

# Your Guide to Low Impact Developments in Greater Grand Rapids

## Metro Health Hospital

5900 Byron Center Avenue, S.W., Wyoming, Michigan



### History

Metro Health Hospital has taken numerous steps to provide a healthy environment for the community. A strong focus on sustainable design, energy conservation, and recycling will help earn the new Metro Health Hospital LEED® certification. Most recently, Metro Health Hospital has incorporated an integrated storm water management system to help protect water quality and minimize its environmental impact.

### LID Features

- ◆ A 48,500-square-foot green roof system is located above the administrative and outpatient services building. Control and experimental roof sections will be monitored throughout a 2-year period to assess the benefits of the system on storm water runoff.
- ◆ The new hospital has nearly 53,000 square feet of grass and bioretention swales (rain gardens) in its parking lots. Using flow sensors and sampling devices, the quantity and quality of the storm water entering and exiting the infiltration swales will be measured and evaluated.

### Other Green Features

Along with its commitment to build one of the first LEED®-certified hospitals in the nation, Metro Health Hospital has embarked on numerous efforts to mitigate its environmental footprint through its internal operations:

- ◆ Over 300 tons of cardboard, paper, glass, metal, and plastic have been recycled.
- ◆ Medical waste has been reduced by 36% from 2004 to 2006.
- ◆ Solid waste has been reduced by 13% from 2004 to 2006.
- ◆ Compostable plates and cups derived from sugarcane and corn are used in the cafeteria.

### Metro Health Hospital

Wyoming, Michigan  
June 2007

### LID Features

- Green roof system
- Bioretention swales
- Storm water monitoring systems for green roof swales
- Native plant landscaping

### Awards

Clean Corporate Citizen designation by the Michigan Department of Environmental Quality (2006)

Michigan Business Pollution Prevention Partner (2006)

Partners for Change Award from Hospitals for a Healthy Environment (2005 & 2006)

Making Medicine Mercury Free Award from Hospitals for a Healthy Environment (2005)

### Design, Construction

- Bioretention Swales  
Design: HDR  
Construction: Turner Christman
- Green Roof  
Design: Bazzani Associates  
Construction: Workstage

### Landscaping

Katerberg Verhage

# Your Guide to Low Impact Developments in Greater Grand Rapids

## Metro Health Hospital

Page 2

### Social and Economic Benefits

The storm water management project at Metro Health Hospital will yield significant environmental benefits that help protect water quality in and around West Michigan, specifically protecting the integrity and vitality of the Buck Creek subwatershed and the Lower Grand River Watershed by mitigating polluted runoff. An integrated green roof and swale system to manage storm water runoff at the hospital facility will reduce the amount of sediment, nutrients, chemicals, and pathogens entering the watershed, helping to protect agricultural and recreational opportunities in West Michigan.



Other social and economic benefits include:

- ◆ Monitoring results will assist in the development of objective performance standards that can support sustainable business development.
- ◆ The green roof and natural landscaping provide animal habitat and a more natural storm water management system.
- ◆ LID techniques have decreased the hospital's reliance on city facilities and local water resources.
- ◆ The green roof should improve the thermal performance of the building, thereby reducing the hospital's use of fossil fuels.
- ◆ Because all buildings in the health village (approximately 40) will be LEED®-certified, a unique opportunity is afforded to demonstrate the benefits of sustainable business strategies to a variety of local and national organizations.

### LID Lessons Learned

- ◆ The importance of bringing together the project team on the front end is fundamental to the success of this type of project, especially when pursuing a design or construction process that deviates from a traditional design.
- ◆ The project team would have preferred to collect monitoring data before the green roof was installed to establish a baseline for runoff comparisons.

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### Project Partners

