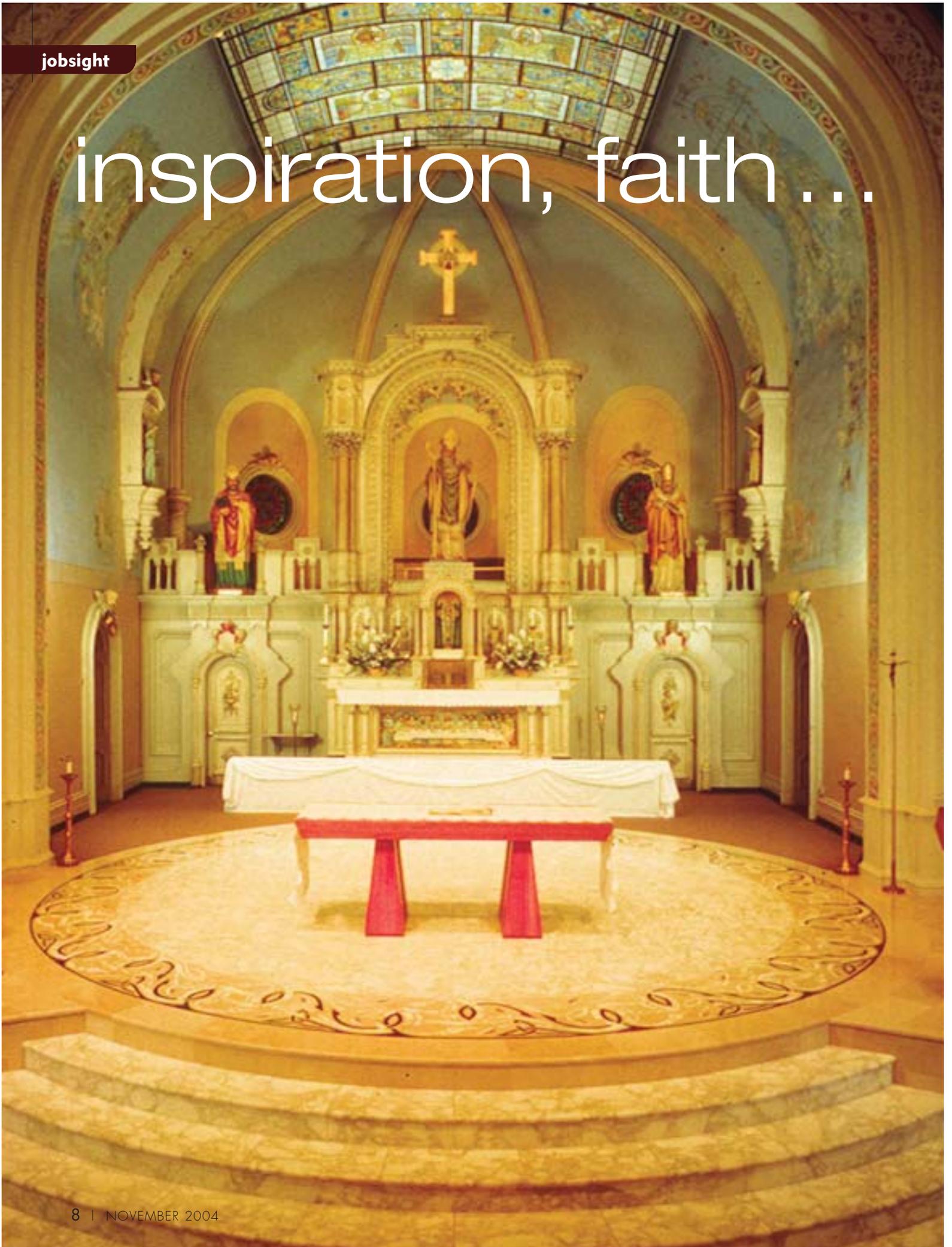


# inspiration, faith ...



# and a waterjet

**Client:** Old St. Patrick's Church, Chicago

**Architect/Designer:** Booth Hansen, Chicago

**General Contractor:** Turner Construction Co., Chicago

**Stone Supplier/Installer:** J Kapcheck & Co., Des Plaines, Ill.

**Waterjet Designer/Stone Fabricator:** Farrodyne USA Inc., Chicago

**CHICAGO** – When one of this city's most-historic religious structures needed some delicate stonework, the job went to some advanced stone-working technology – waterjet – to help meet a tight time schedule.

The end result, everyone agrees, is outstanding.

Old St. Patrick's Church is not only the city's second oldest Catholic parish, but its home on West Adams Street includes a large slice of Chicago's art history. Founded by Irish immigrants in 1846, the parish dedicated the church on Easter Sunday 1856.

Designed by two of the city's earliest practicing architects, Augustus Bauer and Asher Carter, it's also one of the few public buildings to survive the Great Chicago Fire of 1871. In 1977, it was listed on the National Register of Historic Places.

Although built in the Romanesque style, starting around 1912, Chicago artist Thomas O'Shaughnessey introduced a strong Celtic influence into the church by designing, constructing and installing 15 stained-glass windows.

While one triptych is strongly influenced by the art nouveau style, the remaining dozen windows were strongly influenced by Ireland's *Book of Kells*. The 1200-year-old illuminated manuscript, with its lavish, colorful lettering, illumination, decoration and illustration is the world's most-recognized artifact of Medieval Celtic art.

During the same time frame, O'Shaughnessey also decorated the walls with Celtic-inspired stenciling,

which was lost when the walls were repainted following World War II.

The Rev. Jack Wall, pastor of Old St. Patrick's, says that during a recent modernization and upgrade of the facility, the stencil work was rediscovered.

"After some investigative work with the Art Institute of Chicago, we uncovered this magnificent work," he explains. "In addition to restoring these spectacular works, we decided to complete the design work by creating a Celtic world view, complete with everything in Celtic design."

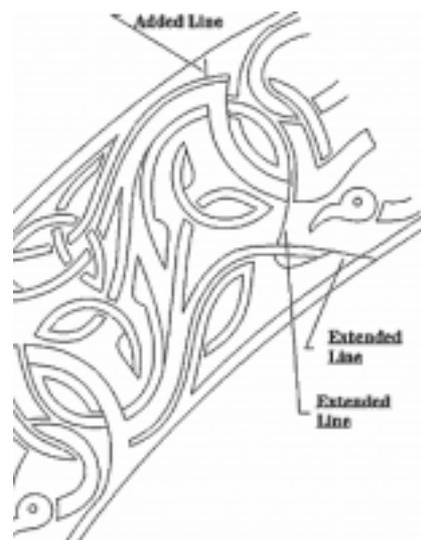
To help achieve this goal, the church turned to the Chicago-based architectural firm Booth Hansen. George Halik, managing principal on the project, says the firm, with a long history of working on renovations, has been working with Old St. Patrick's for many years, beginning with a master plan of their facilities.

Along with assisting in uncovering O'Shaughnessey's original work, the firm took on the work of designing features incorporating that Celtic worldview.

Rather than attempt to duplicate what was already there with new stencils and stained-glass windows, the designers looked for other ways to incorporate new Celtic design elements using today's technology.

These new elements included custom light fixtures, ornamental plasterwork, carved wood pews, stone Stations of the Cross and the sanctuary's stone floor – specifically the area surrounding the altar table.

By K. Schipper



(Facing page) The altar of Old St. Patrick's Church in Chicago reflects the Celtic heritage the church is reclaiming in a massive renovation project. The circular design on the altar floor is custom-design-cut and fabricated by Farrodyne USA, Inc. (Above) The design for the insert as it was received from the architects, and then as it was modified to hide certain cut lines and create a smoother look. (Images courtesy Farrodyne USA Inc.)

“We began by studying *The Book of Kells*, and existing stencil work, drawing those shapes and getting the feel for the techniques and symbolism used with Celtic ornament,” Halik explains. “We then developed a design specifically for the stone altar floor.”

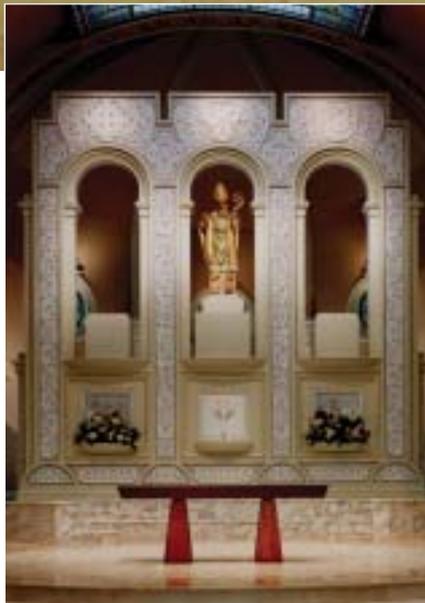
After spending several months of research, preliminary drawings and three-dimensional models, the design was then transferred to the computer. The challenge: How to execute the intricate work in various types of marble, the material that was being used on the remainder of the floor?

The stone, selected by Booth Hansen, is a mix of Italian marbles; mainly beige, with white, red and green accents.

“One of the challenges we had was the schedule,” says Halik. “We started construction on this phase of the project in late June with a deadline of late December, so the schedule was very tight. We also had the issue of how to put this elaborate curvilinear pattern together and then ship it to the church in a way that the stone installers could put it in the floor in the same way they’d do any other sort of paving work.”

As the design took shape, Booth Hansen contacted Farrokh Patell of Farrodyne USA for help in its execution. Patell’s Chicago-based company holds a reputation with architects for its waterjet cutting and carving of stone, metal and glass.

“Farrodyne had done some legwork with the architects, and we had had him do a few things for us previous to this job,” says Jim Small, vice

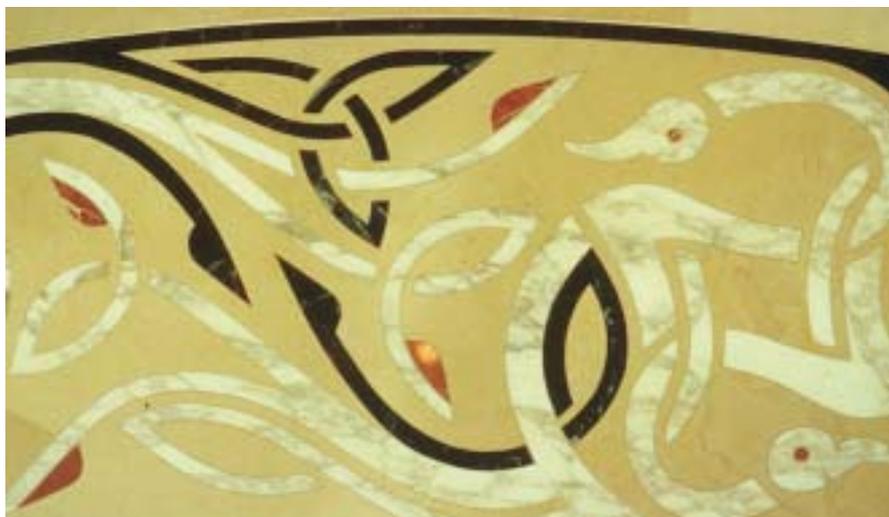


(Above) Another look at the altar after further renovation work. (Below) A close-up of a section of the floor with the colored pieces of marble inserted into the beige marble background. (Altar photo courtesy Booth Hansen; inlay photo courtesy Farrodyne USA Inc.)

president of J Kapcheck & Co., the Des Plaines, Ill.-based company supplying the stone and handling installation.

“George (Halik) called us up out of the blue and said, ‘Can you cut intricate shapes?’” Patell relates. “I said, ‘Sure, we do that all day,’ so he sent us a fax of the drawing.”

Patell says he was intrigued by the job, but somewhat uncomfortable with what Halik sent him. The original artwork consisted of a circular Celtic pattern with 512 inlaid shapes in a 24’ diameter circle. But, the pattern was divided into 64 pie-shaped segments for ease of fabrication and installation – breaking it up 64 times by straight joint lines that compromised the original artwork.



Patell felt that it was possible to design a solution that eliminated those straight cuts without compromising the fabrication and installation. He asked Halik if he’d be interested in a solution that would allow the circle to appear as a continuous whole while leaving the 512 inlays intact.

“We took the approach of trying to answer what we thought was the main challenge – how to preserve the artistic intent without compromising the structural integrity,” says Patell.

With Halik’s permission, the company began looking at ways to interlock the segments so that the joints would be hidden within the pattern. After some deliberation and experimentation, Patell and his staff determined that by adding one line and extending a couple others, the segments could be made to interlock. The segments would be 5’ X 2 1/2’ modules that interlocked like giant puzzle pieces.

While Halik liked the idea, he was very concerned that the intricate shapes could fall apart when handled. The modules would resemble large pieces of Swiss cheese weakened by dozens of holes filled with stone inlays.

Patell agrees with Halik that a big part of the challenge was getting the fabricated modules to Old St. Patrick’s intact.

“After we came up with the interlocking design, we were going back and forth with the architect on whether we could make this work without them falling apart,” says Patell.

His company then devised a way to glue the white, green and red marble inserts within each beige segment and reinforce them with a mesh backing. This created a solid module – with dozens of pieces in the “Swiss cheese” framework – that could be handled with ease.

Upon Halik’s request, the company then produced a prototype.

“To prove the concept, we invited George to watch us physically handle it,” says Patell. “He was happy and relieved with the results and gave us the go-ahead at that point. However, Kapcheck felt the need for some additional insurance. That company suggested we laminate the back of each module with a cement board to make the whole

thing more rigid for handling purposes. We agreed wholeheartedly.”

As with the stone itself, the backer board was cut into interlocking shapes that fit the asymmetrical profile of the modules.

“That definitely added rigidity to each module, making them a lot easier to handle,” says Patell.

He adds the job couldn’t have been done without the company’s Ingersoll-Rand waterjet from KMT

Waterjet Systems of Baxter Springs, Kan. Not only were precise cuts critical to the inlaying process, but the waterjet’s reliability greatly contributed to the successful completion of the job.

“We were in a real jam about the timeline, and then after we started production we got word there was a wedding scheduled and so the completion date was moved up a month,” says Patell. “We ended up having to really scramble to make this



Assembling the waterjet-cut pieces didn’t prove too difficult because of the precise cuts made by the machine. For ease of handling, everything was mounted on specially-cut backer board. (Photo courtesy of Farrodyne USA Inc.)

*A touch of Spring*

See our FULL CARE Line at ISSA booth 1156

**AKEMI**  
Triple Effect Cleaner/Refresher/Sealer

**SPRAY & WIPE**  
Removes Germs, Seals & Polishes All At Once

TRIPLE EFFECT, Akemi’s new all in one spray will fill the air with a refreshing lavender scent while it lifts germs out from the stone’s surface. Also, it provides true impregnation to keep germs out. Finally, TRIPLE EFFECT revitalizes natural stone, which keeps it looking like new.  
Safe for food preparation areas. For more information call 1-877-GO-AKEMI

**AKEMI** The original in stone.

Circle Reader Service No. 8

work, and we were really under the gun. A waterjet breakdown at that point could have been a disaster.”

In the end, Farrodyne had only about a month to complete the job. The pieces – on their backerboards – were loaded into a specially constructed crate and trucked the approximately one mile from Farrodyne’s facility to Old St. Patrick’s, where they were installed by a Kapcheck crew along with the rest of the floor.

Kapcheck’s Small agrees that time became a definite factor as the company rushed to finish the project. While the modules worked as promised, he says that – because of the age of the church – there were some problems with the unevenness of the floor.

“It’s an old building and there was some shoring-up work done,” he says. “Giving them a level floor over a very un-level base presented a challenge, but we raised the elevation and were able to compensate with our setting bed.”

The project has proven to be a huge success. It has earned local and national design awards from the American Institute of Architects (AIA) and won Farrodyne a Coverings 2003 Prism Award.

The church’s pastor, Father Wall, says the unbroken circular design not only symbolically expresses infinity and the transcendent mystery of God, but it also does an excellent job of mirroring the architectural forms of the church’s main stained-glass window.

“A lot of our architectural decisions around the sanctuary were driven by the architecture of that window,” he says. “You have all this ancient artwork and art design done with the highest and more recent technologies, and it’s all quite elegant. It’s a wonderful job.” ■