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Built Work with HGA Architects

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Forward by Robert Greenstreet, RIBA
Essay by Sebastian Schmaling, AIA

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Forward

Accredited Schools of Architecture have a responsibility to educate new generations of architects and must provide a delicate balance of theoretical and practical information to their students. A healthy mix of academics and practitioners are therefore necessary in fusing the dual perspectives together.

In some schools, faculty, who have to meet the academic requirement of the institution to achieve tenure and promotion, can be effectively supplemented with highly skilled local practitioners who are dealing on a daily basis with design and construction issues. In some happy instances, there are individuals who can straddle the two worlds and bring a balanced view of design excellence.

Such an individual is Jim Shields. An excellent teacher, his classes and studios are models of clarity and insight, and are highly sought by his students. His undisputed role as one of the most talented architects in the Midwest, as evidenced by the rich array of work in this monograph, brings huge value to the school.

Last year, Jim was nationally recognized for his excellence by the American Institute of Architects where he was awarded Fellowship of the Institute in the area of Design Excellence. This well-deserved honor and distinction is celebrated in this monograph, the result of many years excellent practice informed by a distinguished career in teaching.

Bob Greenstreet
Dean, School of Architecture and Urban Planning

Constructing the Here and Now *Sebastian Schmaling, AIA*

Looking at contemporary architecture through the prism of popular media, one might be tempted to conclude that the only buildings of significance and consequence today are authored by an exclusive club of internationally operating brand-name architects who incessantly travel the world, leaving behind a trail of head-turning and headline-grabbing structures – vain monuments that usually speak more of professional one-upmanship than of a genuine interest in architectural innovation or the locale for which they were designed. With an insatiable public eagerly awaiting the next immediate and easily digestible architectural icon, an increasingly breathless design profession finds itself in an unwinnable race to catch up with the ever-accelerating and over-mediated forces of cultural globalization.

It is against this backdrop of professional hypertension driven by a universal longing for instant gratification that the work of James Shields emerges as an inspiring alternative, exemplifying how practitioners at the periphery of the global design circus can find their own voices and develop an architecture that is relevant – relevant not only within the limited geographic boundaries of their own practices, but for the architectural discourse at large. At a time when many architects choose to frame their work in the future tense, often subscribing to a primitive brand of utopianism whose vagueness is less about the future per se than it is about avoiding the scrutiny of the presence, Shields counters with an unambiguously precise architecture, one that prefers materiality over equivocality, pragmatism over idealism, and today over tomorrow: an architecture of the here and now.

It is no coincidence, then, that the ten projects presented in this volume are all built and, perhaps more importantly, located within a few hours' drive of Shields' office in Milwaukee, his hometown and now the epicenter of his professional career. Propelled by a sincere love for a community that has not always been enthusiastic about progressive aesthetics, Shields has devoted the majority of his creative endeavors to the physical rehabilitation of this rustbelt city, a place whose physiognomy continuous to be marred by decades of economic disinvestment, tragically misguided planning ideologies, and a general ambivalence vis-à-vis architecture as a civic art. It is Shields' intimate familiarity with the region's historical and cultural forces that gives his buildings, unapologetically modern as they are, an aura of authenticity and an instantaneous sense of belonging.

More than thirty years after Aldo Rossi's "L'architettura della citta," the curative impact that so many of Shields' buildings have had on Milwaukee's cityscape – rebuilding street edges, reknitting the fabric, redefining public spaces – suggests that the postulate of architecture as a principal urban design tool still has critical currency. But Shields' work also echoes another Rossian precept: the importance of typological clarity. Deliberately rejecting today's obsession with the formal acrobatics of bending, warping, and twisting shapes, Shields' buildings are instead composed of simple volumes, diligently grouped to respond to the particularities of a site and to create carefully calibrated spaces – public and private, intimate and monumental, open-air and enclosed – within and in between them. A project like the Discovery World Museum is so powerful not despite but because of its volumetric simplicity: a cylinder and an elongated box linked by a transparent glass spine along Lake Michigan's shoreline, the purity of the precisely proportioned figure a calming antidote to the kinetic gimmickry of Santiago Calatrava's neighboring Milwaukee Art Museum. A similar formal parti organizes the Stayer Center, a sublime stone and glass structure that anchors Marian University's fragmented campus. Its simple material palette, drawn from the college's existing building stock of solid but entirely ordinary mid-century modern blocks, reveals another important dimension of Shields work: the level of tectonic intuition and technical sophistication with which his building envelopes are crafted, their detailed elegance bearing witness to the designer's emphatic concern for materials and their means of assembly.

Tectonics, materiality, permanence, craft: if these are attributes that strike the casual observer as oddly archaic, they may very well be; but archaic is not synonymous with obsolete, and Shields' work eloquently argues that they are enduring ingredients for what Kevin Alter has called an architecture of "self-sufficiency," marked by a firm commitment to the idea of building as a physical act – an architecture that does not rely on semiotic or rhetorical exercises or on sources extrinsic to the discipline of architecture proper to validate itself. And yet, neither Shields' embrace of time-honored architectural principles, nor his obvious contempt for today's sophomoric technophilia that seeks salvation in the gadgetization of architecture, should be confused with a lack of interest in technological innovation. In fact, his work is a case study in applied building technology and environmental sustainability. One early example is the Butterfly Vivarium, a luminous appendix to a foreboding, sprawling museum complex in downtown Milwaukee. The simple transparent volume with a soaring, elegantly detailed roof plane gives this important civic institution the street presence it never had, choreographing a new entry sequence and creating one of the city's most exquisite new urban spaces, a sunken, tree-lined courtyard that serves as the museum lobby's virtual outdoor extension. Perhaps more significantly,

the Butterfly Vivarium features one of the first double-envelope building skins in North America, a sophisticated multi-layered glass curtainwall whose ventilated cavity provides the superior thermal performance that the building's delicate inhabitants demand.

Shields' portfolio includes many other environmentally sensitive buildings, some of which have received coveted LEED certifications from the United States Green Building Council. And yet, his most important contribution to the field of sustainable design arguably transcends clever technology and LEED standards altogether: it is his work with existing dysfunctional or obsolete structures that exemplifies the aesthetic possibilities embodied in the concept of "architectural recycling." The ecological benefits of extending the life cycle of existing buildings and utilizing their embedded resources are obvious, but it requires an unusual amount of intellectual curiosity and a bold architectural vision to catapult adaptive re-use projects beyond the realm of mundane renovations and literal, pontificating preservation. Shields' redesign of St. Anthony the Hermit, a beloved 19th century church that had become inadequate for its growing congregation, illustrates the rejuvenating impact that a set of respectful and precisely articulated architectural interventions can have on an existing structure, recharging its tired bones and breathing new life into its worn shell. At St. Anthony, Shields designed an elegant ceiling vault composed of heavy timber arches and a filigree of thin wood slats, a dramatic spatial device stitching together the old church and its contemporary addition. Refreshingly unconcerned with stylistic platitudes, the louvered vault enters into a compelling dialogue with the original building and its newly exposed, beautifully crafted structural limestone walls, framing the past not as an abstract concept but as an integral part of the presence.

As much as this book focuses on James Shields' accomplishments as a practitioner, it would be impossible to assess the significance of his architecture without recognizing his role as an educator. Shields' built work puts him in a select group of prolific designers who have left their lasting marks on Milwaukee throughout its architectural history – H.C. Koch, Edward Townsend Mix, Eschweiler & Eschweiler, and yes, Donald Grieb, come to mind. What sets James Shields apart from these professional predecessors is his involvement in academia, his sincere commitment to the education of the next generation of architects. His former students can now be found at the helm of architecture studios and design agencies around the country, their works clearly carrying Shields' architectonic DNA. His is an architecture designed for a particular place at a particular moment in time, but its legacy is beginning to extend far beyond the here and now.

The linear Vivarium at left, the new entry courtyard, and the 1994 IMAX Theater (at right).

The section through the Vivarium.

THE BUTTERFLY VIVARIUM, Milwaukee Public Museum, Milwaukee, Wisconsin, 2000

A modest addition to the huge 1959 Milwaukee Public Museum building, the Butterfly Vivarium is a steel and glass enclosure built to sustain Costa Rican rain-forest insects in a harsh continental climate, and allow museum visitors to interact directly with them. Entered from inside the existing museum, the addition took the simple form of a long, linear east-west shed, allowing the rain forest exhibit to be passively solar heated in fall, winter and spring, while overhangs and sunshades provide summer shading to prevent overheating. Completed in 2000 with its walls clad entirely in two separate layers of glass, the Vivarium was in all likelihood the first double-envelope built in America since the Hooker Chemical Building of the 1970's.

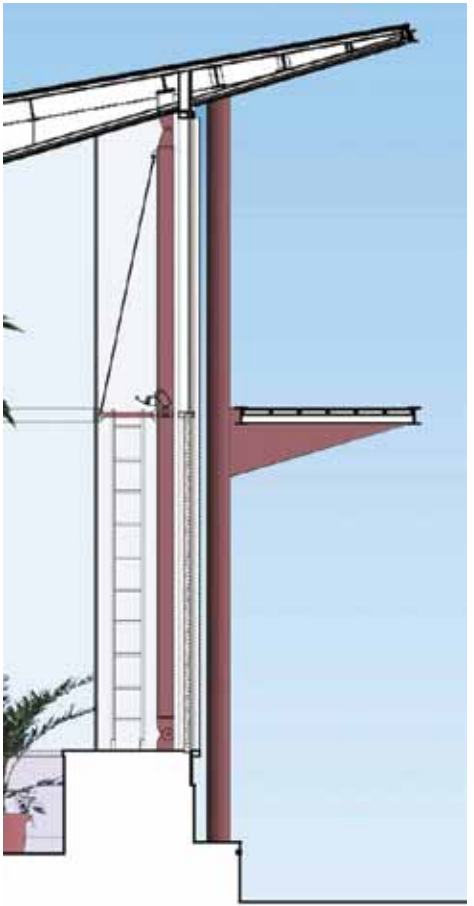
Urbanistically, the 1959 museum had been designed as a suburban building set within a zero-lot-line city, surrounded on all sides by substantial set-backs. Working with the museum since 1993, the Vivarium was one in a series of efforts to urbanize the complex by bringing additions out to the street edge, and articulating defined courtyards in the process. Sited right on the property line, the Vivarium provides rain cover for the sidewalk with its overhangs, and has a marble bench along its entire length allowing pedestrians to take a seat, or children to stand and peek into the Vivarium and view the butterflies from the street.

A new south-facing exterior courtyard was formed by the Vivarium (at left), and by cladding the blank existing exterior with a veneer of glass multi-purpose spaces. A grove of locust trees produces a shaded canopy for museum visitors to dine outside in the sunken courtyard.

A limestone-clad black box exhibition space was also designed to provide for light-sensitive lepidoptera collections and educational materials.

A live Costa Rican butterfly lands on the hand of a young girl visiting the Vivarium.

The 3' thick double envelope protects the Vivrium interior from sound, excess solar radiation and winter cold.



Technically a “Return-Air Double Envelope”, the design thickens the normally thin glass exterior wall to the point where it becomes a return air plenum, moving relatively dry air from a museum lobby across the façade and back to a mechanical room to buffer the Vivarium from winter cold and summer heat. With temperatures of 80F and a relative humidity of 80%, the Vivarium air never comes into contact with the cold aluminum and glass of the outer most glass wall, preventing the water vapor from condensing on the glass and dehydrating the butterflies in cold weather. The outer layer of the double envelope is a 3-inch thick insulated unit containing motor operated aluminum louvers. These louvers are controlled by a seasonal program using solar cells which sense the presence of direct solar gain, and open or close the louvers appropriately. Inside of this insulating glass is a 3-foot wide service walkway, which allows for the cleaning of the glass and for the re-lamping of fixtures. On the interior of this service walkway is a single-pane light of ½” tempered glass, which separates the double envelope from the high humidity of the Vivarium. Located directly on a major street in downtown Milwaukee, the double envelope also quiets traffic noise in the same way that acoustical glass uses various layers and voids to interfere with sound transmission.

The aluminum standing seam roof of the lab building slides out to cover an atrium into which the new building is entered

The vault of the lab building (left) , and a classroom building (right).

The ribs of the lab vault form an arcade.

Site plan of the new school.

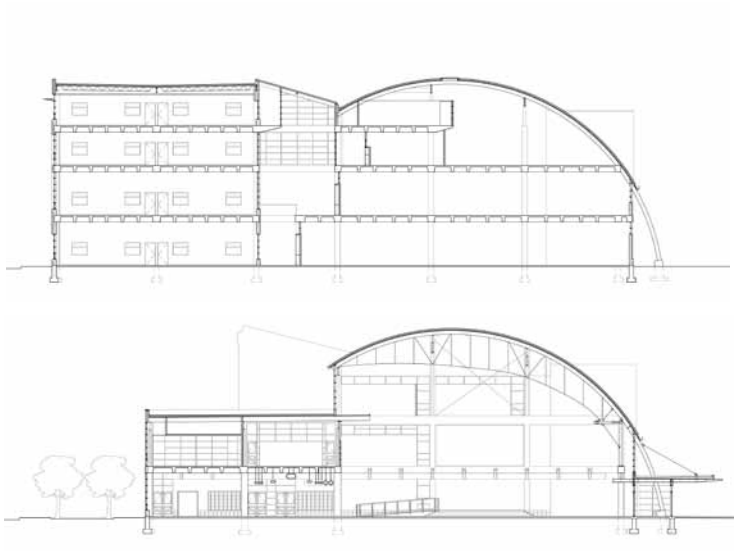
BRADLEY TECHNICAL HIGH SCHOOL, Milwaukee, Wisconsin, 2001

Replacing an outdated century old facility, the new Bradley Tech High School was built along the street edge of the main thoroughfare of the district, National Avenue. Built where the old play fields had been, new fields were created to the rear of the new building after the old building was demolished and recycled. Located in a neighborhood of relatively small historic buildings, the new 170,000 sf building was broken down into a series of 5 distinct programmatic elements: 3 classroom buildings, a lab building, and a gymnasium / library building. Each element received a separate and distinct volumetric form, about the size and scale of the historic buildings along National Avenue. These elements are linked by a sky lit void that serves as a circulation spine and as a source for daylight. The lab building, donated by the heiress of the Bradley industrial fortune, received a distinctive barrel-vaulted roof which recalls the vaulted quonset hut buildings in which so much inventive industrial tinkering occurred in Milwaukee. The tectonics of the new building are robust and industrial in character, with exposed concrete floor systems, exposed steel framing for the vault, sun-shaded clear glass, ground concrete block masonry inside and out, and a roof of mill-finished aluminum.


LYNDE AND HARRY BRADLEY SCHOOL OF TECHNOLOGY AND TRADE

A sky lit atrium divides between the lab building (at left) and the classroom buildings (at right) brings day light deep into the building.

Looking south out of the vault of the lab building.



East-west sections through a classroom building and lab (top), and the atrium (bottom).

The vaulted roof of the lab building slides out over the entry atrium.

The new worship space and bell tower clad in standing seam copper with an earthen brick base.

Plan of the worship space, narthex, and existing building (at right).

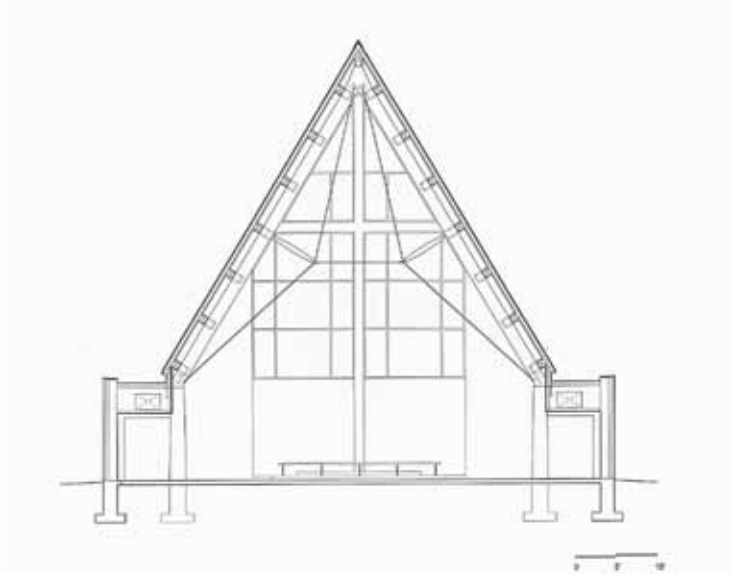
The copper cladding at last light.

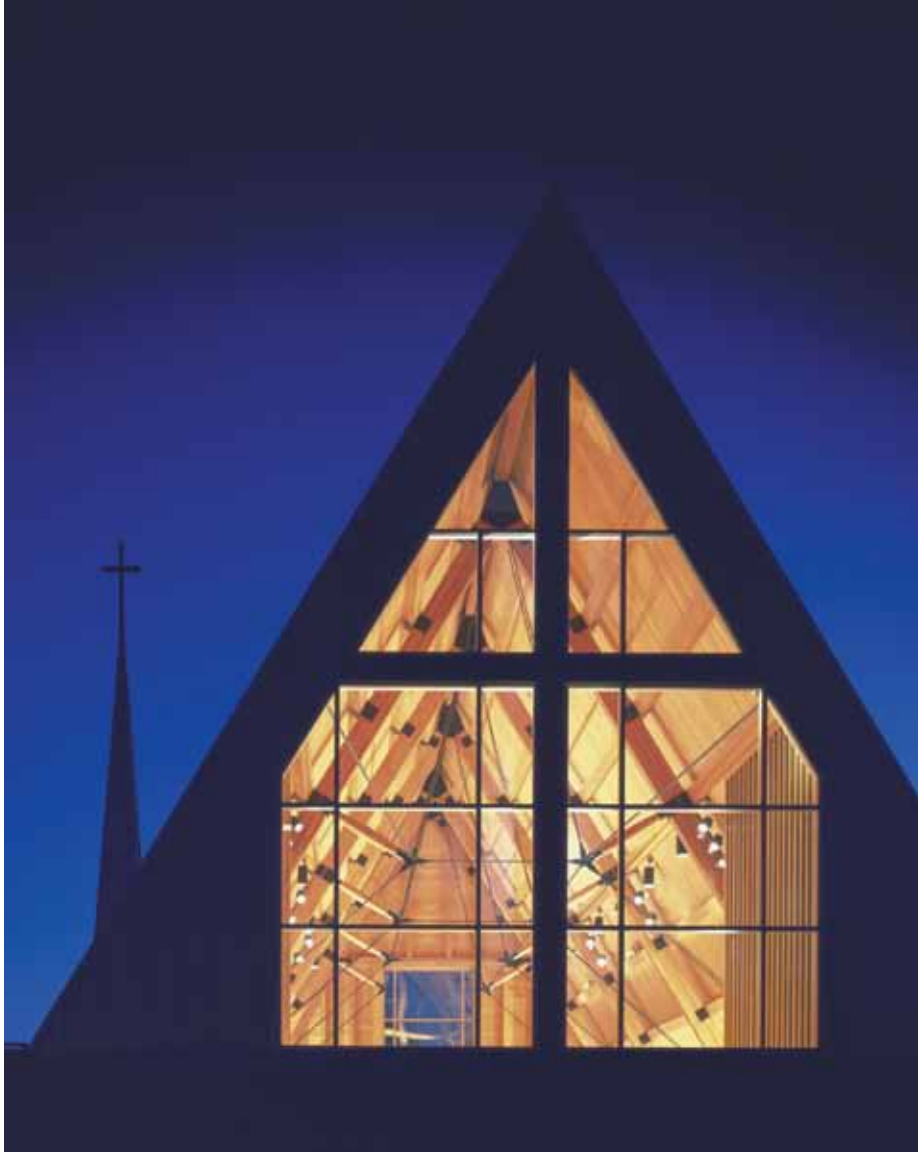
The wood interior of the worship space.

ST. BONIFACE CHURCH, Mequon, Wisconsin, 2002

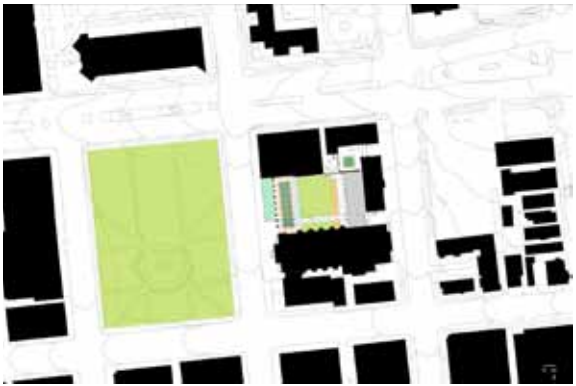
This new Episcopal worship space, often referred to as “The Copper Church”, was designed to hold 350 worshipers, and was attached to an existing brick education building. In a conservative suburb, the clients asked for a church that “Grandma would still recognize as a church, but brought into the new century”. With a low brick base for the gathering space and all support spaces, the worship space is handled as a tall gable clad in copper. The dark, low, horizontal base (extended from the old education building) is associated with things profane, while the vertical and light copper volume is associated with the sacred. A tower holds a collection of existing bells, and helps to form a type that any Grandma would recognize, although transformed in significant ways. The new worship space addresses the suburban street directly, with giant cedar doors facing a new entry plaza in a community where few to no buildings have any recognition of the public realm. Inside, wood trusses are lightened with the use of steel tension rods. Wood decking, wood slats and even wood air grilles completes a warm wooden room, with a contrasting floor of dark natural slate. A great window behind the altar allows a north view out to a grove owned by the church. The structure of this wall forms the cross of the worship community.

The new wood worship space interior, with a clear glass clerestory window behind the solid limestone altar. Wood slats conceal dual organ lofts at left and right .





The new courtyard formed by the layered glass loggia to the left, with the historic Cathedral façade beyond.



Plan of the Cathedral block arranged around the new garden courtyard.

View of the new garden courtyard with the glass loggia at left.

ST. JOHN THE EVANGELIST CATHEDRAL PROJECT, Milwaukee, Wisconsin, 2002

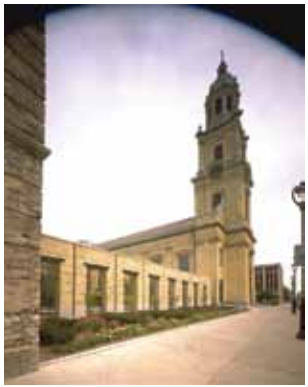
The Cathedral project involved a master plan for the entire Cathedral block, which led to the removal of a vacant and dilapidated building to create a new garden courtyard, a narthex addition to the Cathedral, and the renovation of the Cathedral worship space and old school into a new parish center, and an old convent into a homeless woman's center. Conveniently, the building that required removal faced Cathedral Square, the cities oldest public space. The removal of this building created a courtyard space that opened the block up towards the square, establishing an entry point into the Cathedral precinct that faced the right direction. The courtyard, fundamental to the history of liturgical architecture, allows the Cathedral to be entered through a choreographed sequence from public square, through a garden gate, under a grove of trees, through a garden room, into a glass loggia, and finally turning to enter the worship space on axis with the tabernacle. The new loggia, envisioned as a series of transparent layers open to and part of the garden, was constructed of the lightest possible steel profiles clad entirely in clear glass walls. The regular bay repetition of the 1854 Cathedral is used for the new addition, as well as the same proportioning system (2-squares tall, divided vertically into three parts) that was used to design the original bays.

Two existing crème city brick facades were captured as interior walls within the new steel and glass loggia.

The new loggia remains separate from the existing historic wall of the parish center by means of a sky lit slot of space (at left).

A new garden wall made of recycled brick, salvaged stonework, and wrought iron establishes a sacred precinct for the Cathedral.

The “Before” view.



The “After” view with the new courtyard.

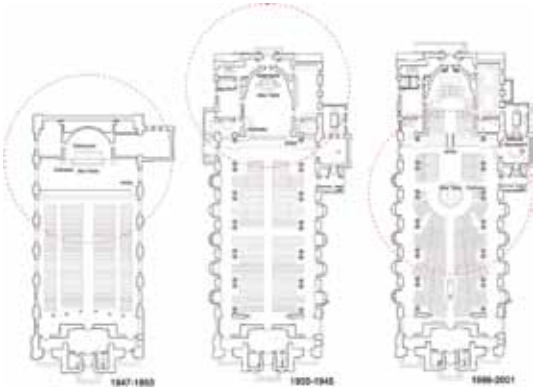
A detail of the garden wall ironwork.

The grove of Linden trees.

The single most significant accomplishment of the project is actually a void; a new garden courtyard was created at the center of the Cathedral block by removing an existing building (see “Before” and “After” images above). The demolished building was a 1950’s school that had been vacant for 24 years. This 4-story building was tall, appearing to shoulder aside the historic Cathedral and block the day light into its north stained glass windows. Removing this structure re-established the impression of the Cathedral as “tall” (it was for many years the tallest building in the city), but also restored the north light into the Cathedral’s glass. This demolition also opened up space for a new garden courtyard, now a central organizing element of the Cathedral block. Brick and limestone was salvaged from the demolition to build a new garden wall along the street, a wall which establishes a sacred precinct for the Cathedral. From this garden the restored north façade of the historic Cathedral can now be seen in all its glory; a view lost for over a century. The new garden features a grove of Little Leaf Linden trees which flower white for much of the month of May. This grove helps to establish a sense of repose and separation from the bustle of the city beyond the wall and gate.

The renovated worship space, with a new work of art by Italian scuptor Arnaldo Pomodoro.

View of a side aisle with new lighting.



The three major incarnations of the Cathedral, with the new plan at right.

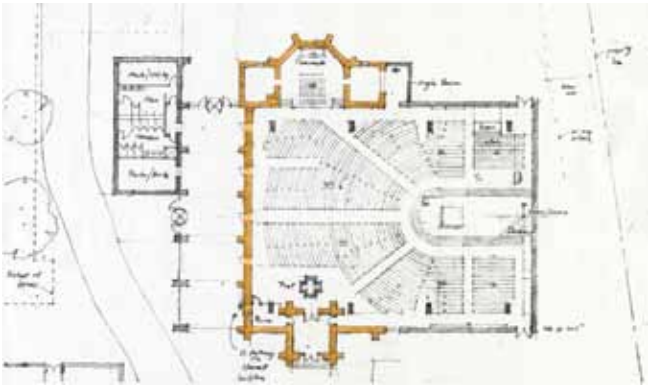
The new font, made of salvaged marble.

As a part of the project, the main worship space of the cathedral was renovated with new lighting, new mechanical systems, a new sound system, new liturgical furnishings and a new arrangement for the altar and seating. At the request of the Archbishop, the altar was removed from a deep 1940's era apse addition, and was placed out in the main worship space to be more central to Cathedral worshipers (see plan diagrams above). The 1940's apse was re-purposed as a music area with a new pipe organ, serving the huge choir and orchestra that previously had no dedicated space large enough to accommodate them.

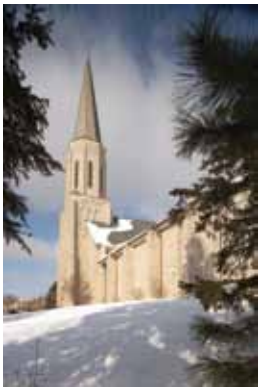
In the most controversial aspect of the project, the Cathedral was renovated to conform to published Vatican directives governing the position of the Tabernacle in Cathedral Churches. This meant that the Tabernacle was removed to a separate side chapel, as it is in St. Peters in Rome. This move was highly objectionable to conservative Catholics, who had experienced the tabernacle under a baldachin within the main worship space since a WWII era renovation.

A lattice of wood is attached to the underside of four laminated wood arches, with a view up to the gabled framing above.

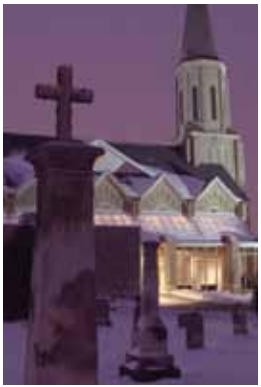
St. Anthony's under construction, with new construction inserted into the fragments or "ruins" of the old church.



An early plan sketch of St Anthony's Church, with 1854 stone walls shown in gold.



The 1854 stone tower was maintained, with a new stone and copper worship addition at right.



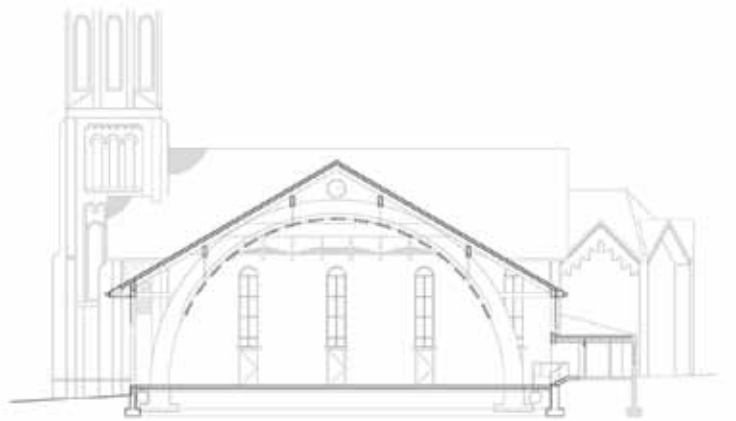
A new sky lit narthex atrium was applied to the 1854 stone facade.

The new timber-framed and sky lit narthex at St. Anthony's, with the 1854 stone façade at right.

ST. ANTHONY THE HERMIT CHURCH, Menomonee Falls, Wisconsin, 2006

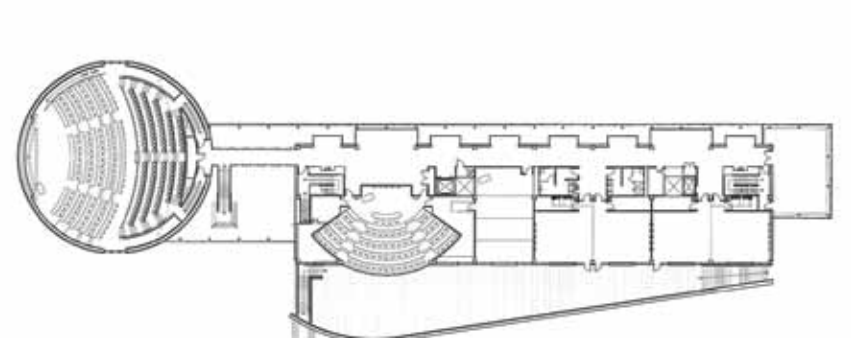
St Anthony the Hermit Church offered the challenging problem of how to enlarge a small 300-seat 1854 church into a 1000-seat worship space without destroying all that was precious to the congregation in the historic original. The solution was to retain the three most important features of the 1854 building: the tall stone bell tower, the buttressed stone north façade facing the old cemetery, and the historic stone apse with its carved wood tabernacle reredos. Carefully preserving these three elements, the remainder of the 1854 building was removed. The interior plaster was removed from the 2-foot thick solid stone walls, revealing the original masonry craftsmanship on the interior surfaces as well as on the exterior. Into this U-shaped "ruin" of old stonework a series of four great laminated wood arches were inserted, arches which framed a new space large enough for 1000 persons protruding to the south out of the old "ruins" (see plan and aerial photo above). Under these arches a wood lattice was attached which helps to articulate the vaulted form of the space. The new walls of this space were built of burnished concrete block, clad in the same limestone as the historic original. Against the old north façade facing the cemetery, a new narthex atrium was framed in laminated timbers bolted onto the old buttresses, and supported by new piers and a services building all built of limestone matching the historic original.

Translucent scrims catch the light from skylights and from side windows, producing a luminous setting for the new stone liturgical furnishings.



Section looking North towards the old Bell Tower and Apse through the new wood arches.

View from the central aisle of the enlarged worship space



The second floor plan, showing the lecture hall and classroom building joined by a two-story glass atrium.

Plan of the Marian campus with the new building.

STAYER CENTER, Marian University, Fond du Lac, Wisconsin, 2001

Marian University in Fond du Lac, Wisconsin, was built in the 1960's in a Late Modern architectural language, using glass, and stone from a nearby limestone quarry for virtually all of the buildings on campus. The buildings were configured in two types: simple rectangles for classroom buildings, and cylindrical buildings for unique functions like the Library and the Chapel. The new Stayer Center, a 50,000sf classroom building with a 250-person lecture Hall, accepted this pre-existing language and divided the program into a stone-clad classroom building, a stone cylinder for the lecture hall, and a glass atrium that wraps and connects the two. Pre-existing campus paths were extended onto the site, one passing through the new glass atrium and forming two main entries into the building. In this atrium, a monumental stairs leads up to a bridge connecting the second floor of the classroom building with the top of the lecture hall rake. The classroom building is single loaded, with circulation in the glass atrium on the first floor, and drawn into the stone building on the second with a series of balconies which protrude into the upper space of the glass atrium. Support spaces on the first floor protrude from the rectangle to form a roof terrace which serves the second floor classrooms.

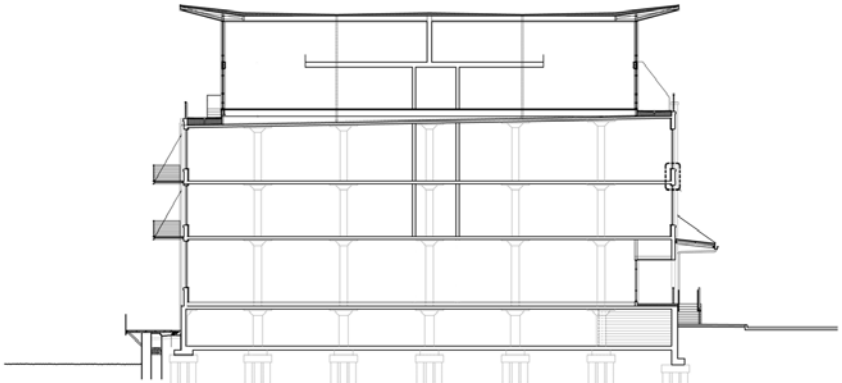
The wood ceiling panels in the lecture hall are designed to reflect the natural sound of a speaker back down onto the audience.

Balconies protrude from the second floor of the class-room building into the 2-story atrium

Section through the glass atrium with the stairs and the bridge hung from the steel structure above.

The bridge across the atrium connects the stone-clad classroom building (at left) with the cylindrical lecture hall .

The new 2-story addition with its broad cantilevered roof sits on top of the block-long 1915 Marine Terminal Warehouse.



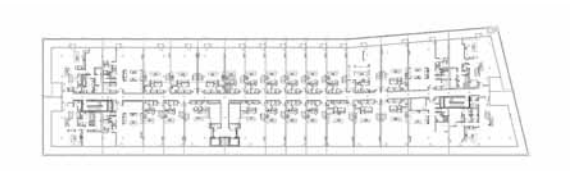
Section with the Milwaukee River at left and Erie Street at right.

View from the river with the new river walk and public boat landing.

MARINE TERMINAL BUILDING, Milwaukee, Wisconsin, 2006

Built in 1915 as a warehouse connecting water and land transport, the Marine Terminal Building was completely renovated into housing on the second and third floors, with first floor office space and parking in the existing basement. Utilizing the vast weight bearing capacity built into the original warehouse, it was possible to add two-story townhouses to the top of the concrete flat slab original. Setting back the addition 8 feet from the old parapet to produce continuous outdoor terraces for the townhouses, an 8 foot roof cantilever visually ties the addition to the historic building below. Using the language of the white infill frame building below, new white frames were established at the same 18.5 foot rhythm as the original. But rather than mimic the historic structure in a direct way, the new addition is handled as a clearly contemporary addition. The white frame elements are thinner and lighter in proportion than the heavy original, and the glass sheets are huge in comparison with the small steel sash replacements of the 1915 work. The new addition also completes the block-long length of the original, with no attempt to “break up the length” of the old composition. A new street-front arcade was cut into the building, recalling the open cart and truck dock portals that had long dominated the façade. A long rod-hung canopy on the street façade was also restored. On the river, new residential balconies were hung in the same language as the restored canopy: black painted steel hung from tension rods with a long, continuous articulation in keeping with the long building.

A new public river walk was built of Ipe ironwood which ramps up to the street, and down under a bridge to connect to an adjacent river walk.



Plan of the new 2-story townhouses built on the roof.

In the office spaces, board-formed concrete structure is exposed.

View of the city from the upper level of a 2-story townhouse

HGA's office features new objects inserted into the old warehouse.

A series of long and low horizontal forms, Discovery World (in background at right) allows the exuberant vertical masts of the Calatrava-designed Milwaukee Art Museum to dominate.

Site Plan showing the L-shaped landscape connection.

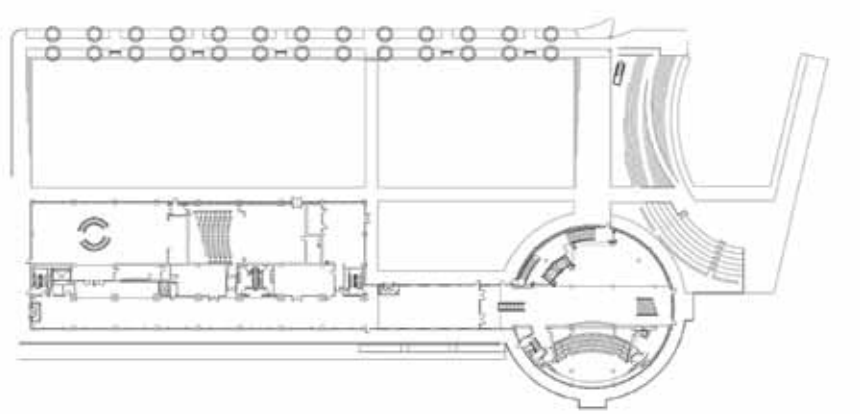
An aerial photograph of the new lake front.

The new Great Lawn and its vista out over the Lake.

DISCOVERY WORLD MUSEUM, Milwaukee, Wisconsin, 2007

A First Place entry into a 2003 design competition developed into this new 120,000 sf museum on Milwaukee's lake front. With a waterfront site close the Milwaukee Art Museum by Calatrava, the competition was held in large part to find a design that would complement the Calatrava, and not detract from it. In contrast to the tall vertical masts of the Calatrava, the competition entry assumed a long, low horizontal character, in keeping with the horizon offered on the lake front site. With two simple forms, a floating rectangle for technology exhibits, and a floating cylinder over the water for water-related exhibits, these two forms are linked by a glass promenade held close to the waters edge. Underground parking for 200 cars is covered with a green roof which has become a major public event space in the city. A new Ipe wood amphitheater facing the water allows for a summer concert series, while new piers and docks provide public access and anchorage for Milwaukee's tall-masted ship. New Ipe wood boardwalks wrap the water's edge, sliding into the building to become the floors of the public concourse. Like the Calatrava and most boats in the new harbor, the new building is white, clad in a rain screen of composite Trespa panels with exposed stainless steel fasteners. Among many sustainable features such as the use of both green roofs and cool white roofs, all cooling loads for the complex are handled by using the cool water of lake Michigan; not warming the new small harbor by more than 1 degree F in the worst summer heat.

The South façade of the new museum, wrapped with a continuous public boardwalk



The First Floor Plan

Section looking East

Historically, Milwaukee has had few places by the waters of Lake Michigan that could be enjoyed and experienced year round. A "Public Trust Doctrine" that prohibits any private development of filled lake bed has preserved the city's waterfront green space, but these spaces are vacant for much of the year as there are no facilities of any kind that would support the use of the waters edge. As a public museum, this project met the conditions of the Public Trust Doctrine, and was approved for construction. This offered a rare, perhaps once in a lifetime opportunity, to provide access to the waters edge in a variety of ways. Design decisions were therefore weighed by how well they dealt with access to, and views of the water. With this in mind, a new waterfront amphitheater was built to encourage use of the waters edge, and has attracted thousands of people to events like the Wednesday night Live @ the Lakefront concert series, and the very popular Friday night Fish Fry & A Flick events. These events are supported by a 200-car garage located under a Great Lawn, a public events space where tie-downs were installed to allow for the frequent use of tent structures. A permanent pier for Milwaukee's tall-masted ship, the Dennis Sullivan was built, drawing large numbers of people to see, tour, and ride on the ship. A public boardwalk was built which allows year-round access to the waters edge, and the concourse of the museum is a free zone, offering people a place to warm up and view the lake in inclement weather with rest rooms and a modest café. A rooftop multi-purpose events space was also built called the Pilot House, a 360-degree glass cylinder with unprecedented views of the harbor and the city. The Lecture Hall / Digital Theater was also built with curtains that can be opened to reveal a panoramic view of the new harbor. Finally, a floating public access dock offers the first water craft access to downtown in almost a century, and is low enough to the water for fishing and for simply getting one's feet wet on a hot summers day.

The long and linear public concourse along the waters edge, as seen at the winter solstice. A wood floor of Ipe wood extends out to an exterior boardwalk.

Outside the concourse a public boardwalk extends around the entire perimeter of the museum.

The Ipe-floored glass link in between the two buildings serves as an entry space for school groups.

Automated curtains close and a screen descends to allow for high-resolution digital projections.

The Lecture Hall / Theater features a panoramic view of the harbor through a glass double envelope.

The roof terrace and sunshades of the Pilot House on top of the round Water Building.

The School of Education with a green roof plaza over parking (at left), the new east wing , the central atrium, and the 1910 west wing (at right).

An early model of the project showing the central atrium.

The site plan showing the Muir Woods and Lake Monona to the north.

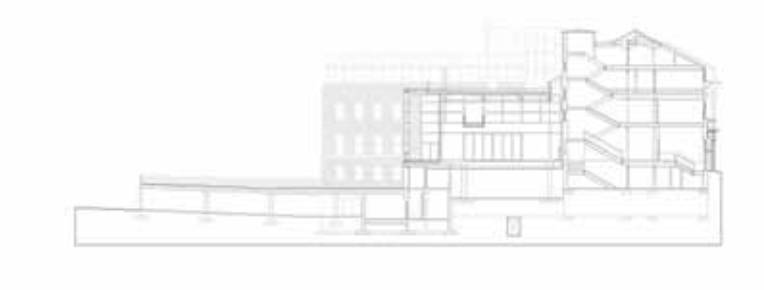
SCHOOL OF EDUCATION, The University of Wisconsin, Madison, Wisconsin, 2010

The School of Education project for the University of Wisconsin in Madison involved the historic preservation and adaptive reuse of an L-shaped existing building, and the design of an L-shaped addition such that the two pieces interlocked in a intimate way to create a greater whole. Built between 1900 and 1910, the existing brick building (composed of south and west wings) was in a poor state of repair, in need of a complete upgrade of all systems. Listed on the National Register of Historic Places, these wings were carefully surveyed, and their exteriors and important interiors were meticulously restored. The program called for a substantial addition, which took the form of a brick east wing attached to a new 2-story atrium. The atrium was built over a new large lecture hall, and covered with a green roof terrace. The new atrium faces north, allowing for extensive clear glass overlooking a view of Lake Mendota and the Muir Woods, a forest preserve devoted to Madison alumni John Muir. This atrium is surrounded on two floors by glazed conference spaces, an art gallery and a café, producing the social hub of the institution. The existing south and west wings had both been built to a rigorous 8’-6” module, producing an intimate human scale building. The new east wing and the atrium were both built to this same module, clearly evident in a screen of tall, slender stone planes that provide shelter for an exterior terrace outside of the atrium. An underground parking garage serves the facility, entirely covered by a green roof plaza over which passes a major campus path. Certified LEED Platinum in 2011, the project achieved a high level of energy efficiency by using radiant water for all heating, and radiant chilled beams for cooling, the first of its kind in the region.

The new east wing (at left), the new atrium and conference center, and the restored 1910 wing (at right).

Ground Floor Plan

First Floor Plan



Section through the green roof plaza (left), the atrium, and the 1900 south wing (right).

The atrium is spanned by a second floor bridge.

Three buildings create a river-facing courtyard with perimeter outdoor dining seating, rain gardens spanned by bridges with benches, and a central lawn.

Site plan showing the river-facing courtyard.

An early model of the project.

The North Avenue retail street edge.

CAMBRIDGE COMMONS RESIDENCE HALL, Milwaukee, Wisconsin, 2010

Cambridge Commons is a new 700-bed freshman residence hall built to serve the University of Wisconsin-Milwaukee. With a site on a bluff overlooking the verdant green way of the Milwaukee River, the project also fronted on one of the areas busiest commercial arterials: North Avenue. The large program was broken down into three buildings arranged around a green courtyard that could relate to the river below, while the three buildings were pushed right up to their street edges and lined with retail and public spaces to relate to the urban setting. The courtyard becomes an outdoor space for student activities like dining, reading and sunbathing, as well as a place for active sports like soccer and ultimate frisbee out on the open green. The three volumes are clad in a unique 16” long crème-colored brick, articulating the surface into long horizontal lines. Dark metal is used to clad the upper two stories of the 6-story volume, further emphasizing the horizontal lines of the composition. In contrast to these long horizontals, deep reveals in the brickwork are used to articulate the student suites on the exterior. Certified LEED Gold in 2011, Cambridge Commons was especially sensitive to issues regarding water. A variety of sustainable features were used to prohibit erosion of the bluff and insure water quality in the river below including green roofs, storing storm water in underground tanks for use later for irrigation, extensive rain gardens, and reforestation of the bluff top with native tree plantings.

Students play a rollicking game of ultimate frisbee on the lawn of the courtyard.

The fourth floor plan, showing the three buildings connected by glass bridges.

Floors in the commons were made of polished concrete embedded with glass.

The commons interiors are articulated as a series of layers parallel to the courtyard.

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CONTRIBUTORS

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Sebastian Schmaling, AIA is a founding Partner at Johnsen Schmaling Architects, a firm who's projects and texts have been featured in numerous books and exhibitions as well as in leading national and international design periodicals, including Architectural Record, Architectural Review, Metropolis, Dwell, Harvard Design Magazine, Detail, Interior Design, Modernism, Competitions, Residential Architect, and The New York Times. Recent honors include four National AIA Housing Design Awards, four AIA Small Project Honor Awards, a National AIA/Cote "Top Ten Green Project" Award, twelve Honor Awards and Merit Awards from the AIA Wisconsin, the 2008 Architectural League of New York's Emerging Voices Award, an Architectural Record Interiors Award, as well as three Project of the Year Awards from Residential Architect and Custom Home magazines.

James Shields, FAIA is a Design Architect and Vice President with HGA Architects and Engineers in Milwaukee, where he has practiced for the last 20 years. In 2010, James was elected to the AIA College of Fellows for Excellence in Design for his award-winning churches, museums and educational buildings. James received his professional degree in architecture from the University of Wisconsin-Milwaukee, including study in Paris with the University of Pennsylvania. Prior to joining HGA, James worked with Joe Valerio of Chrysalis, taught at Arizona State University, and was a partner in Jules, Van Oudenallen, Shields Architects in Milwaukee. In 1985 James joined the faculty of the University of Wisconsin-Milwaukee, where he is an Associate Professor of Architecture teaching Building Construction and Design. James is the author of The Cities of James Duane Doty (CAUPR, 1990), and the co-author of Architectural Representation (Prentice Hall, 1988). James has served as the Curator of the Gallery of Architecture and Urbanism at UW-Milwaukee, where he has organized a wide range of exhibitions on design in the Upper Midwest over the last 15 years.

PROJECT CREDITS

BUTTERFLY VIVARIUM, Milwaukee Public Museum
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General Contractor:	C.G. Schmidt
Photography:	Jon Miller @ Hedrich Blessing
	Jess Smith @ Photosmith, pp. 15,16
	James Vanderheiden, bottom left p. 15

BRADLEY TECHNICAL HIGH SCHOOL
Milwaukee, Wisconsin, 2001

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General Contractor:	Hunzinger / Clark Joint Venture
HVAC:	IBC Engineering Services, Inc.
Civil/Structural Parking/Traffic:	Edwards & Associates, Inc.
Photography:	www.korom.com

ST. BONIFACE CHURCH
Mequon, Wisconsin, 2002

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General Contractor:	Berghammer Construction Inc.
Photography:	www.korom.com

ST. JOHN THE EVANGELIST CATHEDRAL PROJECT
Milwaukee, Wisconsin, 2002

HGA Team:	James Vander Heiden, AIA, PE
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Paula Verboomen, AIA	Rob Doctor
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Matthew Mikolainis, PE	Gordon Pierce, PE
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Liturgical Consultant:	Richard Vosko
General Contractor:	Grunau Construction
Acoustics:	Reidel and Associates
Organ:	Nichols & Simpson Company
Photography:	www.korom.com

ST. ANTHONY THE HERMIT CHURCH
Menomonee Falls, Wisconsin

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General Contractor:	CMA (Jansen Group)
Acoustics:	Riedel and Associates
Civil Engineering:	EMCS, Inc.
Structural Engineering:	Harwood Engineering Consultants
Photography:	www.korom.com

STAYER CENTER, Marian University
Fond du Lac, Wisconsin, 2001

HGA Team:	James Vander Heiden, AIA, PE
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PROJECT CREDITS

MARINE TERMINAL BUILDING
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Owner/Developer:	Mandel Group
General Contractor:	JH Findorff & Son Inc.
Photography:	Saturn Lounge Photography, pp. 52, 54-55
	Jim Shields, upper right on p. 53
	www.korom.com, p. 56, right images on p. 57
	Mandel Group Inc., lower left on p. 57

DISCOVERY WORLD MUSEUM
Milwaukee, Wisconsin, 2007

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Owner:	Mike Cudahy/ Endeavors Group
	Discovery World
General Contractor:	Gilbane Building Company
Aquariums:	BIOS, LLC
Civil and Landscape:	Graef
Deep Foundations:	Wagner Komurka Geotechnical Group, Inc.
Graphics and Signage:	Tom Wojciechowski Design
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Lakefront Development Consultant:	JJR, LLC
Acoustical Consultant:	Geiler & Associates, LLC
Photography:	www.korom.com
	JJR, LLC, top center p. 59
	Jim Shields, top right, p. 59
	Christopher Winters, pp. 60-61, 66-67,70-71
	Rob Doctor, p. 62

SCHOOL OF EDUCATION, The University Of Wisconsin Madison
Madison, Wisconsin, 2010

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Kevin Pope, PE	Michael Kopp
Matthew Mikolainis, PE	Brian Genduso
Gary Merkl	Joe Tarlizzo
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General Contractor:	JP Cullen & Sons, Inc.
Historic Preservation:	Quinn Evans Architects
Civil/Landscape Design:	JJR, LLC
Photography :	www.korom.com
	Jim Shields, top left p. 73

CAMBRIDGE COMMONS RESIDENCE HALL, The University of Wisconsin Milw.
Milwaukee, Wisconsin, 2010

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Developer:	Mandel Group
General Contractor:	KBS Construction, Inc.
Landscape Architect:	Garland Alliance
Photography:	www.korom.com
	UWM Photographic Services, p. 82

SELECTED HONORS AND AWARDS

2011

AIA Wisconsin Honor Award
School of Education, UW Madison

AIA Milwaukee Certificate of Appreciation

2010

Elected to the AIA National College of Fellows in Design
AIA National Convention, Miami, Florida

2008

AIA Wisconsin Honor Award
Discovery World Museum, Milwaukee, Wisconsin

Wisconsin Green Building “Award of Excellence”
Discovery World Museum, Milwaukee, Wisconsin

2007

National Silver Award, Building Design+Construction
Discovery World Museum, Milwaukee, Wisconsin

AIA Wisconsin Honor Award
St. Anthony Church, Menomonee Falls, Wisconsin

AIA Wisconsin Merit Award
NMU Art+Design, Marquette, Michigan

AIA Wisconsin Merit Award,
Kenilworth Building, Milwaukee, Wisconsin

2006

AIA Wisconsin Merit Award
Seminary Chapel, Lutheran Seminary, Mequon, Wisconsin

AIA Wisconsin Citation for Distinguished Service

Distinguished Alumnus Award, Art & Design, UW Milwaukee

National CP&M Education Design Project of Distinction,
Art+Design Building, Northern Michigan University, Marquette, MI

2005

National AS&U Education Design Outstanding Building Award
NMU Art+Design, Marquette, Michigan

AIA Wisconsin Honor Award
Bradley Tech School, Milwaukee, Wisconsin

2004

Designer of the Year, Wisconsin Builder and Daily Reporter Awards

First Place Pier Wisconsin Museum Design Competition
Milwaukee, WI.

2003

AIA Wisconsin Honor Award
Cathedral of St. John the Evangelist, Milwaukee, Wisconsin

First Place Racine Heritage Museum Competition, Racine, WI.

2002

National AIA/IFRAA Award for Design Excellence
St. Boniface Church, Mequon, Wisconsin

National AIA/IFRAA Award for Design Excellence
Cathedral of St. John the Evangelist, Milwaukee, Wisconsin

AIA Minnesota Honor Award
Cathedral of St. John the Evangelist, Milwaukee, Wisconsin

2001

AIA Wisconsin Merit Award
Milwaukee Public Museum Butterfly Vivarium, Milwaukee, Wisconsin

2000

National AIA/ IFRAA Award for Design Excellence
Old St. Joseph, St. Norbert College, DePere, Wisconsin

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2010

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