Final comments

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Commentaires finals

Schlussbetrachtungen

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Mr. President of IABSE,
Mr. Chairman of the Austrian Group,
Ladies and Gentlemen,

I start with an apology and that is for speaking in English and not German. However, if you understood how bad my German is you would realise that I am doing you a favour. First of all I feel it incumbent upon me, although I know Professor Thürlimann will be doing the same, at greater length, to give thanks to the Austrian Group and our Austrian hosts for this splendid Congress.

As Chairman of the Technical Committee, I would also like to thank all the authors, all the chairmen of the sessions and all the participants for their contributions towards making this a success.

I have been given about 15 minutes to review or draw conclusions upon this Congress. That obviously is an impossible task to cover in the alloted time. As Technical Committee Chairman at this Congress I have had to act in the role of a butterfly; if you look at me a somewhat unlikely role I would admit, but I have had to try to be in many places not simultaneously but consecutively, to sample the activities taking place. As a result I am going to confine myself to one or two comments on organisation followed by a few remarks on lessons to be learned from this Congress - perhaps rather subjective lessons on matters which I hold dear to my heart.

Regarding organisation, the Chairman of the Technical Committee is greatly concerned, ex-officio, in matters relating to techno-organisational matters at Congresses and Symposia. In making comments on these matters I am therefore asking for feedback from you the participants to the Technical Committee at Zurich which we will be very happy to receive in writing. In the Vienna Congress there was an innovation with poster sessions. At these, engineers have appeared periodically to explain the meanings and reasons lying behind the diagrams and pictures which are on display in the session halls. This gives an opportunity for face-to-face conversation and questioning of designers and contractors. We believe these sessions have been a big success, but we would welcome comment.

A further point that struck me particularly was the multiplicity of activities - there was so much of interest to see and hear. In particular, on Thursday, we had aside from peripheral activities, Computers, Big Bridges, Behaviour of Structures,

Safety Concepts, Building Physics and Soil Structure Interaction. I would have liked to attend all but in fact I found it virtually impossible even to make my timing coincide with those topics I particularly wanted to hear in each of the sessions. On the other hand there is no doubt that with the broad spectrum coverage a large audience has been attracted.

For the Future, the Technical Committee would be very glad to know which type of technical organisation you favour. Do you prefer fewer sessions with ability to get to them sequentially or do you like the concept of many sessions all at the same time with consequent wider subject coverage? Views on these matters and indeed upon technical questions relating to this Congress and future conferences will be welcome.

May I now turn to the question of slides, transparencies and presentation. I first of all would like to acknowledge the quality of some of the slides and some of the presentations which have been excellent, both for technical content and from the point of view of the audience being able to see what is on the slide and being able to hear what the speaker is saying. On the other hand, inevitably there have been those slides and transparencies particularly - those things screened by the overhead projector - which have been extremely difficult to read. In other cases papers have been presented without illustration when visual content was vital. I am quite sure that very much good work is passed over and not recognised when it is delivered in a Congress or a public meeting of this nature simply because the audience cannot see what it is the author is trying to put across and therefore cannot possibly understand him.

Could I please advise in most friendly fashion that consideration of how the audience is going to feel is tremendously important to the engineer trying to present his work to his fellows. Engineers have a reputation in some quarters as being poor at communication. This is surely not a reputation we wish to foster. For future meetings IABSE will amplify its existing advice on slides and transparencies.

Turning to the question of translation, which is always a difficult matter, I would like to express congratulations and thanks to the French Group for their forethought in providing translations in English of all their contributions. No doubt other nationalities very understandably may say "Why not us"? I am not being chauvinistic when I thank our French colleagues for the English translation; while of course it does give a much wider audience the more languages contributions are made in, probably English gives the maximum engineering readership world-wide.

I have already commented on the enormous diversity of technical content - we have gone from the Matterhorn cold and high, to the South African gold mines at depths where the rock temperatures are 60 ^{o}C. We have gone from aesthetics to computers in the future. We have had new input in terms of the work of Bauphysic, on Aesthetics, on Construction Management, and Timber has reappeared after a long absence. There have been excellent technical visits - I unfortunately did not have the opportunity of going on the IABSE organised visits but I did have a unique opportunity to visit your splendid Neue Reichsbrücke - a fine concept. Altogether the temporary bridges and the new bridge form a fine tribute to the abilities of Austrian engineers and the Austrian engineering industry.

I have been trying to identify an underlying theme of the Congress. I suggest it has been the importance of humanity in engineering. Where more appropriate than

in Vienna, renowned for its culture and its love of life, to make this point. The Charter of the Institution of Civil Engineers in my country makes reference to "Harnessing the Forces of Nature for the Benefit of Mankind". Engineers must remember that they exist to create, using people to harness nature for the benefit of people. By introduction of Aesthetics and Construction Management this Congress, I believe has underlined the importance of the human being as the conceiver and the constructor for the benefit of the populace at large. Human relationships must be good at all levels; with the Client, in the design office, in the workshop, on the site and with the public at large. They can indeed be difficult relationships. One speaker in the Construction Management session said "There are no codes of practice for defining human beings". Many references were made to the effects of shift work and working conditions generally. Another spoke in the session on 'Building under Extreme Conditions' of the physiological problems in mining at great depth.

With that background, I wonder should not the education of structural and civil engineers include human relations high in the curriculum along with man management and perhaps human physiology as well.

I have already mentioned Bauphysic; in these energy conscious days it made a welcome first appearance in a IABSE conference and will undoubtedly continue to play an evergrowing part in our thinking. Much I believe has been known qualitatively for a long time. This science is going to order and quantify that data for us and undoubtedly greatly influence our work in future.

Being a little fanciful one might, from the computer sessions, and safety sessions, think that the time will arrive when the engineer, confronted with a bridge site, will call up a computer program to design and detail an optimised bridge. The program will also so control and organise construction that the overall probability of failure will be 10^{-9} which the pundits I believe describe as an "Act of God". However, while I accord with the speaker in the computer seminar who saw, I quote, "no foreseeable end to the computer revolution", I also feel sure that the human checking of design, of materials, of fabrication, of construction and of maintenance will represent the best feasible safety assurance for many years to come.

May I presume to say to clients, particularly those in developing countries, who sometimes perceive cutting down on site supervision as a way to save money, "That can be a dangerous practice indeed". Let me not pretend by any means that adequate supervision can eliminate human error. I do not believe that is possible, but human error can be reduced. Human error is going to be one of the most difficult areas to deal with in the mathematical theory.

Whilst on safety measures, I should mention EPIC - Engineering Performance Information Centre of the USA, which is trying to collect data on engineering failure to aid study of safety problems and all forms of future design. IABSE Headquaters will be informing local IABSE groups of this organisation.

Finally may I remove my Technical Committee 'hat' and put on the hat of the British Group and say to you all "Please come to London in 1981, 10th and 11th September, when the topic of the IABSE Symposium, which is design orientated, will be "The Selection of Structural Form".

Finally I am going to put on both my 'hats', Technical Committee Chairman and British Group Chairman, and burst into German to say:

Vielen Dank meine Damen und Herren, der Kongress in Wien 1980 war wunderbar!