Topics from CSU CAD Conference

By Kenton H. Johnson

On August 14th-16th, Colorado State University hosted the "2nd International Forum on Micro-Based CAD" in Fort Collins. "CAD" was used to mean computer-aided design or computer-aided drafting, or both (often referred to as CADD). "Design" meant either the original conception of a building, mechanical part, tract of land or some other project, or it could mean the detailed documentation for the construction or manufacturing of such projects.

There were several applications mentioned, many of them thoroughly discussed. A particularly interesting application was in the **Colorado State Governor's Office.**

Katherine Kramer was given a small budget to purchase CAD for various uses around the state. She discovered that micro CAD was the only level of CAD she could fit into the budget. Since purchasing an AutoCAD system, she has used it for monitoring of hazardous waste, graphics presentations and, most recently, planning for the new Denver airport.

Subcontractors at Stapleton airport--an architect and a cabler--are also using AutoCAD to speed up their work. However, their contribution to an AutoCAD database may disappear when they are finished with their work.

Additional training will be necessary to insure continued use of AutoCAD on current and future projects at the Governor's Office. Data exchange--graphics and information--has not yet been addressed.

The **implementation and management** of the CAD systems for production applications were important issues. There are symbol and detail libraries to build, custom menus to design and build, new work methods to adopt, more efficient ways of operating the system to create, standards to develop and implement, macro programming to be done and so on.

Another issue was the **database of information** that is created about an end-product while designing and drafting. As mappers, process plant designers and facilities managers have found on larger CADD systems, an accurate and up-to-date database is as valuable as the drawings. Both a major application and an important problem to be solved is the **educational aspects of micro CAD**. Since larger CADD systems average $50,000 to $75,000 per work station (including central facilities and peripherals), micro CAD is seen by both industry and educators as a very cost-effective means to educate prospective users on the operation, benefits and realities of CADD.

Training on specific software was another well-received topic. Hands-on training was the only method considered, at a ratio of about two students to one machine in laboratories and as high as 30:1 in drafting courses.

Three industry experts gave their opinions on **how micro CAD will effect the larger CADD vendors**. All three agreed that vendors of micro-based and larger CADD systems would share a larger market created by micro CAD, rather than eclipsing one another.

However, Mike Ford, Vice-President, **AutoCAD Marketing**, predicts that large, non-IBM CADD vendors will be pushed out of large companies. IBM PCs, running AutoCAD and other software, are preferred by most for access and price. However, to best utilize the data created by PCs, they must be inter-connected with the central databases of the companies. To maintain database security and computing efficiency, the IBM-oriented MIS directors, who already control the large company's databases, will recapture control over all the computing activities. Preferring IBM PCs and compatibles to other micro or mini computers, these directors will shut out vendors of non-IBM systems.

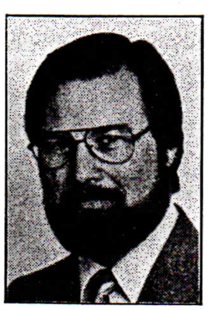
Integrating micro CAD into existing environments can provide "insurmountable opportunities" according to Ian Wallace of **Apricot, Inc.**, maker of PC-compatible computers. He talked about networking in the A/E/C industry, and the benefits--sharing expensive peripherals, intercomputer data transfer and higher productivity. One of the major problems he found with networking was lack of standards.

Micro CAD training was both a problem and a great opportunity. Many of the attendees were consultants, microcomputer dealers and third-party vendors who provide training services as well as sales, installation and implementation services.

Micro CAD buyers are quickly discovering that the few days' training they thought they needed to operate a micro CAD system are just the tip of the iceberg compared to what is really necessary to fully implement a micro CAD system for production work. The implementation and management issues mentioned above can overwhelm the unsuspecting user.

Users both need and are willing to pay for help in these areas, but only at mass-market prices. Larger organizations are prepared, both mentally and economically, to pay large sums to buy additional services, but most organizations are not. Therefore the services are packaged into training classes, software development contracts and software products. "Software" includes macro programs as well as symbol/detail libraries and application-specific menus.

CSU will be both hosting and sponsoring the third forum, which will be September 17-19, 1986, in Fort Collins. Don't miss it. Contact Terry Wohlers, CSU Office of Research, Development and Training, Dept of Industrial Sciences, Fort Collins CO 80523; 303-491-5278.



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Briefly Noted . . .

Here's a listing of microcomputer-based CAD training centers around Colorado:

Abacus Systems, 1919 14th St., Suite 811, Boulder CO 80302 (444-3111, Jim Hudson, AutoCAD).

Business Machines, 121 E. Boulder, Colorado Springs 80903 (632-5157, Gary Silasen, AutoCAD).

Colorado State University, as above (AutoCAD and others).

ComputerLand, 220 S. Union, Lakewood CO 80228 (969-9390, Dave Atkinson, VersaCAD).

Entre Computer Center, 330 S. College, Fort Collins CO 80524 (482-5850, Beth Hammer, AutoCAD).

Looking Glass Microproducts, 4233 W. Eisenhower Blvd., Loveland CO 80537 (669-2681, Phil Kreiker, AutoCAD).

University of Colorado, Continuing Education, Campus Box 178, Boulder CO 80309 (492-5148, Peter Seward, AutoCAD and Dr. Halo).

• **Computer Arts '85**, the first annual art show sponsored by the Denver/Boulder chapter of **SIGGRAPH**, will be held at the Downtown Radisson Hotel in Denver from October 14-16. Call Cynthia Rudy at 755-3618 or Steve Spurgeon at 499-5398 for more information.

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