Virtual reality software can also incorporate the mathematics governing structural behavior so that stresses can be displayed visually. Advanced CAD technology makes it possible to manage spatial data. Click on the plans, and any pertinent specification or design document can be instantly retrieved.

GPS control of grading equipment is here, but this technology places a premium on the accuracy of the plans. Visual examination of grading plans is possible using these techniques. Potential problems are spotted electronically rather than in the field.

If not all of these technologies will be adopted, they have potential, and the construction engineering faculty are examining these issues with CTRE support.

In a related initiative, CTRE hosted a geotechnical engineering and construction technology focus group in January 2002. About 60 representatives of the construction industry attended to identify the research and technology transfer needs in these areas. Top issues included subbase and subgrade materials and application of new construction technologies. Research problem statements were developed to guide research in these topic areas.

As CTRE continues to evolve new programs and support existing ones, it acts as a business unit, helping to make the faculty and staff resources of the university more accessible to business, industry, and government, and ultimately supporting the state's economic development.

Teaching award goes to . . .

CTRE Associate Director for Policy David Plazak received an award for excellence in planning education from the Iowa Chapter of the American Planning Association. David is also an adjunct associate professor in Iowa State University's Department of Community and Regional Planning.

The award, which is new, was voted on by students majoring in planning at Iowa State University. The fact that students made the selection "makes it an especially nice award to win," David said.

Videoconferences a popular option

CTRE's videoconference classroom has seen more use than originally anticipated when it opened its doors in February 2000. Since then, CTRE has logged 459 video sessions for a total of 142 hours and 20 minutes. This works out to over 70 hours of videoconferences per year and just under 20 minutes for the average session.

CTRE's planned, "core" use for the facility was the ISU spring Transportation 691 seminar—about 30 total hours of two-hour long classes held each year. Uses that CTRE had not anticipated, e.g., short meetings and remote job interviews, now account for over half the use of the facility. This is a positive development because these other uses help defray the capital cost of the facility and its operating costs.

The videoconferencing system has also proved much more reliable than CTRE originally anticipated. Sessions using ISDN technology (digital signals over dedicated copper telephone lines) have been remarkably stable and clear. The Internet-based sessions included a few audio problems at times, however, but have been a little more problematic at times. However, since there are no telecommunication charges with H.323 technology, a little drop-off in performance has to be expected.