C C J M

HEALTHCARE

Heartland Health Center
Smart Healthcare Design

Rogers Park Neighborhood, Chicago, IL

Completion Date:	September, 2014
CCJM Role:	LEED / MEP / FP
Construction Cost:	$3,060,000

Smart Energy Conservation features include:

- Renewable energy generation with full kilo-watt hour owner metering providing 18% of total energy use per year
- Passive site resource energy use for lighting, heating, and cooling
- Energy efficient mechanical systems providing savings of over 28% over the ASHRAE 90.1-2007 Energy Efficiency code baseline
- Ground source heat pump (GSHP) system with efficient variable speed pumping
- Building envelope improvements for high-quality indoor comfort and increased energy efficiency
- Active energy efficient lighting controls

Expected LEED-PLATINUM in 2014

National model of smart, energy-efficient building control and environmentally-friendly "green" design for neighborhood health centers

The new Heartland Health Center (HHC) building is an intelligently managed, energy and water efficient building integrating locally manufactured materials with recycled content. It is located in a high-density neighborhood in Chicago and will provide preventative health care to families and individuals in lieu of emergency room visits and public health centers.

Renewable Energy Generation

The PV system will provide up to an estimated 18% of the total energy use each year. The PV array consists of 55 Sonali Solar 250watt panels. The system utilizes a grid-intertie switch and inverter. The PV system has a smart meter to allow the owner to review the amount of energy generated from the roof-top array and maximize energy savings for every day of the year.

Smart Energy Efficiency

The new building's east-west orientation improves the access to daylight for perimeter work spaces. This will reduce the energy needed for lighting by maximizing the amount of north and south natural light penetrating the building's windows. The exam rooms without windows have light pipes which allow for focused, lensed daylight penetration from the sun.
Daylighting was employed at HHC to reduce the need for electric lighting and associated heat loads. The location of the clerestory windows help distribute light evenly without creating excessive glare, while also reducing solar heat gain. The natural lighting will provide the maximum energy benefits without the uncomfortable glare usually associated with lots of windows.

The general lighting scheme includes indirect light fixtures to provide even illumination in each occupied space. Every enclosed space also has an occupancy sensor which will turn off the lights after the occupant leaves the space. The average watts per square foot, or Lighting Power Density (LPD) of electricity used to provide lighting is approximately 0.84 watts per foot.

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