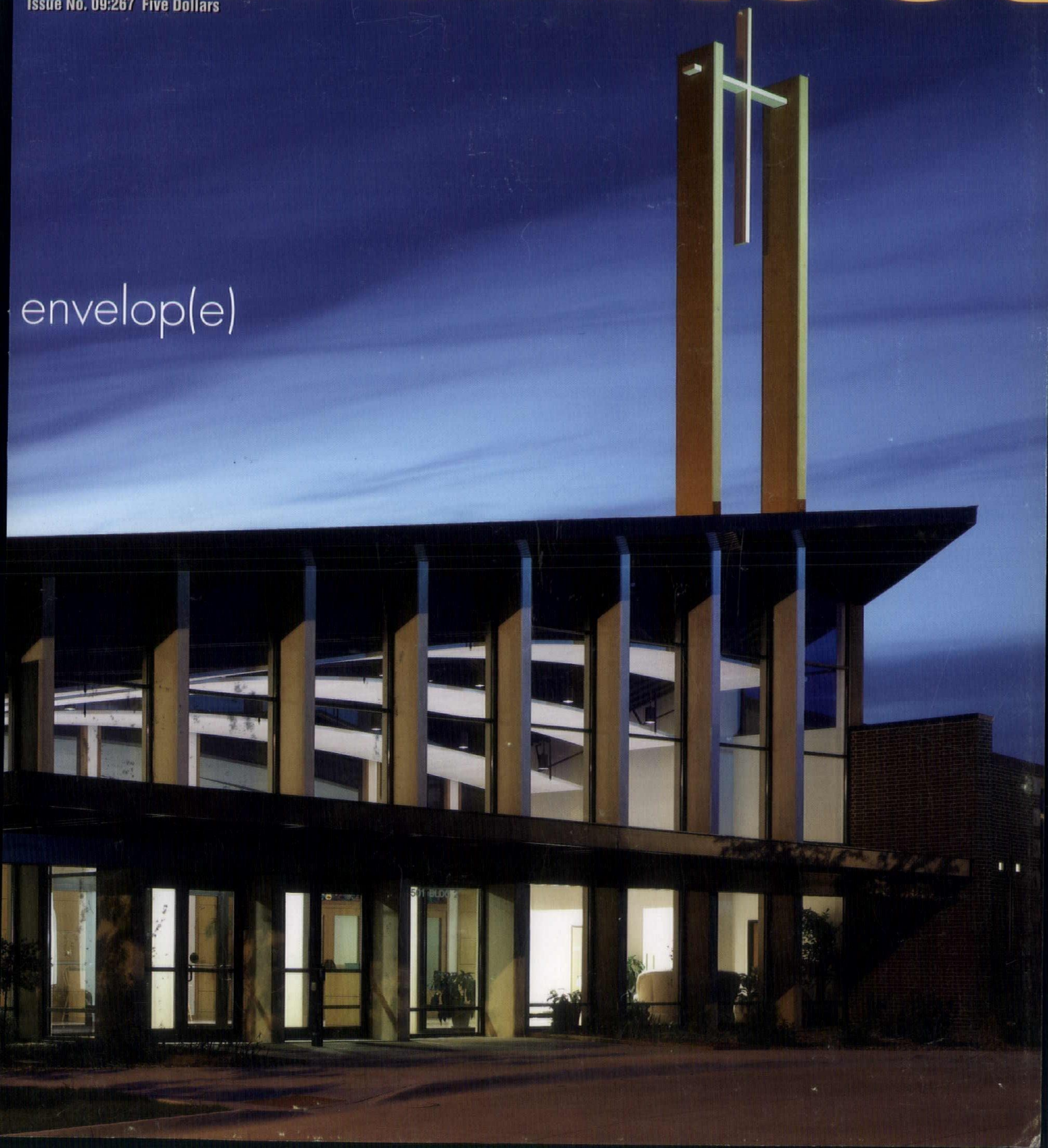
IOWA Architect
Issue No. 09:267 Five Dollars

envelop(e)



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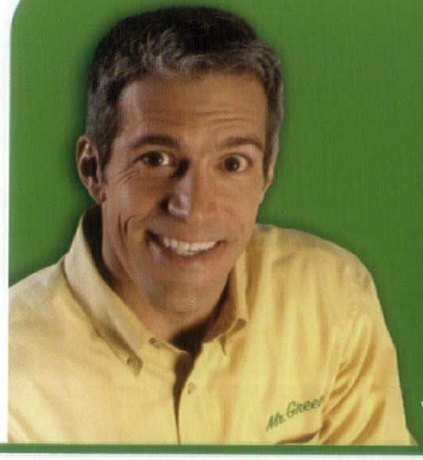

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DEPARTMENTS



COVER

Photographer: Cameron Campbell, AIA

A building envelope functions to maintain a controlled interior atmosphere while exterior conditions range from one extreme to the other. Especially in Iowa the enclosure system must provide adequate thermal separation while controlling moisture. This all seems simple enough, but as we become more and more deliberate and attentive to sustainability and energy use, the list of considerations grows. Solar orientation and the axial depth north/south versus east/west must be examined. The depth of the building, the arrangement of its internal function and fenestration must be studied to optimize the potential for daylight harvesting. If natural ventilation is implemented, the fenestration must meet another set of parameters as does the volume of interior space. Local, recyclable and low embodied energy materials are also a consideration. The building's form, volume, fenestration system, and materiality should be manipulated in concert to lessen the building's energy demand while increasing interior comfort.

# envelop(e)

With the added complexity of these considerations, the bar for design excellence has been raised. While it is encouraging how much the building industry has already transformed, there is a long way to go. Whether it is new construction or a renovation, design professionals have a responsibility to society like never before.

We also have a responsibility toward the less tangible. As we advance the measurable aspects of effective and efficient design we must not lose sight of the non-measurable aspects. We should heed the lesson learned by the uncomely earth homes of the 1970s. Excellent design must resolve a complex set of unrelated considerations into a concise language of form and material articulation. It balances and integrates the quantifiable issues of envelope performance and sustainability with the intangible objective of beauty and experience.

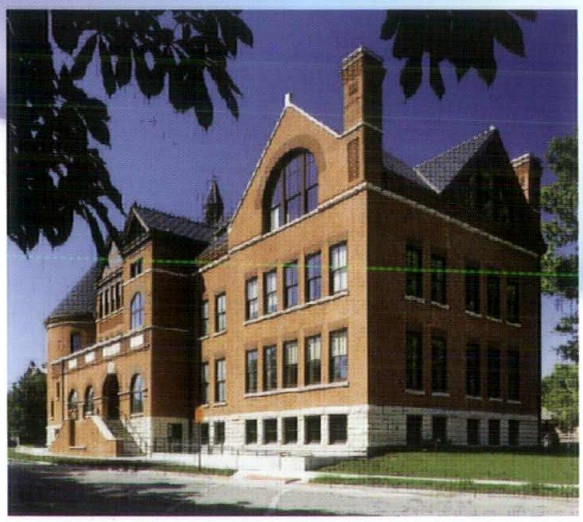
Tim Schroeder, AIA, LEED AP
Editor, *Iowa Architect*

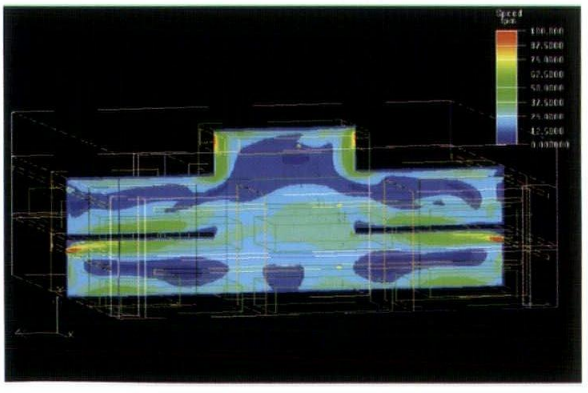
# ADVOCACY

EDITED BY MATT OSTANIK, AIA, CSI, LEED AP

# Sustainability and Envelope

*This issue of* Iowa Architect *focuses on envelope. How does building envelope relate to sustainability? We asked six design professionals to describe in their own words the sustainability issues to consider when designing an envelope.*





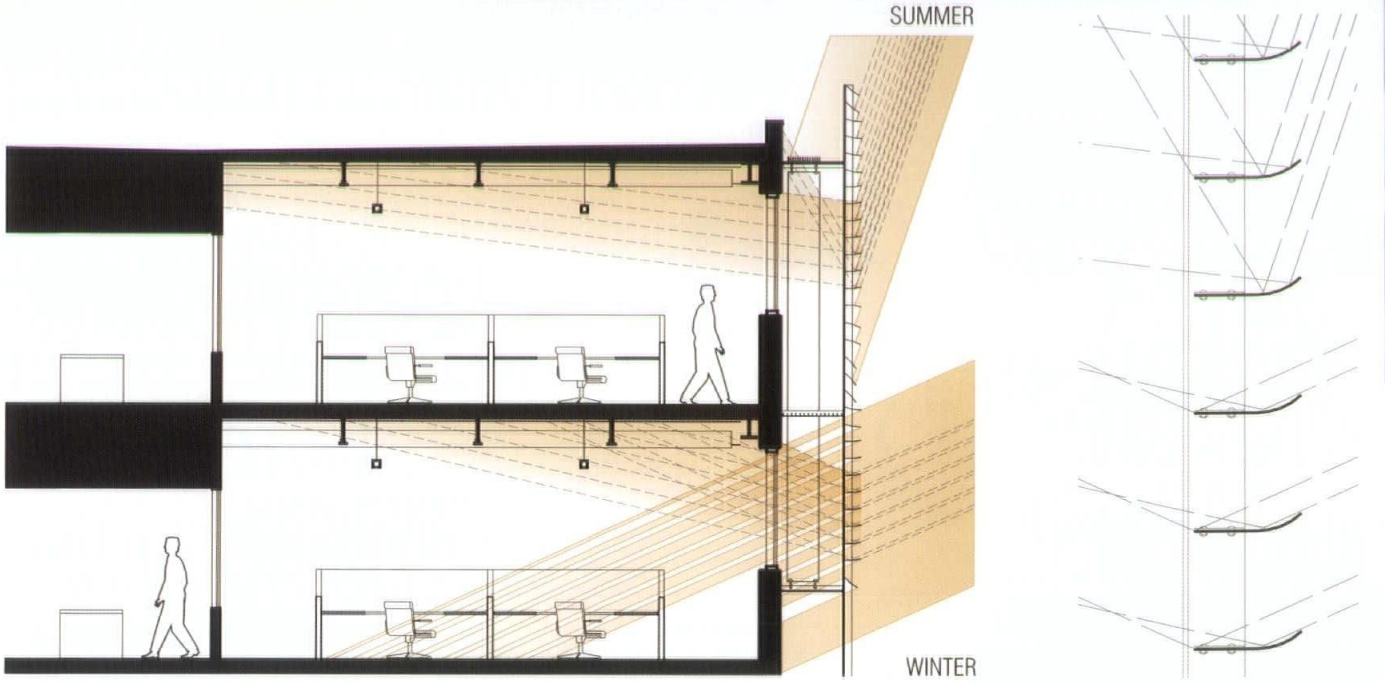
## Envelope and Natural Ventilation

As we look to define sustainable design, it is exceedingly important to consider how architects designed and builders constructed buildings prior to the Industrial Revolution. Consider designing a building without mechanical means of ventilation, heating, cooling, or daylight. Architects understood how a building needs to be a filter to the environment. The enclosure of volume was understood to allow for the maximum opportunities of daylight, sun penetration or avoidance of sunlight, and the tempering of the extremes of climate through mass and natural ventilation. Since the invention of "artificial climate control systems" in the early decades of the Twentieth Century, engineers and architects have focused less on passive systems of ventilation and more on energy-based, mechanically-driven systems. Architects must consider passive systems first during the design process before applying the appropriate active, energy-consuming technologies. This is particularly true of natural ventilation strategies and their affect on the envelope design and volumetric characteristics of the building.

Morrill Hall at Iowa State University was constructed in 1890 prior to modern mechanical ventilation systems. Therefore, as seen in the photo of the restored building, the placement of windows was critical to not only daylight the spaces, but to provide for simple cross ventilation as well. In addition, vertical spatial volumes with roof cupolas and chimneys allowed for stack-effect ventilation. "Stack effect," also commonly called the "chimney effect," helps drive natural ventilation in buildings and is best utilized in buildings that can accommodate larger vertical heights of space and temperature differences. In general terms, as hot air rises and increases temperatures high in a volume such as an attic space or chimney, cooler air is drawn up through the volume through openings in the exterior envelope. It should also be noted that in historic structures such as Morrill Hall, the first floor typically was established above natural grade to allow for windows to provide natural ventilation, daylight and thus creating more usable spaces. Morrill Hall is Iowa State University's first LEED building on campus, and the facility received a silver rating from the USGBC.

The second LEED building on ISU's campus will be the King Pavilion at the College of Design. This studio addition to the existing building is designed to utilize natural ventilation as a passive means of assisting the mechanical ventilation in the facility. This passive idea became a viable strategy because the building will not be heavily programmed in summer months and the basic programmatic need requires large open spaces and volumes for design studio instruction. Learning from Morrill Hall, windows were placed around the perimeter to allow for cross-ventilation of studio spaces. In addition, the building has a small atrium in the center of the studios with an elevated light monitor at the roof above that not only allows for daylight penetration, but also natural ventilation through operable windows allowing for the stack effect. Computer modeling simulations were used, as seen in the illustration, to predict the effectiveness of the passive systems. The building envelope is balanced to not only allow for this permeability as a filter in the appropriate months of the year, but is also balanced thermally to allow for appropriate insulation in the winter months. The King Pavilion is anticipated to be Iowa's first LEED Platinum building and is scheduled for completion in May 2009.

*—Kevin Nordmeyer, AIA, LEED AP, is the newly appointed director of the Iowa Energy Center at Iowa State University which is focused on research and education on energy efficiency and renewable energy for Iowans. Kevin is formerly a partner at RDG Planning & Design and was the design leader for the King Pavilion and Morrill Hall projects. Morrill Hall photographed by Kun Zhang. King Pavilion illustrations by RDG Planning & Design.*




## Envelope and Daylight

The connection of light and architecture is inherent. Building envelope serves as a filter for light, the design of which has always been one of the primary pursuits of the profession. While the sensitive use of daylight has been primary to architecture for millennia, the term "daylighting" is relatively new. In modern times, it has come to mean not only an increase in the use of natural light, but a corresponding decrease in the use of artificial light sources.

The pursuit of proper daylighting techniques in envelope design can play a significant role in achieving more sustainable buildings. A truly sustainable building not only reduces environmental impact, but also improves the social well-being of its occupants and achieves long-term economic viability. Daylighting serves this balance of people, prosperity and planet through increased occupant comfort, enhanced productivity, and minimized energy consumption through reduced cooling and electrical loads.

Effective daylighting begins with optimizing building orientation. Elongated buildings with their primary facades facing north and south enable the most effective envelope design. Glazing is typically minimized on the east and west facades, where the low angles of the sun are difficult to control. North light is diffuse and reflected from the sky, thus straightforward to control.

South light, more complex than north light, provides the greatest potential for sustainably introducing daylight deep into a building, that is, one where glare and summer heat gain are reduced. To do so requires careful configuration of building geometry, interior and envelope. First, building depth is minimized in the north-south direction; sixty feet is a maximum, however forty feet is preferred. Second, floor plates should be kept open, interior walls reduced, and interior glass employed where walled spaces exist. Third, glazing should be arranged high on exterior walls. Generally, south daylight penetrates two feet for every one foot it enters above the floor.

Properly designed south facade sunscreens do a good job of limiting undesirable heat gain in the summer, allowing desirable heat gain in the winter, and reducing glare for occupants. However, this typically comes at the cost of significantly limiting daylighting, particularly in the diffuse conditions of cloud cover.

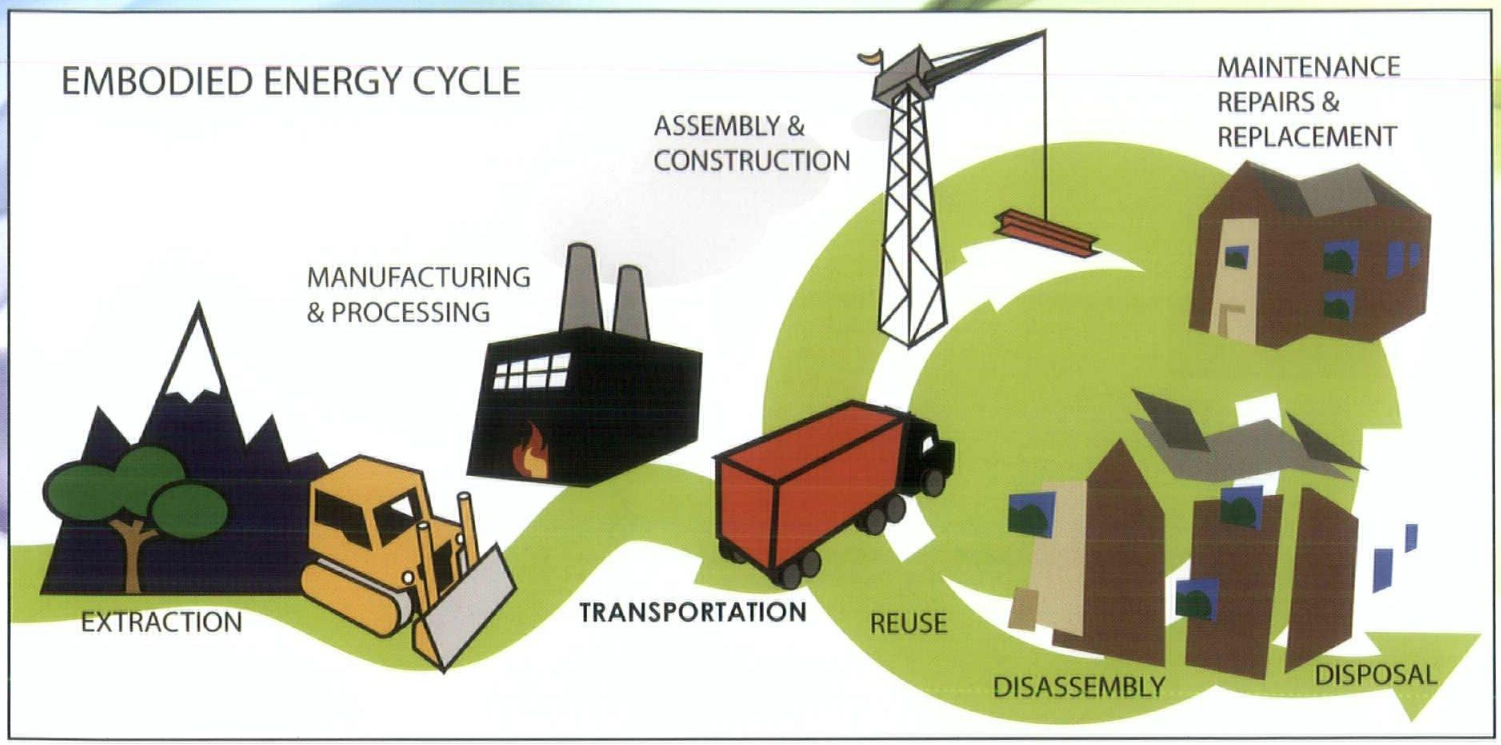
This limitation may be mitigated by daylight harvesting sunscreens whose light-colored blades are manipulated to reflect light deep within a building. Moreover, when the initial point of reflection occurs outside of the building envelope above eye level, increased daylighting can be achieved without increased heat gain and glare.

The louver configuration in the adjacent diagram effectively reflects low-angle winter light far into the floor plate. In addition, the relatively large blade spacing allows the system to perform well under diffuse conditions. However, it truly excels in its ability to introduce high-angle summer sun deep into the footprint through the carefully tuned curved portions of the blade.

Daylighting techniques in general are some of the most effective contributors to a holistic, sustainable approach to building. Engaging in specific strategies with rigor and sensitivity can elevate the enclosure from envelope to architecture.

*—Carey Nagle, AIA, LEED AP, practices architecture at BNIM in Des Moines. He is currently serving as project architect for one of the first Iowa buildings targeting LEED Platinum.*

*—Jonathan Ramsey, AIA, is a project architect at BNIM and teaches at Iowa State University. He is a LEED accredited professional and is the current chair of the AIA Iowa Committee on the Environment.*




## Envelope and Embodied Energy

Many construction industry discussions revolve around achieving energy efficiency in buildings through daylighting, advanced controls for lighting and thermal comfort, and improved thermal performance of the building envelope. As efficiencies in these areas are realized and operating energy requirements decrease, the "embodied energy" component of the building's lifetime energy consumption gains significance.

Embodied energy can be defined as the total non-renewable energy consumed by the products and processes that make up a building. Every building is a complex collection of many energy-consuming processed materials and construction activities, each contributing to the building's total embodied energy. Some sources estimate that the building envelope represents about 25% of the total. As we strive for an environmentally responsible approach to design, an embodied energy review of the envelope can be a very valuable tool.

Frequently cited contributors to total embodied energy include the non-renewable energy consumed in the acquisition, processing and manufacturing of raw materials, transportation of finished materials to the site, and construction processes. Other sources may include the energy consumed to maintain, restore, or replace material during the life of the building, and the energy required to dis-assemble the material for re-use at the end of the life of the building.

Several tools are available to assist in a study of embodied energy. The AIA and USGBC recommend the carbon calculator at www.buildcarbonneutral.org, other helpful analysis tools can be found at http://www.bfrl.nist.gov/oae/software/bees/, www.thegreenestbuilding.org and www.athenasmi.org. Each tool offers a different approach to analyzing various aspects of a building's ecological impact.

Though a full accounting of embodied energies may be difficult to reach, there are several principles that can guide our design efforts. These principles are the inspiration behind nine of the possible sixty nine points that comprise the USGBC LEED Certification standards.

**Adaptive Reuse:** The reuse of existing buildings or building elements can significantly reduce embodied energy. Though some energy is expended in preparing the materials for re-use, it is often a fraction of the energy consumed by virgin materials.

**Incorporation of recycled materials:** Energy is expended in reclaiming materials for new use, but it is often far less than manufacturing from virgin sources. Recycled aluminum has been estimated to consume 95% less energy than virgin aluminum. Some sources estimate energy savings of up to 90% for recycled copper and 70% for recycled rubber.

**Use of materials with fewer energy inputs:** Air-dried lumber, for example, embodies nearly one-third less energy than kiln-dried lumber. Generally, the more manufacturing processes a material goes through, the higher its embodied energy.

**Select durable, long lived building materials:** Enduring materials with low maintenance requirements are generally advantageous. Materials that require frequent replacement and consume related disposal energies contribute to the embodied energy measured over the life of the building.

**Utilize indigenous or local material:** Lower transportation energy costs offer clear advantages. Many local materials can be used with fewer manufacturing costs because they are well suited to the native environment.

Embodied energy is a useful concept to consider as part of a whole-building approach to conceiving of and composing a more sustainably built environment. Understanding and employing these responsible techniques will result in a benefit to both the owner and user and can offer immense opportunity for creative design solutions.

*—Michael Thomas, AIA, LEED AP, is a project manager with OPN Architects, Inc. in Cedar Rapids.*

*—Brian Gunning is the marketing director for OPN Architects, Inc.*

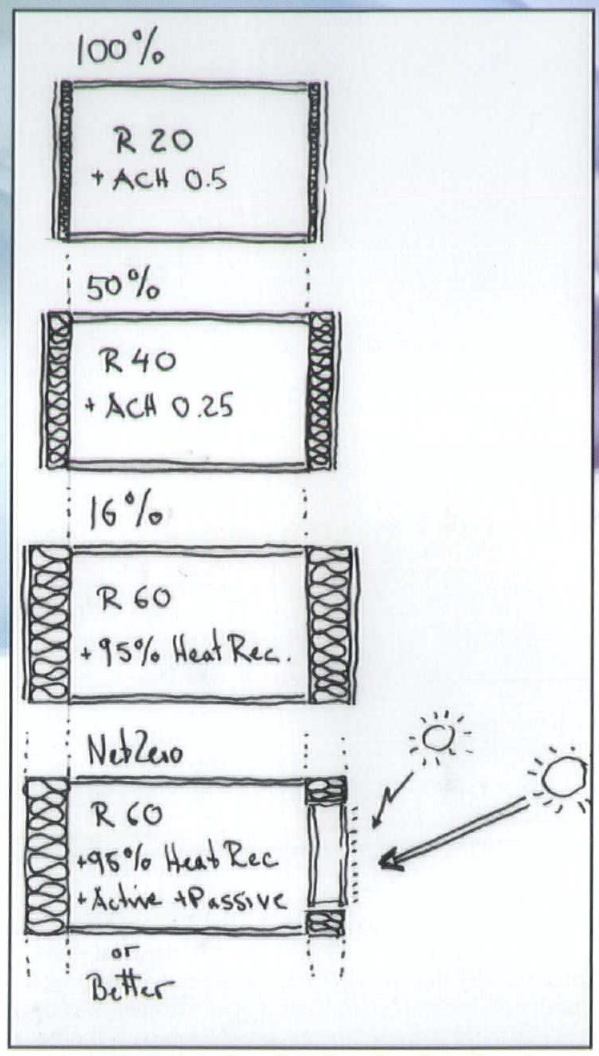
## Thermal Performance of the Envelope

Energy efficiency in buildings starts with the building envelope. Its thermal performance needs to be well-designed for the respective climate of the building location. Therefore, it is important to understand the basic concepts of heat transfer through the envelope and understand the relevant design decisions. Heat transfer by conduction is a function of the envelope area bordering the outdoor climate, while heat transfer through convection by air infiltration is a function of the air exchange rate and the air volume exchanging between inside and outside. Thus, in combination with solar site orientation, efficient space layout, envelope geometry and detailing play a huge role in reducing energy demand. The color of opaque envelope surfaces is another key parameter to determine the surface temperature for the heat transfer equation; ideally, light surfaces perform better in a cooling dominated climate, while darker surfaces can be used in heating-dominated climates. Glass, of course, has a dual potential. While transparency is a strong architectural concept, glass surfaces generally gain heat through radiation and lose heat loss through conduction, thus a balance is important. Glass envelopes can be designed as a great source of heat gain. It's a benefit if used at the right location, and a disaster if used excessively on the wrong side.

Thus, we as architects play a huge role in an integrated collaborative design process to reduce energy demands of a building. Through architectural design decisions on the thermal performance of the envelope, the architect can greatly influence the cooling and heating loads for mechanical HVAC (Heating, Ventilation, Air-Conditioning and Cooling) systems or nearly eliminate them, as shown by the passive house movement, which developed strategies for home designs which use so little energy that a furnace is not necessary for heating. Only with a highly-reduced energy demand, renewable resources like active solar PV power, solar thermal collection and geothermal heat exchange become economically feasible. Recent research has shown[i] that intelligent energy conservation is the most economically viable approach to energy efficiency prior to using active renewable sources.

In a traditional conceptualization of these parameters, the building envelope needs to act like a thermos flask, highly efficient and tightly sealed, with high R-values and reduced ventilation rates. Consequently, air quality, mold and ventilation in general become a concern, and the relationship to the outdoors is lost. What other options exist? Heat gain and heat loss through infiltration could be eliminated by integrating decentralized air to air heat exchangers into the envelope system. The layering of the envelope assembly parts and the separation of skin from structure enable not only the integration of high-performance insulation, but also allows skin to become multiple layers of interchangeable, even breathable membranes: light, dark, shaded, screened, insulated, transparent etc. Materials are starting to change color with temperature, and elements can be interchanged. Tom Haartsen, an engineer in the Netherlands, uses the concept of the "feet of the duck," introduced by Julius Vincent to explain heat recovery.[ii] The body of the duck constantly exchanges heat between two separate blood circulations: one in the feet, one in the body, insulated by feathers. Could a façade be designed like the 'feet of a duck', constantly exchanging the heat back into the building? Maybe it will be in the future.

*—Ulrike Passe, Assistant Professor of Architecture at Iowa State University since 2006, has been appointed director of the Center for Building Energy Research (CBER) in fall 2008 and is the principal investigator of the ISU 2009 Solar Decathlon team (http://solard.iastate.edu). She studied architecture in Berlin and London, and is a licensed architect in Germany (1993). Ulrike practiced in Berlin for 15 years and was elected into the BDA (Bund Deutscher Architekten) in 2005. She is founding partner of the Berlin-based firm Passe.KaelberArchitects, known for energy-efficient design, which won the BDA Hans-Schäfers-Prize Berlin in 1998.*




**The wall sections above show that the higher the R-value and the lower the infiltration rate, the less energy needed.**

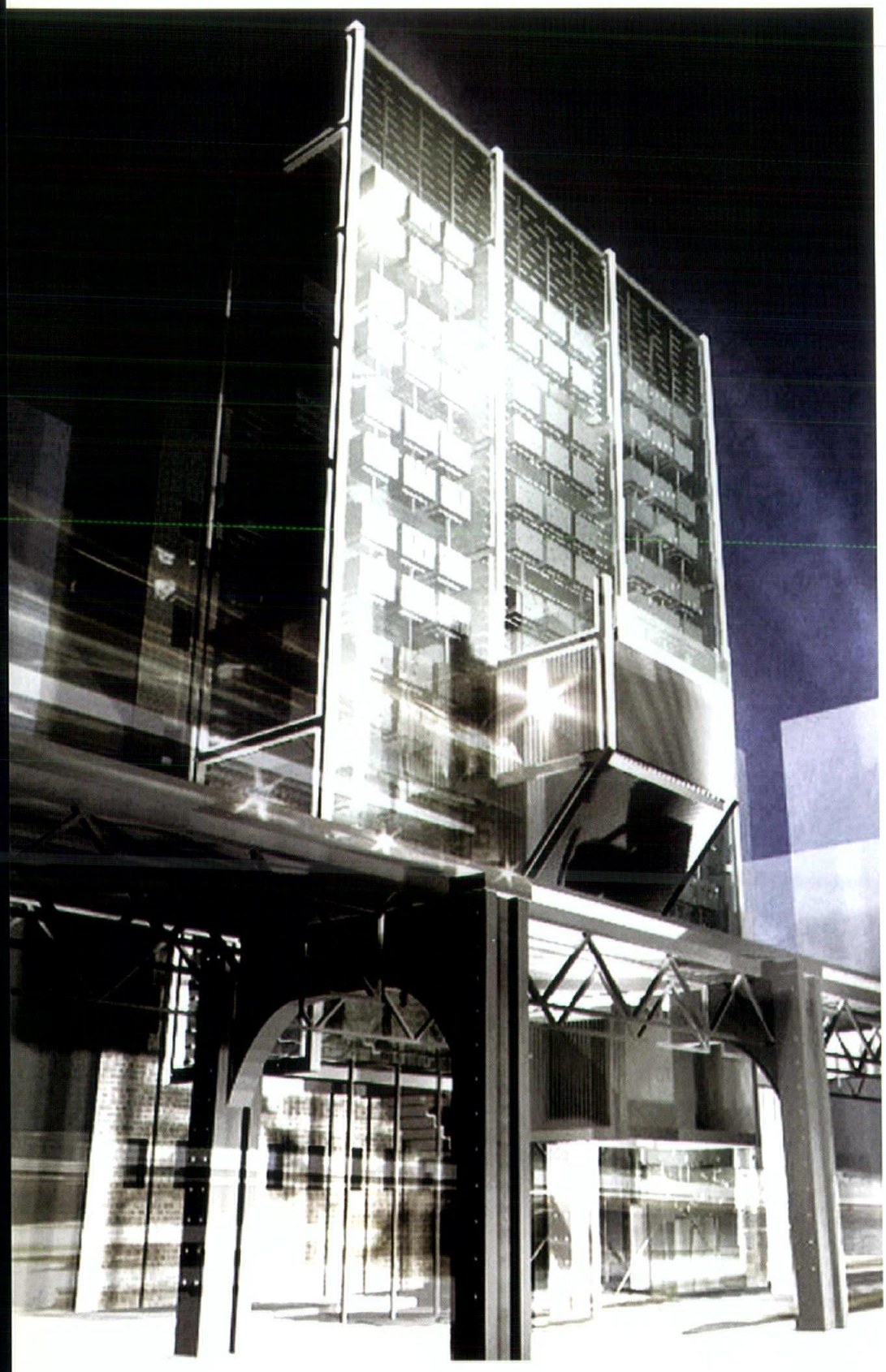
**The top section is typical of many buildings with low insulation values and high infiltration rates.**

**The bottom section shows that if you combine high insulation and low infiltration with heat recovery ventilation and solar energy conversion, it is possible to require net-zero extra energy.**

[i] D.S. Parker: Very low energy homes in the United States: Perspective on Performance from Measured Data, Florida Solar Energy Center.

[ii] Tom Haartsen and Eric van den Ham, The Feet of the Duck or Dynamic Insulation: Tackling Single Glass Facades of Modern Movement Buildings, in: The Challenge of Change, dealing with the legacy of the Modern Movement; proceedings of the 10th International DOCOMOMO Conference, ed. by Dirk van den Heuvel, Maarten Mesman, Wido Quist and Bert Lemmens, IOS Press 2008.

# ALTERNATIVES



## XXM

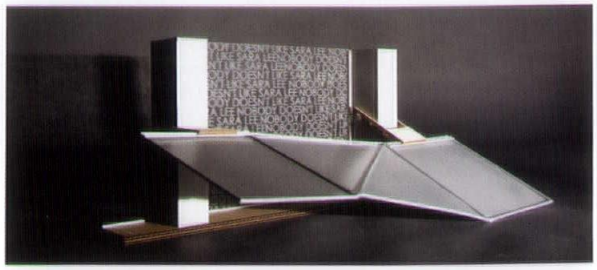
The intention of this independent study as set forth by two architecture students was to analyze the capacity of building façade/envelope. The solution offered goes beyond the conventional notion of an envelope to simply contain or envelop. Instead it reveals the inherent capacity of an envelope to independently define a company brand and corporate identity. The study examines how an architectural façade can both reveal and conceal a corporate image.

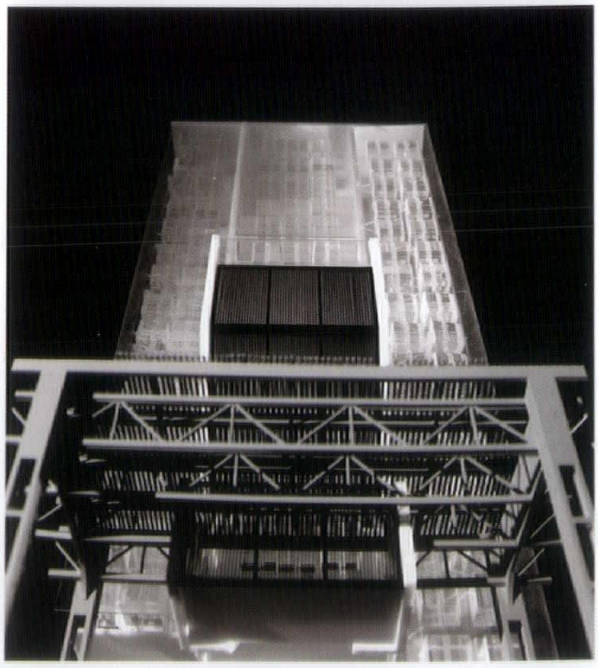
All scales of business rely on intermediate or 'medium' spaces which are often not publicly exposed. Similarly, a corporation's intended image does not always parallel their true nature. While exposing a company's essential yet non-celebrated spaces, XXM speculates that a desired image can be achieved by allowing the envelope to become the 'medium' from which a company's message is communicated.

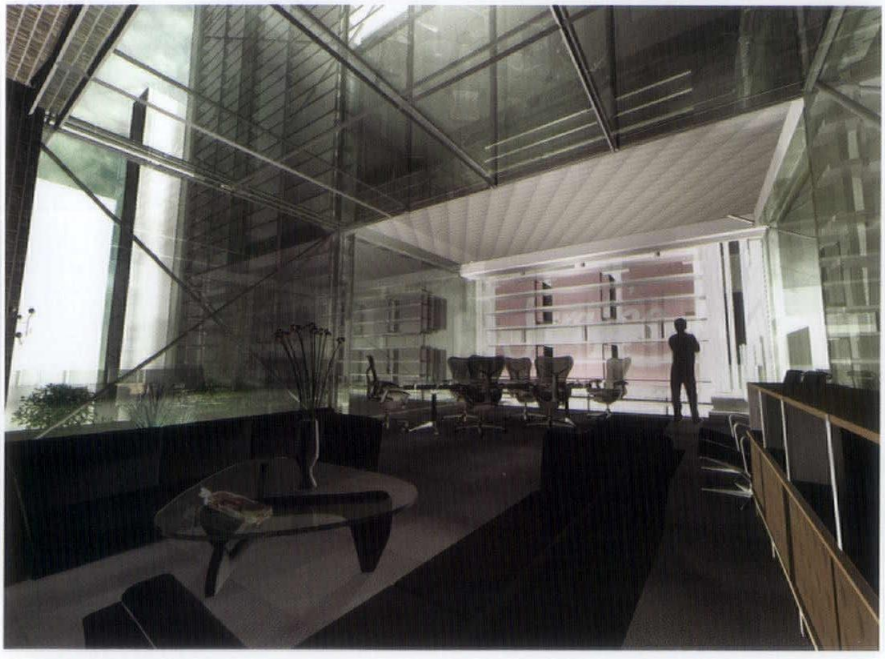
By its nature, the idea of XXM is an adaptable, hybrid system, designed to accommodate a wide range of customizable options. It exposes the hidden elements once thought to be undesirable, and challenges the conventional notion of how a façade/envelope is conceived. Sometimes the best possible bridge is a tunnel or the best building solution is no building at all.

**By:**
**Nate Klinge**
**Brad Baer**

**Major Professor:**
**Cameron Campbell**







# The Envelope...Please

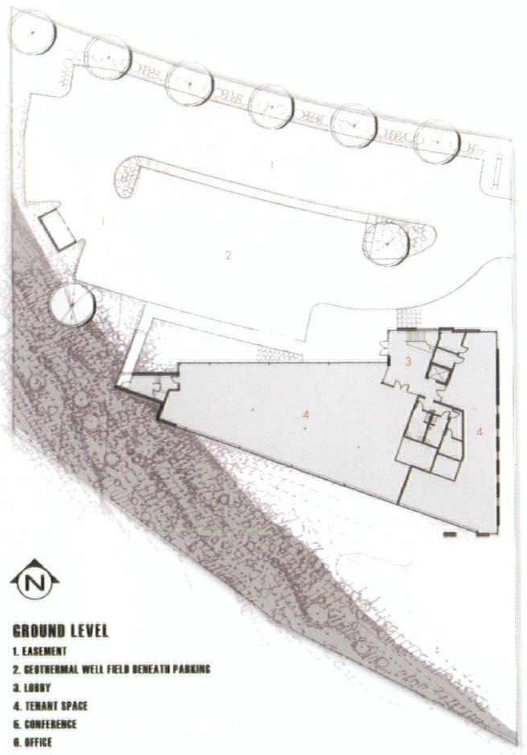
PERFECT SKIN

*"Our small planet, at this moment, here we face a critical branch point in history. What we do with our world right now, will propagate down through the centuries and powerfully affect the destiny of our descendants. It is well within our power to destroy our civilization and perhaps our species as well."*
*Carl Sagan*
*Cosmos - 1980*

The early 1970's stand as an important snapshot in time as the United States was considered invulnerable from turbulent economic and political machinations. The turmoil suffered by so many other nations was inconceivable to American sensibilities. The very thought that a small and barely known group of countries on the other side of the globe could hurl a wild curveball to the economies of the developed world was unthinkable. But that invincibility was shattered and arrived on our shores as a harsh and crashing blow when the Organization of Petroleum Exporting Countries curtailed Middle East oil supplies to the Unites States during and after the 1973 Yom Kippur War.

Economists and historians later determined that this shocking singular event initiated the decline of American dominance, as rapidly escalating energy costs resulted in decreased supply and increased prices for nearly every product and service. Our vulnerability was blatantly exposed, and the events of that decade were a powerful wake up call for the United States, who along with the rest of the advanced world had built entire societies based on the unchallenged concept of a never-ending supply of cheap oil and energy.

An influential publication titled The Passive Solar Energy Book was published in 1979 by architect Edward Mazria, FAIA. This excellent and easily-understood book described and illustrated a multitude of passive solar principles to reduce energy usage for the built environment.




NEUMANN MONSON ARCHITECTS

**Right: The building slices into the site to take advantage of the sloping landscape to minimize potential erosion and disruption of the existing prairie. The ground floor functions as leased tenant space with plans for the company to expand into this area as the firm grows.**

**Below: The north elevation is dominated by the aluminum window and ventilated façade systems with vision glass to attract tenants to the leasable main level spaces.**

FARSHID ASSASSI, HON. AIA IOWA, ASSASSI PRODUCTIONS ©

**Project:** Terry Lockridge and Dunn
**Location:** Iowa City, IA
**Architect:** Neumann Monson Architects
**General Contractor:** McComas-Lacina Construction
**MEP Engineer:** Design Engineers
**Structural Engineer:** Neumann Monson Architects
**Landscape:** MMS Consultants
**Photographer:** Farshid Assassi, Hon. AIA Iowa, Assassi Productions

**MARK E. BLUNCK**

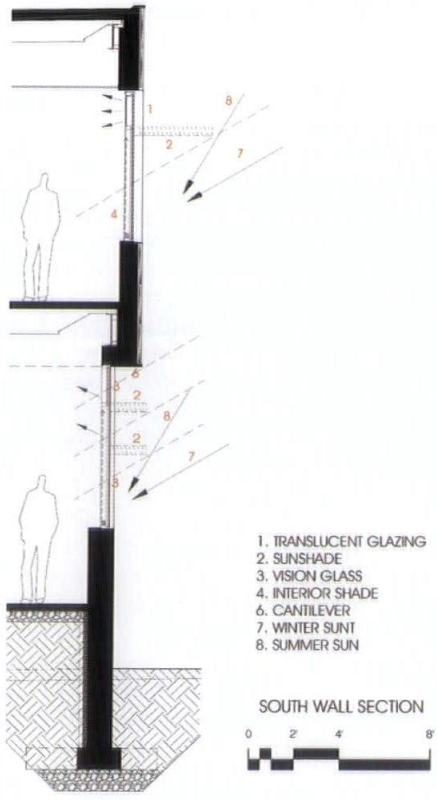
FARSHID ASSASSI, HON. AIA IOWA, ASSASSI PRODUCTIONS ©

These concepts included siting, elevation orientation and shading for varying directions and geographical coordinates, and more efficient use of building materials. Many of these design and construction principles had actually been applied by ancient civilizations but were unfortunately ignored or simply forgotten in the modern age, as cheap abundant energy enabled technology to overcome any deficiencies in architecture and engineering practices.

In 1980, the Global 2000 Report to the President: Entering the Twenty-First Century, was released by the Carter White House. This extensive three-year study was a comprehensive effort undertaken by a dozen federal agencies to analyze energy and environmental trends at the turn of the century. The new incoming administration ignored the report and ridiculed the study as "globaloney." Now, more than 35 years since that first oil embargo, we are having the same discussions on energy efficiency. Have we learned anything?

The architectural and engineering professions began a concerted effort to improve building standards and worked with local and state governments to codify effective design and material specifications. While these moves were important in establishing a new approach, the idea of passive solar energy as illustrated by Mazria remained a peculiar idea for clients and architects.

In Iowa City, a building by Neumann Monson Architects for their client, Terry Lockridge and Dunn, a financial services corporation, successfully combines passive solar energy and Modernist design for a finely composed struc-




NEUMANN MONSON ARCHITECTS

**Above: The steep west grade informed the building configuration and created the tapered plan with the layered elements breaking the prairie hillside like a ship in landlocked Iowa.**

**Left: Sunshades are utlized at both levels to minimize direct sunlight throughout the year. The glazing consists of translucent, vision and tinted glass in appropriate sections for the most effective control of sunlight to enhance energy efficiency.**

FARSHID ASSASSI, HON. AIA IOWA, ASSASSI PRODUCTIONS ©

**Above: The brick wall at the southeast corner transitions from the 90 foot eastern elevation to the long south wall with an attractive material juxtaposition.**

ture representing both facets. Principal Tim Schroeder, AIA, LEED AP, and his team composed a 17,352-square-foot building as a multi-layered composition of interlocking forms distinct from one another for visual deconstruction. According to Schroeder, the south elevation was the subject of intensive study in determining the most effective methods to achieve energy efficiency along this 195 foot wall.

An early design decision was to configure the building mass with the upper level slightly projecting over the ground level footprint by two feet along the southern and northern elevations. This only provides only a limited degree of shading but is much more engaging as an aesthetic detail and not an effective energy saving gesture. Along the southern elevation are elongated rows of fixed exterior sunshades on both levels that enable partial wintertime reflection and full summertime deflection. This visually interesting double layer of shades on the lower level provides complete summer solar protection for spaces now available for client leasing but to be later occupied by the client as the firm grows. These multi-horizontal layered modern design details of industrial materials are essential in creating a lengthened visual stimulus along the vast southern wall and skillfully combine functional and design objectives.

A well detailed arrangement of high R-value transparent, tinted and translucent glass is utilized at various levels along the southern elevation for an effective combination of sunlight and shading. This carefully calculated use of fixed exterior shading, a variety of glazing materials determined by their most effective placement, combined with manually operated woven mesh interior shades and advanced lighting control systems, efficiently allows for 77 percent of the interior to be illuminated by natural light. Utilization of the sun as a major component of building design adds to the energy conservation capability with decreased artificial lighting requirements. When combined with the building envelope materials, this results in a 16 percent overall energy savings made possible by utilizing very low-tech components. As the old colloquial adage states, "This isn't rocket science."

The taut and layered building envelope is composed of brick sections, aluminum window and wall units, and a Swiss-manufactured ventilated façade (rain screen) system. This Swiss Pearl material is reinforced by fiberglass strands and is a mere 7/16" thick with a cementious finish. The product was selected since it resembles a more permanent material and represents an aesthetic shift from the highly polished metal panels that have become rather ubiquitous in the last few decades. The actual product has a low embodied energy level as 60 percent of its manufacturing comes from green energy and is composed of all natural materials. This ventilated façade system along the building envelope possesses many attributes essential for an energy efficient building including heat protection, humidity reduction, continuous insulation, decreased maintenance, and ease of disassembly for repair and recycling. These technical attributes ensure an economical use of materials in their current configuration and eventual demise.

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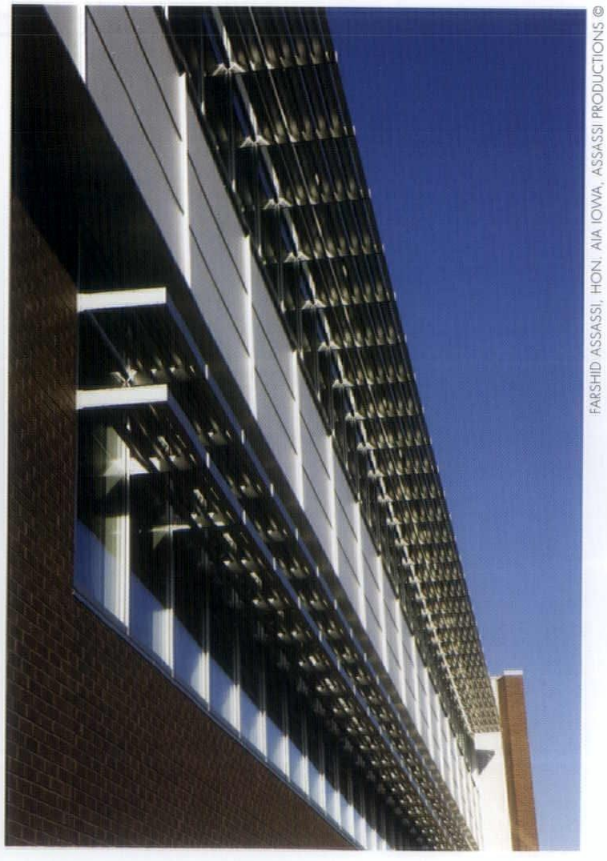
While the north elevation has a generous amount of glazing, with ribbon windows at the upper level and vision glass at the ground level, this was readily acknowledged as not the most desirable arrangement in the harsh Midwest winter. The design was considered for its potential to attract tenants to the ground level spaces. The north side is dominated by the aluminum window and wall system and is the primary feature establishing a pleasing contrast to the brick portions. In yet another gesture to energy conservation, a white TPO roof membrane was selected for its long life and reflective quality. (Why white or reflective roofs have not been required for decades is something this author is still unable to comprehend.) The energy savings resulting from the building envelope components accounts for approximately 10 percent of the improved energy performance.

While the siting, orientation, and building materials are essential to the energy efficiency of the building, the most important factor in this equation is the relatively low-tech heating and cooling system. The building receives an impressive 60 percent of its energy savings by utilizing 42 geothermal wells extending 200 feet into the bedrock beneath the adjacent parking lot. The basic scientific principle is that dissipating a conventional condensing units hot air into the already hot exterior air is a futile attempt to cool a building and works against nature. In this geothermal system, heat is dissipated into the very deep cool subterranean wells. In the winter time, a gas fired furance is not required. Instead, the same principle is reversed and the system creates heat by dissipating cold into the warmer ground. Thermodynamics – what a concept!



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The Terry Lockridge and Dunn project represents an easily achievable goal without requiring costly new technology for improving energy efficiency. These are basic methods that have been employed for centuries, if not millennia. For the first time in the modern era, humanity is finally recognizing their potential. While some advanced technologies will soon reach practical commercial use, incorporating these simple building and design concepts takes advantage of well-developed principles for a new era in responsible stewardship.

—*"All my two dimensional boundaries were gone, I had lost to them badly, I saw that world crumble and thought I was dead, but I found my senses still working." Mark E. Blunck, Hon. AIA Iowa, contemplating* The Byrds *and his next move.*

**Above:The clean modern lines of the exterior are reflected in the interior and represent the efficient use of materials in a purposeful manner. Finishes were selected for their sustainable characteristics such as certified carpet and sorghum wall panels.**

**Left: A well executed example of functional and architectural detailing is provided by fixed sunshades at both levels with the upper floor projecting two feet over the ground level.**

# First Things First

## INSTEAD OF INVESTING FIRST IN A CENTRAL WORSHIP SPACE, A SUBURBAN CONGREGATION PURSUES A PATH LESS TRAVELED

*In what is surely a case of 20/20 hindsight in action, the West Des Moines Christian Church waited years before designing and building a soaring sanctuary space.*

In a world full of missteps, regrets and bad judgments, the West Des Moines Christian Church is not one of them. That's because, unlike many organizations, the church's congregation had the foresight to know that their future need not be the present. Their temporary architectural solution—start with two simple buildings to serve as both support and worship—paved the way for an expansive new space that unifies old and new.

### First Came the Land, Then Came the Buildings

A decade ago, the congregation acquired a plot in what was West Des Moines' no-man's land. Sure, there were developments planned and talked about—a mall, a shopping center, a school. At the time, though, it was a big empty lot propped up on a hill. But the 100-year-old nondenominational congregation had dreams, tempered by a realistic outlook, which made them modern-day pioneers of sorts for several reasons.

To begin with, instead of diving in to build a large central worship space, the church decided to make do with the two simple, big buildings, one used as a fellowship hall/worship space and the other as a multifunction gym space. Inside the facilities were kitchen facilities and square footage for a preschool—everything the members needed to conduct weekly business and meetings. While close together on the lot, the two buildings were set at an angle to each otherwith a large stretch of land in between.

While, from street side, the empty land—and the lack of physical connection between the two buildings—may have seemed awkward, it was actually a stroke of genius. "The intention was always, if you build the sanctuary first, the fellowship hall and gym would become secondary and might not get built," says Brent Hoffman, with Shiffler Associates Architects. "Instead, they decided to build those secondary ideas first and understand that the fellowship hall would be in flux."

### Plans and Plots and Finally Construction

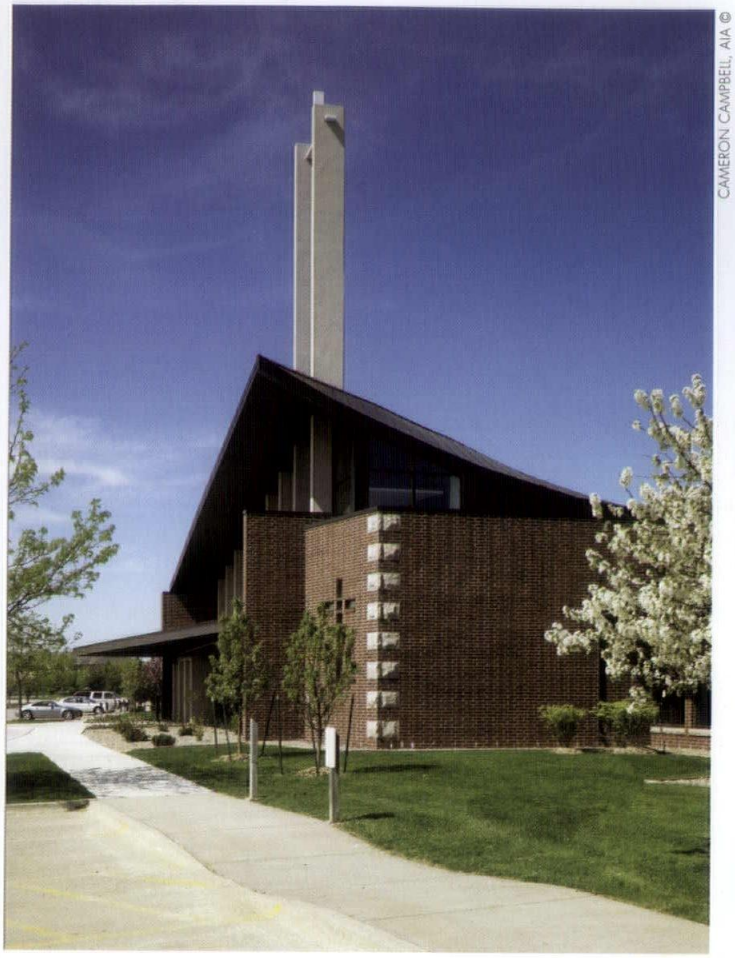
The congregation spent the next several years thinking, talking, designing, and redesigning. They began working with design architect Cameron Campbell, AIA, with form and placement, as well as connections that would seamlessly integrate a new building with the existing spaces. In 2005, the congregation approached Shiffler Associates Ar-

**Right and opposite page top left: From the outside, the structure is simple, with only a cross extending up from the peak of the window panel.**

CAMERON CAMPBELL AIA ©

**Project:** West Des Moines Christian Church
**Location:** West Des Moines, IA
**Architect:** Shiffler Associates Architects, Integrated Studio
**Design Architect:** Cameron Campbell, Integrated Studio
**Architect of Record:** Shiffler Associates Architects
**General Contractor:** Breiholz Construction Company
**Engineer:** Charles Saul Engineering
**Consultants:** Peter P. Goché, Goché Inclusions, llc., Chris Beorkrem
**Photographer:** Cameron Campbell AIA, Integrated Studio

KELLY ROBERSON



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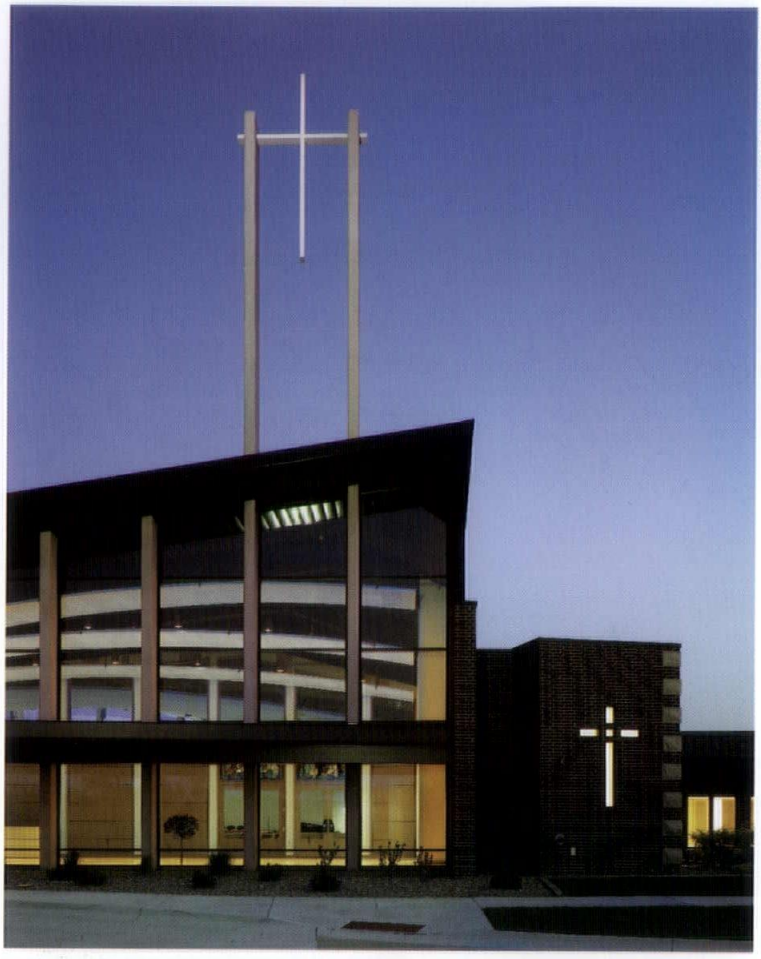

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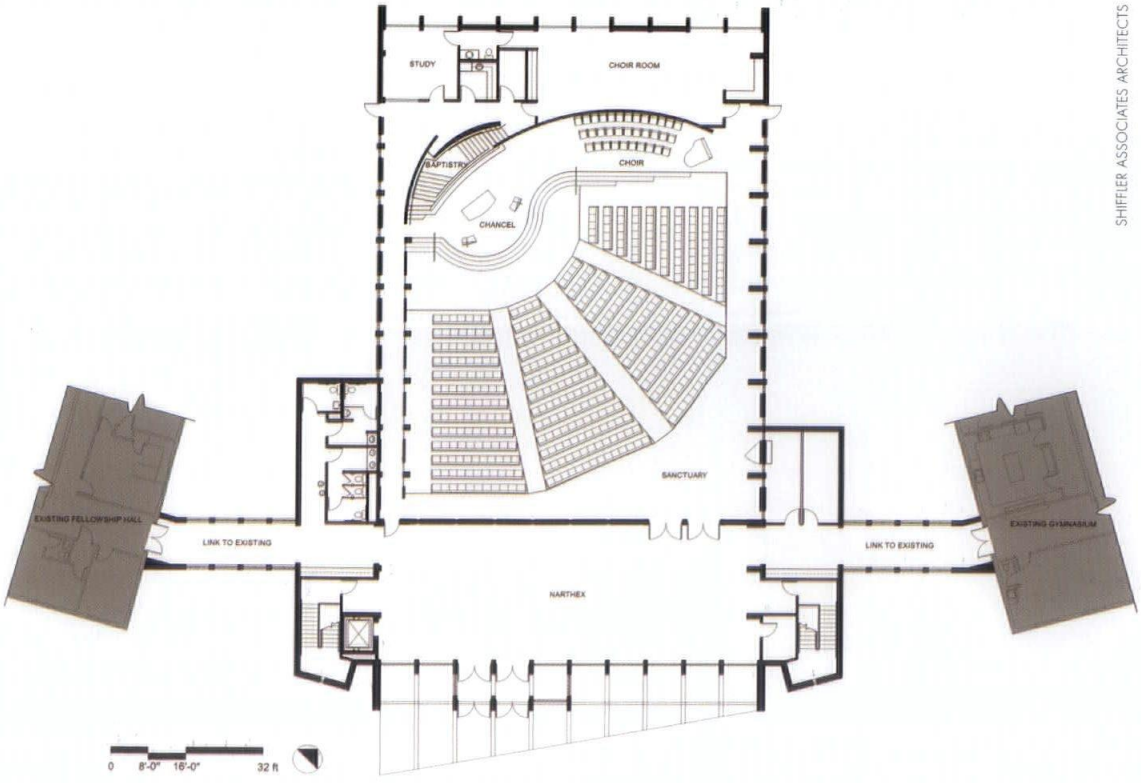



SHIFFLER ASSOCIATES ARCHITECTS

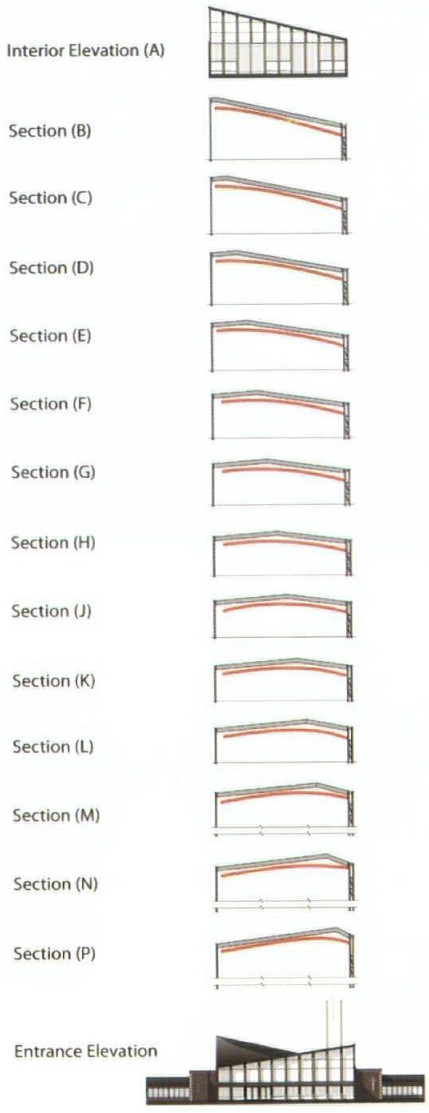
**Above: When the window panel is lit up at night, the undulating window panels add a sense of movement to the sanctuary space.**

**Left: The congregation used two smaller utilitarian buildings for several years until they infilled a central plot of land with a large building that also included a physical connection to the other two spaces.**

CAMERON CAMPBELL, AIA ©

Above: The undulating curves of the interior ceiling are hidden under an angular exterior construction that uses broad banks of windows to maximize sunlight.

Right: An interior elevation shows the shifting layers embedded into the acoustical design of the ceiling.




Series Sections Showing Roof Form and Acoustical Ceiling (in red)

SHIFFLER ASSOCIATES ARCHITECTS

chitects to help refine the project and realize the building

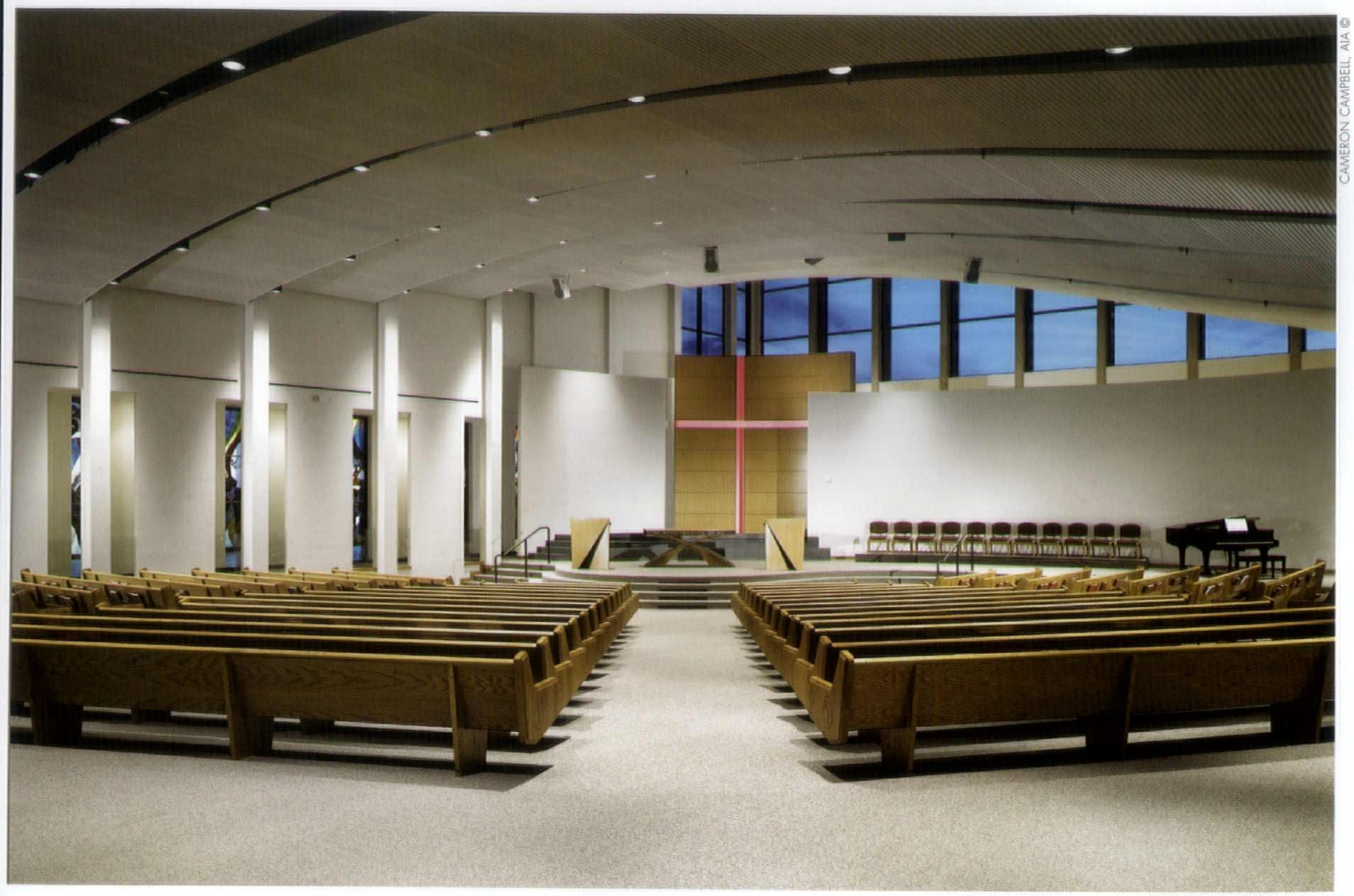
Campbell used the early process discussions as a basis for two central decisions. The first was to create a large, central building in between the fellowship hall and gym that would become the main sanctuary space, while the second was to physically connect the new space with the older two. That dynamic path diagram meant that the main entrance would be off-axis, but that the axis would be reflected in the path of travel from one building to the next, as well as in the parabolic roof plan.

The new main space itself is simple with little in the way of adornment and ornamentation. A full-height bank of windows on the main façade floods the entrance with natural light; those windows are repeated on the rear sanctuary wall, although the two are diagonal to each other. Also in the large main hall are other programming spaces, including religious offices, a choir room, and a narthex.

Inside the sanctuary itself, the architects tweaked the traditional organizational principles of religious spaces, placing the custom lectern off center and arranging pews that circle around and down a softly-angled floor. There is no crucifix, just a subtle cross, lit by LED lights and cut into a large wall of white oak that is also a backdrop to the lectern. That wall hides the pastor's office; the only other decorative elements of note are a series of stained glass windows, created by church members, which line walls behind both side aisles. In a nod to the ever-changing nature of worship today, one aisle also offers a series of openings to enable religious performances to take place.

Located just to one side of the lectern is a full-immersion baptismal, made of flamed granite. It's on a diagonal axis with the rectangular building, and is also a secondary focal point. Having put patience to work before building the sanctuary space, the congregation also integrated hope for future growth and activities into the new building by including the wiring for stage lighting. The interior is simple, which allows minimal interference with the space and its focus—a sense of spirit and worship and gathering.

Perhaps the most complex and interesting part of the building can best be seen by looking upward. Ceiling panels subtly mimic the roof form, but undulate softly from



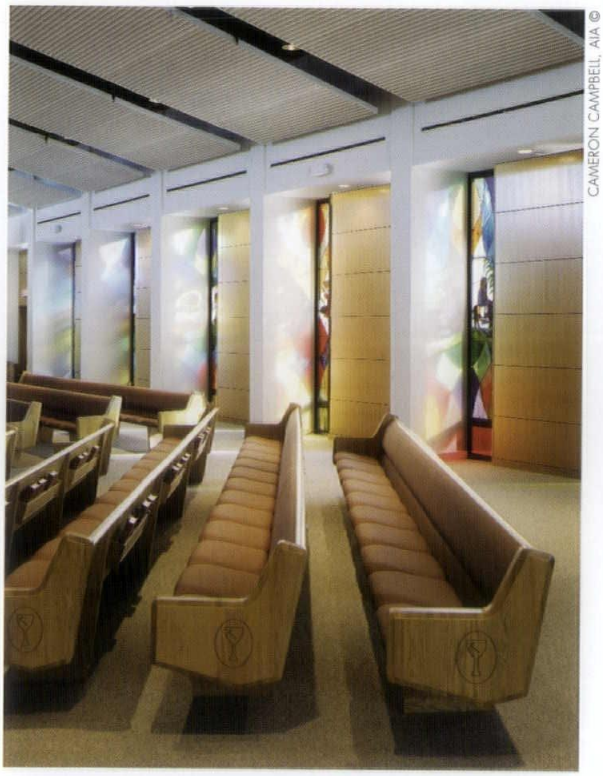
CAMERON CAMPBELL, AIA ©

CAMERON CAMPBELL, AIA ©

front to back, almost as if blown by a gentle breeze. The panels flow from one to the other in a gradual progression, which maximizes acoustics and provides dynamic movement on view from both inside the building and through the banks of windows in front and back. From the outside, the roof planes appear to diverge, but inside the space, the disparity makes perfect sense.

By investing its resources wisely, and understanding that there's no race to finish first when it comes to building the best home, the West Des Moines Christian Church has a space that's built for the here and now, and hopefully the future. It was a building worth waiting for.

—Kelly Roberson is a writer and editor in Des Moines.



CAMERON CAMPBELL, AIA ©

**Above: The interior of the main worship space slopes gently toward the baptismal font and lectern area, with a lit cross cut into the wooden backdrop.**

**Left: The lectern, located off-center in the sanctuary space, is accented by a gently curved white oak wall with an LED-lit cross.**

**Right: Simple bench-style pews circle around a slightly sloped audience section. White oak panels are alternated with congregation-made stained glass windows.**

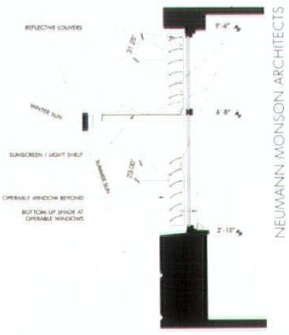
# Cool Cop Shop

## POLICE FACILITY OPENS UP WHILE GOING GREEN

*Davenport Police Facility Emphasizing sustainability and designed to replace a windowless structure, the building brings in natural light and creates a welcoming atmosphere. A community center and parking deck were included.*

**Top: The police facility floor plan demonstrates how the building was laid out to take advantage of natural light wherever possible. Virtually the only areas not receiving daylight in some measure are stairwells and rooms demanding privacy, like restrooms, locker rooms and interview rooms.**

**Below: Louvers and screens are carefully designed to maximize sunlight in the winter and minimize glare and passive heating in the summer.**




**Project:** Davenport Police Facility
**Location:** Davenport, IA
**Architect:** Neumann Monson Architects, Police Detention Specialist: Venture Architects
**General Contractor:** Williams Brothers Construction
**Engineers:** Design Engineers, M2B Structural Engineers, MSA Professional Services (Civil)
**Lanscape:** Confluence
**Photographer:** Farshid Assassi, Hon. AIA Iowa, Assassi Productions

**THOMAS R. O'DONNELL**

It was supposed to be temporary when the Davenport Police Department moved into a former auto dealership in 1978.

"Temporary" turned out to be 29 years – a long time in a cramped, windowless building. "It was not only unpleasant for visitors. It was not a very pleasant place to work," says Chris DeGroot, AIA LEED AP, of the Iowa City firm Neumann Monson Architects.

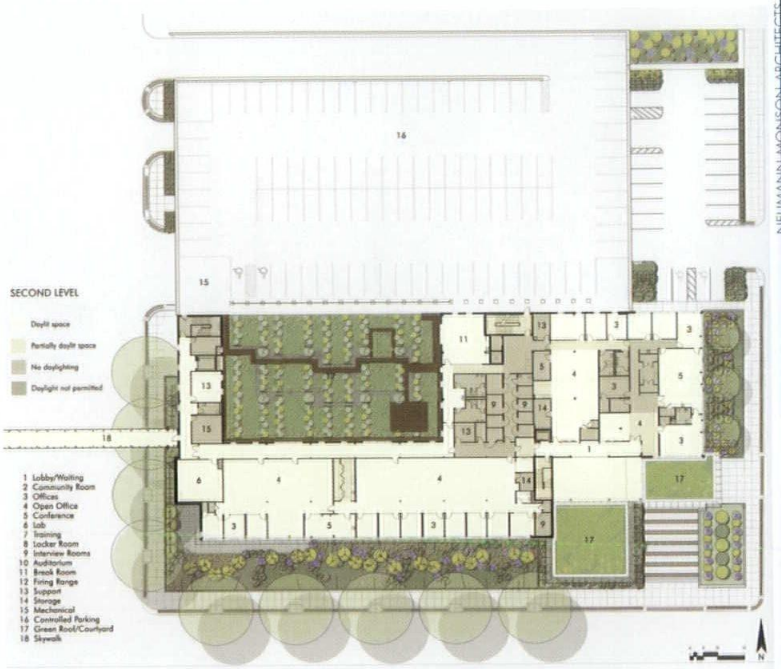
A radical change was in order, and DeGroot delivered with an energy-saving design, an abundance of glass, and an entry that welcomes visitors instead of discouraging them.

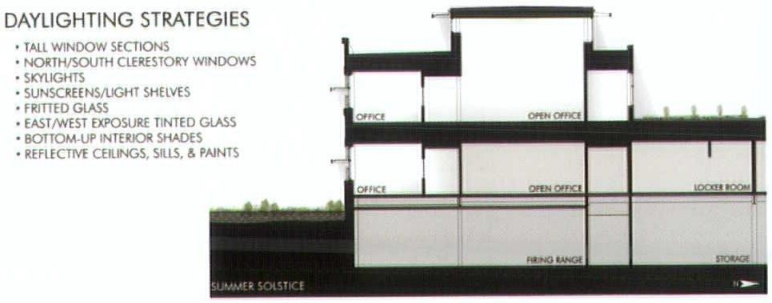
"We spent a lot of time configuring the building and designing the exterior envelope to take advantage of daylight as much as possible," DeGroot says, even though the project's size demanded a multistory building in an urban location. He and his associates tackled the task with several strategies.

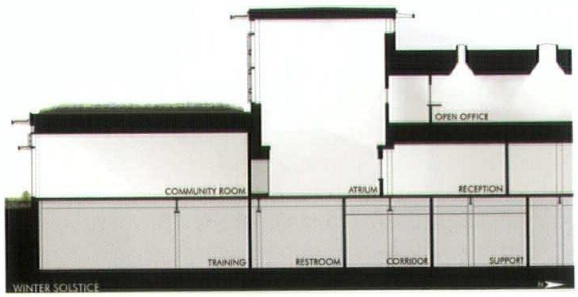
Internal functions were prioritized and those best able to use the light and natural ventilation were pushed to the outside. Offices were placed on the exterior spaces while things like locker rooms and evidence storage were located on the interior. The facility's east-west orientation maximizes the number of offices on the north and south faces to receive sunlight and take advantage of prevailing breezes for ventilation.

Ribbon windows direct light into the lower-level offices while clerestory windows along the length of the building admit light to the top level. Horizontal sun shades and louvers screen sunlight and reduce glare, allowing workers to keep their shades up most of the day. Yet, enough sunlight is admitted that the building was equipped with automatically dimming light fixtures to save energy.

Along the same lines, windows on a community room, prominently placed at the front of the building, are coated with a horizontal frit that allows views but provides privacy and screens out about 80 percent of direct sunlight. "Even though the room is pushed out toward the street and is visible on three sides from from the street, we wanted to avoid creating a fishbowl effect," DeGroot says.




The rest of the exterior is comprised of precast concrete panels on the upper levels and aluminum panels on the western face. Both include recycled content, as do the aluminum window frames.

Green roofs planted with sedum and cactus were installed above the community room and entrance and atop the upper level. The roof directs drainage to landscaped

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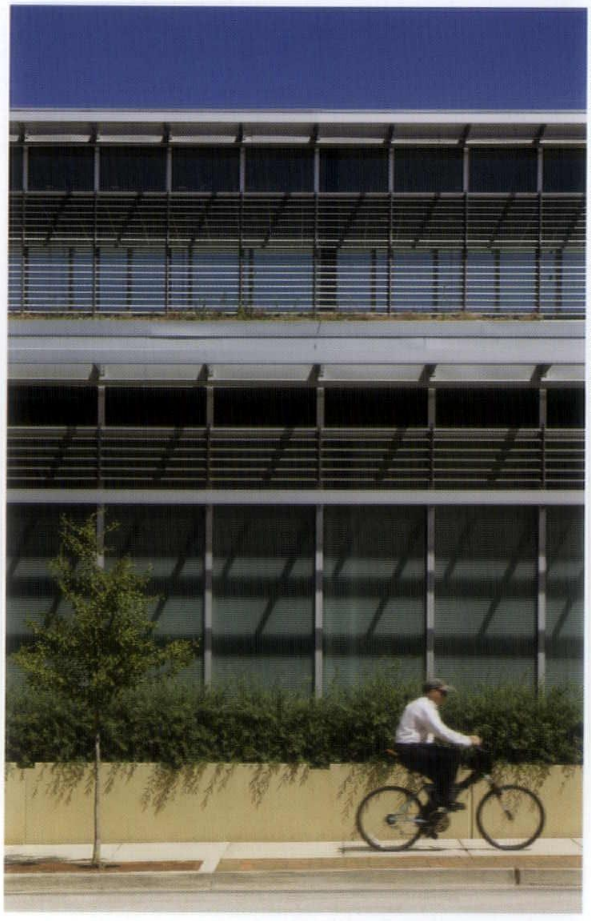

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areas for absorption into the ground cut storm-water runoff by a third.

Other energy-saving features like occupancy sensors for lighting and a high-efficiency ground-source heat pump system cut electrical consumption by 57 percent when compared to a code-based building of the same size, DeGroot says. The building was still awaiting LEED certification early this year, but was expected to qualify for at least Silver.

Overall, the building is a turnaround from the bunker-like feel of many police departments, DeGroot says: "We wanted to overcome that feeling as much as we could to make it an inviting building to the public, a part of the community with a strong civic presence, not a building which would make people feel intimidated."

*—Thomas R. O'Donnell is an Urbandale writer specializing in science, technology, personal finance and architecture.*

**Above: An atrium entry connects the community center with police offices to create a welcoming atmosphere.**

**Left: Aluminum panels with recycled content cover the police facility's west face. A skywalk connects it with the nearby Scott County Courthouse, providing secure passage for officials and prisoners.**

**Right: Louvers and sunscreens allow natural light to penetrate the building while reducing glare.**

# Rounding the Corner

A BLOCK AWAY FROM COURT AVENUE, THE ARCHITECTS OF THIS CONDOMINIUM HAD ROOM TO PLAY

*Flipping traditional loft dimensions allowed the 4th Street Condominiums to capture a view of the city. Set away from the main street, the building is free from some of the constraints of the area's architectural hierarchy and can stand to make a statement.*

One doesn't require a trained eye to recognize that the 103 year-old Proudfoot & Bird-designed Polk County Courthouse still dominates the architectural hierarchy of the downtown Des Moines Court District. Even as the factories and warehouses become restaurants, bars and residential space, the noble Beaux-Arts building informs the streetscape and influences the approach architects take when designing for the area a century later.

Des Moines firm ge WATTIER architecture, inc. has planned much of the new development in the blocks east of the courthouse, including the Court Center entertainment hub (216 Court Ave.), the Spaghetti Works remodel (310 Court Ave.) and the Marketplace Lofts (316 Court Ave.). They turned the corner with their latest residential project, the 4th Street Condos, which are set off the busy street and in close proximity to the whimsically designed Science Center of Iowa. The juxtaposition of styles in the two nearby landmarks encouraged the firm to take chances with the facade of this residential project.

"The architecture needed to by playful," principal Greg Wattier said. When designing this project, the architects wanted to keep the historical courthouse in sight, but they had more contemporary visions for the space that was once a parking lot. "We wanted to address the new urban architecture," Wattier said. "We wanted to make it look like a series of buildings."

To envelop the space, they created exterior layers and pulled them apart — carrying the thickness of the brick throughout. "It's about different materials, different planes, different colors," he said. Another parameter of the project was the decision for all 46 units to be two-bedroom dwellings, each between 985 and 1600-square-feet.

"Traditionally, in a loft you have a long, deep unit,"

CAMERON CAMPBELL, AIA ©

**Right: The architecture of the 4th Street Condominiums bridges the Beaux-Arts style of the Polk County Courthouse with the whimsy of the Science Center of Iowa building.**

**Project:** 4th Street Condominiums
**Location:** Des Moines, IA
**Architect:** ge WATTIER architecture, inc.
**General Contractor:** Hubbell Construction Services
**Structural Engineer:** JF Kintz Structural Consultants
**Photographer:** Cameron Campbell, AIA

**BRIANNE SANCHEZ**

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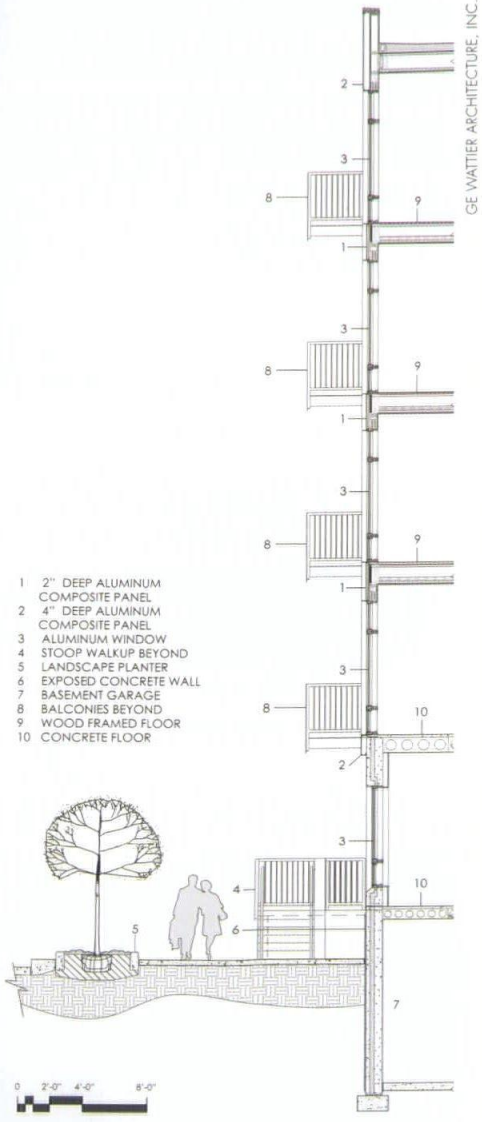


GE WATTIER ARCHITECTURE, INC.

Wattier said. "We wanted to take this building and flip it so the length is along the windows, because of the change in orientation that dictates the width of the building."

The west-facing vertical slot windows in the 4th Street Condominiums capture the glowing clock tower, framing it in view. Both bedrooms are designed around a "brown box" envelope of support space, so the living area receives the natural light and the bathrooms, closets and laundry area are tucked away.

Transparency and privacy were both goals for the living space — the master bedroom and living room are bordered on one side by a wall of windows, so a concrete plane elevates from the street and a gated concrete stoop both connects the building to, and distances it from, the sidewalk.

The interior corridor's bright colors and exposed metal cable tray are artistic and industrial, but the two largest units capitalize on upper floors by incorporating airy two-story atriums. "Here, it's all about the dramatics of the space," Wattier said.

A rooftop patio incorporates the elements of open living with a sense of privacy. The Marketplace Lofts shield the patio to the north, but the openness along the east and the west recreates the through spaces that connect the building on the first floor. On any level, the courthouse stays in sight.

*—Brianne Sanchez is a freelance writer based in Des Moines. She grew up envying her architect father's handwriting.*

**Above: Different materials, planes and colors create a playful architecture.**

**Left: Gated stoops create a platform for residents to engage with the street, but also provide a privacy shield.**

# Shedding Light

## INTRODUCING A NEW NEIGHBOR TO A SMALL TOWN USING VERNACULAR REFERENCES AND TRANSPARENT SURFACES

*The West Liberty Branch of Iowa State Bank and Trust offered an opportunity to mix rural typology and warm materials with a progressive detailing palette.*

There's something quintessentially Iowan about being a "good neighbor," but while most of us recognize what this means in daily life, is it possible for a new building to fit in while maintaining its own identity? To what extent should context determine built form, and how far can a designer go if their client wants to also project a forward-looking image?

This was the dilemma that confronted Neumann Monson's architects when faced with integrating a new branch of Iowa State Bank and Trust (now called MidwestOne since merging last year) into West Liberty, a small town a few minutes outside of Iowa City. The Bank wanted to send two seemingly contradictory messages to the community: that it was a sophisticated commercial institution and that it respected the rural traditions of the community. While the barns and corn cribs of eastern Iowa presented irresistible precedents, it was clear that a direct copy—or even an homage that was just slightly too agricultural—would send the wrong message. Neumann Monson's Dave Zahradnik recalls being asked to walk a fine line between a building that felt comfortable and exciting and realizing that simple mimicry wouldn't work.

Instead, the bank's design evolved as a conversation between rural and commercial themes. The primary move, a shed roof, provided an immediately recognizable rural form while opening the interior to northern light. This alone bal-

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**Above: The Bank's 'Front Porch' foretells the combination of warm materials and crisp detailing within.**

**Left: The shed roof is expressed externally with a zinc, Bermuda-style roof with intentionally 'agricultural' detailing.**

**Right: Underneath the branch's shed roof, the main lobby incorporates traditional and contemporary materials. A corn stove in the fireplace combines energy efficiency with a direct nod to the region's agricultural economy.**

**Project:** Iowa State Bank & Trust
**Location:** West Liberty, IA
**Architect:** Neumann Monson Architects
**General Contractor:** Knutson Construction Services
**MEP Engineer:** Design Engineers
**Structural Engineer:** Neumann Monson Architects
**Landscape:** Shoemaker & Haaland
**Photographer:** Farshid Assassi, Hon. AIA Iowa, Assassi Productions

**THOMAS LESLIE**

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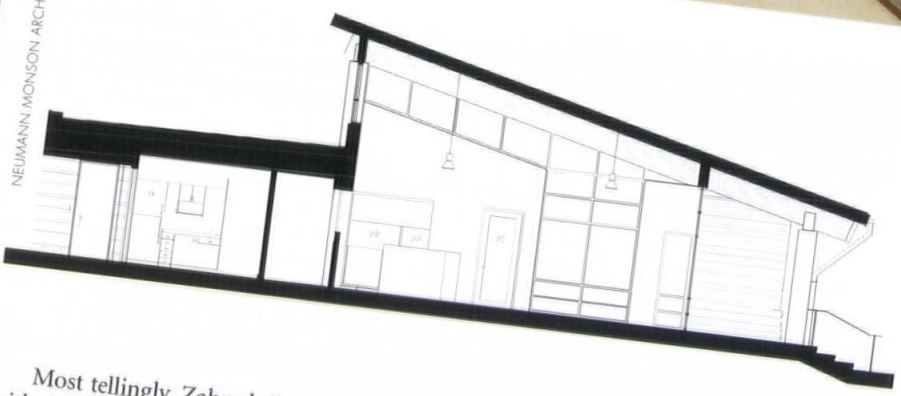


NEUMANN MONSON ARCHITECTS

anced form with performance, adding sustainable, efficient daylighting to the bank's main space. Inside, the designers exposed the shed's timber structure, but chose glu-lam beams, which offered a cleaner, more honed finish while still adding a note of warmth to the interior's palette. A limestone fireplace continues the warm, almost domestic palette, but tile floors and precise, clean detailing add a more refined, commercial feel to the space.

Around the main lobby, offices and service spaces are arranged to accommodate functional needs while gently enclosing the public area. The result is a modest, well-serviced interior that, in Zahradnik's interpretation, calls to mind a small-town country store where customers can linger and feel at home. But this comfort is complemented by expanses of glass and expressed concrete and metal, and the furnishings and fixtures likewise make it clear that the bank is as much about commerce as it is about tradition. Custom-printed sepia prints of local historical markers make a more explicit gesture toward the bank's integration with the community's traditions and culture.

Most tellingly, Zahradnik recalls a long conversation with the clients about the fireplace and their original suggestion that it incorporate a traditional pot-belly stove. That idea seemed over-the-top, but, in the end, Neumann Monson specified an energy-efficient corn stove, built into the limestone hearth and used consistently during winters. This, combined with a "front porch" that is as much about sun angles as it is about a welcoming gesture, and a zinc roof that combines a traditional material with contemporary detailing, tells its own 'good yarn' about time-honored ideas being updated with 21st century execution.

*—Thomas Leslie, AIA, teaches architectural technology and design at Iowa State University.*

**Above: While the lobby functions as a 'living room,' it also offers highly finished and efficient teller services.**

**Left: Conference rooms and offices resolve the dialogue between rural and commercial materials, details, and forms.**

**Right: In section, the Iowa State Bank and Trust Branch easily balances lighting, spatial, and typological concerns with a shed roof and strategically placed glazing.**

# Material Surround

## STONE BROOKE 3 (BLUE MOON DUELING PIANO BAR)

*"Organized around a large, central double-height space with glass on the east and west, this central volume provides clear communication between parking to the west and the plaza to the east. Views are maintained by keeping program space (kitchen, bar and restrooms) pushed to the north and south, framing the central hall."*
*– Evan Shaw, AIA*
*(project architect)*

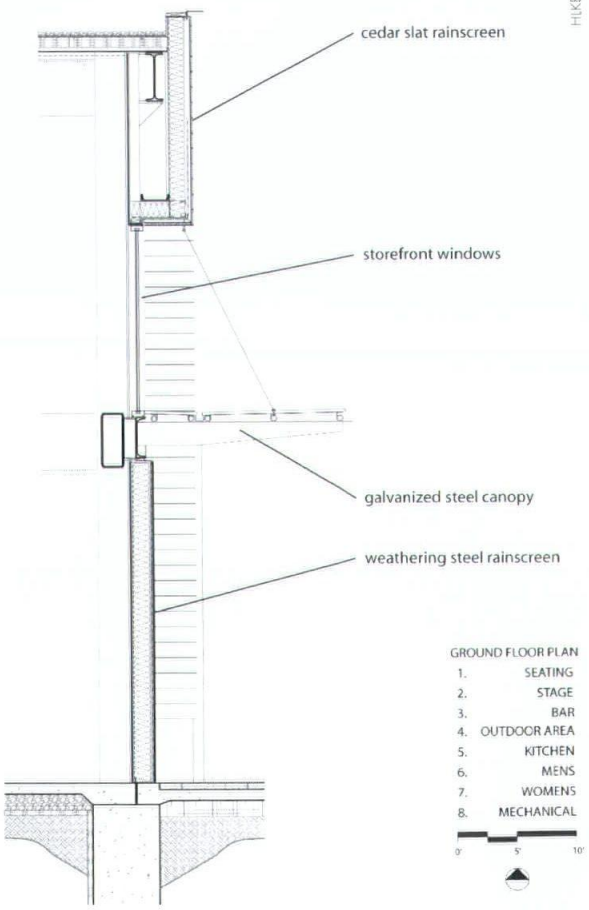
When thinking about design, one is confronted with a fundamental paradox: it simultaneously encourages and resists making specific to human activity. The characteristic is pervasive. It is a quality found in individual inquiry as well as in the collective oeuvre of our discipline. While design promotes innovation and adores ideas of bodily engagement, it has become reliant (almost exclusively) on various means of production which privilege standardized information with regard to human criteria over that which is particular and sincere. It is a product of the deducible context of contemporary culture and building. This paradox, in a sense, explains the evolution of speculative development – in this case, Stone Brooke 3.

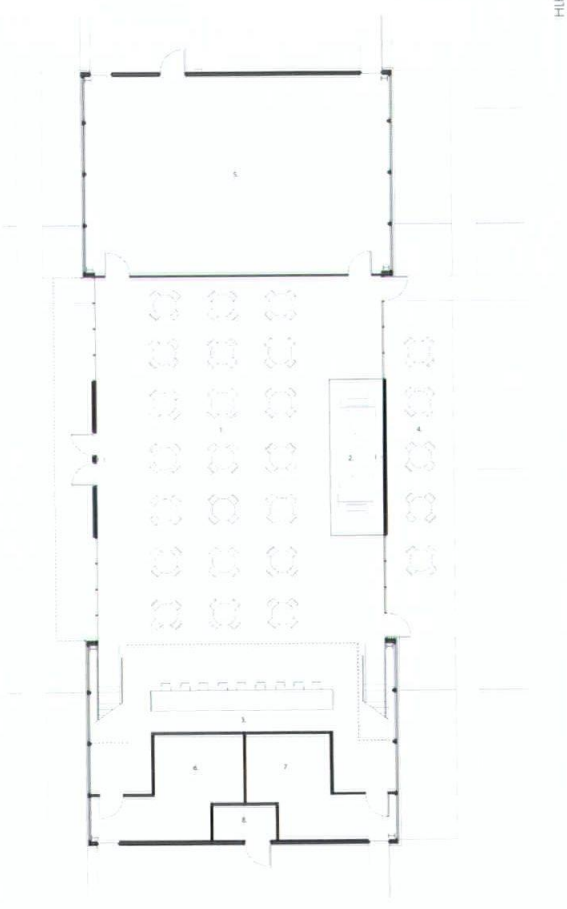
The 5,700 square foot facility, designed by HLKB Architecture, is situated in a planned urban development known as West Glen Town Center in West Des Moines, Iowa. The building title, Stone Brooke 3, refers to the particular section of this development on which it was constructed. It was designed as a speculative 'shell' building – a type of construction void of any interior finished space. Through ongoing preparation, a tenant for the space was secured and a skeletal notion of the required spatial arrangement was considered which lead to the production of a building with a central hall and adjacent support space enclosures. The tenant is Blue Moon, a dueling piano bar and faux alley stage set. Support spaces included a bar, a kitchen, restrooms and a mezzanine level VIP lounge.

The building enclosure, referred to as 'the envelope' or 'the shell' was to be constructed for the same cost associated with other buildings in the same development. The envelope consists of a cedar slat rainscreen system on a composite metal stud wall and steel frame assembly. Views and natural light are provided via storefront windows. A weathering steel rainscreen system at the entry and end elevations provides directional relief to the horizontal cedar

**Left: Wall section showing cedar slat rainscreen on composite metal stud wall and steel frame assembly.**

**Right: Lower level plan showing central hall and adjacent support space enclosures.**




**Project:** StoneBrooke 3 (Blue Moon)
**Location:** West Des Moines, IA
**Architect:** HLKB Architecture
**General Contractor:** Larson & Larson
**Structural Engineer:** Raker Rhodes Engineering
**Photographer:** Cameron Campbell AIA, Integrated Studio

PETE GOCHÉ

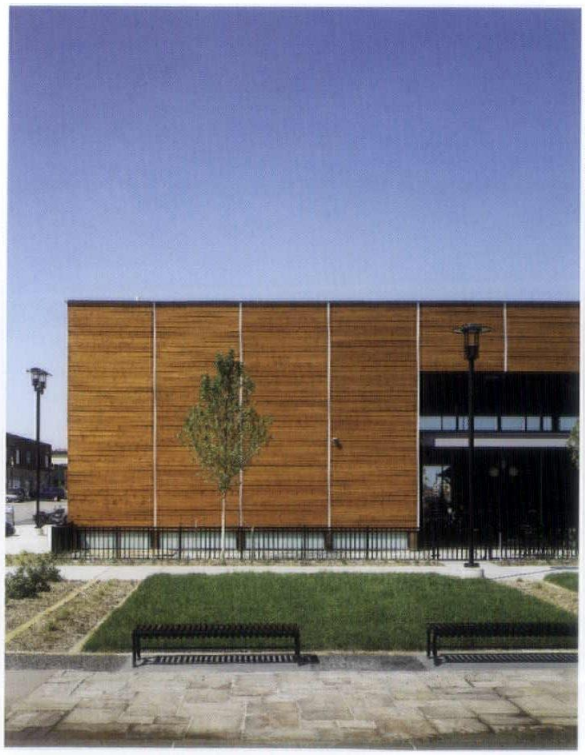
CAMERON CAMPBELL, AIA ©

siding. A set of horizontal windows was incorporated at grade along the cedar slat walls to allow additional daylight to wash the floor of the support spaces.

The bulk envelope is an intensely rational box with crisp detailing. Floating on the lower story glass, it tends to separate itself from its context as much as its occupants. Its sheer honesty of assembly is unique in such an environment and is to be commended. It is quite beautiful.

That the 'envelope' merely implicates the arrangement of interior spaces is problematic, and thus facilitates the deducible context of contemporary culture. The cultural contributions of our discipline are fundamentally better when all aspects of design are understood as an integrated whole. To this extent, the design autonomy of Stone Brooke 3's envelope provides important lessons with respect to financially viable alternates and aesthetic value to the development of such planned urban environments. Additionally, it provides a spatial logic that begins to integrate the exterior with the interior arrangement of rooms (and human activity) specific to daylight – a potential not yet realized by its current tenant.

*—Peter Goché is an artist and architect native to Iowa.*



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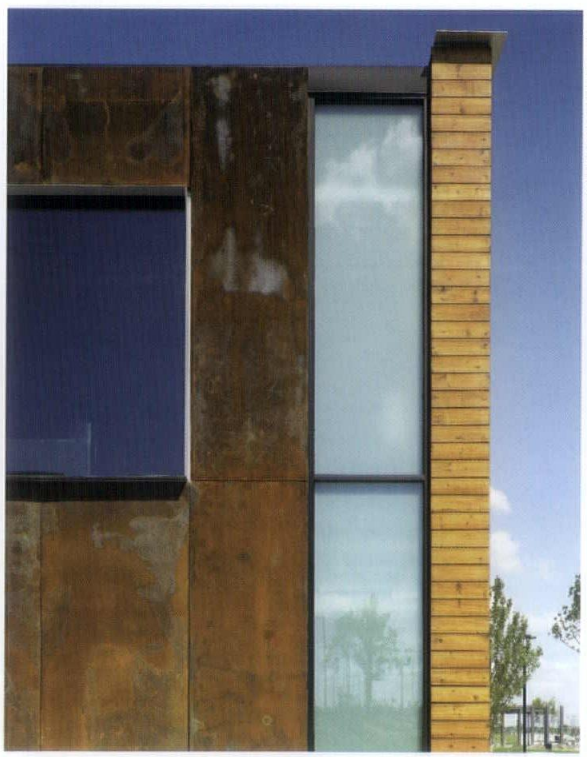

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**Above: Building elevation showing compositional arrangement of material assemblies.**

**Left: Partial elevation showing the general material assembly floating on the lower story glass.**

**Right: Detail showing the crisp rational of the exterior enclosure.**

# Midwest Modern

## A LOW-SLUNG BIG BOX GETS A HIGH-IMPACT MAKEOVER

*With simple steps and small additions, OPN Architects remakes a nondescript factory building.*

There are icons of the past that still form the imagery of the present in the rural countryside. Barn. Silo. Farmhouse. Neatly platted squares of farmland. And, the tractor. Even as technology and scale continue to shape and reshape the agricultural future, the tractor remains an essential component of the state's landscape.

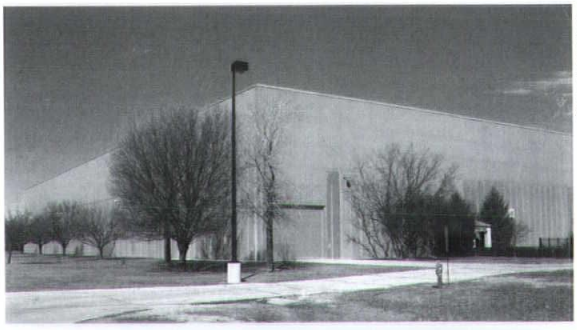
It is the green-and-yellow painted tractors of John Deere that may be the most iconic of them all. But, the factory/warehouse in Moline, Illinois that the company hoped to convert into offices was anything but. The John Deere Harvester Works was a windowless, metal-and-concrete big box, accented only with a small canopy and big garage door. The challenge for OPN Architects was not only to convert the interior of the two-story space into workable, welcoming offices, but to give the exterior envelope presence and definition.

To accomplish that, there were two available options: take the metal skin off and re-skin the building or add an additional exterior skin that also highlighted specific program spaces inside, which was considered a more sustainable path. The firm chose the latter, constructing a unique envelope-within-an-envelope that integrates essential, traditional materials into the fabric of the building.

The new exterior draws focus to one corner, the main public entry, with a two-story height window wall on one side and pathway/door on the other. The large window acts as pseudo-signage/billboard, says Danielle Hermann, AIA, project architect with OPN Architects. From outside the window, the newest combine-turned-statue is on view within the expansive lobby.

With its outsize stature and bright red frame, the 40-foot-tall window breaks up the monotony of the existing wall and allows the integration of a new material—weath-

OPN ARCHITECTS

OPN ARCHITECTS

**Left: The plain concrete-and-metal building left little to desire in exterior appeal.**

**Right: The back half of the building holds most of the working spaces while the front half is more public with a lobby and conference room that form a slot down the middle.**

**Below: A 36-foot-tall window breaks up the expanse of one side of the building, with red weathered steel breaking up the neutral color palette.**

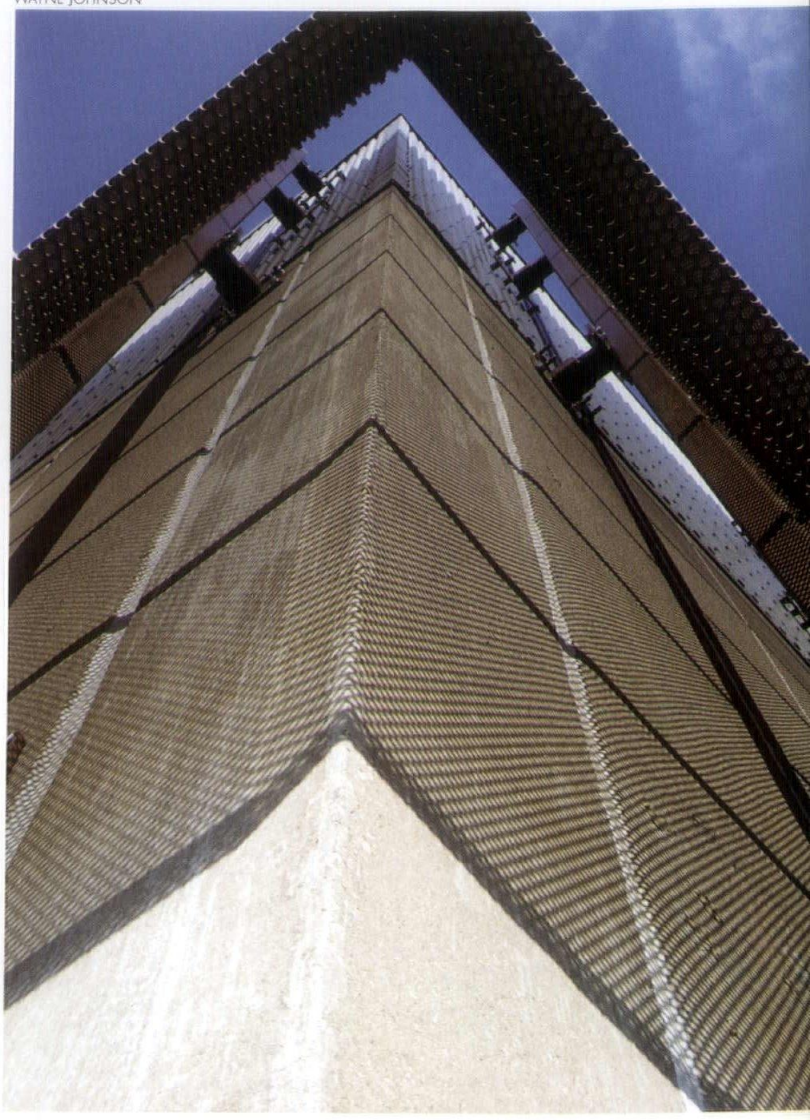
WAYNE JOHNSON

**Project:** John Deere Harvester Works
**Location:** Moline, Illinois
**Architect:** OPN Architects
**General Contractor:** Curry Construction
**Engineer:** KJWW Engineering Consultants
**Photographer:** Wayne Johnson

**KELLY ROBERSON**

WAYNE JOHNSON

WAYNE JOHNSON



WAYNE JOHNSON

ered steel—and colors into the rest of the building. A small strip of windows continues on the adjacent wall, allowing just a bit of natural light to pass into the interior. Sustainable features include high-performance glass, exterior sun screens, corn-based carpet products, and sorghum-board casework. Inside the lobby, in view of the window wall, is a small conference room, created with slatted wood to recall a barn/corn crib aesthetic but using electrified glass—a more modern material—as its exterior envelope. "Everything used in the building relates back to the farming industry," says Hermann. "Nothing was added that doesn't speak to something that was made or that happened in the interior."

While it seems a simple, almost sparse project—there were not an abundance of things added or changed—specific items highlight functions or directly recall important moments for the company: oversize, historic images in the lobby, rows of tractor seats to serve as benches embedded into a low wall in the building's approach. All in all, it's a renovation that's very much in keeping with a Midwestern mindset: Functional without being ostentatious, but subtly and richly enveloped in its heritage and future.

*—Kelly Roberson is a writer and editor living in Des Moines, Iowa.*

**Above: Weathered steel, an iconic material in the culture of rural American, wraps around a corner of the refurbished building.**

**Left: From outside the building, the window acts as a frame for the newest combine.**

**Below left: All public spaces, including the window wall, are two stories high.**

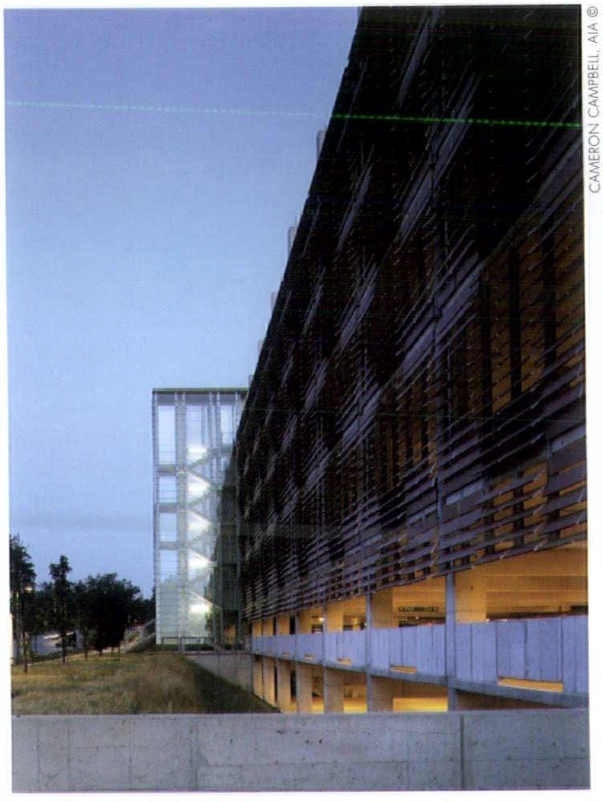
# Simple Boxes and Elegant Screens

## A STUDY IN MATERIALS, CONTEXT AND NEIGHBORLY BEHAVIOR

*HLKB adds an addition to its Melrose Avenue ramp at the University of Iowa and further refines its strategy of making great parking structures.*

*There is an idea abroad among moral people that they should make their neighbors good. One person I have to make good: Myself. But my duty to my neighbor is much more nearly expressed by saying that I have to make him happy if I may.*
Robert Louis Stevenson

Parking garages often elicit the worst sorts of reactions from people, especially neighbors. They are generally considered a necessary evil, to be hidden or disguised if possible. HLKB Architecture has taken on the challenge of these utilitarian buildings as something of a specialty that has won them national acclaim. Their approach uses a straightforward process that doesn't disguise or hide the building's function.



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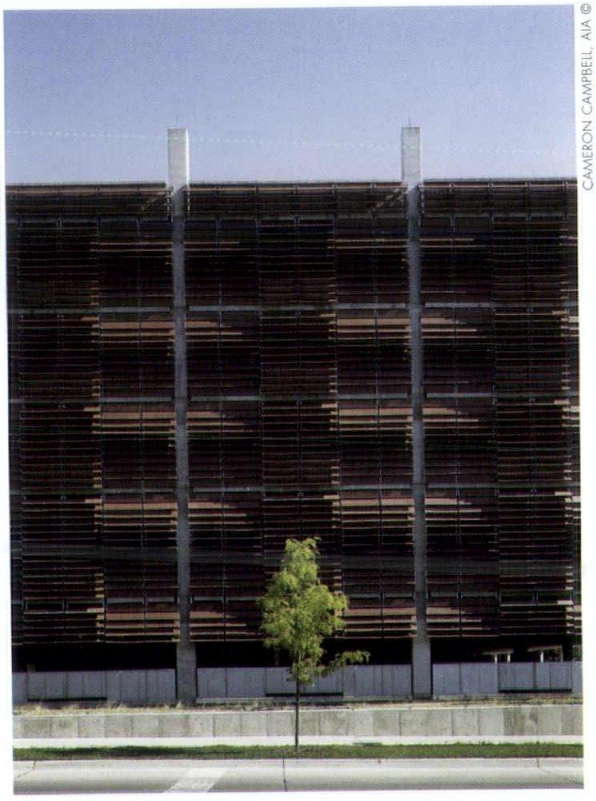

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**Left: View to the west along the terra cotta panels. The gap at the base reinforces the screen quality of the cladding. The south glass stair tower in the distance marks the entry to the internal walkway.**

**Right: Detail of the terra cotta panels. Extensive study was done to ensure light cutoff while maintaining view and ventilation. The scale and materials of the cladding solution create an amicable neighbor to the residences facing this elevation.**

**Project:** Melrose Avenue Parking Garage Addition
**Location:** University of Iowa, Iowa City, IA
**Architect:** HLKB Architecture
**General Contractor:** McComas-Lacina Construction
**Parking and Structural Consultants:** Walker Parking
**Photographer:** Cameron Campbell AIA, Integrated Studio

**JASON ALREAD**

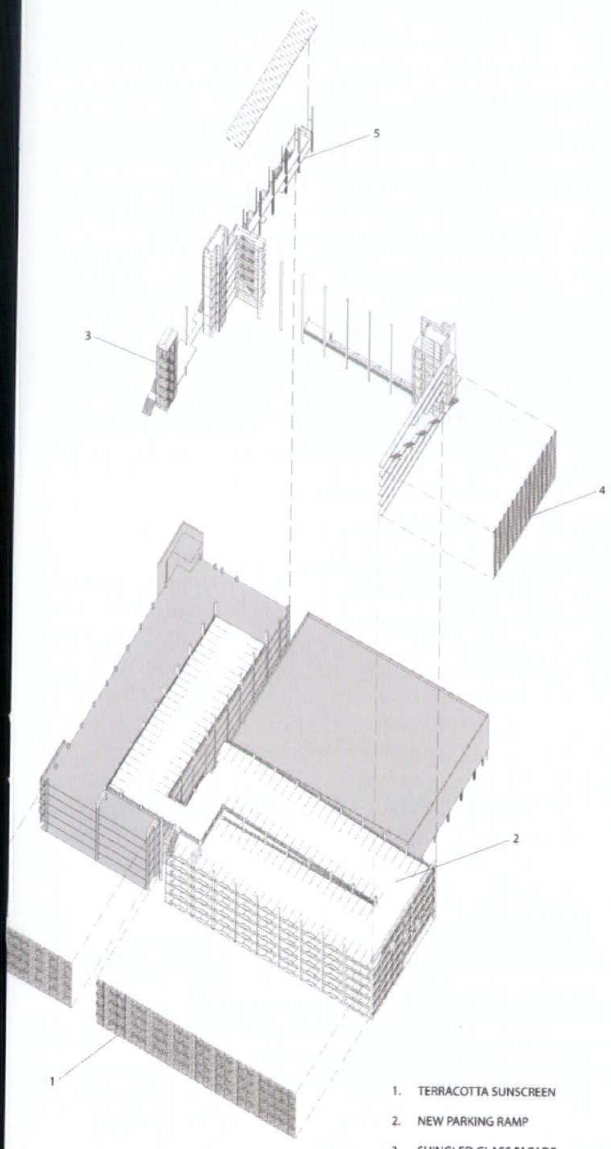
The strategy consists of three parts:

1. Make the parking box simple – really simple.
2. Pull all of the elements that are not parking outside of the box.
3. Clad the box in an interesting way.

The original Melrose Avenue parking structure was done in 1998, the second in the series of garages by HLKB after the U of I North Campus Parking Garage, and it executed this strategy with glass circulation towers and stainless steel cladding. The project solidified the refinement of the simple box strategy and was the model used for subsequent HLKB parking projects. The only difficulty with the building was that the reflections from the stainless screens were causing glare and unhappiness for the residential neighbors to the south.

The addition to the original structure went through an extensive schematic design process to ensure it would fit into a tight site and not offend the surrounding community. The building extends the garage addition to the west, in front of the university Field House building. A passage slot is maintained that allows movement through the project, between the existing and new garage, adjacent to the Field House, and into the hospital circulation. This is a beautifully designed multilevel alley of space, entered next to one of the main glass circulation stairs and proceeding into the hospital skywalk system. The other circulation system runs along the east side of the project at the end of a lap sided glass wall with a cascading stair behind. The movement here is layered between the ventilated glass, movement of occupants and the cars behind. This may the most successful of the glass garage screens HLKB has recently done, punctuated by a terra cotta clad elevator tower at the north end of the project.

The real design challenge of the project was the south side which faced the residential neighbors. Project designer




1. TERRACOTTA SUNSCREEN
2. NEW PARKING RAMP
3. SHINGLED GLASS FACADE
4. SHINGLED GLASS STAIR TOWER
5. NEW WALKWAY

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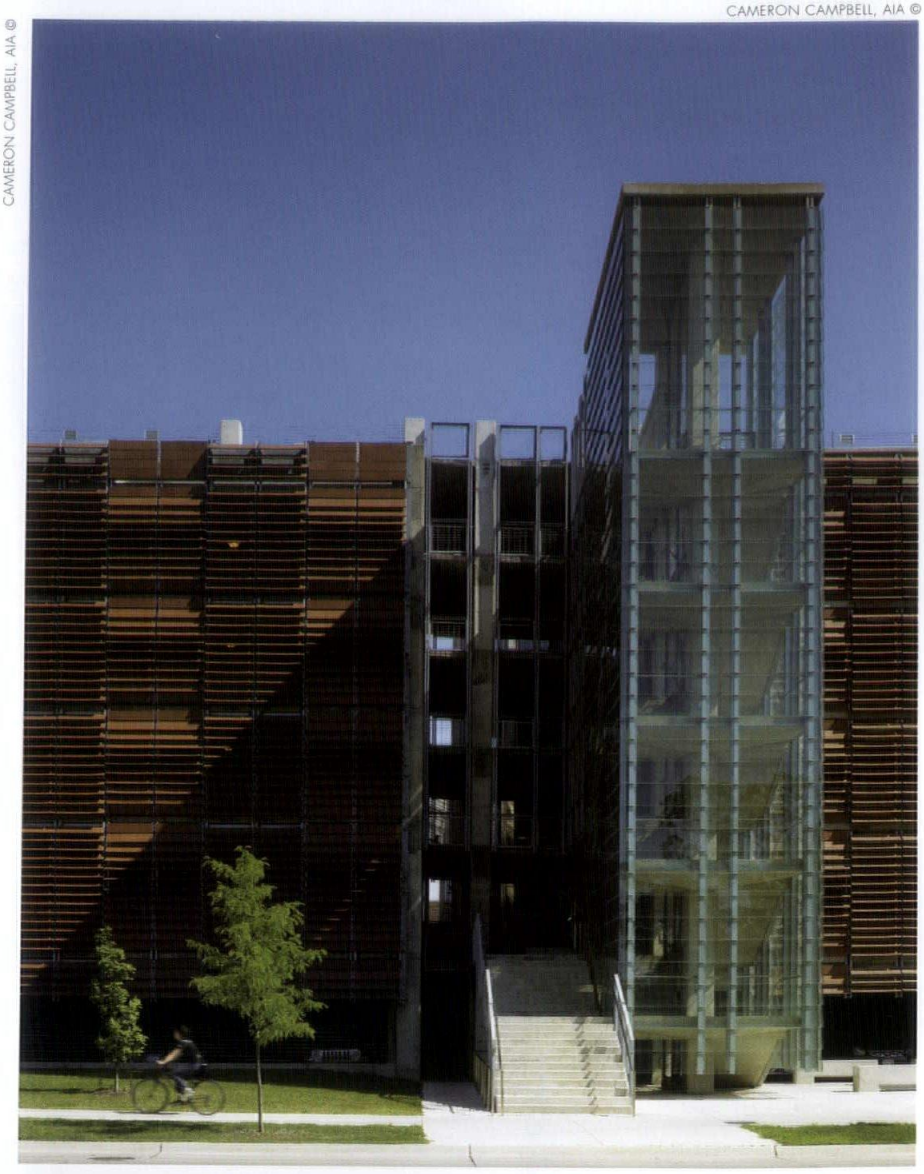

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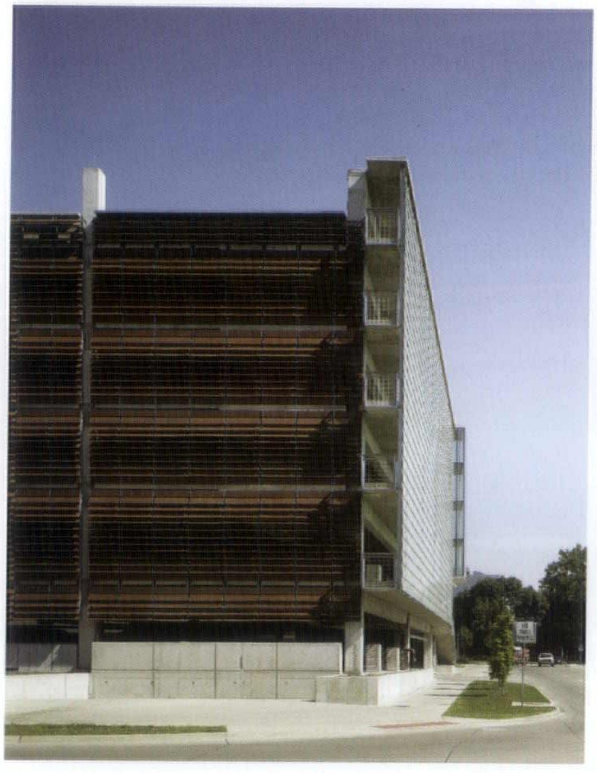


Khalid Khan arrived at a solution that uses terra cotta panels in a screen that varies the angles of the assembly to dramatic effect. The wave of openings follows a logic that serves a number of critical functions. The top panels at each level are mostly closed to occlude light escaping from the garage. The middle panels open to provide light, view and ventilation to the parking behindwhile the lowest panels are closed to block headlights from shining out. The pattern varies to more open where parts of the concrete structure blocks light. These fit within a bay system that is broken down to the module of car parking spaces and then the panels themselves are further broken down within each bay, maintaining a material and scale sympathy with the surrounding brick structures. This cladding is the most ambitious yet of the HLKB parking garages and makes the project both honest about its intentions and contextually friendly. It makes itself good and its neighbors happy, a truly admirable achievement and the next level of success for HLKB's parking approach.

*—Jason Alread, AIA, is an Associate Professor of Architecture at Iowa State University, a Principal at Substance Architecture in Des Moines, and the co-author, with Thomas Leslie,*

**Above: View to the south entry at the gap between the new and existing projects. The older garage on the left was re-clad in terra cotta to match the new project. The stair tower has a shingled glass exterior that promotes ventilation.**

**Left: The garage extension covers the south end of the existing field house and continues the parking loop from the original garage. The south elevation is clad in terra cotta and the east in glass with a cascading stair behind.**

**Right: View of the southeast corner of the project. The cladding changes to glass facing east, and car entry occurs under this floating plane of stair circulation.**

# PORTFOLIO

BY EVAN SHAW, AIA

## University of Arkansas, Garland Avenue Bookstore and Parking
### HLKB Architecture

HLKB Architecture is in the process of designing a mixed-use development at The University of Arkansas, Fayetteville, which includes: a parking facility, bookstore, and retail strip. The client requested that the new complex respond to the materiality of the existing architecture on campus, consisting primarily of brick buildings, while providing an energy efficient facility that aspires to be equivalent to a LEED Silver certification–an example that all buildings can be environmental stewards.

A progression on the firm's previous experience with the typology, HLKB decidedly clad this parking facility, in neighborly fashion, with terra cotta baguettes such that the scrim of the envelope is used to provide privacy during the day and safety at night. The bookstore is also planned to be clad in terra cotta. The overall composition of this complex is drawn together by intermediate hard-scape spaces carved in anticipation of people inhabiting and interacting with each other during their every use.

## Exira Public Library
### OPN Architects

Exira is planning a renovation of their current library that will include an expansion and restoration of two store-front buildings in an effort to revitalize their main street. The concept for the design is to restore the shell of the buildings and create an envelope that is defined by the exposed, original material palette which also serves to unite the buildings through this character. To connect the previously separate spaces, arched openings will be punched in a rhythmic march down the central masonry wall and will provide cross axis circulation paths. This shell envelops new, minimally added library objects that contrast their envelope. The circulation desk and other utility functions are centrally located to form a core that also defines the library's main programmatic areas. The young adult section and the program room, which are widely-used dynamic areas, are located at the front of the building to activate the main street storefront elevation.


## MidAmerican Energy Iowa State Fair Exposition Building
### Architects Smith Metzger

Architects Smith Metzger's design for a new building on the Iowa State Fair Grounds is being constructed in concert with a 500 kW wind turbine. The project will educate the public about renewable energy, wind turbine technology, and MidAmerican's commitment to renewable energy. Building displays will demonstrate real-time power generated by the turbine and provide additional information regarding its design and construction. The turbine is forecasted to produce the equivalent of about 25% of the entire state fair's annual energy usage.

The partially buried architecture engages a 22-foot-diameter rain garden for storm water management. Geothermal heating and cooling, state of the art glazing,and sensitive site design conspire for an anticipated LEED Gold rating.

# JOURNAL

BY DANIELLE HERMANN, AIA

## Mankins Elected to National Board of Directors

During the AIA's Central States Regional meeting in Kansas City last October, Iowa architect Paul D. Mankins, FAIA was elected regional director representing the Central States of Iowa, Kansas, Missouri, Nebraska, and Oklahoma on the national board of directors for the AIA. In this role, Paul will shape and guide policy for the Institute and its 83,000 members for the next three years.

Paul is one of the founding principals in the Des Moines firm Substance and a frequent design instructor in the Department of Architecture at Iowa State University. Over the last two decades he has contributed significant time and energy to advancing the profession. He served on the board of directors for AIA Iowa from 1994 through 2000 leading that organization as president in 1999. In addition, he served on the editorial board of the Chapter's acclaimed magazine, *Iowa Architect*, from 1987 through 1997, serving as editor from 1994-1997. In 2003 he was the first Iowan to receive this award the Young Architects Award from the AIA, and, in 2004, he was admitted to the College of Fellows. ●

## Harms Elected to National Associates Committee

Katie Harms, a recently licensed architect with OPN Architects in Cedar Rapids, Iowa was elected the Central States Regional Associate Director to serve on the AIA National Associates Committee last October at the Central States Regional meeting in Kansas City.

Katie has contributed to the AIA in many ways, including service as the associate director to the AIA Iowa Board and chair of the Iowa Emerging Professionals Committee. She was also elected in October 2008 to be the advocacy director to the National Associates Committee. ●

## Iowa State University Continues Tradition of Excellence

Iowa State's programs in landscape architecture, interior design and architecture are among the top 15 in the nation, according to a survey of practitioners by *DesignIntelligence*, a bimonthly publication for leaders in design professions. The magazine's annual report, "America's Best Architecture and Design Schools," is the only national college-ranking survey that focuses exclusively on design.

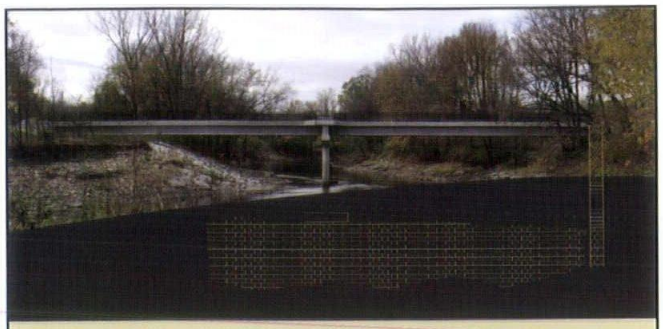
Additionally, two of the ISU Architecture Department faculty are receiving accolades. David Block, professor of architecture, received the Educator Award from the Iowa Chapter of the American Institute of Architects at its annual convention in September 2008. The award recognizes individuals for their contributions to architectural education in Iowa. Mitchell Squire, associate professor of architecture, will receive a 2008-09 Creative Achievement Award from the Association of Collegiate Schools of Architecture at its annual meeting in Portland, Oregon, in March. He is being honored for his "positive and stimulating influence" on Iowa State students through the course he created, Craft and Crafty Action: On the Relationship between Creativity and Mischief. ●

## AIA Iowa Diversity Committee: Vision + Action


The newly formed AIA Iowa Diversity Committee is a formal continuation of the Diversity Task Force and was voted into existence in mid July of 2008. It represents AIA Iowa's commitment to fostering diversity and promoting the benefits of a diverse profession. It also puts our chapter at the forefront of this effort, joining only a handful of other states to have committees dedicated to the success of diversity as one of the three major strategic initiatives of the American Institute of Architects (joined by sustainability and integrated project delivery).

The committee's mission is to explore and address relevant issues related to diversity within the Iowa architectural community and make recommendations toward and actively assist in the development of programs and initiatives that foster and sustain cultural breadth and inclusion. In particular, it will focus on areas in which the AIA Iowa Chapter could provide unique contributions in matters of diversity.

Committee members have been assembled based on their understanding of the issue and their previous and ongoing commitment to the objective of diversity within their professional arena. The composition of the committee itself reflects the diversity of the Iowa architectural community and will continue to strive for representation of the diverse society we serve. For more information, visit the AIA Iowa website and click on the Diversity Committee's featured link. ●







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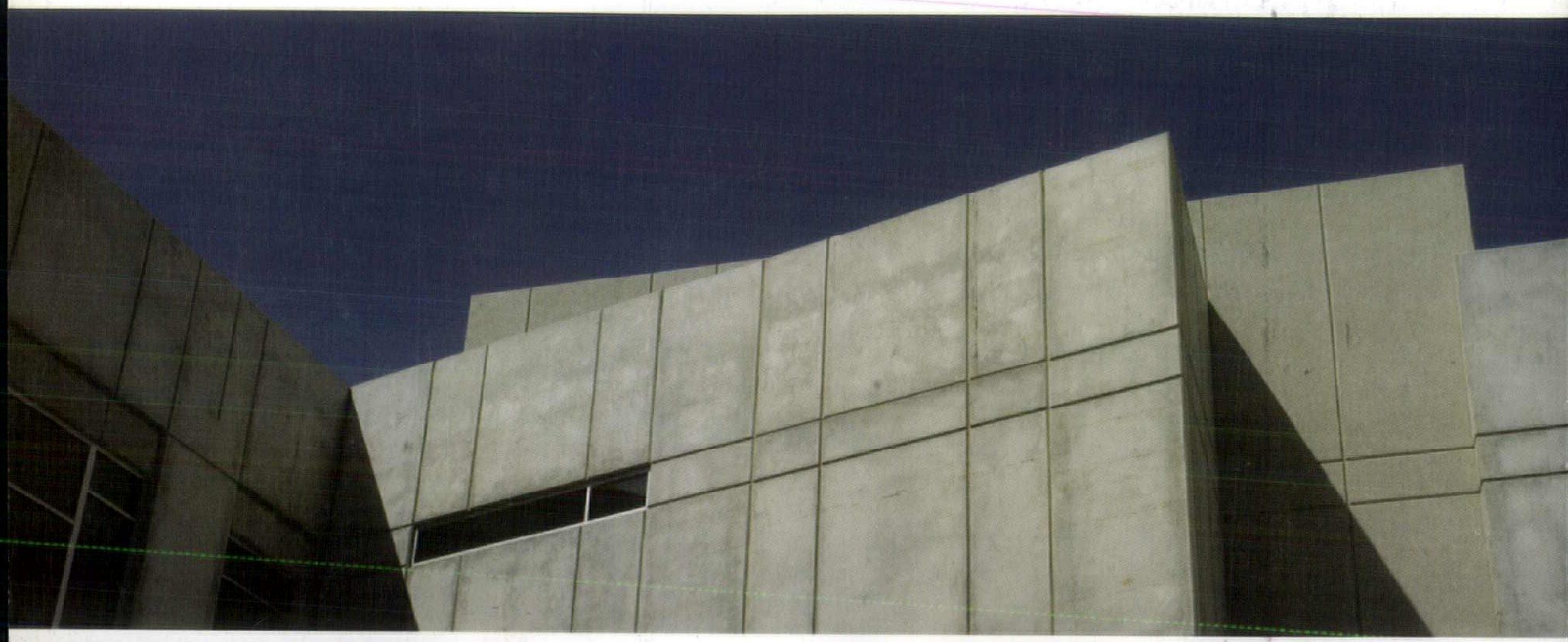

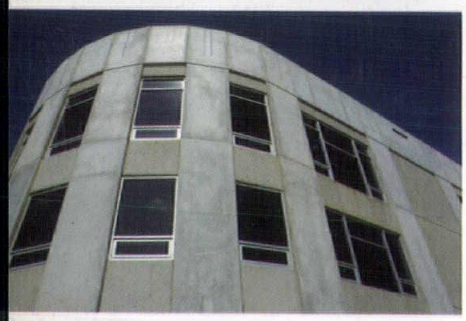

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