

ARCHITECTURE

sd

# green

*The Greening of South Dakota*

**Sustainable Cities**

Prairie Windpower

**Geothermal Potential**

*Landscape Strategies*

AND MORE

# LEADING THE WAY

In 2007, industry leaders partnered with South Dakota State University to study the feasibility of establishing the state's first professional architecture program. Two years later, the South Dakota Board of Regents approved SDSU's request.

Four firms and one individual have already made commitments as "founding" members, providing financial support to launch this new and transformational program. The first department head has been hired and the first students will enroll in the program in September. South Dakota State University thanks the industry leaders (Architecture Incorporated, TSP Inc., Perspective and Koch Hazard Architects and 1958 alumnus Jerry Lohr) for their foresight, leadership and investment.

Additional industry partners are still being sought to support the Architecture Department. Contact the SDSU Foundation at (888) 747-7378 or [info@sdsufoundation.org](mailto:info@sdsufoundation.org) to learn how you can become a "founding" member or "benefactor" of SDSU architecture.



Representing the founders of the new architecture program at SDSU are: Elizabeth Squyer of Architecture Incorporated; Larry Crane of Perspective, Inc.; Jerry Lohr '58, president of J. Lohr Properties and J. Lohr Winery; Sean Ervin of TSP; and Jeff Hazard of Koch Hazard Architects.

This advertisement was paid for by the South Dakota State University Foundation.



SDSU  
FOUNDATION



# AIA

# Architecture SD

## AIA South Dakota

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or

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## MarCom Award



The first issue of *Architecture:sd* won a MarCom Gold Award. The award program is sponsored by the Association of Marketing and Communication Professionals and is designed to honor outstanding achievement and service to the communication profession. Congratulations are offered to the 2008 editorial committee.

# CONTENTS

# plain green



## Plain Green Conference and Marketplace.

Connect with over 300 green leaders and change-makers at the region's premiere sustainability Marketplace - Coming in April 2010.

Plain Green attracts architects, engineers, construction professionals, interior and landscape designers, city planners, community leaders and others on the leading edge of greening our world. You can put your company or products front and center during the Plain Green Marketplace.

We'll kick off Plain Green 10 with a special keynote, followed by four hours of fun where our exhibitors are the hosts. Great food and drink, live local bands, networking with local leaders and keynote speakers, and focussed attention on you. Day two of Plain Green opens up the Marketplace to the public, with free admission at the Washington Pavilion of Arts and Science.

Contact Keith Thompson {[ktompson@kochhazard.com](mailto:ktompson@kochhazard.com)} at 605.336.3718, or Joe Bartmann {[joe@siouxfallsgreenproject.org](mailto:joe@siouxfallsgreenproject.org)} at 605.610.4240 to reserve your spot today!

*This year's keynote speakers for Plain Green include:*

**Cameron Sinclair.** As the Executive Director and Co-founder of Architecture for Humanity, Cameron Sinclair is not only an architect, but an author, humanitarian and world-class visionary. During his studies at the University of Westminster and at the Bartlett School of Architecture, Cameron developed a passion in social, cultural and humanitarian design.

**Mitchell Joachim.** Joachim is a leader in ecological design and urbanism. He is a Co-Founder at Terreform ONE and Terrefuge. He earned; Ph.D. Massachusetts Institute of Technology, MAUD Harvard University, M.Arch. Columbia University, BPS SUNY at Buffalo with Honors. Dr. Joachim is faculty at Columbia University and Parsons.

**Gail Vittori.** Vittori is Co-Director of the Center for Maximum Potential Building Systems, a non-profit design firm established in 1975, Vittori. She is the 2009 Chair of the U.S. Green Building Council's Board of Directors, and author of a book called "Sustainable Healthcare Architecture."

Register today at [plaingreen.org](http://plaingreen.org). Use discount code ARCHSD10.



## Our Legacy



**President**  
Keith Neuharth, AIA

I would like to take this opportunity to thank our dedicated and hard-working magazine committee and all the contributing authors on the successful completion of the second edition of Architecture South Dakota.

As designers, we cannot let these turbulent economic times cause us to pull back. Instead we need to push the envelope with each and every project.

By definition, a legacy is something you receive from a predecessor. So as design professionals we are in fact "paying it forward" to future generations with the buildings that are designed and built today. The growing global community continues to make our planet smaller, and it is imperative for everyone to realize that all our actions, personally and professionally, have an impact far beyond our city, state, or country. To be good stewards of our resources, we need to "walk the walk" that will continue and expand on the principles established by the U.S. Green Building Council and the American Institute of Architects. Their mandate of carbon-neutral buildings by the year 2030 makes us realize that we have only just begun, and we must double our efforts to reach this attainable goal.

Our legacy must be buildings that leave no detrimental footprint on the environment. Together we can and must make this happen.



**2010**  
CONVENTION

**WHEN:** October 14 & 15, 2010

**WHERE:** Downtown Holiday Inn | Sioux Falls, South Dakota

## AIA South Dakota 2010 Convention

The date is set for the 2010 AIA South Dakota Convention. Whether you come for the education, the networking opportunities, or to see colleagues and friends, don't miss this opportunity to invest in your career!

As a new decade begins, architects and design professionals continue to navigate through a difficult economic climate while rising to the challenge of creating livable communities. Join the dialog as we contemplate how the next ten years could change the traditional practice of architecture.

This year promises exciting new challenges and opportunities. Please mark your calendars now and check back to [www.aiasouthdakota.com](http://www.aiasouthdakota.com) for updates on the convention.

### IN ADDITION:

A Full Day Workshop will be held Wednesday, October 13, 2010. Watch the website: [aiasouthdakota.com](http://aiasouthdakota.com) for updates.

**Walk the Walk**  
Architects Leading the Sustainable Evolution



## AIA South Dakota 'Walk The Walk'

Many are unaware that buildings and their construction count for nearly half of all greenhouse gas emissions and energy consumed in the U.S. each year. Globally the percentage is even higher.

The national American Institute of Architects is committed to the goal of reaching at least 60 percent carbon emission reduction by 2010 and carbon neutral buildings by 2030.

Check the website: [www.aia.org/walkthewalk](http://www.aia.org/walkthewalk) for 50 strategies that will have an immediate impact on architects' ability to achieve significant carbon reduction.



## Architecture For Humanity Arrives In Sioux Falls

Architecture for Humanity has come to Sioux Falls! AFH SFSD is a new local affiliate, the parent organization is a non-profit design firm that is cultivating a global network of professionals bringing innovative and sustainable design, construction, and development services to areas where they are most needed.

AFH SFSD was developed to extend this ideology to the greater Sioux Falls Metro.

AFH SFSD's current projects include:

1. Designing a straw bale Tool Library for the Sioux Falls Seminary's Summit House, a community service project to be built during Plain Green 2010. Working with Chartreuse Research, AFH SFSD is responsible for the design and drawings of the structure.
2. Competing in the USGBC 2010 Natural Talent Design Competition: Small, Green, Affordable.

To get involved with AFH SFSD contact [info@afh-sfsd.org](mailto:info@afh-sfsd.org) or visit [www.afh-sfsd.org](http://www.afh-sfsd.org).

## CHARTREUSE Makes An Entrance

BRIGHTGREENRESEARCH.ORG

A new research institute was introduced during the April Plain Green conference at the Washington Pavilion. The organization is dedicated to identifying and developing sustainable building materials using the stuff of the northern plains. [Brightgreenresearch.org](http://Brightgreenresearch.org) will soon be available providing the following tools:

- Database for browsing regionally available green products, natural building methods, and new sustainable material concepts by type and criteria
- Weekly blog about current research topics, upcoming events, new green initiatives, regional and local projects, new case studies, and featured materials
- Frequently updated regional case studies section demonstrating the use of green products and materials in residential, commercial, mixed use, and civic applications
- Monthly updates on a pilot program with a regionally located community group

Watch for the release of [brightgreenresearch.org](http://brightgreenresearch.org) Summer 2009!

## USGBC Chapter Startup

South Dakota is forming a USGBC South Dakota chapter! The chapter and national goals are the same. The chapter is currently in the organizing phase of development. Please join us in this exciting new endeavor! For more information please visit us at <http://chapters.usgbc.org/southdakota>



***"To transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life."***

## New "Green" Energy Efficiency Public Policy Goals Established by SBA 504 Program

The Small Business Administration recently announced three new "Green" Public Policy Goals for the SBA 504 program related to reducing energy consumption. The new Public Policy Goals have two primary benefits for borrowers:

1. Increases the amount a business can borrow through the SBA 504 program to as much as \$4 million; and
2. Eliminates the job creation/retention requirement.

To meet one of the new Public Policy Goals, the project must either:

1. Help reduce energy consumption by 10%. This might include installing energy efficient windows, HVAC systems, etc.; or
2. Generate renewable energy for its own use. This might include installation of solar panels, installing geothermal heating and cooling systems, wind power, etc.; or
3. Be built for sustainable design and meet LEED standards (limited to \$2 million SBA maximum for this particular Goal)

The 20-year March interest rate was 5.6% and several of the fees are being waived under the Stimulus Bill so it is a good time to "Go Green". For more information contact Dakota BUSINESS Finance at 605-367-5353 or check the website: [www.dakotabusinessfinance.com](http://www.dakotabusinessfinance.com).

## AIA South Dakota Scholarship Winners

Each year AIA South Dakota awards scholarships to 4th - 6th year architecture students who graduated from a high school in South Dakota.

### 2008 Award Recipient:



**Jackson Lloyd Strom**

University of North Dakota  
Graduate of Groton High School,  
Groton, South Dakota

### 2009 Award Recipient:



**Jared C. Carda**

University of Nebraska  
Graduate of Wagner High School,  
Wagner, South Dakota



**Peter Costanzo**

University of Minnesota  
Graduate of Lincoln High School,  
Sioux Falls, South Dakota



**Sara Hieb**

Rice University  
Graduate of Brandon High School,  
Brandon, South Dakota



**Kate Renee Renner**

University of Kansas  
Graduate of Vermillion High School,  
Vermillion, South Dakota

Scholarships are funded by an educational foundation. Contact Ward Whitwam at 605-334-2422 for information on making a contribution.

## Color Us Green.



Green. To some people, it means summer is approaching. To others, it's the color of a great salad. To us, it's a way of life. A movement to ensure a healthy and prosperous future for this generation and the next. That was the driving force behind our creation of Chartreuse Bright Green Research. Dedicated to exploring and developing sustainable building materials and systems, Chartreuse will champion green products in and of the Northern Plains. Helping to lead the way to a sustainable future.

### BRIGHT GREENNESS

ONE OF THE KEY STRENGTHS WE BRING TO EVERY KOCH HAZARD PROJECT.



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## The Empower Plant



Heartland Consumers Power District didn't want their new headquarters to be merely functional. They saw the opportunity for something truly inspirational. Something that would inspire the public, and show them the true possibilities of sustainability. Each element of its design fit from the native prairie grass landscaping and rainwater collection system, to the geothermal heating and daylighting systems — will help create a groundbreaking, LEED™ Platinum certified building. One that will do more than house a power company. It will empower people to create a greener future.

### INSPIRATION

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## Great Place. New Face.



After decades of underutilization, the Kresge Building is again the beautiful, elegant, fully occupied structure it once was. Like all of our restoration projects, we applied our passion and expertise to help reenergize a building that will contribute to SlouxFalls' culture and economy for years to come. We are dedicated to improving our community, and are excited to watch it grow.

### FORWARD ENERGY

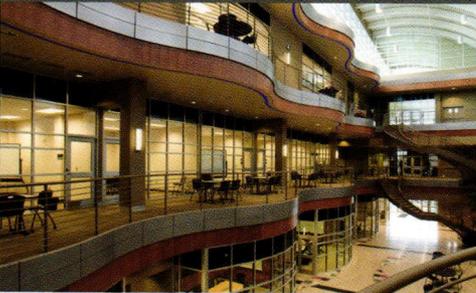
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## aRchitecture



It's one thing to tear down a medical school and rebuild it. It's another thing entirely to do it while the school is still operating. The University of South Dakota Medical School needed to do just that: continue their mission to educate, while rebuilding their entire outdated facility. The unique learning environment that resulted from the multi-stage project is full of natural light, state-of-the-art design and systems, and is one of the first medical schools in the nation built around the cohort group concept. Definitely a prescription for continued success.

### MISSION

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## Creativity isn't seeing what's there. It's seeing what's possible.



After the demolition of SlouxFalls' legendary Zip Feed Mill, few could see the potential the area held for development. But we did. Moved by our client's passion for community, Koch Hazard believed this East Bank site could be a catalyst for sustainable downtown development. And so Cherapa Place was born, a revolutionary new property that counts native landscaping, displacement ventilation, day lighting and reused, recycled and renewable materials among its many green strategies. At first, few could imagine Cherapa Place here. Now it can't be ignored.

### IMAGINATION

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## When you love your life's work, your work comes to life.



It's what we do that defines us. At Koch Hazard, we live with the same dedication and drive that goes into our work, creating a sustainable future through beautiful, functional architecture. Since 1961, this passion has defined Koch Hazard, setting our work apart in the community. Because when you do what you love, it shows.

### PASSION

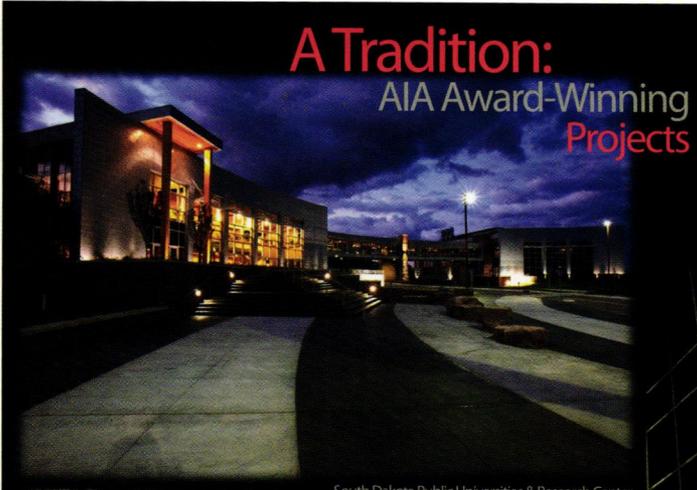
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**A Tradition:**  
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Projects



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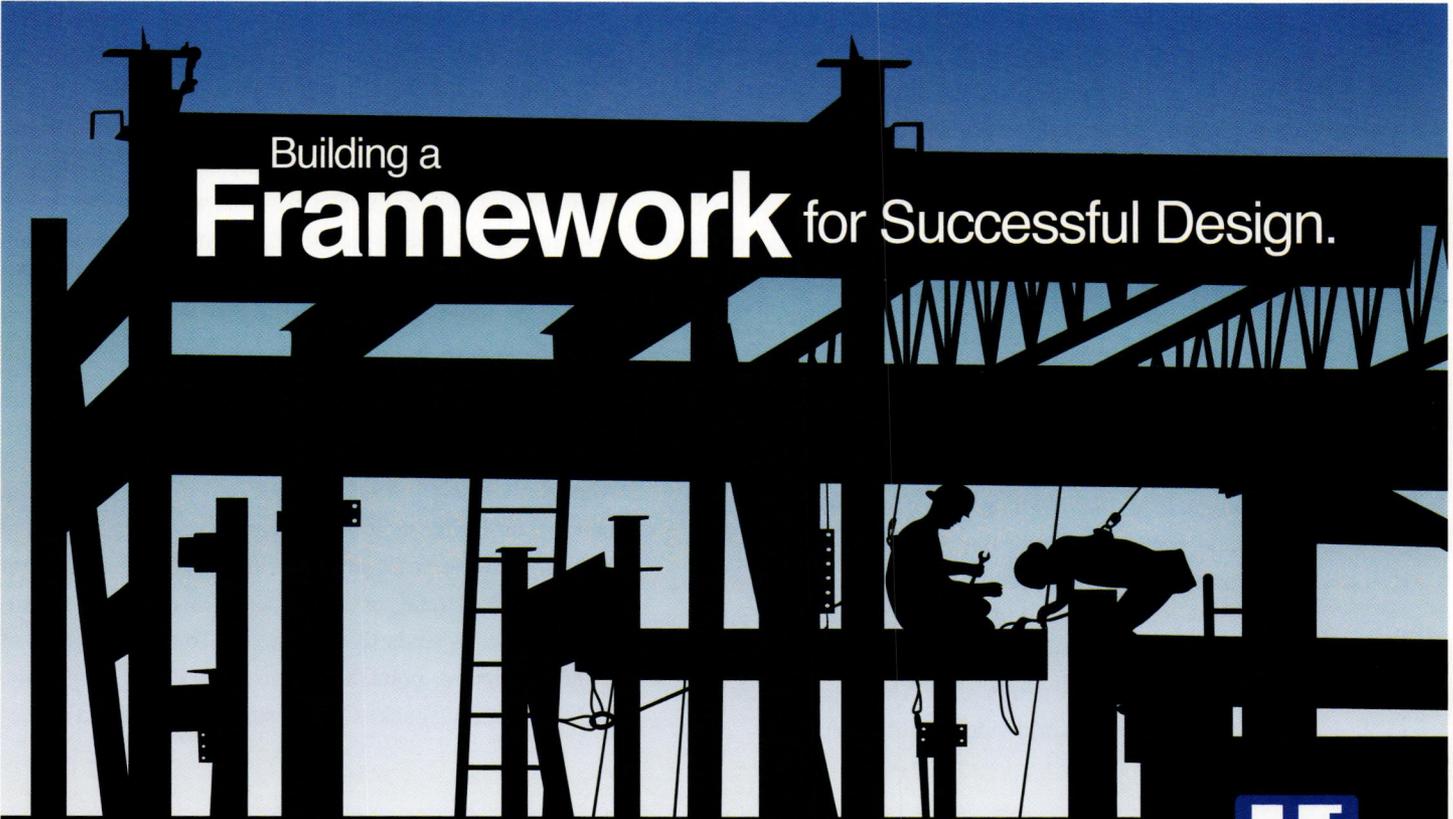
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# THE GREENING

The words 'Green' and 'Sustainable' are now so media saturated that it's worth a quick look at the dictionary to remind ourselves what they really mean.

In the waning days of B.C., the Roman architect Vitruvius wrote *De architectura*, "the only complete treatise on Architecture to survive from Antiquity"\*\*. In it he cited three



## GREEN:

*a. relating to or being an environmentalist political movement b: concerned with or supporting environmentalism c: tending to preserve environmental quality (as by being recyclable, biodegradable, or nonpolluting)*

## SUSTAINABLE:

*a. of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged*



One acronymed Midwestern supermarket chain recently featured a display of large, dark blue canvas tote bags with the words: 'This Bag Is Green' printed on their sides. Amusingly, but tellingly, it speaks of a paradox in our democracy. We have a unique ability in the United States to absorb new people and ideas into our cultural matrix. We also have the capacity to take new, even revolutionary, ideas and spin them off into a mollified mainstream where they often languish and perish. This can act as a safety valve, but it can also act as a damper. There are many shades of green, and "greenwashing" now abounds in our media. We are learning to dig deeper, and look further ahead as we make a distinction between 'designer' and designed, downcycling and recycling. Life Cycle Costs are being supplanted by Life Cycle Assessments that mirror the *Cradle to Cradle* paradigm of William McDonough and others. It's an exciting and provocative time that will challenge us all to do our parts, from the recycling bin to the planning and utility commissions. When our landfills become the highest point in our counties, its time to rethink our model and reinvent and reinvest in a new action plan. These are not just urban problems; they are worldwide, suburban and rural.

elements that needed to be met by architects in their building. Pardon my Latin, they were: "firmitatis, utilitatis" and "venustatis" or "durability, convenience and beauty" (Morgen's translation). Not too hard to wrap your head around. These have stood the test of time and places, and are still valuable tools for critical analysis of the built environment. Some 2000 years later we should add a fourth, "praestatis", from the root 'praesto' which means to answer for and to be responsible for. This is not just the responsibility to a client, and the welfare and safety of the public, but the overarching responsibility to act, design and build in a manner that not only respects but nurtures our environments, built and natural. This responsibility extends across the professional and profession board because it ultimately involves us all.

Malcolm Gladwell, science writer and journalist, wrote a national bestseller in 2004 entitled *The Tipping Point* and in it, as the liner notes say, describes "that magic moment when an idea, trend, or social behavior crosses a threshold, tips, and spreads like wildfire". There are signs that a 'green' tipping point has been reached and, hopefully, there's no turning back. Our consumer oriented and collec-

**TOM REASONER, AIA**

Tom is a free range architect practicing in the upper Midwest. He can be reached at [tomreasoner@gmail.com](mailto:tomreasoner@gmail.com).



# OF SOUTH DAKOTA\*

tive consciences are undergoing a much needed paradigm shift in our relationship to our environment. Our next and perhaps hardest task is to unravel and reveal what is truly green, sustainable and responsible. The answers are as variegated as the color wheel with sometimes subtle corollaries that beg to be addressed and understood as we search for answers. We can no longer 'tweak' our way out of these human conditions. Rethinking and retooling are no longer options.

Initiatives are already at work and much ground has been gained, but we were late off the starting block and the carrots often seem more like mirages. LEED (Leadership in Energy and Environmental Design), Smartgrowth and other organizations, profit and non, have created benchmarks for development and construction standards, tactics and products. Building and buildings are a very visible and significant part of everyday green and sustainable design issues. Estimates are that buildings account for 65% of electrical consumption, 39% of energy use, 39% of green house gas emissions, 30% of raw material use, 30% of waste output and 12% of potable water consumption.\*\*\* However, they represent only one piece of our consumption and they don't function independently.

As the evidence mounts, it's becoming almost impossible to dismiss global warming. Yet regardless of whether one believes in mankind's role in fostering climate change, green and sustainable design is still the right thing to do. As Kermit the Frog so aptly put it, 'It's not easy being green', but it's getting easier and like all habits, good or bad, it must be worked at to become second nature, rather than second hand. It is as easy as remembering to take that blue tote bag to the store and as difficult as fully understanding the true nature and consequences of our design and building processes; now, in the past and for the future. We must be willing to accept the responsibility of being stewards of our homes, our farms or ranches, our towns and cities, our state, our nation, our world; rather than being mere op-

portunists. With a planet in peril there can be no absentee landlords.

We can learn many lessons from our companion flora and fauna with whom we share the planet.

The Landscape Architect Linda Lucchesi Cody, ASLA summed it very poignantly and powerfully in the final paragraph of an article she wrote for the Fall 2007 issue of *Scape, Land and Design in the Upper Midwest*:

"The prairie flora and fauna around us are trying to survive, just as we are. Perhaps the greatest lesson we can take from these species is that we can survive with less. We'll have to be creative (adapt surely) but that's the nature of the game."

We have asked a number of people in South Dakota to talk about green and sustainable design issues as they relate to their professions, businesses, callings; their 'Green Perspectives', in the hope that there are some common threads that ultimately tie us all together. Their comments follow 🍷

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***"The prairie flora and fauna around us are trying to survive, just as we are. Perhaps the greatest lesson we can take from these species is that we can survive with less."***

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\* Apologies to Charles Reich, author of *The Greening of America*  
\*\* p. 302, *A Dictionary of Architecture*, John Fleming, Hugh Honour, Nikolaus Pevsner, 1966 Penquin Books Ltd., England  
\*\*\* U.S Green Building Council



# SUSTAINABLE CITIES

## *Making the Case for Sustainability*



**ERIC AMBROSION**

Eric Ambrosion is a Community Development Specialist with Planning and Development District III, Yankton, SD. He can be reached at [EricA@districtiii.org](mailto:EricA@districtiii.org)

City planning is defined as anticipating change in a community and developing a set of strategies to deal with that change. Sustainability is development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs. While planners deal with today's issues, they must also look ahead to address the needs of future generations. So it would seem that city planning and sustainability go hand in hand. Current development trends, however, suggest that sustainability is a goal not easily attained.

The United States has experienced tremendous growth and change since the 1950s. Communities of all sizes have grown accustomed to the suburban "standards" of the new American dream: the single-family home, large lot, and hypertrophic retailing, an unsustainable approach. Factors contributing to a loss of sustainability include:

- *Suburban sprawl* – Many old core cities have lost population while many outer-ring suburbs have grown.
- *Loss of agricultural land and open space* – Suburban construction in the United States eats up 400,000 acres annually.
- *Depletion of water resources* – Conventional development practices create huge expanses of impermeable surfaces, which in turn create destructive runoff patterns and prevent groundwater recharge.
- *Loss of wetlands* – The United States has lost more than half of its most productive ecosystems since the 1600s.
- *Auto dependence* – Americans choose automobiles for 90 percent of their trips. Dependence on automobiles also means a dependence on fossil fuels.
- *Lack of sustainable policies* – Traditional town patterns would be considered illegal by contemporary zoning standards which promote single-use zoning, massive parking lots, and large setbacks.

## *Alternatives to Conventional Development*

While we ponder the questions of energy depletion, land consumption, and changing lifestyles, sustainable alternatives to conventional development patterns do exist.

Let's take a look at the principles of sustainable development. The central goal of sustainability—that we, our children, and their children must guide settlement patterns to achieve a decent standard of living within the limits of the natural environment—can be achieved by following these principles:

- *Living in harmony with nature* – Land is one of the most precious resources we have in South Dakota, and it should not be viewed as a cheap commodity or a "futures investment."
- *Creating livable built environments* – Too many places are only referred to as "subdivisions" and not true neighborhoods full of vibrant mixed uses and public spaces.
- *Developing place-based economies* – This principle may be the most important of all in the coming decades. The question every community must ask itself is, *Can we rely on the nearby rural areas to feed us?*
- *Ensuring equity* – Referring to the livability principle, too many developments are geared toward a certain market sector. True neighborhoods have a mix of housing types and social classes.
- *Making polluters pay* – Consider how we view various modes of transportation: Federal funds for exhaust-choked highways are investments, and funds for eco-friendly mass transit are subsidies.
- *Promoting responsible regionalism* – Communities minimize harm to other governments in pursuit of local goals.



## Smart Growth and New Urbanism

Two alternative development philosophies may guide us to a sustainable future: Smart Growth and New Urbanism.

Smart Growth promotes compact, mixed-use development and encourages choice in travel mode. Smart growth preaches a true transportation/land-use connection, planning for people first and vehicles second. Smart Growth addresses environmental protection, neighborhood revitalization, and affordable housing.

The New Urbanism is more architecturally prescriptive and detailed in its ordering of the physical layout of a community. The Congress of the New Urbanism states that, while design alone cannot solve our social problems, economic vitality and environmental health cannot be sustained without an appropriate physical framework.

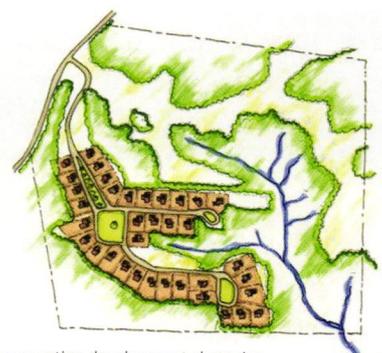
Perhaps taken together, the two philosophies move us more effectively toward sustainability. Think of Smart Growth as the comprehensive sustainable philosophy and New Urbanism as one of the tools to implement Smart Growth policies. Planning for sustainability promotes responsible development; it is not anti-development.

By adopting Smart Growth principles and implementing patterns suggested by New Urbanism, towns in South Dakota can achieve sustainability, reducing dependence on fossil fuels, developing more sustainable agricultural practices and reducing the harm to our environment 🌱

### Rural / Suburban

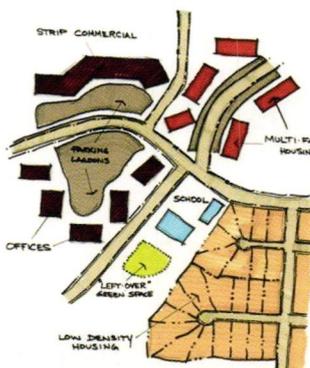


Traditional large lot subdivision, irrespective of topography and natural features.

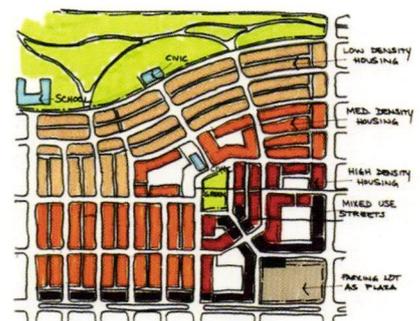


Conservation development clustering modest-sized lots while sharing access to natural areas.

### Urban



Traditional zoning discouraging mixed use and encouraging automobile centered activity.



Smart Growth - type zoning encouraging lighter density, mixed use, and transportation choices including walking.

# TOWARD GREENER SITE DESIGN

Designers are like farmers. We all plant seeds and hope they grow into lasting and meaningful places for the sustenance of our culture.

Recently we have discovered that a few pesky weeds have crept into our fields, causing serious, unforeseen problems.

*“Sustainability” is the new pest management.*

The Sustainable Sites Initiative, LEED® certification, and other rating systems and methodologies provide great measurement tools. But when managing pests, it can be easy to

## *Your team is your toolbox*

A well-designed site exceeds the sum of its buildings, special features, concrete, and asphalt and draws meaning from its underlying place and community. Good site design starts by doing what we do every day: thinking a little deeper, exploring a little further. A diverse multi-disciplinary planning team supplies the tools to thoroughly explore the opportunities and limitations of any site. Meeting early in a project to identify sustainability as a central tenet of the design team’s imperative is one of the best ways to foster

The first rule of sustainability is to align with natural forces, or at least not try to defy them.

*-Paul Hawken*

overlook the original intention—planting seeds to sustain our culture.

The immediate, pragmatic requirements of projects, such as building size and parking requirements, often create long-term negative impacts that are shared by the community, rather than borne on the individual site’s shoulders. Is there a way to bank the natural resources of a site for a greater and more far-reaching sustainable return? Absolutely (and economically) — with good site design.

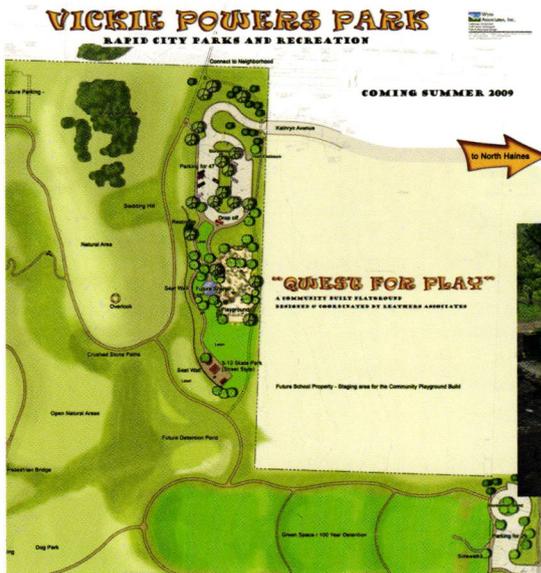
innovation and integrate sustainable intentions into the project.

## *Location, location, location*

A critical part of sustainable planning is an inventory of a site’s current ecosystem functions: what will be lost, what could be gained, and what new services could the site perform for the community. Integration of fundamental programming requirements with site needs and project economics form the basis of appropriate site selection. If site ecosystem functions are out of sync with our program, perhaps a type of “green” economics should inform whether the selected site is the best place for the project. No decision will have a greater impact regionally than locating work in a place best matched to its potential.



**MATT FRIDELL, ASLA** is a Landscape Architect at Wyss Associates, Inc. in Rapid City, South Dakota, a firm that looks for collaborative projects that balance pragmatism and innovation. He can be reached at: [mattf@wyssassociates.com](mailto:mattf@wyssassociates.com)



## How can we bank the natural resources of the site to give us a lasting benefit, **A HARVEST OF SUSTAINABILITY?**



*Locating this new 30 room motel in Custer State Park only required the removal of one tree.*

### ***Reduce the impacts of development***

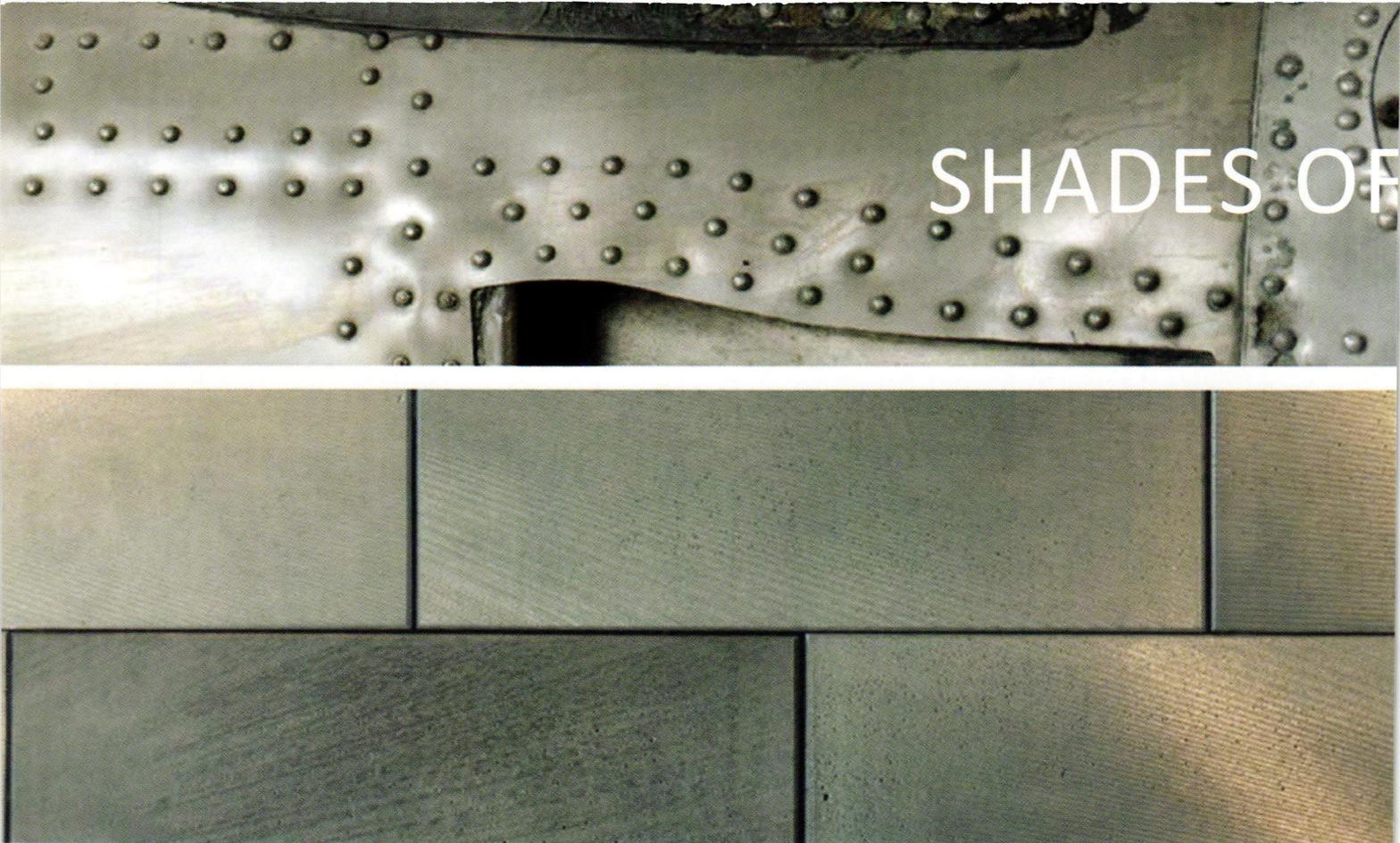
Once a site is chosen, inventory and analysis help identify sustainability opportunities unique to the site. Balancing site disturbance with preservation of unique natural features is an economical way to maintain the ecological and cultural capacity of the site. Defining a minimal development envelope draws a limit to construction disturbance while reducing soil compaction, maximizing protective vegetative cover, and limiting overall impact. Identifying and protecting unique natural features, whether rivers, native-plant communities, or simply an interesting tree, allows the team to develop these elements as features. Endemic features can often provide a reference point for aesthetics, which is often lacking in codes and programs that drive projects.

### ***Leverage natural resources***

Water is a critical element in new development and provides opportunity for a number of sustainable strategies with long-term returns. Banking water by interrupting impervious areas of the site with green space can channel stormwater runoff through a site as a feature or to aid in irrigation. Braiding water through a site creates interesting spaces for planting. The right balance of appropriate planting and site design works to keep the impacts of runoff within site boundaries, and can reduce building energy consumption, heat-island effect, and the need for irrigation water.

The seeds of sustainability can be planted with better building material choices and design, throughout the site and into the greater landscape. That we have weeds in our garden is not simply a result of our need to build, but a design challenge. And designers, like farmers, are problem solvers 🌱

# SHADES OF



*Boi-Luminum aluminum tiles made from recycled airplane parts by Coverings Etc. — not your run of the mill “green”.*



**KAY SCHWARTZ, NCIDQ, LEED AP**  
Kay Schwartz has been practicing commercial interior design for over five years in Sioux Falls, SD. She was formerly educated at North Dakota State University with an Interior Design degree, and passed both the NCIDQ and LEED New Construction exam. Kay can be reached at: [kayschwartz@hotmail.com](mailto:kayschwartz@hotmail.com)

I've heard it said there are three types of green people: proactive green people, altering their lifestyle to be green; casually green people, incorporating green into their lives but not eliminating familiar comforts; and non-green people, who do not support the green movement at all. As an interior designer, I try to keep a balanced perspective, similar to how I approach green during my day-to-day activities. Here are some of my thoughts on green materials and their applications.

One of the great things about green design is the fresh, innovative materials constantly becoming available. Great strides are being made in developing closed-loop\* materials, such as carpet and fabrics. Products with high-recycled content are becoming more common, easier to specify, and less difficult to market to clients eager to be green. Of course, designers must be wary of new and untried manufacturers that appear with the newest green product. Some may be unproven in the field, which can leave the designer (and owner) open to the possibility that a product might fail. Third-party organiza-

tions, such as Scientific Certification Systems, Inc., help verify that manufacturer claims are reliable and accurate.

Manufacturers are actively incorporating green concepts and principles in their everyday products, helping to create better environments for occupants. By using low- and zero- VOC\*\* paints and adhesives, easily added into project specifications and submittals, better indoor air quality can be attained. No longer are low-VOC products hard to find; they are becoming a market standard available to the professional and consumer alike.

Most importantly, green products do not have to look obvious or unique compared with conventional materials (unless, of course, that is desired). Green options are no longer limited to specialty materials like bamboo or cork products; they are becoming available in nearly every type of product category. But keep in mind that green materials may often be more expensive and may therefore be rejected, replaced by their less expensive, non-green counterparts.

# GREEN



Glass tiles — recycled and unique.

The cost of a green product can sometimes outweigh the benefits, so it's important to do your homework and educate your client about why a green product should or should not be used.

No matter what type of green person you might be, keep in mind that green materials can help meet a client's green goals, provide a healthy environment for occupants, save resources, and reduce impact on the environment. Green is here, and it's probably just getting started 🍷

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***One of the great things about green design is the fresh, innovative materials constantly becoming available.***

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\*Closed-loop recycling: Process to recycle old product at the end its life and create a new, similar product; example: old carpet remade into new carpet.

\*\*VOC, volatile organic compound: Organic compound that vaporizes into the air and can cause health problems.



# LEGISLATING GREEN

*One day soon, building green will not be new; it will be the accepted building standard, just like building to the accepted building code or the American Disabilities Act (ADA) requirements.*

**KRISTI HONEYWELL, M.S., P.E.** has been in her current position as South Dakota's State Engineer since 2007. She has worked in the engineering field for 16 years, 14 of which were with the Department of Environment and Natural Resources in Pierre. She earned her Master of Science Degree in Civil Engineering/environmental emphasis from the University of Missouri in 1992 and she is a registered professional engineer in South Dakota.

2008 was an important year for green construction in South Dakota. During January, two bills were introduced during the legislative session that would require all state-owned buildings to be built to a Leadership in Energy and Environmental Design (LEED®) Silver standard.

The first, Senate Bill 188, introduced by Governor Mike Rounds, required that new state buildings meet a LEED® Silver standard. State projects included are new buildings and major renovations larger than 5,000 square feet and costing more than \$500,000. The legislation authorized the Bureau of Administration to ensure the statute was followed by state agencies and institutions, grant waivers from the green standard when necessary, report to the legislature annually, and promulgate rules.

The second, Senate Bill 91, was introduced by several East River and West River legislators. This competing bill also required all state-owned buildings—as well as those built and renovated by local school districts—to be constructed to a LEED® Silver standard. This bill required the Bureau of Administration, the Board of Regents, and the Department of Education to each promulgate rules pertaining to their own construction projects and called for an advisory committee to be appointed to advise the bureau on construction specifications related to the implementation of the act.

After much discussion in the Senate State Affairs Committee, Senate Bill 91 was deferred to the 36th day, ultimately

defeating the bill. The Governor's bill was passed out of the same committee by unanimous vote on January 28, 2008, and was approved on the Senate floor with a 31-3 vote.

Because opponents of the bill were concerned about the proposed rating system, slight modifications were made to the bill in the House State Affairs Committee. These changes gave the state greater flexibility to choose the rating system to be used. Designated were the U.S. Green Building Council's LEED® System – minimum silver rating, the Green Building Initiative's Green Globes System – minimum two-globe rating, or another comparable rating system recognized by the American National Standards Institute. This amended bill passed the House of Representatives with a 32-2 vote. The Governor signed the bill into law on March 17, 2008, making South Dakota a national leader in green construction.

## *Projects Started*

To date, twelve new state-owned buildings and nine major renovations are being designed and constructed to a LEED Silver Standard. These projects will incorporate state-of-the-art mechanical and electrical systems, lowering fuel and electricity costs for the life of the building, water-saving measures, such as low-flow fixtures and reduced landscape irrigation, and environmentally friendly products which benefit the health of the occupants.

# CHANGE IN SOUTH DAKOTA

## Waivers Granted

In certain circumstances, constructing to a high-performance building standard may not be feasible. Senate Bill 188 allows waivers to be granted by the Office of the State Engineer in the following situations:

- The building will have minimal human occupancy;
- The increased costs of achieving a high-performance green building standard cannot be recouped from decreased operational costs within 15 years;
- The building is on the National Register of Historic Places and achieving a high-performance green building standard would result in noncompliance with standards for historic preservation, as set forth in The Secretary of the Interior's Standards for the Treatment of Historic Properties in effect as of January 1, 2008;
- The square footage of the renovation project is less than 50 percent of the total square footage of the building being renovated. If the renovation project is being done in phases, the total square footage of all intended phases combined shall be used in making this calculation; or
- The Bureau of Administration determines that extenuating circumstances exist to make impractical high-performance green building standard certification.

## Challenges

Passing legislation was the easy part. One of the major challenges to overcome is the mindset, "but we can't afford it." The reality is we can't afford to not build green. Energy costs for state-owned buildings increased an average of 10 percent between 2006 and 2007. Energy prices will continue to be volatile for years to come. The savings have to start now to protect long-term building operation and maintenance costs.

Interestingly, most stakeholders in the construction community agree that achieving a high-efficiency green standard is much easier for new construction but may be significantly more difficult for renovated spaces. Owners must ask themselves, Do I want to overhaul my mechanical and

electrical systems—or do I just need to update my finishes? Even if the answer is yes to the first question, it may be difficult to certify the building if the renovation only encompasses a small portion of the total building square footage.

Another important mind shift is required in designing and commissioning the building's mechanical systems. In

the past, the energy model may have been applied after the design was completed to determine how many points were obtained. However, the owner, architect, engineer, and commissioning agent should determine early in project design what level of efficiency they want to achieve and strive for that design. The energy model should then be used to check the result and determine a cost for those energy points. Who knows, maybe additional measures could be taken to increase efficiencies and energy savings? This process must be cooperative and continuous throughout the design process.

## Summary

Designing and building highly energy-efficient and environmentally friendly buildings is here to stay. Building stakeholders as a whole have embraced the concept and continue to improve building design and construction. We should all strive to build better, more efficient public spaces. One day soon, building green will not be new; it will be the accepted building standard, just like building to the accepted building code or the American Disabilities Act (ADA) requirements. I'm proud to say South Dakota is a leader in this area of positive change 🍀



South Dakota Senate Chambers

# SIOUX FALLS GOES



Phillips Avenue, Sioux Falls, South Dakota



**JOE BARTMANN**  
Joe is the Executive Director of the Sioux Falls Green Project, a movement to build a greener future for the Sioux Falls region. He also works with AIA South Dakota and other projects across the region as an organizer and facilitator. Some of Joe's favorite things to do are playing Daddy, reading, hiking and gardening (including caring for 10,000 composting worms in his garage). You can reach him by email at: [joe@SiouxFallsGreenProject.com](mailto:joe@SiouxFallsGreenProject.com).

Back when green was just a nice color, Sioux Falls emerged as one of the best places in America to live or run a business. One of the less touted roots of the city's surge was a serious commitment to preservation and place-making in the core downtown area. It was a subtle mantra of "design matters," and it began to permeate. Designers led and inspired the change and made it real and tangible.

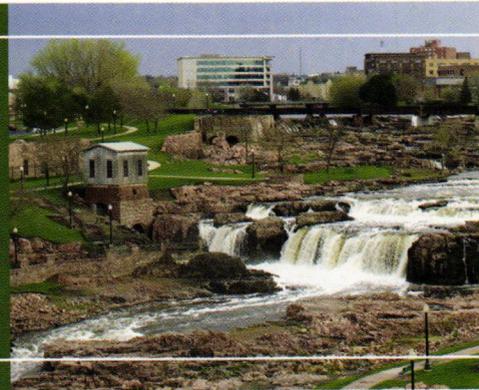
Today, as Sioux Falls keeps working to hold its brand as a healthy, progressive, and growing community, a new movement of change is grabbing hold in the Queen City. This one, too, is being nudged in many ways by architects and other design professionals who have dived into—and lifted up—responsible design. William McDonough, architect and author, has been quoted as saying, "Honor commerce as an engine of change."

The Sioux Falls Green Project is a new non-profit organization working to educate and inspire its community to create a greener future together. It was formed by a collaboration of 13 entities, including city government, the public schools, and 10 local businesses. Founders came together and made an investment in the Green Project out of both responsibility and opportunity. They see that the ecosystems they are a part of cannot sustain the way of life Sioux Falls has become used to, and they recognize an opportunity to position the city as a more attractive place to live, do business, and visit in the new Green Economy. So it's a project about both behavior and brand. And so far, it seems to be working to build local awareness and gather action.

# GREEN BY DESIGN

*"The frog does not drink up the pond in which it lives."*

*– Chinese proverb*



The Green Project is focusing efforts on four key areas: energy, water, waste, and design/development. The message, Every One Counts, is about the idea that each effort, no matter how small, makes a difference. It's everyone's opportunity. The group works with businesses, community organizations, families, events, and schools to help them learn how to green up the way they live, work, and buy. They also partner with the city planning department, design professionals, developers, waste haulers, and others to rethink how to design, construct and maintain effective buildings and neighborhoods.

The green movement is alive and well in the Sioux Falls area. At the core, the Green Project is really a host of the movement, working to illuminate, connect, and encourage all the good green things going on in the city as more Sioux Falls residents shift to a way of life that is better for people and the planet.

The real challenge, though, is deeper than the three Rs of reduce, reuse, and recycle. While initial efforts will focus on how we can become "less bad" to the rest of nature, we have to eventually find solutions that are truly helpful to the natural environment we live in. Our way of life depends on it. And designers of the built environment will lead the revolution 🍀

*The Sioux Falls Green Project was founded by Koch Hazard Architects, Lawrence and Schiller, Howalt-McDowell Insurance, Howe Plumbing and Heating, Novak Sanitary Service, Millennium Recycling, Keloland Television, Canfield Business Interiors, Xcel Energy, The First National Bank in Sioux Falls, the City of Sioux Falls and Sioux Falls Public Schools. New partners are welcome.*

*For more information, visit: [SiouxFallsGreenProject.org](http://SiouxFallsGreenProject.org)*

# THE GREEN PROJECT

# RECYCLING



Contaminates are sorted from the Single Stream machine at Millennium Recycling



**JAKE ANDERSON**  
Jake is Owner and President of Millennium Recycling, Inc. in Sioux Falls. He has more than 15 years of experience in the recycling industry. In addition to recycling paper, plastics, glass, and metals, Millennium Recycling began the state's first electronics recycling program in 2004. You can reach Jake at: [www.millenniumrecycling.com](http://www.millenniumrecycling.com).

Back in the late 1990s, I began to hear whispers in the recycling industry about a new machine that separated different grades of scrap paper. My initial reaction was “I don’t believe it,” but when I learned it was true, that first reaction was replaced by “It won’t work.”

A year or two after first hearing about this machine, I read that a large waste and recycling collector was using a modified version to separate plastics and metals from paper. My reaction was “That DEFINITELY won’t work,” an opinion that was cemented when I was told how much the equipment cost.

Fast forward to the early years of this decade and a trend began to take hold in the recycling business: single-stream recycling. Recycling programs were abandoning the decade’s old recycling practice of separation in favor of this new idea of commingling all types of ma-

terials. In spite of remaining unconvinced that this practice would be sustainable in the long term—due primarily to concerns over contamination, to say nothing about the capital cost of the equipment, I decided to investigate further.

I visited companies and communities across the United States that had adopted single-stream recycling. What I discovered surprised and impressed me. These machines had grown quite sophisticated since I first heard about them, resulting in a very effective separation rate. Several companies were producing these machines, and each was dedicating significant resources to research and development of this new separation technology, eager to incorporate the newest bells and whistles. The competition among these manufacturers served to improve the technology while lowering costs.

# MADE EASY

In 2004, management at Millennium Recycling concluded that commingled recycling was the future. In 2007, we installed our own machine and introduced single-stream recycling to Sioux Falls.

Since then, our overall inbound volume of recycling has increased over 20 percent, consistent with other communities and companies that have made this switch. Why? In a word: simplicity. People like the fact that recyclables don't have to be separated into multiple categories. The easier it is to recycle, the more likely people are to participate. Add to it a program like Recycle Bank, which rewards customers for recycling, and the result is that residents often recycle more than they throw away.

The benefits don't stop there. Collectors enjoy new operational efficiencies like being able to use a compaction truck instead of a vehicle that has three or four compartments with no compaction. In a recycling program that requires separation, a truck needs to be emptied when one

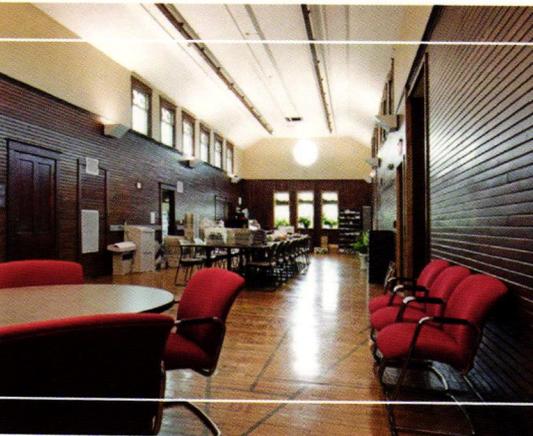
compartment fills, regardless of how full the other bins are, and the collector has to make multiple trips to the recycling facility in a given day rather than one. Fewer trips to the recycling facility to empty a truck means less fuel wasted and more efficient collection.

Single-stream detractors point to concerns about contamination from mixing materials together. I am familiar with that argument, as I made it myself years ago. The reality is that this equipment very effectively separates material with little or no cross contamination. In fact, since we began our program in 2007 none of our material has been rejected by an end user.

Single-stream recycling is here to stay. It has proven to increase recycling rates while making collection more efficient. This one-time detractor has become a believer 🍀



# PRESERVATION AND



**“Nothing is greener than an old house or building. By recycling, renovating, or finding a new use for an older structure, we are using a tiny percentage of the energy it took to build it originally”**



**JIM WILSON, ESQ.** is a Historic Preservation, Planning and Political Consultant. He can be reached at: [whitewilson@msn.com](mailto:whitewilson@msn.com)

In the late 1880s, Russell Conwell, founder of Temple University, delivered the talk “Acres of Diamonds” more than 6,000 times. Conwell contended that people did not have to go to exotic and foreign places to achieve fortune and fame, but could find what they wanted in their own backyards where there were acres of diamonds. One just has to learn—or relearn—to find them. It is apparent that the same philosophy applies to energy concerns in society today. Although the search for exotic and foreign solutions to the energy question may be more exciting, solutions are to be found in our own backyards, utilizing technologies such as solar and wind energy. These will, of course, need additional refinement and conservation, which will require continued commitment—but they are already here and available.

Every building that exists is a storehouse of embodied energy. This energy includes all the energy required to produce, process, and transport the materials contained in the building, as well as the energy involved in the construction of the building. It can also include the energy necessary to develop the infrastructure to support the building if it is built on previously unoccupied land. Since the late 1970s, significant effort has been expended in calculating the amount of energy embodied in buildings, as exemplified by the Advisory Council on Historic Preservation’s 1979 publication, *Assessing the Energy Conservation Benefits of Historic Preservation*.

If a building is to be removed and replaced, someone should calculate the amount of energy necessary to raze, load, and haul away the building, including landfill and environmental cost assessments. These, along with the embodied energy lost, should be factored into the design and decision-making processes when considering demolishing existing structures, along with renovation and rehabilitation strategies. The mindset of “It doesn’t make sense to renovate older buildings when you can build new,” echoed by an administrator at the University of South Dakota\*, has been a mantra of planning and fundraising at all levels of institutional development in both the public and private sectors.

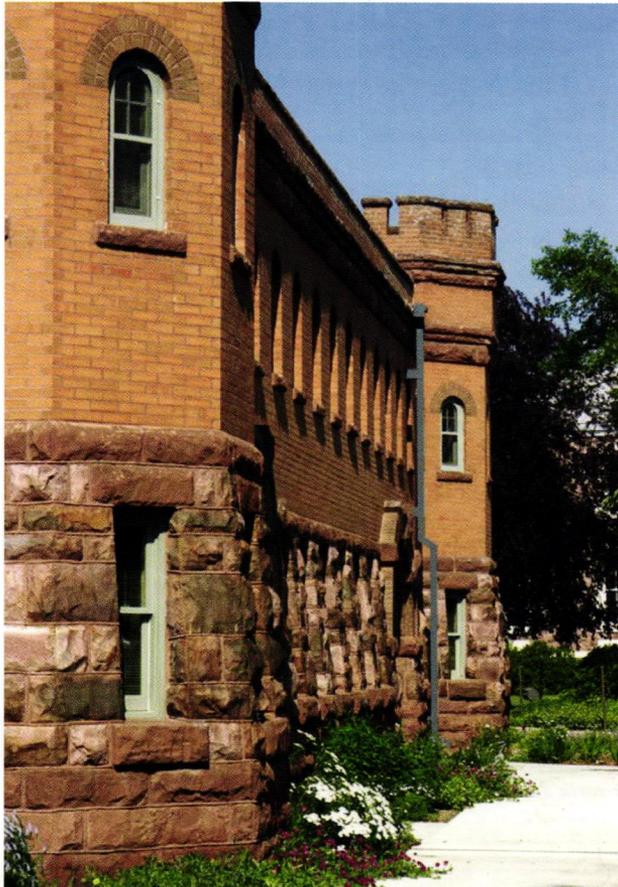
Another important calculation is operational energy—the energy required to operate the facility—which depends on climate, occupancy characteristics, and the physical design of the building. In general, buildings built prior to World War II use less operational energy than those built after the war. The earlier buildings are more likely to accommodate themselves to the environment and allow greater interior temperature variation than an enclosed weather-tight box that relies on massive energy expenditures to maintain an interior steady state.

The architect, developer, and builder as a matter of course develop both a time and financial budget to bring their project to completion. They should also develop an en-

# ENERGY

ergy budget, showing how much energy will be expended to complete and operate the project. For a new building on a virgin lot, the energy cost of providing the necessary infrastructure should be included. For an occupied lot, the energy budget needs to include the embodied energy in the existing building, the energy cost of razing and disposing of the existing building, and a comparison of the operational costs of the old building and the new building. The energy budget gives an owner a previously missing piece of information necessary to optimize the decision to reuse or build new.

Nothing is greener than an old house or building. By recycling, renovating, or finding a new use for an older structure, we are using a tiny percentage of the energy it took to build it originally. In many cases, with appropriate retrofits, most historic buildings will outperform new buildings. Older buildings have operable windows, passive ventilation, and take better advantage of daylight. In the case of masonry buildings, they are more stable in energy terms than modern curtain-wall buildings.



The Advisory Council study previously cited lists the following embodied energy per square foot of construction: 700 MBTU for single-family residences, 1,390 MBTU for educational buildings, 1,640 MBTU for office buildings, and 940 MBTU for commercial structures. Using this information it would be possible to calculate the embodied energy of existing buildings that are being considered for replacement. In addition to the embodied energy found in the old building, the energy budget needs to include energy used to demolish the building and haul it away. Those replacing old buildings with new should be aware of the cost in energy, as well as time and money, so that an informed decision can be made.

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***“Existing buildings are the treasure in our back yards.”***

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If cap and trade (emissions trading, or an administrative approach used to control pollution by providing economic incentives for achieving reductions in the emissions of pollutants) works for the control of pollutant emissions, then charging a fee for the elimination of stored energy in buildings may also be a rational solution.

Existing buildings are the treasure in our backyards. They are renewable, reusable resources that can be judiciously used to eliminate the wasteful energy usage rampant in our society. Saving and reusing existing buildings is a worthy challenge for the best architects, developers, and builders\*\* 🍷

\* TJ Jerke, Construction, *The Volante* (University of South Dakota), 4 March 2009, vol. 133, No. 17.

\*\* For more information and thoughts on embodied energy in existing buildings, see:

Jean Carroon, “A Building Is a Terrible Thing to Waste,” *Boston Architect* (November-December 2008).

# GEO THERMAL

## EVOLUTION



The history of geothermal space conditioning dates back centuries, possibly even millennia. The first geothermally conditioned spaces were caves, providing cool shelter from summer heat and a warm refuge from winter cold. Hot and cold natural springs have also supported human comfort for centuries. More recently, the refrigeration cycle has been used to help remove energy from, or inject it into, the earth.

Geothermal space conditioning can be either a natural or mechanical process that uses the earth's energy to temper spaces from extremely hot or cold ambient conditions. The earth's fairly constant temperature and its very large mass provide a vast energy resource. Surface temperatures can vary quite dramatically however, depending on location; temperatures 5-6 feet below the surface of the earth are usually fairly constant and provide a good source for efficient removal or rejection of heat.

### Geothermal Heat Transfer



**NORM DEWITT** is a mechanical engineer and principal at Associated Consulting Engineering, Inc. in Sioux Falls. He is responsible for the design of plumbing, heating, ventilation, and air conditioning systems for general building construction. He has designed geothermal systems of many types. He can be reached at: ndewitt@aceinet.com

Geothermal heat transfer options include open- and closed-loop systems.

#### Open-Loop Systems

An open system, using ground water pumped from a well, lake, or stream, removes or adds energy and then returns the water to its source.

#### Advantages

- Initial costs are low.
- Efficiencies are constant due to fairly constant water temperature.

#### Disadvantages

- Water quality may cause fouling or corrosion.
- Water source may not be dependable.

#### Closed-Loop Systems

A closed system typically uses tubing, either coiled like a slinky and buried 6-8 feet below grade or in a pond, or installed in holes drilled 100-300 feet into the earth. In the latter case, 3/4-inch tubes are looped down each hole and fixed with impermeable, conductive grout. These long

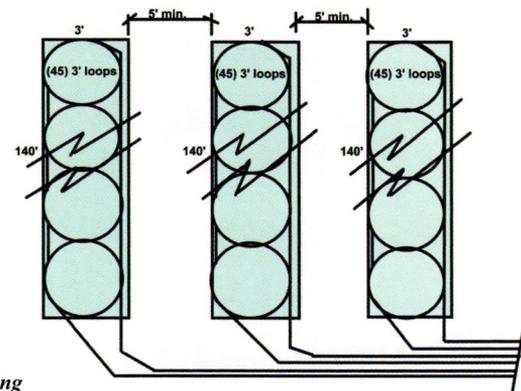
lengths of tubing provide the heat transfer mechanism to extract heat from, or reject it to, the earth's mass.

#### Advantages

- Water quality can be strictly monitored because it is a controlled system.
- The flywheel effect\* can provide enhanced efficiencies.

#### Disadvantages

- Initial costs to drill holes and install long lengths of tubing and grout are high.
- Tubes can develop leaks, thereby reducing the effectiveness of heat transfer.



Typical Slinky Loop Lay-Out

*\* The flywheel effect, which helps keep material at a constant temperature, occurs in a deep dry hole. A roughly equal number of hours of heating and cooling annually optimizes the flywheel effect. Heat that is rejected into the earth during the air conditioning months is stored in the earth's mass and then recovered during the winter months, resulting in higher operating efficiencies.*

## Commercial and Institutional Applications

For commercial and institutional applications, there are two basic types of geothermal systems: decentralized heat pumps and central plant heat pumps, which can be used in 2- or 4-pipe applications.

### Decentralized Heat Pumps

Most of the early decentralized systems used water-to-air heat pumps as terminal devices located near each space served, in a closet or above a lay-in ceiling. These heat pumps were connected by a 2-pipe loop, allowing each pump to remove or reject energy to the loop. As the loop temperature increased or decreased beyond upper and lower preset limits, the energy was rejected to or extracted from the earth via the exterior heat transfer loops.

### 2-Pipe Decentralized Heat Pumps

#### Advantages

- Initial costs are low due to 2-pipe connectivity on the interior loop.
- The need to have a heat pump for each zone creates large redundancies.

#### Disadvantages

- Extra compressors, filters, drain pans, etc. increase maintenance.
- Ventilation air is more difficult to condition.
- Noise and serviceability are increased.

### Central Plant Heat Pumps

Central heat pumps using 2- or 4-pipe distribution are relatively recent in application. Central water-to-water heat pumps produce hot (condenser) and cold (evaporator) water when running.

### 2-Pipe Central Heat Pumps

In the 2-pipe application, the heat pump must be equipped with a reversing refrigeration valve, which allows the heat pump to provide either chilled or heated water to the interior loop while rejecting or extracting energy from the earth via the exterior geothermal heat transfer device. In a 2-pipe application, the central system can only provide either heating or cooling at any particular moment and is not readily switched from one mode to the other.

#### Advantages

- Initial costs are lower than 4-pipe installation.
- High efficiencies can be attained.

#### Disadvantages

- System cannot simultaneously heat and cool.

### 4-Pipe Central Heat Pumps

The 4-pipe application gives the system vast flexibility. When there is a call for heating or cooling, the unit generates hot and chilled water simultaneously, allowing for free reheat in the summer and chilled water for special applications in the winter. This system allows for simultaneous heating and cooling year-round, and whenever the system is operating in either the heating or cooling mode, the opposite mode is available (free) because it is a by-product.

#### Advantages

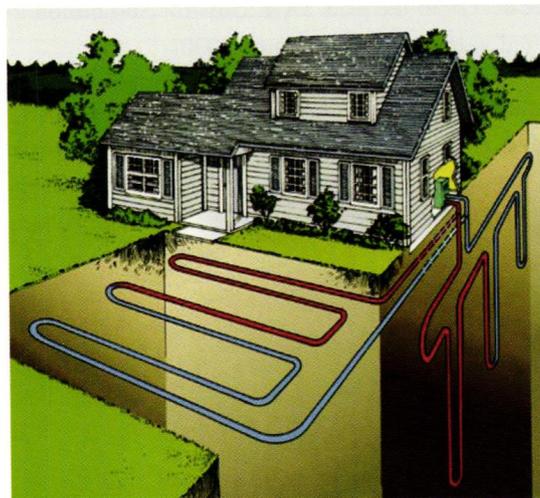
- System can be applied to any 4-pipe application.
- Cooling or reheat is free.

#### Disadvantages

- Initial costs are higher than 2-pipe installation.
- Maintenance is centralized.
- High efficiencies can be attained.

There are also hybrid systems that not only enhance performance, but also take advantage of the “free” potential energy available based on building load, running time and energy sharing.

Geothermal is here to stay. Rising fuel costs coupled with geothermal efficiency and new-found flexibility are positioning this technology to make it the system of choice, especially in the Midwest where summers are hot and winters are long and cold. Under these extremes, Mother Earth is a welcome recipient and giver of energy and, in some applications, an energy “warehouse” until the next season comes along 🍷



Horizontal or vertical closed-loop system.

# ENERGY

Wind power, a solar resource derived from the uneven warming of the earth by the sun, has increased in the United States by more than 400 percent since 2000. Over the past twenty years, research and development has lowered wind energy's costs by more than 80 percent.



ELIZABETH BURLESON

Professor Burleson has an LL.M. in International Law from the London School of Economics and a J.D. from the University of Connecticut. At the University of South Dakota School of Law, Professor Burleson's courses include Energy Law, Property Law, Water Law, Environmental Law, International Environmental Law, Public International Law, and United Nations Law. Her research addresses emerging energy, water and climate law. <https://www.elizabethburleson.com/Publications>

Timely transition to wind-generated electricity can help achieve a sound energy policy capable of addressing the threat posed by climate change. The United Nations Intergovernmental Panel on Climate Change notes that “renewable energy has a positive effect on energy security, employment, and air quality. Given costs relative to other supply options, renewable electricity can have a 30% to 35% share of the total electricity supply in 2030.”

The U.S. Department of Energy (DOE) states that 6 percent of U.S. land could supply more than 1.5 times the current electricity consumption of the country. Yet, challenges remain in matching the demand for electricity with the supply of wind, as well as achieving reasonable and equitable access to the grid. DOE calls for \$60 billion to be invested in transmission through 2030.

While transmission line expansion can lower property values and may actually reduce incentives to conserve energy; this can be mitigated to some degree by using underground lines. While installation and maintenance

costs may be higher, such costs may be outweighed by increased safety and security. The World Health Organization explains, “Electric fields from power lines outside the house are reduced by walls, buildings, and trees. When power lines are buried in the ground, the electric fields at the surface are hardly detectable. . . .” In contrast to electric fields, a magnetic field is only produced once a device is switched on and current flows. The higher the current, the greater is the strength of the magnetic field.

***Renewable electricity can have a 30% to 35% share of the total electricity supply in 2030.***

Like electric fields, magnetic fields are strongest close to their origin and rapidly decrease at greater distances from the source. Magnetic fields are not blocked by common materials such as the walls of buildings. Public participation in decision-making regarding the siting of new power lines is crucial, as is research coordination.

# ON A STICK

## The Promise Of Wind Power In The Northern Great Plains



Electricity generation currently consumes roughly half of U.S. aquifer withdrawals.\* Because wind energy generation uses a negligible amount of water, a 20-percent wind scenario would avoid the consumption of 4 trillion gallons of water through 2030. It would also support more than 500,000 jobs. Unlike fossil fuels, wind energy does not emit mercury or other heavy metals.

Winona LaDuke notes, “We need to recover democracy, and one key element is democratizing power production. . . [T]ribes live in some of the poorest counties in the country, yet the wind turbines they are putting up could power America—if they had more markets and access to power lines.” Tribal wind initiatives have shown that developing wind power can benefit rural communities. Careful wind turbine and transmission line siting can occur when representatives from federal, state, and tribal governments and civil society participate in decision-making.

The northern Great Plains can supply more than 300 gigawatts of wind power, according to Robert Gough of the Intertribal Council on Utility Policy. Federal purchase of green power through the “green tags” program is central to ramping up wind power capacity. Gough calls for renewable energy studies and biannual reporting to achieve grid parity. He notes that tribal wind can replace diminishing hydropower. Gough believes that Congress should pass a national renewable energy standard of at least 20 percent renewable energy by 2020, guided by an ongoing scientific understanding of the measures required to avert severe climate change 🍅

\*U.S. Department of Energy, 20% Wind Energy by 2030: Executive Summary 17 (2008). [http://www.20percentwind.org/Final\\_DOE\\_Executive\\_Summary.pdf](http://www.20percentwind.org/Final_DOE_Executive_Summary.pdf)

# A MODEST



Photo by Jim Margadant, taken in Indian Creek

In 1964, Congress passed the Wilderness Act establishing a National Wilderness Preservation System to preserve areas of federal land that have special and unique value, setting them apart forever. The Act aimed to manage these areas so that they would continue to remain wild, in contrast with the bulk of our public lands where the activities and development of modern civilization are apparent on the landscape.

The Wilderness Act was popular legislation, and since 1964 public demand has increased to protect the best of our remaining federal public lands by designating them as Wilderness Areas. The National Wilderness Preservation System has grown each year. To date, Congress has protected more than 109 million acres of federal public land in 44 states.

The desire to create additional Wilderness Areas exists in South Dakota. The South Dakota Wild Grassland Coalition, composed of sportsmen, ranchers, conservationists, Native American tribes, and everyday citizens, has been working for 9 years to permanently protect a portion of South Dakota's historic prairie grassland. The Coalition's

efforts are focused on the Indian Creek and Red Shirt roadless areas and the Chalk Hills formation, all located in the Cheyenne River Valley on the Buffalo Gap National Grassland in Pennington and Custer Counties. The U.S. Forest Service (USFS) manages these National Grassland areas as a part of the Nebraska National Forest.

During the 2002 forest planning process, the USFS recommended that Congress designate 48,710 acres of the Indian Creek and Red Shirt areas as Wilderness. The South Dakota Wild Grassland Coalition advocates the expansion of these areas to include the Chalk Hills formation south of the Red Shirt area, so that more than 50,000 acres would be protected.

Located in the Cheyenne River breaks, adjacent to the Badlands and the Pine Ridge Indian Reservation, these grassland areas contain a stunning array of landforms, prairie plants, and wildlife. However, to simply characterize these areas as prairie grassland does them injustice. There is nothing monotonous about Indian Creek and Red Shirt. As Dr. Thomas Powers of the University of Montana put it, "They are as much the landscapes of the Old

JIM MARGADANT is a Regional Organizer for the Sierra Club, based in Rapid City, and is a member of the South Dakota Wild Grassland Coalition's steering committee. He may be contacted at: Sierra Club SD Staff Office, 508 6th Street, Suite 307, Rapid City, SD 57701, (605) 342-2244

# PROPOSAL:

## Wilderness Protection of the Grassland

West and the frontier, as distinctively an American landscape, as anything the rest of the Mountain West has to offer.”

Indian Creek and Red Shirt are the largest remaining blocks of native grassland that still can qualify for designation as Wilderness. No permanent improvements exist on these lands; they retain their primitive character, affording the visitor outstanding opportunities for solitude and primitive, unconfined recreation. People who enjoy the backcountry are drawn to these wild, roadless grassland places.

Talking with people who have participated in the Coalition’s outings and tours, leaders have discovered that everyone who has gone into these areas experienced them on a personal level. In leaving behind the pressures and demands of modern life, people feel a sense of renewal. For others, this rugged country poses unique personal and physical challenges. Visitors vividly remember their encounters in the backcountry and feel an almost magnetic pull to return. They know that these grassland areas are



Photo by Jim Margadant, taken in Indian Creek

the best of the truly big, wild public lands remaining in South Dakota.

Like the Forest Service’s recognition, South Dakota residents, Native Americans, sportsmen, and conservationists

also realize that these special grassland areas along the Cheyenne River are places where, in the words of the Wilderness Act, “the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.” As such, these areas deserve permanent protection. Absent protection, their wilderness character will disappear and a window on the history of the American West will be forever closed to future generations.

Presently two Wilderness Areas exist in South Dakota. Congress created the 64,144-acre Badlands Wilderness, located within Badlands National Park, in 1976. The Black Elk Wilderness, located in the Black Hills National Forest, was created in 1980 and contains 13,426 acres. If the 50,000-acre Indian Creek, Red Shirt, and Chalk Hills proposal was to be combined with our two existing wilderness areas, their total area would represent only one-quarter of 1 percent of South Dakota’s 77,116-square mile land mass.

Considering these areas are the best of what’s left of the state’s public grassland, it’s a modest proposal 🍅

***“the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.”***



Photo by Kirk Koepsel, taken in Indian Creek

# STRAW BALE CONSTRUCTION



*Completed Structure*

Civilizations throughout the ages have used local materials to build structures. Nomadic people have developed ingenious methods of creating moveable shelter from readily available materials. In the Americas, early European settlers encountered seemingly infinite virgin forests making wood the preferred building material for all structures in the early years of the colonies.

As America expanded west of the Mississippi River, forests gave way to the almost treeless Great Plains. For this reason, as homesteaders moved into these areas in the late 1800s, sod became the chosen building material. Though sod was plentiful and easily used to quickly construct a basic shelter, it had many shortcomings: rain turned the walls and roofs into mud, snakes and vermin liked the walls as places to escape the extreme temperatures, and the constant presence of dirt and dust caused a general lack of cleanliness.

In the mid-to-late 1800s, with the introduction of baling technology (hand-operated, stationary, horse-driven, and steam-powered balers) resourceful settlers saw those bales as jumbo-sized bricks. Once stacked to form a wall, the straw bales could be covered in a clay/straw stucco to make them water- and vermin-resistant. In 1896 or 1897, the first documented, permanent straw bale building, a schoolhouse, was constructed near Bayard/Scott's Bluff, Nebraska. This technique of building was widely used in the region from about 1915 to 1930.

In the mid-1970s, an article by Roger Welsch was credited with renewing interest in straw bale construction, particularly among those who wanted an alternative to standard wood construction. Mhyrman and McDonald have documented that 70 early Nebraska straw bale structures still existed as late as 1970. In the late 1990s, 13 buildings were still standing and all but one were still in use.

**D. DEAN ISHAM, SDID** Professor Isham has been with SDSU's Interior Design Program since 1994. He has been actively engaged in the construction of straw bale buildings for five years and, in 2008, led a group of volunteer students in the construction of the McCrory Outdoor Classroom at McCrory Gardens, the first straw bale structure with a living roof in South Dakota. He is also active in his design firm, Isham Design Resources.

# AND A LIVING ROOF



During the summer of 2008, students from South Dakota State University and other volunteers came together in Brookings to construct most of the structure for the Children's Gardening and Outdoor Classroom—in 2 weeks.

The 900-sq.ft. project demonstrates the potential of straw bale construction and living roofs. Approximately 250 bales serve as both the insulation (R-50) and the complete load bearing structure for the roof. The living roof, manufactured by LiveRoof, is approximately 1,300 sq.ft. and covers both the large main structure and the patio. The pre-planted media and interlocking flats allowed students to install the entire roof system in a single day.



Students placing RBA (roof bearing assembly)



Students placing standard roof trusses

Since its completion, the building has become a popular place to visit. Local school children, the university community, and the public take advantage of the learning opportunities afforded by the Children's Gardening and Outdoor Classroom at McCrory Gardens. A surrounding children's garden is in the planning stages with SDSU landscape architecture students, and will highlight sustainable gardening practices 🍅

#### References:

- Institute for Regional Studies at North Dakota State University [IRNSDSU], 2006
- Myhrman & McDonald, 1998
- Welsh, 1970
- Swentzell-Steen, et al., 1994

# LITTLE HOUSE IN THE



South Elevation



**TOM REASONER, AIA**

Tom is a free range architect practicing in the upper Midwest. He can be reached at [tomreasoner@gmail.com](mailto:tomreasoner@gmail.com).

In the Spring of 1982 the elevation of Jefferson, South Dakota increased some 16 ½ feet with the topping off and planting of the roof of the new LaFleur residence just off Main Street in this rural community in the southeastern part of the state where one can see Iowa to the east and Nebraska to the west. Nothing so unusual about building a new house, but building an earth sheltered house, then and now, that was different.

What started off as a handshake between two Jefferson natives turned into an innovative experiment and expression of residential architecture that reflected the growing awareness of the tenuous and sometimes fragile relationship between mankind and nature. ‘Green’ wasn’t in the air, but we had seen some black and white numbers that initiated a serious, albeit sporadic, reassessment of our resources and their use in the years to come.

The 1973 oil crisis had come and left in its wake new Federal agencies (the Federal Energy Office) and mandates (Emergency Highway Energy Conservation Act). There was a somewhat panicky awareness that energy was not free (cheap), and unlimited; there were not only limits, but global forces at work that could alter energy supplies.

During the next decade as energy conservation became a buzz word for members of the construction industry, the engines of design and technology responded with advances in strategies and materials that would our help lessen energy use. Passive and active energy systems were re-examined and new research lead to jump starts in what we now call renewable and sustainable design.

The LaFleur family wanted a new home, something out of an 80’s house plan book. Their contractor David Allard proposed that they consider an earth sheltered residence. Armed with the latest books on passive energy and research from earth sheltered housing resources such the University of Minnesota’s Underground Space Center, he worked out a floor plan for a 4000 SF house including a two car garage that met the needs of the family. Engineering was done by a Sioux City consultant. The rest is not so much history as time and materials, and technology.

There are two basic types of earth sheltered buildings, ‘cut and fill’ where the structure supports earth loads from above and on the sides and ‘mined’, where the building is created by excavation in self supporting soil or rock\*. Jefferson is nestled on the flood plain between the Mis-

# PRAIRIE

souri and Big Sioux Rivers and a bermed solution was employed, a variation of ‘cut and fill’ where earth is piled around, up and over the building shell. The structure is composed of 12” concrete block walls (filled with concrete and reinforcing steel) supporting steel beams carrying cored concrete planks with a 2” concrete topping to form the roof. Waterproofing came in the form of trowel applied Bentonite (a natural water barrier) followed by 10 mil plastic sheet and 4” – 6” of extruded polystyrene foam board over which an 18” minimum earth cover was placed and seeded.

**Where else could one say: “Dad’s up mowing the roof.”**



*View from the southeast with berm.*

David Allard, his father, a local block layer and a small crew aided by a crane and earth moving equipment as necessary went to work. New and/or nontraditional construction techniques took the initial estimated cost from \$120,000 up to around \$160,000 by the time of completion. Things went together by the book(s) and construction proceeded with surprises consisting of core samples for footings unearthing an abandoned outhouse pit which produced over 30 antique bottles and required some additional concrete fill.

Ten months later the house was a home. The south side of the house is glazed to allow maximum sun light and heat gain while the west and north side are earth bermed to provide insulation, the east side has the attached garage door openings. Thermal pane windows and clerestory windows provide light and ventilation. The living room fireplace also forms a trombe wall (a sun facing wall that forms a thermal mass) to capture radiant heat energy. With R values of 30 plus (more than twice the insulation value of conventional ‘stick built’ housing of the time) heating and cooling needs were minimized and coupled with underfloor heating ducts the energy savings started on their payback way.

Being the new kid on the block isn’t always easy and forward thinking is always harder than hindsight. The LaFleur residence still looks fresh, still different and still standing the tests of time. Some twenty-five years later the house meets new DOE insulation value recommendations, and with advances in glazing, insulation and heating/cooling technologies and products could be retrofitted to exceed those and approach the much higher requirements of Passive House Standards. Resurrected concerns with energy use and an increased awareness of carbon footprints have made these building types and technologies important elements in our attempts to green and sustain our environment.

In the meantime, families have been raised and it’s probably time for an interiors upgrade, but no leaks and energy savings have been significant. What’s it like living in an earth sheltered house? No so different, only the neighborhood kids would sled down the bermed sides of the house during the winter and a temporary fence was put up along the garage door side parapet as a precaution. And where else could one say: “Dads up mowing the roof” 🍷

\* Architectural Graphic Standards



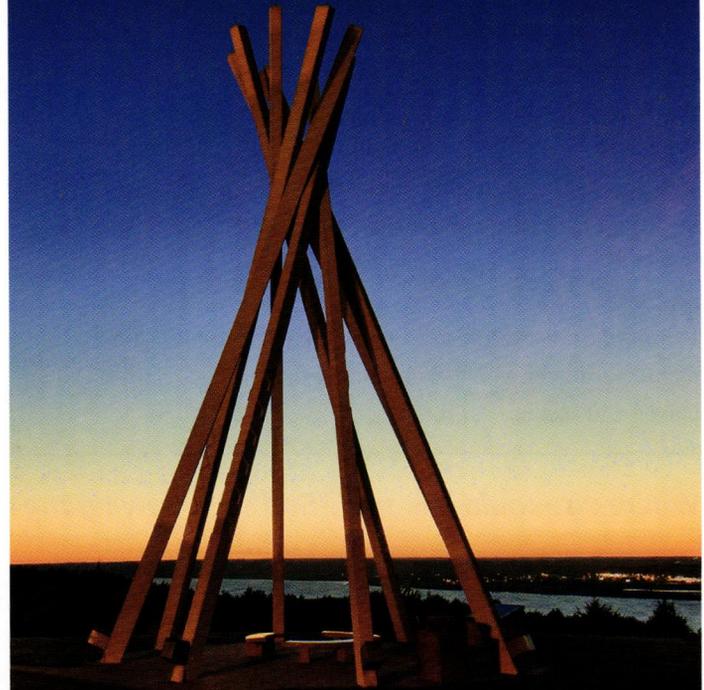
Outside the box...



625 S. Minnesota Avenue Suite 204 Sioux Falls, SD 605-332-7850

WARD WHITWAM, FAIA ARCHITECT

401 East 8th Street, Suite 200C  
Sioux Falls, SD 605.376.7633



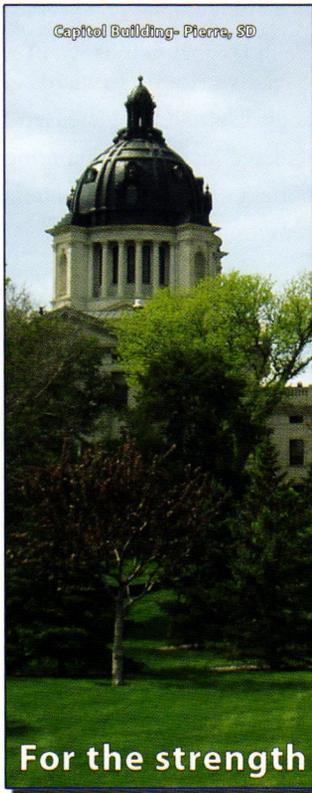
CONTEMPORARY COMMERCIAL & RESIDENTIAL ARCHITECTURE

Halley Park- Rapid City, SD



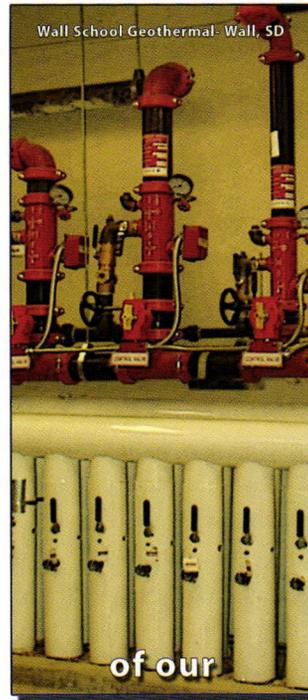
Sustainability.

Capitol Building- Pierre, SD



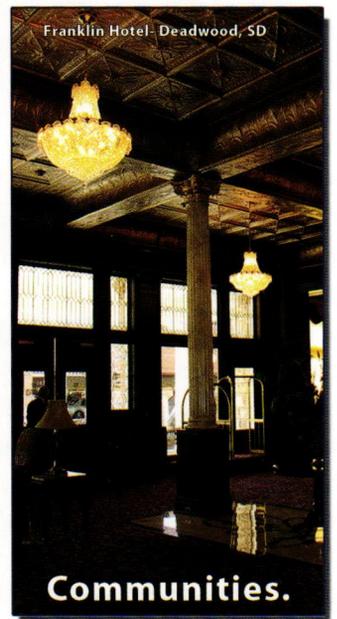
For the strength

Wall School Geothermal- Wall, SD



of our

Franklin Hotel- Deadwood, SD



Communities.

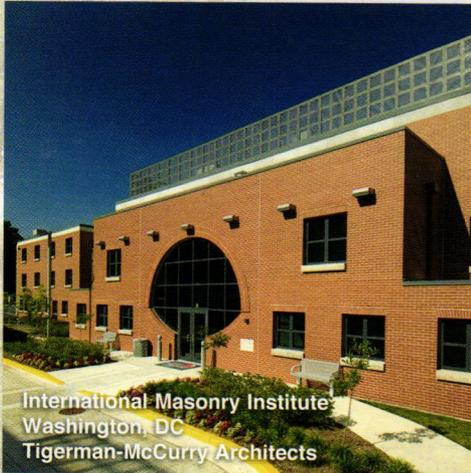


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westplainsengineering.com

# Take The LEED.

DeSCo windows are designed to protect the environment and to help building owners attain LEED credits.



International Masonry Institute  
Washington, DC  
Tigerman-McCurry Architects

## Minimum Energy Performance Credit EA Prerequisite 2

- » A minimum level of energy efficiency must be established for the building and systems. DeSCo windows with high performance glass will reduce energy consumption for heating, cooling and lighting.

## Optimize Energy Performance Credit EA 1 (Up to 10 Credits)

- » Credits are obtained by increasing the level of energy performance above the prerequisite standards. DeSCo windows with high performance glass will help minimize energy consumption.

## Building Reuse Credit MR 1.1 and 1.2 (Up to 2 Credits)

- » These credits can be obtained by reusing existing buildings. DeSCo offers a variety of unequal legs, trim and subframes to easily retrofit an existing building with new, more energy efficient windows.

## Use of Recycled Materials Credit MR 4.1-4.2 (Up to 2 Credits)

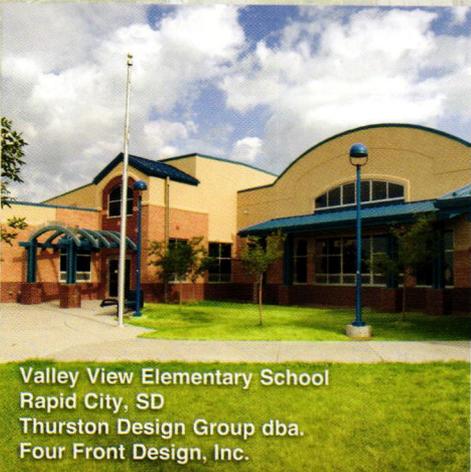
- » DeSCo windows are made of recycled materials.
- » Aluminum content: 45% prime, 49% post industrial, 6% post consumer.
- » White bronze hardware: 100% recycled material.
- » Corrugated cardboard packaging: Minimum of 30% - used packaging can be recycled.

## Indoor Air Quality Credit IEC 4.1

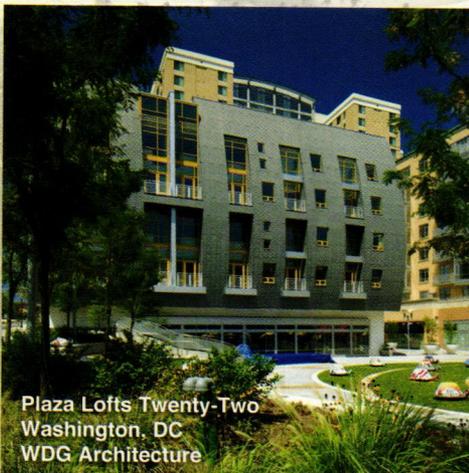
- » Sealants used during the manufacturing process are cured before delivery and do not affect indoor air quality. Credits are only available for sealants applied onsite and inside the building envelope.
- » Window sealants: 420 g/L VOC. Cured in plant and have zero emissions after curing.
- » Glazing Sealants: Less than 50 g/L VOC.

## Daylight and Views Credit IEC 8.1-8.2 (Up to 2 Credits)

- » DeSCo windows can provide many ways to increase daylight and to provide a connection to the outside.



Valley View Elementary School  
Rapid City, SD  
Thurston Design Group dba.  
Four Front Design, Inc.



Plaza Lofts Twenty-Two  
Washington, DC  
WDG Architecture

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## Seeing Rural Communities Better

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We are currently seeking host communities for 2010 and beyond.



**design: SD** is a new way to help rural communities across South Dakota create a better future by design – where architects, engineers, planners and community developers volunteer to help South Dakota's small towns gather and illustrate ideas for their future.

Every year, d:SD hosts a limited number of 'design charettes' in small communities around the state. What's a charrette? A community design charrette is an intense period of design activity undertaken in a community in order to create a new, visual direction for that place. The process normally takes place over a 4-day period, and involves collaboration among many stakeholders in the community and a team of design professionals.

To learn more about us and view some of our past projects, visit [www.designsd.org](http://www.designsd.org) or contact Lindsey Karlson at [lindsey.karlson@rurallearningcenter.org](mailto:lindsey.karlson@rurallearningcenter.org) or by calling 605.772.5153.

2008 & 2009 AIA South Dakota Design Awards

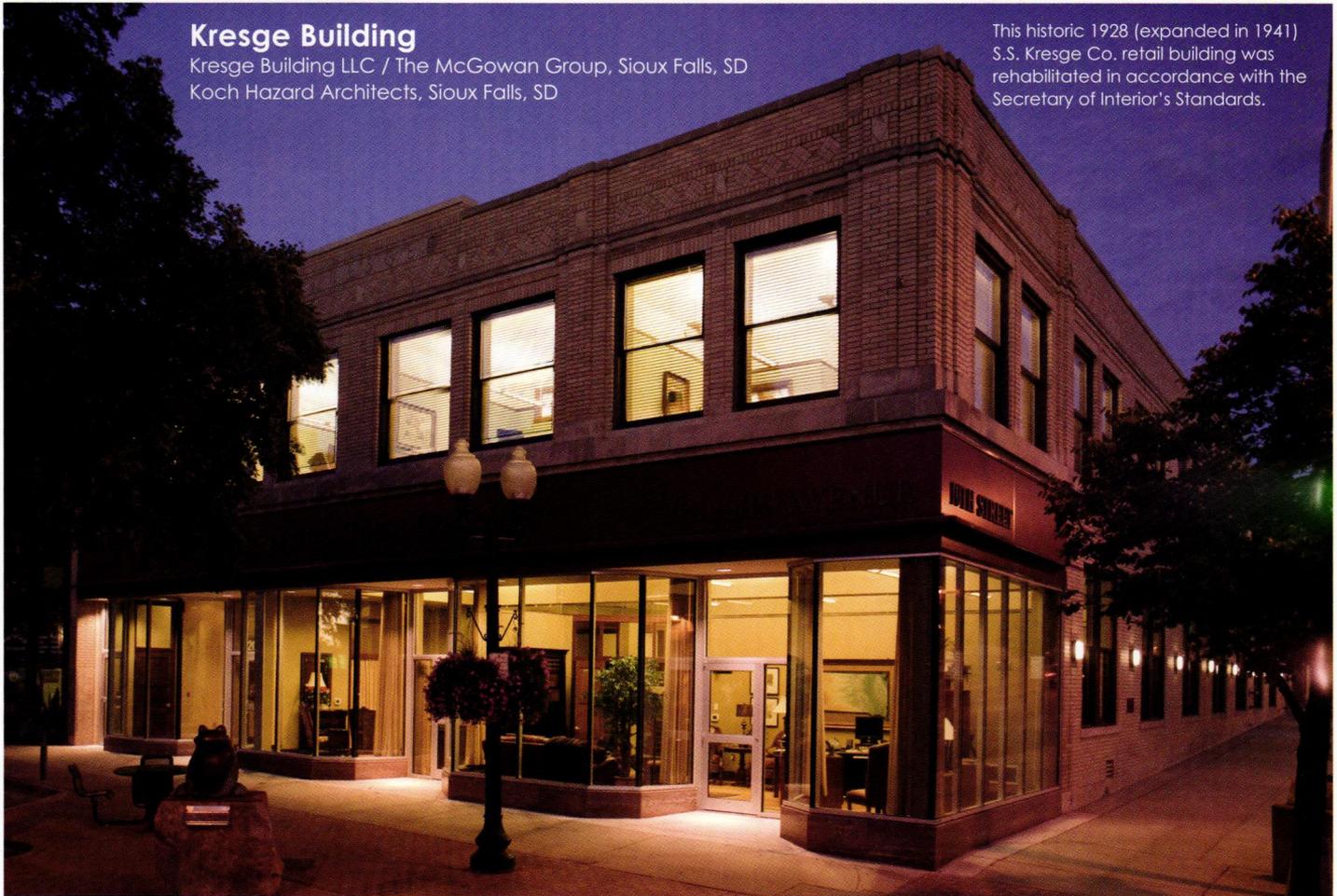


## 2008 Honor Award

### Kresge Building

Kresge Building LLC / The McGowan Group, Sioux Falls, SD  
Koch Hazard Architects, Sioux Falls, SD

This historic 1928 (expanded in 1941) S.S. Kresge Co. retail building was rehabilitated in accordance with the Secretary of Interior's Standards.



#### CLIENT:

Kresge Building LLC /  
The McGowan Group

#### ARCHITECT:

Koch Hazard Architects  
Jeffery A. Hazard, AIA, Design Architect  
Keith W. Thompson, Project Manager

#### CONSULTANTS:

Associated Consulting Engineering, Inc.  
Norm deWit, P.E., Mechanical Engineer  
Kelly Loudenslager, P.E., Electrical Engineer

Structural Engineering Associates  
Greg Hannestad, P.E., Structural Engineer

#### CONTRACTOR:

Beck & Hofer Construction  
Bill Peterson, Project Manager

#### ADDRESS:

201 S. Phillips Ave  
Sioux Falls, South Dakota

#### SIZE:

17,225 gross square feet

#### Tall Ground Level Ceilings Restored:

Lowered ceilings were removed and pressed metal ceilings restored. New partitions are held below the original structure to allow the proportions of the original Kresge retail space to be seen. Ductwork is routed through the basement.



**Storefront True to Kresge Original:**

Although the owner wanted to place offices along the street front, the original storefront configuration was restored: this was done to meet the Secretary's standards, but also to provide access to retail uses, should they be added at some point in the future.

Glass and framing were placed on a base of polished, locally quarried quartzite.

Ground floor window openings on the north façade, which had been made smaller in an 1980's renovation to accommodate a lay-in ceiling, were restored to their original size and proportions.

Original second floor windows were salvaged and retrofitted with insulating glass.

The limestone coping, part of which was missing, was restored and the masonry selectively tuckpointed and cleaned.



**Restrained Treatment of the Largely Intact Upper Level:**

The second floor had been altered from its 1928/1941 layout and appearance and had been unoccupied for over 20 years. Much of the original historic fabric was still present under the various alterations.

New partitions, to create the large number of private offices required by the South Dakota Trust Company, were neatly inserted into the original pattern of larger offices without removing existing walls or altering the rhythm of doors and windows along the main hallway.



## South Dakota Public Universities and Research Center

South Dakota Board of Regents  
TSP, Sioux Falls, SD

**CLIENT:**  
South Dakota Board of Regents

**ARCHITECT:**  
TSP  
Sean Ervin, AIA, Principal-in-Charge  
Jerry Lindberg, Elizabeth Obaka, Project  
Architecture  
Brian Heidbrink, Project Manager  
Karen Mutschelknaus, Interior Design  
Chris Heiser, Structural Engineer  
Roger Nikolas, Mechanical Engineer  
Mike Jamison, Steve Baumberger, Electrical  
Engineer

**CONSULTANTS:**  
Sayre Associates  
Jeff Boldt, Civil Engineer  
GPR Planners  
Dan Dozer, Lab Planner  
Confluence  
Lyle Pudwill, Landscape Architect

**CONTRACTOR:**  
Gil Haugan Construction  
Chris Biren, Project Manager

**ADDRESS:**  
4801 N Career Avenue  
Sioux Falls, South Dakota

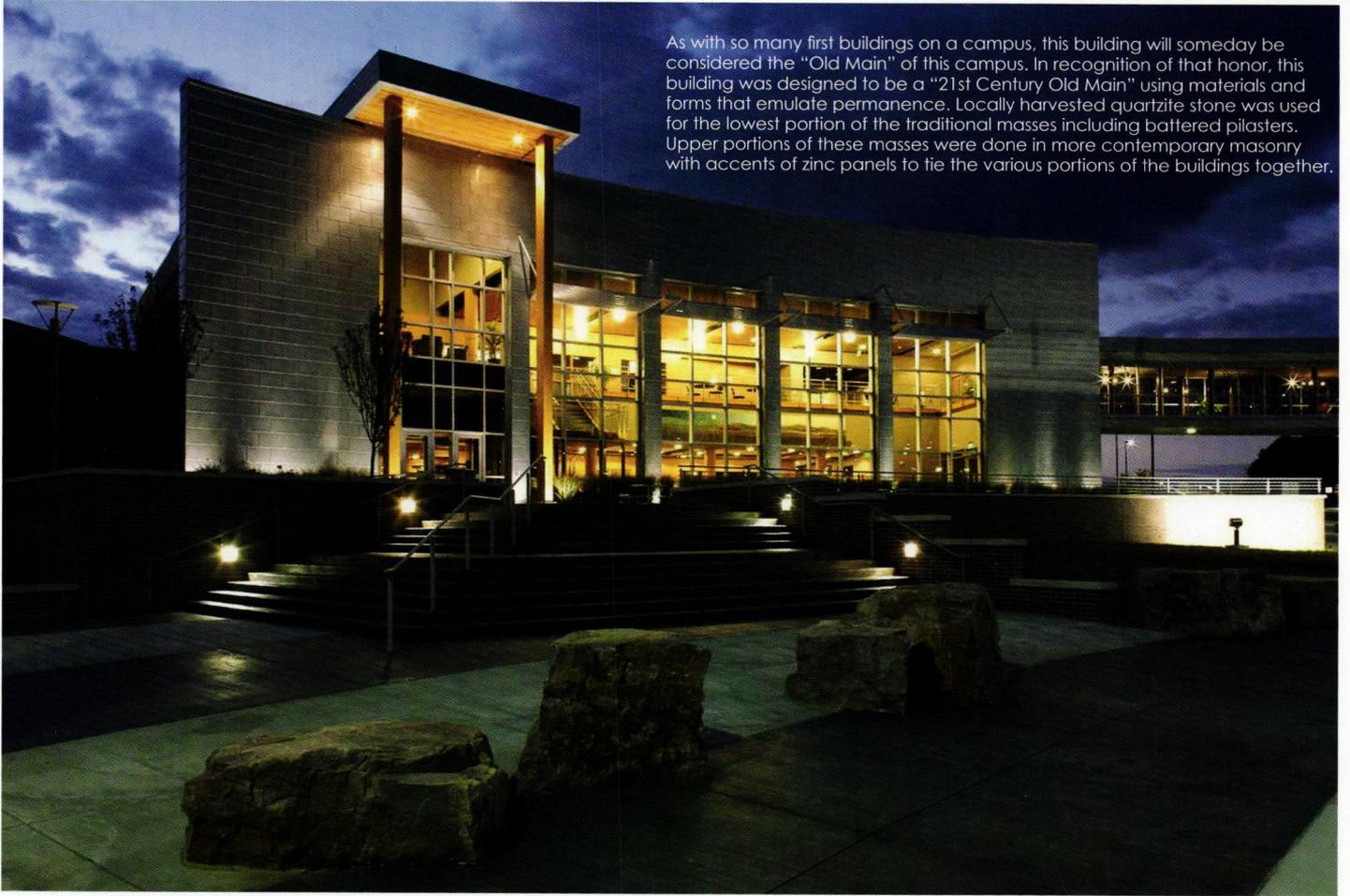
**COST:**  
\$000,000,000

**SIZE:**  
81,000 square feet



▲ Sustainability, from both an environmental and facility longevity approach, was at the center of many of the design decisions as the concept developed. In addition to preserving the wetlands, and using them as an aesthetic feature on the site, the entire site was planned to minimize intrusion while allowing for the natural flood plain. Energy efficiency, kept to a high standard, focused on effective daylighting providing proper environments for students in user-friendly spaces. Materials were chosen that both reinforced local availability and ensured graceful aging of the facility with its masonry and zinc patinas. Interiors of the buildings use natural materials including wood, concrete, stainless steel, and glass to maximize the openness while being warm and inviting.

▶ Students are encouraged to stick around and find time to collaborate with each other as well as instructors. The interior is fraught with planned meeting spaces and open meeting areas to encourage both chance meetings and planned work time. The space provided within the academic program totals 55,000 square feet of classroom building including classrooms, a large lecture hall, administrative offices, and student interaction spaces. The research portion of the program provides 24,000 square feet for the "Graduate Education and Applied Research" (GEAR) center including laboratory spaces, clean rooms, and administration spaces.



As with so many first buildings on a campus, this building will someday be considered the "Old Main" of this campus. In recognition of that honor, this building was designed to be a "21st Century Old Main" using materials and forms that emulate permanence. Locally harvested quartzite stone was used for the lowest portion of the traditional masses including battered pilasters. Upper portions of these masses were done in more contemporary masonry with accents of zinc panels to tie the various portions of the buildings together.



## Brandon Lutheran Church Addition

Brandon Lutheran Church, Brandon, SD  
Architecture Incorporated, Sioux Falls, SD



The new addition was designed to complement the existing building in shape and form. The worship space provides a contemporary space with multiple worship functions in a traditional exterior image.

**CLIENT:**

Brandon Lutheran Church

**ARCHITECT:**

Architecture Incorporated  
Steve Jastram, AIA, Design Architect

**CONSULTANTS:**

Associated Consulting Engineering, Inc  
Norm deWitt, P.E., Mechanical Engineer  
Kelly Loudenslager, P.E., Electrical Engineer

Apex Structural Design, LLC

Julian Pearson, P.E., Structural Engineer

Kroll & Associates

Bill Kroll, P.E., Acoustical Consultant

**CONTRACTOR:**

Sioux Falls Construction Company  
Jay Rasmussen, Project Manager

**ADDRESS:**

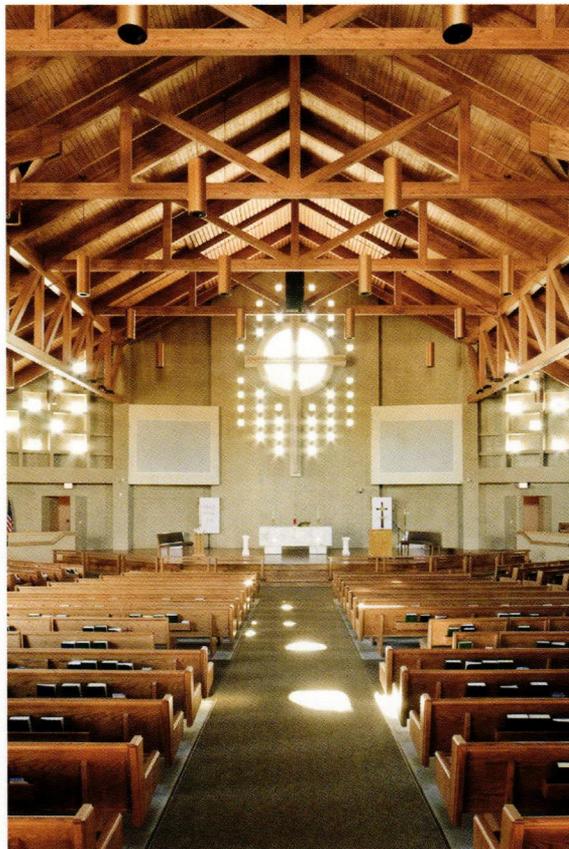
600 East Holly Boulevard  
Brandon, South Dakota

**COST:**

\$2,544,000

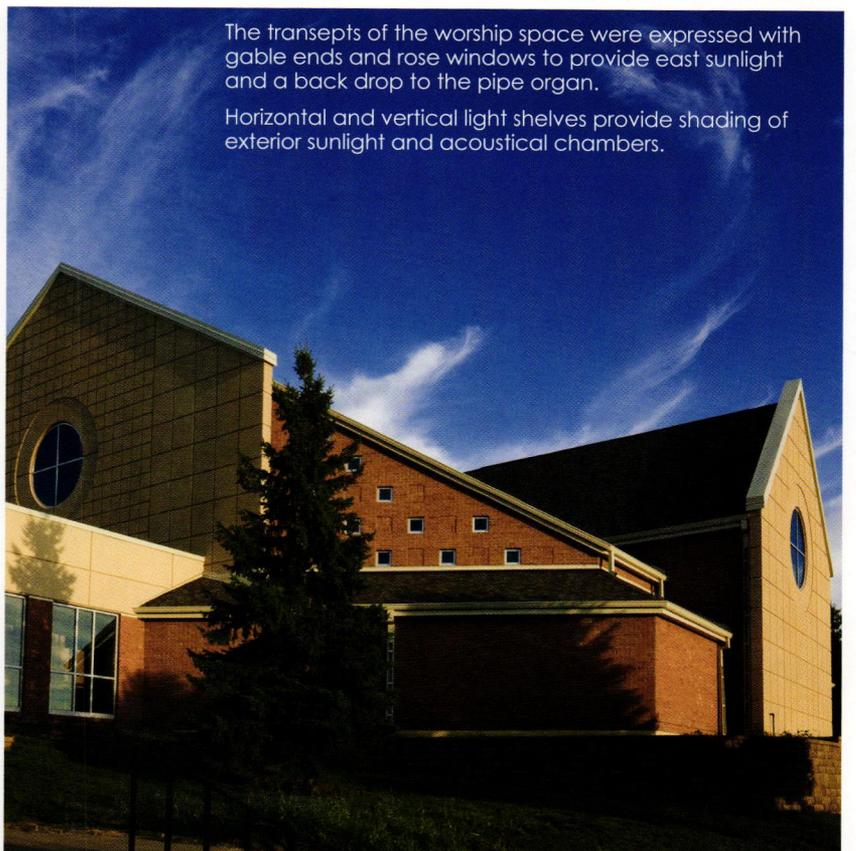
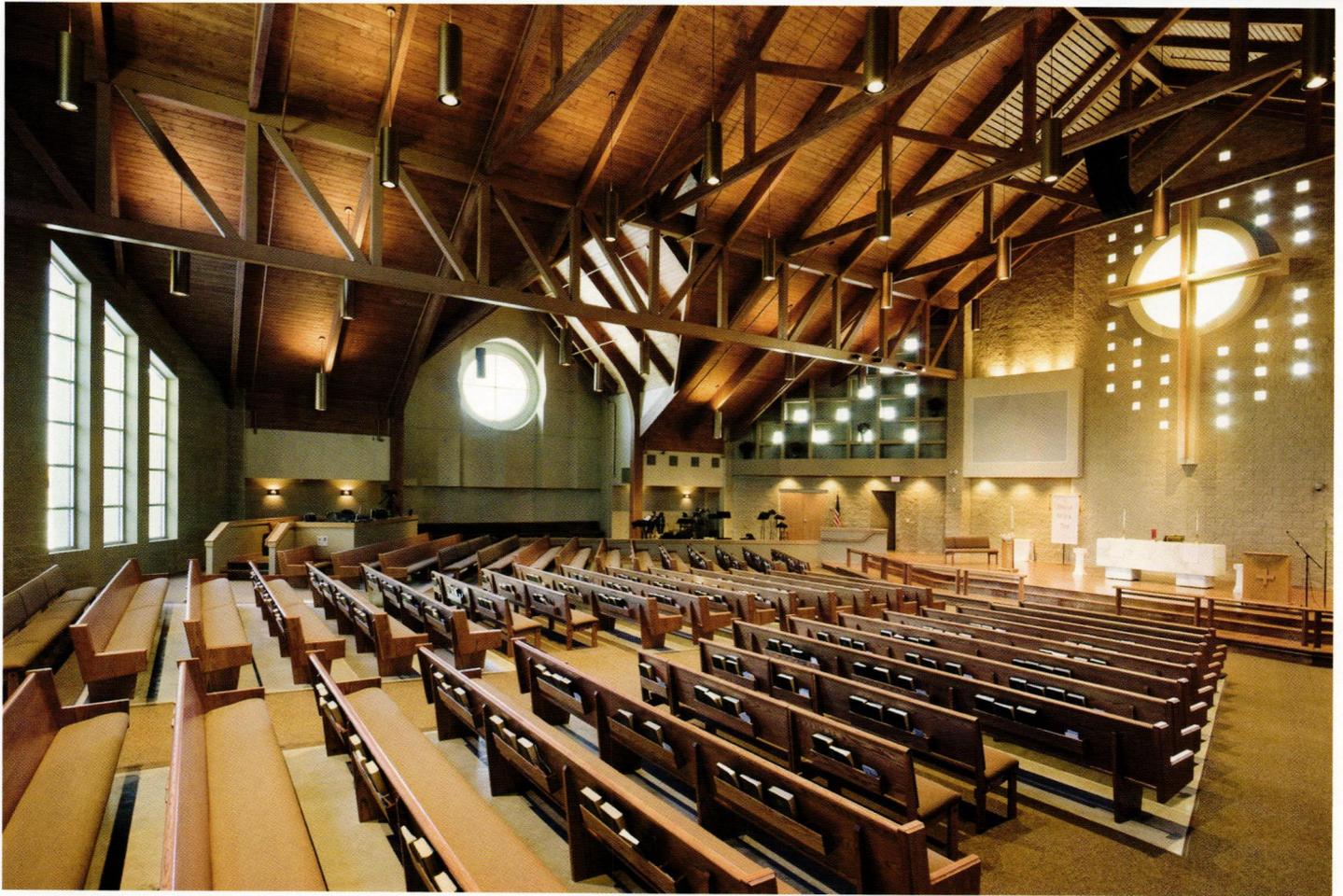
**SIZE:**

12,836 square feet (addition)  
2,727 square feet (renovation)



It was the Owner's desire to create a building that was an outreach to the community. This was accomplished by creating the "Light Box". The light box behind the cross has windows to the exterior and light openings into the sanctuary. Colored lights are included in the light box and change seasonally to reflect the colors of the church year both to the interior and exterior.

The church was designed for multiple worship styles from traditional to contemporary. The chancel provides musical wings for contemporary band equipment, instrumental musicians, bell choirs and vocal choirs. The chancel is also designed for drama/plays. The worship space is designed to allow musicians and performers to circulate around and behind the chancel to appear at various openings into the sanctuary.



The transepts of the worship space were expressed with gable ends and rose windows to provide east sunlight and a back drop to the pipe organ.

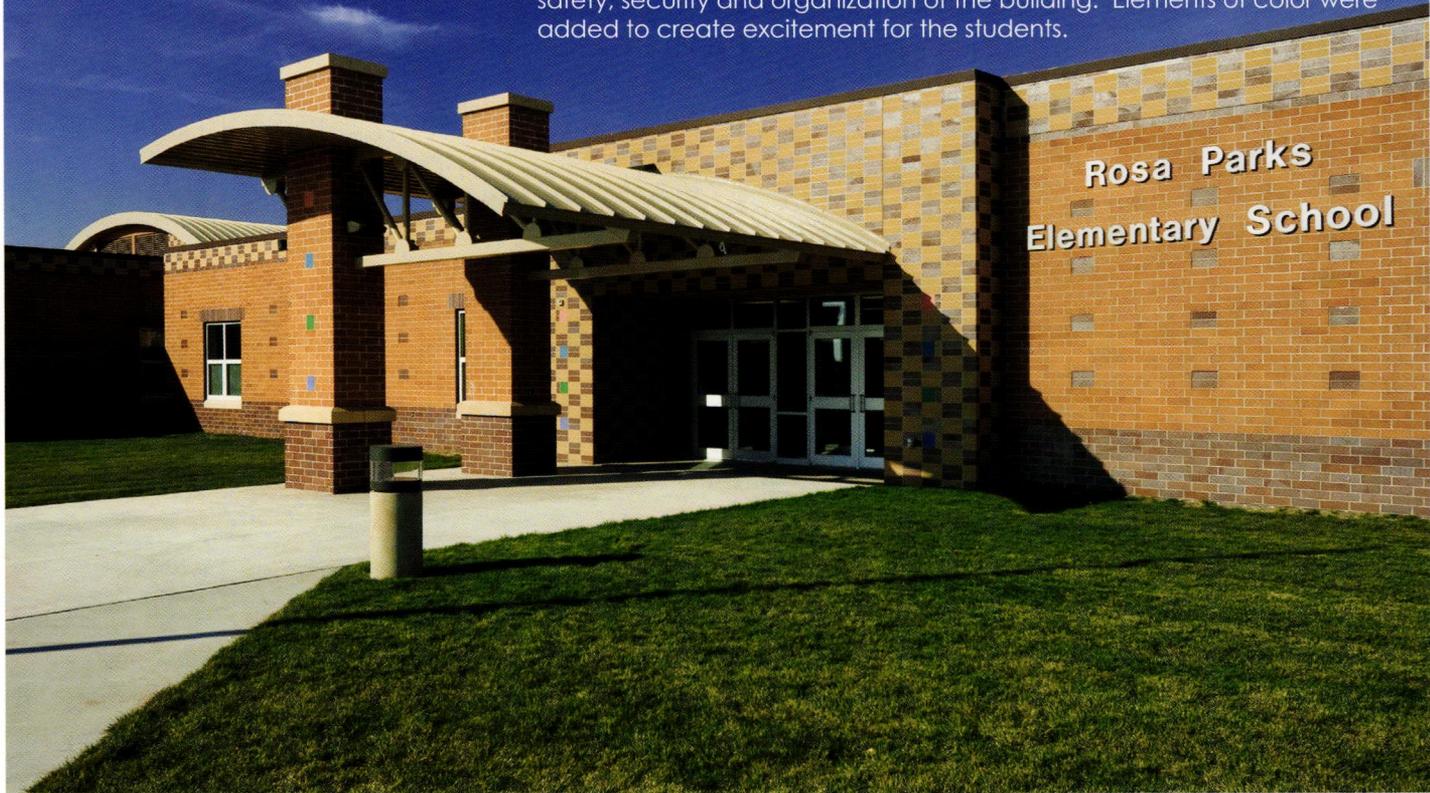
Horizontal and vertical light shelves provide shading of exterior sunlight and acoustical chambers.

## 2008 Merit Award

### Rosa Parks Elementary School

Sioux Falls School District 49-5, Sioux Falls, SD  
Architecture Incorporated, Sioux Falls, SD

Rosa Parks is based on the design of Discovery Elementary School, which has been very successful for the school district in terms of student and staff safety, security and organization of the building. Elements of color were added to create excitement for the students.



This new, three-section elementary school on the east side of Sioux Falls has capacity for 500 students. It is designed to easily add eight additional classrooms to teach four sections.

The school, paved playground and grass areas are designed as a joint school and City of Sioux Falls park. The exterior of the building complies with the unique design standards of the Dawley Family Farm Development.

**CLIENT:**

Sioux Falls School District 49-5

**ARCHITECT:**

Architecture Incorporated  
Steve Jastram, AIA, Design Architect  
Mitchell Aldinger, AIA, LEED AP, Project Architect

**CONSULTANTS:**

Associated Consulting Engineering, Inc.  
Norm deWitt, P.E., Mechanical Engineer

Goodyear Engineering  
Dick Goodyear, P.E., Electrical Engineer

Structural Engineering Associates  
Mark Smith, P.E., Structural Engineer

**CONTRACTOR:**

Hoogendoorn Construction  
Bob Weerheim, Project Manager

**ADDRESS:**

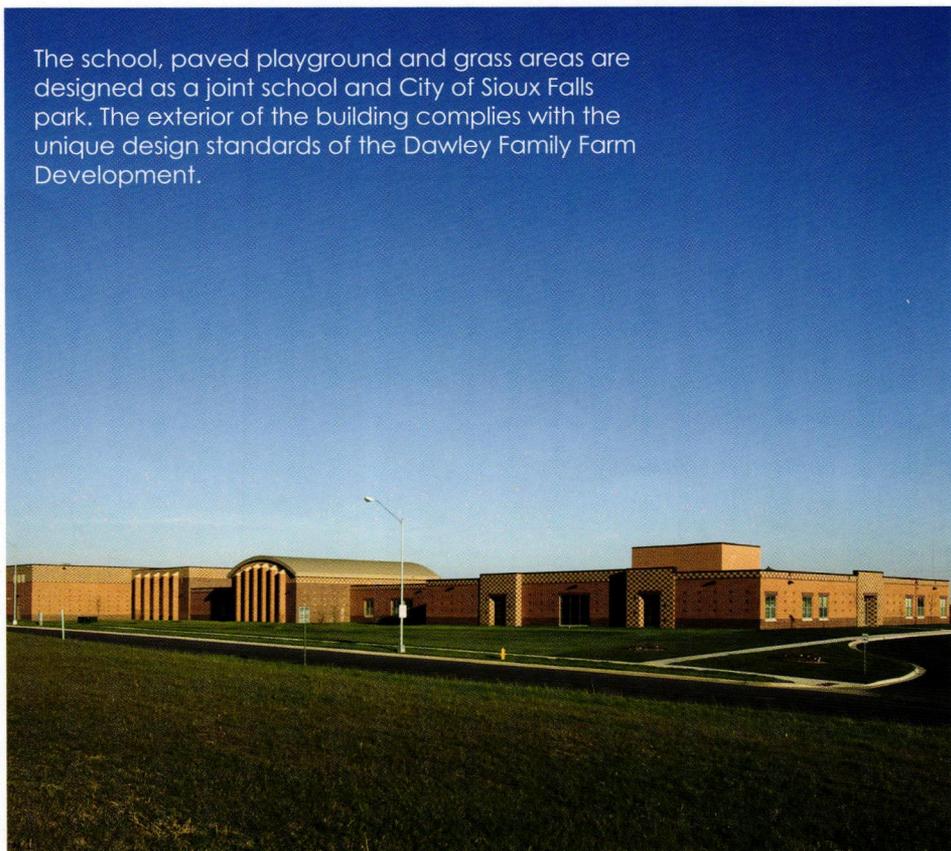
5701 East Red Oak Dr.  
Sioux Falls, South Dakota

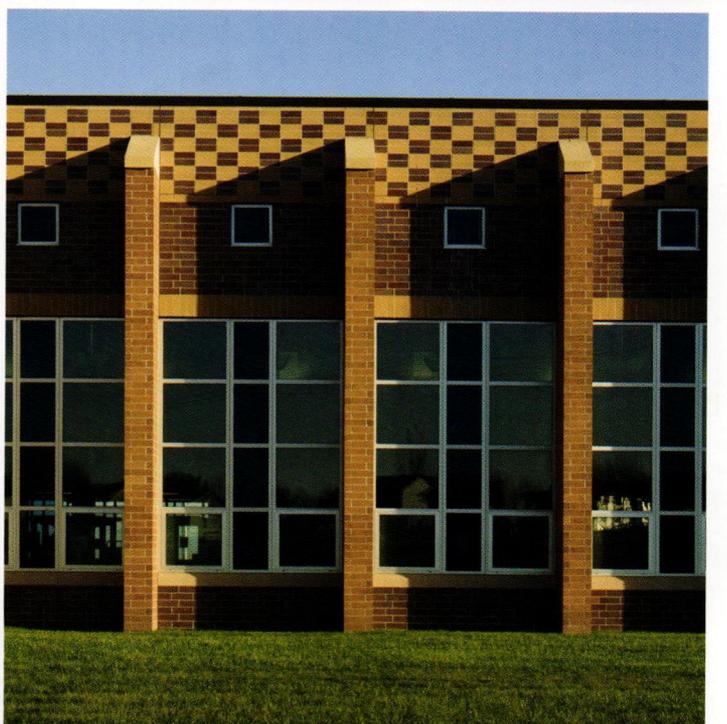
**COST:**

\$7,332,000

**SIZE:**

67,000 square feet





## Orpheum Theater Center

City of Sioux Falls / SMG, Sioux Falls, SD  
Koch Hazard Architects, Sioux Falls, SD



Two existing buildings, one a historic theater previously renovated; the other a former bar, are joined by a link to create an expanded and more functional community theatre and performing arts complex. The project strengthens the street front and enhances activity along an important downtown artery.

**CLIENT:**

City of Sioux Falls / SMG

**ARCHITECT:**

Koch Hazard Architects  
Jeffery A. Hazard, AIA, Design Architect  
Stacey L. McMahan, AIA, Project Architect

**CONSULTANTS:**

Associated Consulting Engineering, Inc.  
Norm deWit, P.E., Mechanical Engineer  
Kelly Loudenslager, P.E., Electrical Engineer

Structural Engineering Associates  
Greg Hannestad, P.E., Structural Engineer

**CONTRACTOR:**

Daniels Construction  
Daniel Bastemeyer, Project Manager

**ADDRESS:**

201 S. Phillips Ave  
Sioux Falls, South Dakota

**COST:**

\$1,651,071

**SIZE:**

37,700 gross square feet



The historic Orpheum Theater is lightly touched by the project, while the Studio Theater, hewn from a former bar, is a low slung "black box" space used for cabaret style performances and dinner theater.

The courtyard theater, created using the space between the existing buildings and the pair of links, is a sloping outdoor space focused on a stage created by opening barn doors on the back-of-house link.



The front-of-house link connects public areas of the two existing buildings and contains a shared lobby, ticketing, concessions and restrooms.

Views of the streetscape and courtyard fill the east and west walls, while indoor activity can be seen from the street, especially at night.



▲ The façade design of the link complements the historic Orpheum Theater using a related proportioning system to organize a steel exoskeleton (inspired by iron fronted buildings contemporary with the historic theater) and regional stone infill which frames openings intended for banner display. The stone color was selected to relate to the brick exposed by removal of a wood covering on the former rainbow bar building and to help pull that building into the composition. The relationship between buildings was further strengthened by the addition of a steel gridwork over the former bar's façade. The horizontal members of the grid echo a series of narrow horizontal brick lines that had been knocked off when the wood covering was added. The new grid is also intended to facilitate hanging of banners to announce events.

## First Presbyterian Church

First Presbyterian Church, Miller, SD  
Koch Hazard Architects, Sioux Falls, SD



▲ This fellowship hall addition, while clearly a 2000's structure, expands the beloved original 1928-30 church in a natural, organic way with great respect for the original architecture.

The church wanted a new fellowship space, kitchen and restrooms on the same floor as the sanctuary, along with an accessible new main entry with an elevator large enough for caskets.

**CLIENT:**

First Presbyterian Church

**ARCHITECT:**

Koch Hazard Architects  
Jeffery A. Hazard, AIA, Design Architect  
Cory A. Bleyenburgh, Project Manager

**CONSULTANTS:**

Associated Consulting Engineering, Inc.  
Norm deWit, P.E., Mechanical Engineer  
Kelly Loudenslager, P.E., Electrical Engineer

Structural Engineering Associates  
Greg Hannestad, P.E., Structural Engineer

**CONTRACTOR:**

Mueller Lumber Company  
Bob Mueller, Project Manager

**ADDRESS:**

321 West 1st Avenue  
Miller, South Dakota

**COST:**

\$1,132,317

**SIZE:**

6,640 square feet (addition)





A substantial amount of glass was used at the new entry to help transition from the original to the new structure.

The new fellowship space is placed adjacent to the sanctuary where it can double as overflow space.

Warm colors and wood bracket details reflect the character of the original building and stained glass windows were relocated from windows that were covered by the addition.

The scale of the addition was kept smaller and stepped down from the original building to respect the dominance of the historic sanctuary.

The new plan adds space, amenity and convenience to serve the congregation well into the 21st century.



## Other 2008 and 2009 Submissions

### Business Aviation

Sioux Falls, SD

Architecture Incorporated, Sioux Falls, SD



### McHale Institute

Sioux Falls, SD

Architecture Incorporated, Sioux Falls, SD

### Bev's on the River Restaurant

Midwest Franchise Iowa, LLC, Sioux City, SD

Architecture Incorporated, Sioux Falls, SD



### Lincoln County Courthouse

Lincoln County, Canton, SD

Architecture Incorporated, Sioux Falls, SD



### Yankton County Courthouse and Safety Center

Yankton County, Yankton, SD

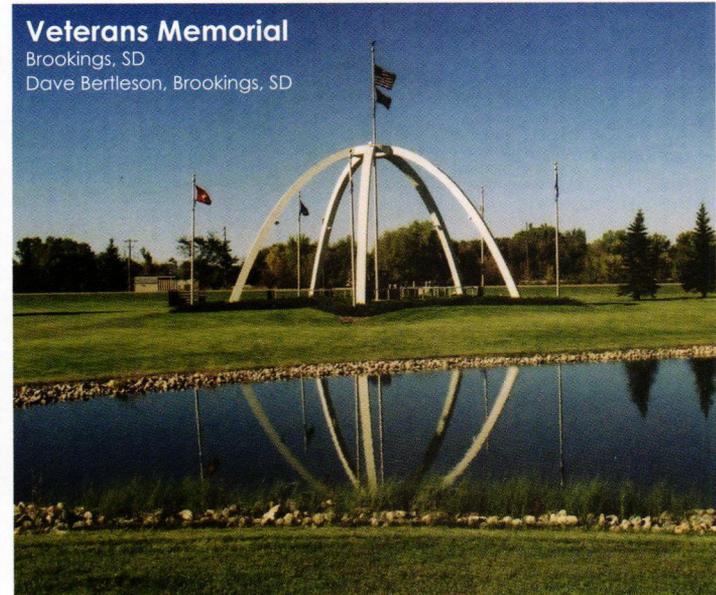
Architecture Incorporated, Sioux Falls, SD

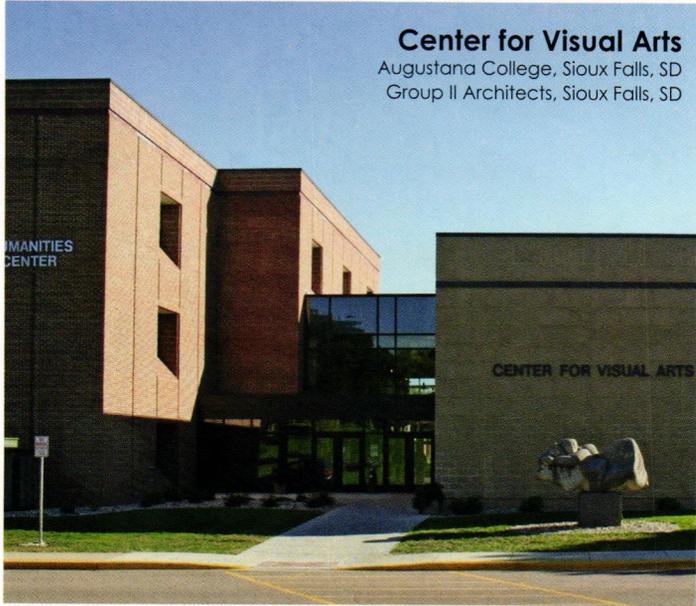


### Veterans Memorial

Brookings, SD

Dave Bertleson, Brookings, SD

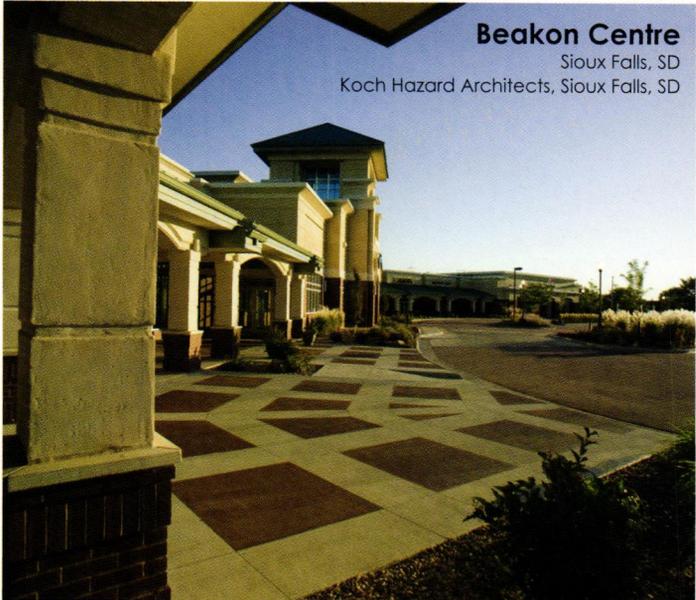




**Center for Visual Arts**  
Augustana College, Sioux Falls, SD  
Group II Architects, Sioux Falls, SD



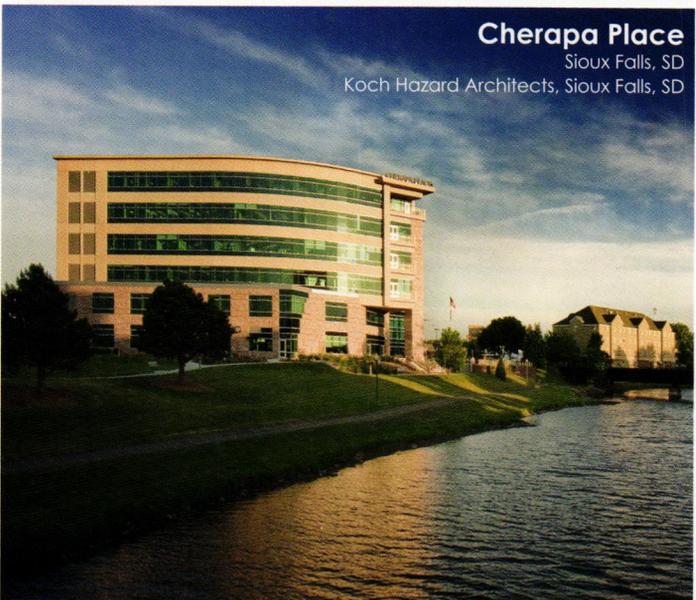
**Children's Home Society Administration Building**  
Sioux Falls, SD  
Koch Hazard Architects, Sioux Falls, SD



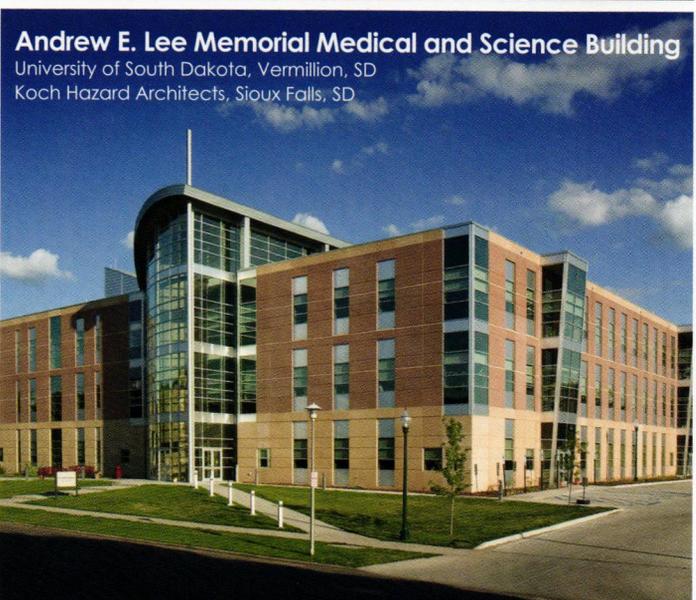
**Beakon Centre**  
Sioux Falls, SD  
Koch Hazard Architects, Sioux Falls, SD



**Hearthstone Assisted Living**  
Sioux Falls, SD  
Koch Hazard Architects, Sioux Falls, SD



**Cherapa Place**  
Sioux Falls, SD  
Koch Hazard Architects, Sioux Falls, SD



**Andrew E. Lee Memorial Medical and Science Building**  
University of South Dakota, Vermillion, SD  
Koch Hazard Architects, Sioux Falls, SD

## Other 2008 and 2009 Submissions

### Sammons Financial Group

Sioux Falls, SD  
Koch Hazard Architects, Sioux Falls, SD



### Sioux Falls Seminary

Sioux Falls Seminary, Sioux Falls, SD  
RSArchitects, Sioux Falls, SD



### Asian Cat Exhibit

Sioux Falls, SD  
TSP, Sioux Falls, SD



### McGovern Library

Dakota Wesleyan University, Mitchell, SD  
TSP, Sioux Falls, SD



## 2008 David James Sain, AIA, NCARB, LEED AP

Rockhill and Associates  
Lecompton, Kansas



David Sain is a long term associate of Dan Rockhill in the firm Rockhill and Associates. Their work is tightly bound to the natural milieu and culture of the Kansas region. In the spirit of regionalism, the areas archetypal forms, Spartan aesthetics, frugal methods, and relationship to nature permeate the results. They are the recipients of numerous awards, most recently; Residential Architect magazine's Firm of the Year, one of Natural Home magazine's Top Ten Green Architecture Firms, Architecture magazine's "Home of the Year." The firm works in a wide range of materials and has been recognized with a Tucker Award for stone, two American Concrete Institute Awards, a Wood Design Award, and a dozen Kansas Preservation Awards. Their work has appeared in over one hundred international books and journals.

The firm, through Dan Rockhill, has recently been recognized as a finalist for the 2006 Cooper-Hewitt National Design Award. Rockhill is Professor of Architecture at the University of Kansas and Executive Director of Studio 804.

Respective websites are: [www.rockhillandassociates.com](http://www.rockhillandassociates.com) and [www.studio804.com](http://www.studio804.com).

The book *Designing and Building: Rockhill and Associates* is available from Amazon.

## 2009 Paul Jeffrey, AIA, NCARB, LEED AP

Bahr Vermeer Haecker Architects  
Omaha, Nebraska



Paul Jeffrey, AIA is a Senior Principal and President of BVH Architects, an award-winning Nebraska based design firm. He has 31 years of design experience with a wide variety of complex projects for public and private clients throughout the United States.

Mr. Jeffrey holds a Bachelor of Science in Architectural Studies from the University of Nebraska-Lincoln. A registered architect, he is a member of the American Institute of Architects, and past President of AIA Nebraska. His experience includes more than 400 built projects for such diverse national clients as the Smithsonian Institute and The Gap Stores.

He has traveled the United States serving as a religious design consultant to other architectural firms, including his current work with four Catholic parishes in Iowa. He has conducted seminars and lectured on church design and liturgical planning at various symposia in the United States. Currently he is working on a variety of projects for Metropolitan Community College, the largest Community College in Nebraska. In 2008, BVH received two AIA Nebraska Design Awards for a new Metropolitan Community College Building.



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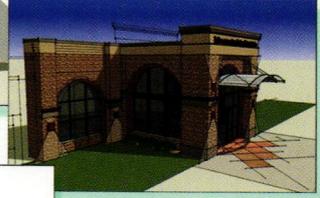
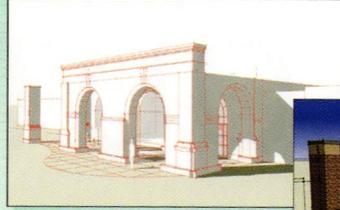
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Sioux Falls Coliseum Façade Renovation, Photo by Stacey McMahan.

# Building Codes in the State of SOUTH DAKOTA

The South Dakota State Health Department and the State Fire Marshal's Office is charged with the review and inspections of certain types of occupancies such as health care facilities, nursing home, assisted living centers, hotels, day cares and schools, etc. There is no state agency that oversees and assures that building designs and construction are in conformance with a minimum life safety building standards in the types of occupancies that are not otherwise covered by the State Health Department and the Fire Marshal's Office.

Within the State of South Dakota, there is no mandate that a county or community has to adopt a building code. Instead SDCL 11-10-5 does mandate that if a governmental subdivision, a county or a municipality chooses to adopt a building code where one does not exist; or if that entity chooses to update its ordinance to a newer building code, currently the 2006 International Building Code would be required to be adopted. This law introduced in the 80's and updated triennially to the most recently published I-Code is intended to assure that there is a level of consistency for the referenced design standards throughout those communities and counties that have chosen to have a building code adopted and/or have active building departments which review plans and verify compliance through inspections.

After two previous attempts in the legislature, last year, a new provision, SDCL 11-10-6, was introduced and signed into law which dealt with the

rest of the state where there is no building code in place. In areas where the local governing body has no building code adopted, the commercial design standard that an architect or engineer would use in design, and a contractor to construct, became the 2006 International Building Code. If a local municipality or county does not have the resources of a building department, the responsibility for minimum structural, accessibility, means of egress, fire and life safety rests on the designer and builder of the building. The language of the bill excluded one- and two-family dwellings, townhouses, and any building located on ranches or farmsteads. Additionally any manufactured homes which are designed in accordance with HUD standards were exempt from IBC compliance as long as the intended commercial use is accessible for the occupancy intended. The intention was to provide minimum design standards for publicly accessed occupancies such as churches, restaurants, taverns and bars, community halls, theaters, offices, private educational occupancies, factories, hazardous materials facilities, mercantile, multifamily residential, storage facilities etc. Furthermore the intent is to establish uniform fire and life safety construction standards for all citizens of the state of South Dakota.

Senate Bill 68 has been introduced on behalf of the South Dakota Building Officials and the South Dakota Municipal League to update both SDCL 11-10-5 and 11-10-6 from the 2006 to the 2009 International Building Code in the 2010 legislative session. In the Senate Committee hearing, the bill was amended by inserting the following language into SDCL 11-10-5, the enabling legislation for a municipality or county to adopt the 2009 IBC:

*"No ordinance may require that any fire sprinkler be installed in a single family dwelling. No ordinance may apply to any specialty resort or vacation home establishment as defined in chapter 34-18 that is constructed in compliance with the requirements of Group R-3 of the 2009 edition of the International Building Code."*



**RON BELL**

Ron Bell has been the Chief Building Official for Sioux Falls, Planning and Building Services since 1985. Ron has been an active member of the South Dakota Building Officials since 1977 and was honored by the International Code Council as the Code Official of the Year in 2005. Ron can be reached at: [rbell@siouxfalls.org](mailto:rbell@siouxfalls.org).

Adopted Building Codes by Counties and Municipalities in South Dakota	
Aberdeen	2000 IBC
Belle Fourche	2006 IBC
Brandon	2006 IBC
Brookings	2006 IBC
Custer	1988 UBC
Deadwood	2003 IBC
Fort Pierre	2003 IBC
Harrisburg	2006 IBC
Hartford	2006 IBC
Huron	2003 IBC
Hughes County	2006 IBC
Lennox	2006 IBC
Madison	2006 IBC
Mitchell	2003 IBC
Minnehaha County	2006 IBC
Pierre	2006 IBC
Rapid City	2006 IBC
Sioux Falls	2006 IBC
Spearfish	2006 IBC
Sturgis	2006 IBC
Vermillion	2003 IBC
Tea	2003 IBC
Watertown	2003 IBC
Yankton	2003 IBC



South Dakota Senate Chambers

In addition, the following language was inserted into SDCL 11-10-6, which defines the IBC as the design standard for the rest of the state that does not have a building code adopted:

---

***The provisions of this section do not apply to any specialty resort or vacation home establishment as defined in chapter 34-18 that is constructed in compliance with the requirements of Group R-3 of the 2009 edition of the International Building Code.***

---

An extremely controversial provision has been inserted into the 2009 International Residential Code (IRC) which requires the installation of automatic fire extinguishing systems in townhouses and one- and two-family dwellings. This provision has pitted the fire service industry which successfully got the provision into the IRC based on the life safety that residential sprinklers will provide; against home builders which maintain that new dwellings will be less affordable by such a mandate. Even though there is no building code that is administered by the state of South Dakota, effectively this provision preempts the counties or the local

municipality's ability to require residential automatic fire extinguishing systems in new single family dwellings. In addition to this provision in the State of South Dakota, to date, the home building industry has successfully taken away the ability of local, county or state building code provision to require residential sprinklers in North Dakota, Alabama, Missouri and Texas and are continuing their efforts in other states.

Currently the State Health Department licenses vacation homes, bed and breakfasts, hunting and fishing lodges, dude ranches etc. For these types of uses that provide accommodations for charge to the public, state law currently regulates such requirements exits, latching hardware at exit doors, smoke detectors and operable egress windows in sleeping rooms and portable fire extinguishers. The IBC allows transient residential occupancies with 10 or fewer occupants to be classified as R-3 occupancies which references requirements consistent with one and two family dwellings instead of mandating requirements that are otherwise found in transient occupancies defined as hotels and motels, R-1 occupancies. The IBC also requires automatic fire extinguishers in any residential occupancy. The Vacation Home and Specialty Lodging Association of South Dakota successfully lobbied to assure that no additional standards from the IBC,

such as automatic fire extinguishers in transient occupancies, be applied to specialty resorts and vacation homes.

Senate Bill 68 which was intended to be a simple consensus item to update from the 2006 to the 2009 International Building Code, essentially took away the ability of a community who adopts the most up to date national consensus building code to determine if sprinklers would be required in new single family dwellings; and expanded the restriction of not requiring sprinklers, or any other IBC provision, other than those referenced in current state law in vacation homes and specialty resorts with relatively small occupant loads 🚫

Will You be a

GREEN

Role Model?



**MICHELLE HOLTHER** is a graduate of the March program at Montana State University-Bozeman and working for TSP, Inc. in their Sioux Falls office. She plans to take the Architect Registration Examination and achieve registration in 2009. [holtfermi@teamtsp.com](mailto:holtfermi@teamtsp.com)

I became an environmentalist at age 10. I credit it to the fact that I had a great role model. My fifth-grade teacher introduced our class to the concept of being green, and I have not been the same since. I learned to look at the bottom of plastic bottles to see if they were recyclable, about landfills and how long it takes things to biodegrade (and the fact that some things never will), and about different types of pollution. I immediately went home and told my parents what I learned. Thankfully, my parents listened and responded. We began recycling nearly everything possible. My interest in recycling was no longer limited to just aluminum cans—which I loved to recycle because I got a few dollars from them – there had been a

paradigm shift in my mind: I wanted to save the environment.

Reducing my environmental impact continues to be a hot-button issue for me today. Unfortunately, I am still surprised at the lack of sensitivity I see in others. When I first moved to South Dakota more than 5 years ago, I felt like I was moving backward. I was called a tree-hugger more than once (not that I mind being called such a name), there were few clients interested in going green, I met some friends who did not even recycle! It was hard to understand. I was fresh out of architecture school and full of idealism, theory, sustainability education and hope for the future. I now realize that I was being called to be a role model.

It was my responsibility to continue considering the environment in my personal life, but even more it was my responsibility to encourage and educate others as well. In order to be proud of the work I do, I have to do it better. We all do.

As young architects or architectural graduates, we have grown up being educated about the environment. As a result we understand, perhaps to a greater degree than other generations, the consequences our actions have on the earth. As Gen X and Y, we are considered tenacious, up for a challenge, and always looking for what's next.\* Put those things together, and we have the ability to influence change on a huge scale. I have heard it said many times that

the United States was at a similar point in the 1970s as we are today. The economy was down, and energy-efficiency, fuel-efficiency, and passive solar design were burgeoning topics. But attitudes changed once the economy improved, and the environment was left in the dust. It is up to us to not let that happen again.

Interest in green design is growing rapidly. In just 5 years, our clients have evolved from rarely asking about green design to the majority of our clients stating that they want their project to be environmentally friendly. Some of us may be suffering from “green” fatigue, but that means the word has gotten out. It is not a topic that is going to disappear until it becomes an inherent part of our culture. As with all things in life, knowledge is the key.

Although, in general, South Dakota has lagged behind in this movement, we as young people are typically early adopters. Let us continue to look toward a greener future and design with that intention in mind. Consider yourself hereby designated a green role model to the others in your office, your clients, the public, and of course family and friends 🍅

\* Greg Hammill. Mixing and Managing Four Generations of Employees, FDU Magazine Online, Winter/Spring 2005. Accessed at <http://www.fdu.edu/newspubs/magazine/05ws/generations.htm> on February 26, 2009.



# Design:SD Grows Up

**Design:SD Project Deuel County** took center stage in the spring of 2009. The region had recently initiated a community development effort, and leveraged the design charrette as a way to include design in the conversation about community development.

The charrette focused primarily on the communities of Clear Lake and Gary, but the team illustrated design principles that could be applied to all rural communities. With the title of “Deuelities” the boards presented to the Deuel County region reflected regional priorities such as the importance of utilizing shared resources, creating a regional identity that could be expressed through common way finding markers, and the importance of land use planning in rural areas.

While the communities of Sisseton and Deuel County begin to tackle the hard work that comes after a Design: SD charrette (turning those illustrated dreams into a reality), Design: SD continues to spark the interest of communities across South Dakota. Currently the sponsors of Design: SD (the Rural Learning Center and SD AIA) are formalizing both the organization and the application process. The team also continues to recruit professionals interested in lending their ideas, expertise and a couple of days to South Dakota’s rural communities.



Sisseton residents describe their community design ideas to Design Team members.



What began as an experiment has continued to grow as communities and design professionals throughout South Dakota experience the synergy and excitement of a Design: South Dakota charrette. Design: South Dakota, now in its fourth year, brings together volunteer teams of architects, engineers, planners and community developers who help small towns gather and illustrate ideas for their future. It’s creating a better future by design for South Dakota’s small towns.

The design challenges of small towns are often overlooked, with lists of projects that seem to take higher priority. But, many communities have found the process of engaging with their community’s design helpful in identifying and organizing priority items for their community.

**Design:SD Project Sisseton (2008)** was initiated by a group of citizens in Sisseton who had participated in the Horizons program and wanted to take their work a step further. The design team took time to dig into the priorities that had been previously identified, and learn a bit more about how the priorities and preferences of community residents should impact the vision illustrated by the design team.

The themes and ideas that emerged focused on a few specific community assets, including a vacant former middle school building that was adjacent to a proposed civic square (the courthouse, library, a church and the middle school all sat within a one block proximity), a large retail/commercial building on Main Street, creating pedestrian paths throughout the community, and strengthening the entire community’s connection to the region.

The design team produced 15 boards that would serve as visual reminders of the ideas and visions the community had shared. The theme “Reconnecting to Center: People, Places and Ideas,” reinforced the importance of building a community with a strong core.

## LINDSEY KARLSON

Lindsey Karlson is a Community Outreach Coordinator at the Rural Learning Center, located in Howard, South Dakota. The Rural Learning Center, along with the SD Chapter of AIA, has sponsored the development of Design South Dakota as a part of their community outreach portfolio. You can reach her at [lindsey.karlson@rurallearningcenter.org](mailto:lindsey.karlson@rurallearningcenter.org).



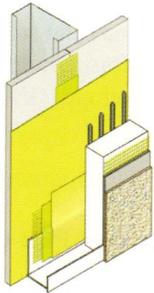
Boards produced during the Design:SD Project Sisseton Charrette

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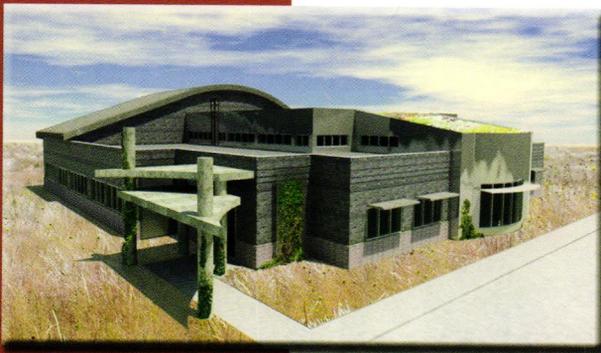
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## A Passion For Design



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Jeffrey J. Nelson, AIA  
President

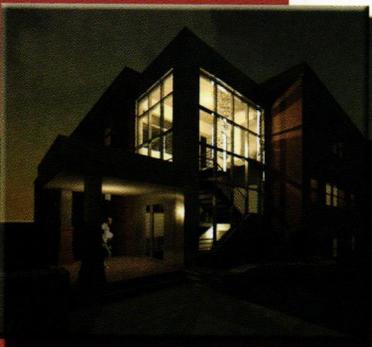
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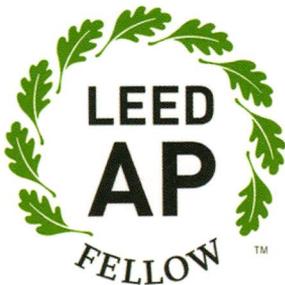


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- LEED Online: faster and easier to use, featuring new help options and smarter templates.
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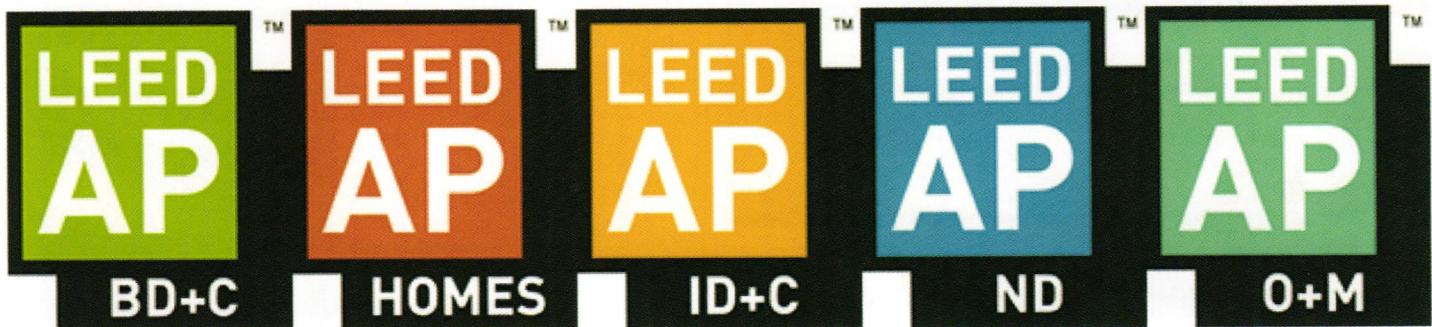
*(Excerpt from <http://www.usgbc.org>)*

Want more information? Go to <http://www.usgbc.org/>. Hold your mouse over the LEED tab and click on the LEED v3 button.

In addition to the launch of LEED v3 last April, USGBC implemented a new credentialing program for LEED APs in 2009, which can be found at [www.gbci.org](http://www.gbci.org). It is now a three tier program recognizing the differing levels of practitioner knowledge and expertise.



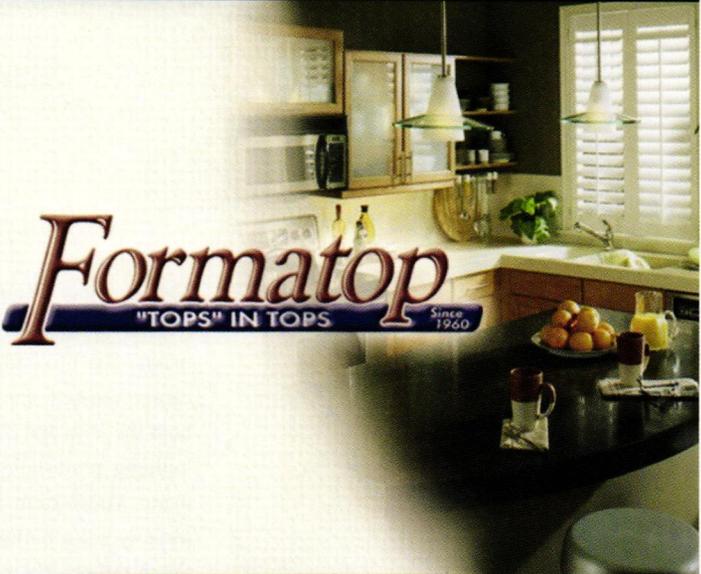
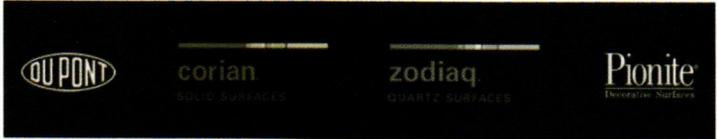
- Tier one is the LEED Green Associate designation and exam, which tests general knowledge of green building practices.
- Tier two is LEED AP achieved by passing a specialty exam based on one of the LEED rating systems including Building Design + Construction, Operations + Maintenance, and Homes, Interior Design + Construction, available now, and Neighborhood Development coming soon. The exams may be taken together or separately to earn the different AP designations. Professional experience on at least one LEED project is also required.
- The third tier makes available a designation for distinguished expertise - LEED AP Fellow. Requirements for this level are still under development.



GBCI’s Credentialing Maintenance Program is designed to expand the knowledge and experience base LEED Professionals. When enrolled, continuing education is required at the rate of 15 hours every two years to maintain LEED Green Associate, and 30 hours (6 LEED related) every two years for LEED APs. In January 2009, the AIA also began requiring a minimum of four hours per year of continuing education focused on sustainable design, constituting half of the eight required for health, safety, and welfare. The two requirements may overlap if programming meets the qualifying definitions, of both entities. Additional information on the AIA program may be found at [www.aia.org/ces\\_default](http://www.aia.org/ces_default).



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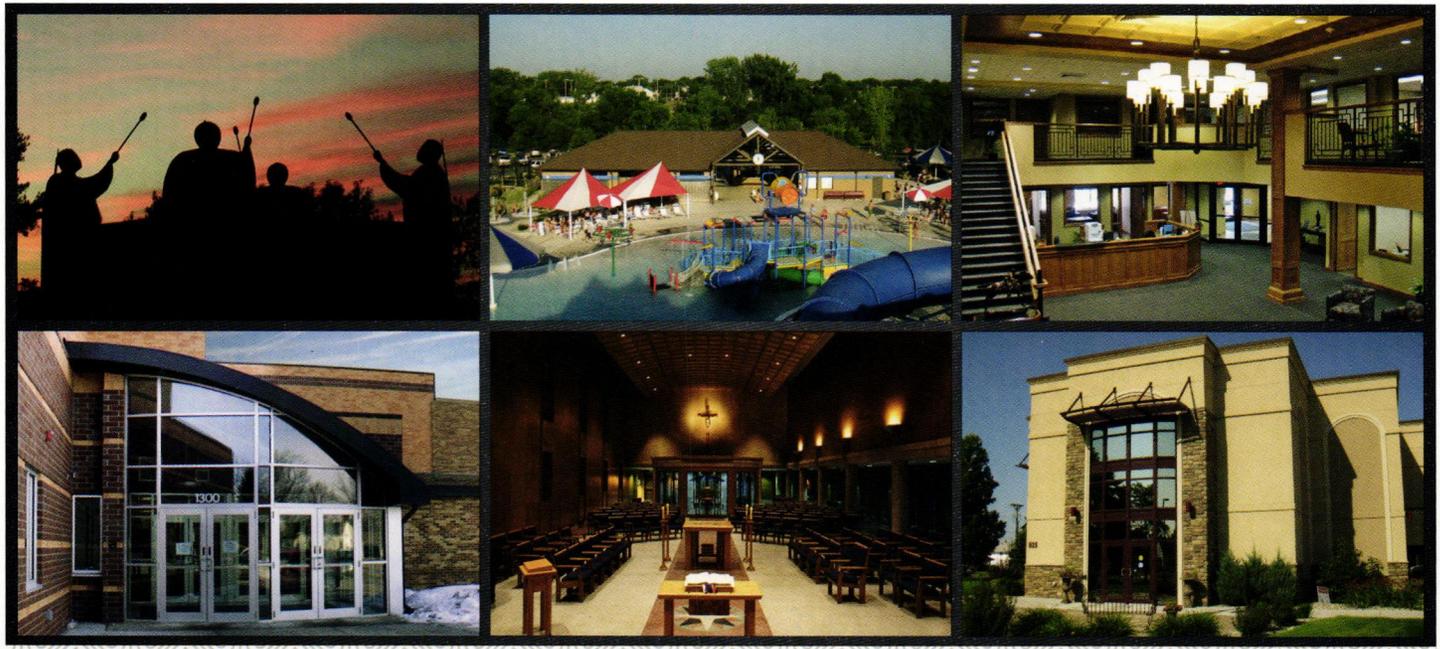


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# South Dakota LEGACY

## The Birdhouse



**TOM REASONER, AIA**  
Tom is a free range architect practicing in the upper Midwest. He can be reached at [tomreasoner@gmail.com](mailto:tomreasoner@gmail.com).

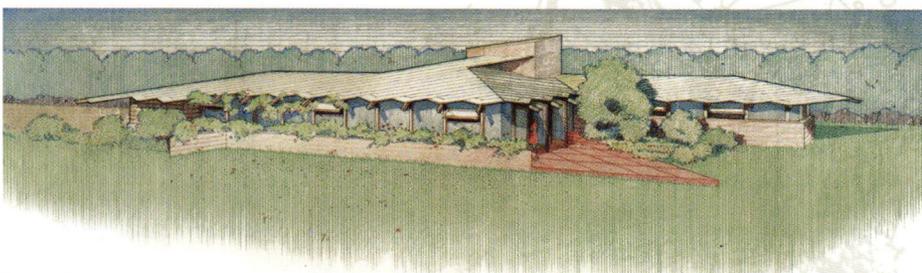
The architect **Frank Lloyd Wright** left his imprint on both our built and cultural environments. His life and legacy are legendary. His career crossed centennial lines and bridged both the 19th and 20th centuries in design and building philosophy. His buildings appear in many Midwestern states, his home turf, yet there is not a building designed by Wright in South Dakota. He was offered the chance to design the Sylvan Lake Lodge in the Black Hills, but was unable to meet the timeline required by its developers and, instead, the commission (completed 1937) fell to a young South Dakota architect named Harold Spitznagel, who had accompanied Wright on his journey to the Hills to see the lake front site.

As an intern with Louis Sullivan (Adler and Sullivan) in Chicago in the late 1800s, Wright established himself as a gifted home designer and continued residential work throughout his long career. Wright practiced and preached, authoring many works on architecture, and in 1954 published *The Natural House*. In this book he denounced the typical dwelling in America as “a bedeviled box with a fussy lid” (preservationists beware). Wright’s earlier Prairie Style Houses from the late 1800s had been refined in size and materials during his later years by the notion of a more organic architecture (“interrelation of practical architecture, mystical nature and progressive technology”\*), culminating in his Usonian dwellings from 1936 on.

Architectural historians typically describe Usonian homes as having one story with open carports, no garage, and no attic nor basement. They were usually built on a concrete slab with under floor heating. Their floor plans are open with a prominent hearth as the center of family life. Wright intended for the Usonians to not only reflect his democratic ideals of the single family, detached dwelling (as exemplified in his Broadacre City scheme), but to also be affordable during the Depression and post-war years. In reality, Usonians ran the gamut of ornamentation and cost, including the use of prefabricated components and employing more conventional building materials and technologies.

Meanwhile back in South Dakota, Byron Harrell, an ornithologist at the University of South Dakota in Vermillion, and his wife, Joyce, had read *The Natural House* and then contacted the Frank Lloyd Wright Foundation in 1961 (Wright had died in 1959) to commission a home for themselves. The architectural fellowship that Wright had founded in 1932 at Taliesin, his residence and atelier near Spring Green, Wisconsin, had become the northern headquarters of the Taliesin Fellowship, finishing Wright’s work and continuing his teachings. John Howe, an original member of the fellowship, took on the Harrell project as his first solo commission. Howe had grown up in Chicago and been very impressed with Wright’s early Oak Park and North Shore houses. He joined the fellowship immediately after graduating from high school and became “the pencil in Frank Lloyd Wright’s hand,” his chief draftsman responsible for many of Wright’s later house designs.

The Harrells had purchased a 2.3-acre lot along a wooded ravine just east of Vermillion atop the bluffs formed by the Missouri River flood plain. They had their house site surveyed and



*Perspective Rendering from the Northwest Architectural Archives.*



Photograph by Mark Wetmore

sent the survey and photographs of the site, along with their “requirements,” to John Howe. He made sketches of the house before visiting Vermillion to see the building site and meet his clients. The rest of the design development and building decisions were done by mail. Howe’s fees were based on 10 percent of the construction cost. The 2,000-square-foot house went out for bid as required by the mortgagors. A local lumber yard, Thompson Lumber Company, was awarded the contract for \$35,000. The house took two construction seasons to complete, more to do with other contracting commitments than construction difficulties, although the design most certainly had some of the contractors scratching their heads.

The house plan is configured using a grid, a Wrightian device: triangular with sides of 5'-4", Howe’s trademark module. This grid is omnipresent in the joints of the concrete floor and became the template for interior walls and dimensioning. The main building elements were concrete block, integrally colored concrete floors, wood-veneer paneling, Tectum roof decking (composite panels made of spun-aspen



Photograph by Mark Wetmore

fibers), and exposed heavy timber framing—all off-the-shelf materials, but utilized in uniquely Wrightian fashion with built-in seating and dining table and a few custom light fixtures. The original multi-stepped, double-pitched, and staggered roof covered in painted canvas probably raised some experienced eyebrows and ultimately had to be recovered in more durable materials. Exterior planters extend along the southeast-facing living room and echo the stacked bond concrete block masonry of the dynamic chimney projection and exterior walls.

In typical Usonian fashion, the entry is secluded and understated. It leads into a series of spaces that unfold into a world where, as Byron Harrell said, “You were outside when you were inside.”\*\* Transparent walls offer panoramic views of the outdoors as deep roof overhangs provide summer shade and winter light. Entry, work/hobby shop, kitchen, dining, and living areas all interconnect as they revolve around a central mechanical core that features a massive, open-hearth fireplace, while the two bedroom suites are discretely located at each end of the house. Under the cantilevered concrete block chimney, breast wood fires could warm the living and dining area as logs crackled and burned on a welded metal grate whose robust diagonal lines reflect the building’s diagonal geometry. Even with utilitarian building products and finishes, the home’s interior is still warm and intimate, more of a nest than a machine.

The Harrell residence is locally called “the birdhouse” because of the compound roof’s resemblance to stylized, outstretched bird wings. The original owners lived in the house until 1991. An addition, also designed by Howe and built at the southwest end of the house in the 1970s, featured a solar heating system, but the system never seems to have been effective, and

the annex now serves as a guest suite/studio with a retrofitted, conventional heating system. A freestanding garage was added by a later owner. Otherwise, the residence remains much as it was when it landed in 1962.

John Howe left the fellowship in 1964 and had a long and successful practice as an architect in Minneapolis, Minnesota. He died in 1994 and was honored with a show of his work at the Minneapolis Institute of Arts in 2000. While South Dakota may not have a real Wright, it got something almost Wright in the Birdhouse. As John Howe said, “Having worked with Mr. Wright for such a long period of time, I cannot but follow his architectural principles. This ethic requires that a building be in harmony with its site, naturally express its purpose, and be built according to the nature of materials and the construction process.”\*\*\*

The Birdhouse, now almost 50 years old, has some ruffled feathers that are being preened by its current owner. And yes, it does feel both Wright and right at home along the bluffs overlooking the Missouri River Valley.

Epilogue: The Birdhouse’s pristine setting will be challenged later this year with the construction of a roadway in the ravine beyond the house taking out many trees and a third of the property through eminent domain 🍷

\* Alan Hess, *Organic Architecture, The Other Modernism* (Salt Lake City: Gibbs Smith Publisher, 2006), 5.

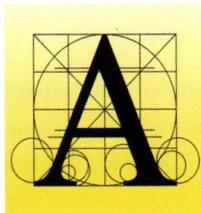
\*\* Byron Harrell, telephone interview with author, 12 January 2009. John Howe Papers, Northwest

\*\*\* Architectural Archives, University of Minnesota Libraries, Minneapolis, Minnesota.

## Firm Profiles

### ARCHITECTURE INCORPORATED

#### Architecture



#### Incorporated

415 S. Main Ave  
Sioux Falls, SD 57104  
605.339.1711  
Fax 605.339.2331  
mail@architectureinc.com  
www.architectureinc.com  
Established: 1976

#### Principals

Alan Richard Dempster, AIA,  
LEED® AP - President  
Mark Aspaas, AIA - Vice President  
Steven Jastram, AIA - Corporate Secretary  
Elizabeth Squyer, AIA - Principal Architect  
Patti Monson, Assoc. AIA, LEED® AP - Principal Production Manager  
Sarah Aldinger, AIA, LEED® AP - Principal Architect  
Mitchell Aldinger, AIA, LEED® AP - Principal Architect  
Lisa VandeVoort, LEED® AP - Principal Business Manager

#### Firm Personnel By Discipline

Licensed Architects	6
Certified Interior Designers	2
Other Architectural	7
Contract Administration	1
Marketing	2
Administrative	5

#### Firm Description/Philosophy

Founded in 1976, Architecture Incorporated in Sioux Falls and Rapid City, South Dakota has firmly established its reputation as a regional leader in innovative and award-winning design. As a well-diversified design firm, our awards are as varied as our portfolio. Indeed, we are proud to be architects of distinction, earning national recognition and designing for international clients. However, our pride is deepened by the fact that many of our awards represent the priority we place on listening. We listen to our clients. We listen to each other. Our philosophies are simple. Respect History. Preserve Beauty. Build Longevity. Embrace Stewardship. Advocate Sustainability. Create Innovation. Enhance Living. Imagine Better.

#### Recent Projects

Career & Technical Educational Academy, Sioux Falls, SD;  
Harrisburg High School and Athletic Complex, Harrisburg, SD;  
Prairie Club Golf Resort, Valentine, NE;  
Dakota Middle School Theatre Renovation, Rapid City, SD;  
Brandon High School Addition and Remodel, Brandon, SD;  
University Center, Rapid City, SD;  
Presentation College Multi-Use Facility, Aberdeen, SD;  
Pettigrew Elementary School, Sioux Falls, SD;  
Children's Museum of South Dakota, Brookings, SD

### ARCHITECTURE AUTOMATED, INC.



Convention Center Plaza  
1408 W. Russell St.  
Sioux Falls, SD 57104  
605.336.3722  
Fax 605.336.3708  
archautomated@midconetwork.com  
Established: 1986

#### Principals

Gene Murphy, AIA, NCARB

#### Firm Personnel By Discipline

Licensed Architects	1
Administrative	2
Other	3

#### Firm Description/Philosophy

AAI is a full service Architectural Firm offering a wealth of experience in all parameters of design, but especially in the fields of Educational, Ecclesiastical, and Governmental Design.

Our geographical range extends from the far reaches of South Dakota to Southwestern Minnesota. We pride ourselves in our dedicated service to our clients with representation extending through the one year construction warranty period.

#### Recent Projects

School Facilities Expansion, Sioux Valley School District 05-5, Volga, SD;  
School Facilities Expansion, Dupree School District 64-2, Dupree, SD;  
Sioux Falls Area Complex, South Dakota Dept. of Transportation, Sioux Falls, SD;  
School Facilities Expansion, Colman-Egan School District 50-5, Colman, SD;  
Worship Center Expansion, St. Matthews Lutheran Church, Worthington, MN

### BAFFUTO ARCHITECTURA



baffuto architectura  
bright-green

623 West Boulevard  
Rapid City, SD 57701  
605.341.7501  
Fax 605.341.7501  
bbaffuto@aol.com  
Established: 1998

#### Principals

Thomas Baffuto, AIA/NCARB - Principal Architect & Owner

#### Firm Personnel By Discipline

Licensed Architects	1
Administrative	1

#### Firm Description/Philosophy

A design oriented architectural firm established by the desire to offer meaningful design through the "art" and "technology" of architecture, baffuto architectura seeks to work with enthusiastic clients interested in creating a new vision for their special projects. Mr. Baffuto, AIA is known for his creative design work that integrates client needs in programming and planning, into building solutions that are alive with architectural detail and functional expression.

#### Recent Projects

Rapid City Fire Stations #3, #6 & #7, Rapid City, SD;  
Harding County School District New K-12 School, Buffalo, SD;  
Jenny's Floral, Custer, SD;  
Hickok's Historic Hotel, Deadwood, SD;  
Meade County Housing Commission Office Expansion and Remodeling, Sturgis, SD;  
First Western Bank and Foothills Family Clinic, Piedmont, SD

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Sioux Falls, SD 57105  
605.334.7179  
Fax 605.334.2841  
info@baldrige-nelson.com  
Established: 1982

**Additional Location**

Amherst, VA

**Principals**

Jeffrey J. Nelson, AIA - President  
Sherry R. Nelson, AIA - President

**Firm Description/Philosophy**

Baldrige & Nelson Architects and Engineers, Inc. believes that quality design comes from a total commitment to each individual project. Every client has unique and important needs. Our team of professionals ensures that these needs are met through programming, design and communication. Our goal in working toward the successful completion of each project is exemplified in our design philosophy.

It simply states:

“Quality architecture is never an accident. It is the result of good design, sincere effort, intelligent direction and skillful execution.”

**Recent Projects**

Science Lab Renovations, MeWalt-Jensen & Krikac Buildings, Northern State University, Aberdeen, SD;  
SD State Library Renovation, Pierre, SD;  
Base Civil Engineering Complex, South Dakota Air National Guard, Sioux Falls, SD;  
Kramer Hall Dormitory Renovation into Suites, Northern State University, Aberdeen, SD;  
New Office Building, Pierre Economic Development Authority, Pierre, SD;  
Tri-Valley High School Addition and Renovation, Colton, SD

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contact@bannerassociates.com  
www.bannerassociates.com  
Established: 1947

**Additional Locations**

Sioux Falls, SD  
Rapid City, SD  
Pipestone, MN  
St. Peter, MN

**Principals**

Daryl Englund, PE - President  
David Odens, PE - Principal  
Richard Salonen, PE - Principal  
Timothy Connor, PE - Principal  
Dennis Micko, PE - Principal

**Firm Personnel By Discipline**

Licensed Architects	2
Other Architectural	2
Interior Designer	1
Licensed Engineers	31
Other Engineers	5
Surveyors	4
Construction Observation	2
GIS	1
CADD Technicians	7
Administrative	5

**Firm Description/Philosophy**

Banner Associates is a multidiscipline engineering and architectural firm dedicated to developing innovative solutions for our client's specific needs. To best serve our clients we offer the personalized service that a small firm provides, along with the proficient and knowledgeable staff and resources that a large firm offers. Virtually all projects have numerous disciplinary facets. As a multi-disciplined firm with a cross section of expertise available, we will tailor a team of qualified and experienced professionals backed by

skilled technical and support staff, to provide the level of expertise and service that is precisely right for each project. Banner's wide range of expertise includes architecture; civil/transportation, municipal, and structural engineering; land development; water resources planning and development; water storage, distribution and treatment; wastewater collection and treatment; GIS and surveying.

**Recent Projects**

SDSU Innovation Center, Brookings, SD;  
SDSU Equestrian Center - Phase I, Brookings, SD;  
Camelot Intermediate School, Brookings, SD;  
Larson Manufacturing - Distribution Center, Albert Lea, MN;  
URC Child Development Center, Brookings, SD

## Firm Profiles

### FENNEL DESIGN, INC.



237 N. 6th Street  
Custer, SD 57730  
605.716.0520  
Fax 605.716.0521  
gene@fendesinc.com  
www.fendesinc.com  
Established: 2006

#### Principals

Gene Fennell, AIA - Principal

#### Firm Personnel By Discipline

Licensed Architects	1
Interior Design	1
Intern Architects	2
LEED® AP	3
LEED® CI	1

#### Firm Description/Philosophy

Enter into Planning & Design relationships that guide the client, builder & community to innovative & sustainable environments; providing prideful expression of profession and lifestyle.

#### Recent Projects

Custer County Courthouse, Custer, SD;  
Custer Sky Blue Restaurant, Custer, SD;  
Custer Liquor Store, Custer, SD;  
Custer Ambulance Service, Custer, SD;  
Apple Springs Golf Lodge, Boulder Canyon, SD;  
Prairie Berry Winery - Phase III, Hill City, SD;  
Highmark FCU, Rapid City, SD;  
Historic Fairmont Creamery, Rapid City, SD;  
Fire Station #1 Upgrades, Rapid City, SD;  
Hart & Beshara Residences,  
Handicapped Access Additions (Pro-bono)

### FOURFRONT DESIGN, INC.



517 7th Street  
Rapid City, SD 57701  
605.342.9470  
Fax 605.342.2377  
kanderson@4front.biz  
Established: 2006

#### Additional Location

Spearfish, SD

#### Principals

Bryan S. Vulcan, PE - President/CEO  
Curt Huus, PE/LS - VP/COO  
Ken Anderson - VP/CFO

#### Firm Personnel By Discipline

Licensed Architects	4
LEED AP Professionals	10
Licensed Engineers	9
Licensed Land Surveyors	4
Interior Designers	2
GIS Manager	1
Certified Energy Manager	1
Technical	14
Administrative	6
Landscape Architect	1
Mechanical Engineer	1
IT Professional	1

#### Firm Description/Philosophy

The name FourFront Design, Inc. reflects both services offered and core values of our firm. Our primary disciplines include Architecture, Engineering, Landscape Architecture, Mechanical Engineering, Surveying, Planning, and Geographic Information Systems. These services are backed by our promise to serve Clients with leading edge, award-winning services in professional practice.

FourFront Design, Inc., originated as Brady Consultants in Spearfish, SD in 1950. In 1980, it reorganized to form the Alliance of Architects and Engineers. In January 2006, the Alliance of Architects and Engineers merged with Thurston Design Group, LLP, to form FourFront Design, Inc.

Sustainable Design has long been a primary focus of the firm, and we are the first South Dakota professional design firm to become a member of the United States Green Building Council. Several staff have become LEED Accredited Professionals.

As a Service Disabled Veteran Owned Small Business (SDVOSB) nearly 50 professionals, FourFront Design, Inc. proudly serves clients from throughout the continental United States from offices in Rapid City and Spearfish, South Dakota.

#### Recent Projects

Dahl Arts Center Expansion and Remodel, Rapid City, SD;  
Ketel-Thorstenson CPA's Office Expansion, Rapid City, SD;  
Health Sciences Facility, Gillette, WY;  
Joint Forces Headquarters, SDARNG, Rapid City, SD;  
Rushmore Plaza Civic Center Arena Expansion, Rapid City, SD;  
South Dakota Housing Development Association Offices, Pierre, SD

### GALYARDT ARCHITECTS INC.



1506 Mt View Road, Ste. 102  
Rapid City, SD 57702  
605.343.5282  
Fax 605.343.2378  
gemgold@aol.com  
Established: 1968

#### Principals

Gary E. Galyardt, AIA - President

#### Firm Personnel By Discipline

Licensed Architects	1
Administrative	1

#### Firm Description/Philosophy

GAI provides architectural and planning services for educational and recreational facilities, commercial offices and retail buildings, government and community use facilities, industrial and warehouse facilities and multi-unit housing. Out philosophy of combining strong design skills with equally strong practical technical skills. We provide personal attention to our clients and create projects that are responsive to our clients programs and budget constraints. This has resulted in successful projects and satisfied repeat projects for over 40 years.

#### Recent Projects

St. Francis Mission New Administration Building and Recovering Addition, St. Francis, SD;  
Lead-Deadwood School Boys Locker Renovation and Elevator Replacement, LEAD, SD;  
United Blood Services, Rapid City, SD;  
New K-12 School Building Conceptual Design, Buffalo, SD;  
St. Charles Church, Historical Restoration and Miscellaneous Improvements, St. Francis, SD;  
St. Ambrose Catholic Church Elevator Addition, Deadwood, SD

## HKG ARCHITECTS



524 South Arch Street  
Aberdeen, SD 57401  
605.225.6820  
Fax 605.227.7770  
dean@hkgarchitects.com  
www.HKGarchitects.com  
Established: 1952

### Principals

Dean Marske, AIA - Principal

### Firm Personnel By Discipline

Licensed Architects  
Architectural Designers  
Project Managers  
Administrative

### Firm Description/Philosophy

For more than five decades, HKG Architects has been empowering our clients to grow and expand by bringing their visions to life. Our technical know-how means your project stays on schedule. And our years of experience mean we know how to operate easily within any budget. From beginning to end, we keep you in the loop through every phase of the project. With unparalleled access to our experts, you get the personal touch you deserve.

### Recent Projects

Faulkton Area Medical Center, Faulkton, SD;  
Mobridge High School, Mobridge, SD;  
Sisseton Fine Arts Center, Sisseton, SD;  
Aberdeen Public Safety Building, Aberdeen, SD;  
Aberdeen Fire & Rescue Facilities 1,2 & 3, Aberdeen, SD;  
Highmore Multi-Purpose Addition, Highmore, SD

## HULA DESIGN/BUILD



9 2nd Ave SE  
Aberdeen, SD 57401  
605.225.6820  
Fax 605.725.4852  
thurlbert@huladesignbuild.com  
www.huladesignbuild.com  
Established: 2008

### Principals

Thomas Hurlbert, AIA - Principal

### Firm Personnel By Discipline

1	Licensed Architects	1
2	General Contractors	1
1	Project Managers	2

### Firm Description/Philosophy

South Dakota, in 2008 when Thomas Hurlbert and Jeffrey Lamont combined a unique skill set to create a firm offering professional programming, planning, and architectural design services, as well as general contracting and developing services.

Thomas Hurlbert, AIA and Jeffrey Lamont have deep foundations in Northeast South Dakota. Thomas Hurlbert's great-grandfather, R.N. Kyburz, built his first project in 1918 and incorporated his Aberdeen construction business in 1928. Hurlbert's grandfather, Cliff, and father, Hollis, continued the construction tradition for nearly seventy-five years.

Jeffrey Lamont's grandfather, Robert Lamont, has been a prominent Aberdeen developer, rancher, banker and entrepreneur. Following in his grandfather's and father's business spirit, Lamont created Lamont Companies, a successful nation-wide developing and general contracting business.

By combining business savvy with architectural and construction

experience, hula is creating a new design/build paradigm; combining smart architecture and construction with economical client-driven solutions for all project types.

### Recent Projects

Presentation College Multi-Use Building/Boys and Girls Club of Aberdeen, Aberdeen, SD;  
O.M. Tiffany Elementary School Classroom Addition, Aberdeen, SD;  
Lamont Office Building, Aberdeen, SD;  
Splitrock Center Retail Building, Aberdeen, SD;  
Aberdeen Housing Authority Master plan, Aberdeen, SD;  
Dakota Crossing Retail Building, Aberdeen, SD;

## L.L. JIRSA, ARCHITECT

123 N Main Street  
Mitchell, SD 57301  
605.996.8185  
Fax 605.996.8185  
lljirsa@mitchelltelecom.net  
Established: 1992

### Principals

Larry L. Jirsa, AIA - Owner

## Firm Profiles

### KOCH HAZARD ARCHITECTS



KOCH • HAZARD  
ARCHITECTS

431 North Phillips 200  
Sioux Falls, SD 57104  
605.336.3718  
Fax 605.336.0438  
www.kochhazard.com  
Established: 1961

#### Principals

Jeff Hazard, AIA, LEED® AP -  
Senior Principal and CEO  
Chris Schiltz, AIA - Senior Principal  
and President  
Stacey McMahan, AIA, LEED®  
AP BD + C - Principal and Vice  
President  
Todd Stone, AIA - Associate  
Principal  
Cory Bleyenbug, Assoc. AIA -  
Associate Principal  
Tony Taylor, Assoc. AIA - Associate  
Principal

#### Firm Personnel By Discipline

Licensed Architects	4
LEED® AP	12
Project Manager/Designer	9
Technical/Graphics	8
Interior Design	1
Marketing	1
Administrative	1

#### Firm Description/Philosophy

Koch Hazard Architects focuses on our client's missions and visions, providing thoughtful advice, responsive management, insightful design, comprehensive documentation and diligent follow through to build lasting relationships.

The firm provides architecture, planning and interiors services in South Dakota, Minnesota, Iowa, and Nebraska. Firm expertise includes education, healthcare and recreation

facilities, commercial, governmental and cultural facilities, churches, multi-family and senior residential and mixed-use facilities, sustainable development, preservation, restoration and adaptive reuse. Koch Hazard's work has received numerous professional and civic awards.

#### Recent Projects

Cherapa Place, Sioux Falls, SD;  
Rural Learning Center, Howard, SD;  
Longfellow Elementary, Mitchell, SD;  
Our Saviors Lutheran Church, Sioux Falls, SD;  
Sioux Falls Airport Terminal Expansion, Sioux Falls, SD;  
Sammons Financial Building, Sioux Falls, SD;  
Sanford School of Medicine, Vermillion, SD  
Heartland CPD Headquarters, Madison, SD;  
Student Housing Complex, SDSU, Brookings, SD

### LUND ASSOCIATES LTD.



1621 Sheridan Lake Road  
Rapid City, SD 57702  
605.348.3555  
Fax 605.348.6254  
lund@lundltd.com  
www.lundltd.com  
Established: 1980

#### Principals

Cam Lund - President

#### Firm Personnel By Discipline

Licensed Architects	3
Intern Architects	2
Civil Engineers	1
Interior Designers	2
CAD Technicians	2
Administrative	2

#### Recent Projects

Deadwood Mountain Grand – Hotel/  
Casino/Entertainment Center,  
Deadwood, SD;  
Deadwood Gulch Resort Remodel,  
Deadwood, SD;  
Chadron Community Hospital,  
Chadron, NE;  
Black Hills Community Bank, Rapid  
City, SD;  
Days of '76 Museum, Deadwood, SD;  
VA Black Hills Health Care System,  
Renovation of Primary Care, Hot  
Springs, SD

### MANNES ARCHITECTS

800 Douglas Street  
Yankton, SD 57078  
605.665.1852  
Fax 605.665.1875  
info@mannesarchitects.com  
www.mannesarchitects.com  
Established: 1982

#### Principals

Glenn H. Mannes, AIA - Principal/  
Owner

#### Firm Personnel By Discipline

Glenn H. Mannes, AIA - Architect

#### Firm Description/Philosophy

Established in 1982, Mannes Architects provides up-to-date, comprehensive, architectural services for individuals, organizations, and communities in South Dakota, Nebraska, Iowa and Minnesota. Our mission is to provide outstanding service and distinguished architecture, while striving for creative solutions and maintaining loyal client relationships.

#### Recent Projects

First Methodist Church, Yankton, SD;  
First Baptist Church, Norfolk, NE;  
Cedar County Courthouse,  
Hartington, NE;  
Kilberg-Pioneer, Inc., Yankton, SD;  
Hartel Communications, Hartington, NE;  
First Lutheran Church, Mitchell, SD

**MILLER SELLERS HEROUX ARCHITECTS**



625 S Minnesota Ave, Ste 204  
Sioux Falls, SD 57104  
605.332.7850  
Fax 605.332.3539  
robin@msharch.com  
www.msharch.com  
Established: 1989

**Principals**

Robin Miller, AIA - CEO  
David Sellers, AIA - Principal  
James Heroux, AIA - Principal

**Firm Personnel By Discipline**

Registered Architects 3  
Other Architectural 5  
Administrative 3

**Firm Description/Philosophy**

Our commitment to provide the best possible value in a final building project is why we have so many dedicated repeat clients. At the core of who we are is a desire to understand you and your business. Our approach entails functional/operational people enhancement based solutions coupled with innovative design. This is the best way to realize the greatest financial returns.

**Recent Projects**

Urology Specialists, Sioux Falls, SD;  
Capitol 4th Floor Annex, Pierre, SD;  
Confidential Client Family Amusement, Anaheim, CA;  
Sanford Power Center, Sioux Falls, SD;  
Waterfall Plaza, Sioux Falls, SD;  
Capital Card Services, Brookings, SD

**PERSPECTIVE, INC.**



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Sioux Falls, SD 57104  
605.271.9877  
Fax 605.271.9879  
info@perspective-inc.com  
www.perspective-inc.com  
Established: 2007

**Principals**

Larry Crane, AIA - Architect/Partner  
Jim Bruget - Project Manager/Partner

**Firm Personnel By Discipline**

Licensed Architects 1  
Other Architectural 3  
Interior Designer 1  
Administrative 1

**Firm Description/Philosophy**

Perspective: to visually process information, objects, and space in their true relation. Perspective is a new 6-person architectural and interior design studio providing a fresh vision, purposeful design, and client-focused service. Full of energy and passion for design, Perspective's team works with clients to create a vision for their project. The team has extensive experience in hospitality, healthcare, and corporate building projects. Each team member contributes unique talents to the studio, including architecture, interior design, and project management.

**Recent Projects**

Housing First, Sioux Falls, SD;  
Minnehaha County Juvenile Detention Center Study, Sioux Falls, SD;  
Sioux Falls Federal Credit Union, Highline Branch, Sioux Falls, SD;  
Stewart School, Addition & Remodel, Sioux Falls, SD;  
Fresh Produce Office, Sioux Falls, SD;  
Grille 26, Sioux Falls, SD;  
The Lodge at Deadwood, Deadwood, SD;

**RANDALL STANLEY ARCHITECTS, INC.**



405 South 3rd Avenue  
Sioux Falls, SD 57104  
605.336.6891  
Fax 605.335.5858  
rsa@rsarchitects-sd.com  
www.rsarchitects-sd.com  
Established: 1989

**Principals**

Gary L. Stanley, AIA, NCARB – Principal  
Keith Neuharth, AIA, NCARB – Associate  
Jeremy Christopherson, Assoc. AIA, LEED® AP – Associate  
Jeri Breck – Associate

**Firm Personnel By Discipline**

Licensed Architects 2  
LEED® AP 2  
Other Architectural 2  
Administrative 3

**Firm Description/Philosophy**

In 2009, RSA celebrated our 20th year in architecture. The firm was established in 1989 by Gary L. Stanley to provide vision & design solutions that are functional, economical and aesthetically represent our client's needs.

RSA serves a variety of markets locally and nationally. RSA is committed to implementing LEED standards of sustainable design into all of our projects to ensure the development of high performance buildings.

Establish, cultivate and nurture is our approach to building solid client relationships. Our philosophy is simple...to listen, learn, and design around YOUR unique project goals.

**Recent Projects**

Akeley Lawrence Science Center, University of South Dakota, Vermillion, SD;  
Watertown Police Department, City of Watertown, Watertown, SD;  
Holy Cross Lutheran Church, Sioux Falls, SD;  
Peace Reformed Church, Sioux City, IA;  
East River Electric Corporate Headquarters, Madison, SD;  
East River Electric Service Center, Bath, SD;  
Dakota Prairie Bank, Ft. Pierre, SD;  
Horizon Health Care Dental Clinic Expansion, Wessington Springs, SD;  
Hope Haven Training and Administration Facility, Rock Valley, IA;  
School and Church Consultation, Pajut Village, South Sudan, Africa

## Firm Profiles

### TOM REASONER, ARCHITECT



915 Ridgecrest Drive  
Vermillion, SD 57069  
605.624.7076  
tomreasoner@gmail.com  
*Established: 1997*

#### Principals

Thomas E. Reasoner, AIA

#### Firm Personnel By Discipline

Licensed Architects 1

#### Firm Description/Philosophy

A general practitioner practicing generally in South Dakota. Classically trained and romantically inspired design. Somethings are bigger than others, but nothing is too small. Architecture and design services scaled for the client and performed as a partner in the quality and care of the built environment.

#### Recent Projects

Dove Meadows (Plans/Model), Plymouth County, IA;  
Pettersen Residence Green Remodel, Clay County, SD;  
Visitors Center/Monument Model, Roberts County, SD;  
Bradbury Residence Garden Pavilion Plan, Vermillion, SD

### ROBERT J. RYSAVY, LLC

2801 W. Oak Street  
Sioux Falls, SD 57105  
605.610.7786  
rysb@sio.midco.net  
*Established: 2009*

#### Principals

Bob Rysavy, AIA

#### Firm Personnel By Discipline

Licensed Architects 1

#### Firm Description/Philosophy

Our firm practices architectural services from the initial programming/ planning and design, and through the construction phase. Our approach to quality design is to form a long-term client/team relationship and understand the goals and expectations. We have found that by listening and hearing a client, we are able to develop solutions that meet the program and design requirements.

#### Recent Projects

Kitchen Floor Replacement, Jameson Annex, SD State Penitentiary, Sioux Falls, SD;  
Tuckpointing/Masonry Restoration, South Dakota School for the Deaf, Sioux Falls, SD;  
New Dormitory, Pierre Indian Learning Center (Construction Phase), Pierre, SD

### SANDRA LEA DICKENSON ARCHITECTURE

*Sandra Lea Dickenson, A.I.A.*

203 S Yale Street  
Vermillion, SD 57069  
605.624.6670  
finelinearch@gmail.com  
*Established: 2001*

#### Principals

Sandra Lea Dickenson, AIA

#### Firm Personnel By Discipline

Licensed Architects 1

#### Firm Description/Philosophy

Sandra Lea Dickenson Architecture provides services in Southeast South Dakota for small building projects, both commercial and residential.

We recognize that small projects are often more design intensive than larger projects and are positioned to provide the special attention that small projects require.

#### Recent Projects

SESDAC Inc. Office Renovation, Vermillion, SD;  
Center for Children and Families, Vermillion, SD;  
Coker Residence, Vermillion, SD;  
Boomer Homes for Easy Living, Vermillion, SD

### TODD ARCHITECTS LTD.



**TODD ARCHITECTS**

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Watertown, SD 57201  
605.886.7730  
Fax 605.886.7733  
dave@toddarchitects.com  
*Established: 1969*

#### Principals

David J. Todd, AIA - President

#### Firm Personnel By Discipline

Licensed Architects 1  
Administrative 1  
Other 1

#### Firm Description/Philosophy

Our philosophy is to have a principal in charge and in direct contact with the project through all phases of the work. Our sound reputation ability to establish good communications with our clients and meet tight project schedules.

#### Recent Projects

Lake Area Technical Institute (Building Expansion Phase I), Watertown, SD;  
Watertown municipal Unilities, Watertown, SD;  
Faultless-Nutting (Manufacturing Facility), Watertown, SD;  
Codington-Clark Electric Cooperative, Inc, Watertown, SD;  
McKinley Elementary School, Watertown, SD;  
Mobridge Game, Fish & Parks, Mobridge, SD

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Fax 605.343.7159  
info@teamtsp.com  
www.teamtsp.com  
Established: 1930

### Additional Location

Minneapolis, MN  
Rochester, MN  
Marshall, MN  
Marshalltown, IA  
Omaha, NE  
Sheridan, WY

### Principals

Sioux Falls  
Paul Boerbppm, AIA  
Richard Gustaf, PE  
Tony Dwire, PE  
Sean Ervine, AIA, LEED® AP  
Michael Jamison, PE  
Kent Larson, AIA  
Ron Mielke, PE

Rapid City  
Bob Morcom, PE

### Firm Personnel By Discipline

Licensed Architects	23
Other Architectural	25
Construction	17
Engineering	37
Administrative	30

### Firm Description/Philosophy

TSP is a full-service firm employing almost 150 skilled professionals offering architecture, engineering, interior design, and construction services. We believe that successful projects are the result of experience, listening, comprehension, and team leadership. We are committed to the development of long-term relationships with our clients. Our high quality planning services and appropriate design solutions illustrate this dedication and commitment.

### Recent Projects

SDSU Dairy Micro-Biology Building, Brookings, SD;  
Black Hills Corporation, Rapid City, SD;  
Mayo Civic Center, Rochester, MN;  
ID 287 South Education Center, Richfield, MN;  
Rapid City Airport Concourse Terminal Enhancements, Rapid City, SD;  
South Dakota Public Universities & Research Center, Sioux Falls, SD

## UPPER DECK ARCHITECTS, INC.



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605.721.0237  
Fax  
time@upperdeckarchitects.com  
www.upperdeckarchitects.com  
Established: 2007

### Principals

Timothy D Cheever, AIA - Principal

### Firm Personnel By Discipline

Licensed Architects	2
Administrative	x
Other	x

### Firm Description/Philosophy

Upper Deck Architects is a unique company with the goal of providing a personalized service that is unequalled in the region. Dedicated to client satisfaction, we pride ourselves on listening to our clients to completely understand their project needs and goals.

Established in 2007, Upper Deck Architects is a new firm comprised of familiar faces. While working together at a large architectural firm, our personnel had the desire to work in a fun, creative and collaborative environment.

### Recent Projects

Calvary Lutheran Church, Rapid City, SD;  
Arrowhead Country Club; Rapid City, SD;  
Belle Fourche City Hall, Belle Fourche, SD;  
Hill City Middle School, Hill City, SD;  
Tuscany Square Shopping Center, Rapid City, SD;  
Douglas Elementary School. Box Elder, SD

## WARD WHITWAM, ARCHITECT



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Sioux Falls, SD 57103  
605.376.7633  
Firm 605.334.2422  
wardwhitwam@yahoo.com  
Established: 1953

### Principals

Ward Whitwam, FAIA

### Firm Personnel By Discipline

Licensed Architects	1
Administrative	1
Interior Design	1

### Firm Description/Philosophy

Creative Design tailored to the individual client.

### Recent Projects

David and Erika Billion Guest House, Yankton, SD;  
Lam Vietnam Restaurant, Sioux Falls, SD

## Firm Profiles

### WIDSETH SMITH NOLTING



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605.335.1011  
Fax 605.335.5874  
lanny.auringer@wsn.us.com  
www.wsn.us.com  
*Established:* 1975 in Crookston  
2004 in Sioux Falls (Innovative Design)

#### Principals

Lanny J. Auringer, AIA - Vice President

#### Firm Personnel By Discipline

Lanny J. Auringer, AIA - Architect  
Jared Nesje - Architect  
Nathan Lund - Civil Engineer

#### Firm Description/Philosophy

Who we are... We are a group of professional engineers, architects, land surveyors, environmental scientists, technical designers, and administrative staff providing professional consulting services in the A/E industry.

Where we are... We have offices in Alexandria, Bemidji, Brainerd/Baxter, Crookston, Red Wing, and Rochester, MN, Grand Forks, ND, and Sioux Falls, SD

What we do... We provide consulting services to public and private clients in their communities and throughout the states surrounding our offices. We do so by listening to and understanding our client's needs, being proactive, and providing exceptional professional services. We integrate our multiple disciplines and utilize talented and dedicated employees to provide quality services by striving to create long-term partnerships with our clients.

Why we do it . . . Our goal is to be successful by contributing to the success of our clients and building partnerships with them, one at a time. We strive to be recognized as good stewards of public and private facilities, infrastructure, and resources; to preserve and enhance the quality of life in our region; and to make our communities safer and better places to live, play and work.

#### Recent Projects

Prairie Rehabilitation, Worthington, MN;  
Eye Site by Howlin Vision, Sioux Falls, SD;  
Emporium on 41<sup>st</sup>, Sioux Falls, SD;  
JDS Industries World Headquarters, Sioux Falls, SD;  
Historic Loop Center Redevelopment, Sioux Falls, SD;  
Fellowship of Christian Athletes, Sioux Falls, SD

### THE WINKELS GROUP INC.



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605.361.2537  
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winkelsgroup@midconetwork.com  
www.thewinkelsgroup.com  
*Established:* 1981

#### Principals

Robert J. Winkels Jr. - President

#### Firm Personnel By Discipline

Licensed Architect	1
Other Architectural	3
Administrative	2

#### Firm Description/Philosophy

On approximately half of our projects, TWG offers conventional architectural services. On the other half, we provide project management, owner representation, criteria development for Design Build, and real estate development services.

#### Recent Projects

Architecture:  
O'Gorman High School, Sioux Falls, SD;  
C.J. Callaway's, Sioux Falls, SD;  
Carnegie Town Hall, Sioux Falls, SD;  
Broom Tree Retreat Center, Irene, SD;  
Al's Oasis, Oacoma, SD

Project Management and Owner Representation:  
Augustana Football Stadium, Sioux Falls, SD;  
Washington Pavilion, Sioux Falls, SD;  
Lincoln County Courthouse, Canton, SD;  
Minnehaha County Jail, Sioux Falls, SD;

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**BENCHMARK FOAM, INC.**

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**BUILDING PRODUCTS INC.**

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**BUILDERS SUPPLY COMPANY**

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**CMi ARCHITECTURAL PRODUCTS, INC.**

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**FARGO PAINT AND GLASS CO.**

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# South Dakota Images



Photo Courtesy of the State Archives of the South Dakota State Historical Society.

## The Ultimate “Green” Building

Early Plains settlers knew how to build “Green”.

There was an unending supply of building material for sod houses. The prairie buffalo grass sprouted from densely tangled roots giving the top three inches of soil a tight consistency. A sodbuster shaved off a belt of roots and grass 12 to 18 inches wide and three inches deep. This ribbon of sod was cut into 18 inch strips.

The building was started by laying each block, with the grass side down, staggering layers like brickwork. Two rows were usually arranged parallel to one another making the finished walls about 24 inches thick. Intersecting layers were lapped together at the corners with a pole used to hold the beams. As the sod house grew spaces were left for windows.

The best ones faced south, turning their backs to the north wind. While not exactly watertight, they were well insulated and fireproof.