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Chicago Public Library Edgewater Library Smart Education

Edgewater Neighborhood, Chicago, IL

Completion Date: June 2013
CCJM Role: LEED / EP / FP
Construction Cost: \$7,900,000

Size & Scope:
20,000 square foot neighborhood library

High efficiency lighting and mechanical systems

LEED-GOLD

CCJM

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Chicago Public Library – Prototype Buildings For A User Friendly Smart Facility

Energy Efficiency

The facility is equipped with a geothermal system with ground wells and ground source heat pumps. During the winter, geothermal heating and cooling systems absorb heat stored in the ground through the water that circulates in its underground loop. This heat is carried to the ground source heat pumps where it's concentrated and then sent as warm, comfortable air throughout the facility. During the summer, geothermal heating and cooling systems absorb heat from the space and transfers it to the underground loop where it is then absorbed by the cooler earth. The geothermal heat pump uses the cool water returning from the earth to create cool, dehumidified air for the facility.

Renewable Energy

Edgewater CPL has a partnership with the local utility company to provide power from renewable sources that the utility company owns. The facility's power consumption is measured by multiple kWh meters. The facility is censored for receptacle (plug load) load, lighting load, HVAC load, IT load and other miscellaneous sources. All loads are monitored separately by meters and reported back to the Smart Building Automated System. Then, the load information is closely documented for system usage analysis. The information is also used to manage the system to meet the most efficient condition.

Smart Systems

This facility also integrates a Youth Media Area where kids can check out energy uses on iPad or Google devices for a unique way of interacting with the interior environment. The Youth Media Area includes handheld device charging stations which are monitored by the BAS (Building Automation System) for energy usage and control. A Lighting control system consisting of daylight harvesting sensors and occupancy sensors is connected to the BAS, which provides an occupancy schedule and is also remotely monitored by the City building management department. The collaboration area is equipped with smart board systems that patrons can use to capture the meeting contents in real time and send to their personal smart devices along with wireless access points.