

Issues on Inter-National Methodical Differences in CAD

Stephen M. Hartley

Abstract:

Date and reports made available through member organizations of the International Federal of Associations of Computer Users in Engineering, Architecture and Related Fields (FACE) will be presented as a starting point of discussion.

The preliminary results of the Sixth Annual CAD Systems Survey by England's Construction Industry Computing Association (CICA) will give numbers of CAD systems by system supplier as used in the construction industry of the U.K., in non-construction uses of U.K., as all users of Europe and the world. Lists of the prominent systems in various countries will be provided with some percentages of use of a few systems. The problem of the date will be the fact that the proliferation of low cost CAD systems, often sold by third party dealers, leaves little trail as to who is using these system for what type of work. Also many of these low cost systems are being found idle as the owners have not started using the system or have returned to traditional manual drafting. The survey shows trends towards the non-graphic content of CAD. Although more difficult but potentially more powerful, this trend is to provide non-graphic databases linked to or integrated with graphics in such a way that the integrity of each set of data is preserved while allowing complete flexibility. An earlier CICA report entitled, CAD Systems and the Quantity Surveyor (estimator), indicates that the automatic bills of materials is still a myth. It is felt that the technology for taking-off of quantities will change before automatic take-off happens.

The Laboratory of Building Economics of the Technical Research Center of Finland did FACE Report No. 7 entitled Construction Industry Towards the Information Society - The Japanese Example. This study was done as part of their work to automate the construction industry from design to build. Although the study includes case studies of individual development efforts of organization in Japan, the Finnish Laboratory efforts have been a combined effort of private and governmental organizations. The Japanese are working heavily in the areas of CAD, project management, robotics, expert systems, manufactured building and other information technology applications. These activities are being integrated by the Japanese. The Finnish are now integrating some of the same activities in the precast concrete industry. Their efforts have shown the problems of different computers and CAD systems trying to work and just talk together. The efforts of CAD translations and transmission of drawings over telecommunications channels has caused an effort in producing more compact translations. The efforts of integration of systems and the efforts in more compactness seem to be in direct conflict with each other.

Author:

Stephen M. Hartley joined the consulting firm of Toltz, King, Duvall,

Anderson, and Associates, Inc. in St. Paul Minnesota in 1968. TKDA is a 150 person firm with Architectural/Engineering and Civil Engineering Divisions. Although his work experience has been various fields including hydrology, hydraulics, HVAC and process control, almost all assignments were because his computer expertise. Since 1969, he has lead the continued in-house computerization of TKDA. He has programmed in and used systems in all areas listed below as well as business applications. His computer consulting experience includes being Project Engineer on a 12-computer distributed digital acquisition and control system that includes nearly 18000 points. The current in-house system that he is responsible for includes micros and a Prime system that are used for engineering analysis and design, word processing, job and cost accounting, and CADD.

Education:

BS, Civil Engineering, University of Massachusetts
MS, Agricultural Engineering, University of Minnesota

Registered Professional Engineer:

Minnesota, Civil Engineer
California, Control Systems Engineer

Professional Memberships:

American Society of Agricultural Engineers
President of Minnesota Section - 1974
American Society of Civil Engineers
Instrumentation Society of America
Minnesota Water Well Association
National Water Well Association
Society for Computer Applications in Engineering, Planning and
Architecture, President 1985-6