



LeClaire, Iowa

TWILIGHT RIVER CRUISES

CHALLENGE

Replacing a riverboat's outdated chiller system without disturbing the characteristic architecture

SOLUTION

An all-electric, multi-zone system from Mitsubishi Electric

RESULT

A Victorian-era riverboat experience offering modern thermal comfort for passengers and energy savings for operators



PROJECT INSIGHTS

Modeled after Victorian-era steamboats, the [Riverboat Twilight](#) (Twilight) offers one- and two-day cruises on the upper Mississippi River. Passengers enjoy guided views of the natural scenery, landscapes and wildlife, which includes eagles and hundreds of bird species. They also see storied river towns, modern tugboats and the historic, but still functional, locks and dams that make river travel possible. But it's the ornate, all-wood, gingerbread interior and overall aesthetic of the Twilight that transforms the site-seeing into an authentic

Mississippi River experience. The riverboat's style allows passengers to imagine they're riding on a vintage steamboat like they've seen in books and movies, but with a significant exception: thermal comfort.

With design and engineering support from [Meier Electric](#), the Twilight replaced its 36-ton chiller with [Zoned Comfort Solutions®](#) from Mitsubishi Electric Trane HVAC US. The combination of ductless and ducted Mitsubishi Electric Trane units reduced hundreds of comfort complaints per year down to zero. In addition to meeting the challenges of heating and cooling a vessel with

"A lot of people ride our boat because of how it looks on the inside. Mitsubishi Electric was the only manufacturer with an indoor unit, a ceiling cassette, that could fit between our 16-inch joists. It was a smooth, simple installation that didn't require any major steelwork. Passengers who ride with us every year didn't notice a change in the boat's appearance but commented on the well-regulated temperature. Also, the indoor and outdoor units are incredibly quiet. I can have passengers standing 2 or 3 feet away from an outdoor unit and they'll ask if the units are running. They can't hear them!"

— KEVIN STIER, Captain
Twilight River Cruises



large glass windows, the system's **EZ FIT™ Recessed Ceiling Cassettes** fit precisely into the riverboat's existing ceiling joists, which eliminated the need for structural changes during installation. The Twilight was able to preserve the beautiful, gingerbread interior that attracts its passengers.

The multi-zone Mitsubishi Electric Trane heat pumps require only a quarter of the electricity consumed by the old chiller system. The chiller would cycle through starts and stops throughout the day and use enough

energy to dim lights whenever it would activate. In contrast, INVERTER-driven heat pumps run continuously, varying capacity to meet the load of each zone.

PROJECT TEAM

HVAC Contractor:
Meier Electric

Distributor:
Republic Companies

EQUIPMENT

- ▶ (12) M-Series Multi-Zone Heat Pumps
- ▶ (22) EZ FIT™ Recessed Ceiling Cassettes
- ▶ (3) SEZ Horizontal Ducted Indoor Units