

YOU KNOW, WE COULD HAVE
JUST CHANGED A FEW LIGHT
BULBS AND CALLED IT A DAY.

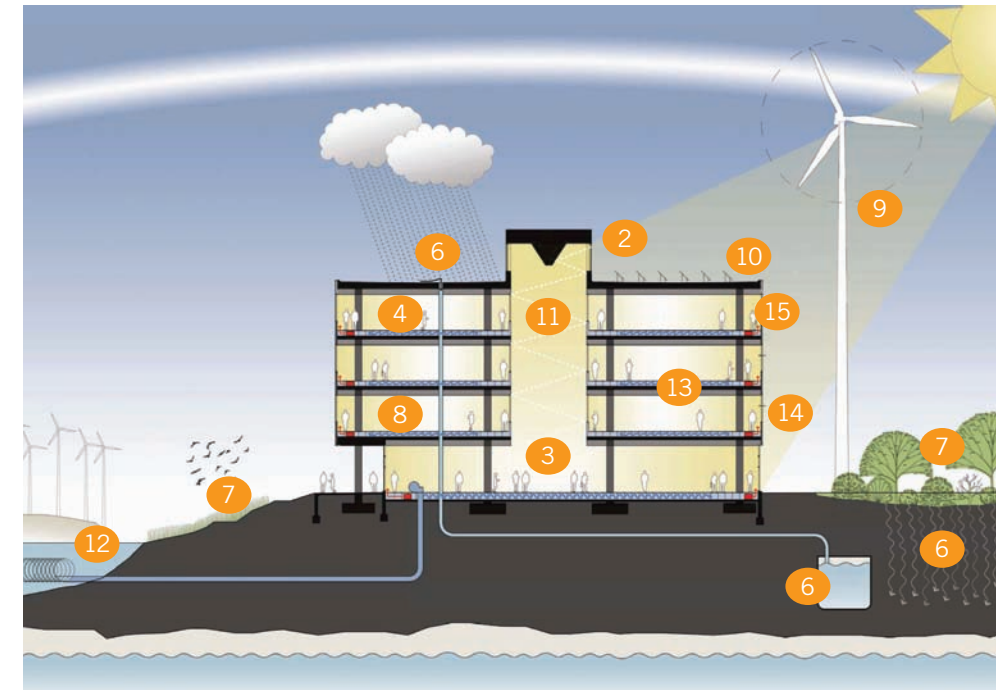
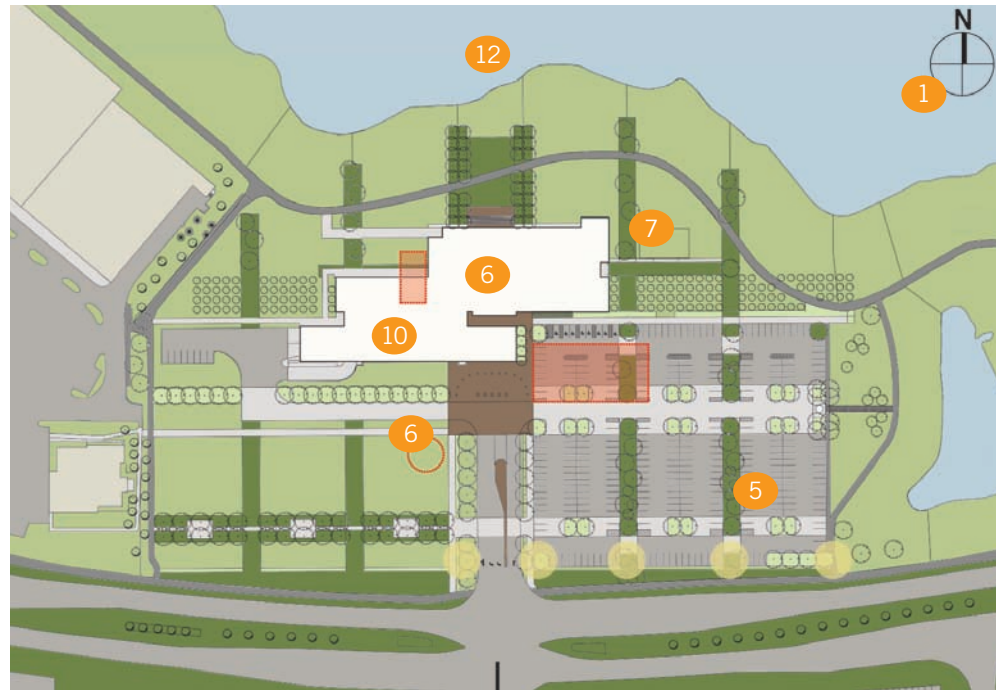


GREAT RIVER
ENERGY®

A Touchstone Energy® Cooperative 

THIS IS WHAT WE DID IN OUR NEW HOME.

- 1 **Building orientation.** Because of the North-South orientation and narrow building floorplates (designed to harvest maximum daylight and reduce heat gain from artificial light), this building uses up to 40% less energy for lighting than standard buildings.
- 2 **Daylighting.** Windows, daylight atriums and the interior building layout provide natural light to virtually all workspace in the building. Natural light provides a more comfortable working environment and saves energy, too.
- 3 **Daylight harvesting.** One unique feature of the building is the atrium in the center, which allows natural light to come in. Reflective panels in the ceiling allow the interior to receive as much natural light as the perimeter.
- 4 **Daylight sensors.** Sensors are connected to a computer and to dimming ballasts on the lights, to increase or decrease artificial light levels. This results in constant overall lighting and a reduction in energy use.
- 5 **Minimize exterior lighting.** By strategically placing our high-efficiency lighting, we minimized both the number of fixtures and the light pollution from the night sky—which reduces energy use.
- 6 **Rainwater harvest.** A 20,000-gallon cistern (or reservoir) collects rainwater and snowmelt from the roof for use in toilet flushing. A pond collects rainwater for irrigation. This facility uses up to 90% less drinkable water than a standard corporate campus, saving up to 1.6 million gallons each year.
- 7 **Landscaping.** Plants native to Minnesota and the region, including prairie grasses and fruit trees that need little irrigation, surround the building. When irrigation is needed, captured rainwater is used, not drinking water.
- 8 **Faucet sensors and aerators.** Motion sensors turn water on only when hands are under faucets and aerators reduce the amount of water being used. Dual flush meters adjust the quantity of water needed for flushing toilets.



- 9 **Wind turbine.** It supplies a portion of power to the building. During periods of low demand, such as spring or fall nights and on weekends, excess electricity the building isn't using is channeled to the power grid. A 166-foot tall, 200 kW wind turbine like ours can power the equivalent of 40 homes.
- 10 **Photovoltaic panels.** A 70 kW array of solar photovoltaic panels on the roof helps power the building. The combined output of the on-site wind turbine and the photovoltaic cells provide up to 15% of our building's annual power use.
- 11 **Green elevator.** The elevators use a counterbalance mechanism and high efficiency motor to save energy. But a healthy building has healthy employees. So there are plenty of stairs to promote physical activity.
- 12 **Lake-source heating/cooling.** A state-of-the-art geothermal transfer system provides heating and cooling. The system uses the bed of Arbor Lake as its heating and cooling source because water provides great conductivity.

- 13 **Displacement ventilation.** We have a more efficient way to move hot and cool air to employees than a traditional overhead forced-air system. This may be the first time a lake-source geothermal heating/cooling system and displacement ventilation have been used together.
- 14 **Fly ash.** Fly ash is the product created after coal is burned to generate electricity. Instead of being sent to a landfill, it can be used as a replacement for Portland cement in concrete. More than 40% of our building's cement was made this way.
- 15 **Local construction materials.** As much as possible, local materials such as Mankato limestone, Lake Superior granite, fly ash, and wood were used in construction, reducing the need for transportation and its associated pollution.

Over 90% of construction waste on the project was recycled, including virtually all metal, wood and plastic. A sustainable building should be sustainable from design through construction and occupancy.

THIS IS WHAT YOU CAN DO IN YOURS.

If you get a chance to tour our new building, we hope you'll observe the energy-saving products and techniques we used and ask yourself, "How can I apply this to my own home, school or office?" Here are some ideas to get you started on energy conservation:

- Install compact fluorescent light bulbs (CFLs). This alone can reduce the amount of energy you use for lighting by up to 75%.
- Install a programmable thermostat. Set your furnace back 10 degrees at night, and you'll save 10%, both in energy and money.
- Sign up for cycled air conditioning.
- Use a rain barrel to capture water for your garden and landscaping. Don't waste drinking water from the tap on irrigation.
- Weatherstrip your home and conduct a thorough energy audit.
- Upgrade to more efficient Energy Star® appliances.
- Install ceiling fans or use interior fans to keep your home feeling cooler while using less power.
- Plant trees or shrubs around the area where your air conditioning unit is located. A unit operating in the shade uses as much as 10% less electricity.
- Install motion sensors and/or an automated system to monitor and control the temperature and lighting systems in your school or business. Why heat and light a room when no one is in it?
- Ask your electric cooperative about load management and other conservation programs for farms and businesses.
- Make saving energy a priority if and when you get the chance to build.

Learn more about energy conservation by visiting www.GreatRiverEnergy.com and www.mnbrighterideas.com.



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A Touchstone Energy Cooperative

Our Owners And Distribution Partners:

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BENCO Electric Cooperative, Mankato
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Runestone Electric Association, Alexandria
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Stearns Electric Association, Melrose
Steele-Waseca Cooperative Electric, Owatonna
Todd-Wadena Electric Cooperative, Wadena
Wright-Hennepin Cooperative Electric Association, Rockford

Owners' Representative:

The Tegra Group

Architects:

Perkins+Will

Builder:

McGough Construction



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12300 Elm Creek Boulevard
Maple Grove, MN 55369
763-445-5000

www.GreatRiverEnergy.com



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