

THE TECHNOLOGY OF ARCHITECTURE

By Susan Reese

Career and technical education is helping students draw up blueprints for success in architectural technology.

The Pentagon is the world's largest office building and contains more than 3.7 million square feet of space. The average American home has about 2,330 square feet. These buildings may seem to have little in common, but there are things they share, and one is that they began with a good plan.

While architects are behind the design of most buildings, architectural technicians may be behind those architects providing support as a valuable member of the team.

According to the College of DuPage (COD) in Glen Ellyn, Ill., one of the two-year schools offering training in architectural technology, graduates have a number of opportunities available to them. They may work as drafters or plan reviewers with architectural, engineering, manufacturing or government agencies. Within government agencies, they may work with code and zoning issues or in historic preservation activities. With an architectural technology background, they may go into the construction indus-

try, working onsite to review or prepare documents, or in estimating or sales. They may even decide to continue their education and become architects themselves—and all of this can begin while they are still in high school.

Drafting Success at DuPage

Architectural technology is part of the tech prep program in DuPage County, which is just west of Chicago. According to COD Tech Prep Coordinator Ken Windisch, the tech prep program is available to all of the 35 high schools in the county. He also notes that the computer-aided design and drafting (CADD) program—an important element of architectural technology—is very active

in connection with the high schools.

Since it is a tech prep program, it includes a 2+2+2 sequence of occupational and academic courses. In high school, students earn college articulated credit, then transition into a two-year community college. They then have the option of continuing on for another two years to obtain a baccalaureate degree at a four-year university.

The college recommends that, to prepare for the architectural technology program at COD, students take courses in math (algebra, geometry, trigonometry), science (physics) and communications (writing). The occupational electives recommended include drafting, CADD and construction trades. COD



contests. The winners go on to the state finals.

The seamless transition from high school degree to baccalaureate degree is facilitated by articulation agreements that the College of DuPage also has with four-year universities. The agreement with the University of Illinois-Champaign has been in place for some time and is a formal agreement that allows students from COD to go into the university as juniors if they have the necessary credentials. The transfer agreement with the Illinois Institute of Technology is less formal and subject to a portfolio review.

Ostergaard is very proud of her school's program, which she calls "an exciting program in a dynamic environment."

There is even an architecture student club at the college that organizes field trips that have included lectures and exhibits as well as trips to the Farnsworth House in Plano, Ill., and the Robie House in Chicago.

The architecture program and the student architecture club also hold a design competition each year that is known as a charrette. For those of us puzzled as to how the French word for cart became the name of a design competition, Ostergaard offers this fascinating bit of history: The highest order of schools in the French architectural system held competitions in which carts went around to pick up the students' final work. Because the students worked until the very last moments to perfect their designs, it often meant that they ended up riding in the carts to put the finishing touches on their work.

"So, in architecture," explains Ostergaard, "charrette has come to mean a brief, intense design period."

For last year's competition, the students designed a playground for a village in Sri Lanka that had been devastated by the tsunami, and Ostergaard says that they are always looking for a project that will be appropriate for the event.

"We are looking for a not-for-profit group that has an architectural need for a simple structure," she adds.

The architecture program at COD has what Ostergaard describes as "extensive



Left: Students are working in the main architecture lab at Ranken Technical College. In the hands-on approach to learning, students spend three hours working in the lab to every hour spent in lecture. **Right:** Students at Ranken Technical College participate in a peer critique process, giving them experience both in presenting projects to their peers, and in giving feedback on the work of others.

computer resources, both hardware and software, that the students have available in their classes and in the studios."

She also notes, "We have a very deep design sequence that our transfer students participate in that is a full two-year sequence, so that they are very well prepared when they go to transfer."

Whether they are entering the field armed with an associate's degree or a certificate, or are transferring into a four-year university, it seems that the COD students are being provided with the resources for a successful career. However, in the fall of 2007, there will be even more resources available when the program moves into its new building.

Notes Ostergaard, "In that building, we'll have dedicated studios and shop facilities that will really enhance our program even more."

Ranken Technical College

Computers play an important role in today's architectural profession, so at Ranken Technical College in St. Louis, Mo., students in the architectural technology program complete the majority of their work for the course on computers. The school offers a bachelor's of science degree in architectural technology that Ranken's Web site notes combines real-world projects with studio work and offers students the opportunity to man-

age projects from concept design through construction. The associate of science degree option is for students who wish to complete only two years of introductory architectural technology and drafting training, but it does not preclude students from continuing to pursue their bachelor's degrees.

In the Ranken architectural technology program, students complete studio projects using AutoCAD in residential building technology and commercial building technology. Their projects in building design use 3-D computer modeling. Other major studio projects completed by the students include CAD management and information technology management.

The architectural technology students at Ranken take courses in subjects that include materials and methods, environment design, building design, structures and professional practice. Professional practice educates students on the responsibilities of managing a construction project.

Ranken's architectural technology program includes a construction field study/internship course designed to give students hands-on experience in an actual construction setting. The course works in conjunction with the school's carpentry program, so the architectural technology students work with the

carpentry students on a project. The architectural technology students may also choose to work in an internship setting.

Ranken students have had the opportunity to participate in projects that include the St. Louis Hillel Center. They also help with planning in the home building program that is a partnership between the college and the Ranken Community Development Corporation. This program has helped to transform the school's St. Louis neighborhood and was featured in the January 2004 *Techniques* story, "Knowing Our Place in the Community."

At Ranken, the technical advisory board made up of industry representatives helps shape the curriculum. The architectural technology program includes a Capstone Portfolio course that culminates in a portfolio review with the advisory board, which includes practicing professionals in fields associated with architecture.

Another exciting opportunity for students in the architectural technology program at Ranken is the study-abroad program. This has allowed students to visit countries such as Italy, Greece, Peru and Egypt, where they were able to experience the architectural styles and building methods of other cultures.

As they do at DuPage, Ranken students participate in competitions, and John Kreishman, who is head of the architectural technology department at Ranken, notes proudly that one of their students won third place in chair design in a national American Institute of Architects competition last year.

Planning a Future

According to the school, upon completion of the architectural technology program, the Ranken students will be able to assess, plan and create effective building and structural design. Unless the students themselves choose not to go into the profession, they can be almost certain of finding a job, says Kreishman.

"We have an incredibly high placement rate, basically 100 percent," he notes, "and it really spans the full gamut. Those who complete the four-

year bachelor's program can become immediate and productive contributors of architectural offices."

In tracking other graduates, Kreishman says that Ranken architectural technology students have found employment with residential builders, where they take design, drafting or even management positions.

"Civil, structural and mechanical engineering firms are constantly looking for one of our graduates," he adds, "and interestingly enough, manufacturers and subcontractors—for example, in sprinkler design or hardware specifications and drawings—are also hiring our graduates."

Architectural technology appears to be a field in which many career opportunities exist. It is also an occupational area that requires a certain amount of creative ability combined with strong technical skills to assist in the planning of a solid structure. In schools such as the College of DuPage and Ranken Technical College, career and technical education is helping students plan for their own success in architectural technology by providing them with a strong, solid educational foundation. ■

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For More Information

To explore the field of architectural technology and the schools profiled in this article, here are some Web sites to visit.

The American Institute of Architects
www.aia.org

College of DuPage
www.cod.edu

Ranken Technical College
www.ranken.edu

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