

TARGET FIELD, HOME OF THE MINNESOTA TWINS



BALLPARK STATS

Location: Minneapolis, Minnesota

Began Construction: August 30, 2007

Opened: April 12, 2010

Seating Capacity: 39,504

Owner: Minnesota Ballpark Authority

Operator: Minnesota Twins

Venue Uses: MLB games, collegiate baseball games, concerts

Construction Cost: \$581 million (in 2012 dollars)

LEED Certifications: LEED Silver for New Construction in April 2010, LEED Silver for Existing Buildings: Operations and Maintenance in December 2011

THE TWINS' GREENING STORY: MOTIVATIONS, CHALLENGES AND LESSONS FROM THE FIELD

When Target Field received its LEED Silver New Construction (NC) certification shortly after opening in 2010—at the time, it was only the second ballpark in the U.S. to receive LEED certification—the U.S. Green Building Council called it the “Greenest Ballpark in America.” But the Twins didn’t stop there: The stadium went on to earn LEED Silver for Existing Buildings: Operations & Maintenance (EBOM) the following year.

WHY GO GREEN?

Pursuing LEED certification was built into the stadium’s construction requirements, thanks to a provision in the State of Minnesota’s 2006 ballpark legislation.¹ In addition to the state requirements, “our owners from the very beginning felt that this facility and this organization needed to be on the leading edge of sustainable operations,” explains Dave Horsman, senior director of ballpark operations. “That was part of the design principle going into the facility. That’s where we started from with the architects and the general contractors.”

“Gaining LEED certification has been a long-standing goal for the Twins, Hennepin County and the Minnesota Ballpark Authority as we have collectively shared the responsibility to ensure strong environmental stewardship,” said Twins owner and CEO Jim Pohlad when the club earned its first LEED certification. “It’s our sincere hope that the sustainability aspects of Target Field will provide inspiration to other local, regional and national projects of this magnitude.”²

WHERE TO START?

“Our greening program started with LEED certification. When our executives and our owners sat down with the architects to design the building, there were some key principles they were looking at. They wanted to make a ballpark that was uniquely Minnesotan—architecture that fit in with downtown Minneapolis. They also wanted to design a building that was beautiful architecturally but also functional. And the other piece was environmental stewardship,” says Horsman.

With sustainability in mind from day one, it was easier to integrate greening into every phase of the process, says Horsman. “We had a consultant, a general contractor and an architect. As we got more and more involved, there was an environmental component to every meeting and discussion. It became commonplace and ingrained with everything else.”

“One of the key things is that our ownership involved the front-office staff, specifically the operations staff,” he continues. “They got a lot of us into the process. If we had good ideas and good judgment, they were fully supportive. The philosophy that we came to is that a LEED certification

MINNESOTA TWINS SUSTAINABILITY STATEMENT

“The Minnesota Twins organization believes our future success—both on and off the field—is built on a business model that embraces operational efficiency, environmental stewardship and social responsibility. We honor the power of sport by leading through example, and we will continue to use sport to inspire, build the best fan experience and cause no unnecessary harm, working with our fans, community, suppliers, partners and employees to have a positive influence in the world.”

—Minnesota Twins website

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would be nice but in reality, certification or not, we wanted to build and operate a facility that is as sustainable as possible. In other words, we didn't really want to engage in any window-dressing. We wanted the initiatives to be substantive and to help us with sustainability as well as our operations.”

Since the stadium was a new construction, there were many opportunities to reduce environmental impacts when it came to choosing a site, building materials and construction practices. The stadium was sited in downtown Minneapolis, easily accessible by walking or biking and near several public transportation options, including rail and bus routes. The site itself was a previously contaminated brownfield that required soil remediation. The Twins also took advantage of regional resources while also tying in to the local aesthetic. “Wanting to be uniquely Minnesotan helped in sourcing local materials,” says Horsman. “We have 100,000 square feet of limestone on the exterior of our building that was quarried 90 miles away. Because we wanted something reminiscent of Minnesota, it was easy to find opportunities to source local materials.”

Another significant feature of the stadium's site was an existing underground cistern system that could be refurbished to control runoff and capture rainwater for reuse onsite. The rainwater capture system now in place at the stadium is one of its standout features and a key part of the LEED project. “Our rainwater capture system was part of the construction process,” explains John McEvoy, manager of ballpark operations. “The initial intent of our cistern was to let the sediment settle to the bottom before the water is pushed back into Bassett Creek, which runs near our ballpark. Later in the process, Pentair came to us with the idea of us reusing the water.”

“In a ‘city of lakes,’ the Minneapolis tagline, we try to be conscious about our water,” McEvoy adds. “We have a partnership with a local company that has helped us put in a rainwater recycling system. We are able to use that rainwater to wash our lower concourse.”

Through a custom-designed rainwater recycle system provided by Minneapolis-based Pentair, the Minnesota Twins captured, purified and reused more than 686,360 gallons of rainwater in 2011, reducing the use of municipal water at Target Field. “It essentially collects rainwater that gets filtered out and put into a 5,000-gallon holding tank,” McEvoy continues. “The cistern itself is 200,000 gallons. When we pressure-wash at the end of the night, that cistern is full enough to use the rainwater to wash the seating area. We save

GREEN CONSTRUCTION INITIATIVES

- ★ Site required brownfield remediation; soil had to be treated and site decontaminated.
- ★ 60 percent of the building's exterior is regionally sourced limestone from Mankato, Minnesota (90 miles from the ballpark).
- ★ More than 70 percent of construction waste was recycled or otherwise diverted from landfill.
- ★ More than 30 percent of all installed materials were made from recycled content, including the foul poles and roof canopy.
- ★ Precautions were taken to control soil erosion, waterway sedimentation and airborne dust.
- ★ Stadium was sited to include a public transportation hub where commuter and light-rail lines terminate, adjacent to a major bus hub as well as easily accessible by bike riders and pedestrians.

14,000 to 21,000 gallons of water and 86 gallons of gasoline, as well as 57 man-hours of labor, per game when we use that system.” In the future, the Twins plan to refine the purification system and hope to use the recycled water to maintain the playing field.

CHALLENGES: OVERCOME AND ONGOING

Among the biggest challenges at the stadium was reducing energy consumption, particularly for the LEED Existing Buildings: Operations & Maintenance certification. “We were concerned that we wouldn't make that energy prerequisite, which would blow the whole thing out of the water, so one of the more substantial things we did was work on our energy consumption,” says Gary Glawe, senior director of ballpark systems.

Getting the building and operations running smoothly took priority. “In truth, we were first focused on getting business up and running, as well as the guest experience. We put the EBOM energy efficiency part of it on the back burner at first and waited for our energy data to play out before we made operational changes,” Glawe explains.

After the Twins became more comfortable with their new building's operations, they began to address opportunities for increased efficiency. “We took the systems already in place and began using them more efficiently, such as building out some of them,” Glawe explains. “Areas that are unoccupied for the season are only scheduled when we need them. The first year, I was scared to put in automatic lighting because I was afraid it would shut off in the middle of an event. But we gained confidence in that first year and scheduled the whole facility to shut down at a certain time in the day because people were leaving lights on. We really engaged our office

STANDOUT GREENING ACCOMPLISHMENTS

- ★ A power purchase agreement offset 70 percent of energy consumption at the stadium with wind energy in 2010 and 2011, avoiding more than 8.8 million pounds of carbon dioxide emissions.
- ★ Captured waste energy from the adjacent Hennepin Energy Resource Center is used to heat most indoor spaces at Target Field and the playing field.
- ★ High-efficiency field lighting saves nearly \$6,000 a year.
- ★ Fans are encouraged to use public transportation or bike to games. Two rail lines stop near the left-field corner, a Metro Transit bus hub is less than a block away, and 427 bicycle storage locations are within 200 yards of the ballpark.
- ★ A water cistern system under the warning track captures and treats rainfall runoff, which is filtered and used to wash down the seating area after games, with potential field irrigation uses in the future.
- ★ Low-flow urinals, dual-flush toilets and aerated faucets use 30 percent less potable water than conventional fixtures and are estimated to save 4.2 million gallons of water annually.
- ★ The Twins reduced the use of chemical cleaning compounds by 66 percent in 2011 from the previous year, and 73 percent of cleaning compounds met the USGBC's LEED standards.
- ★ The stadium diverts 47 percent of its waste for recycling and composting, with all other waste going to waste-to-energy.
- ★ The stadium donated 7,500 pounds of leftover food to local charities in 2011.

staff and made an objective to reduce energy consumption by at least 5 percent. It made everyone aware to turn off lights, turn off computers, those kinds of things.”

Through lighting and HVAC upgrades and better automation of equipment in 2011, the Twins reduced their use of electricity by more than 12 percent, despite adding a new video board in right field and additional radiant heating units in the concourses. Target Field is an EnergyStar Portfolio Manager member and as of 2012 was 23 percent more energy-efficient than other buildings in its EnergyStar category.

Another challenge during the LEED process was waste management. “We started our composting back in April 2010, when we opened,” says McEvoy. “We ran into a number of challenges with how to get things to one location for pickup

and working with our housekeeping and concessionaires. We had to do some redesigning of compactors and added a couple of totes to get things from the kitchen to the compactors. It wasn't until mid-August 2010 that we had it clean enough to go to the compost site.”

“I don't think we really got serious about it until July 2011 when we realized our diversion rate wasn't as good as we thought it was. As part of the LEED process, we tried to get a 50 percent diversion rate. We just missed that, so we then did a waste audit,” explains McEvoy. “We were at 37 percent [diversion] in 2010. Our highest diversion rate now is 47 percent, as of last year. We hope to be above the LEED requirement level by the end of this season.”

“We started our composting in the suites because it's easier to control in this central, sealed-off location. Also, some of those compostable products are a little more expensive than regular products. In terms of the bottom line, it was cheaper to buy those products for a small area instead of an entire ballpark. But we'll start there and go from there. I think we'll get close to a 100 percent diversion rate someday,” says McEvoy.

“To try and collect more organics and recyclables, we have a crew that picks up all the recyclables out of the seating area after the games. The second crew comes in and picks up all the trash. Everything left over is organic. We do it with blowers and brooms. After that we started dealing with popcorn boxes and pizza boxes. Some of the things that we vend from our concessionaires aren't Biodegradable Products Institute-certified compostable, but they are paper waste so we can compost them. We were collecting 22 cubic yards per game last year.”

The Twins emphasize simplicity and easily understood signs when it comes to recycling programs. “My advice is to make your waste system as simple as possible. Signs are a big thing, especially in the kitchen. Color-coded and multiple-language signs make it so everyone can read and understand. You should also make sure that whatever you choose fits with everyone else's operation,” says McEvoy. Working with suppliers and training staff is also crucial. “We talk directly to the concessionaire folks and the warehouse people. We have six major kitchens in the ballpark. We went to each chef in those kitchens and got them all on board. From there they spread it out to their kitchen area. Once we got everybody on board it worked out really well.”

In 2011, the Twins kept more than 1,762 cubic yards of waste out of local landfills, and 741.3 tons of trash were sent to the Hennepin Energy Recovery Center, a waste-to-energy facility neighboring Target Field. This recovered energy was used at Target Field to heat portions of the service level and provide hot water in the facility. In addition, 430.67 tons of waste were recycled, and 152.41 tons of organic materials were composted.

Diverting their waste from landfills makes economic sense for the Twins. “The good thing about our waste composition is that it is much cheaper to go organic. It costs \$65 a ton to haul trash and \$15 a ton to haul organics,” says McEvoy. By composting more than 152 tons of organics in 2011 instead of landfilling them, for example, the Twins saved \$7,600.

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says Dave Horsman.

LESSONS FROM THE FIELD

USE LEED AND OTHER CERTIFICATIONS AS A

REFERENCE: “When we started our Green Program in 2008, as tenants in the Metrodome, we didn’t have recycling bins in our office. The LEED certification pushed us in the right direction,” says McEvoy. “Teams out there that are looking to start a sustainability initiative, if they pick a certification, whether it’s LEED or ISO, it gets them on the right track. I can’t say for sure, but without LEED we probably wouldn’t have an actual purchasing policy or a durable goods policy. LEED has given us a more holistic approach to our sustainability operation.”

USE AN INTEGRATED BUILDING APPROACH: “Without a doubt we advocate for LEED to others, but it’s not just the LEED side of it. Because of our fully integrated approach, we ended up with a building that is very functional. Without a fully integrated approach you end up lacking in one area or another,” Glawe says. “We didn’t move into this facility until 2010, but we started talking about LEED in early 2009. We thought, ‘What can we do now to help us a year from now or two years from now?’ We made our vendors follow the regulations; we made engineering changes throughout the process. Thinking far enough in advance during the construction process helped us move forward a little bit easier.”

LEED DOESN’T HAVE TO BE EXPENSIVE: An integrated building approach can also help keep costs down. “During the NC project, the overall cost of the LEED component was 0.5 percent of the overall budget, on the construction side. The LEED cost is only 2 percent above of what your building cost should be,” explains Glawe. “I think a lot of that has to do with going into the whole process with objectives of environmental stewardship. We weren’t going back to the drawing board as often because it was frontline for everyone at the beginning. That helps keep cost down.”

TURN LOCAL ENVIRONMENTAL ISSUES INTO OPPORTUNITIES, AND TAKE ADVANTAGE OF LOCAL RESOURCES:

“Our rainwater recycle system is the perfect example of taking advantage of opportunities presented to you,” says Horsman. “With the advertising potential, it was a good partnership for Pentair to put that system in for us. If they hadn’t put it in, I’m not sure that it could have been done.” Glawe adds, “That was a partnership piece with a local company that wanted the exposure. It’s a win-win. We gain a corporate partner and they gain a chance to advertise their service. The benefit goes both ways.”

MAKE ENVIRONMENTAL INITIATIVES PART OF YOUR CULTURE:

Horsman notes that the process of adopting a greening initiative depends on the facility, with facility operators responsible for energy and sustainability decisions from the beginning. “One thing that I am impressed with when I walk around this facility on an event day, with our thousands of employees and tens of thousands of guests, is that this whole thing has become so widely adopted that it’s just second nature,” says Horsman. “Our senior management made this an objective and put the responsibility on operations folks to come up with meaningful ways to do this, and that has made it easy to propagate it on down the line. It’s impressive to see ushers, who are part-time employees, doing sustainable things as second nature. Nobody has to make a concerted effort anymore because it’s just part of what they do. If you’re going to have success, that’s got to be a part of it.” “It has to become part of your culture,” McEvoy adds. “That never made a whole lot of sense to me until I saw it firsthand.”

ENDNOTES

1 Brian Johnson, “LEED Amendment Survives in Twins Stadium Bill,” Finance & Commerce.com, May 30, 2006, <http://finance-commerce.com/2006/05/leed-amendment-survives-in-twins-stadium-bill/> (accessed July 19, 2012).

2 “Twins’ Target Field Gets Highest LEED Rating of Any Ballpark in America,” MLB.com, April 8, 2010, http://minnesota.twins.mlb.com/news/article.jsp?ymd=20100408&content_id=9142070&vkey=news_min&fext=.jsp&c_id=min (accessed July 19, 2012).