

Fulfilling the Expectations
in Northampton, Massachusetts



LEED™ Certified Buildings

RMS 113, 114, 115 REVISED

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“Sustainable Northampton”

In 2007, the City of Northampton adopted a new Comprehensive Plan called “Sustainable Northampton.” The Plan provides a clear vision that commits the City to becoming a model community for sustainable policies and practices. Sustainability is a concept for ensuring a high quality of life for future generations. It’s often defined as a focus on the three E’s: healthy Environment, strong Economy, and social Equity.

Green building can support a healthy environment and a sustainable economy. Building green reduces water, energy, and materials’ consumption during the building’s lifecycle. Building green reduces the impacts buildings have on human health and the environment. Green buildings use non-toxic materials, natural lighting, and renewable materials. They improve indoor air quality, provide comfortable, productive working environments, and reduce legal liability. Finally, green buildings save money over the life of the building.

LEED’s Whole–Building Approach

Leadership in Energy and Environmental Design (LEED) is a certification process for green buildings. LEED was developed by the US Green Building Council (USGBC), a national, non-profit organization committed to expanding sustainable building practices.

LEED measures the performance of a building’s energy and water efficiency, use of non-toxic materials, and innovative design, among many others. The more points the building receives, the higher the building’s rating.

The Rating system is as follows:

LEED Certified	26–32 points
LEED Silver	33–38 points
LEED Gold	39–51 points
LEED Platinum	52–69 points

Currently, there are five projects in Northampton that are under review for LEED certification. This brochure will introduce you to these very important projects by describing the green building techniques that were used.

The section about Northampton’s Senior Center will illustrate how specific objectives of LEED were fulfilled. The other sections—Smith College’s Ford Hall, Village Hill Northampton, the River Valley Market, and KFC/Taco Bell—will provide brief overviews of how LEED played an important role in their design and construction.



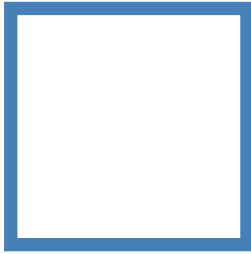


Table of Contents

1 *Northampton's Senior Center* 4
 A busy community activity center currently under review for LEED Certification. The building features energy-efficient lighting, insulation, and electricity use.

2 *Smith College's Ford Hall* 10
 Ford Hall is a premier science and engineering building. The building features a sophisticated energy management system, reduced water consumption with ecohydrology, and a green roof with organic gardening.

3 *Village Hill Northampton* 11
 Village Hill is a mixed use development, featuring many Energy Star and LEED certified designs.

4 *River Valley Market* 12
 River Valley is a member-owned, natural foods cooperative market. The market sells fresh local produce and groceries to the Connecticut River Valley.

5 *KFC/Taco Bell* 13
 Located less than a 1/4 mile from downtown, the company's intent is to reduce its ecological footprint while also reducing operating costs associated with power consumption.

Fulfilling the Expectations

Northampton's Senior Center



Bicycle Storage



Objective

Reduce pollution and land development impacts from automobile use.

Fulfilled

The 16 bicycle stalls and the shower facility located on the premises are designed to accommodate over 300 users and promote active and alternative transportation.

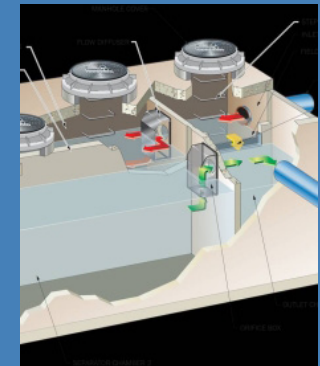
Stormwater Management

Objective

Limit disruption of natural water hydrology by reducing impervious cover, increasing on-site infiltration, reducing or eliminating pollution from storm-water runoff, and eliminating contaminants.

Fulfilled

Through the use of infiltration, bioretention, parking lot sweeping, a treatment vault, and deep-sump catch basin, the post-development rate and quantity of stormwater runoff will actually be less than the pre-development rate and quantity, and treatment for suspended solids will exceed 80% efficiency.



Water Efficient Landscaping



Objective

Limit or eliminate the use of potable water, or use other natural surface or subsurface water resources available on or near the project site, for landscape irrigation.

Fulfilled

The building does not require a permanent irrigation system and thus minimizes water use for landscaping.



Refrigerant Management

Objective

Reduce ozone depletion.

Fulfilled

The building has zero use of CFC-based refrigerants in the building. CFCs are a leading contributor to ozone depletion.

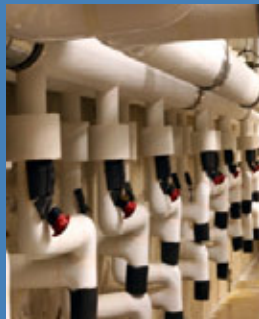
Optimize Energy Performance

Objective

Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.

Fulfilled

Extra insulation, efficient fenestration, demand-controlled ventilation, efficient lighting, and ground source heat pumps all contribute to an aggregate energy savings of over 27%, thus reducing operating costs and contributions to greenhouse gases.



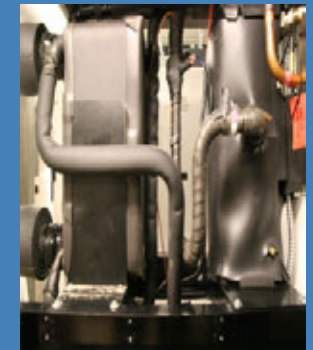
Minimum Energy Performance

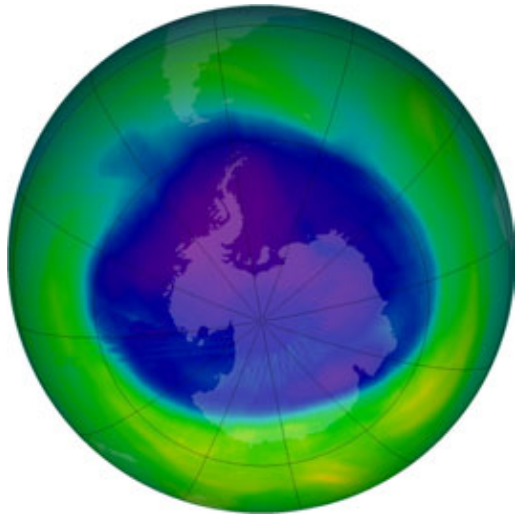
Objective

Establish the minimum level of energy efficiency for the proposed building and systems.

Fulfilled

The building envelope (wall systems, insulated glass), HVAC (heating, ventilation, air conditioning), and lighting are all highly energy-efficient and designed to comply with the latest national energy efficiency standards.





Enhanced Refrigerant Management

Objective

Reduce ozone depletion and support early compliance with the Montreal Protocol while minimizing direct contributions to global warming.

Fulfilled

The selected refrigerants and HVAC&R system minimize emissions of compounds that contribute to ozone depletion and global warming.



Recycling

Objective

Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

Fulfilled

Two dedicated recycling areas within the building facilitate a robust recycling program.



Minimum Indoor Air Quality

Objective

Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the health, comfort, and well being of the occupants.

Fulfilled

The building is designed to comply with the latest national indoor air quality standards.

Tobacco Smoke Control



Objective

Minimize exposure of building occupants, indoor surfaces, and ventilation air distribution systems to Environmental Tobacco Smoke (ETS).

Fulfilled

No smoking is permitted within the building or within 25 feet of any building entrance, outdoor air intake, or operable window.

Air Delivery Monitoring



Objective

Provide capacity for ventilation system monitoring to help sustain occupant comfort and well-being.

Fulfilled

Permanent CO₂ and outdoor air-flow measurement systems ensure safe CO₂ concentrations and optimum ventilation system performance.

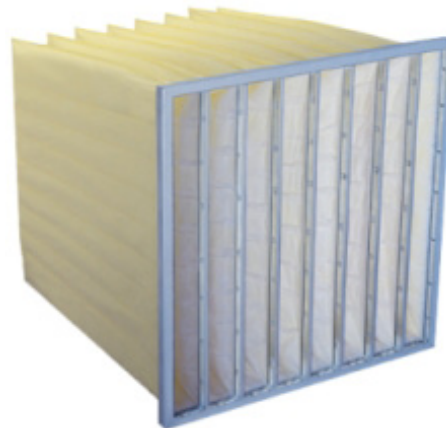
Indoor Pollutant Control

Objective

Minimize exposure of building occupants to potentially hazardous particulates and chemical pollutants.

Fulfilled

Walk-off mats located at entrances prevent most dirt and dust from entering the building and MERV-13 rated air-conditioning filters remove more pollutants than traditional filters.



Controllability of Lighting



Objective

Provide a high level of lighting system control by individual occupants or by specific groups in multi-occupant spaces to promote the productivity, comfort, and well-being of building occupants.

Fulfilled

Every workstation in the building has been equipped with individual lighting controls; multi-occupant spaces are provided with motion sensors, most of which have dual-level switching for further controllability.



Site Selection

Objective

Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.

Fulfilled

By selecting a previously used site that is located near the downtown and in a high-density development area, the building minimizes negative environmental impacts and adds to the diversity of the neighborhood.



Community Connectivity

Objective

Channel development to urban areas with existing infrastructure, protect greenfields and preserve habitat and natural resources.

Fulfilled

The site is located within walking distance of downtown Northampton providing easy access to restaurants and shops, within $\frac{1}{2}$ mile of two residential developments with housing densities of 72 and 34 units per acre, respectively.



Public Transit Access

Objective

Reduce pollution and land development from automobile use.

Fulfilled

Located within $\frac{1}{4}$ mile of three bus stops for nine separate bus lines, the Senior Center provides easy access to far-reaching, affordable, and energy-efficient public transit.

Thermal Controllability

Objective

Provide capacity for ventilation system monitoring to help sustain occupant comfort and well-being.

Fulfilled

Permanent CO₂ and outdoor air-flow measurement systems ensure safe CO₂ concentrations and optimum ventilation system performance.



Thermal Comfort: Verification

Objective

Provide a comfortable thermal environment that supports the productivity and well-being of building occupants.

Fulfilled

A thermal comfort survey will also be issued to building occupants, employees, users, and visitors after six months of operation. Based on the results of the survey, a corrective action plan will then address any comfort issues.

Thermal Comfort: Design

Objective

Provide a high level of thermal comfort system control by individual occupants or by specific groups in multi-occupant spaces to promote the productivity, comfort, and well-being of building occupants.

Fulfilled

The building's heating and cooling system has been designed to meet the latest national standards for controllability in both individual and group areas.

Daylighting and Views

Objective

Provide for the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

Fulfilled

Of all regularly occupied spaces, 95% have direct views to the outdoors.

Fulfilling the Expectations

Village Hill Northampton



Village Hill Northampton

Energy Star and LEED certified, Village Hill Northampton will offer retail, residential, commercial, and light-industrial development for a range of income-level families, all within a short walk from the city's downtown. In Spring 2008, Wright Builders, Inc. began building 23 houses out of the 200 total planned, which include apartments, condominiums, townhomes, and single-family homes.

A collaboration of Wright Builders, Inc., Kuhn Riddle Architects, and the Berkshire Design Group are designing and building Village Hill Northampton.

Village Hill's Lowering Energy Costs

Eventually, homeowners will save money—up to 35% on heating and 75% on lighting—by reducing energy costs in their homes as a result of:

- Higher standards of insulation installation
- Elimination of wind infiltration
- More efficient heating systems and reduced air leakage
- Floor system air sealing for greater comfort
- Efficient doors and windows
- Reduced drafts
- High efficiency lighting
- Constant/periodic ventilation to refresh interior air
- Gas stove hoods that vent outdoors

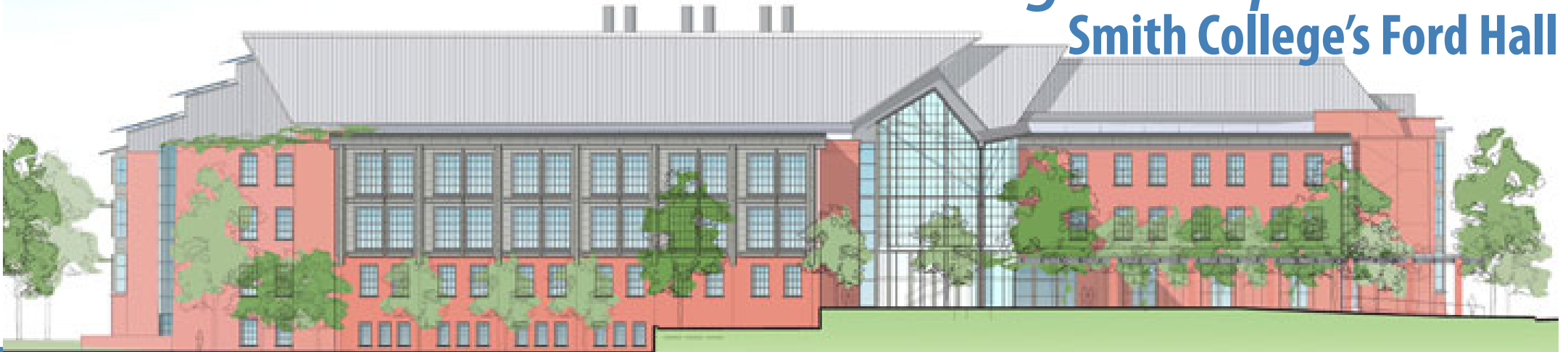


VILLAGE HILL
N O R T H A M P T O N

Community. Commerce. Culture.



Fulfilling the Expectations Smith College's Ford Hall



Ford Hall

Smith College is focusing on sustainability and “green architecture” in the construction of Ford Hall, a science and engineering building. The 140,000 square foot, LEED certified building incorporates sustainability and energy efficiency through its design, construction, and operational processes. Designed by the architectural firm Bohlin Cywinski Jackson, Ford Hall will reduce its own energy consumption, lower its costs of operation, and allow the building itself to be an instrument for students to study.

Ford Hall's Sustainable Objectives:

- Using solar cells for cooling, heating, and ventilation
- Installing high-efficiency electrical equipment such as LED lighting fixtures
- Creating maximum daylight exposure through optimum windows and glass placement, heat recovery, and innovative insulation and construction materials
- Using recycled and recyclable materials whenever possible for laboratory instruction and interior enhancement
- Managing water consumption through low-flow fixtures, high-tech monitoring, and ecohydrology
- Organic gardening and green roofs
- Extensive monitoring of energy consumption

Ford Hall is Smith College's largest effort to date in the campus' overall goals towards sustainability and energy efficiency, being undertaken by the school's Sustainability Committee through initiatives such as recycling, renewable energy, lawn preservation, and minimizing waste.



Fulfilling the Expectations River Valley Market

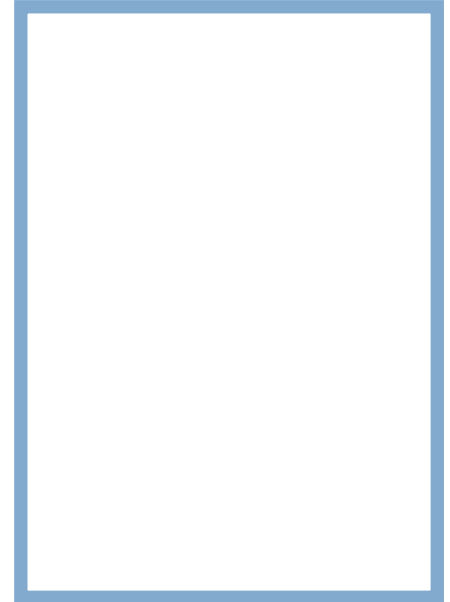
River Valley Market

The River Valley Market, a cooperative market in Northampton, has incorporated sustainable practices in both its construction and practices. Unlike the usual supermarket, the co-op market focuses on the community, encouraging local agriculture and businesses as well the city's green environment. The new 13,500-square foot market facility expects to receive a Gold rating under the LEED Rating System.

River Valley's Green Features



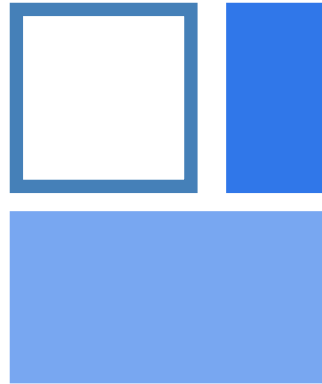
- Use of recycled materials in steel, drywall, concrete, and decor
- Solar electricity panels: 34.6 KW from 165 photovoltaic panels and 100% green electricity
- High efficiency refrigeration and HVAC (Heating Ventilation and Air Conditioning)
- Waste heat from refrigeration recycled to heat hot water
- Forest Stewardship Council (FSC) certified local wood from Massachusetts Woodlands Cooperative (locust and hemlock)
- Four electric car chargers in the parking lot
- Rainwater collection from the roof for the trees and plants outside
- Use of water-efficient, native plantings



Fulfilling the Expectations

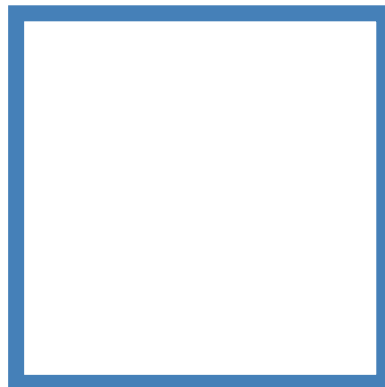
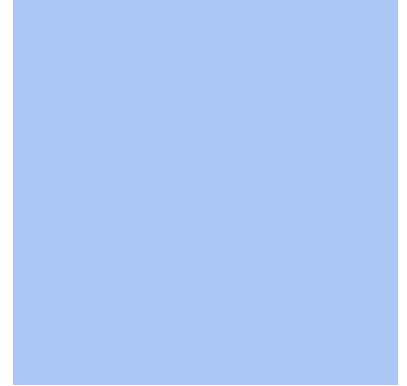
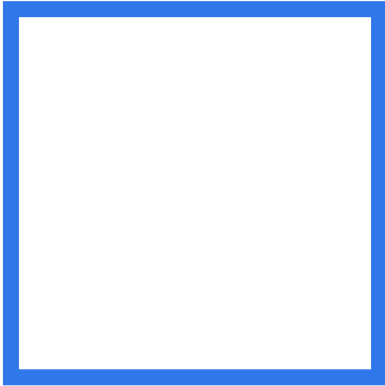
KFC/Taco Bell

The KFC/Taco Bell restaurant on King Street near downtown Northampton is a model for high profile, energy-efficient building. The company is applying for LEED certification and will go under review over the next several months by the USGBC. It is the first LEED fast-food establishment in the Pioneer Valley. The drive-through and sit-down restaurant is scheduled to open late in 2008. The building will feature bike racks for employees and patrons, energy efficient lighting and gas grills and passive solar windows.



Fast food chains are not a bell-weather industry for sustainability. The chains depend on industrial agriculture, have long supply chains and menus are generally viewed as unhealthy. The public's demand for healthier choices and greener products has not gone unnoticed and the chains are responding by lightening up their menus and building energy efficient buildings. There will still be idling cars at the drive-through. However, the entire industry is making strides toward providing a more sustainable business model, and LEED buildings are a small part of that trend.





City of Northampton

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