

# BUILDING PROFIT<sup>®</sup>

SUMMER 2016

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Growing Building Supply Company Expands to Serve Community

**Farm Equipment Dealership Satisfies Sustainability Goals**

Campus Training Center is a Marvel of Efficiency



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Stafford Hills Club leverages Butler® systems' design flexibility to build beautiful health club facility in a natural environment.



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Back cover: Chad Jackson Photography



# Energy-efficient health club complements neighborhood

*Butler serves an ace for husband-wife developer team*

Following an afternoon tennis match, Marla Zupancic returned home with an idea. She shared her thoughts with her husband, Jim Zupancic, a Portland-area real estate/business lawyer and developer, and described to him how she played on a poor-quality court that day. Soon, inspiration evolved into a plan to build a tennis-centered health club facility. The Zupancics, both avid tennis players, recognized a shortage of high-quality courts in Portland and set out to fill the void.

As their plan took hold and design concepts were created, the Zupancics concentrated on developing a club where people could gather, socialize and attend wellness-based events. The motivation to achieve these goals led the couple on an extensive tennis center tour, with stops in Australia and across the United States, as they evaluated design features.

One stop included a tour of the National Tennis Center in Flushing, New York, home of the U.S. Open Tennis Championships. A Butler® building system, the National Tennis Center features multiple metal systems, which encouraged Jim and Marla to focus the design team on metal building materials.

“When we saw the USTA Tennis Center in New York, we were inspired,” Jim said. “The building design reaffirmed that we were going in the right direction in terms of function and high-end finishes.”

### **Building a championship team**

Upon returning to Oregon and securing development approvals on a 16-acre property, which included 10 acres that had to be preserved as wetlands, Jim organized a design team led by architect Ray Yancey and general contracting firm Todd Construction to complete planning for the proposed tennis-centered health club. He also contacted Butler Manufacturing™ to locate a Butler Builder® in the area that could infuse qualities of the USTA Tennis Center into his new project.

Todd Construction President Brent Schafer brought in three design-build companies to provide steel services proposals, including SM Andersen Company Inc., a local contractor and Butler Builder with more

*(Above) The LEED® certified Stafford Hills Club, located near natural wetlands and parklands along the Tualatin River, is designed after the U.S. National Tennis Center in New York.*

PHOTOGRAPHY BY HEATHER MCGRATH, PROVIDED BY MYHRE GROUP ARCHITECTS

*“Our goal was to create a legacy property, and in order to do so, we needed the quality of the building to match our vision.”*

*JIM ZUPANCIC, STAFFORD HILLS CLUB*

than a decade of experience building Butler building systems. Rick Brockway, manager of SM Andersen’s metal building division, met with the larger Stafford Hills Club group to give the design team an in-depth explanation of the benefits of Butler building systems.

“We selected SM Andersen Company due to Rick’s experience and expertise with metal buildings and Butler,” Jim Zupancic said. “Rick knew the Butler product inside and out, which gave us confidence, whereas other builders we spoke with had metal-building experience but gave us concern that our project would be more of an experiment for a less experienced builder.”

### **Achieving a Northwest look**

Once the team was in place, Yancey began designing the club with Butler® systems in mind. The plan called for creating an architecturally appealing building representative of the Pacific Northwest,

but the overall scale of the structure in a residential neighborhood presented a challenge. Yancey had to design the large structure to be attractive and a complement to the natural environment.

The project underwent a series of architectural reviews, and Yancey mixed colors and textures to downplay fears that the building could end up looking like a



*A skybox lets spectators watch indoor tennis matches at the Stafford Hills Club. Ceiling lights are designed to reflect light from the courts for good visibility.*

## WETLAND DELIVERS ENVIRONMENTAL CHALLENGE

Located in a wetland zone, Stafford Hills Club faced significant challenges in the early stages of the project to obtain environmental approvals to build the club. As a strong advocate for environmental and business collaboration, club developer Jim Zupancic understood the importance of preserving the area’s natural landscape. Given the location of the building and the high amounts of rainfall the area receives, stormwater treatment was a large part of the design consideration and an environmental requirement from local government.

All rain runoff must be properly treated before it enters the river system, so the Stafford Hills Club design takes outflow from the stormwater off the roof and runs it through bioswales for pretreatment before it enters the wetlands. As a result of conservation efforts by the Stafford Hills Club team, the wetland area has seen a substantial increase in the number of indigenous waterfowl, and they have improved the natural area to a level above what it was before the club’s development.



*(Left) The Stafford Hills Club is home to seven indoor tennis courts and three outdoor courts.*

*“We carefully analyzed metal building structures and other energy-efficiency elements of the project to make sure we were building something that would perform well consistently on a long-term basis.”*

*JIM ZUPANCIC,  
STAFFORD HILLS CLUB*

metal box — a big concern voiced by the City of Tualatin’s design review board. The final design incorporated a combination of steel, wood and stone, and it was approved by the city.

The final design plan called for two buildings: one to house the tennis courts and clubhouse, and another that housed offices, meeting rooms, a salon/spa, fitness studios, demonstration kitchen and aquatics locker rooms.

“We faced challenges by designing both a multi-story and a typical single-span, one-story building within a building, but the Butler engineering team put together two packages to ensure it could be done,” Yancey said.

### **A club with a view**

The largest building, which houses the tennis courts and clubhouse, required the Widespan™ structural system by Butler to eliminate obstructions over the tennis courts. In a nod to the USTA building in New York, the Zupancics requested that the design include a second story “skybox” level that would allow spectators to watch matches.

To accommodate that request, Brockway and SM Andersen Company — serving in a single-source management role for all steel and metal structures — called on Butler Heavy Structures to oversee necessary engineering and design changes.

“The Butler Heavy Structures group played an integral role with the heavy loading for the second floor of the building, along with the stairs and exercise room,” Schafer said. “It was really helpful as a general contractor to have

them come in and handle the process directly.”

“Without Butler Heavy Structures, we wouldn’t have been able to provide a single source of responsibility,” Brockway added.

### **LEED® Silver energy efficient from inside out**

The unique building-within-a-building aspect of the clubhouse design was truly remarkable and provided an interesting energy-efficiency benefit. Any excess heat that escapes from the interior clubhouse windows goes directly into the tennis building, creating an efficient heat transfer in which one building actually heats the other. This intentional engineering approach channels heat loss into the tennis building and keeps it remarkably comfortable in the winter.

“We carefully analyzed metal building structures and other energy-efficiency elements of the project to make sure we were building something that would perform well consistently on a long-term basis,” Jim said. “The building design maximizes the utilization of the Butler structure in a lot of different ways.”

When completed, the buildings earned a coveted Leadership in Energy and Environmental Design Silver certification.

An additional decision to include seven large, 18-foot metal roll-up doors on the perimeter of the tennis courts creates a cooling convection system during the summer months and helps maintain a consistent and comfortable ambient temperature. Beyond that, should a flood occur due to the building’s location in a flood plain, the doors can be opened to funnel water outside.

*“Without Butler Heavy Structures, we wouldn’t have been able to provide a single source of responsibility.”*

*RICK BROCKWAY, SM ANDERSEN COMPANY*



*The Stafford Hills Club outdoor pool is open year-round and is just one of the amenities that appeals to members.*

### **Butler form and function drive total cost of ownership decisions**

As owners invested in the long-term success of the health club, the Zupancics were conscious of Butler’s reputation for durable, high-performing systems and higher-quality options to reap those long-term benefits. That approach drove product selections, including the visually appealing StylWall® flat and fluted wall systems, as well as R-30 over-the-purlin insulation. He also focused heavily on the high-performing, long-lasting MR-24® roof system.

“Jim really liked the MR-24 roof system and particularly the fact that Butler is the only company that completes a true double-lock seam system,” Brockway said. “Particularly in the rainy Oregon climate, proper roof sealing is paramount to keeping moisture outside the building.”

Factory-applied exterior steel finishes also stood out as an excellent choice for Jim Zupancic, who viewed a factory finish as far superior compared to what can be done on-site.

“Our goal was to create a legacy property, and in order to do so, we needed the quality of the building to match our vision,” Zupancic said. “In order for the club to look good and perform well for decades, we were willing to invest in what we felt was the best of all our choices.”

### **Embraced by the community**

The completed 95,000-square-foot Stafford Hills Club exudes excellence with its seven indoor tennis courts, three outdoor courts, a resort-style pool, cafe and high-tech gym equipment.

The club has been embraced by community neighbors who were at first skeptical of the project and the potential it had to negatively affect property values. Those neighbors now take the opportunity to participate in group fitness, cooking classes, networking events and other fun activities at the club. In fact, housing prices in the surrounding neighborhood have increased, partly as a result of the community amenities available at family-friendly places like Stafford Hills Club.

“We’ve received compliments from people within the community and outside Oregon who’ve come to see what we’ve built and have heard a lot of gracious compliments for how it looks and performs,” Jim said. “We’re proud to serve as the uniting hub for our neighbors.” ▲

## **STAFFORD HILLS CLUB**

**Butler Builder®:** SM Andersen Company, Inc.  
**Project Manager:** Rick Brockway  
**Architect:** Ray Yancey, Myhre Group Architects, Inc.  
**Size:** 95,000 square feet  
**Butler® Systems:** Widespan™ structural system, MR-24® roof system, StylWall® flat/fluted wall systems



# Growing building supply company expands to serve community

*Operational flexibility achieved via Landmark™ 2000 structural system*

About 75 miles east of New York City, at the mouth of the Peconic River, lies a community of 33,000 people, aptly named Riverhead. It's a community with a history that dates back to the 1700s, and one that Jesse Goodale II had strong pride in.

More than 60 years ago, Goodale chose this community for the home of Riverhead Building Supply (RBS), the residential construction supply business that he co-founded. RBS became a favorite among area DIYers and residential contractors alike. Today, the business encompasses 11 locations across New York and Rhode Island, includes a robust distribution and manufacturing arm, and employs over 500 people.

What began humbly has grown into a local empire, and RBS recently found itself in need of a second distribution warehouse to keep up with its success.

With its wide distribution channel, RBS now delivers more products to customers than it sells in stores, requiring an efficient operation to maintain its reputation for quality and service. For a business selling many items that don't fit neatly on pallets (such as 48-foot wood beams), efficient storage can be a challenge — the more flexible the distribution facility, the better.

## **Design flexibility fuels operational improvement**

When RBS set out to expand its central distribution center and build the second warehouse, the original thought was to copy the design of the first building, a 124,000-square-foot structure with 16 mainframes and

*(Above) Riverhead Building Supply sells many large items, that require more space in the distribution facility.*

PHOTOGRAPHY BY CHAD JACKSON PHOTOGRAPHY



*The new RBS distribution building streamlines operations and helps fulfill orders more efficiently.*

48 interior columns. However, when Radon Construction, the local Butler Builder®, got involved, it became apparent the building design could be more efficient by opting for the Landmark™ 2000 structural system from Butler Manufacturing™.

This structural system helps minimize interior columns and uses open-web framing for maximum interior flexibility. The system provides the longest bay size on the market — 60 feet. This flexibility allowed Radon to share an alternative building design that eliminated eight mainframes and 24 interior columns — an updated design that RBS was quick to approve.

A frequent advantage of cutting down the number of columns is cost efficiency. Typically,

designs with fewer columns require less steel and fewer labor hours when completing building installation. For this project, with its unique storage needs, the added interior flexibility was the primary benefit.

“By removing half of the columns in the building from the original design, we’re now able to more efficiently store and organize inventory in the building,” said Kevin Goodale, grandson of Jesse Goodale II and current vice president of RBS. “The layout flexibility achieved by the Landmark 2000 structural system allows our operations to run more efficiently.”

Along with the benefits the Landmark 2000 structural system offers, previous experience with a leased Butler® building system

*“The layout flexibility achieved by the Landmark 2000 structural system allows our operations to run more efficiently.”*

*KEVIN GOODALE, RIVERHEAD BUILDING SUPPLY*

constructed by Radon helped put Goodale's mind at ease, knowing the quality they'd deliver.

With over 30 years in operation, Radon's design-build expertise stood out to RBS. A long-standing Butler Builder, Radon has over 20 years of experience behind its knowledge of Butler products and efficient building processes.

"Working with Radon and being able to utilize the Landmark system was great," Goodale said. "We had a tight time frame, and Radon was able to put multiple guys on the job to get us closed in as fast as possible."

A quick install was important to RBS to clear the way for subsequent contractors to complete the building and get it ready for operations.

### **Community built**

Jesse Goodale II, who passed away in 2014 at age 97, was a pillar of the town. He was known for rolling up his sleeves to ensure his community was well maintained. From groundskeeping at the local cemetery to picking up trash off the side of the street (and enlisting 250 volunteers to help), the elder Goodale was passionate about helping his community look its best.

Continuing with its co-founder's legacy of community enrichment, RBS prefers working with local contractors whenever possible. So, members of the community helped Radon construct some of the facility. Despite working with an unfamiliar crew, Butler's factory-punched building components help ensure it could be erected correctly, minimizing the need for on-site workarounds and contributing to construction efficiency.

As a Butler Builder, Radon brought the exclusive MR-24® metal roof system to the project. This standing-seam roof system requires a proprietary installation process to achieve the Pittsburgh double-lock seam. This 180-degree seam connects the roof panels to virtually eliminate leaks. It's the same seam used to seal soda cans and oil barrels. The erector team was able to move through all 124,000 square feet of roof in just three weeks.

"RBS pushed for speed, so we added manpower to make it happen," said Craig Plansker, president, Radon Construction. "We brought in another erector and increased the size of the team installing the roof, which helped us wrap the install up on schedule."

Another interesting feature the new supply building offers is a row of clear panels just below the roofline that help draw in natural

*"We had a tight time frame, and Radon was able to put multiple guys on the job to get us closed in as fast as possible."*

*KEVIN GOODALE,  
RIVERHEAD BUILDING  
SUPPLY*



*Family-owned Riverhead Building Supply started 60 years ago and today encompasses 11 locations across New York and Rhode Island, employing over 500 people.*

*From left to right: Charlie Errigo, vice president of Radon Construction; Kevin Goodale, vice president of RBS; Raymond Abruzzese, former president of Radon Construction; Craig Plansker, president of Radon Construction.*

*“Having everything in one spot greatly improves our level of service to the customer.”*

*KEVIN GOODALE, RIVERHEAD BUILDING SUPPLY*



***A row of clear panels just below the roofline draw in natural light and help reduce the amount of electricity needed to light the building.***

light. In conjunction with LED fixtures, these panels help reduce the amount of electricity needed to light the building. Beyond efficient lighting, Kevin Goodale is also looking into adding solar panels to the roof to help add energy back to the grid.

### **Efficiency under one roof**

The new building allows RBS to consolidate and centralize its storage and distribution facilities into one location, which is more than twice the size of its current structure.

“The new building streamlines things for us and helps us fulfill orders more efficiently and quickly,” Goodale said. “Having everything in

one spot greatly improves our level of service to the customer.”

When it comes to advice for other owners looking to work with Butler, Goodale knows just where to start.

“Take the time to get the details right during the planning stage and involve your design-build contractors to ensure you end up with a building that maximizes return on your investment,” he said.

That statement was echoed by Radon Construction.

“We prefer to be involved as early in the design stage as possible,” Plansker said. “If the design starts before the design-build contractor gets involved, it becomes harder to take advantage of the efficiencies afforded by choosing Butler.” ▲

## **RIVERHEAD BUILDING SUPPLY**

**Butler Builder®:** Radon Construction Corp.

**Architect:** Robert C. Tast, AIA

**Size:** 124,050 square feet

**Butler® Systems:** Landmark™ 2000 structural system, MR-24® roof system, Shadowall™ wall system

## **BUILDING A COMMUNITY**

Riverhead, New York, is undergoing a renaissance, experiencing growing interest from first-time homebuyers and investors, according to a recent New York Times article.

Helping drive this local revival is Riverhead Building Supply (RBS), a local business that offers contractors, architects and homeowners the materials they need for just about any residential building project. Not only are RBS products literally helping change the face of Riverhead, but the business is dedicated to improving its community.



# Farm equipment dealership satisfies sustainability goals

*New building is a one-stop shop for everything from toy tractors to million-dollar machines*

On any given day, customers visiting Green Tractors Inc., formerly Clow Farm Equipment, might include a mom picking up a toy tractor for her child's birthday, a suburban homeowner comparing new lawn mower models or a large-scale farmer checking out specs for a million-dollar crop harvester. Regardless of who they are or what they're looking for, every customer gets the same warm welcome and great service found at this John Deere dealership's new 15,000-square-foot facility in Kingston, Ontario, Canada.

The new building is a source of pride for the family-owned business that Oakley Clow founded back in 1962. Today, Oakley, along with his wife, Shirley, and their son, Doug, manage day-to-day operations and couldn't be happier with their new structure and the process that went into it.

The new building consolidates all the farm equipment dealership's functions under one roof — a big improvement

over the multiple buildings and hodgepodge of additions constructed over the past 50-plus years. The older buildings were inefficient and no match for the energy savings, customer appeal and worker comfort found in a modern and efficient Butler® building system.

"After making the decision to build, we started researching options and toured other John Deere dealerships to get ideas and advice," Doug Clow said.

As the Clows visited facilities throughout eastern Canada, one stood out — a Butler building system that inspired the new Green Tractors dealership design.

Bel-Con Design-Builders Ltd, a Butler Builder® in Belleville, Ontario, helped bring that inspiration to life,

*(Above) Green Tractors prioritized year-round energy efficiency and comfort for its new location, with the goal of combating frigid winters and humid summers.*

PHOTOGRAPHY BY TOM GUNSINGER

*“We wanted to invest in a building that would help make our business economically sustainable for the long term.”*

*DOUG CLOW, GREEN TRACTORS*

partnering with Ernest Cromarty of Ernest A. Cromarty Architect Inc.

“The local economic development corporation first put us in touch with Tom Gunsinger at Bel-Con,” Clow said. “We liked the idea of working with a local builder, and we liked what we had seen in Butler buildings during our dealership tour.”

The family already had a new building location, 29-plus acres along a major highway, purchased 20 years earlier with an eye on future growth and higher visibility for the dealership.

With the construction site selected, Bel-Con worked closely with the Clows to clearly identify design needs. The checklist included energy efficiency, low maintenance and a positive environment for both employees and customers.

### **Extreme energy efficiency**

Faced with frigid winters and hot, humid summers near the Lake Ontario shore, Clow sought year-round energy efficiency and comfort in the new location. Gunsinger recommended several building system options from Butler Manufacturing™ all aimed at producing a structure with low maintenance and extreme energy savings.

- **MR-24® roof system.** This weathertight steel surface covers the entire Green Tractors building with superior protection. Specifically designed moveable clips accommodate roof movement as Ontario weather changes from heavy snow and cold to blazing sun and heat.
- **ThermaLiner™ insulation system.** The ThermaLiner system pairs with the MR-24 roof system for superior energy efficiency with effective accredited R-values as high

## **PLANNING FOR SUCCESSION**

About two-thirds of family businesses fail to transfer successfully to a second generation.<sup>1</sup> But the owners of Green Tractors are on the way to beating those odds, with Doug Clow fully engaged in the business alongside his parents, Oakley and Shirley.

Succession planning is one reason it was so important for the Clow family to think of their new building as a long-term investment.

For projects like Green Tractors, construction accounts for only 10 percent of the building’s overall lifetime costs. Operation after construction — lighting, heating, cooling and maintenance — account for 90 percent. As the Clows were planning for succession, it was important for them to consider those long-term operating costs.

Bel-Con Design-Builders Ltd helped Doug and his parents make smart choices that will pay off in energy efficiency and low maintenance over their new building’s lifetime.

<sup>1</sup>Facts and Figures. Family Business Alliance website. [http://www.fbagr.org/index.php?option=com\\_content&view=article&id=117&Itemid=75](http://www.fbagr.org/index.php?option=com_content&view=article&id=117&Itemid=75). Accessed March 2016.

as 38.7. In addition, the finished interior ceiling panels contribute to an appealing customer-facing showroom.

- **eShadowall™ wall system.** With panels, thermal spacer blocks and fiberglass blanket insulation, this exterior wall system delivers accredited R-values up to 21.3, along with an architecturally pleasing exterior.
- **SunLite Strip® daylighting system.** By bringing more natural light into the building, the SunLite Strip daylighting system reduces electrical lighting costs and creates a more pleasing environment.

The net result of the design is an energy-efficient building that is pleasant for both workers and customers, now and for the decades ahead.

### **Sustainability for the future**

Long-term value was another reason Butler building systems were a perfect fit for Green Tractors.

“Going into this project, we focused on environmental sustainability, but my mindset was to achieve overall sustainability as well,” Clow said. “We wanted to invest in a building that would contribute to our profitability and help make our business economically sustainable for the long term.”

Low maintenance was also a top priority in the design process.

“Green Tractors is in the business of selling and repairing farm equipment — not repairing buildings,” Gunsinger said. “With a low-maintenance building, they can concentrate on what they do best.”

### **Multi-function spaces**

Besides serving a wide range of customers, the new Green Tractors building design needed to accommodate a variety of functional spaces — showroom, parts department, service shop and offices for accounting and other business functions.

Green Tractors displays its largest John Deere farm tractors and planting and harvesting equipment on a sizeable outdoor lot. The indoor showroom showcases smaller machines, implements and lawn mowers,



## **GREEN TRACTORS INC.**

**Butler Builder®:** Bel-Con Design-Builders Ltd

**Architect:** Ernest A. Cromarty Architect Inc.

**Size:** 15,015 square feet

**Butler® Systems:** Widespan™ structural system, MR-24® roof system, ThermalLiner™ insulation system, eShadowall™ wall system, SunLite Strip® daylighting system

along with a popular farm toy department. In addition, the service and repair area brings in all sizes of equipment, from small push mowers to massive 200-plus-horsepower farm tractors.

The Widespan™ structural system from Butler Manufacturing provided ultimate flexibility to design spaces to meet all these dealership needs.

For the 50-by-90 showroom and 30-by-90 two-story office area, clearspan modular framing gave total layout freedom with no intermediate columns. In the shop, Bel-Con was able to design separate areas for repairing large and small equipment.

The builder creatively and efficiently used the available square footage by placing the parts department on a mezzanine between the main floor and roof.

“We saved interior floor space by moving the parts department up,” Gunsinger said. “The versatile Butler structure could easily accommodate the addition of a 1,200-square-foot mezzanine.”

*The Butler SunLite Strip® daylighting system brings more natural light into the building and reduces electrical lighting costs while creating a pleasing environment.*

*“It was nice to be able to talk to people face to face and be welcomed to ask questions. Tom was always there and willing to talk through every step with us.”*

*DOUG CLOW,  
GREEN TRACTORS*

**SATISFIES SUSTAINABILITY GOALS****Meticulous detail**

Throughout the design–build process, Clow remained involved with every detail and relied on Gunsinger and his crew to exceed all his expectations.

“It was nice to be able to talk to people face to face and be welcomed to ask questions. Tom was always there and willing to talk through every step with us,” Clow said.

After completion, the new building created plenty of buzz around Kingston.

“We’ve been overwhelmed by the community support. The building was packed during our grand-opening open house. And we’re gaining new customers who stop in as they are driving past,” Clow said. “They see the beautiful building and are curious about what’s inside.” ▲

*“The SunLite Strip system is a great solution to bring both quality light and energy savings into the building design.”*

*TOM GUNSINGER, BEL-CON DESIGN-BUILDERS*

**KEEPING IT NATURAL**

If you feel happier in the sunshine, you’re not alone. Research shows that people exposed to natural light during working hours sleep better, are more active and enjoy a higher quality of life compared to workers without light exposure.<sup>2</sup>

Mechanics in the shop area at Green Tractors appreciate the natural light that comes with the SunLite Strip® daylighting system, because they often work under and behind immense farm equipment.

“In our area, light quality is just as important as energy efficiency, because we don’t get as many daylight hours as other latitudes,” said Tom Gunsinger of Bel-Con Design-Builders. “The SunLite Strip system is a great solution to bring both quality light and energy savings into the building design.”

Based on prismatic acrylic domed technology, the SunLite Strip system adds up to three times the amount of light earlier and later in the day, compared with translucent panels. And, when integrated with lighting control systems, the SunLite Strip system can reduce lighting costs by up to 70 percent.

<sup>2</sup>Boubekri, M., Cheung, I.N., Reid, K.J., Wang, C.H., & Zee, P.C. Impact of windows and daylight exposure on overall health and sleep quality of office workers: a case-control pilot study. *J Clin Sleep Med*. 2014;10(6):603-611  
<http://www.iasosnet.org/jcsm/ViewAbstract.aspx?pid=29503>

*“With a low-maintenance building, Green Tractors can concentrate on what they do best.”*

*TOM GUNSINGER, BEL-CON DESIGN-BUILDERS*



# Campus training center is a marvel of efficiency

*Building is world-class model for environmentally friendly features*

**W**hen officials cut a ceremonial ribbon to open the new Sustainable Energy Resources and Technologies (S.E.R.T.) building on the Iowa Lakes Community College campus, what color was the ribbon? Green, of course. That's because the Estherville, Iowa, school not only houses environmental education programs — the building itself is a world-class model of sustainable, “green” design and construction.

It's hard to believe that the project started as an abandoned stained-glass factory that the Iowa Lakes Board of Trustees purchased in a sheriff's auction in 2010. With a visionary design and energy-efficient components from Butler Manufacturing™, the 21-year-old building was transformed into a state-of-the-art learning environment.

## **Converting from old to new**

The task of converting the obsolete building to a marvel of energy efficiency fell to Christensen Construction & Design Company, Inc., a Butler Builder®. Coincidentally, the local company built the original structure adjacent to the college property in 1984. Over the past 22 years, Christensen Construction worked with Iowa Lakes Community College on more than 17 building projects. Those experiences gave the builder a leg up with the S.E.R.T. project.

*(Above) Christensen Construction & Design Company, Inc., with the design expertise of frk architects + engineers, transformed an old stained-glass factory into a state-of-the-art educational building at Iowa Lakes Community College.*

PHOTOGRAPHY BY SARAH MORPHEW

## PUTTING SUSTAINABILITY FIRST

Because Iowa Lakes Community College has a long history of environmental awareness, it's not surprising that energy efficiency and sustainability were high priorities for the college's new Sustainable Energy Resources and Technologies (S.E.R.T.) building.

Located in the picturesque Iowa Great Lakes Region in the far northwestern part of the state, Iowa Lakes Community College started its first environmental studies program in the late 1970s. Offerings have grown since then to include such programs as water quality and sustainable aquatic resources, as well as wind energy and turbine technology. Even its construction technology program teaches students energy-saving initiatives.

With 3,200 students, the college is one of 650 nationwide that joined the American College & University Presidents Climate Commitment. And its wind-energy education program is one of only seven nationwide to receive the American Wind Energy Association Seal of Approval.

*"No roof repairs were needed for the renovation, thanks to the longevity of Butler's standing-seam roof design."*

STEVEN CHRISTENSEN, CHRISTENSEN CONSTRUCTION

"We had a long-standing relationship with Christensen Construction. Our experience working with them on other Butler buildings gave us confidence that the building we purchased would be structurally sound," said Delaine Hiney, facilities management executive director, Iowa Lakes Community College.

Using the original 30,000-square-foot building shell as a starting point, Christensen Construction collaborated with architectural firm frk architects + engineers of West Des Moines, Iowa, to create functional educational spaces while minimizing impact on the existing structure. Along the way, the team relied on the Leadership in Energy and Environmental Design (LEED) rating system to select sustainable, durable materials for construction. Butler® systems helped make that possible.

"We still had the original Butler building plans from 1984. That helped us figure out ways to utilize pre-existing components yet make

the renovated building fit green construction goals," said Steven Christensen, president of Christensen Construction.

The original Widespan™ structural system from Butler provided the flexibility to add classroom space and new, larger windows, which wouldn't have been possible with masonry construction.



*The SunLite Strip® daylighting system from Butler provides high-quality lighting for the 70-ton nacelle, which contains components that generate energy from spinning wind turbine blades.*



*Christensen Construction & Design Company Inc., a Butler Builder,<sup>®</sup> built the original Iowa Lakes Community College structure in 1984, prior to the S.E.R.T. project addition. Owner Steve Christensen is pictured here, outside the addition.*

Christensen Construction fabricated multiple steel structures within the existing shell to accommodate the new S.E.R.T. building's needs.

The construction team used multiple sustainable practices throughout the project, conserving where possible and recycling unneeded components to minimize the environmental impact.

"We ended up tearing down some walls, but we recycled the wood, copper and steel. We even recycled the concrete to make aggregate driveways," Christensen said.

### **Supporting school spirit**

Existing metal wall panels remained in place, but were covered by the 26-gauge Butlerib<sup>®</sup> II wall system. Like any campus, Iowa Lakes Community College rallies around a signature color, but the school's color is a deep blue that is not a standard Butler<sup>®</sup> building system color choice. However, Butler Manufacturing was able to customize the wall panels with a high-performance Butler-Cote<sup>™</sup> fluoropolymer finish, matching the college's color while still meeting construction deadlines. The durable and economical Butlerib II wall system also contributed insulation and maintenance benefits.

Fortunately, the building's original Butler 24-gauge MR-24<sup>®</sup> roof system was still secure and weathertight after 21 years.

"No roof repairs were needed for the renovation, thanks to the longevity of Butler's standing-seam roof design," Christensen said.

The builder also found the original StylWall<sup>®</sup> flat wall system to be in good shape, with its signature smooth, uniform appearance. The 24-gauge wall panels simply needed a face-lift with a coat of shell gray paint.

### **Energy savings and quality light**

Through the design phase, project architect Doug Chervek, ALA, collaborated with Butler Manufacturing and Christensen Construction to help solve the project's unique challenges. One of those challenges was incorporating natural light to bring both energy savings and lighting quality.

The SunLite Strip<sup>®</sup> daylighting system from Butler was a perfect solution. Six SunLite Strip system units, each 2 feet by 10 feet, spread sunlight through a prismatic acrylic domed system. This technology adds up to three times the amount



*Iowa Lakes Community College incorporates many features to enhance both mechanical and energy efficiency, including the SunLite Strip® daylighting system and a photovoltaic (solar) system to reduce electrical costs.*

*“Our experience working with other Butler buildings gave us confidence that the building we purchased would be structurally sound.”*

*DELAINE HINEY, IOWA LAKES COMMUNITY COLLEGE*

of light compared with translucent panels. It can reduce lighting costs by up to 70 percent when combined with lighting control systems.

“This whole building is about showing students how to incorporate different sustainable energy strategies into a structure. We tried to add as many strategies as we could within the budget,” Chervek said. “The SunLite Strip system was a great choice and integrated perfectly with the existing roof system.”

#### **A slew of sustainable features**

Overall, Butler’s versatile Widespan™ structural system allowed Iowa Lakes Community College to incorporate many other features to enhance both mechanical and energy efficiency. The building’s “green” technologies include:

- Efficient, geothermal heating and cooling
- Polished concrete, radiant-heated floors
- Photovoltaic (solar) system to reduce electrical costs



## WHAT'S A NACELLE, ANYWAY?

The focal point in the center atrium of the Iowa Lakes Community College S.E.R.T. building is a 70-ton nacelle. A nacelle contains components to generate energy from spinning wind turbine blades. It would normally sit atop a wind turbine, 200 to 300 feet in the air. But the nacelle inside the S.E.R.T. building is only 6 feet off the ground, so students can safely learn how to work on the equipment, no matter the outside weather.

To provide high-quality lighting for this unique feature, Iowa Lakes Community College chose the versatile SunLite Strip® daylighting system from Butler. The SunLite Strip system bathes the nacelle in natural light, so students can easily view its complex parts.

- Sunshades to filter out 60 percent of the direct sunlight
- Thermal pane glass windows for added insulation
- Occupancy sensors to control lighting use
- Lobby ceiling fans for continuous air circulation

*“This whole building is about showing different sustainable energy strategies and how to integrate them into a structure.”*

DOUG CHERVEK, ALA  
FRK ARCHITECTS + ENGINEERS

With so many sustainable features, the completed 42,000-square-foot S.E.R.T. building is an active learning lab for Iowa Lakes Community College students. For example, students can observe the geothermal heat pump in operation behind glass with LED lighting. Even the college cafeteria uses compostable dinnerware made from recycled materials, reducing the load on area landfills. It all supports the college's

driving force — teaching students about sustainable energy technologies.

“Our students now have a top-rated facility to safely engage in training and education needed to enter the workforce,” Hiney said. “The facility really shines, and our industry partners are impressed by the scope and quality of the training that Iowa Lakes Community College can provide.” ▲

### IOWA LAKES COMMUNITY COLLEGE

**Butler Builder®:** Christensen Construction & Design Company, Inc.

**Architect:** frk architects + engineers

**Size:** 42,000 square feet

**Butler® Systems:** Widespan™ structural system, MR-24® roof system, Butlerib® II and StylWall® flat wall systems, SunLite Strip® daylighting system

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