

Project: WMS Boathouse at Clark Park



The WMS Boathouse at Clark Park is the premier rowing center for the City of Chicago, offering year-round training and facilities. Creating a key public access point along the river's edge, the \$8.8 million facility supports the larger movement toward an ecological and recreational revival of the Chicago River. The 22,660 sq. ft boat house is actually comprised of two buildings: a one-story boathouse for storing rowing shells, rental kayaks and canoes and a two-story field house with a rowing tank, small offices, a community room and an exercise area. The functions of the building have been separated as the boat storage area is utilized primarily in the summer

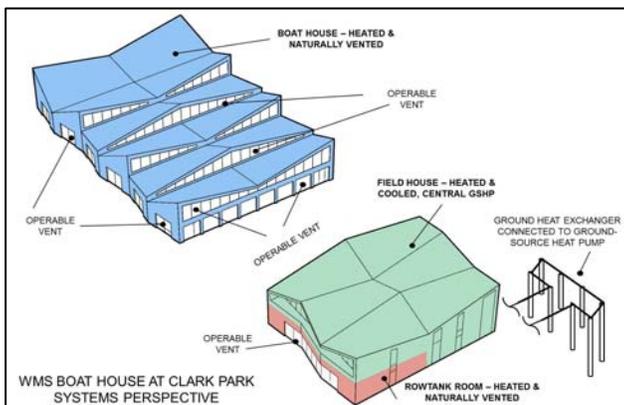
and has relaxed comfort criteria. Sustainable design strategies have been woven throughout the building, including small rain gardens, using permeable concrete on the plaza so no rainwater can run-off the site and providing enough daylighting to reduce dependence on electric fixtures. The building has targeted LEED Silver Certification.

Energy Efficiency

The building systems are designed to reduce energy consumption by 21.1% over the ASHRAE 90.1-2007 baseline and achieve 5 points under EAc1 LEED Version 3. The design consists of the following systems:

Field House – A central VAV ground-source heat-pump serves the exercise room, community room, and support spaces. VAV boxes provide some airflow modulation to each zone. The unit contains an energy recovery wheel. The ground heat-exchanger serving the unit is comprised of 8 boreholes at 450 feet deep spaced 20 feet on center. The row-tank room in the field house is served by a separate heating only, single zone VAV unit. Humidification is controlled in the winter by modulating the outside airflow. In the summer, the unit operates in economizer mode to “flush” the space. A high-efficiency, condensing boiler provides back-up heating for the loop and serves the hot water coil in the row-tank unit.

Boat House – High-efficiency, condensing gas-fired unit heaters provide heating. The building is designed with operable windows and clerestory for natural ventilation during the summer. Energy efficient lighting is provided with daylight dimming controls in the exercise room, multipurpose room, and boat storage space. High-efficiency, condensing gas-fired water heaters are provided for service water heating for the facility lavatories and showers.



Cost Effectiveness

The system for the row-tank space is an example of cost-effective design. The row tank is used primarily in the winter when rowers are unable to access the river. With this in mind; the system is designed primarily for winter operation. The room operable windows used in conjunction with the space exhaust fans provide ventilation in the summer. The removal of refrigeration from this system drastically reduced the building tonnage and the size of the ground heat-exchanger with minimal impact on the functionality of the space.