Preface

Ever since computers became part of our daily life in the mid-fifties, many people have been afraid that computers could become more intelligent than the human brain, and what would then happen? Experts in computer technology have, from time to time, reassured the public that such a situation was unlikely to occur, because the capability of the human brain still greatly surpassed the capability of computers.
However, attempts to build intelligence into computers have continued, and research within the field of «Artificial Intelligence» has gone on for more than three decades. The results of the research however, have been modest, maybe not in theory, but with respect to operational systems.
The search for the benefits of intelligent computer systems has been astonishingly persistent, despite the lack of convincing results. Nevertheless the devolopment in computer power has continually helped the performance of intelligent systems.
Out of the many years of research has, among other things, emerged a certain type of intelligent system, the «Expert System», originally developed for medical diagnosis problems. This type of intelligent system has developed through the last decade into commercially available shells, which can be used on reasonably cheap computer systems, and for many different problems. This is the background for the widespread use of expert systems today, and also the field of civil engineering shows many attempts to use these promising systems. It is natural to expect success for expert systems in an area like structural engineering design, an area in which expert knowledge and experience play an important role. However, the results have not always been up to expectations — some of the problem areas, in which the need for expert systems are most obvious, are possibly still too complicated for present day technology.
The IABSE Working Commisson VI, dealing with the use of computer aided methods in civil engineering, found, a few years ago, that the situation had matured to the extent that it was reasonable to arrange a IABSE colloquium on the use of expert systems in civil engineering, allowing IABSE members and internationally renowned experts to exchange experience and ideas, hereby arriving at a state of the art evaluation of the use of expert systems in civil engineering. The colloquium has been arranged in collaboration with ISMES, the Italian group of IABSE, Working Commission VI of IABSE and the HQ of IABSE. The scientific committee comprises members from WC VI, and members from outside IABSE. The colloquim has been sponsored by the COWIfoundation.
I would like to thank all parties contributing to the success of the colloquium.

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