



Visualizing a cathedral



Three years ago, STONE WORLD published an article about the construction of the Cathedral of St. John the Divine in New York. Using an apprentice program and carving and setting techniques from 13th Century cathedral construction, the builders didn't expect the church to be finished for at least 50 years. (Of course, it was the non-profit Cathedral's cash flow as well as its medieval stoneworking techniques that influenced that estimate.) However, things have changed since then (more on the side of stoneworking technology and less on the side of cash flow), and now it is feasible for the church to be completed within 10 to 20 years.

What changed? The ancient stone shop was transformed into a modern factory that extends the capabilities of stone fabrication.

Today, instead of carving every piece of stone by hand, all but the most intricate detail is cut by machinery — sophisticated machinery that is completely controlled by computers. The CAD/CAM system allows for the creation of three-dimensional designs on the computer — designs which are then automatically communicated to the machines that cut the stone.

And this automation has even moved one step further at the Cathedral Stoneworks, the newly established profit-making company that was formed to complete construction of the non-profit cathedral as well as to fabricate commercial jobs throughout the country (look for an article in a future issue of STONE WORLD).

Borrowing technology from facial reconstruction, Cathedral Stoneworks has connected a visualizer to its CAD/CAM system. The visualizer can actually take a three-dimensional picture of something and communicate that image through the system's computers which then direct the machines as they carve that image into stone. Via computers, the object is directly transformed into stone. Skilled stoneworkers finish the intricate details.

Although users of the system recommend its use for storing sculptures that may eventually deteriorate or for replicating existing facades or architectural ornamentation for restoration or renovation, the use of such a process could lead the more imaginative to visualize the stone industry one day advancing so far that a person could step into a booth, pull the curtain, and have a visualizing machine render his likeness in stone "while-u-wait."

In reality, such a scenario is highly improbable and more fiction than prediction, but that's nearly what happened to one prominent member of the stone industry when his image was captured by the visualizer and rendered into a three-dimensional stone likeness — the result, a limestone bust that was later presented to him to honor him for his years of service in the stone industry. (The complete story on this will also be featured in a future issue of STONE WORLD.)

In microcosm, the Cathedral of St. John the Divine and the Cathedral Stoneworks represent the entire stone industry — stone-age materials whose use has blossomed through the use of space-age tools, technologies that continue extending the limits of stone design and construction.

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