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CLOSING ADDRESS

Prof. M. Fanelli, Chairman of the Colloquium

The aim of the present Colloquium was to bring into the open the main critical questions concerning the correct use and the proper role of computing in structural engineering. It was intended - in close agreement with IABSE, to which our Task Group belongs - that from the outcome of this Colloquium a more precise and detailed formulation of these critical questions should be achieved, on the basis of which to send out an official call for papers for the specialized session to be held at the IABSE Vienna Congress in 1980.
Naturally, the task of synthetizing these questions or subthemes will demand some time. All we have heard and discussed during these last three days must be digested and filtered down to a few essentials. At present, we are still reeling under the impact of many impressions, and we begin also to feel the stress of a very intense work. So, it would be foolish to attempt now to sum up the conclusions of our Colloquium. All that I propose to put forward are a few fleeting impressions about points on which there seems to be a quite wide consensus among the participants.

It seems, first of all, that practically everybody agrees that computers 'are with us to stay': we have passed the 'point of no return', so that to go back to a computerless world is well-nigh impossible. However, it is also widely recognized that these powerful tools are - or can be - often misused (eg. through a wrong choice of means in relation to objectives; wrong expectations; wrong or no appraisal of consequences; addiction to computers; inability to check results independently; failures in communication; duplication of efforts, etc.).
Also, nearly everybody agrees that computers and programmes are only means for the correct use of which the designer is the main responsible (indeed, according to many, the sole true responsible).

The potentiality for misuse of computing derives - partly, at least - from the chaotic development of the computer world, which has not yet been rationally 'integrated' into the communication system of our society.

If I am allowed to take a leaf from Dr Pfaffinger's book (and so to close the circle by going back to the very first paper of our Colloquium), I would like to draw a similitude with what happended with the advent of motorcars. Then, as with the advent of every new technical tool intended to do faster and better what we did formely by less advanced means, it was necessary, but by no means sufficient, to acquire new skills (eg. to learn driving). Many stringent requirements soon became apparent in order that the new advance could be integrated reasonably well into our way of life: the type of car had to be chosen in relation to its use (no sports car for city driving!); new sets of regulations and checks had to be introduced, e.g. 'roadworthiness checks', traffic lights, traffic police, car insurance, legal liability of drivers (not of cars of car makers!) for accidents etc. Also, education of the user, not only in the new skills, but also in plain good sense, had to be sought for (one should not get so carried away by his new car as to use it to go from his home to the newspapers' stand 50 yards away!). If you care to take the trouble, you can find a striking correspondence of every one of the aspects just mentioned with the problems we have been talking about 'Computing in Structural Engineering'.

It seems to me that a main lesson is emerging: we have not yet coped with the task of reconciling, in an orderly way, the enormous potentialities of computers with the general 'cybernetic' (both in Ampere's and Wiener's sense) fabric of our society. The sooner we recognize and face this fact of life, the better is, because only by striving toward such a reconciliation can we hope that structural engineering will use computing to the full advance of people at large, in the sense of promoting a better and safer 'structural environment' for all mankind.