



**EXPLORER'S "green" design based upon
Leadership in Energy and Environmental Design (LEED™) Requirements
Backgrounder**

Much attention has been given to the vessel's remarkable hybrid diesel-electric propulsion system, or ELFA™, from Siemens Energy & Automation, which combines conventional diesel motors with a multi-component Siemens system that converts the engines' power to electricity and uses it to power the boat's systems. The vessel operates on bio-diesel blended fuel and electric power, which can be recycled to the local grid.

The propulsion system is only part of this extraordinary story. RiverQuest also made a commitment to incorporate green design technologies into the boat's other systems. As a result, more than 110 LEED standards were investigated, and the resulting design demonstrates technologies that are new to the marine industry.

RiverQuest assembled its Green Team, an advisory board of the "Who's Who" in green building and design, headed up by three prominent anchors: Moshier Studio, a Pittsburgh-based design firm with extensive experience in green design; Perkins-Eastman, an architectural firm with a long list of green projects to its credit; and the U.S. Green Building Alliance, a Pittsburgh-based non-profit organization that provides expert services to facilitate green building solutions.

The following are examples of the innovative features of the green boat:

Windows – Energy efficient custom architectural windows instead of less efficient marine windows

Heat Recovery System- To recover and recycle heat waste from the engine

HVAC – Reduced chiller size made possible by energy modeling, as well as non-ozone depleting refrigerants

Insulation – Excellent thermal insulation system, including thermal breaks added to wall construction

Plumbing – Water-efficient toilets and other fixtures

Lighting – Low energy and natural lighting design, including occupancy sensors and other energy management and control systems.

Materials and Coatings – Cabinetry will be made from renewable materials, such as wheat grass and low volatile organic coatings

Among many of its challenges, the green team had to locate the vendors and subcontractors that were experienced in green design and building, or willing to incorporate LEED standards into their work processes. The team also worked to educate vendors about green material selection and construction techniques.