UC team virtually rebuilds lost architecture of the Shakers

November 6 2008

The Shakers, a religious group that built 19 communities in the United States during the 1800s, had a prolific and distinct architectural construction and design style. Much of that architecture has been lost; however, a UC project aims to virtually rebuild it.

A 19th-century historian traveling in southern Ohio later wrote about his first glimpse of Union Village, a Shaker community located near Harrison, Ohio: "When I caught sight of the first house, my opinion was confirmed that I was on the lands of the Shakers, for the …style of architecture, solid appearance and want of decorative art was before me."

The style of architecture and the construction methods used by the Shakers throughout Middle America and New England were unusual – reflecting an ascetic living and working structure that was both communal and gender-segregated.

Much of this distinct architectural legacy has been lost. However, an ongoing University of Cincinnati public-education project is virtually rebuilding lost structures and interiors using advanced visualization technology.

UC's CERHAS: A history of success

The center – a 21st century leader integrating art and design with technology – has previously led high-visibility, public-education efforts

to virtually reconstruct ancient Troy, sites in ancient Greece, the Midwest's lost monumental earthworks built by ancient Native American cultures and other lost or inaccessible art and architecture.

Shakers in southern Ohio

That initial request led to a years' long project by Kozan to collect old photographs of the village as well as old drawings and maps of the area to virtually restore the northernmost portion of the site.

Kozan explained, "Reconstructing the lost buildings or even the lost interiors of existing buildings is a challenging puzzle. We have no surviving plans. Interiors have been dramatically altered and subdivided since the Shakers left the site in 1916. And even for two buildings on the site (Meeting House and Dwelling House), later owners have made additions (i.e., porches and annexes) and changes (i.e., asphalt roof vs. the Shakers' wood shingle roof) that must be virtually removed in order to see the structures as the Shakers knew them."

Distinctive aspects of Shaker architecture

Shaker architecture, with its unusual features and construction methods, provides valuable insights into Shaker life and culture. All of these come to life in Kozan's virtual reconstructions of buildings and interiors once part of the Whitewater Shaker village. Distinctive aspects of that architecture include

-- Interior spaces characterized by austerity and simplicity.

-- Separate door entries for men and women to access key structures. Within interiors of dwelling structures, the Shakers also built separate staircases and living spaces for use by men and women.

-- Certain structures (like the worship house in White Water Shaker Village) were built without supporting pillars. Instead, roof trusses top every floor, and the floor below hangs from the trusses just above. This allowed for wide, open, uninterrupted floor expanses suitable for Shaker worship (which entailed trembling, shouting, dancing, shaking and singing in order to "shake" or purge sin).

-- An emphasis on unadorned structures and implements, such as plain wood pegs for hanging garments or furniture when not in use; durable, functional wood furniture of spare, straight lines; wood floors without carpets; and plain, brown packaging for products like seeds. (Much of this contrasted with the wider society. For instance, seed providers in the late 1800s commonly used colorful paper and boxes as packaging.)

A lasting impact

The simple architecture of their homes, meeting houses and barns have had a lasting influence on American architecture and design.

As a group, the Shakers had what Kozan described as a commitment to savvy use of resources allied to simplicity in building forms, set within site planning that emphasized social structure and social interaction within a communal life. They achieved a well-coordinated design hierarchy within structures and with the placement of structures within the landscape. Their work provided a continuous flow of influences upon generations of American architects and designers.

The UC project to virtually recreate and preserve these structures and interiors is also having a lasting impact on students. Third-year architecture graduate student Jordan Parrott, 30, of Miami, Fla., has worked on the project with Kozan with in and outside of class time.

"It's an exciting project for three reasons," explained Parrott. "First, it's

in our own local community. Second, we get to see the results of our work made widely available because our renderings are available on Google Earth. And, finally, it's enabled me to see the many alternatives available in the field of architecture. There are different avenues of work and research, things related to preservation, visualizations and development, open to us as future architects."

Continuing the legacy

UC's Kozan and architecture students have created schematic 3-D virtual models, located online in Google's 3-D Warehouse and Google Earth, of structures that no longer exist but were once part of the White Water Shaker Village site near Harrison, Ohio.

These include

-- Bank barn
-- Boys' residence
-- Dye house
-- Kitchen
-- Tobacco barn
-- School
-- Stable and wagon shed
-- Wash (laundry) house
-- Women's work shop (known as the Sisters' Shop)
-- Wood house

The UC team has also created more detailed 3-D virtual models, also located online, of still-extant structures, providing a view to interiors as they were originally built by the Shakers. The current interiors of the extant structures are in some state of disrepair and have been remade and remodeled numerous times since the village was first established in 1824.

Kozan's long-term goal is to expand these virtual reconstructions to include other historical Shaker communities throughout the U.S., to spread the architectural lessons to be learned, and to encourage tourism via preservation, rebuilding and virtual means throughout an online Shaker network.

In an upcoming class, students will continue work related to completing visualizations of these structures. In keeping with the communal life of the Shakers, Kozan also plans a virtual event where – in a virtual Shaker meeting house interior – online participants from around the world will gather, represented by Shaker avatars.

Kozan explained, "I'm promoting these efforts because to do is to learn. By interacting with the design history, students and others can take away the lessons of this legacy, which speak to creating meaning-filled living spaces."

He is also presenting on this work at academic conferences and in journals, including a recently published article in the "Proceedings of the 34th Computer Applications and Quantitative Methods in Archaeology Conference."

Source: University of Cincinnati