Tech Briefs

Archiving: A museum study will help digital design files overcome historic problems

The Art Institute of Chicago examines how best to archive digital design data

Archiving project information was once merely a matter of collecting, organizing, and filing away paper drawings, each one created anew as design progressed. But what about records of the iterative steps that illustrate a design team's thinking and the creative prowess behind a successful work of architecture? Saving this sort of historical record takes forethought to keep intermediate digital documents files from getting overwritten in the crush of new work. The almighty "delete" key makes it far too easy to eradicate the evolution of a design even before the project is completed.

Archivists are now taking action to make sure these steps aren't lost to the ages. Early last year, the Department of Architecture at the Art Institute of Chicago began a comprehensive study to find the best ways of collecting, archiving, and exhibiting digital design data. Chicago architect Kristine Fallon, FAIA, president of Kristine Fallon Associates, heads the project, which involves a team of architects, academics, museum curators, and technology experts who are reviewing the challenges of maintaining digital archives and will ultimately provide recommendations for best practices.

Backed by grants from the Schiff Foundation and the Graham Foundation for Advanced Studies in the Visual Arts, the Institute hopes the study will have a direct impact on how museums and other institutions preserve architectural work. Commercial design firms will also benefit from the study's guidelines, Fallon says. Architects who don't implement digital-archiving practices are "like artists using evaporating paint," she believes. "Most architects like to be immortal. Not having digital archives threatens their immortality."

Thorough archives also play an important role in expansions and additions to existing projects, and in the restoration and renovation of historic buildings. Even more pragmatically, past design elements are often reused in new projects, adds Scott Pratt, director of digital technology and senior vice president for the Chicago architectural firm Murphy/Jahn, one of the firms involved in the Institute's study. "Often, a project is an evolution of a prior work. It just makes sense to keep archives," he says.

Digital archivists face two hurdles in this effort. One is procedural: convincing firms to implement policies for documenting important project milestones. The other problem is technical: how to ensure digital files don't fall out of commission. "I can't bring back a word-processing file from 10 years ago—how are people going to read an architect's digital design data after 100 years?" Fallon wonders.

The Art Institute is one of many organizations addressing these challenges. The National Archives and Records Administration (NARA) in College Park, Maryland, the agency responsible for managing and preserving federal records and priceless historical documents like the Declaration of Independence and the Constitution, is spending $36 million annually in its Electronic Records Archives (ERA) program to find better ways of preserving digital documents. After working for years with other government agencies, as well as universities, other archives, and research facilities throughout the world, NARA selected a systems integrator earlier this year to design its electronic archives, the first phase of which could come online by 2007—but ERA officials don't expect their solution to be fully functional until seven years after that.

Valerio Dewalt Train Associates has recorded its sketches, massing models, and a rendered image for the Indian Community School in Milwaukee.
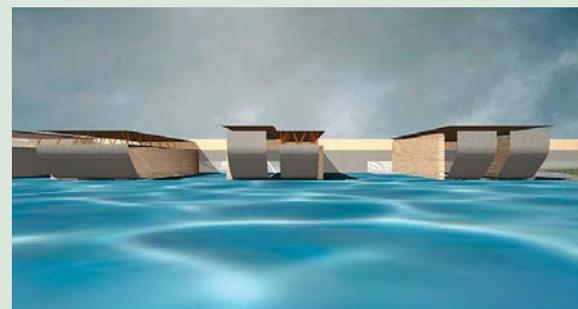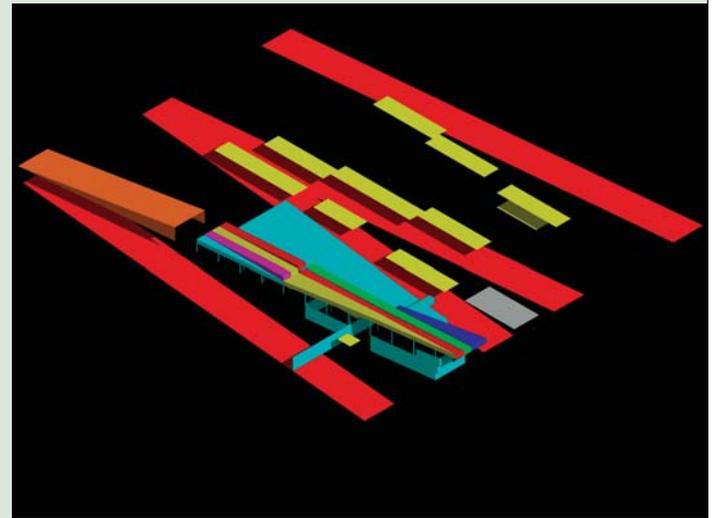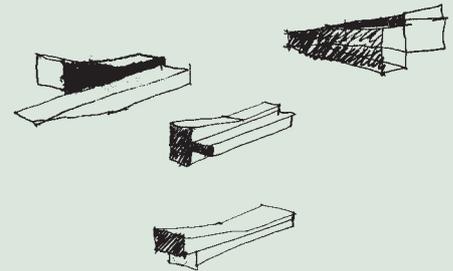
The Art Institute's study will set forth recommendations long before that. The first phase of its study, completed earlier this year, surveyed archiving best practices at 63 design firms throughout the world, ranging in size from a sole practitioner to those with thousands of employees. This survey will become the basis for guidelines to be included in the final study report this summer.

In March, the Institute sponsored a daylong exhibition—essentially a design charrette with three teams of museum staff, designers, and technology gurus. Each team examined a number of in-progress and completed projects with various types of digital information available. "The exercises raised a number of questions about the role of museums, curators, and architects regarding who collects or

saves information and how conservation of digital files is best carried out," Fallon says. "We also examined some wild ideas about using digital data as a source of exhibition material." The results of the study will be available this summer on the Institute's Web site and will be presented in September at the International Confederation of Architectural Museums in Venice.

Some of the study's preliminary results and recommendations are already surfacing. For instance, to combat obsolescence of archival documents, a proposed global registry could alert architects to digital file types that are in danger of disappearing and provide a way for architects to reformat their files.

Software vendors are also working to tailor existing file formats to improve them for archiving. Adobe Systems is now developing offshoots of its original and ubiquitous PDF format, including PDF-A (for archiving), envisioned to be a slimmed-down version of a standard PDF file that can handle text, raster images, and vector graphics. A second variant, PDF-E (for engineering) will accommodate large-format

graphics and 3D models. And Autodesk is considering making its existing DWF format capable of capturing graphics elements of a file as well as creating a snapshot of associated design information, according to Jon Pittman, AIA, Autodesk's senior director of strategic research.

Architectural firms shouldn't wait for new technologies before starting to preserve their digital work, Murphy/Jahn's Pratt says. His firm keeps a small number of electronic photos, presentation drawings, elevations, and renderings of finished projects on its network. But most iterative design drawings and related documents are saved on DVDs about six months after a project's completion, Pratt says. The firm doesn't record every design change, but instead concentrates on important milestones, such as the completion of schematic designs or bid sets. CAD drawings remain in native AutoCAD format, whereas renderings and photos are stored as TIF or JPEG files. "For a project that's five years old or younger, we have between two to five or more DVDs, which have all of the CAD files, all

Ross Barney + Jankowski worked with client teams to develop a total of four massing models for the James I. Swenson Science Building for the University of Minnesota at Duluth. The firm saves each digital alternative as part of the project record.

the versions of renderings and presentations, as well as the PowerPoint shows created in the course of development," Pratt says. "Prior to the digital era, we may not have every presentation that was created along the way," he

says. Once the technical challenges of digital archives are ironed out, they may make historical records even more comprehensive than when paper ruled the design process—a big step toward architectural immortality. *Alan Joch*