is our own peer review systems, our own benchmarking systems, our own evaluation system. A general accreditation system should be a system of control and should breed no bigger ambitions than that. Otherwise I am a little afraid that the development of the accreditation system could be a trap for us.

Aart Oxenaar, Amsterdam, the Netherlands

I would just like to add that we could also take the system into our own hands. Perhaps you are not aware of this, but it is possible to start your own body of visitation. This means, that we can say that we need our own peer review and our own accreditation and evaluation systems, because they are better than the other systems and better than what the state is doing. This way you can bring it all together in one system and in that sense you can start your own visitation body. At least in the Netherlands, and in more and more countries now, this process is now

being privatised. Anyone can start a company that does visitations; all you have to do is get this company accredited. So the EAAE could start its own visitation body in the Netherlands, determining for itself the competences and the criteria against which the schools should be benchmarked, and then make the reports. In a way this is a form of collective peer review or collective self-evaluation, which can be done as long as you make sure that the way you do it, that the reports you make, are accepted by the formal accreditation body. So we should not consider them as two opposing parts, we should be looking at the options for drawing them together into one movement. If you look at the way the Dutch formal accreditation organ is developing, you'll see that they are very open to that kind of development. They do not see themselves as the fox coming into the chicken-coop; they see themselves as part of the game.

Richard Foque, Antwerp, Belgium

I feel that visitation, accreditation and all that can be just fashionable. We, more or less, take for granted that this is a job we have to do. But at the end of the day what is most important, what we are really trying to determine, what is really at stake in my opinion, is whether these kinds of procedures really contribute to and enhance the quality of architecture, the quality of the built environment in the future. I would appreciate it if each member of the panel could give their view on that, because in my view that is really what is at stake.

Spyros Amourgis, Athens, Greece

We heard questions and answers relating to what the profession says and to what academia says, but I have not heard anything about what the public says, the users. I say this because we somehow think that we are not different to lawyers, doctors and other professions that offer their services to society. But how many of your graduates go out and start helping people remodel their kitchen, add an extension or another children's room, fix the roof, or other simple tasks like that? If a child hurts its knee, does the doctor say "Sorry, I can't help your child because I only do neurosurgery"? No. So do we respond like these other professions? Are we preparing people who will be employed by big corporations, who will become the bosses? Are we preparing people who will staff government or municipal agencies for planning and building permission and so on? What about that other part, the everyday services? If you say that in the world of globalisation we are going to see bigger and bigger, my experience from the US – which is a very large and well-organised market – is that if you want to fix your kitchen you still get a local contractor. So we let a lot of architectural design opportunities be taken over by non-trained people, and that is an issue.

David Porter, Glasgow, United Kingdom

Two thoughts. One about accreditation and one about research. What I want to do is just clarify the professional accreditation system as I am used to it and differentiate it from the accreditation programmes. The system I am talking about examines the programme plus the students' work. That is to say, it does not just look at the paperwork but looks at the outcome in terms of what a student actually produces, and that makes peer review possible. Within that, I would say, the system I am used to looks at the baseline standard and it is reasonably proficient at that, but at the level of giving good peer review it flounders. I think that the body of knowledge that exists in a group like this is probably superior to the one I am used to in our system.

The other thing I want to say is about research. The question of the relationship of architectural education to research has been asked many times, and I do think that if it has been asked that many times without being answered, it is probably unanswerable. It was interesting to hear the idea of research for architecture. But what we generally think about this, even our way of approaching it, is to start with Marvin's point, which is if you have a thousand people, be it a thousand architects coming to a seminar about research, so it is not an absolutely typical of American architects, and 86% say that they are commissioned to do work that is research-based, that is a starting point to finding out what that research is. We need that sort of quantifiable data.

In the discussion between Karl-Otto Ellefsen and Constantin Spiridonidis about whether architecture schools are really good at innovation, I actually agree with you, Constantin; I think that we have over-hyped architecture schools as being part of the avant-garde because it is good for marketing purposes. In reality the most useful material of research is coming out of practice, and if that is the case then maybe the role of the schools becomes to collate and filter that research and make it more publicly available. Because most of the research done in practice is usually privatised and stays with the client and with the architects who do it, and perhaps our role is not always to be at the front end of innovation, but to collect and recognise the innovation that is happening and make some kind of sense of it and make it publicly available.

Marvin Malecha, Raleigh, NC, USA

First of all, we as architectural educators are very good at giving criticism. However, in doing post-tenure evaluation of faculty, which by the way also exists in my institution, I have found that most faculty are not very good at receiving criticism, and I can see that resistance here in the room. Well, I can tell you that those days are over and I know that you know that those days are over as well.

I teach a class of freshers, and one of the things that is happening big-time in my institution is that instructors are being encouraged to do all of their lectures by podcasting. So my first year lecture course is done by podcast, and I am receiving criticism on my course from all sides; the new socialisation of information is such that we are receiving criticism. If you really want to find out what is going on with your schools, at least in the US, get on the blog and find out what students are saying about you; because they are talking about you, they are assessing you every day, so you might as well go ahead and somehow structure this so that you can actually improve and learn from it. I bet the more you do this for yourself the less likely you are to have somebody come in and tell you to.

Following from this, the point that somebody else made earlier today that firms are moving very quickly is an understatement. I have never seen the evolution of practice as I am seeing it today. It is unbelievable - the changes in services provided, how contracts are being written, how things are being delivered, work that is being 90% completed in China, in service bureaus, in shipped-backed agencies who are signing off on it because they are reviewing work differently. It is an amazing thing that is going on. It is questioning the basis of licensing, the delivery of services, who is delivering, how it is being delivered. Schools are falling behind that curve radically and we have to figure out how to get back on track. Judging from what I have seen going on in Europe and what I see going on in the United States, that we are providing a better education of individuals than we ever have before and yet we are falling behind practice, or moving differently than practice, radically. This gap has got to be bridged somehow, and

we have to prepare students to make the transition. We cannot avoid that. If we try to avoid it the accreditation will become more and more regulatory and we will be in a very difficult position. I know that each country is going to approach it differently, but it is unavoidable that somebody is going to look at us as providers of a consumable product/being in education. I hate to use those terms in this high-minded conversation but it is coming, either from practitioners or from parents or from government agencies - it is coming. All I would say is, get ahead of that curve, control that curve, be responsive to that curve, because if you are in control of it you can actually use it to your advantage; if it is being done to you, you are going to be always in reaction, which is a terrible place to be because you can never meet somebody else's expectations and because the way practice is changing the expectations are changing faster than you can keep up with them. That would be my only caution. We will not avoid being evaluated; those days are over. There is no such thing as the protection of the ivory tower any longer. That is done with. Because if you have the protection of the ivory tower you will not be given enough money to do your programmes, they will starve you to death.

Frid Bühler, Constance, Germany

The discussion about the ivory tower is a typical German discussion, because Holborn was a German, and I do agree with you that these times belong to the past. Considering benchmarking, I felt some positive feeling in the audience although benchmarking is very difficult thing. It is good no doubt if I have a school that is the size of mine which I can compare to others and go to the Ministry to ask for more funds. But to me benchmarking implies the status quo, because the school used as a benchmark is itself in the process of developing. Nobody knows where it will be. If you base a comparison on the present status, you somehow freeze progress and that is the danger of benchmarking.

Karl-Otto Ellefsen, Oslo, Norway

Aart Oxenaar said that in the Netherlands they are doing something that I consider as very important. What we are fighting is not our peers, but the big centralised systems, because they are of no use to us. It might be a controlling mechanism, but in the development of our institutions it just will not work.

Session 2

New Responsibilities for a Sustainable Architectural Education

In a rapidly changing world and in the fast-changing conditions of professional practice, the education of architects needs to ensure the competences that will keep architectural knowledge up-to-date and to reinforce the capacity of the architect to be adaptive to the new conditions and circumstances. In this context, new teaching objectives appear and new pedagogical directions have to be developed in order to ensure this adaptability. New responsibilities for the schools of architecture emerge from these circumstances for which our collective work can develop innovative approaches, means, systems and methods.

How can we ensure that the knowledge of our graduates will be self-sustained?

How can we organise our educational system in order to be adaptive to the life-long learning perspective?

Which forms of collaboration between schools can be developed on this subject?

How can schools follow up the career of their graduates and contribute to its sustainability?

Chair: **Per Olaf Fjeld**, Oslo, Norway

Introductory Panel:

Staffan Henriksson, Dean, Aarhus School of Architecture, Denmark

Aart Oxenaar, Director, Amsterdam Academy of Architecture, The Netherlands

Hansjoerg Hilti, Dean, University of Applied Sciences, Liechtenstein

Rob Cuyvers, Head, Limburg School of Architecture, Belgium

Vladimir Slapeta, Dean, Brno University of Technology, Czech Republic

Bertrand Lemoine, Director, School of Architecture Paris-la-Villette, France

Stefano Musso, Vice Dean, Genoa School of Architecture, Italy

Per Olaf Fjeld, Oslo, Norway

The theme of this session is “New Responsibilities for a Sustainable Architectural Education”. Sustainable architectural education – that must have something to do with change then; at least, it must certainly involve a capacity for change and an ability to adapt to the new knowledge coming in. Inevitably, it will also make us face up to the relationship between the new and the old knowledge, and that is a challenge in itself.

It seems that in order to be sustainable we must start from something, a certain type of ground in which sustainability can take place. A most interesting challenge will be to determine what type of competences will make someone able to transform in a constantly changing environment. Therefore, we are talking about some competences that might have a different type of capacity than others in relation to sustainable architectural education.

It is clear that there must be some sort of relationship between sustainability and life-long learning. In that sense we are talking about a process, really, in which education sets the foundations, which then have the capacity to transform into something sustainable. Therefore, sustainability does not deal solely with the four or five years that someone is at school, but with, to put it very simply, the idea of life-long learning.

It is also clear that none of our schools are experts in everything. Within that idea is also the idea of collaboration, the necessity to collaborate in order to reach the sustainable architectural education that we envision, and this is something that we are trying to pursue.

Finally, there is a pedagogical challenge in this, because we are about to face and we are about to have to understand more than we did a couple years ago and for that reason it is fantastic to have this very competent panel here and it will be interesting to hear to what degree the idea of sustainability is discussed at this level.

Staffan Henriksson, Aarhus, Denmark

What is a sustainable architectural education? I would like to provide two possible answers to that question. First answer: A school of architecture is no longer a vocational educational centre providing human power for the construction industry. It deals with architecture as an academic subject and educates the future respondents to the eternal and unanswerable question: what is architecture?

Schools of architecture produce the content providers of the building sector, in the broader sense. Nowadays, schools of architecture conduct complex surveys among their alumni, among employers, among students, and the conclusions always tend to highlight two things: that graduates actually are quite skilled in architecture itself – namely, in the development of architecture projects – and, on the other hand, that recent graduates do not know anything, especially about construction technology, tendering documents and legal procedures in the planning process. The traditional answer has been that updated professional competences are the responsibility of the individual, possibly with the help of courses and seminars developed jointly by the schools and the professional organisations. Recently, however, we have seen the development of numerous international Masters’ programmes equivalent to MBAs, research-based post-graduate programmes at quite an advanced level. These programmes tend to contain a leadership component, because a sustainable architectural education probably is not about the education of employees but about the training of reflecting leaders of architectural or artistic processes. That is a first tentative answer.

Second answer: A sustainable architectural education is primarily about inducing a sustainable attitude towards scope and ambition, constantly developing it to the highest level. The new European Qualifications Framework for Lifelong Learning gives the learning outcome for the highest level, Level 8, in terms of competences, as follows: “(to) demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study context, including research”. In a truly sustainable architectural education this description should apply to every year and to every cycle of architectural education. Architectural education is one of the most popular, most sought after educations, meaning that the students of architecture are among the best and the brightest. So we can demand more of them, we can raise the level. I think we should keep this in mind when talking about sustainable architectural education.

Aart Oxenaar, Amsterdam, The Netherlands

There are two points that I would like to bring up for discussion, not as the final answer to any problem but as a way of thinking. First, I think it would be interesting to reconsider the way we teach. We are in the 21st century and I think that in a way we still teach as we did in the 19th century – at least our school still does, it has been doing so for a hundred years. Second, though I think it is very important to be vigilant and to follow all these developments around us, regulations, rules, validation and accreditation systems, we should not forget that the essence of our work as heads of schools is to remain at the wheel and to create for ourselves enough room to move if we want to keep a sustainable education.

First of all, of course, is the question of how to assess what is sustainable in education. We have all these EU regulations and directives. In Holland, we have new regulations under the title ‘law’ which we have been discussing over the past two-three years; we have the accreditation system; we have a competence-based learning system, which the Dutch government said we should think about more seriously. Altogether these give a basic idea of what should be the main lines of the education of an architect.

We just had our visitation, the report came out and everything was fine and in order. But does that make us sustainable or does it just make us compliant with all these formal demands? I think the question is, should we try to build into our way of teaching, into our way of organising our school, a way to have a constant discussion among us educators, as well as with the professional bodies and those active in the profession, about what we are aiming at with our educational programmes? To quote David Porter, are we the only ones to determine who goes into the IKEA box or should we discuss it with the buyer?

I think that during the century of its existence our school has developed a model that may be interesting to put up for discussion here. First because it takes us back to the beginning of architectural training, in-firm training, where architectural firms took in pupils and then slowly realised that they needed more knowledge, more specific skills, so they brought it into schools, and then in the course of the 19th and 20th centuries the schools took over. Second, because it seems to be quite usable, especially in fast changing times when we are constantly challenged as educators to measure or to benchmark our views of architectural education against what is happening in practice. Marvin Malecha already gave us some very interesting, and sometimes roaring, examples of what is happening in America. As we all know whatever happens in America eventually happens in Europe; perhaps some twenty-five years later, but it does happen.

So, very quickly, I want to present our programme: we have a concurrent Master's programme, four years of Master's education, two years of in-school training and two years of professional training (which, by law, for people coming here from abroad, is accepted also as the formal period of practice required by the title law) not consecutively but concurrently taught, which means that students work in practice and bring the experience they acquire there into the school. On the other end, in the school, we have no fixed teachers, no tenured staff. All teachers have their own offices and work in practice and come in to confer with the students and exchange knowledge and experience. Also, teachers make their own assignments. Of course, as a school we have a programme of studies, we have a matrix, we even have a matrix of competences now to make sure that all these competences are met; but the teachers come up with their own assignments and in the assignments they can bring in themes that are acute for them, that have come up in their work, and they can bring in questions they would like to research. In short, they can keep the discussion within the school, about what should constitute the body of knowledge or about what should be the essence of architectural education, keeping that discussion alive. At the same time we have our staff and the three department heads of the school to ensure that there is a body for discussion within the school. However, we do change heads of departments every four years to refresh the discussion and to get every new view in what direction the practice is moving.

The advantage of the system is an open exchange with developments in practice: teachers bringing in themes and problems, students bringing in things they work on in practice. Of course, as always, there is another side to it. This sort of close cohabitation between students and practitioners, who are already somehow united because they work together, can lead to some sort of secret pact or accord when they are in the school, something in the vein of "we know it's bad out there and we all know what the problems are, so let's just have fun or reinvent the world within the school" – and that is why we have a staff and a matrix and a programme, to make sure that this does not happen. Another problem is how to steer the content, how to make sure that the problems we address together make up for the competences an architect needs and make up for the themes he should touch upon during his education – and that is why we have the heads of schools. But overall the essential thing is that this way we have been able to keep room for ourselves to steer, to organise an open structure which helps us steer between the Scylla and Charybdis of, on the one hand, all these endless regulations – and it is easy for us as heads of schools to get lost in that kind of discussion – and on the other hand, the brilliant young architects coming up with new ideas of how to change the world and architecture. If we manage, as managers of schools, to have enough room to move between these, I think we can run a very sustainable school.

Hansjoerg Hilti, Vaduz, Liechtenstein

I will start with what has been passing through my head since I got the invitation to sit on this panel. I remembered a board member of our university, a banking director, who told the business school that what they need in the head office are intercultural and internationally trained people with a little knowledge of business administration; that they can teach better than any university. I remember thinking what could that mean for architecture education? What is left for us to show the students?

A couple of years ago I was at a lecture by Herman Hertzberger. He showed us images of Dubrovnik and presented interviews with the people in the streets in the early evening. He

compared the social life of Dubrovnik to the university, saying that “in the houses are the basics and in the streets people learn” – my question is, what is left for us to teach if the students can learn better outside the schools than inside?

Two weeks ago, my son, who is studying architecture in Zurich, came back from a workshop in Dublin, Ireland, and the first thing he told me coming into the house was that in ten days of workshops only with other students and without professors he had experienced more creativity than in three years at the ETH! Yes, it is hard to take. He also gave me a book entitled, *The World is Flat*; maybe some of you know it. Among other things it says, perhaps not in proper literary language, that the world is changing so fast that we have to reconsider all our professions completely in a very short time. It really is much cheaper to produce renderings in India than it is in Holland or in Scotland or in Liechtenstein, so what is left for us architects to do here in Europe?

When I think what young students are doing now ... For example, our students have to complete internships assessed by the schools, and what I am seeing in the last few years is that the students search on the Internet for architectural offices that interest them from all over the world and they send their portfolio and go there to do their internship. For them the world is ‘flat’ already. For our students the world is completely connected, they can also move everywhere through the Erasmus programmes, and my question is, are the schools as ‘flat’?

We talked this morning about accreditation and quality assurance, but we never talk about how the students make quality assurance, running through a ‘flat’ world and learning and working wherever they want. I think we have to learn from these young people. When I take this ‘flat’ world as an idea, I ask myself, are we ‘flat’ to other disciplines? Are we still breeding in our own kitchen on-demand architects or are other disciplines working with us?

What shall we teach? Or, will it even be allowed to teach in the future? What remains to us as schools may be coaching. Do we know what the future of the profession is or what the future professions will be that students or young people will find in ten years, in fifteen years? I still believe that we can show something to students, that we can help them to find self-competence in learning, and maybe we can give them one more thing, something that in the last twenty years I think has been slightly forgotten, and that is a sense of social responsibility, thinking about future problems – perhaps this is sustainability. It is a demographic problem: our generation has not produced until now a proper architecture as an example. I mean, do we give really good answers to shrinking and growing areas in cities? I think one problem, which I see even here, in this body of people, is that we think too much about protecting ourselves instead of facing issues head on, as Karl-Otto Ellefsen asked us to do this morning.

Rob Cuyvers, Limburg, Belgium

I believe that to teach sustainable architecture we need to be real knowledge centres. There are many important elements in being a knowledge centre, but there are two that I find most important. The first is that we are part of the world, with our contacts with other universities, other schools, construction industries, and so on, that we create and maintain relations between the school and the outside world, and that we do research.

Our school in Limburg is very small, with about 850 students in arts, architecture and interior architecture, so we have to be focused and very inventive. In order to make the necessary contacts with the outside world we have to look very carefully at finding people to work with us. We have to look to other universities, constructors, practitioners, practicing architects, and

clients, to work with us, to evaluate our curriculum, to give lectures and to be part of evaluating projects with students. But interdisciplinarity is also very important to us inside the school and we are working on a collaboration of architecture and interior architecture. We are working with international studios, with arts, architecture and interior architecture. We work with other creators, and this way we are looking for interdisciplinarity inside the school as well as outside. But the most important element at the moment is the work we are doing regarding research.

As a very small school we have to create a very strong structure in order to have the capacity for research. The first step was creating one research institute, for arts, architecture and interior architecture. The second step was to look for particular themes; we cannot all do research in every problem, in every interesting theme. So we did benchmarking and we discussed what themes we would develop in our school and in the end we decided on three themes, two for architecture (public buildings in a defined urban setting, where the focus is either on universal design or on buildings with a mix of public and private spaces in complex urban settings) and one for interior architecture (retail design). With the research programme we are also looking to make contacts with industries, and that process is going very well. In interior architecture, for example, we have managed a retail label with Phillips for the lighting research. You have to know that when I arrived in the school there was almost no research going on but at this time we have over forty researchers and fourteen PhD students working in research.

As I said, we are looking for connections and relations because we cannot stand alone in the world. We are looking to industries but also to other universities, and particularly to the university of Leuven, with which we have an agreement to pick up research elements or items that are of common interest – in universal design, for instance, or CAD – and rather than develop them separately, to do it together.

This is the direction in which we are working to develop our research programme and we are looking at connecting with other schools and other institutions where there are people who are working on the same themes as we are. Coming from a small school myself, in closing I would like to say that small schools can also be very important knowledge centres in this changing world and that is a very important element and one, which I want to underline.

Vladimir Slapeta, Brno, Czech Republic

The question of how to organise architectural education is very old and I think it is answered by each generation in a new way. Looking back at Czech architecture journals since 1900, in every decade you will find a new answer and several attempts to unify schools. Partly this is because we have the Austrian system with art academies, academies of applied arts and technical universities. Another reason for this perhaps is that architecture could be taught in all types of academia, art academies, technical universities and universities, not to mention that some of the best architects never even received diplomas, like Corbusier, Van de Velde, and so on. But schools are not for geniuses or for the most talented people; they are for elevating of standards – that is a basic principle.

I would like to mention two other examples from the past, where this sustainable life-long learning process was guaranteed. The first one was the Wagner School in Vienna, which was a very elitist school. Besides the school, Wagner also had his studio and the best students moved immediately from the classroom to his studio and worked on their projects. So there was a natural dialogue between students and young architects, and the Maestro and the most talented members of his staff very soon achieved a high social status, alongside Olbrich,

Hoffmann, Plecnik, Kotěra, who then transmitted this model to their own sites; like Kotěra did in Prague, for the Prague Academy; or like Plecnik did, first in Prague and later in his native town of Ljubljana. As I said, these were very elitist education systems, but they worked very well, and they were based on personal trust. Personal trust, which used to be the basis for many actions and many decisions in society, is something that I think we are missing in our society today in general, not only in architecture.

A similar system was introduced by Pavel Janák, also in the School of Applied Arts. The network was later organised through the Czechoslovak Werkbund, before the war. I also want to mention the situation of the '68 generation. The School in Prague – now the biggest school, the Technical University – was in very bad shape: all the professors from the functionalist era had already retired or were no longer influential, but they still had some flair which was accepted by students at a time when the school was dominated, of course, by Bolshevik bureaucrats; although the spirit of the school, I think, created students who reflected the social events in Prague in the mid-60s. They invited people from practice to lecture to the city schools, and so the school, already in 1965, was under the pressure of the younger generation and I think, some dialogue, some pressure, are always very fruitful. Then, when Karl Hubacek, one of the very charismatic architects of Liberec, was building the Jested Tower, he decided to invite talented graduates from Prague schools to Liberec to work with him. Many important architects of today worked for many years, and introduced a very interesting creative atmosphere, which was far away from normal bureaucratic structures. They did small tasks in a building, like a small chapel competition for a Norwegian fjord, then a competition for a villa for a film director in Prague. Later some of them escaped, like Mirko Baum, who became a Professor at the RWTH in Aachen; Daniel Skulhaug, who escaped to Rotterdam and who is sitting right here in the audience. The rest played alternative important roles for the architectural debate throughout Czechoslovakia and after the change of regime some of them got crucial positions in schools and in planning in the Czech Republic.

Coming to the situation today, it has really changed. There is an even stronger demand for flexibility, universality and complexity in our profession. I do not think that architects now could survive, when from the beginning already there is a great degree of specialisation. They have to face every task. Like Jacques Herzog once said in an interview, "If I am asked if I am a craftsman, I say, yes, I am a craftsman. If I am asked if I am a diplomat, I say, yes, I am a diplomat; I am a businessman, I am a diplomat, but I am also an artist". That is the complex role of an architect in society.

It is very important for schools to involve practitioners in teaching practises. In the past this might have seemed quite impossible but nowadays we are trying to accomplish it, sometimes by full-time contracts, sometimes by half-time contracts (because architects must also be able to run their offices), because only if they share their real experience with the students will it be fruitful for education. But we must not forget that of all the students, maybe only ten or fifteen percent of graduates will be running their own offices later. Most will be working in municipalities, in regional planning institutes, in preservation offices, and so on, and for them we are organising courses, life-long courses to keep them up-to-date. It is a problem of research, but I am a little bit sceptical about how to do it with design. I think the best is learning-by-doing in offices.

Then there is the question of whether schools should control the practice of graduates. It cannot work very well because our profession is controlled by the whole of society and by

clients, and this is an important link. Without this link nothing will be built, we will only do visionary projects.

Schools anyway could and must offer a platform for the exchange of ideas and experiences between academia and practice. In many schools in Europe, my school included, we are already trying to do this with meetings and lectures and workshops. It is also important to invite practicing architects and professors from other countries for diploma and project jury, instead of using only people who are already professors in our schools.

Research was mentioned in some of these contributions. One problem with regard to research during the course of studies is time. For instance, in the 60s and 70s, we still had six years of study in architecture, so I remember that I had enough time to do my historical research, and I am still using some of the results today. Today, when we have only five-year education, three plus two, there is really a very limited time to develop, and it is also very difficult for architects, for instance, in architecture history, to be concurrent with art historians, who had more time for research in archives and in the field. But we should not forget that research in architecture is the project; that the project is also somehow the result of research. I think we have to discuss once again the problem of finding the right arguments against technical faculties or scientific faculties to say that we are also part of research and that it is important for the society that we are part of research because the decisions architects make have enormous influence on the whole ambience of human beings.

Stefano Musso, Genoa, Italy

Let me begin with some general considerations, because we talked a lot in recent years about something that belongs to the world of instruments, means, structures and so on, and about how to organise our work, how to organise the curriculum. We spoke about the importance of splitting from a knowledge-based education system to a competence-based education system, and this is also quite important. However, that not only competences are important but also behaviours, they way we act. So let me start from a consideration: if we want, if we desire, if we think that it is necessary to form students able to do, to act, to know, first we must ask ourselves whether we are able to act and behave in the same way and whether we do act or behave in the same or in a comparative way. We often ask our students to be able to have a holistic view on architecture, but sometimes we act like the most aggressive of specialists, who always think that their own contribution is the only one or the most important one. In trying to organise or structure the curricula, the succession of courses, we have to keep in mind that while this is a crucial and important task, it is at least of almost the same importance as the way in which we spend all the hours of our class or studio with our students. This means that to the first question, "How can we assure that the knowledge will be self-sustained?" I would answer that although, of course, nobody has a crystal ball to be certain of the future, I am nevertheless sure that our students will be able to sustain their life-long learning only if they are open-minded, if they are protagonists of their lives, if they are able to direct what they are doing. That depends, at least in some way, not only on the information we give them, but on the way we act with them during the hours we spend together.

I think that they will be able to continue to study if we are able to make them perceive what knowledge is, and sometimes I think we, first, create a sort of misunderstanding between what knowledge and a simple sum of information. Knowledge is something more than the simple sum of information, and I think that only if they are aware of what knowledge is or should be

will they be able to continue to learn after they graduate – and of course there could be a lot of definitions of what knowledge is, but the important thing in our relationships with these students is for knowledge to exist so that the process does not just reduce itself into a simple communication of data. It is also important to understand what could be the role of knowledge in someone's life; that it is not only a useful or productive role. Only this way will they be able to understand when, how, why, what they know is sufficient to react on, to respond to or to answer the world's questions and the world's requests; because, if you think about the original meaning of the word responsibility, the Latin origin of the word, it means having to answer to, to respond to; but to respond implies to qualify to what and whom we respond to. For us it is to society, and particularly to the students; and for students and professors and societies together it is to the destiny of human kind. That means that we have to be very careful and to find a balance between the search for the right and most effective way to organise our hours, the balance between disciplines, and the way in which in every-day life we make our students feel that they can trust us. It is not a matter of presenting an interpretation of a teacher like a missionary or like a person rich in very human attitudes and behaviours; it is a matter of responsibility. Only if students understand that you are really the first that can accept a critical point of view, which means that you accept that students can argue your assertions, your thoughts, your proposals, will they be able to do the same in their future lives. It is not very common that a professor is able or willing to act in this way.

As far as I know, for the third question, "Which forms of collaboration between schools can be developed on the subject ?", of course Erasmus Programmes and such are instruments that are we already have and that we can use, but to which kind of goal? I do not think that benchmarking is the main goal that we have to keep in mind, because these kinds of exchanges are not made only to judge or to make a sort of ranking of who is the best and which is the model to comply with in order to be at the same level of excellence as others, but to share, to put on the table something, to mix, to merge, to contaminate and to go back. We have always explained to our students that a project-level thinking or the process leading to the design of something is not a linear one, but in reality in what ways do we support this with our actions? If we want to be convincing to ourselves and to our students we have to be able to accept also their arguments, respecting the roles of course, because as far as I know second year students will never teach anything to people of sixty years old; but this is on the level of transmitting information, of offering examples, and it does not necessary mean that a teacher of sixty years has nothing to learn from his students. On the contrary, architecture is not only an object but a way that was invented, developed and experimented on for centuries in order to be in the world, to take care of the world in a relational way; because architecture does not exist only for the architect, nor only for the client or the user, it exists in a dialectic and relational dimension in the same way teaching and showing how to design is a relational matter. It is not only a matter of transmitting something; it is also a way to keep something. When you begin a dialogue, if it is a real dialogue, you never know where it is going to end, because you are not the only protagonist of the story and you have to be able to react on the reactions of the others. That is exactly what we have to teach, not only in words but with our behaviour with our students. They could be protagonists of their lives and not only copies of ourselves or very efficient pupils of a school intending to create very competitive architects ready to keep and to accept any change, because innovation, like conservation, is not a value in itself.

What is missing from my teaching activity, and perhaps also in that of others, is the awareness that first and foremost we are dealing with human relationships and what we do will perhaps

affect the whole life and behaviour of our students. Of course I am not saying that we are able or that we should be able to form our students, to give shape to our students, as if we were God, creating from nothing a perfect reality. No, I am only saying that our students will go on to live their lives and do what they want to do, what they are able to do, but if we, at the start, are not aware of these somehow basic requirements – openness, open-mindedness, a really critical capability of thinking, a disposition to listen to the other, putting in doubt what they are convinced of initially – well, in some way any box we can build, any structure we can imagine, any rule of assessment of the methodology of accreditation we can imagine, will never ensure that the results of our fatigue will be good.

Jean-François Mabardi said to us yesterday that when he begins a project or an activity or a course, he always starts with an exclamation point and ends with a question mark. In this, I confess, I would rather be more like Jean-François Mabardi because in contrast, unfortunately, I always begin with a lot of question marks and I always finish with a lot of question marks. On the other hand, that is the fantastic dimension of my work, it is not automatic. It is not preconceived, it must be invented, not in the dimension of an irresponsible and totally free dimension. I have to answer, I have to be responsible and I have to explain and to share these responsibilities with others.

Bertrand Lemoine, Paris, France

The idea of sustainable architecture education is of course related to the fact that we have to adapt to the fast changing world, the rapidly changing conditions of professional practice, but also to changes in the meaning and the role of architecture itself in the society, and this in my opinion should be implemented on two connected but distinct levels. The first has to do with the content and the competences, which are to be delivered in the initial education of architects, up to the Bachelor and the Masters degree in particular. Of course if we think that the important thing is to teach architecture, and not only to train architects which is a bit different and which is of course related to the now vast possibilities of different types of activities which accredited architects can embrace, then we have first of course to think of delivering and teaching up-to-date knowledge to our students – up-to-date in terms of course of content, but also in terms of adaptation in a fast changing context, which does not always occur.

We have seen many recent changes in many disciplines and in many fields; including, of course, software modelling, building information modelling and sustainability, but also history and criticism for example, where great advancements and changes have been made in the past year, as well as urban design, and many others. So we have to adapt to this evolution of content and even schools of architecture should not only integrate this new knowledge but also produce or contribute to the production of this new knowledge and pedagogy. The thing of course is to use an up-to-date pedagogical approach. There have of course been many changes in general, in terms of education through the direct, rather hierarchical relation between the master or the teacher and the student. We see that now of course, but there is more, as was already mentioned, not only in terms of delivering knowledge but also in terms of using much broader capabilities to sustain the delivery of the knowledge, of course using adaptive tools and Web-based tools that take advantage of the vast amount of knowledge available readily in the World Wide Web, which we have to consider when changing our way of interpreting knowledge.

But maybe the third and most important thing is not only to deliver knowledge, but to build up competences and the personality of our students. Of course there are so many competences we would not list here, but in my opinion some crucial ones relate to the mastery of tools that are in constant evolution. But the world is also making our students, our future architects, well aware of the complexity, the evolution, the rapid pace of change of the wider world and of the professional world and this is also crucial. We have to plant the idea into our students that architects have to find their way and to build up their way in this fast changing world, and of course to find their way in terms of architectural design as well as in terms of the whole environment surrounding architectural design. In this perspective to deliver or to build up the capabilities of architects to endorse change, to adapt to change and to have a positive attitude in a changing world, is in my opinion crucial; curiosity, for example, is probably exactly the type of competence that we should try to deliver to or develop in our students. Therefore, a research-minded attitude based on academic research, but more than that based on the idea that research is always putting questions forward, trying to find, to explore other possible answers and to test these answers against hypotheses and against the facts, is really an attitude that should be the responsibility of the school to develop in terms of sustainable education.

The second domain in which we have to work on sustainable education is of course that of continuing education. The idea that it is necessary to continue to develop capabilities and knowledge throughout one's life is now for the most part accepted in our societies, but we can see that so far it has not been very much developed in the architectural world. The changes introduced by Bologna and the mandatory internship following a diploma in architecture, which is of course done a little differently in each country but is implemented everywhere for one, two or three years, is the first step in making a kind of bridge between the scholarship inside the schools and the professional world. It is a form of transition, which in some countries is connected to the professional organisation. In France, it is connected more and more to the schools, yet, after getting a diploma, the students have to spend six months in professional practice but also one month in terms of extra education focused on the real, including financial, conditions of practice. The mission of schools of architecture is not only to deliver initial training but also to build up some form of continuous education. In this respect the schools are in competition with other professional knowledge institutions, universities, and other private institutions, which are also trying to build up such types of offers, and they have to find their way and they have to build up proposals and most of all they have to build up credibility, which will be crucial in the future not only to deliver an initial diploma but in order to continue to deliver knowledge.

There are a lot of programmes to be developed and perhaps it will take some time but the consciousness of the necessity to develop them is now there. There is a wide scope in terms of improving the knowledge in a lot of fields, in architectural design, in sustainability and in software of course, but also in management and building technology. Improving the capabilities after the students have graduated in the sense of mastering languages, leadership skills and so on, is also felt to be more and more vital and probably schools of architecture have a new field here to explore and to assess. Another thing to think of perhaps is broadening the scope of competences of architects, into real-estate development for example, which has all sorts of possibilities for architects to express their talents but which is something in which schools have not shown much interest. It depends, but certainly there is a wide range of possibilities to be explored.

So how do we implement this idea of sustainable education within our schools? Of course we have to build up or develop an offer, but we must also listen to the needs and the demands of the profession; to try to make the offer as close to what is expected as possible in order to make this offer credible and also to push forward new ideas, new things, spontaneously required by the market but which could be the responsibility of the schools to develop. In this we have to bridge the gap of course between the academic world and the professional world.

There are different ways to bridge or reduce this gap. Of course, the continuous redefinition inside the schools themselves, in the Bachelor's and Master's degrees, of the educational processes and pedagogies and contents, is crucial to ensure that schools are constantly adapting, and in this sense the evaluation process is crucial in order to have some kind of feedback on the value of what we deliver. Of course keeping links with graduate students is important and it enables also young professionals to keep a link, to teach, to be associated with programmes, and then in their everyday life to reduce this gap between the two worlds.

Collaboration between schools at the national level and also at the international level should also be thought about in my opinion. Also, collaboration between the educational world and the profession is crucial, but it is always the case and the specificity of architectural education is that the professional world is very close, with of course some fluctuations over the years in the profession and in the education system. In fact, in France, maybe seventy percent of teachers are also professionals and certainly all architectural design professors are professional practitioners. A close connection is of course important because the specificity of architecture is not only to be a field of knowledge, a kind of culture, a very wide cultural field, but also to be rather closely connected to a very specific profession. We have to build up relationships between the profession and schools and we have to find ways to keep building up such relationships because, in my opinion, this will be important in terms of the long-term sustainability and credibility of architectural education.

Per Olaf Fjeld, Oslo, Norway

Thank you all very much for your contributions and for the rather challenging and different views that you presented. I am not going to try to sum up, but there is one thing that seems quite clear and it was mentioned by several of you, that within the idea of change we are talking about a certain type of openness. Some even say that it is to learn outside is better than to learn inside. We are talking about a type of coaching at times and we are talking about the fact that the world is so 'flat' that the schools do not have the capacity to compete with the 'flatness' of everything that is outside. At least we talk this way at events like this. But what really is this openness that we are talking about? What is the relationship between this openness and the precision that is somehow established in the knowledge that architecture has? That is a very interesting shift. So what is this openness that we talk about and its capacity to be fed into a precise programme, whatever that programme is?

It is also a matter of interest that we are part of a continuous education, and I did not think about that as life-long learning per se, but then you spoke about how we are part of building up a continuous architectural capital, a continuous architectural base, which then becomes more than the strategy of one school but a base for architectural education as a whole, and I would like to say that whatever change we are talking about, we must not forget to build up this base which is a starting point from which we can intervene. As Stefano Musso very clearly put it, how can we talk about sustainability without having a clear sort of resistant force

which sustainability can be discussed in relation to? To put it differently, do we have to set the direction or directions in which sustainability can be discussed, or is it up to each school or each individual separately?

Discussion

Oren Lieberman, Canterbury, United Kingdom

A lot relies on 'teaching by example', engaging in conversation and actually responding. Stefano Musso introduced the concept of dialogue with students, but as a way of showing them how to understand different worlds rather than different world views. I make a distinction here between the opinion that there is architecture and that we all think about it differently and the opinion that there are in fact different architectures. If we engage in that we will progress in this process of creating some sort of sustainable architectural education.

Loughlin Kealy, Dublin, Ireland

There is an underlying hypothesis in architectural education in Ireland, which is that the responsibility for the education of the architect is shared between the academy and the profession. Our school actually does engage in a certain amount of post-qualification education within a professional perspective. The professional organisation itself is very well aware of the demands for contractual situations, legal situations and so on. There are epistemological questions that we need to address as educators, but there are also opportunities available and there are challenges available in negotiating relationships between academia and the profession. In a situation such as ours where that relationship is already fairly clear, it is still quite complicated to find a direct route through which academia can deliver what the profession needs most.

So there is a job here for academia if it wishes to take seriously the idea of life-long learning in a practical way. Let us consider it from a philosophical point of view and from a pedagogical point of view in developing students' learning capabilities. Looking at students' learning potential, is inescapably part of our responsibilities as an academic institution. What we thought we might consider today a little bit is, in the changing circumstances in which architects are likely to find themselves in the future can we collaborate in a meaningful way with our professional organisations?

Stefano Musso, Genoa, Italy

I am sure that we do not have to pass from the philosophical level to the practical one but to merge the two, because there is no practice without thinking and a thinking that is not able to do something for changing the world is not a thinking but a simple collection of data. Only if we clarify why we do something, are we able to look forward and find the right solution in terms of 'how' and 'what'. So what Loughlin Kealy said is really important but, sometimes I have a lot of difficulty explaining to my students why they have to learn or why knowledge is important. I am sure some of our colleagues have found themselves in similar situations. This is the reason I initially said that sometimes we have to ask ourselves if we are doing what we pretend our students will be able to do.

So, yes, there should be a lot of potential in this field. In Italy, for example, we are now faced with a challenge, because so far the task of keeping professional knowledge up-to-date has been left in a sort of no-man's-land. The national board of architects asks university professors to deliver lectures in order to bring professional architects up-to-date on very practical issues and local issues (seismic, new energy, etc), but if we want these kinds of practical answers to be effective, we have to ask ourselves again why we are taking these kinds of initiatives and

we have to open a new dialogue between the academic and professional architectural bodies. On the contrary, continuing to provide only technical answers to specific needs or problems that someone calls us in to explain will produce ineffective results.

As far as sustainability of education is concerned, I would like to stress that the concept of sustainability is also theoretical; it is not a fixed term. In order to achieve very practical results with regard to the capability of our students to react, to adapt, to continue educating themselves, we have to show them that there are some things that are indeed very valuable, such as critical thinking, going slowly, not rushing to conclusions, not going for the first solution you find. Because critical thinking is what allows you to put in doubt what you have already decided; it is the capability to say to yourself not only what you are convinced of but also the opposite opinion, just to prevent the objections of the other and just to put under control the way you act and the products you are ready to realise; it is to reflect; it means to become aware of your own limits.

The education market does not belong only to the academics just as it does not belong only to the professionals, but both of us sometimes speak of the problems of the system as if we were not part of the system, whereas on the contrary we know that between the parts and the units and the system there are complex relationships. That implies that we have to be aware that with complexity there are no simple definitions. There is only the chance to act, to take the responsibility and to declare how we want to face that complexity.

Aart Oxenaar, Amsterdam, The Netherlands

Loughlin Kealy said, let's collaborate in a meaningful way. We should, nevertheless, look one step further and say, if sustainability is a problem then we could say education is fine, we know what we are doing, we are educating professionals, the way we do it is okay, and we are quite sure that we are turning out well-trained architects. If we think the problem is that the world out there is changing a lot and that the way architects execute their profession is changing a lot, then maybe we should look back at where we came from.

It once began with architects training architects, passing on the profession. Now, apparently, it has come to the point where we academics are asking ourselves whether we should work together in a meaningful way with those that practise the profession. It should rather turn into a continuous cycle: we train students who become architects and who come back into the school to train the next generation. It is our role as educators and it is our role as heads of schools to organise the process in such a way that this can happen. We should be very much aware of where we want to stand as schools: do we want to be academic institutions that look at practice and think about ways in which we can relate to them or do we want to organise a more open structure, organise ourselves as heads of schools to move so we can keep this cycle going? My school started as a group of architects forming an association to teach new generations and we have succeeded in keeping it like that. Therefore I do not have to approach the professional bodies and open a discussion with them. I feel that our school is dragged by the profession.

Bertrand Lemoine, Paris, France

Is the new role of schools that of continuous education? Such was not the case some years ago, but now the idea of architects going back to school after ten or twenty years, not to teach but to learn is starting to take hold. Furthermore the new involvement of the schools in terms of

public debate and the construction of knowledge now produce books and magazines, maintain Websites, do exhibitions and organise conferences, workshops and symposia. I admit that the profession organises some things too and cultural institutions also have their part, but the schools are quite active in this open public debate. They are questioning, and that is probably a new role. Probably it is an invisible way, but a real way in which the school also participates in this continuous and sustainable production of knowledge in the domain of architecture.

Constantin Spiridonidis, Thessaloniki, Greece

In recent years, with a slight exaggeration, we are prepared to accept that the duration of architectural education is forty-five years, out of which five take place in the school and all the others take place in the profession. If this is true, or if we are ready to accept that this is not entirely wrong, then there is a strategic question for schools of architecture; either we will charge our students (like long-lasting batteries) with everything they need to last for forty years and which they can then use to renew and to adapt in the changing conditions, or we will reappear in the future, as Bertrand Lemoine already mentioned, to recharge or renew the knowledge offered in the previous years. I think that between those two strategic decisions there is a question. Why do the schools have to undertake this responsibility to re-educate architects or re-adapt or otherwise participate in this sustainable process? What do they have to gain? Because there is a cost to this in time and energy. Who will pay for it? Who will expend this energy and why should they do so?

I really do not have an answer to this. Of course there are moral answers. Probably there are various philosophical or other approaches, but at a practical and operational level, what we have is a question. There is a policy that says that you have to develop life-long learning processes, but nobody discusses who will take on their cost or why schools should participate in them. What the schools will gain by participating in them. If we will not define the profit we will have from the life-long learning processes, it will be rather difficult to organise them in a systematic way. There are certainly seminars, conferences and material on the Web, but this is not in my view a systematic way of organising life-long learning. If we will follow the first strategy, then we have to concentrate on all these more or less generic competences that we spoke of previously – the capacity of critical thinking, the capacity of learning-to-learn, the ability to collaborate in interdisciplinary teams, the ability to communicate, etcetera – that appear to be very significant for the students in dealing with the changes that will occur in the future. We are somewhere in between, but that does not mean that I have an answer about the process in which someone will apply such mechanisms to sustain architectural knowledge in the future.

Chris Younes, Paris, France

I am a teacher and researcher at the Paris-la-Villette School of Architecture. I think that the question of a sustainable education is in fact very paradoxical, very enigmatic in a way. Accreditation is a new context; evaluation is a new context, for all the schools of architecture in the world. It is a way to move and it is a way to have a critical approach to what we can do. At the same time, we have to develop our own culture. Academic culture creates a very important environment, because it is a place where it is possible to think about what we do, to take time, to compare. Sometimes when I see a report about accreditation, although we speak a

lot about quality, in fact it is a question of statistics: we state how many students there are, how many succeed, etcetera.

It is also very important to see what a good professor is. What does it mean? We learn something from them, it is because we share something. There are two big issues with regard to sustainable education: one is that we need to invent a new way to mix generations in schools. It is a pity that the schools are made up only of the same ages; we need to mix the different age groups. Otherwise, we end up having big differences from generation to generation and I am always asking why we cannot make more connections with the architects that will come back to the school to learn together with the new generation.

At the same time, we must insist on active training, active education, because I am sure that in schools of architecture we have invented something very important in the context of teaching design. In fact, that design has helped us invent a new kind of pedagogy because it involves resisting one kind of reality in order to imagine another one. It involves explaining and demonstrating to others that it is possible to do it in another way. So for me the question of sustainable education is a way to take care of the question of what it means to be a professor, because nowadays that is something we forget a little too often. To be a teacher, to be a very good teacher, is something very fragile; it requires research, it requires solidarity, and the way to support teaching is to manage to take care of the schools, which we don't do.

Bertrand Lemoine, Paris, France

Sustainable education is a real challenge for the schools, a challenge also in the sense of assessing their own credibility in terms of initial education. Schools that are far away from the idea of continuous education will find that their whole perspective becomes blurred and weakened in terms of their own capabilities and credibility in properly training young architects. It is the same for the professionals; the cultural attitude of architects has always been that continuous education is mostly self-education (through reading books, magazines, travelling, seeing buildings) and up to a point this is enough. This is also the common attitude of the professional regarding research, but it is missing the point in that research is also about building up or capitalising on the research of others then passing it, on having added some new ideas. Another common attitude of architects is that there is a kind of dialectic between the strong, personal beliefs that you have to carry as an architect and the permanent questioning about the very idea of architecture that is equally necessary for architects, which creates a bit of a contradiction. Schools of architecture have to pass on to the younger generation the idea that self-education like personal research are important, even essential, but they are not enough in themselves and that it is important both to have both a very strong personal position and to be willing to change this position in order to evolve. This may sound like a contradiction. It is a productive one. This is a challenge which is feasible.

Hansjoerg Hilti, Vaduz, Liechtenstein

An observation I made in the last thirty years is that the generation that is running the practice is not as resistant to life-long learning in schools. When we look backwards at the whole computer thing, the older generation would not learn it. So they hired a younger generation that would do it. Maybe life-long learning means that our schools have to provide the profession with young people who can take on the challenge of what is being asked by the profession. Therefore, graduates providing new skills are valuable to practitioners and to commercial life.

Vladimir Slapeta, Brno, Czech Republic

I have only one remaining point and it is a remark about the relationship between the schools and professional bodies. Very often professional bodies would like to dominate the schools and I do not think that that is the right approach. Academia should have its own autonomy to be able to maintain this abstract life of ideas and the conceptualisation of architecture, which is in direct opposition to the pragmatic approach of professionals. We should keep this fact in mind, because it is something that we have to face every day in our dialogue with the professional bodies.

Stefano Musso, Genoa, Italy

I would like to choose another word. Not only abstract, but also in some way not depending on the convenience of any other, autonomous. Only with autonomy is it possible to answer also in a pragmatic way the question that society poses to us. Otherwise we really risk having instead of a virtual circle, a vicious one. Everyday we complain about the qualities of the students or about the bad qualities of our built environment, cities, boroughs, etcetera, and this has been going on for the past twenty, fifty, I don't know how many years. At the same time we would like to have the closest relations with the representative bodies, which of course is necessary but depends on how and on what basis we build these kinds of relationships. There is a contradiction here, because on the one hand we complain about the built environment and on the other hand we ask the professionals how to prepare the students to be more productive, more competitive, and quicker in answering to the needs of society. I mean, the professionals of today were the students of yesterday and some of the students of today will be the professionals and perhaps the professors of tomorrow, so we cannot speak about such problems belong to a complex system, acting like we were not part of this system.

Each of us plays many roles in this game. I am a professional and I am a teacher, and of course I think that there are differences, less in the way or in the amount of time, but simply in the relationships that I have with the other actors in the two processes. When I am teaching the other actors on the stage are my students, my colleagues, and the rest of the world that I have to interact with but not in a direct way. When I am practising architecture there are other actors on the stage with me. For me the problem is to be coherent. I do not want to deny myself, my nature, my soul, what I say to my students in the classroom while I am with a client or with the municipal authorities discussing a commission to do something. On the other hand, I would like to be free to show my students what I have done in my professional life so as to prevent the risk of depicting during the class a sort of an ideal world, very polite, very clean, where everything is perfect and I am the best and I make only perfect things, and then go to the other side and do something else. The problem is not that they might think that this professor might speak well but his actions outside the classroom speak otherwise, because this could only be a matter of a moral, theoretical evaluation, and that it is not so interesting for me. What is interesting is that I speak well and I do well, and of course it is a relative 'well' because it is not up to me to make this kind of judgement, it is up to others, and that is something that I have to accept if I am sincere when I say that I would like to create people, students, who are capable of critical and creative thinking.

We often speak of inventing, but invention is not the result of an electric shock, of a sudden epiphany on the road to Damascus. According to the Latin origin of the word, invention means to find, and in order to find it is necessary to search, to pose questions. So, I am sorry but the

capability to pose questions, not to stop at the first solution, not to apply automatically what has already been done by others, not to follow the example of my own teacher, is a crucial and essential question for each of us which determines the role we are playing at that moment on the stage.

Rob Cuyvers, Limburg, Belgium

We have been talking about research competences of the students that need to be developed, as well as a culture of research. It is very important that the professional bodies do not come to the schools if they do not have anything new to contribute. Doing research on elements that are very interesting for the professional bodies, I have learned that they will come to us if we have something they need. For instance, if the professional body is looking for a professor who has studied a lot in a particular area, like the evaluation of buildings, then they will come to us or they will ask us to go to them. It is important that in discussing this we remember that in the last fifty years the research that has been done in architecture is really very modest compared to what has been done in industry. If we want to be true knowledge centres we have to work very hard in this direction, building up our research and the research competences of our students.

Hansjoerg Hilti, Vaduz, Liechtenstein

Patrice Rendinger said that the world is not moving as fast as some of us think. I nevertheless notice that all labour, not only in architecture, is being geographically re-distributed in a completely different way. Part of the labour will be done in Europe, I hope, and the other part will be done elsewhere. This is happening incredibly fast. We do not train students to use a mechanical calculator as we did fifty years ago, so in the same way we have to show them what is going to be the future of their work in Europe, because in my opinion it is going to be completely different to what it is now.

Aart Oxenaar, Amsterdam, The Netherlands

In Holland as of next year life-long learning will be compulsory by law if you want to keep your title as an architect. I keep thinking that this eternal circle – architects becoming practitioners, practitioners coming back into the school to teach, bringing in their problems from practice and discussing them with students, students studying them anew and bringing in a new generation – is a very strong way of keeping the profession alive and keeping students on par with the profession. Herman Hertzberger started teaching in our school in the 1960s and he is still teaching there, but you will also find young people, who finished their studies two-three years ago, teaching in our school. Then there is the generation that is now forty or fifty years old, whose practices are taking off and who do not have time to study specific problems, who run into something new and lack the knowledge to deal with it. Who now come back to the school and ask to make a project and work on it with the students. So here you have this circle of practice and school, with different generations mixing together, and I cannot but think that it is a model that might be usable.

Bertrand Lemoine, Paris, France

First, sustainable and in particular continuous education, has a very powerful influence on initial education, and also in relation to research. Second, post graduate education is crucial in terms of assessing the social value and usefulness of schools and faculties of architecture. Third, we have to take a stance as schools, we have to develop strategies and we have to build up an offer that will reinforce our credibility at this level. My final remark is that education creates value and sustainable education will create sustainable value.

New Responsibilities for Developing Constructive Relations with the Professional Bodies

The necessity of a seamless relationship between education and practice has already been accepted by the majority of academic and professional world. There are already some initiatives on the level of representative bodies (ACE-EAAE) but schools are very remote in establishing strong, permanent, efficient and clear objective-oriented collaborations. New responsibilities are emerging for schools of architecture out of this situation. As the lifelong learning perspective becomes a core issue in the educational strategies the relationship with the professional bodies can become a central issue in the framework of the above strategies.

Which kind of initiatives can schools take in order to ensure a continuum from education to practice?

Which competences do they have to look at?

For which purpose and perspective?

Which forms of collaboration can ensure the above competences?

Are there any good examples of good practice?

Chair: **James Horan**, Dublin, Ireland

Introductory panel:

Juhani Katainen, President, Architects Council of Europe

Francis Nordemann, Vice President, EAAE

Johannes Kaefenstein, Head, Department of Architecture,
Lucerne School of Engineering and Architecture

Adrian Joyce, Chief Advisor, Architects Council of Europe

James Horan, Dublin, Ireland

This session deals with primarily the relationship between educators who teach in schools of architecture and the professionals who carry out the practice of architecture. In this context I am just going to speak for a few minutes about what has been happening in Brussels since the new Qualifications Directive replaced the Architects' Directive. While this may seem to be slightly off the subject, in fact, because of the way the new Directive is designed and phrased, it is absolutely central to the relationship between educators and professionals. When the Architects' Directive was still in force and the Advisory Committee, with representatives from each of the Member States of the European Union, was still functioning, there was an opportunity for professionals and educators alike to have direct input into what qualifications and diplomas in architecture were recognised by the European Union. Under the new Qualifications Directive, government representatives, usually civil servants, are making those decisions and those deliberations, and none of them as far as I know are actually architects. However, it is clear that Brussels has realised that it is difficult for functionaries or civil servants to make value judgements about professional qualifications, particularly in the field of architecture. As a result of this, Member States have been invited by Brussels to have the co-ordinator, the government representative, accompanied by an expert if they so wish. The difference here of course is, that in order for the expert, be they a professional architect or an architect involved in education, to participate in the discussions in Brussels they now have to be paid for by the Member State and not by Brussels. So there is a commitment needed from the Member State to fund an expert to accompany the government representative when discussions about architecture are taking place. From what I can gather, not every Member State realises this, or if they realise it they have not done anything about it, and out of the twenty-nine Member States that now exist more than half are sending experts with the co-ordinator to the Brussels meetings. This means that the discussions in Brussels are now involving many of the people who once sat on the Advisory Committee, albeit that the input they have and the way the meetings are conducted are different. The architects at these meetings are there in an advisory capacity only to the co-ordinator representing their individual Member States. But the first message this morning is that if you are aware or rather if you are not aware that there is an expert from your Member State representing architecture at the Brussels meeting it would be advisable for you to make noises in your Member State to your government to make sure that that representation is allowed to happen. Why do I start with this as the starting position in the context of discussing the relationship between the profession and the educators? The answer, very simply, is this: the game has changed.

The new Qualifications Directive is substantially different from the Architects' Directive in so far as the new Directive is about access to the profession and not just the academic qualifications. When the Advisory Committee used to meet under the Architects' Directive the main topic for conversation, discussion and recommendation was the academic qualification being offered by schools of architecture. Now, the important discussion is, what allows somebody to practise architecture in any of the Member States across the European Union. The net result of this is that it is no longer optional for educators and professionals to remain remote from each other. We are all in the same business because of legislation in Europe and it is absolutely critical that this is understood.

Therefore, the intention of this discussion today is to highlight these points, and the panel we have has been carefully selected so that there is balance in the group that are going to speak

to you this morning, and furthermore we would like to place ourselves in a position where some assistance and facilitation can be provided to individual Member States who may be having difficulties in establishing good working relationships between the educators and the professionals. I have always believed, and I think that the belief is being shared more and more, that architectural education is a process that goes throughout one's life and is shared by both those who carry out education in the schools of architecture and by those who practise it later. The continuum in this type of life-long learning and life-long education is now clearly established, and not only is there a direct transition from education to practice but there will be increasingly a return from practice to education on a regular basis to remain current and up-to-date with what is happening both technically, professionally, and under all of the various headings that architecture operates.

Juhani Katainen, Tampere, Finland

I will describe what the Architects' Council of Europe is in a few words. The ACE is working for architects in Europe as well as for the wider world. Its membership includes thirty-two countries and through its various member-associations it represents approximately 450,000 architects across Europe. This means that we have quite a lot of you at our reach. While our main working areas today are in three directions, one of them, directly linked to education, is access to the profession. We have been working on that for a long time. There is a working group on education in our premises and many of our colleagues have been working on this issue, as I have myself. I have been attending the meeting here for ten years, almost from the beginning, and all that time I have been involved in ACE activities, and when I started I was mostly involved with this education group. A second area of interest deals with how to act as an architect in society, which has to do with market access and how to work in the market. A third level has to do with what impact architects have on society, what our relationship to society is, and this takes into account many other things and is a very interesting area of our activities.

Our main concern at the moment are the effects of the Directive James Horan just referred to and the impact of the Competition Directive, which was quite recently produced by the European Union and which has, as you all know very well, far-reaching effects on our activities in society. We are also interested and involved in the renewal of the Energy Performance of Buildings Directive and this is one part of our working activities, as is, naturally, and specifically this year, the generation of a declaration on sustainability, which is a very important part of the discussions we are having. Health and safety is another large area which we are now working on and we have another working-group preparing a paper on that.

For a few years we have been in active co-operation with the EAAE and I am particularly happy about this. This is my second term as President of the ACE. In my first term, in 2002, I proposed this kind of activity, but it was not accepted at that point; however, it was accepted a short time later and I am very happy about this because it gives us new opportunities and new possibilities to look ahead together because I believe that as architects in Europe we have to work together. After all, whether we are professionals in education or professionals in the market, we can always interchange our roles and I am a good example of this. I have been a practising architect for forty years and a professor in architecture for seventeen and a half, and now I am sitting here as the President of the ACE and as a retired professor, enjoying your company and still speaking about architecture and about the future of architects. We direct

our energies especially towards young people, and as James said, here on our panel there are some younger people, but I myself feel very young and I hope you all feel that.

Francis Nordemann, Paris, France

Actually pretty soon I too will be a retired architect and a retired teacher, although I intend to be present for a few more years. I am part of this panel as the president elect of the EAAE, and I will be joining the ACE-EAAE Joint Working Party, with Herman Neuckermans, Per Olaf Fjeld and James Horan, this coming October. I am very happy to be in that position, working closely also with Juhani Katainen. The presence of the profession and of schools are key to the development of something that makes sense and that has some scale, to use an architectural concept.

I will begin with some convictions of mine and some convictions of the EAAE; some are shared, some are not, but they are all open to discussion. First, it has to be remembered that architecture as a discipline opens onto many professions. It is important even for what we usually call professionals of architecture to have architects employed in more areas than constructing buildings; we want architects as civil servants, architects working with clients, architects in advisory positions, architects in charge of programme specifications and briefs, architects in city planning, architects in set design or object design, whatever. But it is important that the academia brings forward the discipline of architecture itself and the ability to design as a basis for everybody, because it is a good way to share a culture, to share an attitude and to share elements of some fundamental skills. Professional skills or professional knowledge can continue to be taught through life-long learning, and my conviction is that there are two conditions for that: first, the basic, the primary education has to be really clearly separated from professional skills and life-long learning – there have to be points of exchange of course, but at some point you have to have a diploma, you have to have a boundary line, you have to have a sanction of the basics of the discipline; then, second, and in support of that, the schools have to maintain contact and somehow host the life-long learning process, otherwise, there is the risk of having every kind of professional involved in the life-long process. You know, you can have specialist in wood saying you have to know everything about construction in wood, but construction in wood can be interesting in some cases and not interesting in others, and the interest of the bodies in charge of construction in wood have to be understood with a cultural background and a construction background, and this should certainly be kept in mind. Furthermore, having the primary process and the life-long process hosted by the same institutions helps their relations between them. It is the role of primary education to insist on parties, to put it that way, so that afterwards, in the life-long process, you can identify which actor is in charge of such and such situation or what are the interests at stake in a discussion or in a teaching process. So it is important that things are related to each other while at the same time they retain their separateness.

I also think that the basic or the primary education has to be informed by research and somehow I believe the private sector will be involved in helping to develop research. But it is important that this is kept within the primary education in order to renew the core knowledge of the discipline, to have it evolve, to have it nourished by research, and in order to keep the life-long teaching process flexible, able to change and to follow with the times. Professional skills might not be the same in southern Europe and in northern Europe, because of a different background, a different context, cultural or geographical. This is a matter of scale and a way to

order things and to put a hierarchy not in terms of importance but in terms of the place that each element finds in the perspective and in the set of the built world.

Johannes Kaefenstein, Lucerne, Switzerland

I have been thinking a lot about what to say in this company and about what we heard yesterday, and it strikes me that some of the themes we discussed yesterday overlap with the themes up for discussion today and that is right because the questions are not too far distant.

I want to begin with a kind of tour d'horizon. The issue was raised of whether the world is round or flat and maybe, when we are delegating or out-sourcing work to India now we do not think of what will happen in fifty years, but who is to say that this will not be returned to us and that in the future India will not be out-sourcing to us? Maybe we are just transferring the problem to other regions and other countries. If there comes a time when it comes back to us we might find ourselves saying that the world is round.

Something else. I think that architects are building houses; of course we are talking a lot, we are thinking a lot, but maybe our core business is building houses, and though there are different complexities and different scales of houses, when I say 'house' I think we all know what I am talking about. I have an architect friend in India who is building houses and who, in order to achieve the quality of what he wants (which actually surpasses the quality or is very, very close to the quality of what we can get in Switzerland today), is using a model that was in force some five hundred years ago and involves working with all the different crafts. He has young architects drawing, many of whom are from America, but he also has all sorts of craftsmen, woodworkers, masons, etcetera. All in all he has about 160 people working with him, including cooks.

Another example. A professor at my school, the School of Architecture of Lucerne, who has been building the highest tower in Switzerland (110-120 metres), is now building a two-room building for the school that does not consume energy. This building has walls that are one-metre thick, basically massive concrete, and looks as if we were preparing ourselves for the next invasion from the north. At the same time it has the biggest and probably most advanced glass roof we can do right now in Switzerland, with beams spanning fourteen metres made entirely of glass. So perhaps this means we are turning a corner.

As a last example I would like to refer to our colleagues, Mathias Kohler and Fabio Gramazio, who gave a wonderful talk on the first evening and who are building walls, or actually I think they are still at the thinking stage and are not actually building them yet, but in any case they have a fantastic way of thinking about walls. They are also thinking about and building with robots; you know, manual work that we see at every building site, every conventional building site. One of the things that fascinated me most was the short video they played showing students feeding a robot.

Now, I want to try to very simply respond to one of the questions of this session; namely, which kinds of initiatives can schools take to ensure constructive relations with practice? As you may have noticed I slightly changed the question. I think this also takes us back to some points made yesterday. As schools we have to be very clear of the profile we want. We, or at least the schools I know, cannot do everything, so I think we have to decide where we want to go and which actually are the questions that we should be asking ourselves.

I want to make a small statistical diversion here. Fifty percent of global energy consumption is consumed by buildings; that is a fact and it is an issue we must think about. Also, and I am never really good at remembering statistics, but I think it is twice a week every week (maybe it is every month, although it is scary enough in either case) that a city the size of Barcelona is born. So we have very clear problems and we have to take the responsibility to target them and to decide where we want to make a small contribution with our schools.

I also think it is extremely important to know the profile of the incoming students. For instance, in my school we have two kinds of incoming students. There are the professionals, who are already draftsmen and who know what construction is about; they know the craft of drawing, detailing and constructing, and in the first year we kind of have to shake them to decode them, to have them forget what they know, because in some ways it limits their vision of what architecture or the profession they want to engage in could be. Then, there are students who are coming directly from high-school or college without any professional knowledge.

Another point is, I think that our staff, our teachers, have to be architects, by which I mean they have to practise architecture. This relates to what Aart Olexenaar said yesterday and I very much agree with his way of thinking and the model he supported. Again there the world is 'round', it is a cyclic process: we produce students and send them into practice and then they come back and teach new generations. That also means that we ourselves have to be part of the cycle and I think that we have to decide how or at what point we want to leave and come back.

I also think that working more on a 1:1 scale could offer huge opportunities, because that way we can start to really work at an interdisciplinary level. We can start to integrate engineers, building technicians, etcetera, and instead of sitting next to each other in lectures where the subject matter might be not advanced enough for the engineer or much too advanced for the architect, we could work together. The field of 1:1 construction is a fantastic way of engaging students of different disciplines to start to think about professional problems, because I think that we often go to the engineers, to the building technicians, to all the people we need, much too late and only when we realise that we cannot do the job alone.

I also think that we need to introduce or include industry. We have to work with materials, we have to use the materials that are produced, and if we start working on a 1:1 scale and if we start to think about experimental construction detailing I think that we can give feedback to industry, but first of all we have to have them in our schools. Perhaps this could be another one of the cycles that guarantee a constructive relation with practice. Finally, I think we are at a point in time when all the big architects are building wonderful buildings but sometimes, and I do not want to go too far with this, I get the feeling that it is more about form than it is about content. So, in conclusion, I would just say that for me the content is the construction.

Adrian Joyce, Brussels, Belgium

I hope that what I have to say, although more prosaic and less philosophical than what we have heard so far, will be of interest. Addressing the questions for this session, I wanted to talk first about the question of continuum between education and practice and recall that yesterday there were a number of calls for a survey on the diversity of experiences that exist at the moment in the European Union in relation to the gaining of professional practice experience after education and before practise or licensing. In this context I am happy to inform you that

the ACE is at the closing stages of a survey that has been running over the last eight or nine months, looking at the different systems as they exist across the European Union. Building on the results of that survey, which we should be able to publish in November of this year, the ACE is going to make recommendations about this professional practice period. Without going into all of those recommendations, one of them speaks about the potential role of schools in that period of time. It is a fact that in the European Union, in many countries, the period of professional practice experience is managed by or is under the auspices of the schools of architecture, and France, with its new system, is a clear case of that approach. In other countries it is under the auspices of or under the control of the profession and the United Kingdom is a very clear example of that approach. But within and between those two extremes other models exist where collaboration occurs or where it might be the school that operates the period of professional practice experience but the professional bodies that hold a jury or to whom the students report at the end of that period. So we hope with this work to get a clearer picture of this continuum, at least through that critical period, whether half a year or one or two or three years, of professional practice experience in order to have recommendations that are both valuable to the profession and to the schools about what it is within the discipline of architecture that is needed at that time.

On that point, and in relation to the second question of this session, the work of the ACE has also sought to identify the competences that should be acquired in any period of practical experience. After identifying a long list of competences the ACE has come to identify a core list of competences which our research indicates are common across all of Europe as core competences that are generally not fully acquired prior to graduation, after five years of education, but which must be acquired prior to licensing or registration. So my message to you is that we have a bulk of work which we can report to the Joint Working Party, which we can deliver for real collaboration and real examination about what this continuum is, at least in that short-term time after education of our student architects.

So, what is the purpose behind such research work? Well, in answer to the third question of this session, from the ACE's point of view the single purpose behind this work is the new Professional Qualifications Framework Directive on which we have spoken on many occasions in the past. Nevertheless, I feel it worth recalling that this Directive is about free movement of persons. It is not a directive about the quality of education. It is not a directive about anything other than facilitating the movement of persons between the Member States of the European Union, in order to have their qualifications recognised. That Directive covers over 800 professions and of those professions seven are singled out for special treatment, because there are seven professions that had a Sectoral Directive before and the profession of architects is one of those. The special treatment that we are singled out for is that by virtue of this Directive there is automatic recognition of qualifications between countries, and that is the key difference; for all the other 793 professions there is an assessment procedure, a submissions procedure, that must be followed by an applicant before he or she can have their qualifications recognised in another Member State. For architects recognition is automatic based on an approved list of qualifications annexed to the Directive. It would not be an exaggeration to say, and James Horan has very usefully introduced the topic, that it is around this list of qualifications that I see at least in the medium term the most fruitful area for cooperation between the schools and the profession. Why? Because this Directive is a market-access directive. It is a directive ensuring that when you have got your qualification recognised in another EU country you are

entitled to pursue the activities of an architect in that country as if you were a national of that country. This means that the list of qualifications should not, as was the case in the past, be just the academic qualifications, and there is work to do to inform the national governments that they should be listing both the academic qualifications and the professional practice or professional experience qualifications in this Directive.

This brings me on to the forms of collaboration, the fourth question that is being considered in this session. You have already heard about the work of the Joint Working Party between the EAEE and the ACE. It has been a very fruitful collaboration to date and I am very pleased that we are going to be holding the eleventh meeting of that Joint Working Party this September. Its work has been principally focused around the implications of the Professional Qualifications Directive but its first and very important action was to launch late last year a joint campaign to seek the amendment of the Professional Qualifications Directive; namely, to change the mention of duration of studies from a minimum of four years to a minimum of five. There are arguments that we have set out together as to why the minimum in the Directive should be five years. I would rather not go into the detail of that argument unless the Chair feels that it is worth it at a later point in the discussion, but it is a campaign that has already received very substantial support among several Member States. Two of them I can mention, the last President of the EU, Slovenia, and the current President of the EU, France, are both strong supporters of the idea that this should be changed within the Directive, but there is a lot of work to do on that front. It is a concrete example of cooperation between our two organisations at EU level.

Turning to the national level, James Horan clearly reported to you about the government appointed co-ordinators, who are a group of officials generally from the department of education who are coordinating the recognition aspects of the Directive for all 800 professions. One single person in each country responsible for 800 professions – just think about it, it is unbelievable. In the other six sectoral professions, largely medical, you need to be aware that the curricula of education are harmonised across the EU, so when a new qualification is listed, it is notified for listing because they enjoy automatic recognition as well, and it is a very simple exercise to assess whether the curriculum is covered by that new qualification. This is not the case for our profession. Architectural education is purposefully highly diverse. It is a cherished quality of our approach to education that we are not harmonised at European level; hence, when a qualification is notified to the Commission expert advice is needed as to whether or not that qualification meets the requirements of the Directive. What we believe is needed at national level is a series of 27 mini ad hoc advisory committees, so that the co-ordinators who will be travelling to Brussels can have regular meetings with representatives of the schools and representatives of the profession in their country and can be given expert advice about any notified qualifications before they travel to Brussels about whether or not they should vote in favour of listing. As I said, it is very prosaic, very meticulous work, but it is really crucial. At the present time and to the best of our knowledge there are just short of 70 qualifications up for listing, and those qualifications have been notified up to one and a half years ago because the European Commission is taking a very long time and is being very careful about listing, partly because it accepts the responsibility if it makes a mistake. We predict that there will be even more qualifications than that within a short space of time and there are two principal reasons for this. The twelve countries EU who joined in 2004 and 2005 have acquired rights for existing qualifications, but the recognition of those qualifications ran out

in the academic year 2006-2007. This means that without a fresh notification from those twelve countries any student graduating from 2010-2011 will not be listed in the Directive and will not enjoy automatic recognition if they wish to travel around Europe. So we have at least the qualifications from those countries. Plus, the Bologna accord has been an earthquake through all our structures of our courses and if as a consequence of the Bologna accord decisions the title of a qualification has changed or the content in the curricula has changed those new or modified degrees or qualifications need to be listed.

So there is a huge amount of work to be done and our ambition, and I think that that is what it is at this point, is that the Joint Working Party at EU level could become an interpretive and assistive or collaborative body to help in those countries where there is difficulty in getting this kind of collaboration going at national level between the co-ordinator, the schools, and the profession. It is a big work but I think that if we can decide to do it together we can achieve great results for the discipline of architecture.

The last point in the questions posed is: are there any good examples of this collaboration? So taking this one area alone of the Professional Qualifications Directive we are aware of very good collaboration occurring in Slovakia, in Ireland, in the United Kingdom and in the Netherlands, and to a significant extent, but maybe not quite as structured, in Spain, Finland and Denmark. We would like to know more from more countries about whether or not real collaboration is happening on the ground.

So I hope that this rather detailed and maybe more technical presentation shows you that there is work for us to do together that would be of value to both sides of this relationship. In a closing remark, in the Directive there is an article that calls on the Commission to consult with professional bodies in the case of certain eventualities under the Directive and at the time it was being written the phrase professional or educational bodies should really have been put in, but educational bodies are not included and I put it to you that this collaboration that we have established now over the past three and a half years offers the right platform for the schools to have a voice in this very important work.

James Horan, Dublin, Ireland

Just to kind of draw a slight conclusion out of those discussions, before we invite comments from you and from the floor, the single most important word that has occurred in these sessions for this 11th Meeting of the Heads of Schools is the word "responsibility" and it appears in each of the sessions as a key sentiment that we are hoping would form a central part of the thinking and the discussions. In the context of this particular discussion this morning we are more or less putting out a challenge that as educators and as people involved in running schools of architecture we actually have a responsibility to engage with the profession whether we like it or not. Traditionally, it was possible to remain somewhat isolated and confined to the academic area that you found yourself in running a school of architecture, but because of the legal changes at European level and because of many other changes that have been happening right throughout the educational process that isolationism is no longer optional. The only way that we can have a successful school of architecture functioning within the European Union is if the path of the educational process right to the point of practice is clearly defined. I do not mean to demean or make a second class citizen out of architects who decide not to practise and engage in academia or research specifically (that is an option and that is fine) but

nevertheless the vast majority of graduates of architecture across the European Union will end up in some form of practice or related practice activities. Consequently, as heads of schools of architecture it is necessary for each of us to understand what in fact our graduates will be able to do and what they will be allowed to do. We have the responsibility to make certain that our graduates are not disadvantaged because we have not made the right approaches or the right connections to ensure that their qualification is recognised across the European Union.

Over the past number of years the areas of study have expanded enormously in schools of architecture. The subject matter that graduates of schools of architecture are expected to be acquainted with has increased in size and in complexity; the introduction of computers, the introduction of energy performance in buildings, the introduction of the notion of sustainability and responsibility for the use of materials and impact on the planet, information that has been introduced under all sorts of headings from health and safety to universal access increases the number of areas of expertise that architectural graduates are expected to have knowledge about. Consequently, it has now become very clear that even if the minimum period of education for architectural students is increased to five years it will not be possible to cover in their entirety all of the subject areas that somebody will need to be familiar with in order to safely practise. Consequently, the very educational programmes that we produced have to be structured in such a way that the graduate has learned how to continue his or her own educational process after the support of the university is no longer there, and this is where the continuum into the profession is critical.

Today's discussion, which I am now going to open up to the floor, should consider what we need to do and what we need to know in order to ensure that there is a seamless connection between the formal educational process in the school and the continued educational process.

I think that the discussion so far may have raised a number of questions and with that in mind I think we should offer you the opportunity to seek clarification, ask questions or indeed add further opinion to what we have spoken about. So, would anyone like to make a comment at this point?

Discussion

Hisham Elkadi, Belfast, United Kingdom

I am the Head of the School of Architecture at Ulster University. We all understand that there are different systems in place at national level in different parts of Europe. Someone mentioned the example of France, where the schools have a very direct link to validation, while in the United Kingdom we have a very different system with different bodies taking care of that. Who decides who represents the state? Do you leave that to the Member States to decide? Might that not lead to complications within Member States and so on?

James Horan, Dublin, Ireland

Essentially, the person who represents the Member State in Brussels, where the discussion is taking place and the decisions are being made, is appointed by the government in each Member State. In most cases they are civil servants from the department of education in the individual Member State. That is the only responsibility the government actually has. It is not obliged to engage with any experts if it does not want to. In practice many Member States are engaging with architects to seek advice on architectural qualifications. But if your government in your Member State is not doing this, the schools of architecture and, indeed, the professional body of architecture should be insisting that that expert opinion is being sought. This is another reason for the need to have a firm working relationship between educators and professionals alike. It is in the interest of both that they are being represented and being heard when matters dealing with qualifications are being decided.

Adalberto Del Bo, Milan, Italy

To begin with I would like to remind you that a European recommendation was added to the Directive 1985/384/EEC, maybe in 1986, which relates to the roles of professionals and educators and which highlights the convenience of having professors who also practice, particularly in the field of design, the reasoning being obviously that someone cannot teach a profession they do not practise. So that was a special recommendation, and we know that there are other recommendations to that Directive – the necessity of a minimum of five years, for instance, is another. I just want to remind you that such a recommendation was made, although it was never an official requirement. Another recommendation I suggest you look at has to do with training in practice. The problem of training was one of the first recommendations made some time in 1985. It was probably considered too difficult to impose a specific period of training across Europe, so a very strong recommendation was made instead. Various other recommendations were made at that time too; they are not laws, they are not mandatory, but I thought it would be interesting to mention them and perhaps we should keep them in mind.

Something else. Adrian Joyce said that approximately 70 qualifications are up for listing now, but we know that about 70% (now it is perhaps closer to 80%) of the faculties have changed in recent years from five or six continuous years of study to the three plus two system, and if I understand correctly under the new Directive every one of them will have to make a new notification. So just a quick calculation indicates that there should be a lot more qualifications up for listing. Isn't that right?

James Horan, Dublin, Ireland

This is a very interesting comment about the number. What we have noticed in Brussels is that while the number is seventy, the number of Member States represented by those seventy is only about four. So they are mainly from France and from Italy, and some from the Czech Republic and Switzerland. The other Member States have not made any notification, yet. In many cases people are waiting a little bit to see what is going to happen in Brussels and to see how this is going to be handled, but the risk is if you wait too long you will be graduating architects who cannot move about. So there is no question that a massive amount of work is going to land on the table in Brussels, and so far, with four meetings of the co-ordinators group having already taken place, no single diploma has yet been listed. They are still discussing the first ones.

Adrian Joyce, Brussels, Belgium

Adalberto Del Bo has brought up an important point, which is the work of the old Advisory Committee under the Architects' Directive (now defunct), and he highlighted two of the recommendations, on the training period and on the type of person who should be a professor or who should be teaching. What I want to say with regard to the training period, the period of professional experience, is that in the Architects' Directive there was an article that permitted Member States to require professional practice experience of migrants before their qualifications would be recognised. The new Directive does not have such a provision and so there is no formal requirement to look into the professional practice experience, and this is the other reason we feel a campaign is needed at national level to ensure that both the academic and professional experience qualifications are listed. So another important change in this new Directive for architects, apart from the elimination of the Advisory Committee, is that there is no formal provision to require professional practice experience.

Nicolau Brandao, Oporto, Portugal

Professional practice experience means absolutely different things in Portugal, Sweden, France, Italy, etc. For instance, in Portugal, architects cannot take full responsibility of a project, that is the law. It is different in Spain, for example, where they learn structures and they can do the work alone. So we are talking about professional responsibilities, but how can we talk about it without discussing this first and somehow without comparing liabilities? How can we harmonise curricula when we work according to different laws, rules, regulations and even different ways of doing or producing architecture, the building itself. In some countries the architect takes responsibility, and if he says something about the building and he is wrong he has to take responsibility, even if it is a detail for the windows or something. It is not like that in Sweden, for instance, because there it is the builder who takes responsibility.

Furthermore, we talk about this training period – what training period? In some places it is one week, in some it is three weeks, and in others it is two years. If we try to harmonise things like we did with Bologna by making an abstract law for all of Europe without taking such differences into account, we will be creating another earthquake. We have to take into account what the individual governments might do. Although the European authorities say that architecture, like medicine, need a longer period of studies than other disciplines, the Portuguese government refuses to admit that architectural preparation or training takes six years and they have forced

us to limit it to five years. What did Brussels do? Nothing. Maybe they cannot do anything. So I ask again, what are we talking about?

One more thing, just to pour a little more oil on the fire: are professionals all working in the same way around Europe? In some countries they have a very strong organisation that helps them and gives them a measure of control over some things, and Spain is a very good example of this, I think. In other countries it is a more folkloric kind of structure, and that is the case in Portugal. I know that in some countries there exist no professional organisation. So who trains future professionals, the offices? Which interests are the professionals dealing with?

James Horan, Dublin, Ireland

Thank you for those interesting questions, and what you have said about the position in Europe is absolutely correct. The situation is different in every Member State. But the difficulty is that somebody from another Member State can come to your country based on their qualification and not yours, and this leaves some really big questions to be answered. Consequently, there are two things that we are talking about this morning. The first one is that there is a survey being undertaken at the moment to try to get an accurate picture of what exactly the position is in each Member State so some type of comparative analysis can be made. The second thing is, and this is probably more important, that we are not advocating that these issues are addressed at European level. We are affected by law at European level, but the only effective place to address issues like these is within the individual Member States. So the educators and the professionals and the governments of individual Member States can look at the issue locally, but part of what the EAAE-ACE Joint Working Party is suggesting is, if the relationship between the educators and the professionals does not already exist in an individual Member State, we would like, through the EAAE, from the educators point of view, and through the ACE, from the professionals point of view, to facilitate the possibility for that discussion to begin and then to explore how we can get a fair or level playing field across the European Union. Because if we do not address this, certainly Brussels will not address it on our behalf.

Adrian Joyce, Brussels, Belgium

The ACE has worked on what we hope will be adopted as a definition of professional experience. Before I give you in the words of our working group what they believe is a succinct definition, I do acknowledge that Nikolau Brandao is correct to say that the situation in relation to professional experience varies considerably across Europe. Nevertheless, it is a fact that with the increasing responsibility and liability that architects carry, the acquisition of skills and knowledge is a crucially important thing for consumer protection and protection of the public interest because we operate in the public realm. So the definition that the ACE is suggesting is as follows: "The phrase professional experience covers the acquisition of a range of essential skills and knowledge that are necessary to the autonomous practice of the profession of architect". So that is the succinct definition that we are putting forward, and what it means is that when you have acquired these skills and knowledge you can as an individual, independently, provide architectural services without exposing the client or the public at large to risk.

Architects carry liability, and in that respect the ACE, in cooperation with an outside consultants, is currently running an inquiry about the liability regimes in the 32 countries from which our members come. I made a little inquiry during the break, and while technically you were correct about Sweden, in fact it is a little more complicated. What happens in Sweden is that the

chain is different than in other countries. A client who suffers a loss in a building will sue the contractor but then the contractor frequently sues the architect and it is the architect who in the end carries the liability. This corresponds to what our studies show, that there is a universal principle across Europe that the architectural profession as an independent liberal profession carries the liability for its decisions in terms of design and specification of materials.

The last point raised by Nikolau Brandao's on the government forcing a five-year duration when schools wanted six. That is absolutely in keeping with European treaties, because the European treaty regulates the competences at European level and leaves subsidiary powers to the Member States. One of the critical areas where the Member States have refused to give competence to the European Union is education. Everything to do with education remains a national competence; which is why our Directive never looked to affect the quality of qualifications but only to facilitate the movement of persons – in effect, it is a market-based Directive. So I hope that that has answered some questions or at least allayed some of the concerns expressed.

Herman Neuckermans, Leuven, Belgium

When one speaks about the transition from education to the profession and specifically about an apprenticeship period, I would advocate the need for a more precise way of expressing duration, and instead of months or years perhaps we could use credits, or something like that, and/or competences. Because if I am willing to work eighty hours a week and the others work thirty hours, it is not the same thing. So I think the duration has to be expressed in a more refined way than just saying six months, one year or whatever. A better solution might be the transfer of credits system (ECTS), which is expressed in the volume of work; because, although it is not the best way to qualify someone's competence, it has been tested and anyway it is the best thing we have at the moment. The credits refer to an amount of work and relate to some competences, which you then have to specify.

Pierre Von Meiss, Lausanne, Switzerland

If I may, I would also like to make a suggestion to the professional bodies, which could be disseminated perhaps through the ACE. For us universities it is really of great interest to have Master students who do not continue directly from Bachelor's to Master's, because they have been in school since the age of six and have never touched the ground. It is much more profitable for every university in architecture to have students who have at least one year of practice, the year out which already exists in some countries. What I will ask the professional bodies is to please be generous enough and accept that this year counts too and not only the time after the end of the Master's degree.

James Horan, Dublin, Ireland

You are absolutely right about that. It is not like that everywhere. In the United Kingdom you can have your year out in the middle of your studies and that counts for your professional practice and experience. It does not, for example, count in Ireland, where you have to have two years after graduation irrespective of whether you take a year out or not, and these are the things that make the processes very uneven and unfair from one country to the next. But I think the one thing that I would say in response to that is that in practice, because we believe that the process of architectural education in the biggest sense is shared by practitioners and

by educators, practices must be generous in their time and in their ability to take students in and not to just treat them as employees while they are there, but to treat them as people who are being educated within the practice context. That is something that we as educators should be promoting strongly to the professional bodies across the European Union.

David Porter, Glasgow, United Kingdom

It is not just the length of experience that is important but also the quality. Under the system that I am used to, there is a minimum of two years, but in reality students go for their professional examination when they feel they are ready, when they have got a range of experience that will actually prepare them for that examination. So it is sometimes two years, but it is often three or four years and they are actually a pretty good judge of when they are ready to take that step in their professional careers. So we can have minimum lengths but I do not think that we should confuse that with the quality and the level of achievement.

James Horan, Dublin, Ireland

This is absolutely true. There are practical difficulties associated with graduates and students gaining the appropriate experience. I come back to the point I made already about the practice being generous about assisting the graduate and the student reaching this level. In many cases young graduates have to prepare a case study, and finding appropriate case studies for all of these young graduates can be difficult. Very often they are ready to do the examination but they have not found the case study and they cannot do the examination until the case study has been completed. I think part of the survey that is being undertaken by the ACE at the moment will give us a much clearer picture of the landscape out there and what the differences are among individual Member States, and then it will be the responsibility of the educators working with the practitioners to try and get a more fair comparative system working between the Member States, which is extremely uneven at the moment.

Hisham Elkadi, Belfast, United Kingdom

We all agree on the particularity of architectural education and how different it is from the other six subjects, but the validation panel is generic and as I understand it is made up mostly of lawyers.

Is there any attempt from the ACE to influence the profile of the panel that judges schools of architecture and curricula?

Juhani Katainen, Tampere, Finland

We work on these issues but we have not been involved directly in influencing who the members of the panels should be. Nevertheless, I think this is a very interesting question and it is a direction in which we could do some more work perhaps, but I feel that the Joint Working Party would be more of an assistance in this case because the schools would be with us there discussing these matters.

Ramon Sastre, Barcelona, Spain

Spain is one of the countries where no practice is required to become a professional; students finish their studies and join the association and can build anything the next day. But the truth

is that practically all students do work in offices for two or three or more years and it is one of the reasons they take a long time to finish their studies, and they work like that for many years and nobody can control it. But what is in our control and what we can do is to give them some free electives so we can show that most of them have more than the necessary credits of office practice, even though, officially, there is no compulsory practice.

The second thing I would like to mention also relates to life-long learning. Very recently I received an e-mail from a school in our association saying that they have received a prize for life-long education. It has been more than ten years since they started this school and at the beginning there were just courses on the interpretation of new laws and things like that, but then they began to teach or to refresh what is taught in the initial university education. One of my colleagues actually says to students: "You do not pay attention now but in a few years you will pay to hear the same things you are now getting for free". Most of the teachers of this school are also professors at the university, so there is a relationship, but it is a strange relationship because you do not know where you are. However, if this school was started within the university it would probably be a lot more complicated, because we are a public university and it is not easy to get money. One has to demonstrate your exact needs and so on, but in the association there is no such problem, they make a course, you pay and that is it. If you are a teacher you can get money from the association. It seems to be working very well and every year it becomes bigger and bigger, to the point that they need new buildings to accommodate these courses.

Nicolau Brandao, Oporto, Portugal

We are talking about the skills and knowledge we need to acquire, some in school and some in a kind of apprenticeship or stage, whatever you want to call it. But what I want to know is whether from now on I will be teaching my students detailing, for example, or not.

Just to illustrate my point. An architect does a project for Berlin and calls it "Mon jour tristesse". He sends his drawings, which are almost complete, to Berlin and then the builder brings him a catalogue of window-frames and so on for him to choose the ones he wants for his project. Of course, Caesar, in typical Portuguese fashion, says, "No, I always draw my own windows and doors, I never use catalogues". The German guy, who is the owner or the builder, some authority anyway, says, "Okay, that is no problem", and gives him a paper for him to sign. Caesar, who knows no German, asks what the paper says. "Oh, no problem at all", says the German, "it just says that if the window has a little problem, if it breaks somewhere or if there is a little bit of humidity or sun, you will pay for all the frames from your own pocket".

So where does that leave us? Do I teach my students how to draw or do I just give them catalogues and show them how to choose from them? I have to know what to do.

What you have been discussing has to do with industry, with responsibility, with legislation, but, I will say it again, that is not enough. There are more complex subjects that we have to deal with in our schools. For instance, now that they have cut back the duration of studies from six years to five, I am left with deciding what to leave out. Do I stop teaching history, frames, what?

Now, about the knowledge; under Directive 1985/384/EEC, the Architects' Directive, I think it was the minimum. I worked with that Directive, I went to Brussels, and I think it was quite clear. I mean, there are always some problems, but now we have almost nothing and that worries me.

About the year out and learning in offices and so on, I must agree with what Pierre Von Meiss said. There are some schools, for instance, in Finland, where in order to enter their fifth year of study students have to provide a paper that proves they worked somewhere, in practice or in a workshop or something. I think that is very important because even if it is only for two months, during the holidays, it means that they are required to have direct contact with building. However, we must not forget that students who have spent time working in practice do not necessarily acquire much experience. They might get some experience in building with concrete for example, but later they may be required to work in another country using different materials and then they will find that they have no experience at all.

Just to finish, because I know something about different curricula, I want to say that one of the better schools in Europe, the AA in London, teaches nothing about detailing and things like that. But it does not really matter, because the AA, and also the Bergen School of Architecture, which is one of the schools I know best, might not teach that kind of stuff but they prepare their students to face any problem they might encounter in their professional life, in any kind of building situation. Yesterday somebody said that the schools only disseminate knowledge that has been produced elsewhere. That is not true, because we provide a way of thinking and certain principles, we make the students think about things and we prepare them to be able to resolve problems. Having young people learn through practise is a medieval way to teach, like apprenticing a child to a shoemaker, where first he will learn to hammer a nail and then one thing and then another and after twenty years he too will become a very good shoemaker. But that is not how we can teach architecture now; that stopped in the eighteenth century.

Unidentified Intervention

We all agree that it takes more than five or six years to make a good architect, but we also need a period of practical experience, so we may conclude that both educators and professionals contribute to the making of an architect. As Constantin Spiridonidis said yesterday, architectural education takes forty-five years, but I do not think so. At least for the schools I think that there is a period that is long enough to teach students what architecture is, and I am not going to go into whether it should be five years or six. The schools need to transmit tools, competences, the most important in my opinion being a critical attitude and a knowledge of ethics regarding the role of the architect in society. Also the details, why not? The details are important because without them you cannot even choose a good frame from a catalogue. So the most important thing is the collaboration between practising architects and the schools.

I would like to propose that it would be a good idea for next year to have a session devoted entirely to the problem of training. I do not know how much this was discussed in previous meetings, but times have changed, and I think there is a lot for us to discuss. As our colleague from Portugal said, the situation is so different from country to country that it is imperative for us to know how this is addressed in other countries before going further, and such a discussion would also give us the opportunity to hear what the situation is in the newer Member States.

James Horan, Dublin, Ireland

It is an interesting point that you mention about training. From a historical point of view architecture was something that people learned as apprentices. They learnt it in the office of another architect and it is only in relatively recent times that schools of architecture started to produce

what we refer to as formal education. I think the problem, and it has been highlighted by our colleague from Portugal in the context of the AA in London, is that formal education can be almost taken in total isolation from practice, and principles of design may very well be part of that curriculum but at the end of the day in order to be able to practice you have to carry out the job in reality and learn from that. Essentially the experience that one gets in the office environment is really what allows someone to become a practitioner and call oneself an architect, as opposed to a graduate of architecture, and that is a difference I think that we have slightly lost sight of. Perhaps part of the future work that we have to do in our discussions with the profession is to clearly identify the difference between an architect and someone who has graduated from a school of architecture.

Michael Eden, Goeteborg, Sweden

I think that this discussion is not unique for architects, it goes for any academic profession, civil engineers, doctors, etc. If you are a skilled practitioner or professional you learn. Talking as a teacher and as a head of a school, what I do not want to produce is architects who just produce and never learn, and who do not want to change by learning. That is the real responsibility of the schools, producing graduates who are aware that they should never be complacent.

I also have a small problem when talking about professions. We know that there are fields where architects are needed outside the design studios, for example, in real estate companies or as project leaders. This is a minor issue because we all have a professional body that organises these things, but I know we need to make the students aware that they have an education that is highly valuable in many fields.

The only question then is whether there is anything wrong with the current Professional Directive for the schools or for the profession. From the perspective of a school I think it is a very practical and profession-oriented Directive that gives us the freedom and the responsibility to educate architects, and for my university it has been very useful so far. For instance, when the Faculty of Engineers want to change our Master's programmes, now we say they cannot because of this Directive. For instance, the Directive talks about sufficient understanding, sufficient training, sufficient knowledge, so now we use that to say that our Bachelor programmes are okay, but they are not sufficient and therefore they should not tamper with our Master programme.

So the main thing, as I understood from what James Horan said, is that we should now go home to our government authorities and professional bodies and see to it that there are experts from both sides on this committee. I think that it is very important that the schools also are represented in these committee meetings. I do have one question: is there any danger of a radical change in the Professional Directive that will make it more difficult for us to train architects than it has been so far?

James Horan, Dublin, Ireland

That is a seriously leading question. We do have a session tomorrow dealing with the Directive specifically and, even though today we have touched on it, it is impossible to avoid the Directive if you are talking about relationships between educators and the professionals. But I think that you are absolutely right to ask whether there is any danger that something else will change so radically that we will be almost caught sleeping again.

The Directive is going to be reviewed, and the review process will be starting in 2009 and will be continuing for three years, till 2012, so the formal review will take place in 2012. The process will be beginning very shortly we believe that the timing of our discussions is correct in so far as we should be attempting to influence Brussels and to decide what in fact we would like to see as part of that review and how the Directive might be modified. In order for that influence to be complete it has to come from both, education and the profession, together. Neither body is sufficiently strong enough to have that kind of impact on its own.

Peter Gabrijeljic, Ljubljana, Slovenia

Our school is in a quite good condition, meaning that our graduates are good enough and that they are easily employable. Every month we have maybe ten or fifteen requests for graduates. We have a sort of unwritten, let us say, partnership with the profession. Our official study period is five years but usually students take seven, seven and a half years to graduate. During this time they also work in offices, not for the money, not for financial reasons, but for the challenge. The school is organised with fifteen design studios run by professors who are also practising architects, who have their own offices and who know how to run the process of design. All the other subjects, including research, are just supporting that primary design course. At first glance it seems that the organisation of the school is a little bit chaotic but, if you look closer, it is a very normal way of organising the process of how to teach and how to learn architecture. It is the duty of the school to care about the average knowledge but at the same time we should be able to offer freedom to somebody with the potential to be outstanding. When the time comes that the student feels he knows enough and is independent and strong enough to go into independent practice, it will be like standing from one foot to the other, because all this time he will have been in both positions. The students who do not proceed in that way are usually unemployed and of no interest to anyone.

How should we organise the 5+2+3 educational structure and how should these people be dispersed in the profession? Where can we find and who should care about the average knowledge? Until now our government supported us so that people could continue their studies after the five years for another two, but I do not know how to manage it now, because it implies a little too much administration.

Hans Lindgren, Gothenborg, Sweden

My thoughts on this discussion are based on two experiences. On the one hand experience from my school of architecture and on the other from some years of work in the Swedish Association of Architects, with a committee on educational and research issues. From my experience in the department, I should say that we work very much with the largest architectural office in Sweden, very interested in promoting the research we do. They need our research and they are looking for opportunities for cooperation. They finance, for instance, professorships at the department and they are also prepared to finance PhD students. They recognise the need for research and for things like evidence-based design in their practice and they have international experience and ambitions. It is very easy to discuss with them the matters that we have talked about today and they fully understand and they add to the discussion in very interesting ways.

From another perspective, from my work with the Swedish Association of Architects, I would say that this view is much more difficult to understand. The members of the organisations have a perspective which we can share and they realise what is happening in Europe and within the

committee we can discuss these things. Nevertheless, the Board of the organisation has some difficulty in fully understanding what is happening. They are acting strategically, because the organisation is very much represented and part of a supporting organisation for smaller companies in Sweden. They have many other interests. They do not have the ambition of entering international competitions on projects, and so forth. So there are many very different situations where we discuss this, and in a way I find it difficult to take on this challenge to talk with the professional body and to find someone representing the profession, which, as Michael Eden said, is very wide and not that easy to define and to decide on an expert to aid in this process with the European Union. So I am somewhat lost as to what I am to do in practical terms, in what I can do to help this process continue in a positive and constructive way.

I must add also that the bigger companies act according to their business plans and it seems to me that they do not really have time to wait for the Swedish Association of Architects to act, which creates a tricky situation which some of you might recognise from your own experiences.

Bertrand Lemoine, Paris, France

Schools of architecture do not in fact train or develop skills or knowledge that are necessary only for practising architecture, but also for many related professions. In fact, if you look at the statistics in France, seventy-five percent of the people with a diploma in architecture that are of employable age are registered as practising architects. This widening professional scope is a strong trend now and will prove to be a strong trend in the future too. So we should also keep in mind that we train people not only to develop the skills of an architect, but rather to practice architecture and to think maybe in specific terms of projects, design conceptions and project management, which is rather specific to architects. We must also take into consideration that we do not only deliver Bachelor's and Master's degrees, but we also deliver PhD's in architecture which lead to research or teaching.

Furthermore, the period of professional training or internship after getting a diploma is not only a question of length or duration. There are two other important things. First, that it should be associated with further education as is the case in France, where you have to complete a hundred and fifty hours focused on economic and financial issues, legal issues, site project management and so on, which are really focused towards the profession of architects. Second, the length of the work depends on the situation in which you are completing your professional training. You can work for five years, ten years, in an architectural office without asking yourself any questions, just doing the job that you are required to do. The point is, being required to have a kind of critical attitude of what you are doing in the context in which you are doing it – in the context of the architectural firm – on what type of projects you are working on and how to put some questions to yourself and deliver these interrogations in front of a jury, is very different than merely working for many years in an architectural practice. Of course you learn things through the years, but the idea of having this critical attitude is very important to really fulfil the development of the educational capabilities of young architects.

In closing, I have a suggestion to make. Imagine what it would be like, if the situation was the reverse: five years of training and then two years of education? What would be the result? Would it be better? Would it be worse? What new questions would it put forward? How might this help us to think about the elaboration of architecture curricula?

James Horan, Dublin, Ireland

I am very tempted to say that whether it is five years of training and two of education, or five years of education and two of training, in both cases it depends on the quality of the education and the quality of the training.

Gunnar Parelus, Trondheim, Norway

There is one scenario that I am worried about. If there is a too strict definition of a practicing architect, we risk to inhibit the involvement of people with the production of architecture on a broad scale, in all the different positions mentioned earlier. The rest of these professional architects could be trained in a different way, not based on knowledge of how architecture is made but in terms of the practicing architect. We, nevertheless, need to have this broadness in how someone can become an architect based on the knowledge of production of architecture, how you design. Therefore, it is important to have this scope in the output of the schools, not in volume but in breadth, because, if you separate them, what might happen is that each separate role would have its own curriculum and the production of architecture would disappear from it. All these academic disciplines would come in and then we would be in a far worse state.

Well, our subject was constructive relationships and it has been very interesting to listen to different views. It has certainly been very constructive, because even the questions that we have not answered here are things that we can think about and work on in our own time.

otherwise we will have to sign papers and pay for all the damages that we produce. Finally, I think that we have always had responsibilities for developing constructive relations, so although they might not be that new we have to articulate them again and again.

Adrian Joyce, Brussels, Belgium

Having the full training of an architect and not using that as a practising architect is something embedded in the policy of the ACE in any event. However, every practising architect was once a graduate and so there is a very fertile ground for real, constructive collaboration between the profession and the schools because we are all products of your good work. I have been encouraged by the quality and the breadth of the debate here this morning and I see that there is plenty of common ground and plenty of common understanding, and I suppose my voice is to try, as in Macbeth, not to knock on the door and announce that the real world is making demands upon your graduates, but to say that we need to talk a little bit more frankly about it. We need to better understand what that real world is demanding and a lot of it is about economic difficulty, liability, answerability, and an increasing erosion of the public perception of a regulated profession. Everyone now thinks they can be architects so they do not respect our decisions anymore. Therefore, we have a lot of challenges to face and we need to maintain quality at the educational stage for practice.

James Horan, Dublin, Ireland

The discussions this morning have ranged from very practical down-to-earth information to quite philosophical comments about teaching and how this ultimately lead to practice. With regards to information, we learned a lot about what is happening in Brussels and what the Directive means. Tomorrow we will discuss it in greater detail. We have been given by Constantin Spiridonidis a disc of what has been said this morning and before the end of this conference we will provide you with a written transcript of some of the points that were made at the beginning

of the session, because there is some valuable information there, that is only now becoming clear. Heads of schools need to know and that means that there is the possibility of developing the relationships that we have spoken about as the core subject matter of today's session.

With regards to the relationships between the schools and the professionals, this can only really happen effectively at local level. There is no possibility that there can be a pan-European solution as to how this occurs. It can only occur within the individual Member State and indeed I would go so far as to say that it is even more local than that. A single school can start to establish a meaningful dialogue with a professional body and develop the notion that there is an educational continuum here, and this is what we would like to try and encourage. The Joint Working Party would very much like to have your input about what kinds of experiences there are in this area, what kinds of successes and what kinds of failures, because we would like to build a map of the European situation so we can tell each other what is happening in individual areas.

I would go so far as to say that the single most important notion that came out in my mind this morning was the fact that people are stressing quality over quantity every time. I do not think that there is anyone here who will not subscribe to that philosophy. However, the important thing in my view is that at the end of the day architects must be capable of making good judgements. Every decision that an architect ultimately makes is a judgement and a good judgement is based on experience and experience is a consequence of a series of bad judgements. Practice has to take up this call along with the educators.

New Responsibilities for Diplomas Recognised by the New Directive

The new Directive is in operation since last autumn. Now the recognition of diplomas is mainly based upon the professional bodies and the EU services. Schools have to protect the academic ethos of their curricula through new lines of collective action, initiatives and measures. New responsibilities are emerging for the schools of architecture to ensure their graduates the conditions to work as architects in other European Countries and to define the contemporary standards for a European curriculum in the perspective of the eventual change of the 11 points of the Directive.

Chair: **Francis Nordeman**, Paris, France

Introductory panel:

James Horan, Head, Dublin Institute of Technology, Ireland

Emma Mathews, Head of Qualifications, Architects Registration Board, United Kingdom

Constantin Spiridonidis, Co-ordinator, ENHSA Thematic Network

James Horan, Dublin, Ireland

The EU Architects' Directive ceased to exist in October 2005, having been in operation for almost twenty years. While it was in force an Advisory Committee was formed to advise the Commission as to whether qualifications in architecture complied with the Directive or not – and you will all be familiar with the eleven points of the Directive, which set out in broad terms what is required for any school of architecture to comply with the Directive. The Advisory Committee counseled the Commission as to whether individual schools of architecture met these requirements or not, and while the activities of this Committee were advisory, which meant that the Commission could make its own decisions either way after they received the advice, as far as I can remember only one occasion in the entire time that this Committee operated, that the Commission made a different decision than what was recommended by the Committee.

Finally, the Advisory Committee, after more than twenty years of service and having provided a vast amount of information analysis and documents to the Commission about schools of architecture and their compliance with the Directive, ceased to exist in October 2005, although it did remain active in a semi-state for a further two years until October 2007, as this was the period of time that the Commission had allowed for individual Member States to transpose the legalities of the Qualifications Directive (which replaced the Architects' Directive) into the individual legal systems. What this actually means is that now we only have the Qualifications Directive, and the old Architects' Directive and the Advisory Committee no longer exist.

As was pointed out yesterday the Qualifications Directive deals with all of the qualifications across the European Union, and indeed beyond the European Union to EFTA countries as well. There are about 800 different professions or qualifications that come under the aegis of this particular Directive, and the Commission is advised by a group of co-ordinators, one from each Member State, who normally speaking are government appointees and in most cases are civil servants from departments of education or the like. This means that this group of co-ordinators is making and will be making decisions about compliance. The case of architecture is almost unique in Europe or, in fact, it may be unique in Europe insofar as it is the only qualification that, having had a sectoral directive under the Architects' Directive, does not have absolute harmony of qualification across the schools - the medical profession does. This means that there is always a case-by-case situation to be examined whenever a new qualification in architecture is presented.

From your point of view as heads of schools, the single most important thing in your mind should be to ensure that the graduates of your school are able to move around Europe and practise architecture in all the Member States because your school is listed and that qualification has been recognised. That should be your primary concern. But it is not the only thing that you have to think about, and maybe firstly I will just talk very briefly about what you need to do if your school is not currently listed and also what you may need to do even if it is listed and you intend to make a change which redefines it in some way or another. The only person who can communicate with the Commission in Brussels is the permanent representative of your home country in Brussels. A school has no possibility of making any direct communication to Brussels itself. It must be done through the permanent representative and therefore it must be done by the school through the competent authority in your own Member State. So if you do not have a working relationship with those people in the government who have the right to communicate with Brussels, you need to establish one.

If you were listed in the Architects' Directive, that listing has been transposed into the new Qualifications Directive. But, for example, if you had a five year diploma in architecture under the Architects' Directive and you are now proposing to have a three plus two in a post-Bologna environment, you really must notify, because the new qualification that you are describing is different from the qualification that was described earlier. It is really important that, when somebody graduates from your school, the qualification that they are awarded by your university is in the same words as what is written in the Directive; otherwise, if they try to practise as an architect in another Member State and their diploma or their scroll or their parchment says something different than what is in the European document, they will have real difficulty in trying to carry out their role as an architect.

So that is the first part of the equation. The second part is where it gets slightly more complicated, and this is an area where information has really only just begun to unfold over the last year; but before I talk about the second part I am just going to say a few words about what has happened since October 2007. The co-ordinators, each representing their own Member State, have held a series of meetings in Brussels to discuss qualifications, all qualifications, and part of those meetings dealt with the protocols and, I suppose, the rules of engagement that they wanted to try and formulate as to how they would go about their business. A number of those meetings dealt specifically with architecture, and the co-ordinators and the Commission are clearly aware that architecture presents certain complications and difficulties that require perhaps more work and more meetings than any other qualification. In the case of those co-ordinators meetings, the suggestion was made to each Member State that the co-ordinator attending the Brussels meetings could, if this was felt to be appropriate, be accompanied by an expert who had knowledge of the architectural issues and who could act as an advisor to that co-ordinator at the meetings. This is different to the Advisory Committee, and the difference is two-fold. Firstly, the advisor, the expert or architect who is there with the co-ordinator, is not there in a voting capacity but in an advisory capacity only. Secondly, there is no obligation on any Member State to bring an expert advisor, and if they do decide to bring in such an advisor then the cost of bringing him or her to Brussels is born by the Member State and not paid for by the Commission.

From talking to various colleagues across the European Union and from being part of the Brussels meetings (I have been acting as the advisor to the Irish government and attending the meetings) it is quite clear that some Member States are not represented by architectural advisors and the co-ordinators are making the decisions alone. Therefore, it is in the interest of architects, be they educators or professionals, to ensure that the government representative who is making decisions about architecture in Brussels is informed and knows precisely what they should be deciding upon – and even if your Member State is not prepared to fund an advisor traveling to Brussels there is no reason why there cannot be meetings at home between the co-ordinator and the architects. This role of advising the co-ordinator in my opinion falls equally between the schools and the professions, and there are two specific reasons why I believe this.

Firstly, it has always been a personal belief of mine that the link between the two is critically important and that architecture in general across the European Union can be much more effective in looking after its standards if the professionals and the educators work together. But much more importantly, and this is the point that I am coming to about the Qualifications Directive, is that it is not about the diploma you get from the schools. The Architects' Directive

was principally concerned with the diplomas from the schools; the Qualifications Directive is about mobility, and it is about access to the profession. So in any Member State where an architect must do something further than graduate from university, i.e. gain practical experience, sit a professional practice examination, prepare a case-study, or anything further, that is now part of the qualification. Therefore, what Brussels is now looking at is a combination of the academic qualification received by the school of architecture coupled with any further requirements needed to allow someone to practise. Once a person has reached a point of qualification in their own Member State, as that state defines it, they can then practise without any problem in all of the other Member States; as you can imagine, this creates a rather uneven playing surface.

I will just go one step back for a minute. When the Architects' Directive was primarily concerned with academic qualifications over that period of nearly twenty years, a great sense of harmony and equivalence was developed among the schools of architecture, so that the Commission and the Advisory Committee felt confident that when a school qualification was listed it was broadly equivalent to the other schools' qualifications across the European Union. However, now that we are listing the access-to-the-profession qualifications, there are vast differences in what is required from one Member State to the next. For example, in some Member States the very moment that you graduate from university you are entitled to practise without any further study or experience whatsoever. If that is the case in your Member State then you can practise in all of the other Member States exactly the same way. However, in other Member States, for example, in Poland, they have to study for three years gaining practical experience and then sit an examination before they are allowed to practise. So the constraints or the difficulties or the requirements that your individual Member State applies to you sets the conditions by which you or your graduates can practise in Europe. It is a lot easier for the graduates of some Member States to get to this point of practise than others, and it is with this complication and unfair playing surface in mind that the EAAE-ACE Joint Working Party is trying to build a picture first of all of exactly what are the differences and the similarities to access the profession across the European Union and then to see how we can try to make things fairer.

There is no way whatsoever, in my opinion, that anything will be imposed by Brussels to try and make the playing field more even. The only way this can be done is if we do it from the ground up. Each individual Member State must begin a dialogue between their schools, their professional body and their government for there to be a chance that this will happen. The responsibility falls first of all to the schools to be absolutely clear about what their role is in notifying the academic side of the qualification, to engage with the profession in their own Member State, to complete the notification for the qualification, and to engage with the co-ordinator and the government representatives to try and see how they can ensure that their graduates, their architects, are playing the same game as fairly as other members in all the other Member States of the European Union.

I am sorry that I have taken so long in describing this. It is complicated. It has clarified itself considerably since we met here last year, and the meetings that have been taking place in Brussels with the co-ordinators have helped to bring substantial clarity to what the legal meaning of the new Qualifications Directive actually is.

The Joint Working Party sees a very particular role that it can offer in helping to bring clarity to this situation. We know from at least anecdotal evidence that the relationship between the educators and the professionals in each Member State is not the same. Some Member States

have very good working relationships between the chambers of architects, the institutes of architects, and the universities and schools. Others have almost no communication at all. One of the things that we referred to yesterday was that, as a part of the work of the Joint Working Party, we are prepared to act as facilitators to any Member State that wants to set up a dialogue where none exists, and we are prepared to make the argument to either the professions or the schools or the government in those Member States as to why that dialogue should occur.

Emma Mathews, London, United Kingdom

I should point out that I am not an architect, I work for the Architects Registration Board and I am the Head of Qualifications, so really I am an administrator. But as James has been describing, our organisation is the body in the UK which is responsible for the registration of architects. We are the body that sets the standards that set out what qualifications an individual must hold to register in the UK, and we are delegated without task from the UK government. The new Qualifications Directive has brought changes for us; we are now also the formal UK competent authority for architects, which means that we are also responsible for making sure that the United Kingdom's qualifications comply with the requirements of Article 46 of the Directive, which sets out the eleven points and the other requirements.

I just wanted to explain some of the issues and challenges that are facing us as an organisation, as we work our way through the introduction and implementation of this new Directive. We are currently looking at the United Kingdom's entry into the Directive. As James mentioned, every country is now obliged to put forward what is required to practise in every Member State. Our entry currently does not set that out, so we are entering into discussions with the Commission to set out exactly what is required, so that everybody else in Europe will be clear about the requirements for registration in the UK. Thus, we are working with our government to set out what is required in the UK so the other Member States are aware of what is required to practise and enter the profession in the UK. This is a change for us, and so we will need to work very closely with our government to make sure that that is fairly represented.

The other challenge that is looking like it is going to face us very shortly is that we do not currently list individual qualifications under the Directive. It is likely that the Commission is going to require all Member States to list qualifications under the Directive, which means that we will have to go through the process that James has described by putting forward material to the co-ordinators in Brussels for consideration and agreement for those qualifications to be listed. So we need to have extensive conversations with our UK institutions and to work very closely with them to make sure that Brussels is fully aware of the UK position and the UK qualifications and to help those institutions in demonstrating that their qualifications meet the relevant requirements of the Directive. We are lucky enough at the moment to have representatives sitting on the co-ordinators group from our department, which represents universities at government level.

We also have, luckily, an architect, who is from our government sponsoring department, and another academic expert that we send to Brussels when qualifications are being considered. But when it comes to listing qualifications we are looking at the possibility of taking representatives from the schools themselves so that they can be around the table when the conversations happen in Brussels, because we believe they are the best people to describe their own qualifications.

Another issue that has been facing us relates to practical experience. As James Horan mentioned, the transposition of the Directive into UK law has meant that individuals who wish to register in other European states and hold UK qualifications must be eligible to register in the UK first, before they can move over to Europe and register there. This again is a change for us and we have faced challenges explaining to our own national students as well as our institutions how this new kind of set-up will work. So we are looking very closely at that and how best to put that forward. That works the other way round as well, for European individuals wishing to register in the UK: they must be eligible to practise in their own home state before the UK will register them. This has caused some difficulties for us and some confusion amongst those wishing to register, so we are trying to be as clear and concise as we can in terms of the requirements for registration, both in the UK and for our own UK nationals wishing to go and register in Europe.

In closing, I will try to summarise the key points that I have covered so far. The key issues facing our organisation in terms of implementing the Directive involve explaining to the Commission the UK's system of recognising qualifications, which our body is responsible for in the UK. In the UK, entry to the profession comes after completing three stages (parts one, two and three), which include practical experience, so we need to inform the Commission that that is the position in our Member State. At the moment our requirements are not set out in that way in the Directive, so we are going to have to make changes to our entry under the Directive. That is something that the Commission is going to require all Member States to do. All Member States will be required to list their requirements for access to the profession. So that is a big challenge for us, and a big change. We also need to work very hard with the schools to explain the new processes, that the Commission are requiring qualifications to be considered, and we need to explain those clearly to our schools; and we are intending to work with them to do that so that it is very clear what the requirements are for them. The Directive has also, as James mentioned, brought about some confusion for our students in that it used to be that, having their part one and part two qualification and their practical experience, previously they were then able to go and register in Europe, but that is no longer the case. Our requirement for registration and to practise architecture is that someone must hold a part one, a part two and a part three, and we have to work very hard to make it clear to our students that they need to be fully eligible to register in the UK before they can move to another European state.

These are some of the big sort of practical issues facing our organisation. We are an intermediary, if you like, between the schools of architecture and the UK government, and so it is very useful to be here and to hear your concerns about the process and to gain even more clarity about the position in Brussels so that we can work to take that forward and be as clear as we can.

Constantin Spiridonidis, Thessaloniki, Greece

I would like to start by explaining why the issue of the Directive appears as one of the main themes for discussion in this meeting for the third year running. We were aware of all these eventual consequences of insisting on this issue, but we decided to continue this discussion because we strongly believe that it is a very significant issue and that the information is not very well disseminated around the schools of architecture. As an example, we have six schools of architecture in Greece, of which only three are listed. The others are not listed, not because

they did not manage to be in the list but because they made no effort and did not follow the necessary process to become listed. On the other hand, I would like to remind you that last year we made a kind of inquiry into the systems that the different countries apply after the Bologna accord, and the interesting result was that 73% of schools of architecture in Europe are already following the three plus two system. This means that 73% of schools have to redefine their position in the list of the European Union's recognised schools, and it means that a lot of work has to be done through the different services in Brussels in order to have these schools listed according to the new Directive. This is something that schools of architecture must be made very well aware of, and that heads of schools of architecture should consider, ensuring the presence of their school on this list as one of their major responsibilities.

In some countries professional mobility appears to become easier than in others. For example, if in one country someone has to spend three years in a specific course after graduation in order to be granted access to the profession, this implies that this professional will not have the right to move as an independent professional to another country for these three years. But in other countries, like Greece, for example, the possibility to enter the profession comes with the diploma, which means that this professional will be in a position to move immediately to another country, which then creates a kind of injustice or disparity in the system. By all evidence it will sooner or later bring about discussions on equal opportunities for all European citizens, which of course should result in some kind of balance between the different countries. This is something that the professional bodies and the schools, and above all the professional bodies will have to discuss. Therefore the initiative of the EAAE-ACE Joint Working Party is very important. It will absorb a considerable part of this discussion. The schools will have to actively participate in it, through their representatives of course. In future such meetings we shall collect the results of this discussion as to feed new ideas and possibilities to the Committee and the persons who are involved in it. This is ground that has not been developed so far. We have to think about the possibilities for a better collaboration and a stronger involvement in this process within each one of the Member States.

The third point that I would like to refer to is the question of content. It was already mentioned yesterday that there is a pressure, a political pressure, on the European Union services to install five years as the minimum length of studies in view of access to independent architectural practice. There already exists some pressure to modify the Directive in this direction. We know that it is very difficult to realise this demand, but I feel that at least we, as schools of architecture, have to insist on that, and we have to participate in this pressure towards this change in the Directive. Even if the chances are small, I think that we have to clearly declare the will of the schools as we did once before. In the Meeting of Heads in 2000, we declared our will as schools of architecture that the minimum length of studies be five years, but it looks as though it is time we issued a reminder or something redefining our position. One could perhaps begin to think a little more optimistically about content. This pressure and this declaration of will on the part of the schools of architecture should not limit itself to the minimum length of the studies.

We all know that the old Directive is already twenty-three years old, and we are all aware that during those years significant changes have happened in the domain of architectural education, reflecting the changes happening in our societies and our economies. Many new issues have appeared that are not covered by the eleven points, so if these eleven points determine the minimum necessary requirements then there is room to re-think our position on quality and try to introduce other aspects that we consider important. For example, no reference is made

in the Directive to new technologies and only marginal references are made to sustainability and environmental issues, while the question of research is practically absent. So there are many aspects that could enrich those eleven points, and probably we as schools of architecture could help raise the minimum standards in architectural education.

In past years the eleven points appeared as the most significant reference for the structure of the curricula of the schools. This was the permanent reference for almost all the proposed curricula. If this meeting wants to go beyond being a forum for the exchange of information and become more constructive and oriented towards action and decision-making, these are aspects that will have to be put on the table. Even if the possibility of having another eleven points is very small (and I do not think that it is necessary to change all eleven points but probably only to add some new ones), another possibility, proposed by Juhani Katainen, is that we speak about interpretations: that is to say, to change the way that we interpret the eleven points and in this re-interpretation to gain the possibility of adding some views that till now had not appeared in the discussions or in our conceptions of them.

I hope that the discussions that will follow will provide some input as to whether these issues could become issues of our milieu and, if that is the case, what kinds of measures and initiatives we have to take in order to achieve this.

Discussion

Hisham Elkadi, Belfast, United Kingdom

I just want to clarify one thing here, because James Horan talked about entry to the profession. In the United Kingdom, as Emma explained, entry to the profession comes after part three, but not all schools in Europe have such a requirement. This means that all the schools that do not have this extra threshold for professional practice at national level will have no problem going to the Commission because they can just present their programmes and say that they require a further two years of experience but without this being another threshold. On the other hand, the countries that have a separate threshold to enter the profession will have to be listed at that level. So for example there is no point in taking diplomas or master programmes in the United Kingdom, which come under the second threshold, because they do not provide entry to the profession.

James Horan, Dublin, Ireland

This is the central point of the problem because at the moment each Member State decides how it notifies Brussels, it decides what it wants Brussels to put into the Annex of the Directive as to what in fact is an architect in that country. Because the rules are very different from one Member State to the next, it means that the more highly experienced you are and the longer it takes you to get to the point where you are permitted to practise architecture in your own country, the more disadvantaged you are against the other Member States who do not have such stringent regulations, and that is where the discussion has to take place. You are absolutely right. It is one of the fundamentally difficult problems we are facing at the moment.

Hisham Elkadi, Belfast, United Kingdom

Yes, but we have to sort that out very quickly. I mean, there are schools here that have been through the process, but do all these schools have entry to the profession? I guess we are confused because we do not know if our schools have to go through this process on the basis of part two or not. We have to make some changes, we have to look to the profession, and so the eleven points in a way are completely irrelevant.

James Horan, Dublin, Ireland

Just to maybe answer that in a little bit more detail, as I mentioned in the very beginning a school has no process by which it can notify its qualifications directly to Brussels. At the moment all a school can do is inform the competent authority in the country in which it is located and expect them to make the notification. Then, if that competent authority decides to add in years of practical experience on top of the school's qualification, then that is the case.

So you are absolutely right, but Brussels will not solve this. I do not think that the answer lies in Brussels; the answer lies in the dialogue between the professional bodies and the educators across Europe.

Constantin Spiridonidis, Thessaloniki, Greece

I wonder if we should be speaking about accreditation, because I think that it is not an accreditation process; it is just to put a school on the list. I understand that it is more or less the same,

but the term accreditation at least has completely different connotations. The question is whether the school has the right to be in the list of the schools of the European Union whose graduates have the right to work in another country. Of course this situation comes within the sphere of responsibility of the Member States that have to take initiatives in order to solve this problem.

Richard Foqué, Antwerp, Belgium

Given what has been said now, does this mean that somebody from one Member State, where the requirements to enter the profession are more severe than in others, going to study in another Member State, where the requirements are less strict, will then acquire a diploma that will enable them to go back to their own country with fewer requirements because they will have been permitted to work in that other Member State? Is that how it works?

James Horan, Dublin, Ireland

If I understand your question correctly, Richard, the answer is that you cannot travel to another Member State to try and get a qualification and then re-import it back into your own Member State. You can only practise in your own Member State based on the rules of your own Member State. You cannot go to another Member State where the conditions are less stringent and then re-import that back into the system. You can do an Erasmus exchange, you can graduate in another Member State, but if you have already graduated from a university in your country where there is a two-year practical experience requirement plus an examination and you go to a country where that is not a requirement, you still cannot practise in the country where it is not a requirement if you have not met the requirements in your own country.

Richard Foqué, Antwerp, Belgium

So you are privileged/prejudiced by your citizenship.

James Horan, Dublin, Ireland

Correct

Herman Neuckermans, Leuven, Belgium

I support what has been said so far, especially regarding Spiridonidis' remark on the difference between accreditation and what we are talking about here. I agree that accreditation is a completely different thing and it has to do with recognition by the state of a diploma, whatever the diploma is, and it has nothing to do with architecture in particular. But I also want to come back to the initial debate that has indeed been going on for several years, and from what the panel has said it is clear that architecture as a discipline has missed the opportunity to update the eleven points. I mean, that list of eleven points has been important in the Qualifications Directive, and it is a shame that we were apparently incapable of coming up with another list during the twenty years of the Architects' Directive's existence; now, it is too late. So that is one of our weaknesses, I suppose.

The eleven points have to do with academic qualifications. My first point would be to say that we are not done with the academic qualifications. A second thing, which is even more important, is that we are not done with the professional qualifications either, and there I

think we have an important topic to discuss, because we must not forget what has been said before. For example, yesterday Nikolau Brandao mentioned some very precise things that point to something that fundamentally questions what is going on and questions the principle of the Qualifications Directive, which is basically that the licence to build in the home country means a licence to build in the host country, within the EU. I mean, that is the purpose of the Qualifications Directive, that is the professional mobility we are talking about. So the more we start to discuss this and look into it in detail, the more I question the principle. We have to make mobility possible, that is still the point, and it is not that I believe we should avoid the issue of mobility, but for me it is not evident that a licence to build in one place should serve as a licence to build elsewhere, because there are many differences between countries.

I used to use the example of seismic design, simply because it hurts when a thing falls on your head. In many countries in Europe they do not teach anything about seismic design but the graduates from those countries, when they have the licence to build, can then go to another place and build there. Some people say that this is not a problem, because liability insurance will cover or not cover those architects I don't know if this is a good way to behave. In fact I think the approach should be competence-based, because this is where quality lies. If you rely on laws and systems and their protection, you are in fact a weak person. You should be necessary in the function you claim by showing the competences, and that is why I mention this because it comes back to the questioning of the eleven points and the adding of more points or other points that give access to the profession, which in my opinion we will have to specify, maybe country by country. I am not saying that you have to forbid somebody to practise in your country, but maybe there should be some small test or something professionals will have to sign stating that they know certain things and do not know certain other things.

James Horan, Dublin, Ireland

There is an opportunity, Herman, about to come up now because the Qualifications Directive is due to be reviewed in 2012 and the process of the review starts in 2009; and I would see this as a very good opportunity for the educators and the professionals alike to try and see how that review might take place or what it might include. There is no question that the eleven points were written at a different time and that a lot has happened since, both academically and professionally, and for example it might be conceivable that a new number of points could be introduced into the Directive which would include the professional qualification to practise as well as the academic one, and if that were to happen we then might get a fairer system across the European Union.

Herman Neuckermans, Leuven, Belgium

Yes, but my point is that we have to speed up, because if we continue at the pace of the Architects' Directive we will miss the train again.

Bertrand Lemoine, Paris, France

The problem is quite complex, and certainly the introductory presentations somewhat clarify our understanding of the issues involved in this process, but it seems to me that there are several contradictions within the process itself as well as in connection with the Bologna process.

The Bologna process has set up a common frame for all European academies and universities to facilitate exchange and to go beyond the mutual recognition of diplomas. It is not only about the equivalence of diplomas but also the recognition of the courses and the credits delivered, which allow precisely the exchange of students and the free movement of students within the European Union. This is of course a position in which the basic idea is that we have this framework in which to make the levels, the diplomas, even the content of the education, as close as possible, so as to facilitate the mutual recognition of diplomas, meaning that if you have a diploma in one country it is recognised in another country. But the lack of connection between the diplomas and professional accreditation and all the different procedures we have heard mentioned in different countries, which present many and varied barriers to accessing the profession, are in my opinion in contradiction precisely to that equivalence of diplomas which is meant to come out of this common frame; in other words, it seems that we do not have a common frame anymore.

This suggests also that the mobility and the access to the profession on a European level sought by the Directive is difficult to fulfil under these conditions, and that it can no longer be based on the diplomas, which means that all the effort that has been achieved by all the schools in Europe to comply with that are in a way kind of useless because now a new step has been introduced. I would suggest that we find strategies to avoid this. For example, I have a French diploma and I can have the equivalent diploma in Greece, and then if I have the equivalent diploma in Greece I can register in Greece directly for the profession, and if I can register in Greece I can work everywhere in Europe. That is the precise objective of the Directive. Another strategy would be that I, as the Head of La-Villette could make a double diploma with the school in Thessaloniki, for example, so that all my students on finishing will also have the Greek diploma which enables them to register in Greece and to work then everywhere in Europe.

So of course we can all see the interest of having a freer circulation of professionals and open access to the profession on a European level, but we can also see that the lack of connection between academic institutions and is creating a real distortion of that objective and that this distortion contradicts the very concept of mobility so embedded in the Directive.

James Horan, Dublin, Ireland

Actually, there is a very clear disconnect between the Bologna process and the Directives because they are not really related at all. The Directives are to do with legislation in Europe and they are handled by the Commission; the Bologna process was an agreement reached between the ministers for education in the various Member States and is not obligatory. You do not have to get involved in the Bologna process in order to be listed in the Directive, so there is a disconnect between the two, no doubt of that.

Loughlin Kealy, Dublin, Ireland

I just want to set out a kind of a framework; it is what I would call a sort of perverse logic.

As I see it there are four actors in this process: there is the Commission in the first instance, then there are the competent authorities related to Member States, then there are professional bodies, and finally there are the schools. So, at the first level there is some sort of dialogue between the Commission and the competent authorities in terms of establishing, if you like, the procedures that relate to the practice of architecture. At the second level, hopefully, there

is a conversation between the competent authorities and the professional bodies. Now, the basis on which the Commission operates has to do with freedom for the exchange of services – I think that is primarily what it is interested in – and what we have been hearing so far today in talking about the injustice, shall we say, of the requirements between Member States, is that this injustice has actually been established by the requirements of the professional bodies, because their requirements vary from place to place. So my first question really would be, is a common professional platform emerging which would tend to remove these sorts of injustices, and how might that be progressed? Because I know that those inequalities or differences in ways of dealing with things are deeply rooted in the culture of the architectural profession of a particular place. But my question is, is there a dialogue, a discussion, an attempt at a European level by the professional bodies to try and resolve this particular issue?

If there were, it would be a very powerful platform in relation to any conversations that might happen with the competent authorities in a particular Member State in the first instance and from there with the Commission. Therefore, if my perverse logic is reasonable, I suppose the requirements of the professional bodies are surely based on an idea of the competences that are required for practice, so it would seem to me that in terms of the professional bodies there is a requirement to set out very clearly what the competences are for professional practice; likewise, in the development of a common platform there would be an attempt to ensure that these competences are somehow not identical but equivalent across the European space. So what I would really like to know, and this is my final question, is in what precise ways can the schools and the EAAE help to produce this common platform?

Juhani Katainen, Tampere, Finland

Loughlin rose appropriate questions. Actually, we do have a kind of common platform already in existence, the Joint Working Party, where we can start exchanging our views on these things. You also spoke about competences and what could be used, but the other common platform is the Architects' Council of Europe, in the sense that we have thirty-two countries involved and representatives from most architects' organisations. Of course, we all understand that it is not easy to go to someone and say your requirements should be changed in this or that way because that is a more common way, but we can discuss it and we can, I hope, in the future work something out. As you probably know, there is a special working group inside our organisation that deals with these matters and with the Qualifications Directive specifically, led by Toal Ó Muiré from Ireland. I think that I could suggest this as a matter for their consideration, but there is a long way to go. After all, it took twenty years to make the Architects' Directive; I do not know how many years we will need to change all the professional bodies in all the countries involved to be thinking on these issues in a similar way and with a common basis. But, again, it is a good call.

Then, do not forget that we also have a platform here from which to work on that. Actually, what you referred to is not a question for the schools, it is not really the schools' problem, and I say that because what we are now speaking about mostly here is a technical question, which is how to list your school's programmes. In reality I think that everyone is ready to list their programmes and what is left to discuss are just some small technical issues that are now missing and the question of who is going to handle that, and I hope the Commission will solve this, because it is not our problem. I mean, if they set up rules, we produce the material and they have to deal with it.

Then, there is also another instrument that Toal Ó Muiré has been setting up, and it is not actually part of the ACE, but it is close to the ACE and it is a platform for competent authorities. This group is starting its work now and the next meeting, which will be held in the Hague, was set up specifically to deal with these practicalities between competent authorities; if that work proves successful, maybe we can get some more answers pertaining to them.

So these are the initiatives we have undertaken so far. Our General Assembly will be in November and I hope that many of you will come to put these matters before us, through your own organisations and also through our working groups. But I am happy to be here today in this capacity and I am specifically happy to have Adrian with me because he also has a long career here taking part in these discussions. So let me finish by saying that it is a long way, but you have to take the steps.

Adrian Joyce, Brussels, Belgium

Allow me to elaborate slightly on the problems raised by Loughlin.

He has accurately stated that it is a professional body or competent authority problem, where with their mandate national governments are establishing what the criteria are for access to the profession, and this is why the informative document* that we have distributed will be helpful to you, because the resolution of our problem lies at national levels. The European Commission will only take a legalistic point of view in relation to the terms in the Directive and it will apply it to the letter of the law as written. If we want to effect real change, then the request for that change must come from the Member States, and we must work together at national level in this proposed ad hoc committee in order to clarify the situation in each Member State and in order to have requests going up from Member States to the Commission for change, because we have it on good authority that the Commission itself will never initiate a change to this Directive.

I would also like to take this opportunity to clarify two small issues. In 2012 the European Commission is not intending to carry out a review of the Directive; it is charged with carrying out an assessment of the Directive. I do not say this just to be pedantic, but because this means that the Commission will assess whether the Directive is achieving the objectives for which it was written; they will not assess whether or not it is correctly written or whether it needs revision. So that is something we need to keep at the front of our minds. However, it is clear to me that the profession and the schools would like to see the text of the Directive changed in certain aspects, as in changing the minimum years of study from four to five. Therefore, once again, the only realistic way of achieving that politically is if the requests are coming from Member State governments. So again it is at that level that the work and advocacy must be carried out to ensure that the requests are addressed to Europe by national governments.

The other thing I wanted to come back to was Herman's pessimistic assessment of the Architects' Directive. I think that he is being a bit hard on it when he says that it existed for twenty years and we have missed opportunities, etc. The reality is that if you look at the evolution in the quality of architectural qualifications between 1987, when that Directive came into force, and 2007, when it was abolished, there was an enormous evolution across Europe, in particular

* See in the Annex the text of ACE-EAAE Joint Working Party entitled "Directive 2005/36/EC-Summary of Presentation to 11th ENHSA Meeting of Heads".

in Germany – and I checked this with Herbert Bühler yesterday, where now over 95% of schools in Germany offer courses of a duration of five years or the equivalent. So although the text remained identical, the Architects' Directive has really effected great change across that time, and in my opinion it was a Directive that worked extremely well.

There is one last point I wanted to make. We have had a correct discussion about the injustice and about the uneven playing field in which we operate today and about this idea of qualification shopping, where in some countries a person with a diploma immediately has access to the activities under the title of architect and can go to a country where nationals need two or three years of tested experience and they can undercut that experience. If we are unhappy with that, there is a way out of it, and I put this to the floor and I would like to hear what you think. The way out of it is to say that we do not want automatic recognition anymore. The only reason that this unevenness exists is because as a sectorial profession we are in the system of automatic recognition, so the listed qualifications are treated legally as equivalent. Now, would the schools wish to get rid of this easy method of recognition in other countries and go back to the general system, where you would have to prove your qualification? This means that each and every applicant going to another country could be asked for just about anything: language, sanity certificates, proof of health, proof of financial stability – I do not know what could not be asked for. Each and every country would have its own sets of requirements for access to the profession of architect, and what state would we be in then as a continent? So there is a way out if you are unhappy with the unevenness of the field today, but I suggest that not having automatic recognition is the road to hell.

Loughlin Kealy, Dublin, Ireland

No. Adrian Joyce moves too fast from the celestial levels of competent government authorities and then arrives down at the schools yet again. I am saying that no, this is not primarily a matter for schools; this is primarily a matter in the first instance, as you say, and I agree, of the competent authorities, and then of the professional bodies. So your first question is not whether we would be happy, but whether the professional bodies would be happy, and the answer is no, of course not. If they are not happy then they have to correct the injustice of the requirements between them – that is what I am saying. It is their duty in the first instance to tackle where the problem lies and not to export the problem somewhere else.

Pierre Von Meiss, Lausanne, Switzerland

I would like to make a suggestion to the ACE. I think that one way to go about the thirty-two different legislations and countries and practices is if you could get some kind of funding to do research on the liability of architects in the thirty-two countries, because that is where the differences really are. If there are small differences then it is very easy to find a solution. It is important to know where these differences are and what they are about. I think the professional bodies are the only ones that can do this kind of thing.

Adrian Joyce, Brussels, Belgium

The ACE together with the Centre d'Etudes d'Assurance in Belgium is already working on a detailed survey of the thirty-two countries on liability and insurance regimes and we anticipate with a bit of luck that we will have a full professional report early in 2009 on this topic.

Pierre Von Meiss, Lausanne, Switzerland

This is important, because a clearer understanding will help each national body to assess its challenges. Today probably none of them really know the perhaps close to 30 different conditions for access to independent professional practice and connected liabilities in European countries.

Herman Neuckermans, Leuven, Belgium

When the Architects' Directive was still in force there was a procedure for objecting against a notification; is there still such a procedure now, and if so what is it? For example, without naming names or schools, if one school accepts in its Master's programme a Bachelor in chemistry or philosophy and at the end of the five years that person receives an MA in Architecture, which is then part of that professional qualification process after adding or not adding professional training, etc., is there then some way in the process of listing or notifying the diploma or the academic qualifications to indicate whether the Bachelor's degree was in the same field? Because if the MA is what counts for access to the profession, you will have people entering practice with only two years of studies in architecture.

Adrian Joyce, Brussels, Belgium

The answer to your question is that if a school takes into its Master course, or two-year course, students who have not studied in a similar field beforehand, it may be okay in their country to practise architecture but under the EU Directive it will fail the test, because the minimum conditions of training are four years of full-time training in architecture and training must incorporate the eleven points. Before it was disbanded, the Advisory Committee wrote a paper on this subject in which it was clearly stated that four full years must be devoted entirely to the subjects of the eleven points. So your hypothesis might work within an individual state, but a person such as you describe will not be able to go abroad and automatically get recognition in another country.

Herman Neuckermans, Leuven, Belgium

But that means a restriction on the principle that a licence to build is a licence to build forever, because a licence to build in some countries does not necessarily mean that you have a licence to build elsewhere.

Then, just to respond to what you said earlier: I did not say that the Architects' Directive was bad, but that the eleven points were not reviewed and that we have now missed that chance.

James Horan, Dublin, Ireland

The other aspect of your question, Herman, was the process that existed under the Architects' Directive for a Member State that had doubts as to whether another Member State's qualifications complied with the Directive. This has changed. Under the Architects' Directive there was a sub-committee of the Advisory Committee called the diplomas' group, of which I was the Chair for seven years, that used to listen to objections and concerns about a given diploma if they had been raised to the Commission, and that group would then offer an opinion as to whether the diploma was compliant or not. That process has now been eliminated and it seems, although I cannot be absolutely certain about this, that the only right to object will

come when something is listed. A Member State can question whether in fact it is compliant, but once it is listed it is going to be very difficult to take it off the list. But there is no process in place whereby doubts can be raised; I do not know whether Adrian might have something to add to that as well.

Adrian Joyce, Brussels, Belgium

Actually, a Member State can object to a listed qualification at any point, but there is an important difference. In the Architects' Directive there was a time limit of three months, which could be extended to four, in which a Member State could object, but in the new Directive there are no time limits at all and for anything. So this is a very awkward and difficult situation, and the ACE has written to the Commissioner in the European Union expressing this concern and asking what happens if a qualification that has been in the list for three years is successfully challenged and taken off the list; what happens to the people who enjoyed that listing for the three years who are clearly now judged not competent under the terms of the Directive? We also asked whether the Commission will pay for any buildings that fail by fault of actions of those people.

So this is one of the reasons that the Commission is taking a very long time to consider whether or not to list the new notification. In the good old days that took about three to six months, but in the current atmosphere it is going to take eighteen to twenty-four months for each notification to get into the list – which is a message also for the twelve EU countries who really have to allow that kind of time-frame for the re-notification of any qualifications.

James Horan, Dublin, Ireland

At this stage it is not at all clear how this possibility to object will actually work out in reality. For example, if a Member State which requires two years post-graduate professional experience, certified and with an examination, discovered that there were many architects coming to work in that country directly from university because that is what they are allowed to do in their own country, it might be a reason why a Member State might object to a qualification on the grounds that it was not adequate. This has yet to happen, but obviously there is a big can of worms out there and someone has got to open it one of these days.

Stefano Musso, Genoa, Italy

My question has to do with the need to notify new or modified qualifications. Point 4 in the document says that it is necessary for a country to notify its qualifications in architecture: "(In the opinion of the ACE): When a listed qualification only refers to the academic period of education". What does this mean? Why is the first bit in brackets? Does it refer to how each school must act with regard to this in the opinion of the ACE, the implication being that it is not a general opinion? Or that it is an opinion that is not shared by the other component of the Joint Working Party, the EAAE?

I ask because I am facing this kind of problem at the moment. We were listed in 1993 as a school that could deliver a Master's degree recognised under the Architects' Directive. Then we had at least three references in the intervening years and each time we had problems with our competent authority because she was the first to judge if the school had to re-apply to Brussels or not. Now we face a new reference, the last one in the series – or so I am told – and a lot of critics use these arguments to support their point of view that we can or cannot do

something because if we do it will constitute a transformation of our curricula and we will be obliged to apply again to Brussels.

Another reason I think this is not made clear is because in Point 2 it says that notification should occur, "When the content of the curriculum of a qualification changes significantly", which is of course a qualitative measure of judgment. Of course I know that it is impossible to give more detailed information in general terms, but in this process that is already uncertain and complicated I am afraid that I really need a bit more clarification. Then to go back to the fourth point in the document, which in my opinion is actually quite shocking: I mean, if a school must re-apply because the old listing was based only on the duration of academic curriculum, almost all the schools in Italy will have to re-apply. Under the old Directive only the duration of the academic career was taken into account and there was no reference to a post-graduate training period, and that is how we are listed.

So it is a very crucial point, and if this is a criterion and a rule that we are obliged to follow, and not just an opinion of the ACE or of the Joint Working Party, this means that most schools in Europe will have to re-apply. Is this correct? Or have you put it like this because it is still an uncertain point and needs to be further clarified?

James Horan, Dublin, Ireland

It is an uncertain point and we certainly do not know all the answers here, because this process is still evolving. One of the reasons why there is a reference to this academic period only is because at the various meetings that have taken place with the co-ordinators in Brussels the Commission has specifically asked the following question every time a new diploma came up: What other professional qualifications are required to allow this person to act under the title of architect? It seems clear that the Commission is moving its mind into that position, and this could therefore be a problem.

Stefano Musso, Genoa, Italy

If this does become a problem, it can be solved only by the national governments of each country, perhaps by declaring that each school in its territory has complied with the eleven points, etc., and that to allow students to practise after finishing the curricula and being awarded the diploma delivered by the school they must, for example, as in Italy, pass a state exam. That could be a general rule that could in a general way meet this requirement or the opinion of the ACE. Could this be the solution?

Adrian Joyce, Brussels, Belgium

First of all I want to draw your attention to the sentence before that list of four items, where it says that "it is necessary for a country to notify..." – we specifically did not say that it is the school's responsibility. This is an issue for the national governments to deal with. James Horan has accurately stated the opinion of the ACE, which is that, with the Commission now asking whether this is the full set of qualifications required for access to the activities of architects in your country, if you have only listed an academic qualification it needs to be re-examined, and this is why it is written that way in this document. But indeed, as you said, the decision is up to the competent authority in each country.

Ramon Sastre, Barcelona, Spain

Is the list of schools available? I mean is there a Website you can visit, or do you have to ask the government or the competent authorities in each country to find out which schools are listed?

Adrian Joyce, Brussels, Belgium

The list is publicly available and it is published in the Official Journal of the European Union. It is republished on a regular basis when new notifications are accepted. A quick way to get to the current list is to go to our Website, where under a section on the left hand navigation bar called 'Qualifications Directive', you will find reference documents and the text of the Directive in English and in French, including the list of qualifications. So, in answer to your question, yes, the information is very openly available.

Ramon Sastre, Barcelona, Spain

I also have a comment, which may change the direction of our discussion today to some extent. It seems that the problem of professional mobility is more an issue for the professional bodies than for the schools. What I would like to ask is, if we are forming or are trying to form architects for Europe, do we have to change the way we teach? When we say we teach local architecture or local construction, what do we mean by local? Local does not mean our own country anymore. It seems to mean Europe, and Europe has different climates, different cultures, different seismic conditions, etc.

So I would say that this is probably a more important thing; I mean, if we pretend not to be on the list because our architects can work anywhere, yes, that is important too, but if we are on the list, then we have a responsibility to form architects who are really able to go and work anywhere in Europe. This means that our students will have to be able to deal with the temperatures in Finland and the sun in the Mediterranean region, and a lot more. We are aware of our rights but not far less of our duties. We should keep this in mind.

Hisham Elkadi, Belfast, United Kingdom

I am sorry to turn the discussion back to the fourth point in the ACE document, but I think it is crucial in order to clarify what is going on, because we cannot move forward unless we know the current situation and it is just not very clear to me at the moment.

I think that Adrian Joyce made it absolutely clear that any school of architecture that does not give entry to the profession will not be listed, while the position of James was that this is under negotiation and that the Commission is moving from this position into the position of inquiring into what else is provided to give entry to the profession. If Adrian's position is affirmed, most schools of architecture in the United Kingdom will not be listed because our part two, our Master programmes, our diplomas, do not give entry to the profession. If James' position is more likely, then that means that the Commission are judging schools on intermediate position for entry to the profession, which again is not clear because they cannot have intermediate judgment on schools. I want to know which position is actually the case now, because there are many schools represented here that are going through this process.

James Horan, Dublin, Ireland

At the moment there are qualifications that have been listed and identified to Brussels, in some cases with professional experience added in and in some cases without it. All I have been saying is that in my experience, since the Commission started to chair co-ordinator's meetings, it has continuously been asking whether there is further requirement beyond the academic qualification from the schools to carry out the activities of the architect, and that seems to me suggestive. I do not think that Adrian and I are disagreeing on this. It is not absolute that the Commission is saying that you must have a professional qualification in addition to your academic one, but they are asking the question and they are saying that if in your country it is necessary to gain professional experience that piece of information must form part of the notification to Brussels, and that is the real thrust of where this is going. If you take it logically this would suggest that the Commission is thinking that it would like to see every Member State with an academic qualification and the subsequent professional requirement in order to allow someone to practise as an architect.

Hisham Elkadi, Belfast, United Kingdom

So the fourth point in the document can be deleted. Because you are saying that a country should notify a qualification if its listed qualification only refers to academic period.

James Horan, Dublin, Ireland

It is likely that the Commission may start to ask Member States that have only listed academic qualifications, which may concern all schools in the UK.

Adrian Joyce, Brussels, Belgium

I wanted to say to Hisham Elkadi that you seem, for your situation and your national situation, to wish for the schools in the United Kingdom to deliver the professional qualification, or that is what seems to be behind what you are saying; but I want to recall that the competence to set the requirements lies with each country and in the United Kingdom there is a government requirement that in order to practise you have to have part three, and part three, if I understand correctly, can be delivered in a number of different ways.

But I also wanted to say that when you look at the European scene, and the United Kingdom is one country out of twenty-seven, it is generally the situation that schools of architecture do not produce qualifications that allow immediate access to the profession. The vast majority of countries have a further system either through the ministry, like in Italy, where there is a state exam, or in Belgium, for instance, where there is a two-year period of professional practice experience required, not followed by an exam, that is then validated by the Order in Belgium. So there is a wide variety of systems across Europe and here this is a meeting of heads of schools and you should not have in your mind, as it seems Hisham has, that a school should be producing the qualifications that lead to access to the activities under the title of architect.

Loughlin Kealy, Dublin, Ireland

I am aware that the discussion is kind of moving in different ways because in some cases people are concerned about the whole question of listing and how their particular programme or particular school faces a new regulatory environment, and I think it is clear from the kind of

taxonomy that was suggested before that this is primarily a dialogue to be led with the competent authorities in their own country, especially if it has to do with something very specific.

I would like to first make the observation that the dialogue that would happen at national level is not necessarily the same kind of dialogue as will happen, shall we say, at European level or that will happen at the level of professional bodies or between competent authorities. What I was trying to get at, and Adrian clarified it for us to some extent by saying that the competent authorities are meeting, is that presumably there is a reluctance in Europe to harmonise but at the same time there is also a logic in Europe which is about removing barriers, so the inherent logic behind the competent authorities meeting is, I imagine, to remove barriers. What that means – and it brings me back to the question of common platforms – is whether there are common platforms emerging among competent authorities or common platforms emerging among professional bodies. Now, if we can say that it is desirable, and whether there is a common platform or not between professional bodies is not really our business in the first instance, but it would help to orientate oneself if there were, but my question is really whether as a body, as the EAAE, what kind of role we can play in this process. I know there is a Joint Working Party that has to do with the EAAE and the ACE, but I am not sure in terms of your agenda for that Working Party whether that common platform is explicitly part of that agenda, and if it is how we can help advance it.

So I know that there are levels of question and there is a kind of overlap in the discussion when it comes to the question of listing, because these things are penetrating vertically as well as everything else; but it seems to me that there are very distinct levels at which dialogue is needed, and the underlying logic of the European Union as I understand it is freedom of movement and exchange of services and the removal of barriers which is necessary to accomplish that. The issue of quality, and the ability if you like to create a high-quality built environment in the future, which we are primarily concerned with also as educators and as part of some sort of notional partnership – how that enters into that kind of discussion is not clear to me at all, I am afraid. To go back to my basic question, I am just wondering whether there is a platform emerging at the professional level in Europe as an attempt to create some sort of common understanding, and whether we can help in some way in that. Is there a role for the EAAE in helping that situation?

David Porter, Glasgow, United Kingdom

Let us return to Loughlin Kealy's question, because it ended with "what role can we serve to help as schools?". When I wrote down his question and you also mentioned the role of establishing competences that would then differentiate the academic from the professional, and I think that is part of making the common platform between these two different sorts of bodies, the professional bodies and the competent authorities. It seems to me that this body has already done a great deal of work on establishing those competences. So the question is actually whether they can be part of the tool that will open this up in a negotiation between us in some form, our professional bodies nationally and the competent authorities. But that it is also a question of how we strategically address it. So I am just underlining what you very eloquently explained, Loughlin.

Constantin Spiridonidis, Thessaloniki, Greece

From the development of the discussion I find some directions, more than conclusions. First, the role of the professionals to establish a common ground or a common platform appears to be very important. The Second, based on the first, is that regarding the creation of such a platform, professionals seems to expect to hold the discussion at the national level with their competent authorities. As Loughlin said, it is strategically necessary to produce immediately a number of platforms as alternative possibilities and to propose those platforms to competent authorities at a national level. To investigate if they are appropriate, if they can offer some kind of solution. More initiatives have to be taken in this direction. The Directive is there, the conditions are developed, and we already have some kind of injustice in the conditions of professional mobility that will create side effects like those that Bertrand referred to. Third, we have to establish collaborations between the schools in order offer the possibility of having another way to facilitate entry to the profession based neither on the criterion of quality, nor on the criterion of academic but on the graduates performance.

For all the above, we EAAE and ECE have to act immediately, and in my understanding the first thing that must appear is some kind of proposal stating what we think, which will then be presented to the schools, to the competent authorities and to the professional bodies in each of the countries, in order to examine the compatibility of the existing condition. So my conclusion to that is that we have to start from above or at least in parallel, in order to have something created as a proposed model at European level, and at the same time this will have to be tested at local level – but in any case we have to start yesterday.

Bertrand Lemoine, Paris, France

I have just been reading the text of the Directive and the list of qualifications, which were really very easy to find on the Internet. It is a simple text but when you read it and when you read the different articles you see that there is a list of qualifications, eleven points, for the training of architects, which in fact all schools of architecture now fulfill.

But these qualifications do not give access to the profession. They are necessary but they are not enough, they are not sufficient to gain access to the profession in most countries. In most countries, although not in all, they do not give access to the profession. That is a point, which also poses a bit of a contradiction, because they set out what is expected from an architect but once someone fulfils those and receives a diploma he cannot, at least in most countries in Europe now, enter the profession. You have to acquire other qualifications, as well as things that are not qualifications, like experience. I suppose when you work for three years you are supposed to develop certain qualifications that are embedded in this list as well as others that could perhaps be added at some point. In any case, the point is that you are expected to gain experience before you can practise. You can see experience as a qualification of course, but it is slightly different. Article 46, which lists the eleven qualifications, focuses on education, on diplomas, and on the fact that diplomas are recognised throughout Europe; but then, in the more general Article 49, it says that when a Member State gives you access to the profession then you gain access to the profession in other countries. This does not specify which type of qualification you have to get. It is just implicitly stated that you need to go through the process of accreditation in your own country and again it is not very clear whether this means that you must be a citizen of a country to qualify in that country or if you just have to be a citizen of Europe, in which case you can qualify in any country in Europe.

But the main point which is not clear is that the Directive states some requirements for the schools, but then the schools cannot, in this text, deliver the qualifications, the real qualifications to get access to the profession. So either we can or we cannot. Of course the situation is complicated in Europe. In some cases, as in France, the schools, in cooperation with the professional institution, are responsible for delivering access to the profession, through an extra year in which professional experience is mixed also some educational knowledge, but in other countries it is entirely in the hands of the profession, and the schools are requested to fulfill certain requirements but they are not in fact the ones giving the right to access the profession.

So in the text in my opinion, between Article 46 and Article 49, there is a kind of gap, and we see that in this gap is the vast and uneven plane that we have talking about with regard to the differences in different countries in Europe. In this uneven plane it is very difficult to position our schools, because we can fulfill all the requirements stated in the Directive, but that is not enough to really go to the professions. So that is why we are behind: we are expected to do something, but we are not in a position to fully deliver.

Herman Neuckermans, Leuven, Belgium

I just wanted to react on this remark because maybe we do not have to be unhappy with the fact that there is a difference between these academic qualifications and the professional ones. Because I heard many of you saying that we are not educating architects, but we are educating in architecture, and that means that we are preparing people for many other different professions. So this Professional Qualifications Directive addresses architects who take the legal liability of conceiving a building, and that is all. So perhaps it is not such a bad thing that there is a difference; those who choose to go into practice or want to acquire these qualifications can do so, and that is their choice. But those who intend to write books, publish, become critics, make movies, perhaps do not need professional practice.

Stefano Musso, Genoa, Italy

The way I have understood it is, that the old Directive was about qualifications of diplomas, whereas the new Directive is about qualifications of professions, and is aimed more at facilitating professional mobility, etc., and this is where the confusion lies. Then, qualifications on the professional level also in some way affect the assessment of the schools, but even today a school must first of all comply with the eleven points of the requirements of the old Directive; and basically another problem arises there in connection to a new assessment, but what is added is up to the competent local authority in each country and not up to individual schools, because it has to do with the different legal systems that exist in each country. So in the end, what I want to know is if I am right in saying that we can divide the problem in two and that what is lacking for an eventual new assessment is not up to a single school but up to the competent national authorities to add.

James Horan, Dublin, Ireland

Yes, it is the competent authority ultimately or the government of the individual Member States who will carry out the notification process. As part of that they will take into account the schools within their jurisdiction. The schools are still expected to comply with the eleven points of the Directive under Article 46; but because the thrust of the Qualifications Directive

seems to be moving ever more closely to the practising of the title of architect and operating like an architect, it would now appear that you need both of these things together when you are notifying Brussels about a qualification – hence the need that we have identified for schools and the profession to be talking to each other and indeed to be talking to the competent authorities in their own Member States so that that the complete loop of communication is clear and happens in a reasonable manner.

Nicolau Brandao, Oporto, Portugal

For all of us there are problems deeper than that. I say this because in Portugal we still can present a project without being an architect, a student of architecture, or anything to do with architecture at all – someone with a Bachelor in engineering can do the same things an architect can, after only completing a Master and getting professional recognition.

James Horan, Dublin, Ireland

Essentially we are proposing that a resolution comes out of this meeting, which is really in the form of advice about what we should do when we go home and what we need to do in our individual Member States to advance the process we have been discussing.

The first part just describes the background, so I will read out just the last three paragraphs for you. What we are essentially saying is that this meeting, the 11th Meeting of the Heads of Schools of Architecture, has resolved to:

- seek to arrange, in each Member State of the European Union and in collaboration with the profession, an advisory body that will assist the government officials to assess notified qualifications in the field of architecture, giving an expert opinion on whether they comply with the requirements of the Professional Qualifications Directive.
- advocate that each Member State carries out an assessment of the qualifications that are currently notified and listed in the Professional Qualifications Directive in order to ensure that they are the full set of qualifications required of nationals to practise as an autonomous architect.
- suggest to each Member State that a national expert drawn from the schools or the profession accompanies its officials when meetings of the group of co-ordinators established under the Professional Qualifications Directive are dealing with matters related to architectural qualifications, and we would see this as a first step.

Constantin Spiridonidis, Thessaloniki, Greece

I would suggest the addition of a last paragraph that would say that the ACE and the EAAE have engaged to undertake initiatives in the near future to develop activities in this direction. I think that it will be better because this way we leave the initiatives to the states.

Richard Foqué, Antwerp, Belgium

I absolutely agree, but my comment is that it may be better if it were formulated in even stronger terms. The last point for instance uses the word “suggests”, I would change that to “strongly advocates”. We should be just a bit more explicit and more emphatic.

Guido Morbelli, Turin, Italy

The third point says “drawn from the schools or the profession” – since we have been saying all the time that schools and the profession have different objectives and different attitudes, I think it should not be just one of the two. Actually, it would be better if there could be two experts, because a representative of the schools may think in one way and a representative of the profession may think in another way, and they may be in conflict with each other.

Francis Nordemann, Paris, France

Perhaps ‘and/or’ would do it. Let us keep it a bit open.

So we will add the final paragraph to the resolution and perhaps make some other small corrections, and if you agree we will discuss it this afternoon in the final session.

Session 5

Conclusions and Future Perspectives

Chair: **Maria Voyatzaki**, Thessaloniki, Greece

Introductory panel:

Francis Nordemann, Paris, France

James Horan, Dublin, Ireland

Per Olaf Fjeld, Oslo, Norway

Constantin Spiridonidis, Thessaloniki, Greece

The first part of this session mainly dealt with the resolution to be taken by this conference. All the debate related to the final formulation of this text is presented in Annex 2. The final text, as was approved by the participants of the 11th Meeting of Heads, is the following:

11th Meeting of Heads of European Schools of Architecture

Resolution Sessions 3 & 4

New responsibilities for developing constructive relations
with the professional bodies
New responsibilities for diplomas recognised by the new directive

At its 11th Meeting, the European Network of Heads of Schools of Architecture (ENHSA) the thematic network of the European Association for Architectural Education (EAAE), welcomed over 120 participants to its annual conference. These included participants from the Architects' Council of Europe (ACE), representing the profession at European level, participants from Latin American Schools of Architecture and its own institutional and individual members. Central to the debates were concerns raised by the rapidly changing legal framework of the EU and specifically the ongoing implementation of the Professional Qualifications Directive (2005/36/EC), which regulates how the professional qualifications of EU citizens wishing to move around the EU are recognised in the State to which they migrate.

Noting that the effect of recognition under the Professional Qualifications Directive is to permit full access to the market for activities under the title of architect in the host country;

Being aware that, for the architectural profession, recognition of professional qualifications is automatic;

Highlighting the public interest nature of architecture and therefore the need to ensure that equivalence can be assured without undermining the necessary diversity that currently exists within the EU;

Concerned that the procedures for the assessment of notified qualifications in the field of architecture under the Professional Qualifications Directive is not yet clearly and reliably established;

Realising that there is an undeniable need for closer collaboration between the Schools of Architecture and the profession;

The 11th Meeting resolved to:

Seek to arrange that, in each Member State of the EU and in collaboration with the profession, an advisory body will be set up that will assist the government

officials to assess notified qualifications in the field of architecture, giving an expert opinion on whether they comply with the requirements of Article 46(1) of the Professional Qualifications Directive;

Advocate that each Member State carries out an assessment of the qualifications that are currently notified and listed in the Professional Qualifications Directive in order to ensure that they are the full set of qualifications required of nationals to practice as an autonomous architect;

Strongly advocates to each Member State that its officials, when attending meetings of the Group of Coordinators established under the Professional Qualifications Directive, are accompanied a person expert in the field of architectural education and practice.

The ACE and the EAAE commit to continue their ongoing collaboration and to address and promote pertinent actions and initiatives arising from the challenges implied by this Resolution.

Chania, 9th September 2008

In the second part of the session the Panel proceeded to its final statements with regards to the presentations and discussions of sessions 1, 2, 3 and 4:

Maria Voyatzaki, Thessaloniki, Greece

We have the Chairs of the four different panels we heard over the past few days. Our intention is that they do not really to synthesise everything that was discussed, but more to give a personal overview of the sessions that they chaired, so that they can then connect these overviews to perspectives along which their sessions could be developed further.

I will follow the chronological order of the actual programme and begin with Constantin Spiridonidis, who will be giving us his insights relating to the session on new responsibilities in designing competitive profiles of architects.

Constantin Spiridonidis, Thessaloniki, Greece

The only thing I would like to remark on is the fact that a reference to accreditation appeared to attract the interest of the discussion, thus transporting the initial perspective that we had for this session to speak about the profiles so as to have a kind of continuity with the discussions we had in previous years. The question on accreditation was posed in a very strict way; personally, at least in this room, I would prefer to speak about quality, and more on the content of the things, rather than processes, and to tell you the truth I cannot imagine how someone could continue or could extend this kind of debate in the future. The discussion we had did not leave something coherent, at least in my mind, and for this reason I think that it was not a very successful session. It was just something that passed and did not leave a mark. Probably we have to rethink seriously next time how someone will direct the interest towards the profiles of the graduates, which in my view is a very significant discussion, and how the quality we want could be achieved in our institutions.

So this is my very short critique of this session. I hope that the discussion from this session will provide us with some inputs and insights in order to think how someone could redefine the issue and begin a new discussion.

Per Olaf Fjeld, Oslo, Norway

Once again I think that I at least have learned a lot, and that we have come quite a long way in these eleven meetings. The discussion on the Bologna declaration is drawing to a close; those who have followed this discussion have a different perspective from those who have not. Perhaps we have come so far that we are now ready to look at another sort of agenda and move forward in a slightly different way, leaving the Bologna declaration behind us. I am very happy to sense that the individual approach does not seem to have disappeared from the school. That you have been able to put together an agenda within your own school that still talks about an individual attitude towards architectural education, while at the same time everything is becoming more and more competitive, is very important. There is no doubt that it is very important within this competitive world, even between our schools, to continue to stress this individuality and this profile that each school has.

But it is no longer necessary to discuss this in every meeting; in other words, maybe we have taken a leap in which we understand what has been going on within the last few years and that we have actually accomplished what we tried to do, or at least that is what I sense.

It was Constantin Spiridonidis who invented the idea of competences, and that is something we do need to continue to discuss. It is a field that offers great possibilities and can be seen and discussed from many different angles that we have perhaps not yet touched on, both related to new competences and what the position of the old competences might be in relation to the new. Often in these sessions, in listing some of the competences, we talk about a certain type of openness, the idea that we are open to change and that we have the capacity to seize new opportunities. I really hope that is the case and that we are able to continue in that way, because I do think that will be part of this battle for survival.

Within the last years, we have not stressed the pedagogical process enough, and I think that is something that could be incorporated in these discussions in a much stronger way. Then, in this meeting we also talked about different platforms that we can use as a basis to react to issues, and I think, particularly in relation to sustainability, that if we do not have such a platform, or at least an agreement on the direction in which we would like to react, sustainability cannot be discussed.

Then, I have a final comment related to the relationship between the education and the profession. Again it has been a very successful relationship, but for me it is starting to become a bit confused, although not necessarily in a negative sense. But I do not think that we have been clear enough in relation to the quality aspect and the political aspect in our relations and that both the ACE and the EAAE need to very clearly state what they want, particularly in relation to life-long learning, which means, in other words, the quality of the education as a whole. Then, we should also go more into the political aspect of our relationship, which is also very important, but not necessarily the most important thing. Since we now know each other much better and in a much more constructive way than we did five years ago, the debate can be much stronger, and this is the case mostly in relation to the competences, where you have given us a way to discuss them in relation to the new competences, and we should face what we mean about architectural education and its quality related to the profession itself. It has to be discussed away from protection. I am not saying that we do that but sometimes I think there is a little bit of that in it.

So I am very happy, or at least content, with the steps that we have been taking together and in the way that we are proceeding, and I think that we should have it clear in our minds where we are at the moment and then maybe there are other agendas which we can pursue in a stronger way.

James Horan, Dublin, Ireland

Per Olaf Fjeld has just made reference to the relationship between the educators and the profession. If we think back to four-five years ago I remember having discussions with members of the EAAE as to whether we could even start discussing the possibility of forming a relationship with those involved in the profession of architecture. The mindset and the thinking that underpins architectural education has advanced enormously in those four to five years and that the edge between education and profession has been blurred in so far as that we are now believing, rightly so in my opinion, that education is continuing and that when you start practising architecture as a professional you will still continue to learn and you will still be involved in the educational process. Over the last four years particularly, we, collectively with the professionals, have bought into that philosophy, and that is a platform and that is the position where we now find ourselves.

This morning's discussion on the Directive, which I know Francis Nordeman will talk about in a moment, was a clear example of how the combined experience of the educators and the professionals can come together to produce a sense of clarity that rarely rears its head at meetings like this. The basis for which we build is really based on the information we have. The field of information out there is changing and never remains quite the same, so we are always dealing with a slightly shifting landscape. The success of what we are doing is, I believe, due to the fact that, because of our synergies between educators and the profession, we are in a better position to deal with that shifting landscape and in a better position to respond to it for the benefit of architecture.

Consequently, I feel a sense of optimism. Achievement is a bit like a snail crawling up the fence: during the day he crawls up a meter and while he is asleep at night he slides back half a meter; nevertheless every day he makes half a meter. This is the way we operate. It is a slow but sure progress. Nevertheless, I believe there is progress and I would be very optimistic about where it goes from here.

Maria Voyatzaki, Thessaloniki, Greece

Thank you, James, good analogy. Last but not least, I will invite Francis Nordemann to say a few words about his session on new responsibilities for diplomas recognised by the new Directive.

Francis Nordemann, Paris, France

This eleventh meeting has been quite illuminating for all of us, and certainly for me. I am stepping into something new and I am very happy to be in a situation where the basics are explained and described. The Directive is this basic common platform for modern professionals and I think a map of this platform should be established; This could be a renewing key document. I understand that the quality and the content of education is another matter and that it is totally independent of the requirements of the Directive. In between education is based on the Bologna declaration, which is now in place for almost all the schools and the professionals. There is now exists a field that is really open for discussion and collaboration, which would help reinforce each other.

I am convinced that schools have an important role to play in bringing newcomers to the market. These newcomers will then become professionals who are able to take on the responsibility of building and moving in the European Union; I mean, being able to practice the way they have been taught will promote the discipline in the professional realm of building construction, while also the cultural level of architects will be a way for them to be the ambassadors of the schools and it will create a progressing demand on the school.

I understand that there is a lot to be fine-tuned and articulated in the professional realm – the responsibility of the schools to provide the basics, which then will become clarified and enhanced in the profession – and this means that the discussion and the exchanges we have will somehow be fostering this progression. New developments will arise and we might expect diversity in geographical situations, cultural situations and changing times, and challenging steps will be made in education and research. This will be a long process but an exciting one, and this eleventh meeting is another milestone in this process.

Annexes

- 1. ACE-EAAE Joint Working Party:
Directive 2005/36/EC
Summary of Presentation
to 11th ENHSA Meeting of Heads**
- 2. Debate related to the formulation
of the text of the Resolution
of the 11th Meeting of Heads**

Annex 1

ACE – EAAE Joint Working Party

Directive 2005/36/EC – Summary of presentation to 11th ENHSA Meeting

Draft – 8th September 2008

This information note is a summary of the information delivered to the 11th Meeting of the European Network of Heads of Schools of Architecture during Session 3 entitled “New Responsibilities for Developing Constructive Relations with Professional Bodies” on the subject of the Professional Qualifications Directive (2005/36/EC).

Recommended Action

Schools of Architecture should seek to learn the name of the national Article 56 Coordinator for their country and then seek to establish an ad-hoc committee at national level that brings together representatives of the profession (who have been separately alerted to this need by the ACE), the schools and the Coordinator in order to provide expert advice to the Coordinator on any notifications of qualifications in the field of architecture that are being considered for inclusion in the list annexed to the Professional Qualifications Directive (PQD). Furthermore, the schools and/or the profession should ensure that the national government always brings at least one expert from the national ad-hoc committee to each meeting of Coordinators in Brussels.

Introduction

The PQD is a directive of the European Council and Parliament that regulates, for EU and EEA (European Economic Area) citizens only, how the qualifications of persons wishing to move around within the borders of the EU and the EEA are assessed and recognised. It covers over 800 regulated professions and includes the architectural profession. It should be noted that the directive does not seek to regulate, in any way, the content or quality of the qualifications of the professions covered – it simply sets out what is and is not permitted in the procedures to be followed by Member States when they are giving recognition to qualifications held by migrants coming from other EU and EEA States.

Architectural Qualifications

Within the directive, there are a number of sections that deal with qualifications for the so-called sectoral professions and one such section deals with the architectural profession. This special treatment exists because the architectural sector had its own directive (85/384/EEC) that set out the procedures for AUTOMATIC recognition of qualifications, under certain minimum conditions of training*, for the architectural profession and these provisions are largely repeated in the PQD.

* Studies must be a minimum duration of 4 years and must lead to the acquisition of the 11 points listed in Article 46(2) of the PQD. On this point it should be noted that ACE and the EAAE launched, in December 2007, a joint campaign to seek to have the minimum duration of studies noted in the PQD raised from 4 to 5 years.

There are, however, two major differences between the regime that is now in place under the PQD and the old regime that existed under the Architects' Directive. The first is that the tri-partite Advisory Committee (with representatives of the Governments, the schools and the profession) has been abolished and has been replaced by a group of national Coordinators who now consider all notified qualifications. This group is made up of nominees of the Member States only, appears to consist mainly of lawyers and they certainly have no special expertise in the subject of architectural qualifications.

The second major change is that the PQD is clearly a "market access" directive in which:

"The recognition of professional qualifications by the host Member State allows the beneficiary to gain access in that Member State to the same profession as that for which he is qualified in the home Member State and to pursue it in the host Member State under the same conditions as its nationals. (Article 4.1)

For architects the relevant qualifications for each country appear in an approved list of qualifications listed in an annexe attached to the directive (Annexe 5.7.1). The listed qualifications must legally be treated as equivalent in the automatic recognition procedure set down in the directive and so the actual qualifications listed are of utmost importance to the free movement of architects around the EU. However, unlike the Architects Directive, the PQD does not permit Member States to check that incoming migrants have professional practice experience and, as the Commission simply transposed the approved list of qualifications from the old Architects' Directive, the vast majority of listed qualifications are academic qualifications only.

Need to Notify New or Modified Qualifications

In order for the system of automatic recognition to operate properly and in order to ensure that the architectural profession can have full confidence that the listed qualifications are effectively equivalent (absolutely necessary as recognition grants full access to the practice of the profession in the Host Member State), it is important that the listed qualifications are the full set of qualifications required by each country of their own citizens. That is to say that they should include any required professional experience along with the academic qualification.

There are several situations in which it is necessary for a country to notify its qualifications in architecture:

1. When the title of the qualification(s) changes due to a re-structuring exercise such as the Bologna Process.
2. When the content of the curriculum of a qualification changes significantly.
3. If the qualification is no longer covered by the "acquired rights" provisions of an Accession Treaty (as is currently the case for the EU-10 countries that joined the EU in 2004) or an Accession Directive (as will be the case for Bulgaria and Romania later this year). For the EU-12 countries it is imperative that they notify their qualifications to ensure that graduates who are now in the schools will be granted a listed qualification when they graduate in 4 or 5 years time (depending on the country)
4. (In the opinion of the ACE): When a listed qualification only refers to the academic period of education.

The procedure for notification of qualifications will be known to the national Article 56 Coordinator and can only be made by a national government via its Permanent Representative in Brussels.

Actions Arising

Arising from the situations set out above, there are a number of matters that require urgent attention at national level:

1. The Coordinators at national level must be given expert advice and help in all matters that touch upon architectural qualifications. It is suggested that the best way to do this is to establish at national level an ad-hoc committee whose members represent the government, the schools and the profession.
2. Each Member State must be lobbied in order to get them to re-examine the current approved list of architectural qualifications and they must be assisted in revising the list to bring it up to date with the Bologna Accord and with the need to list qualifications that cover professional experience.
3. Each time the national Coordinator travels to Brussels to attend a meeting at which matters affecting architectural qualifications are on the agenda, they should be accompanied by at least one expert from either the schools or the profession.

Conclusion

The actions arising, as noted above, provide to the schools and the profession, a valuable opportunity for collaboration and joint action. That collaboration must be mainly at national level, but the Joint Working Party (JWP) of the ACE and the EAAE will assist in as many ways as it can to ensure that the objectives set out in this note are achieved.

Annex 2

Debate related to the formulation of the text of the Resolution of the 11th Meeting of Heads

Maria Voyatzaki, Thessaloniki, Greece

First of all I must ask for your final agreement on the resolution that was put together in the previous session. Are there any objections, additions or comments you would like to make before we get on with the session?

Herman Neuckermans, Leuven, Belgium

Well, at the end of the discussion in the last session, Guido Morbelli raised the issue of whether it would not be better to have two people accompanying the co-ordinator to Brussels. Someone suggested changing the text of the resolution to “and/or” rather than “or”, but I think we need to discuss this a bit more because when you say “and/or” it can be one.

Adrian Joyce, Brussels, Belgium

The comment I wanted to make is that “and/or” seems to me to be a better solution because politically it is going to be very difficult to get a Member State to pay for two experts to go. This way we leave it open.

Maria Voyatzaki, Thessaloniki, Greece

Professor Morbelli, as the one who first brought this up, would you like to add something?

Guido Morbelli, Turin, Italy

I will follow the majority ruling, but as I said we have been saying all these days that a representative of the schools could be in conflict with a representative of the professional body, because they have different views on some things. I think that in the end if only one is chosen, either from the schools or the professional bodies, they will tend to push for their own interests. So I expressed the opinion that it would be better if there were two experts, one from each body.

James Horan, Dublin, Ireland

Guido, you are right that the discussion we had at the end of the previous session was a bit inconclusive in one respect, but we felt that it might be a little over prescriptive to expect that a Member State could afford to send two people. And Stefano Musso made a very interesting point to me a little while ago. He said that if we leave the “or” in, as opposed to “and/or”, we oblige the professions and the educators to talk to each other before a representative is sent to involve themselves in this process.

Stefano Musso, Genoa, Italy

I am sorry for interrupting. I really did understand what Guido was saying but I reacted in this way because I think the only way this process will have a chance of success will be if it is based on an attitude of trust. And I agree that the risk that Guido mentioned is real, but in the meantime I think that we cannot send to Brussels two people that re-propose discussions in that phase. It would not be useful and it would not be polite. So I think that it is up to us to create the conditions in which in our country there will be a dialogue between the schools and the professionals, so that the person sent to Brussels has the trust of the others to represent the real situation in that country. I do not think that the solution of two people could resolve the issue. At least, this is my opinion.

Richard Foque, Antwerp, Belgium

I have been closely following the argument that if you can get even one it would be a great victory, but on the other hand it is my opinion that resolutions like this should be posed in a very strong way because they are a first step in negotiations. So if you say you want two people and then agree on one, it will make the other side think that you have given in, when in fact that is what you want. So it is a question of tactics, but that is my more pragmatic approach to these kinds of questions.

Pierre Von Meiss, Lausanne, Switzerland

Or, you could replace the word "expert" with the word "architect", and then you could drop the "and/or" and solve that too.

Herman Neuckermans, Leuven, Belgium

It is just a matter of strategy and if we really want to have two experts then we have to put "and". If ultimately for us "or" is okay, then you still have two possibilities: to write it, and then of course it will be an issue of expenses, or not to write it, in which case they might reduce it to one subject to negotiation, as Richard said.

Constantin Spiridonidis, Thessaloniki, Greece

I would just like to remind you that the typical characteristic of the new Directive is that it makes reference to qualifications related to education and to qualifications related to practice. So in case there is a discussion in the Commission about a diploma, there is a possibility that you will need an expert in the domain of qualification of profession or in the domain of academia. Therefore, I think that the phrasing "and/or" is more appropriate since it gives the possibility to the national representative to select the appropriate expert depending upon the case, because all the cases are not the same and sometimes it would be more useful to have professionals in the room and sometimes academics. So I think we must have this kind of flexibility and I think that this description "and/or" or just "or" expresses exactly the possibility to make the choice according to the cases under discussion.

Pierre Von Meiss, Lausanne, Switzerland

One has to be very careful. I imagine the scenario in our my school: we are asked who has time to sit on an EU committee, and we say perhaps the building economics professor, because we the design professors have no so little time, and then that is who is selected to accompany the Member State co-ordinator to Brussels. So I am afraid that if you do not don't put the word "architect" somewhere in there, that is what will happen.

Constantin Spiridonidis, Thessaloniki, Greece

That is okay; I do not think anyone disagrees with that. The question I think is whether it should be "and", "or" if not "and/or".

Maria Voyatzaki, Thessaloniki, Greece

I am not sure in the end if this is a real disagreement, a matter of linguistics, or if we are just being pedantic. I think that it goes without saying that a "national expert in architecture" is automatically an architect, but to keep everyone happy, perhaps we could replace that with the word "architect". Would you agree with that? How does the panel feel about this?

Constantin Spiridonidis, Thessaloniki, Greece

I think that it is a question of semantics, whether we use the phrase “national expert in architecture” or the term “architect”.

James Horan, Dublin, Ireland

Except that not every architect is an expert.

Constantin Spiridonidis, Thessaloniki, Greece

That is true enough.

Maria Voyatzaki, Thessaloniki, Greece

Expert in what, is the question.

James Horan, Dublin, Ireland

Could I suggest that maybe, before I make any more changes to the document, we take out “experts”, and leave it as “drawn from the schools of architecture and the profession of architecture”, so that it does not make any assumptions about the expertise.

Maria Voyatzaki, Thessaloniki, Greece

James, what if where it says “national experts” we just added the word “appointed national experts” – which would imply that the academia and the state nominates someone and that this person is appointed to act on their behalf – or does this make it even more complicated? Because the way it is now it is vague as what credentials this expert should have and the only way I see to get around that is if this person is appointed by a professional body.

Herman Neuckermans, Leuven, Belgium

I will of course join whatever the majority decides, but let me just give you some information. We are the European Association for Architectural Education, and that means educators. If we want to make a statement guaranteeing that educators are heard, we should guarantee that educators are there. If we say “or”, it would mean either professionals or educators, in which case we may be left out. I mean, I have nothing against professionals, we have a very good collaboration with them, but I know that from the birth of the Qualifications Directive professionals are somewhere referred to in the text whereas educators are not, because we are not powerful enough as a community to be there. So if we claim to be there, then educators should be there. And in my uncompromising proposal I said “and”. Of course I understand the argument about the costs and that most likely it will be reduced to one person. But I strongly believe what I say, because, James and Adrian, you know that in the Qualifications Directive there is only a reference to the profession and not to the educators, and here we are in a meeting of educators and it is up to us to claim our voice, although how you formulate it I will leave to the experts.

Maria Voyatzaki, Thessaloniki, Greece

This is maybe a discussion that needs a different context. My idea is that we wrap it up soon, so that we can have a brief discussion about the meeting in general. So if you want, we can hear another couple of suggestions and maybe it would be good to organise a group to make a final decision, since we seem to be rather stuck at the moment. So I propose we hear a final word from Loughlin and James and then if we do not get anywhere from those two interventions then I think we should stop for now and think about it a bit more before reaching a conclusion.

Loughlin Kealy, Dublin, Ireland

First of all I would just like to say that I support the first two points that are made in the declaration and I am very happy to give that support. Then the second thing I would just say is that I think the problem could be very simply solved by a slightly different formulation, which is to say, "strongly advocates to each Member State that the official attending meetings", etc., "be accompanied by a person with expertise in the field of architecture education and practice". So just reversing this sentence I think removes the difficulty.

Maria Voyatzaki, Thessaloniki, Greece

Is everyone happy with that? If so, let's settle it.

Done, agreed. Please, Loughlin, put this phrase down on a piece of paper and give it to Adrian, because I can just see us forgetting the exact words you used and starting the argument all over again.

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