Knowing why you’re making energy efficient choices always helps with the decision making process.

That was the case with U.S. Bank Stadium, the new home of the Minnesota Vikings in Minneapolis. The Minnesota Sports Facility Authority (MSFA) had many decisions to make in building the new stadium and topping the list were energy efficiency and sustainability. They were grateful to work with Xcel Energy and an architect familiar with the steps to achieving LEED certification.

“The legislation is clear that the MSFA was to achieve LEED certification,” explains Michael Vekich, Chair of the MSFA. “We are proud that U.S. Stadium has been awarded LEED Gold. This award not only demonstrates a commitment to sustainability, but in utilizing more efficient lights for example, we are able to save money over the long term.”

With that understanding, the team went to work on building one of the newest and most energy efficient stadiums in the country.

**Tough choices and new technology**

The new stadium is 1.8 million square feet, with signature 100-foot tall transparent glass front doors, the largest moveable doors in the world and a co-polymer, plastic-like roof that lets sunlight in and makes everyone forget they’re actually inside a building. From the moment people step inside, they’re impressed.

“When we bring people into the building who have never been in before, it’s so much to take in. They look at the roof, the doors, the video boards and everything else. It’s fun to watch their expressions,” Vekich says.

To construct a world-class stadium for the home NFL team and its hundreds of thousands of fans, and achieve LEED certification, they worked with Xcel Energy’s Energy Design Assistance program. The program provides energy modeling to identify all of the energy efficient opportunities to consider, as well as equipment costs, payback terms and rebates.
They started with LED lighting throughout the building.

“The LED lighting was more expensive than traditional lighting, but in the end, we’ll actually save money,” says Vekich.

He adds that the LED lighting alone throughout the stadium reduced electric costs by 37 percent.

The heating and cooling systems were next.

A heat recovery system, air-handling units and other measures reduced their energy costs by another 15 percent.

“We also included sub-monitors on all utilities to measure their efficiency. If we notice something deviating from normal, we can take proactive action to fix the problem,” Vekich says.

“There are hundreds of considerations and measures to achieve LEED,” says Sara Terrell, Xcel Energy account manager. “Our program’s energy modeling helps customers understand the choices and make decisions.”

The list of sustainability and efficiency measures is long and impressive. It includes:

- LED sport/stadium lighting
- Motion sensors and high efficiency lighting throughout the building
- CO₂ control of outside air
- Air handling unit staging for the upper and lower bowls
- Wall and roof insulation
- Heat recovery system
- ENERGY STAR® TVs and refrigerators
- Low flow showerheads and toilets

Sustainability measures rounded out the effort, including recycling, landscaping around the stadium focused on native plants and the unique roof material which lowered the use of steel in the building.

The combination of measures helped them achieve LEED Gold certification, more than $733,000 in Xcel Energy rebates and energy savings of more than 20 percent compared with building to code. The payback term is just under two years.

**High tech and highly impressive**

Residents love the new stadium and are proud of its many impressive attributes. But Vekich takes the most pride in the things implemented behind the scenes.