



The Structural Audacity of St. Mary's Church

Douglas Cardinal

For St. Mary's Church, Douglas Cardinal produced Canada's most sensuous walls. Rendered as sustained moments of ecstasy, they glide and undulate, enclosing exhilarating space within towering walls of dark brown brick.

St. Mary's is set apart from things familiar, much like the future. As in the works of Le Corbusier and John Hejduk, the Cardinal church expresses a modernist faith in abstract spatial invention.¹ The wall is worked—curved and scalloped—to sculpt new experiences in space. What results is a hybrid of art and architecture; a place for the public to gather but also a sculptural earth work.²

It might have been a dream of frozen music that melted away. But a conspiracy of visionary forces made it happen, giving Canada one of its most brilliant works in architecture. I don't think anybody, not even Cardinal, could have anticipated the greatness of St. Mary's (1968).

I'm thinking about this driving north on Highway 2 toward Red Deer.

St. Mary's Roman Catholic Church is located at 6 McMillan Avenue in the eastern suburbs of Red Deer, population 68,000. This is where, at an ordinary address in an ordinary town, Canada's most sensuous work resides.

A large patch of freshly mowed grass and a handful of coniferous trees are all that separate Cardinal's extraordinary church from cookie-cutter housing. On the edge of town, in this suburb called Morrisroe, there are some pockets of large homes clad in cedar shingles, but mostly there are modest clapboard starter homes. Oil field engineers, drillers and service rig workers live here. Others find work along the commercial strip of Gaetz Avenue in Red Deer Centre or the Bower Place Mall, away from the downtown.

At St. Mary's, Cardinal has produced brave walls—walls that mesmerize for their roiling movement, walls that carry a certain madness in them. They are the colour of fertility and the earth. The exterior is a seamless exposé of mass and void, described through the rise and fall of the brick walls and the apertures in the bell tower.

Naked, without any decorative frippery, the church invites the whole, spiritual truth. The curving brick wall at the front entrance wraps around a vestibule and round room—the baptistry—followed by the holy water font located next to the wall. From here, the visitor moves naturally to a vast room of delirious proportions. Two forces of abstraction—one brick, one concrete—occur simultaneously

SENSUOUS WALLS

St. Mary's Roman Catholic Church is located in the eastern suburbs of Red Deer, Alberta. At an ordinary address in an ordinary prairie town resides Canada's most sensuous work.



NATURE NEAR

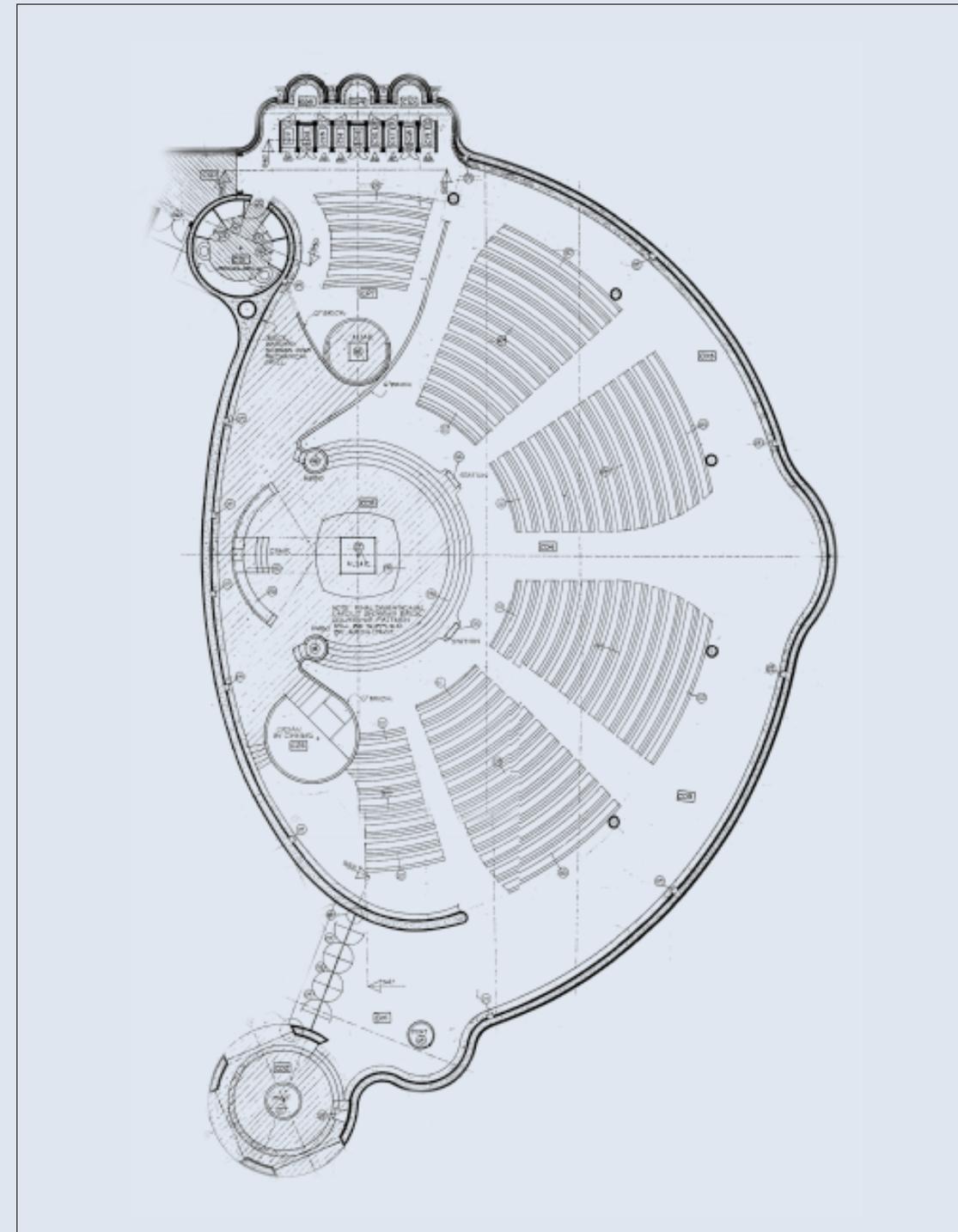
At St. Mary's, the brick wall is a continuous, sinewy invention that rolls over several confessionals and the main entrance, leaving apertures for the bell tower.

here: the wall and the roof. (I maintain the singular for wall because, except for a rupture at the front entrance, the wall is a continuous, sinewy construction at St. Mary's.) At its apex, the concrete roof reaches 47 feet high. One of the remarkable structural innovations at the church is the fact that the roof presses its weight down across the nave to eventually finish at a height of 14 feet, its weighty mass skimming the tops of the arched confessionals. Instead of windows there are narrow slits in the wall behind the confessionals. Two light funnels bring drama and significance to the sacrament of the host at the altar and over the tabernacle.

The composition achieves an equilibrium that belongs to nature. The space is open and universal, supported by five pillars of reinforced concrete, faced with the same dark brick. A series of buttresses also clad in brick provide support on the east side of the church. The big worshipping room—120 feet free of internal columns—is moody and sombre. But it is not all serenity in the church. Cardinal casts

a strong spotlight on the altar but only hints at slivers of light near the confessionals. The concrete roof descends so deeply into the space it seems to force questions about our relationship to God, and, indeed, our own mortality.

Douglas Joseph Henry Cardinal declared himself early as Canada's sensualist in architecture. He was born in Calgary in 1934, a child of mixed ancestry—Blackfoot, Metis and European lineage—but was raised north of the city in Red Deer. It was a time when Aboriginals of any stripe were damned by the full-blown racist policies of the Canadian government and missionary churches. Over 100,000 Aboriginal children attended residential schools from the 1840s until 1969. First Nations kids were pried away from their parents and sent off the reserves to be culturally reformed at schools administered by Anglican, United, Presbyterian and Catholic churches—their language, religion, music, potlatch banned.³ Even their long hair was taken from them. Unusually harsh punishments were



ST. MARY'S FLOOR PLAN

Inspired by the curves found in nature, Cardinal designed the big worshipping room to be free of columns. Pews are organized in a semi-circle to heighten the significance of the altar. The tabernacle is set off to the side, toward the confessionals (upper image).

applied, the most devastating being a profound loss of self-esteem. That Indians were worthless was the fundamental lesson taught by the schools. Even young children in independently administered schools on progressive Aboriginal reserves are reluctant to believe in themselves. Their parents were the last generation to go through the physical and psychological battering at these institutions. So, it has been difficult for them to act as positive models.⁴ Douglas's father, Joseph Cardinal, was a conservationist and forest warden revered for his knowledge of ecosystems and species identification. He never spoke of his ancestry. Neither did Douglas Cardinal's mother, Franches Marguerite Rache. Her father was German. But her mother was Metis.⁵

Cardinal, the eldest of eight children, was sent to a Catholic boarding school near Red Deer when he was eight years old. His younger brothers, Ron, seven, and Ken, five, went with him. They attended the school with about one hundred other kids, some First Nations, some Metis, others who were Italian and Irish. At the time, Cardinal's father was a fish and game officer for a huge tract of central Alberta and was often away. Unable to cope, the parents sent the boys away to school.⁶ There was hardship at the school, and difficult loneliness. On Friday, Reverend Mother Lucy—whom the school children nicknamed Lucifer—read out the week's marks. Bad marks provoked a beating with a strap. Good marks inspired the gift of a holy card. "My brothers didn't fare very well," says Cardinal. "They were younger and were very, very hurt in the process and it affected their lives to this day. I was a little older, so I decided that I would survive better by doing exactly what was expected by me. My modus operandi at the time was to excel. It's a survival mechanism, which still drives me. While kids got beaten up and got the strap, I got the holy card."⁷

But, even as Cardinal felt culturally disconnected and alone, he also came under the positive influence of some teachers at the school—Mrs. Salter, for instance, who gave the boy an appreciation of art and music. His father presented Cardinal with a Swedish 270 rifle when he turned fourteen years old but he preferred to walk out onto the land and sketch or photograph animals rather than hunt them. He suffered from extreme shyness, but became an accomplished pianist. Incapable of playing in front of an audience, he did occasionally perform on radio. With Mrs. Salter's encouragement, he studied Renaissance architecture, hunched over books in the school's library. At one point, Cardinal discovered Michelangelo's studies of geometric forms. He drew a female nude superimposed on a circle with all the signs of the Zodiac, then showed his sketch to Mrs. Salter. "She sat down with me and told me it was beautiful," he recalls. "She asked to keep it. And she said: 'Other people around here wouldn't appreciate it. But I do.'"

Cardinal was hooked on architecture long before he graduated from high school. But it took a lecture in 1952 by Canadian painter Lawren Harris to give him permission to channel his self-doubt and fears into a raw, undulating architecture. "I could sense that real love and affinity for what he saw in nature," recalls Cardinal. Harris's abstractions of nature represented an honest vibration with nature, and that frankness inspired Cardinal. Had the Greeks not entwined a reverence for the human body with natural forms and the exquisite siting of their buildings? Cardinal wanted to claim a similar strategy of architecture for the new world.

At the time, Cardinal was in first year architecture at the University of British Columbia. His organic forms were celebrated during his second year, but damned the next, by a studio co-ordinator who was devoted to the formal rigours of the International Style.⁸



Ultimately, Cardinal's experience at UBC became intolerable. He left in 1953 and returned to Red Deer to hone his skills as a draftsman while working for two different local firms. He completed his architecture degree one decade later at the University of Texas at Austin.

Before arriving in Texas, he travelled extensively through Mexico and was moved by the ancient ruins of the Aztecs and the Maya; the superb integration of architecture, sculpture and mural paintings at the University of Mexico also inspired him. Like Erickson before him, Cardinal entertained the possibility of working for Frank Lloyd Wright at Taliesin West, near Scottsdale, Arizona. But, instead, he

moved on in search of an accredited university that would allow him to work in Canada. In 1956, he enrolled at the University of Texas at Austin where he was turned on to the most significant expressionist architects of the twentieth century: Hans Poelzig, Erich Mendelsohn, Felix Candela, Pier Luigi Nervi and Antonio Gaudí.

Gaudí, like Cardinal, was an architectural activist. He was a Catalan who believed deeply in carving an image in architecture for a people who had suffered enormous cultural oppression by the Spanish, then the French and, during much of the twentieth century, by the military dictator General Franco. His work spins on metaphors of nature. The exterior

PURE SPIRITUALITY
Lit by a single light cannon, St. Mary's altar is honestly constructed of chunks of Tyndall stone with the sawmarks still on them.

RITE OF PASSAGE

A passage with towering walls of brick located behind the pews: forcing questions about our own mortality.



of Gaudí's apartment house Casa Mila in Barcelona resembles a cliff, modulated and worn by wind and rain over centuries. Each apartment's built-in furniture carries the spindly structure of cow bones. He used the structural language of the region's beaches to speak to his compatriots: shells inspired his helical-shaped stairs that wind their way in a tight spiral inside the Sagrada cathedral.

One of the fundamentals of early modernism was the reduction of the wall. Walter Gropius exploited the glass curtain wall in his designs. Frank Lloyd Wright erased masonry to turn a corner with glass rather than brick. In Gaudí's life-giving forms, however, the wall becomes a shield and protector. Giving it intense, unfettered expression is how Gaudí honoured the wall.

Gaudí's audacious forms provoked something in Cardinal. The concrete shell structures by Felix Candela intrigued him. While he was studying architecture, Cardinal became involved with the anti-racism movement at the University of Texas. He worked part-time at the Austin-based firm Jessen, Jessen, Milhouse and Greeven, a Beaux-Arts, classical firm that produced ink drawings on linen. After graduating, he returned to Red Deer and worked for one year to gain professional accreditation at the local firm Bissell & Holman.

Cardinal has made a name for himself in Canada and the United States as the Metis architect. He has used this white man's title to his benefit, wearing a buckskin jacket or long beaver coat to meetings in the 1970s with potential clients, his black hair hanging long down his back. In 1983 he won the commission to design the \$93 million Canadian Museum of Civilization in Hull, Quebec, mesmerizing the client with his poetic descriptions of the way the building would grace the edge of the Ottawa River. Given the colonization of Aboriginal people in this northern country, Cardinal has the right to exploit the stereotypes, and then some.

What drives Cardinal is raising the self-esteem of aboriginal communities through architecture. He used his Indianness to heal himself, to seek help from a medicine man, to know what it was to endure many times the ancient rites of purification of the Plains Indians: the sweat lodge, the sun dance and fasting. He designed a school that doubled as a large cultural centre for Ile de la Croix, a northern Saskatchewan community of 1,500 Metis. Members of the community had previously burned down their school—they viewed the building as a colonial act—and said the next bureaucrat to come from Ottawa would be shot.⁹ Working closely with the people, many of whom were descendants of the influential Metis leader, Louis Riel, he received approval from government sources to design a school as a place of learning and culture. The building is a simple wood and steel structure covered by three great umbrella-like roofs angled in various directions. He encouraged unskilled local residents to learn basic cabinet-making and other building trades to work on the construction.¹⁰ In 1990, Cardinal master planned the Cree village of Oujé-Bougoumou in northern Québec, drawing from traditional building techniques and gaining recognition for creating a "village of the future" by the United Nations. As the principal designer for the Smithsonian Institution's National Museum of the American Indian, Cardinal attempted to reconcile the divergent interests of hundreds of Aboriginal communities into one broad consensus. It was an admirable attempt to pass the talking stick around the circle, but, ultimately it failed and Cardinal was replaced by the powerful Polshek Partnership Architects Inc., the New York-based firm that, for example, simplified details in the exterior stone coursing pattern and replaced an interior, stone-clad atrium mostly with drywall in order to meet the museum's budget restrictions.

The heavy concrete roof that dips in a dramatic angle across the nave of St. Mary's was constructed without conventional formwork. Rather, high-tensile steel cables sheathed in plastic were suspended from a reinforced concrete ring beam. They were connected to the circular roof lights over the altar and tabernacle. Drawings of the roof beam layout dated Dec. 17, 1965, indicate a 248-inch-by-84-inch concrete beam over the nave with six concrete pilasters faced in brick. A 60-by-60-by-20-inch concrete ring girder is also integrated with a steel ring. For the typical detail section, three-quarter-inch semi-lightweight concrete was sprayed onto mesh reinforcing, over strand cable horizontal bars, over expanded metal lath standard steelcrete wired to circum-bars.¹¹

How the roof was held in place: inspired by Candela's shell structures, the concrete was pumped onto steel mesh and insulation attached to the steel cables. After the concrete shell ($\frac{3}{4}$ inch) was cured, the cables were post tensioned and interior supports removed. Over 250 tons of concrete was thus suspended in a large, open space.¹²

Cardinal tested the loads with a physical model the way Gaudí had decades before him in Barcelona. Models of wires were created by Cardinal and weights were hung from them.¹³ As there wasn't enough money to form the concrete roof with formwork, he elected instead to use an intricate spiderweb of metal wires as both structure to hold up the light cannons and formwork to hold the concrete.

In the beginning, St. Mary's wasn't meant to be anything but a serviceable container for a growing Catholic community in the suburbs of Red Deer. But, Cardinal wasn't swayed by the predictable layout of the suburb. He didn't pay much attention to the contractor who was also the chairman of the building committee. He allowed the chairman time to hold forth on the need to move the burgeoning Catholic community out of the school gym and

into a place of its own—a prefabricated steel church, he recommended, because he could build it just above cost.¹⁴

The references to nature are inescapable. The suburb of Morrisroe sat on the southeast edge of the town of Red Deer, within visual reach of Alberta's grain elevators and oil rigs. These were absorbed by Cardinal. So were the creatures of nature; a sea shell or fish life from some of the province's ancient, dried-up lakes. The coulees of southern Alberta are also surely present in his charged design.

Cardinal had no intention of drafting a steel box. But he waited out a few committee meetings until the new, energetic priest arrived to lead the congregation. Father Werner Merx came from a German family of architects and engineers. He was educated in Rome, played the French horn, enjoyed good wine. He was a liberal within the reformed Catholic church of the 1960s. How to translate the mandate to communicate more directly with parishioners through built form intrigued him, and he listened carefully to Cardinal's talks to the committee, which were effectively lectures about the greatest moments of architecture in the history of the Catholic church.

Father Merx and Cardinal formed a partnership of intellectual depth and commitment—a rare client-architect relationship that, Cardinal says, he has never again found in Canada or the United States. They spent many hours, recalls Cardinal, discussing the programmatic focus of the church, a dialogue that inevitably returned to the defining role of the altar. "We would talk about these things and I would sketch them and I would model them," says Cardinal, "and he would be my critic all the time."¹⁵

The medieval altar with its long rectangular table was considered. An altar cloaked in ornament and decoration was considered and quickly rejected. Merx insisted that the altar be the primary symbol—

that it should be designed so that all eyes would be immediately drawn to it. In response, Cardinal designed oak pews that were curved around the altar with the floors of the church sloped gently toward it. Positioning the light cannon directly over the altar brought the metaphorical drama of the divine light to the sacraments—within the lugubrious interior, it is the single most strongly lit space in the church. It was decided to remove the tabernacle from the altar and place it to the side with another more modest light cannon hovering over it.

How to render the materiality of the altar became a significant matter. In one iteration, Cardinal sketched the altar as a highly polished piece. But, Merx countered that Christ was not a man of silk, but of rough linen. Cardinal responded by specifying an altar of chunks of stone with the sawmarks still on them. The synergy between Cardinal and Merx recalls the trust between Le Corbusier, the architect of the iconic Notre-Dame-du-Haut Chapel and his client Father Alain Couturier a decade earlier in France.

Notre-Dame-du-Haut was castigated by some, including the British critic Nicolaus Pevsner who declared it irrational—implying, by extension, that Le Corbusier had temporarily lost his rational mind. "When Corbu put out Ronchamp they said that's not really something we should study because that's the work of a senile, old man," scoffs Cardinal. "But I said, 'That's his best work!' It was its irrationality that inspired me."

I'm ten minutes late when I arrive from Toronto via Calgary for the 11 AM Sunday mass at St. Mary's Church. The hollowed-out Red Deer, which years ago sold out its city centre to strip malls and fast food joints, slips away from my consciousness the moment I enter the church. I can't remember anything about the clapboard houses in the neighbourhood outside. I am mesmerized by St. Mary's—this soulful place.

Douglas Cardinal started designing the church in 1964. The design took two years and construction cost \$360,000. St. Mary's opened in November, 1968.¹⁶ The church has received some recognition internationally. Philip Johnson, the American Godfather of modern architecture, promoted it. He had first come across Cardinal's work—St. Mary's Church and Grand Prairie College—as a juror for the prestigious Lous Sullivan awards for design excellence in masonry construction. Impressed by what he saw, he insisted to Arthur Drexler, then director of the Museum of Modern Art's architecture and design department, that he include St. Mary's in the important 1979 exhibition and book *Transformations in Modern Architecture*. It was featured handsomely in a chapter titled "Sculptural Form: Imagery," that included the work of Eero Saarinen's TWA Terminal, New York and Jorn Utzon's Sydney Opera House, Australia.¹⁷

But, after designing St. Mary's, Cardinal's unorthodox approach to design isolated him from his community. "The problem in doing something that radical was that all my other clients ran for cover," says Cardinal. "I scared people, so I had no option but to go to Edmonton."¹⁸ He established a practice there, then Ottawa, and has rarely returned to Red Deer since the church was constructed.

Unfortunately, Father Merx has long gone. The priest pacing in front of the congregation is a relative newcomer to St. Mary's. He is delivering his homily when I arrive, designed to inflict guilt on his flock like a thousand flicks of the whip. He accuses the gathered of not taking their faith seriously by showing up late. Would you show up late to the ballet or opera? And, so on, spitting his venom from under the light cannon toward the girls in summer dresses, the fathers holding babies, toward the women dressed in jeans and windbreakers. About 650 people have turned up for mass. Every one of the wooden pews is taken up with families. The priest carries on

with his loud accusations. The irony is that his voice travels perfectly. Cardinal's curvilinear design promotes dispersal of sound evenly. In fact, the circular stage on which the five-ton stone altar sits recalls the thrust stage at Stratford.

Michel Foucault, the French philosopher, wrote eloquently about the role of architecture in society. To him, architecture is not capable of dictating the actions of individuals. It can certainly inspire. It can certainly bring people to new awareness.¹⁹ If it's Godawful and relentlessly dull, it can also paralyze our senses. But even great works of architecture can be used to negative effect—Claude Nicolas Ledoux's Royal Saltworks was initially conceived and constructed during the Enlightenment as a utopian community for labourers near Besancon, France. But over time the salt mine was forced to shut down. The Saltworks became a community garden for the French after the First World War. During the Vichy Regime, it became a holding tank for Jews who were about to be delivered across the border into concentration camps.²⁰

Foucault also separates out architects from other professionals who have the power to dominate. He places doctors, psychiatrists, prison wardens and priests within this category. Architects are not as complicit in a series of power relationships. If a community comes to hate a building, or if a certain style of architecture falls into disfavour, the buildings are simply torn down. Individuals, however, stick around.

In the case of St. Mary's, an addition by a local Red Deer architect was slapped onto one side of it in 1995, provoking Cardinal to sue the church, unsuccessfully. The bricks are carefully matched to the original but the addition of a parish hall masks the complexity of the first form and messes with the tight compression of the building's composition. It rides side-saddle on Cardinal's snake. And the half-moon window heavily detailed with

black metal mullions is a kitsch operation. Cardinal's interior has been, thankfully, untouched. Small indiscretions exist: a linen cloth has been thrown over the Tyndall-stone altar, masking the fossil of a small fish that was delicately set on the southwest corner of the altar. The space suffers from general clutter: there are plastic flowers at the front of the altar and a white projection screen attached to the back. Since Cardinal filed his law suit, the architectural significance of the church has been a serious sticking point. Commissioning fresh photography of the church for this book turned out to be an impossibility.

The priest approaches me warily at the end of the mass, long after the congregation has filed out. I explain that I've come from Toronto to see the remarkable church. He shrugs and looks dissatisfied. "There are a few things I'd change," he says.

He doesn't deserve St. Mary's.

STILL ENDURING

Though the 1995 addition to St. Mary's church has been controversial, the integrity of the original space by Douglas Cardinal remains. Naked, without any decorative frippery, the church invites the whole, spiritual truth.

