



FAITH & FORM

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EDUCATION ISSUE
Let There Be Light



The Votive Chapel - Shrine of Our Lady of Guadalupe La Crosse, Wisconsin



Top: Our Mother of Good Counsel
Bottom: Votive Chapel

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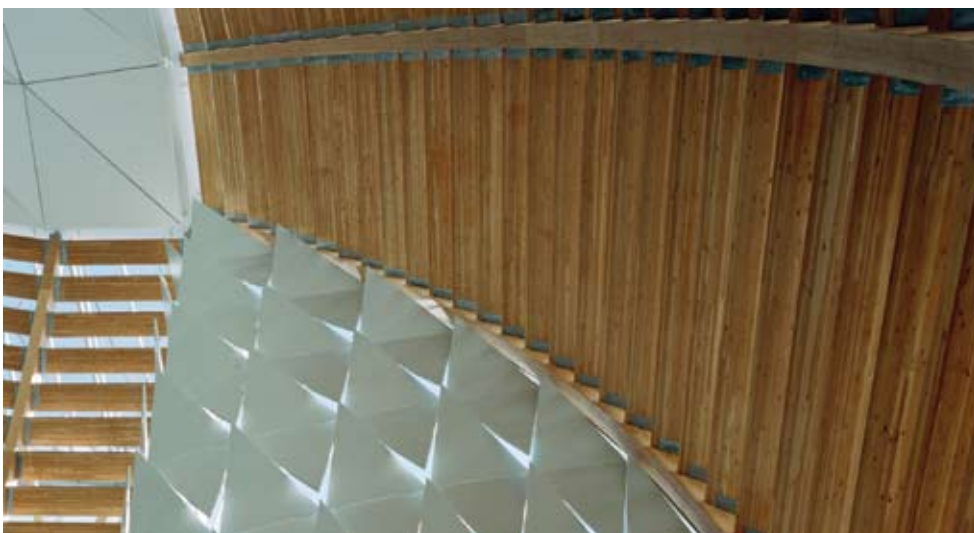


Photo: Timothy Hursley

ON THE COVER:

Detail of the Cathedral of Christ the Light in Oakland, California, designed by Craig W. Hartman, FAIA, a design partner of Skidmore, Owings & Merrill LLP (*article begins on page 6*).

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NEXT ISSUE:
A potpourri of
articles about new
developments in
sacred art and
architecture.



THE POWER OF CHANGE

EDITOR'S PAGE ★ MICHAEL J. CROSBIE



THE CONTROVERSY over an addition to the site of Le Corbusier's Chapelle Notre Dame du Haut in Ronchamp, France, raises questions about the timelessness of landmarks and the life of sacred sites.

Le Corbusier's pilgrimage church was completed in 1954 on the crest of a hill in the town of Ronchamp. It is as much a site of veneration of the architect as it is of reverence for the Virgin Mother. Last year, architect Renzo Piano's design to create a new entrance to the site and the addition of a convent and oratory down slope from the chapel sparked a brisk Internet mêlée. The Fondation Le Corbusier was behind an online petition addressed to the French Minister of Culture, calling upon her to stop the project, which, if built, would "represent the end of what is extraordinary in French

culture: that of a cultural state which protects artists of all time and all generations."


The petition objects to the convent, which will house a dozen Sisters of the Poor Clares, who will greet pilgrims to the site and show Christian charity. The order will have a 99-year lease on the convent. Piano's scheme shows the convent surrounded by trees and tucked mostly below grade, its roofs cascading down the hill, more than 100 yards away from Le Corbusier's chapel. "Despite the aesthetic qualities of this project and its deliberate discretion," states the petition, "it is the choice of its location, which may permanently jeopardize the harmony and cohesion of the entire site."

Nearly 2,000 have "signed" the electronic petition. Among the signatories are Richard Meier, Robert Venturi, and Cesar Pelli.

A counter-petition posted by the Association Oeuvre Notre Dame du Haut, Piano's client for the project (and Le Corbusier's client for the chapel 60 years ago), characterizes the new buildings as, "above all, about humbleness, respect, harmony, and subtle, almost invisible work." Among the more than 500 signatories' names are Tadao Ando, Nicholas Grimshaw, and Rem Koolhaas.

The trouble is not with Renzo Piano's scheme. The dilemma is an apparent blindness to the nature of sacred places, and a lack of faith on the part of the Fondation Le Corbusier in the power of Ronchamp to evolve with its pilgrims.

The petition to stop the project notes that Le Corbusier's wishes were that Ronchamp be left as it is, forever. Can a sacred site ever be finished, especially a place of pilgrimage? The defenders of Le Corbusier's masterpiece apparently believe so. But this contradicts everything that we know about places of worship throughout the world. What makes them vital is that they are palimpsests—successive generations write their own stories of faith over those already inscribed. Layers accumulate. We feel most connected to places of worship that evolve, that show the remnants of those who came before us, and who will join us over time.

Faith is not frozen in amber. True faith is organic, growing, living, changing. So are the places in which we gather to express that faith. 

MICHAEL J. CROSBIE IS THE EDITOR-IN-CHIEF OF *FAITH & FORM* AND CAN BE REACHED BY EMAIL AT MCROSBIE@FAITHANDFORM.COM



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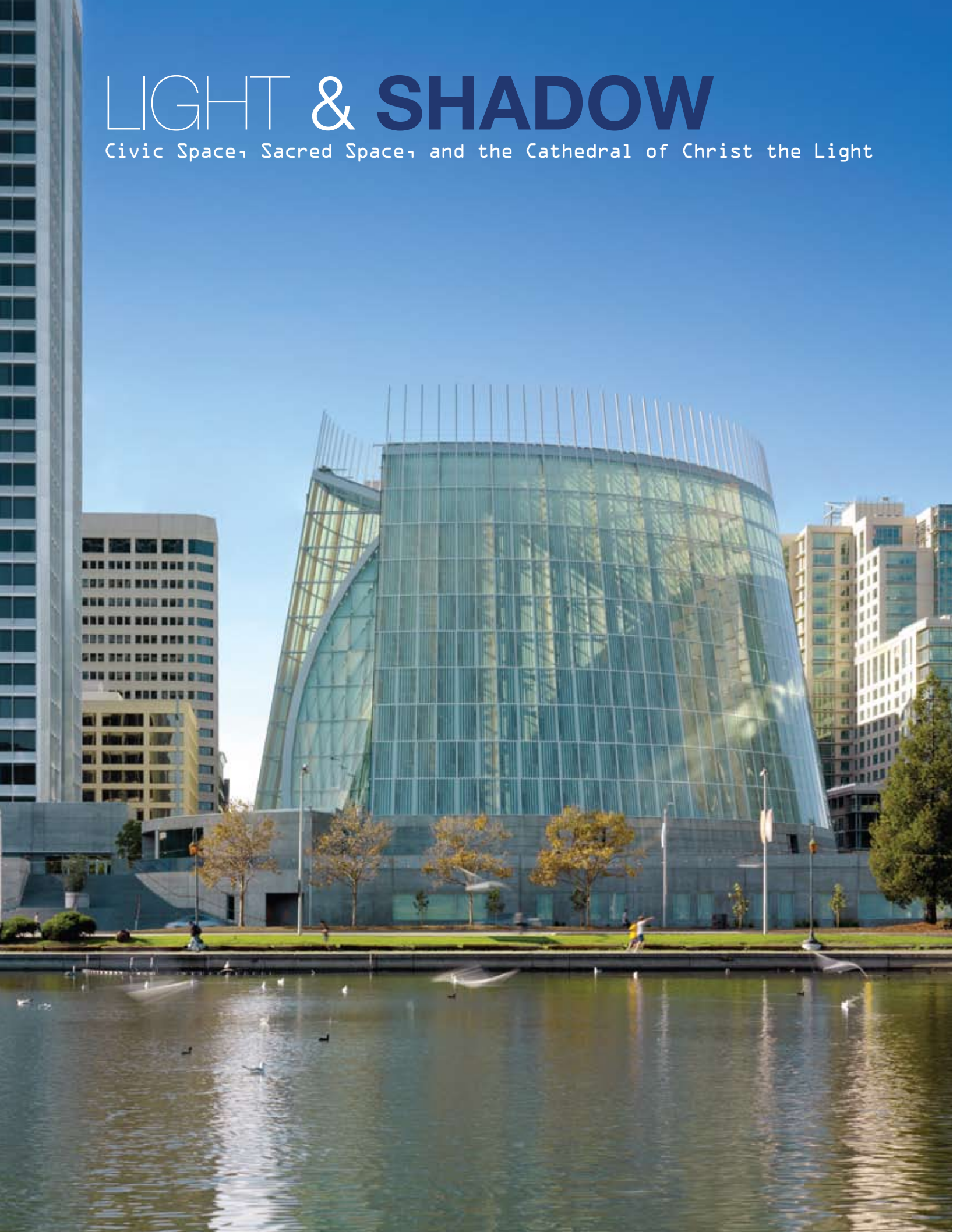
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LIGHT & SHADOW

Civic Space, Sacred Space, and the Cathedral of Christ the Light





BY CRAIG W. HARTMAN, FAIA

IF EACH WORK OF ARCHITECTURE must bridge past, present, and future—and all of the particular social and cultural dimensions embedded within—then a new Catholic cathedral, set in a relatively young and very culturally diverse city in California, provokes especially profound questions.

How might a cathedral, conceived in the 21st century, within a rapidly changing Pacific Rim setting, possess the cultural integrity and the power to inspire that define the great European cathedrals? How might a new cathedral speak to contemporary culture while honoring two millennia of Christian tradition? And more specifically, how might this new cathedral provide a meaningful setting for both spiritual renewal and civic discourse in its immediate community, the city of Oakland?

The historic St. Francis de Sales church, originally completed in 1893, had served as the cathedral for the Diocese of Oakland from 1962 (when the diocese was established) until it was rendered unusable in the 1989 Loma Prieta earthquake. After much reflection, the diocese, which serves more than 500,000 Catholics in two counties east of San Francisco, resolved to build a new cathedral center, overlooking Lake Merritt in downtown Oakland, that would include the 1,350-seat main cathedral sanctuary along with a mausoleum, a conference center, administrative offices, bishop's and clergy residences, a bookstore, a café, and community-serving ministries.

A lengthy international selection process, culminating in a design competition, led to the initial selection of Santiago Calatrava as the architect for the new cathedral. After a year of studying various sites, however, the architect withdrew from the project. The Diocese then turned to the original competition design by Skidmore, Owings & Merrill.

This vision was initiated under the leadership of Bishop John Cummins, the second Bishop of Oakland, and completed under Bishop Allen Vigneron, who succeeded Bishop Cummins in 2003. Both were passionate advocates for a cathedral that would speak to the

community in the architectural language of our time. Bishop Vigneron and a task force of Catholic scholars helped to develop the nuances of this language in relationship to the Catholic liturgy.

SIMPLE ELEMENTS

In considering a design that would honor the most elemental qualities of human spiritual experience, it seemed appropriate to reflect on the very beginnings: the account of the Creation beginning with light, water, earth, and trees, followed by living creatures and finally humankind. If these elemental qualities could be shaped to celebrate the fundamental rites and tenets of the Catholic faith—Baptism, Reconciliation, and the Eucharist—a space that would nurture spiritual journeys on a personal, individual level might emerge. Such a cathedral would embody the most ancient of earth's materials—the same that defined architecture at the time of Moses, Solomon, and eventually Jesus—and these “of the earth” materials would be shaped to receive and celebrate the presence of light.

From this perspective, light is a sacred phenomenon, and its introduction within the cathedral is perhaps the most visible manifestation of God's presence. The search for the

poetic expression of light has largely defined the architectural history of the Catholic Church. In this search, the church has embraced the most advanced architectural thinking to create works of architecture that illuminate, inspire, and ennoble the human spirit. One need only experience the impossible lightness of Sainte-Chapelle's stone structure, the Euclidean clarity of Chartres Cathedral, or the domes of Brunelleschi and Bernini to understand the importance that innovation has played in shaping the church's architectural traditions.

For a 21st century cathedral set in a dense, diverse city, the invocation of elemental qualities also provides a means for honoring the church's 2,000-year history without forcing a culturally biased point of view. The design of the Cathedral of Christ the Light strips away received iconography, allowing the more essential experience of light, materials, and space to instill a sense of sacredness that is approachable and open to the region's evolving multicultural population.

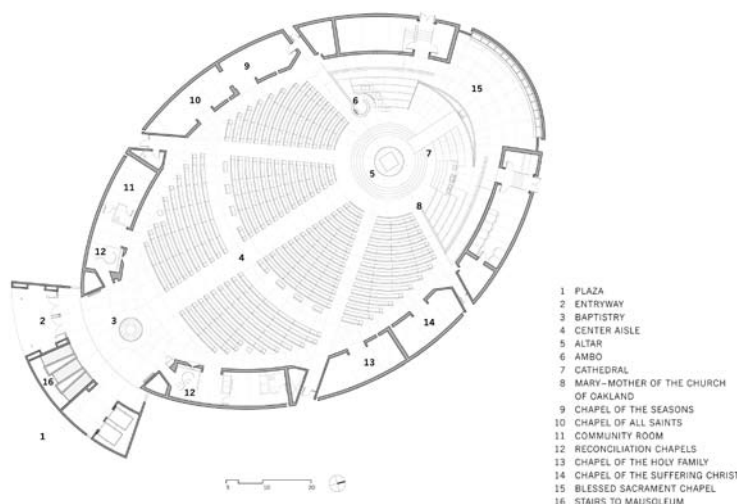
SACRED GEOMETRIES

The cathedral's plan geometry lends itself to the “ring” advocated in Rudolf Schwarz's seminal 1938 book *Vom Bau Der Kirche*, translated in 1958 as *The Church Incarnate*. Schwarz, a



At left: From the exterior, as it overlooks Lake Merritt in Oakland, the Cathedral of Christ the Light exhibits its diaphanous envelope.

At right: Entry to the cathedral is from the southwest, via a plaza that surrounds it, is through a heavy concrete wall.



Slits of sunlight dapple the massive interior concrete walls, which ring the nave.

friend and colleague of Mies van der Rohe, proposed that the arrangement of congregants in a circle around the altar should create a sense of community and inclusion. The changes in the Catholic liturgy brought by Vatican II in the mid-1960s reinforced this plan in contrast to the linear, hierarchical plan of early cathedrals.

The design began with two intuitive ideas. First, the architecture should be soft, fluid, and ephemeral in response to its place on the lake and the Pacific Rim. Second, for practical and metaphorical reasons, the sanctuary should be formed of wood. Wood can be shaped easily and is a cost-effective, renewable resource. With the proper cross-section, it is fire-safe and can retain its structural soundness for centuries. Metaphorically, wood is associated with biblical stories ranging from the ark to the temple and is also associated with places of sanctuary and dwelling—both modest and noble—in the collective human memory.

Sketching a conceptual plan revealed that the sanctuary could be given geometric structure through the intersection of two great arcs. The resulting interlocking circles create at their intersection the Vesica Pisces form within the cathedral's plan. This shape evokes the symbol of a fish—an ancient symbol of congregation and a sign of Christianity.

The curved plan form is further developed in the third dimension by the intersection of two spheres, which define the building's principal structure and volume. The Vesica Pisces recurs above—defining the cathedral's luminous ceiling—and marks the position of other key points within the cathedral, most notably the Eucharist tabernacle and the Baptismal font. In section, the south-facing Alpha Window, the Vesica Pisces ceiling, and the Omega Window establish a circular geometry—also a sacred reference for many cultures—that suggests the cycle of birth, redemption, and death.

The Fibonacci sequence—a geometry often linked with organic systems and natural phenomena—defines the detailing and proportioning of the Reliquary Wall, which forms the cathedral's base. The 15-foot-tall cast-concrete wall—12 feet wide at the base, tapering to 9 feet at the top—expresses a weight and mass that are clearly anchored to the earth. Side chapels “carved” into the mass provide discrete spaces for spiritual reflection and culturally specific icons and art. Inspired by Ronchamp, these side chapels are sliced with narrow openings that allow light to rake the walls and floors.

LIGHTNESS AND LUMINOSITY

The primary building elements each work to shape the experience of light within the cathedral. The delicate, Douglas fir structure comprises 26 laminated ribs joined by angled structural louvers that become progressively more open as they layer upward to the top of the vault. Each louver reflects daylight onto the bottom face of the panel above, resulting in a softly luminous interior wooden vessel enclosing the sanctuary. At night, this quality is reversed when the inner vessel, illuminated from within, takes on a lanternlike presence.

The spherical segments of the sanctuary are held within two conical segments of glass. The conical and spherical geometries are concentric at the base and move apart as the building meets the sky. The conical segments are expressed as veils of ceramic frit-coated glass floating beyond the inner sanctuary vessel, enclosing and protecting the interior. The fritting creates a tapestry of clear, translucent, and opaque glass that captures the shifting daylight and produces a quietly dynamic pattern of light and shadow within the sanctuary.

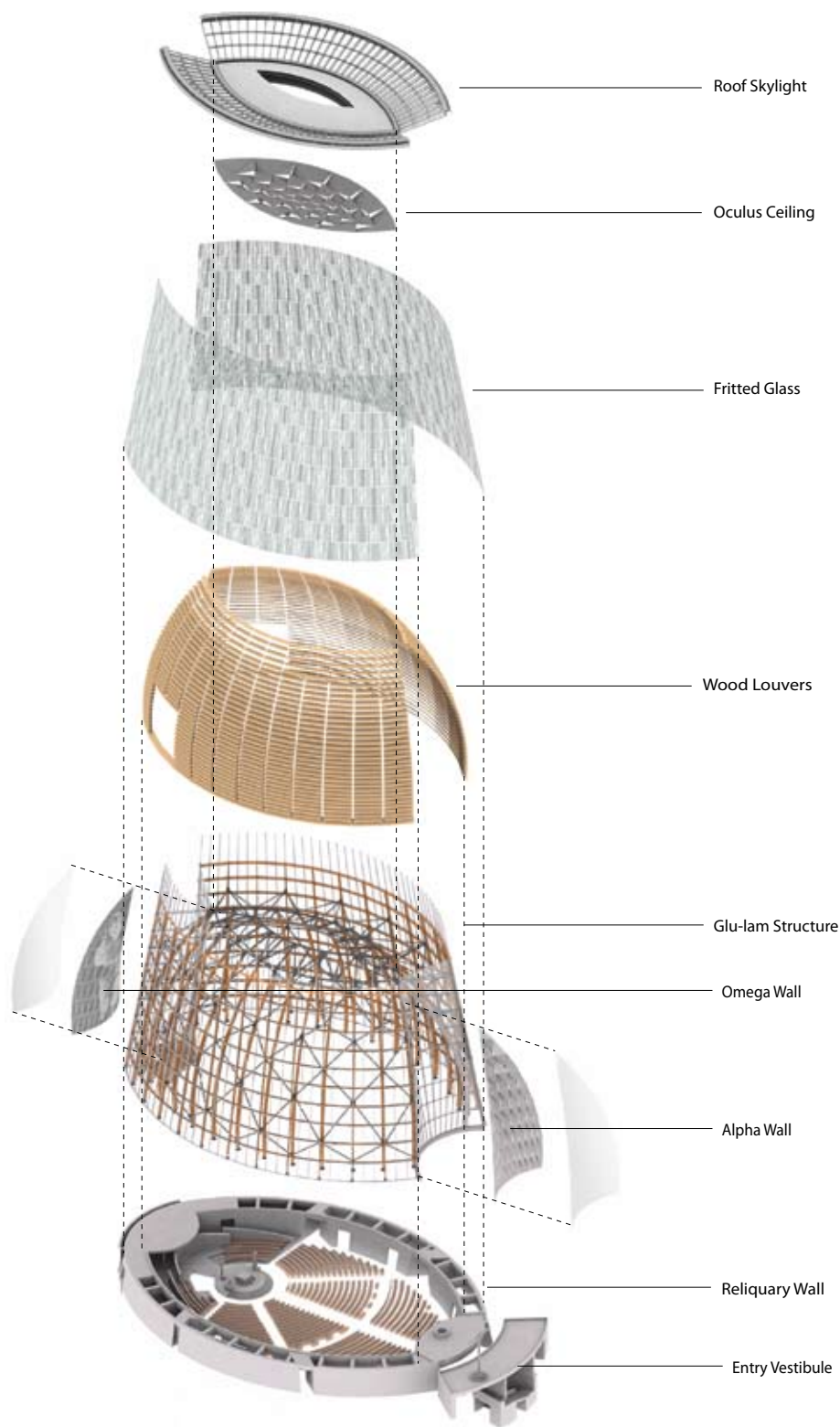
These two geometries—the cone and the sphere—are laced together with a system of compressive wood struts and delicate steel-tension rods. Together they form a high-strength composite structure of extraordinary lightness. The margins at the north and south ends are enclosed in highly transparent, low-iron glass to reveal the connecting structure and

Photo: Timothy Hursley

Photo: Timothy Hursley



The altar thrusts into the space, around which rise walls of glass and structural wooden louvers, with the Alpha Window in the distance.



The cathedral's various shells fit together to create a lantern that captures light.

to allow light to strike the inner conical surface, causing the translucent glass to become a glowing veil.

Rising 100 feet above the cathedral's entrance, the Alpha Window consists of triangular aluminum panels that diffuse direct southern daylight. Here, words draw from scripture to reveal meaning: "I am the Alpha and the Omega, the first and the last, the

beginning and the end." Passing through the entrance and under the Alpha Window, visitors cross the sanctuary's open and ethereal nave. Daylight streams downward from the Vesica Pisces-shaped oculus ceiling that tops the structure. The ceiling's concave diagrid of porous aluminum floats below a convex glass surface, capturing and modulating the changing sunlight throughout the day. A glass ring

set in the floor around the square, white marble altar extends this light to the catafalque, or altar, in the mausoleum below. (The circle and square also refer to the Asian symbol for heaven and earth.)

Behind the altar, within the Omega Window, a depiction of Christ from Chartres Cathedral is transformed and rendered in anodized aluminum panels and 94,000 pixel-like perforations. The powerful presence of the 58-foot-tall image relies simply on the play of light penetrating the different-sized perforations, which were created using a proprietary digital algorithm. Points of light shine through the holes, which were set in 100 different diameters, revealing the image and providing a nuanced sense of depth. Through the filter of contemporary technology, the original content—a sculptural image from the 12th century—is transformed into an ephemeral veil of light and shadow in the 21st century.

POROSITY, CONNECTION, AND SUSTAINABILITY

Complementing the simple use of light and materials is an underlying porosity that connects the cathedral center's various components and knits the complex into the surrounding city. The site is unconditionally open and welcome to all, regardless of faith. Like Cluny, it seeks to weave together indoor and outdoor rooms and gardens as an overall precinct offering places for respite, reflection, and meditation. Unlike early monastic complexes, however, the design creates a very porous condition that is linked to the city in every direction and serves to mediate the topographic shift downward to the lake's edge.

Within the cathedral sanctuary, openings penetrate the full depth of the Reliquary Wall on axis, with each aisle radiating from the altar, flooding the aisles with light and creating a visual link between the altar, the city, and the lake. Elsewhere, skylights and a below-grade courtyard bring natural light and landscape into the offices and conference room areas below the plaza level.

With its elemental qualities, crafted with advanced technology and practices, the cathedral is inherently attuned to nature, thus minimizing the building's ecological footprint. The entire cathedral complex is constructed of modest, regionally available materials, including resource-conserving slag and fly-ash concrete and sustainably harvested Oregon Douglas fir.

The thermal mass of the cathedral's base helps to reduce rapid heat gain, while heavier pools of cool air introduced through openings in the sanctuary floor displace warm air and




On the chancel wall, the Omega Window renders a 12th-century image of Christ from Chartes Cathedral by admitting sunlight through tens of thousands of perforated holes.

*The cathedral is set amid
the life of the city, over
which the Omega Window
glows at twilight.*



cool the lower, occupied strata of the expansive volume. When needed, comfort is provided by warm water circulating within the concrete floor—a Roman technique. The low-E glass enclosure, working with the interior vessel, modulates daylight and heat gain within, and limits the need for artificial lighting to evening hours.

The Douglas fir ribs and louvers provide protective structural elasticity and favorable acoustical conditions. An advanced seismic system, which includes base isolation, is designed to withstand a 1,000-year earthquake, preserving the cathedral for centuries.

The most significant challenge in creating a work of architecture intended to stand for centuries is not a technical question but a cultural one. The aspiration was to make a cathedral that is enduring in its worthiness, one that, in this relentlessly secular world, will provide respite, inspiration, and cultural meaning for untold generations. 

CRAIG W. HARTMAN, FAIA IS A DESIGN PARTNER OF SKIDMORE, OWINGS & MERRILL LLP, BASED IN THE FIRM'S SAN FRANCISCO OFFICE. HIS DESIGN FOR THE CATHEDRAL OF CHRIST THE LIGHT RECEIVED A 2009 HONOR AWARD FOR ARCHITECTURE FROM THE AMERICAN INSTITUTE OF ARCHITECTS.

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Detail of the layers of fritted glass and wooden louvers, which filter the light coming into and emitted by the cathedral.



Photo: John Blaustein

Lighting For Worship Spaces





BY ROBERT SHOOK AND MICHAEL WHITE

THE SPIRITUAL CONNECTION between light and faith begins with the striking and all-encompassing images called to mind by the familiar passage of Genesis, “Let there be light...” as the light is separated from the darkness and the day and the night are ruled by great lights in the firmament of heaven. Light is used in many passages in the Bible and also in the Koran to express the spirit of God manifest in the world.

Light is also frequently used in ritual and ceremony. The choir sings, “Radiant beams from Thy holy face...” during the traditional Christmas Eve service, and the light is spread from one to many. When prayers are said, often candles are lit as a symbol of the enduring power of prayer. Families gather during Hanukkah to light candles and remember the story of the lamp in the temple that burned for eight days. As we begin to think about how to use light in a house of worship we have this rich tradition to draw on. The images found in word, ritual, songs, and sayings can be read as a design statement for the use of light in a house of worship.

Light is invisible and intangible and yet invokes emotional responses in people. It is the ephemeral quality of light that makes it the perfect metaphor for the spirit of the unknowable God. The practical application is to use light to suggest God’s presence in the worship space. Strong highlighting of religious symbols can suggest the spirit of God emanating from the Cross or the Star of David. The statue of the Virgin Mary can be lighted to reveal its form and to create a special quality. Illumination of a church spire can symbolize the spirit of the church reaching out into the community. In designing lighting a certain degree of care must be exercised to provide the right measure of emphasis and support without crossing over the line into the sensational or calculating.

First Presbyterian Church of Evanston, Evanston, Illinois, designed by Goss Pasma Architects, displays good lighting composition with appropriate hierarchies of brightness for the platform, organ, walls, and seating.

Photo: Barry Rustin



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Layers of light are evident in this design for the San Fernando Cathedral in San Antonio, Texas, by Rafferty Rafferty and Tollefson Architects / Fisher Heck Architects. Downlights provide general illumination while uplights accent the historic ceiling. Highlights on architectural and religious elements complete the lighting environment.

HOW LIGHTING FUNCTIONS

Most religious buildings today are used for a wide variety of functions such as weddings and funerals in addition to their regularly scheduled worship services; many also present music and theatre events for their immediate community. Lighting can address the many different needs arising from these programmatic changes. At its most basic level, lighting makes it possible to see and to read: the right quality of light allows worshippers and worship leaders, including musicians and choir members, to see well and read their music and other materials well, without uncomfortable glare.

Another important function of lighting is to support the visual composition of the worship space. Lighting designers often speak of the lighting “hierarchy” in a particular space. Which surfaces, objects, or areas should be the brightest, which secondary, and which tertiary. The lighting hierarchy should support the programmatic needs, and at the same time enhance the worship space’s overall design, including permanent and temporary religious and architectural elements.

Lighting can also be used to focus attention: in many houses of worship the lighting is modulated throughout a service to raise and lower the lighting levels in particular areas such as the pulpit, the choir, or the altar, to better focus the worshippers’ attention on the speakers, singers, or musicians leading a particular part of the service. If no one is occupying the pulpit, there is no reason for it to be brightly illuminated; that would steal attention and waste energy.

And lighting is used to set the appropriate mood for a particular service or event. For regular daytime services, the worship space is relatively bright and well balanced, with appropriate illumination levels in all areas. But many types of services benefit from much lower lighting levels, or from lighting settings that emphasize particular aspects of the worship space: a Cross, a shrine, or an architectural element.

In the Madonna della Strada Chapel in Chicago, Illinois, designed by Marvin Herman and Associates, the lighting designers reinforced the architectural arches with continuous LED lighting.





A variety of light sources were used to light the Shrine of Mary at Holy Hill, Wisconsin. Fluorescent lamps are used between the ribs of the vaulted ceiling, and at the 'halo.' Halogen spotlights reveal the texture at the carved altar and highlight the statue.

LIGHTING IN LAYERS

Lighting for architectural spaces is often referred to as having “layers” – different lighting techniques or effects within the same space that make up the total lighting environment. Typically, worship spaces include one or more of the following layers:

- General lighting
- Front lighting
- Highlighting of religious elements
- Highlighting of architectural elements

It is possible for a single lighting treatment to fulfill the needs of more than one layer at a time, but more often each layer must be addressed separately, with a discrete set of fixtures in a specific location within the worship space.

General lighting: One of the most basic activities in a worship space is reading. Congregants need to read prayer books, hymnals, etc.; celebrants need to read from their reference materials and notes; choristers and musicians need to read their music. Ideally, illumination should come from directly above at all times, so that shadows are not created that make reading difficult. In most cases, light should be relatively bright and uniform and should be shining directly down into the space, not reflected indirectly from the ceiling. Special attention should be paid to ceremonial areas, particularly the center aisle, where once-in-a-lifetime events such as bridal processions may be taking place and being videotaped.

Front lighting: It is as important to see the worship leaders well during a service as it is to see performers well during a performance. This layer of light, from the front, assures that celebrants are brightly illuminated from the same direction as the congregation is viewing them. Seeing facial features well has a direct effect on how well people hear, so good lighting is a positive step toward better understanding.

In many worship spaces front lighting at a minimum is required for the pulpit, lectern, and altar areas. It is also common to require front lighting for the area between the pulpit/lectern/altar and the front of the congregation seating so that celebrants may come forward and connect more directly with the congregation.

How bright the front lighting should be depends on two criteria: sanctuary size and technology. The greater the distance to the back row, the brighter the front lighting will need to be. Also, video cameras – for image magnification during services – generally require brighter illumination than congregation viewing alone.

Pastors often complain that the front lights produce glare. The fact is that if the front lights are not creating a certain amount of glare then they probably are not effectively doing their

job. Often front lights can be located left and right, rather than directly in front: this arrangement usually results in less glare.

Highlighting of religious elements: Many worship spaces prominently display specific two- and three-dimensional elements that represent aspects of their bases for belief – Crosses, shrines, murals, tabernacles, lanterns, screens, Stations of the Cross, and others. Lighting designers usually consult with worship representatives to best understand the relative importance of these elements, and to what degree they should be featured visually.

Highlighting of architectural elements: A church's architecture establishes a particular aesthetic that is meaningful to the worshipers. Elements such as vaulted ceilings, arches, columns, murals, and organ cases often require special lighting to emphasize their importance. Illuminating ceilings and walls also imparts a sense of brightness to a space that is otherwise difficult to achieve with general lighting alone.

LIGHT SOURCES FOR WORSHIP

Professional lighting designers are familiar with a wide variety of lighting fixtures that can be used successfully in worship spaces. Because it is so important that lighting be directed at very specific elements within the space, it is common to use adjustable fixtures with specific beam capabilities in most areas. These can range from track lights to theatrical spotlights, depending on the size of the space and the complexity of the lighting requirements. The primary advantage of theatrical spotlights is that they can be “locked down” to a particular aiming, or focus, allowing the maintenance crew to re-lamp these fixtures without disturbing their focus.

As important as the choice of lighting fixture is the choice of light sources (bulbs or lamps) to be used. Houses of worship have traditionally used incandescent lamps, which are relatively inefficient and short-lived compared with other lamp technologies, such as fluorescent, metal halide, and LED. As we become more attuned to sustainability, we seek opportunities to use energy-efficient light sources in worship spaces. The following is a summary of different types of light sources:

Incandescent: This category includes standard incandescent and halogen incandescent (quartz). These lamps are inexpensive, can be dimmed full-range with standard dimmers, and turn on immediately without a warm-up period. Most incandescent lamps have rated lives of less than 1,000 hours. Dimming an incandescent lamp, even as little as 10 percent, will extend the lamp life considerably.

Fluorescent: Fluorescent lamps are much more energy efficient than incandescent lamps and have rated lives up to 20,000 hours. While it is possible to dim fluorescent lamps, it is more expensive to dim fluorescent than incandescent. Fluorescent lamps require a brief warm-up time to come to full brightness.

Metal Halide: Older metal halide lamps were very bluish. But a newer technology, known as ceramic metal halide, has yielded lamps that are warmer in appearance. The disadvantages of metal halide are that they cannot be dimmed, they require a warm-up period to come up to full brightness, and they cannot be restarted immediately after being turned off. Metal halide lamps last up to 10,000 hours.

LED: LED stands for “light-emitting diode,” a fully solid-state light source. This is the most recent technology and has promise for many lighting applications. It is very energy efficient, can be dimmed, and is extremely long lived, up to 50,000 hours. Its disadvantages are that currently it is comparatively expensive and it does not render colors as accurately as other technologies.

LIGHTING AND VIDEO

Video is becoming an essential element in most modern worship environments and in many traditional environments as well. This has a direct effect on the lighting. Video cameras generally require higher illumination levels and a different type of lighting than direct viewing by the congregation. Proper lighting for congregational viewing is directed from a high angle to create shadows in facial features, which makes the features easier to read from a distance; the shadows, however, are greatly exaggerated by video cameras, which can make faces appear haggard and wrinkled. Proper lighting for video is generally directed from a lower, flatter angle, to fill in facial features for a more natural look when viewed by video.

Congregations that make extensive use of video usually have large video displays in the vicinity of the platform. Most of these displays are projection screens, either front projection or rear projection. Care must be taken in their design to illuminate the worship leaders well without spilling unnecessary light onto video projection screens. This generally calls for a more theatrical approach to lighting the platform, where each individual light is directed at a very specific area of the platform and can be aimed to avoid illuminating any portion of the projection screen.

WHERE SHOULD THE LIGHTS GO?

Lighting designers spend a great deal of time collaborating with architects to integrate

the lighting fixtures into the architectural design and keep them out of view as much as possible. Not only do fixtures sometimes need to be hidden, but their locations should allow them to be maintained as simply and easily as possible.

For churches with accessible space above the ceiling, recessing fixtures is a good option. This method gets the fixtures mostly out of sight and allows them to be maintained from above, using catwalks in the attic. However, recessed fixtures are limited in their degree of adjustability, and historic churches with ornate ceilings often do not easily accommodate holes.

It is often possible to locate surface-mounted fixtures below the ceiling if they can be fully or partially hidden behind architectural elements such as exposed beams and arches. Other likely locations for lighting fixtures are on the sides, concealed in niches or behind columns. However, fixtures in such locations are often very difficult to maintain.

MAINTENANCE

Lighting maintenance considerations go hand-in-hand with source selection and systems design. As the program for the building is developed, the second question should always be "How do you change the lamps?" The maintenance plan should also identify the skills that will be needed to keep the lighting system operational. Small congregations can rely on volunteers to change lamps, but if the complexity of the system increases, consideration must be given to adding staff or outsourcing the work.

Worship spaces often have high ceilings with recessed lighting fixtures, which can be an access challenge. In spaces with deep plenum space, catwalks can be built above the ceiling to provide easy access to recessed downlight fixtures. If the budget or architectural conditions won't permit access from above, personnel lifts can be used. It is often the case, however, that immovable furniture and platforms make it difficult or impossible to get a lift into the needed position to reach every fixture.

In order to understand the long-term cost of maintaining the lighting and control systems, it is necessary to evaluate lamp life, lamp cost, hours of use for the building, and any special needs such as lift rental. Despite their relatively short lamp life, incandescent lamps are still the most common source. With limited hours of use and incorporation of a dimming control system, most lighting equipment does not require maintenance more frequently than once per year.

LIGHTING CONTROLS

Lighting control systems for houses of worship range from relatively simple systems that offer a choice of several push-button preset scenes, to more complex systems that permit great flexibility but require skill to operate. The specification is driven by the programming needs of the congregation and the available budget. If the celebration includes multimedia or dramatic presentations, the lighting scenes may need to be adjusted each week. A theatrical lighting control console can provide the flexibility for a skilled user to quickly set up a series of scenes or cues to accommodate a dynamic service.

If the worship service follows a more traditional and consistent path, the need can be met with an architectural system with a straightforward control interface. In this case a control panel with five to ten labeled pushbuttons can be located at a convenient side door in vesting room or near the pulpit. A second panel can be located at the organ console, which is helpful if the lighting will change at a given point during the service.

Common to both architectural and theatrical style systems is a rack(s) of dimmers that deliver power to the lighting fixtures. This is a rather large cabinet placed typically in a centrally located electric room where the main service power enters the building. Messages from the control panels or theatrical consoles described above tell each dimmer when to raise or lower its connected load. The greatest flexibility can be achieved by using a large number of low-power dimmers, with one assigned dimmer per lighting circuit. However, since the cost goes up with the added flexibility it makes sense to balance the number of dimmers against the program requirements.

MEGACHURCH LIGHTING

Many evangelical churches are overtly theatrical and therefore require a higher degree of flexibility and functionality. Often they actually refer to their worship spaces as theatres, with stages. Frequent changes to the lighting are required as the focus of the service moves from the minister to the projection screen and then to the choir and on to the baptismal. Some evangelical churches need to support the extensive use of video and dramatic presentations as part of the regular service.


A much more extensive lighting infrastructure must be provided in order to achieve this level of presentation. It isn't unusual to find exposed overhead catwalks, or at least ceiling arrangements with open slots allowing theatrical spotlights to be rearranged and refocused regularly to suit the requirements

At right: Grace Church in Edina, Minnesota, designed by HGA Architects, provides support for a dynamic program that includes video, music, and dramatic presentation.

of a particular service. As the complexity of the system increases, early involvement of the lighting designer becomes more important. If the program demands are understood during preliminary design the lighting system can be better integrated with the architecture.

MAKING THE RIGHT CHOICES

In the design of new worship spaces and in the renovation of existing spaces, professional lighting design consultants are increasingly playing a significant role on the design team. Architects and electrical engineers have a basic knowledge of lighting, but lighting designers can bring a much higher level of knowledge and experience to bear on this important aspect of worship space design. Lighting designers are most successfully utilized when they are involved early in the design process. This assures that the lighting will be properly integrated into the architecture and coordinated with all of the other building systems.

The demands of the worship space are many and varied, and the application of light can help to create the appropriate mood for the participants. The service is usually a celebration with an upbeat and energetic feeling. Abundant daylight is the best lighting to support this, and the natural connection to God's work is simple and strong. The form of the traditional cathedral can be seen as a progressive study in daylighting as the use of wall penetrations to light the ancient building evolved alongside the development of structural knowledge, which permitted taller and wider openings. When the openings were later filled in with stained glass, the use of light, art, and religion came together to create inspiration. While electric light may have a hard time competing with natural light for inspiration and majesty, its design should be thoughtfully considered and artfully applied to support and enrich the mission of each faith community. 

ROBERT SHOOK, IALD, IS A FOUNDING PARTNER OF SCHULER SHOOK AND HAS BEEN PRACTICING LIGHTING DESIGN FOR MORE THAN 35 YEARS FOR A WIDE VARIETY OF PROJECT TYPES, INCLUDING CHURCHES. HE IS A MEMBER OF THE ILLUMINATING ENGINEERING SOCIETY HOUSES OF WORSHIP COMMITTEE.

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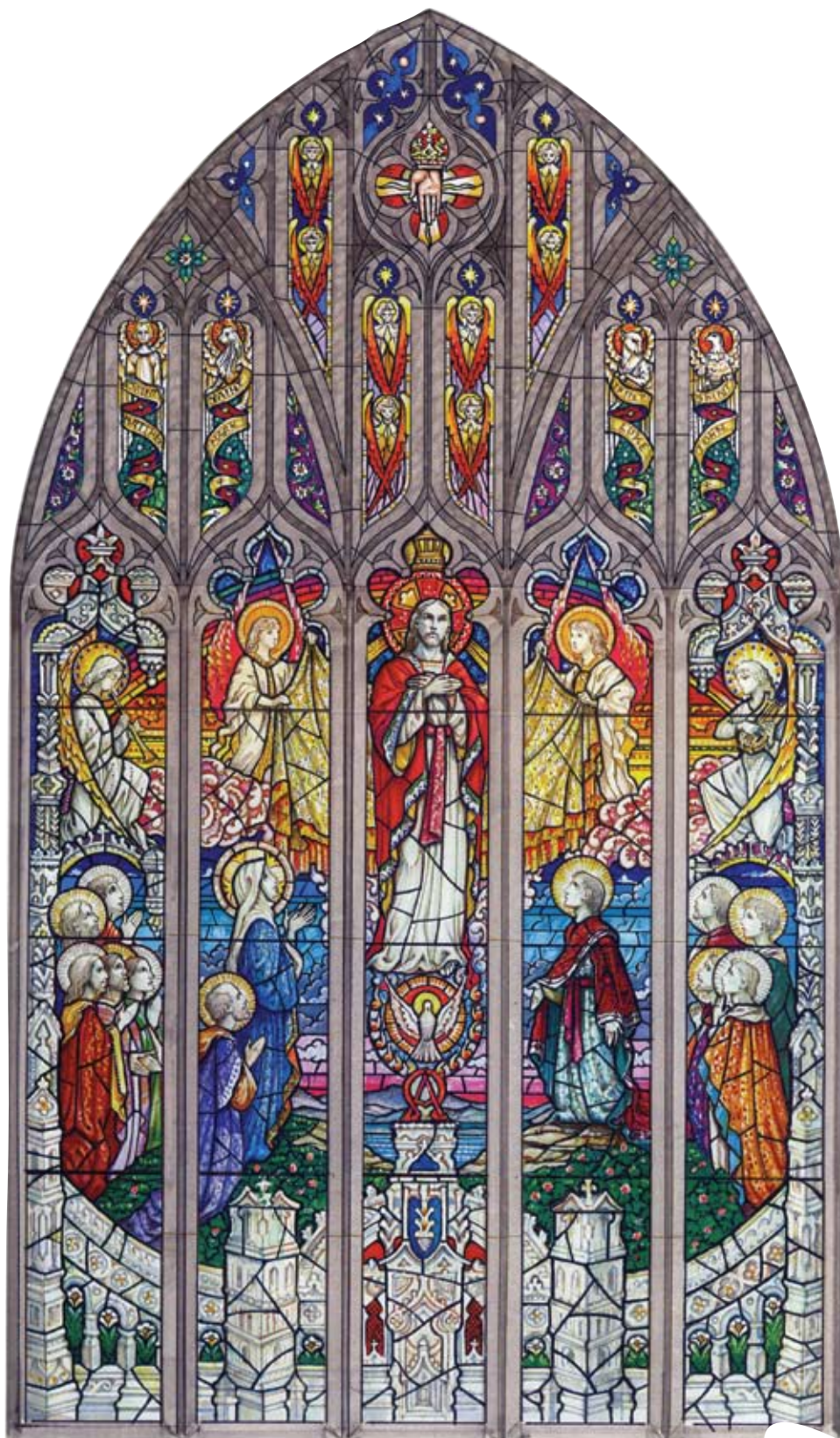
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STAINED GLASS LIGHT INTO ART



By ANNIE DIXON

STAINED GLASS BOLDLY GLORIFIES GOD and silently speaks to the soul as no other medium can. Powered by pure light, this art form builds upon God's creation on the First Day to enhance the architecture of worship with a glow that is universally and intuitively understood. It is practical and beautiful, a fine art finely crafted, with a prominence and permanence unlike other decorative or liturgical arts. Thus, it has a long past and a bright future in the buildings of faith and the affection of the faithful.

Colored glass and lead matrix are merely the physical trappings of the form. The true art of stained glass is an experiential one, dependent upon the ever-changing element of light to create fresh tapestries with every sunrise. Light, the visual yet ethereal metaphor of all that is good and life affirming, streams through the glass panels and transforms the worship space throughout the days and seasons. Pools of light and color float around the room from morning to evening, while the windows change their hue and intensity from summer to winter. It is a delicate dance of vivid texture and tone, emanating from the framework and alighting

*We thank Thee for the lights that we have kindled,
The light of altar and of sanctuary;
Small lights of those who meditate at midnight
And lights directed through the coloured panes of windows
And light reflected from the polished stone,
The gilded carven wood, the coloured fresco.
Our gaze is submarine, our eyes look upward
And see the light that fractures through unquiet water.
We see the light but see not whence it comes.
O Light Invisible, we glorify Thee!*
— T.S. Eliot

on pews and linens, stone and wood, choreographed over time and space as a recurring reminder of God's eternal presence as a thing of beauty that is periodically revealed to us but cannot be captured or confined.

Windows are necessary construction features, but stained glass makes them distinctly purposeful to the faith environment. This unique art form reflects God's own priorities in adding beauty and variety to the practical and the mundane. As windows, they protect the building's interior from the elements as well as any other, but by their color and form they do so in a way that can be astonishingly beautiful, just as crops flower to feed us spiritually as

Ascension Window, designed in the style of Charles Eamer Kempe, for an Episcopal church to complete a set of windows begun a century ago.

Photo: Dixon Studio



Detail of Our Lady Queen of Peace window in Our Lady Queen of Peace Catholic Church, an African-American parish in Washington, D.C.

well as physically. And because the purpose of a sacred space is not so much to shelter us from the elements as from despair, the inspirational and meditative qualities of stained glass are at least as important as its structural capabilities.

The combination of art and craft, style and structure, qualifies stained glass as both a fine art and an architectural one. The raw materials are transformed into a transparent canvas individually engineered and fabricated by hand to be permanently installed in a specific location. Even in America, mass production is of little benefit to the glass studio, where original designs are sketched and colored, detailed portraits and intricate scenes and patterns are painted on glass and kiln-fired piece by piece, dozens of glass fragments and lead strips are precisely joined together to build a panel, and sections are finally fitted into the framework by installers who often have to build and climb high scaffolding to reach the settings. It is a prayerful and careful business, a collaborative labor of love by artist, craftworkers, and architect, resulting in a lasting legacy—a living, luminous icon of light.

Whether involved only in determining the size, number, and location of window openings, or fully immersed in the selection of style and subject matter for stained glass, the architect creates a master plan to ensure proper proportions of windows to walls when the artisans execute their works. Like acoustics in a concert hall, the intangible sacred art and physical architecture are inextricably intertwined in a marriage of beauty and building, and must be compatible with one another if their union is to be a happy one that lasts for many lifetimes. Liturgical appointments and furnishings may come and go as they follow seasons or trends, but the windows are an integral architectural feature. On the exterior of the building, the lace-like patterns of their monotone panels help to denote the structure's purpose and act as delicate veils, shrouding the inner beauty of the space from the harsh glare of the world. Inside, even the smallest stained glass windows bestow a jewel-like quality on a multifaceted religious experience, from joy to grief, communal to solitary. Indeed, stained glass can serve as a glorious backdrop to gatherings and celebrations but, in those quiet moments when there is neither sermon nor song to guide or



Detail of Our Lady of Lavang window in Our Lady of Lavang Catholic Church, a Vietnamese parish in Norfolk, Virginia.




Photo: Dixon Studio

Our Lady of Perpetual Help window in St. Luke Catholic Church, Virginia Beach, Virginia.

console, the empty space still echoes the architect's original composition, forever interpreted by mason and glazier, who have left behind a visual harmony, a continuous hymn of praise in stone and glass.

While the durability of stained glass is evidenced by its longevity as a material in existing buildings, its future as a religious art form is assured by its long history and widespread use. Universally associated with religious buildings, stained glass was developed a millennium ago as a Christian art, and has since migrated to other faiths in various forms. In churches it was traditionally employed as the "poor man's Bible," offering a detailed visual narrative of the Gospel to those who could neither afford nor read books. It was adapted for temples, mosques, and meditation centers, with symbolic or nonrepresentational panels that make powerful use of the material with little or no embellishment, simply to screen out the secular world and bathe the worshipful one in light – an approach that has come full circle in modern minimalist worship spaces.

Despite having kept pace with –and even established a few– architectural trends over the past millennium, religious institutions can never hope to keep up with the latest techno-

logical advancements in visual presentations; instead, they have the opportunity –and perhaps the responsibility– to maintain a history of patronage and the highest standards for an art form that is truly their own.; one that experiments with new techniques but respects the creativity of the designer and the skill of the craftworker rather than the speed of a computer; one that is commissioned and owned by a community rather than by a collector; one that helps to form that community by shaping its collective identity and memory; one that waxes and wanes in intensity with the momentary movement of the sun and the clouds, creating the "living windows" that breathe life into our sacred spaces. In so many ways, stained glass is quintessentially a sacred art, striving to mirror the God it glorifies: it is awe inspiring and luminous, and its beauty transcends words with a clarity that is as true and good and pure as the light that brings it to life. 

ANNIE DIXON IS PROJECT MANAGER AT DIXON STUDIO OF VIRGINIA AND EDITOR OF STAINEDGLASSJOURNAL.COM. SHE IS AN EDITORIAL ADVISOR TO *FAITH & FORM* AND FOUNDER OF THE CHURCH ARCHITECTURE NETWORK ONLINE. ALL OF THE WINDOWS SHOWN IN THIS ARTICLE WERE DESIGNED BY RONALD NEILL DIXON.

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Artist / Annie Dixon,

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Award submissions will be made electronically starting this year. Details for registration and uploading submissions will be posted at faithandformawards.com in mid-April; submissions are due by June 26

Questions? Contact:

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Online Submission Deadline: June 26, 2009

painting with light



The transcendent art of Stephen Knapp

By Michael J. Crosbie

Photos courtesy of Stephen Knapp (lightpaintings.com)

What do you see? Angels? Stars?

Artist Stephen Knapp says that people who view his “lightpaintings” see all kinds of things, but mostly they feel spiritually uplifted and inspired. Knapp has been creating art with light for the past 15 years, refining the techniques that give his work its ethereal quality. He explains that he employs dichroic glass treated with layers of metallic coatings that act as a selective prism to separate focused white light into different frequencies of the spectrum, expressed in different colors. The artist cuts, shapes, and polishes the glass at his studio in Worcester, Massachusetts, to create a palette of color that he can use to refract and reflect light onto a surface and the surrounding space.

Risen Blue, created in 2004, measures 19 feet by 12 feet by 10 inches.

Text continues on page 28



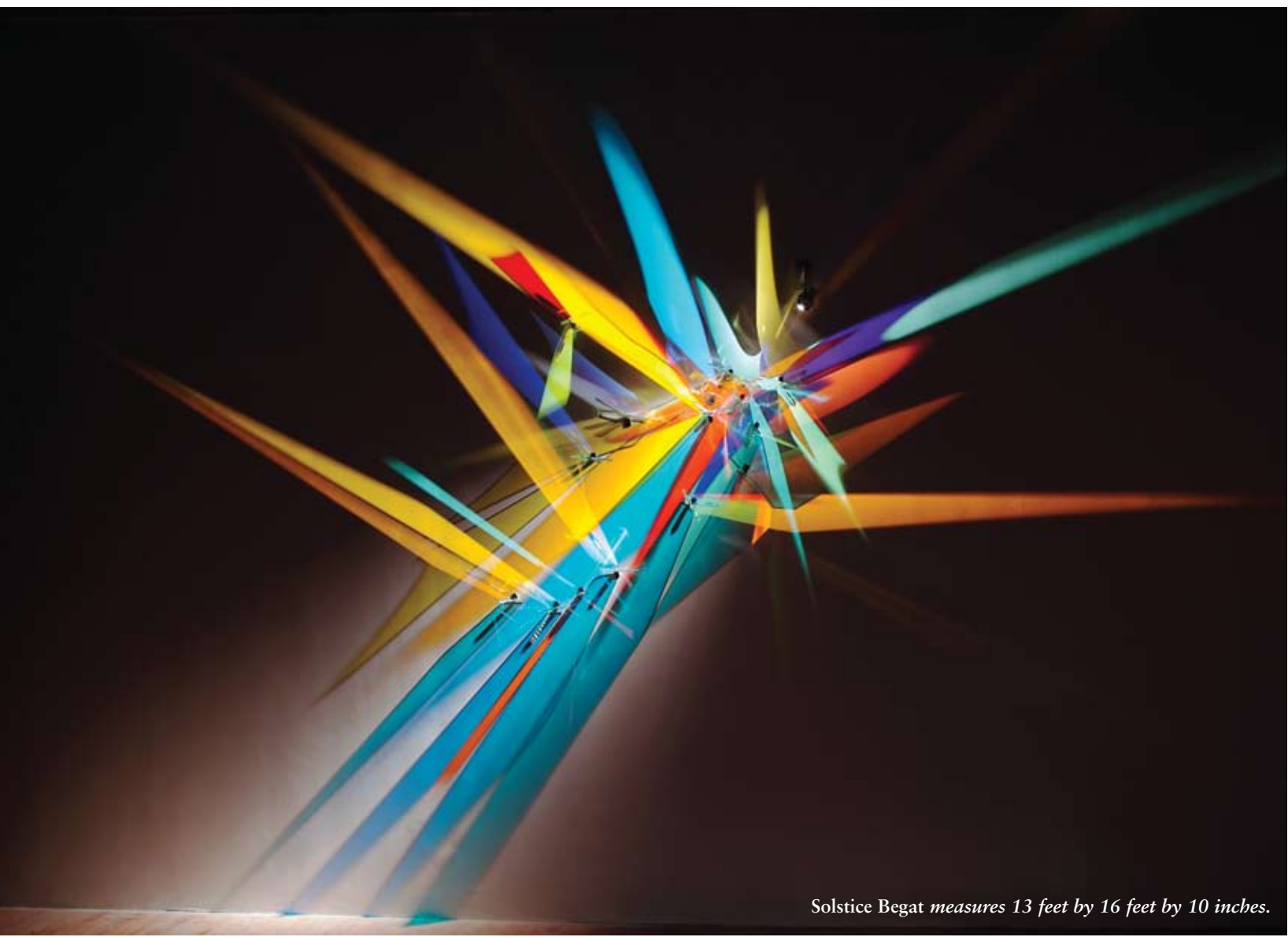
First Symphony, created in 2006 for the Music Instruction Building at Ball State University in Muncie, Indiana, overlooks a major intersection on campus.



Capriccio, created in 2003, measures 11 feet by 8 feet by 10 inches.



Luminous Affirmations was installed in 2006 at the Tampa Municipal Office Building in Florida.




Solstice Begat measures 13 feet by 16 feet by 10 inches.

Essentially, Knapp makes glass into paint, and then transforms it into light. The pieces are fixed in place with stainless steel anchors. Light from inconspicuous sources using halogen and ceramic halide lamps is then trained and focused on the glass to release an explosion of seemingly three-dimensional color. Knapp says that viewers of his lightpaintings often describe the experience as transcendent.

“In lightpaintings I strive to create destinations, small pieces of wonder, places for introspection and meditation,” says Knapp, “where hopes, dreams, and aspirations are possible.” For Knapp, lightpaintings are an invitation to the viewer to journey within the art, to find meaning in the abstraction.

Knapp’s art is also green. He points out that the ability of the glass to both reflect and refract light increases the illumination level, so there is very little loss of light energy. Higher levels of illumination can be achieved with lower wattages.

Knapp says that his work has not yet found a home in a house of worship (he was part of an exhibit a number of years ago at the American Bible Society in New York). But his lightpaintings seem destined for sacred space, to transform walls into labyrinths of color that invite one to meditate – to become lost in the light and found in its embrace. 



Temporal Meditations, created in 2005, is part of the permanent collection of the Flint Institute of Arts in Flint, Michigan.

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Watermark Community Church uses a variety of light sources, plus large image magnification screens to create intimacy between the congregation and those on stage.

Photo: Courtesy Omniplan

ELECTRONIC LIGHT

THE ROLE OF MEDIA IN CONTEMPORARY WORSHIP SPACES



BY SCOTT HALL

MANY OF TODAY'S contemporary religious buildings rely heavily on media technology to intensify the worship experience and to create a sense of community among young and old congregation members. The challenge for religious facility designers, however, is as complex as the technology itself: architects must create evocative worship spaces that provide congregants with both physical connectivity and digital connectivity if they wish to enhance the worship experience.

Just as the advent of the elevator gave buildings the ability to rise higher, so has the audio/visual medium permitted assembly venues to increase in size while sustaining meaningful connections among members. Today's contemporary worship buildings evolved from traditional plans to more effectively accommodate the best arrangement of visual media, audio equipment, theatrical rigging, platform lighting, and support areas. The technical requirements for audio, video, and lighting (AVL) systems drive specific design criteria. Ergonomic view angles, clear lines of sight, platform configuration, and video screen size and location all contribute to the overall experience of the worship "room."

Megachurches—those with congregations of 2,000 or more—were the first to integrate theatrical, production-quality AVL systems into the worship experience because their large size necessitated video screens and sound systems so that attendees could see and hear wor-

ship leaders. As a result, these buildings often have nontraditional worship spaces with sloped floors; theater, cat-slide, or balcony seating; and broad space as opposed to deep space, which allows congregants to get closer to the platform.

Two nondenominational churches in Dallas recently converted nontraditional buildings to use the most up-to-date media equipment to punch up the power of their worship services. Watermark Community Church created a modern, understated worship space complete with exposed mechanical ductwork and special technical specifications. Likewise, Fellowship Bible Church Dallas turned an eight-theater multiplex cinema into a tech-friendly "campus mall" that houses worship, child and adult education, administrative, and conference uses. Both of these facilities are examples of the use of electronic media in contemporary religious buildings to appeal to the most basic senses of the worship experience: seeing and hearing.

Watermark Community Church desired an aesthetic expressive of its core values of "authenticity, integrity, and community." The congregation met in a high-school auditorium for many years. Demands for a permanent facility to alleviate the weekly set-up resulted in the acquisition of a 12-acre urban site along Interstate 635 in North Dallas. The new location provided for a prominent address and adjacency to a substantial park greenbelt. The church was built in phases: Phase I included worship services, as well as administration, children's education, and adult education in the renovated eight-story office tower; Phase II, recently completed, includes a 2,100-seat interim worship facility.

Fellowship Bible Church Dallas is housed in a renovated movie theater complex, which contains a variety of light sources and media.



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The worship space keeps the focus on the experience, not on the architecture. Located on each side of the platform in the worship space, 16-foot-by-25-foot image magnification (IMAG) screens provide visibility of the platform during the worship service. These video screens visually enhance worship in two ways. First, virtual imagery can be projected onto the platform during musical performances, drawing congregants further into the experience. Second, the screens help to visually reduce the physical distance between the platform and Watermark members, giving them the opportunity to see the activities on the platform in detail.

Watermark is now adding a new 3,500-seat worship building in Phase III. Currently under construction, this facility will incorporate much of the same technology as the first building: high definition video, IMAG screens, and a high performance sound system. The interior wall surfaces will function as an extension of the platform, with graphic and video projection and lighting, which will be controlled from the AVL Sound Booth. Together, all of these technological elements blend with the architecture to create a memorable sensory experience that can be seen, heard, and felt by congregants throughout the service.

To accommodate its growing congregation, Fellowship Bible Church Dallas (FBCD) sought a home to complement its core mission of “outreach, restoration, and equipping.” FBCD chose an existing multilevel movie theater and retail complex in an established urban neighborhood with a diverse socioeconomic demographic. This strategic location—in a transient neighborhood situated adjacent to a mass-transit rail station—satisfied the church’s first core mission of “outreach,” since it connected the wealthiest Dallas population with the poorest. FBCD’s second core “restoration” mission was realized through the adaptive reuse of an existing 130,000-square-foot movie theater complex, comprising retail and restaurant space organized around a circulation “mall” area on the ground level, with eight sloped-floor theaters on the second level. The final core mission of “equipping” is achieved through the church’s implementation of programs and community service activities.


The church’s incorporation of media technology into the architectural “conversion,” further reinforces its mission, since it provides more opportunities for outreach and equips church members with the ability to connect with each other. The main worship space with stadium

seating was created by removing the interior walls between three existing theater auditoriums to create a single, 1,300-seat auditorium with stadium-style seating.

IMAG screens were positioned for optimal viewing, a sound booth was added, and a separate AVL control room was added within the existing movie theater projection mezzanine space. These technological additions not only support the church’s mission to connect to the community, but they also enrich the worship experience by filling the space with visual, verbal, and musical stimulation.

Infusing interactive technology into the worship experience is perhaps the newest media phenomenon architects are taking into consideration when designing contemporary churches. Interactive techniques serve as a sort of conversation between congregants and worship leaders, helping the church build a sense of community after the worship service is over and congregants have gone home. For example, some worship leaders send prayer petitions to congregants’ cell phones, which are then texted and compiled on projection screens. Readings from scripture can also be graphically recorded and then distributed online for further study during the week.

At Watermark, there is a WiFi system and power outlets for laptops all throughout the seating areas. At FBCD, worship services from the main building are simulcast via video in the worship chapel, youth and community education spaces. The main concourse area also boasts WiFi capability with abundant lounge seating and amenities.

The main purpose of any assembly facility is to facilitate the transmission of information. In the case of a worship space, the message must be passed from the pastor to the church body, from the singer to the listener, and from the video screen to the viewer. That message—and the feeling of connection it creates—is now instant, thanks to digital technology. When the physical space and digital space work in concert with each other, the congregation can grow closer because the worship experience lingers long after members leave the building, and long after the next generation inherits the worship space. 

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NOTES & COMMENTS

IN SEARCH OF MASTERS OF LIGHT

Last October, members of the Interfaith Forum on Religion, Art & Architecture (IFRAA), a Knowledge Community of the AIA, traveled to Rome in search of “Masters of Light” and to absorb timeless lessons in the making of sacred space that remain as valid for architects today as for our predecessors in ancient times.

The conference commenced at that ancient temple dedicated to all the gods, the Pantheon. For the nameless master who conceived this place, the earth was the center of a universe symbolized by the juxtaposition of two perfect forms—a sphere contained within a cylinder. Here a magical light assures that the immense room is never the same, changing with the seasons, from morning to afternoon, and even from moment to moment as a cloud drifts across the sky. The shaft of light from the oculus slashes across the cavernous space, reflecting back up from the polished marble floor. Tempered and softened, it illuminates with a silvery luminescence the inner recesses of the niches hollowed out of the thick masonry walls. Nowhere can we more clearly observe the truth of Louis Kahn’s observation that structure is the giver of light.

It is this light that generations of Roman architects have struggled to tame—scooping, bouncing, diffusing, redirecting, and transmuting it from gold into muted silver with an unending series of oculi, monitors, lanterns, cupolas, and clerestories. Over and over we witness the efforts to harness this light in the sacred spaces of Rome: high, hidden windows; top-lit domes; polished floors and walls of marble and travertine that bounce not-quite-spent light against vaulted and coffered ceilings; layers of space screened by travertine walls and gilded baldaquins, where light is filtered until it imparts a faint luminosity to legions of marble saints, martyrs, apostles, popes, and madonnas.

At San Carlo alle Quattro Fontane (1638), a triumph of Baroque complexity, we see the full force of Francesco Borromini’s compulsive genius. The space is deceptively compact as though the single small room were compressed into an oval to fit the confines of the site, squeezing the space and forcing it to explode vertically. The undulating forms of the exterior are echoed within, as a series of overlapping cornices jostle for position above concave altars and chapels. Above the commotion floats a single, serene, oval dome, covered with interlocking Greek crosses, octagons, and hexagons of diminishing size, creating a masterful illusion of height. The dome culminates in a small, brightly lit lantern that spills diffuse sunlight down over the whole, softly illuminating the space, casting evocative shadows, and bringing to life the squirming bulges and hollows of columns, cornices, piers, and niches.

Much of the best modern Roman architecture continues to acknowledge the lessons of the city’s multicultural past. At his Moschea Islamica (1995), architect Porto Portoghesi explained how the design of this mosque represents a “dialogue of cultures,” a synthesis of Roman and Islamic traditions through the use of Roman travertine and brick, fountains, and an interior “street,” open to the city. The main worship space with its central dome and clerestory lighting recalls Islamic, ancient Roman, and Baroque precedents. The light reflected from below symbolizes the words of the Prophet Muhammad, who speaks of “light on light,” while the elaborately intertwined columns and arches recall Islamic calligraphy.

Richard Meier & Partners’ Jubilee Church, Dio Padre Misericordioso (2003), continues the theme of light. Here is a religious building that turns outward toward a broken and fragmented world where the earth is no longer the center of the cosmos. Instead of admitting light into a closed interior room through an oculus or lantern, huge, billowing concrete “sails” act as both light scoops and shading devices. Everywhere



Photo: James F. Williamson, FAIA

Interior of Borromini’s San Carlo alle Quattro Fontane in Rome.

light slips between free-standing, vertical planes that do not quite meet. Devoid of Baroque contradictions and complexities, this is an architecture that celebrates clarity, rationalism, and the power of technology. At the same time, through the interplay of space and light, it manages to suggest the presence of transcendent mystery.

From a distance the low-domed, copper-sheathed roofs of Renzo Piano’s huge pilgrimage megachurch, Chiesa San Pio da Pietrelcina (2003), echo the green slopes of the mountains beyond, suggesting a link to an ancient pre-Christian, Mediterranean pantheism of earth mothers, burial mounds, and sacred mountains. Inside the structure, two concentric ranks of monumental stone arches radiate outward from the central altar platform. Around the building perimeter a continuous clerestory, tucked tight against the underside of the overhanging roofs, tempers the harsh Mediterranean sun and admits a soft glow of natural light. Surprisingly though, the room manages to maintain a serene, welcoming quality, quite unexpected in a space of such size.

Conference participants witnessed in the Roman architecture of the sacred a yearning for the divine that recognizes the timeless power of space and light and the raw materials of architecture.

—James F. Williamson, FAIA

The author is a professor of architecture at the University of Memphis and the 2008 Chair of the Advisory Group of IFRAA.

FAITH & FORM WINS AWARD

Faith & Form, the Interfaith Journal on Religion, Art and Architecture, has won an award from the Printing Industries Association, in its 2009 Print Excellence Awards program. The journal was cited for a Bronze Award.

FANS OF THE BIBLE

An exhibit of biblically themed fans is now on view at the Fan Museum in London, through May. "Adam and Eve and Pinch Me" includes fans from the 17th century to the present day. There are at least three references in the Scriptures to winnowing fans (*vanus* in Latin, hence the word "fan") that separate the wheat from the chaff. This exhibition, while telling bible stories in an unusual way, opens yet another window on to the many facets of fans and their uses.

The fans are full of contrasts, from spectacular paintings and magnificent montures to simple, often naïve fans. In art history, subjects from the Old Testament are seen as a prefiguration of the New Testament: for instance, Abraham's



Adam and Eve, Chinese fan with bamboo monture stained 'sang de boeuf,' designed by Frédéric Gay, 2002.

intended sacrifice of his only son, Isaac, is seen as a forerunner of the Crucifixion. It is, therefore, not altogether surprising that fans which, by the 17th and 18th centuries, are purely secular objects (although ladies carried them to church) should depict subjects mainly from the Old Testament, many of them derived from prints of paintings. Many "religious" fans came from Holland where, it seems, their production was a "speciality."

In every representation, the scriptures are adhered to in every detail, giving the impression that the picture is being "read." Interpretation is as relevant today as it was in past generations, and these biblical fans give us an insight into the thoughts and lives of people who were not unlike ourselves but whose circumstances were different.

For more information on the exhibit and the Fan Museum, visit: fan-museum.org.

2009 AWARDS PROGRAM ANNOUNCED

Submissions to the 2009 Faith & Form/IFRAA International Awards Program for Religious Art and Architecture are welcome. This year, submissions to the awards program will be made online. Information about online submissions will be posted on the Faith & Form website in mid-April. The awards program is open to artists, architects, and designers worldwide.

STUDENTS RE-THINK SACRED SPACE

One of the most successful programs at the Catholic University of America's School of Architecture and Planning is the graduate concentration in Sacred Spaces and Cultural Studies. The goal is to investigate the nature of contemporary spiritual places. The approach challenges one-dimensional views on sacred architecture. Spirituality is to be found not only in devotional spaces such as churches, mosques, or synagogues. Rather, it unfolds from places of everyday life, like natural landscapes, museums, dwellings, even skyscrapers and malls, marked by intense experiences or beliefs, to worship abodes that often imply social, political, or ethical meanings.

Supported by a research-oriented seminar that investigated the relation between tradition and innovation in religious architecture in the 20th century, the design studio held in the fall semester of 2008 explored two problems: one section (taught by Michael Patrick, AIA) focused on developing new typologies for Catholic church architecture in the third millennium. The five major themes addressed were form ("the universality of religious form"), path ("the path of pilgrimage"), image ("synthesis of space and surface"), memory ("church building as mnemonic device") and community ("looking together on the face of God"). The other section of the studio (taught by myself) investigated the impact of religious spaces on the American campus with a particular focus on Catholic University, and resulted in the design for a new university chapel. The studio tried to respond to the various challenges emerging within a student community immersed in the pop culture of the 21st century: in the age of globalization when the internet and virtual reality provide surrogates for any type of architecture, what aspects of religious spaces are relevant for the students? What spaces would best accommodate the interaction of the young generation with the Church? Given the complex cultural mosaic of the university, could Catholic and ecumenical meanings be simultaneously embedded within the same building in order to welcome a heterogeneous community that includes Christians of different confessions, Muslims, and Jews altogether?

The architecture students conducted a campus survey to determine the dynamics of the student body, and a thorough site analysis that resulted in six potential sites for a new chapel. Located at one end of a parking lot projected to become green space, one project (*shown below*), designed by student Amy Boyek, explored the metaphor of the Church that is "hidden in plain sight." Relatively small in size (150 people), the chapel is preceded by a plaza where scattered benches and trees colonize what will become the exterior atrium of the chapel: fully occupied during religious services, this space will provide an area of recreation, individual study, and communal gatherings at other times. The constant existence of the Church is made visible through the subtle negotiation between physical presences and absences in the plaza. Carrying on this idea, a fine language of screens is further developed throughout the entire project in a

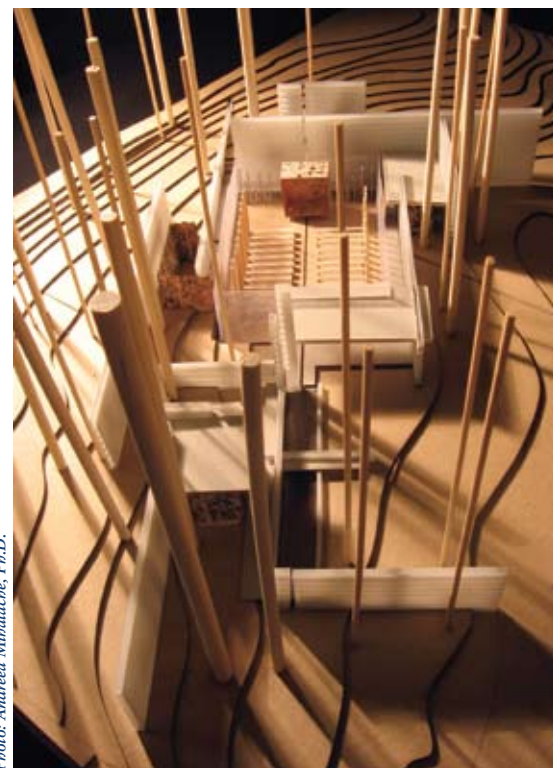


Photo: Andreea Mihalache, Ph.D.

game of concealing and revealing. The materials employed range from semi-transparent glass, to translucent concrete, and perforated wooden panels that would require digital fabrication technologies. Filtered light creates space through the almost dissolution of the walls. The outside trees find their way inside the chapel and morph into structural metal columns and organ pipes. Hidden behind translucent screens, different parts of the chapel (the baptistery, the confessionals, the sacristy) become independent pieces that allow the manifestation of both individual and collective religious experiences. The strategy of engaging the

chapel into the everyday life of the campus is achieved through in-between spaces that can be inhabited at any time.

The relevance of these exercises goes beyond the academic agenda. Throughout history, from the dome of Saint Sophia in Constantinople, to SOM's Cathedral of Christ the Light in Oakland, religious architecture has allowed the simultaneous manifestation of symbolic meaning and the

art of making. Following this path, the students have brought new perspectives on long-debated issues: the role of the church as simultaneously *Domus Dei* and *Domus Ecclesiae*, the dialogue between individual and communal experiences, and last, but not least, an architectural language informed by new technologies.

--*Andreea Mihalache, Ph.D.*

The writer is a Visiting Assistant Professor at Catholic University's School of Architecture and Planning.

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The editors of *Faith & Form* want to bring its readers the latest news of those involved in the fields of religion, art, and architecture. Send press releases and materials to the attention of Michael J. Crosbie, Editor, *Faith & Form*, 47 Grandview Terrace, Essex, CT 06426; email: mcrosbie@faithandform.com.

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PERMANENCE VERSUS IMPERMANENCE

JUST ONE MORE THING... ★ BETTY H. MEYER

DO YOU FIND YOURSELF LONGING for something that you feel is absolutely "permanent"? I admit that I do. Of course, I believe in change and want to do my part in bringing it about, but a part of me still longs for the assurance that something exists that is not subject to change.

Several years ago I worked on a book with Bartlett Hayes, then Director of the Addison Gallery. In the book, *Tradition Becomes Innovation*, he asked artists and architects to become familiar with traditional forms of religious architecture, then challenged them to use their imaginations to design structures that contemporize the traditional while preserving the spiritual essence that has survived through the ages. Is it possible to design new forms that express ancient and unchanging truth?

I wonder about the permanence of religious faith. I know that fewer and fewer people attend institutions of faith, especially young people. Among those born after 1984, only 33 percent attend, according to a recent article in the *New York Times*. Why so few? Some would say that religious texts are of such another time and culture that it is very difficult to relate them to their own lives. Besides, it is easier to listen to television, watch movie clips, or use the computer than to go to a building and listen to a dated sermon. What must we change in order to attract and engage parishioners today? Is there, in our fast-paced and changing world, a stable center within this swirling vortex? Is there a truth that is universal and timeless? Can our means of expression illuminate it?

I once had an experience that gave me new hope for the permanent and absolute. After keeping a doctor's appointment in Boston, I visited the Museum of Fine Arts, which always lifts my spirits. But this time the experience was unlike any I had ever had. A poetry professor once told me not to try and understand a poem, just listen to it; experience is part of a poem's power; don't vex yourself with an intellectual understanding of it. I decided that I was going to try this with a painting. I stood in front of an abstract painting, determined to "experience" it no matter how long it took. Gradually, I began to feel my inner, emotional self involved. The colors and forms became like a bridge that leads from the visible to the invisible and I became conscious of what seemed the essence of life. I suppose what happened was what some people would call an esthetic experience. Whatever it was, I shall never forget it; it exists in my mind today. There was a sense of permanence and purpose. It wasn't linear or logical and it wasn't an experience that I can easily express in words. Perhaps it was the "essence of life" feeling that we call faith, the faith that something inexpressible can feel so true or real or right.

My experience may seem exaggerated to you, but will you think about it? Painting, music, sculpture, dance, architecture, and poetry are available to all of us. Of course, the works themselves will go the way of all matter — ashes to ashes and dust to dust. But the reality that they strive to capture, I believe, is permanent and absolute. What do you think?

BETTY H. MEYER IS EDITOR EMERITUS OF *FAITH & FORM* AND CAN BE REACHED BY EMAIL AT BMEYER@FAITHANDFORM.COM

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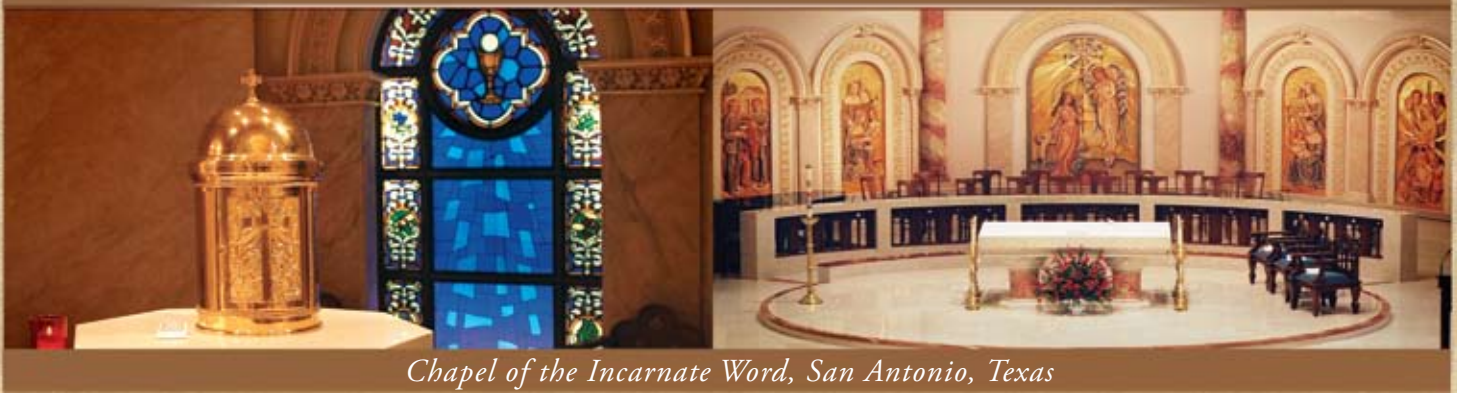


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