Low-cost GKS offered by University of Lowell

The University of Lowell is distributing its Graphical Kernel System, which is delivered with fully integrated device drivers. In use at the university since 1985, Lowell's GKS is at level 2b and is said to be completely simulated, so that it is available even for devices with few capabilities.

Lowell's GKS comes with Fortran, C, and Pascal bindings. Features include complete source code, more than 15 different text fonts (including Greek and Russian), different line and marker types, and support for cell array and several generalized drawing primitives. Tools, user documentation, implementation documentation, demo programs, and test programs are provided with the release.

The software is available for operating systems including VMS, Ultrix, and Unix for DEC, Sun, Data General, Sequent, and Apollo. It is being ported to other operating systems including Symbolics, Celerity, IBM, and Intel Hypercube, as well as to small systems such as IBM PC AT and Commodore Amiga.

Licensing costs, which cover all sources, are $500 for nonprofit educational organizations, $1000 for government organizations, and $2000 for commercial organizations.

Reader Service Number 35

Software for design of manufacturing and medical facilities

Two companies recently introduced facilities design software packages: one for the design of manufacturing plants, the other for health care facilities.

- Palette Systems' Computer-Aided Facilities Engineering Software, based on the company's Palette CAD system, is a multipurpose graphics software system integrating 2D and 3D CAD; standard and user-defined facilities engineering drawing symbols; materials, quantities, and cost estimating; a total plant database plus drawing management system; and documentation preparation.

Operating on Apollo Domain 32-bit workstations and VAX, VAXStation, and MicroVAX II computers, the system can be linked via networks with larger relational databases on IBM and VAX computers, and with other Apollo workstation databases via the Domain network.

The system is directed with mouse-driven pop-up menus, tablet menus, and keyboard commands. Users can add their own on-screen menus, symbols, macros, and control features.

Three-dimensional modeling permits visualization, design checking, and clearance checks. An engineer can generate piping layouts, and then determine pipe clearances in three dimensions. Models of machines and equipment can be stored as graphic symbols, and moved through a plant design plan to simulate alterations and relocations. A 3D model can be generated from existing 2D plans, and the viewer can scale, rotate, and move the image to examine it from any direction.

The software performs automatic takeoff of numbers, lengths, areas, and volumes to prepare costing reports in user-specified formats. Costing can incorporate materials, labor, and items ranging from overhead to subcontract supplies and complete subassemblies.

According to the company, a single "master plan" of an entire facility can be stored in the system without slowing system response or performance. It is stored as separate graphics files called tiles, which are managed transparently by the system. The single large plan can be displayed, zoomed, panned, and worked on at will.

A basic system costs $7900 per workstation.

Reader Service Number 36

- Graphic Horizons has developed MediCADD, an architectural design system for firms and facility managers specializing in health care facilities.

The system is based on a Sun Microsystems Series 3 supermicrocomputer and has a set of integrated programs consisting of a library, a layout optimization program, a design and drafting program, a 3D visualization program, and a database management system. An expert system to notify the designer that life safety codes have been violated is optional.

The library has alphanumeric and graphic databases of medical equipment, furnishings, and hospital spaces. With the optimization program, the designer can generate many possible layout options for groups of spaces without having to research each option manually. The feature automatically gives feedback on the relative merits of the options.

The drafting program uses pop-up menus and offers lines, arcs, and splines. A pan and zoom function lets the designer work on very large drawings. Edit, cut, move, transform, and rescale are among the other functions provided. A drawing can have as many as 256 layers.

With the visualization program, the designer or client can view the designed facility in perspective or in a simulated walk-through. The program can create 3D files directly from existing 2D files made in the drafting program.

The database management system keeps track of such details as names and descriptions of rooms in the project, their dimensions, the numbers and types of doors and windows, and finishes for the floors, walls, and ceilings.

The MediCADD System costs $25,000; the optional expert system, $10,000.

Reader Service Number 37