LEEDSUMMARY REPORT
BUILDING 9
March 28th, 2012

MONROE COMMUNITY COLLEGE
ROCHESTER, N.Y.

LEEDGOLD CERTIFIED
by the U.S.GREEN BUILDING COUNCIL

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MONROE COMMUNITY COLLEGE

COUNTY OF MONROE STATE OF NEW YORK

PROJECT INFORMATION
A. PROJECT DESCRIPTION

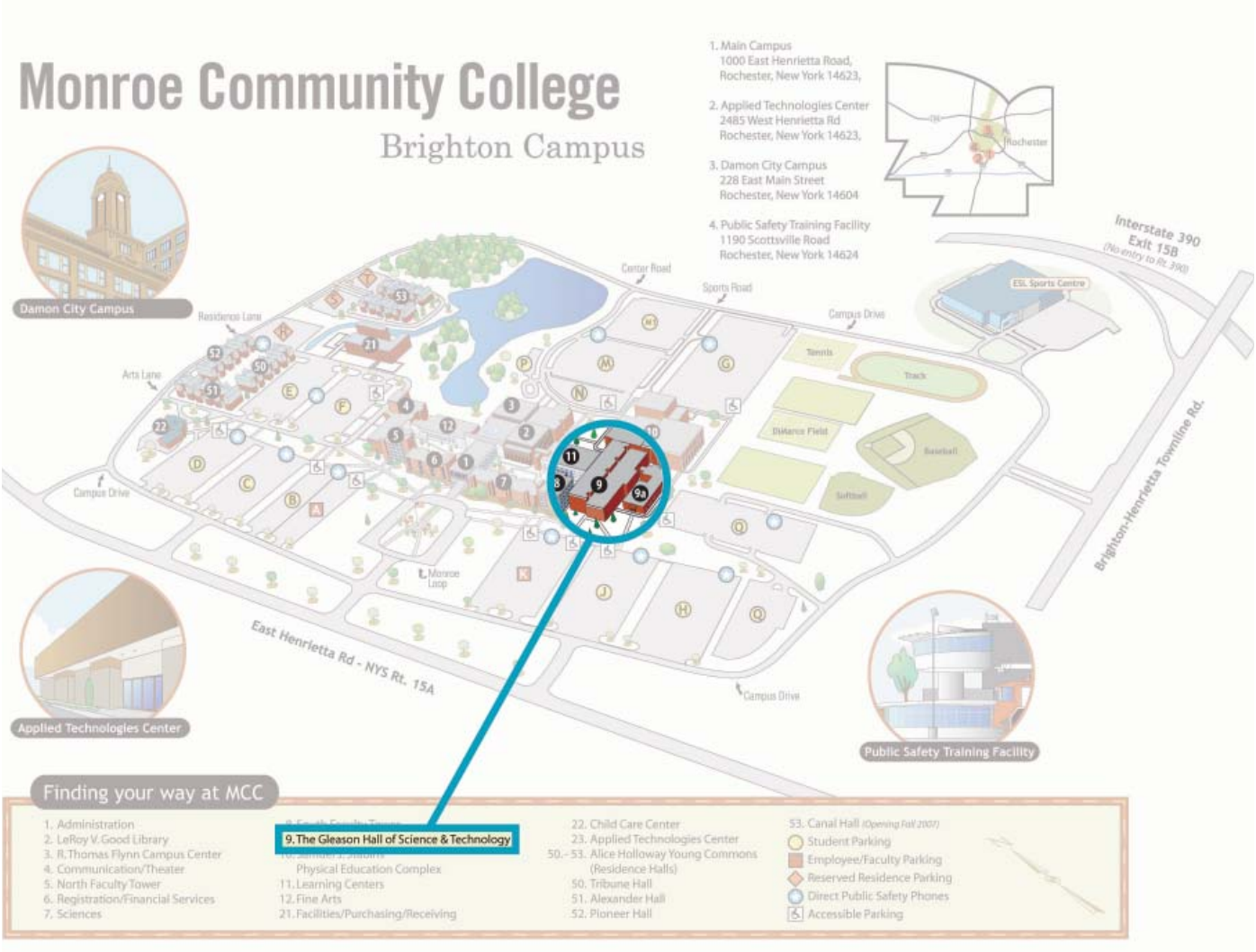
The Building 9 Renovation (The Gleason Hall of Science and Technology) at Monroe Community College has been awarded LEED-Gold Certification by the U.S. Green Building Council (USGBC). LEED stands for Leadership in Energy and Environmental Design, a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings.

This 82,100 SF renovation on the MCC Brighton Campus is home to a program that comprised mainly of science and engineering technology, medical technology, and general purpose classrooms. As described more in Section C "Project Scope", The renovation of Building 9 was a phased project. SWBR Architects, project designers, coordinated the project's sustainable design efforts, working closely with MCC and the County of Monroe. Design for the facility started in May of 2007 and the Building 9 Renovation officially opened in Fall of 2011.

In earning this LEED-Gold rating, MCC practiced careful management of stormwater in its site development through improvements to existing wet ponds on the campus. The project team used many regional and recyclable materials in its construction and utilized an array of measures to improve indoor air quality for the occupants. The Building 9 Renovation saves approximately 51.8% of the water used by a comparable facility through the installation of water-efficient fixture and can perform 30.2% better in terms of energy over a standard building's energy usage.

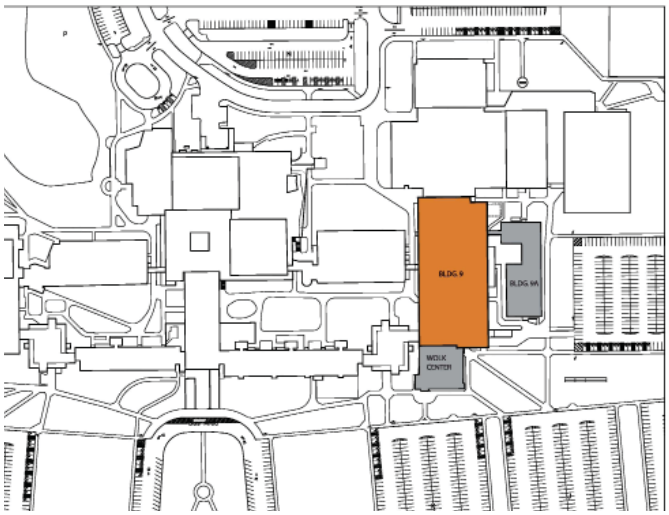
The project's sustainable design investments could save the County of Monroe +/- $1,210,000 in Energy Costs for this building over the next twenty years.

PROJECT INFORMATION
B. PROJECT LOCATION



CAMPUS MAP

Building 9 is located on the south side of the Brighton Campus of Monroe Communtiy College in Rochester, New York. The Buildings main entry faces East Henrietta Road, N.Y. State Route 15A to the west. There is also a secondary entry to the building on the south passing the Samuel J. Stabins Physical Education Complex (PAC Center, building 10). Parking for the facility is approachable from the east, west and the south of the buiilding. There are two bus lines that are seen from the west entry and both stage at the main entry look in the center of campus facing East Henrietta road.



BUILDING LOCATION ON CAMPUS FIGURE

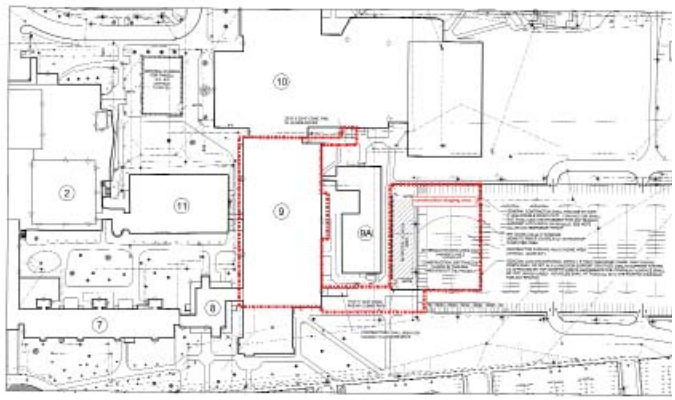
PROJECT INFORMATION

C. PROJECT SCOPE

As stated in the project description, the MCC Building 9 Project program is primarily general use classrooms with labs and specialized classrooms for engineering/ science technology, radiology and massage therapy. This project consisted of two phases that are collectively labeled "Building 9" and include scope for renovation plus addition of a new exit stair tower.

Phase 1 - Consisted of replacement of the entire roof membrane and renovation of four (4) classrooms in the Southeast corner of Building 9 on the first floor. Also included were the addition of three (3) new mechanical units on the roof as well as a new exit stairway on the North façade .

Phase 2 – Consisted of renovating the remaining 71,100 sf of the two stories of building 9. Landscaping on the North façade was also included with some re-working of pavement and planting on the Southwest corner of the building.



PROJECT LIMIT LINE FIGURE

FIRST FLOOR - BOTH PHASES

SECOND FLOOR - BOTH PHASES

MONROE COMMUNITY COLLEGE

COUNTY OF MONROE STATE OF NEW YORK

MCC's and Monroe County's Commitment to Sustainability

Monroe Community College (MCC) and Monroe County has a strong commitment to sustainability with a growing campus of LEED certified projects. The Wolk Center for Nursing just received LEED- Silver Certification and the Pamela Ann Chesonis Center (PAC) has recently received LEED- Gold Certification. Monroe County has issued a "Green Building Implementation Guide" for all project managers. This document defines procedures and steps to implement sustainability, whether LEED or not, into all campus buildings. In addition to these items MCC has adopted a Campus wide Recycle Plan that sets the agenda to minimizing waste disposal into landfills.

Monroe Community College and Monroe County challenged the design team to produce a project that would earn, at a minimum, a LEED- Silver Certification level from the US Green Building Council. As was described earlier, the project first began with a four classroom and roof renovation in addition to new mechanical units and a two story stair. At that time the project was registered under LEED with the title "Phase one, Building 9". We were questioning the legitimacy of the scope and with phase two funding locked in, the choice was made to combine the two phases under one LEED submission. This combining of the phases allowed us to approach the building in a holistic and more sustainable manner and achieve a higher Gold Certification level for the entire building.

Educational Aspects of Sustainability

Being a learning institution, MCC has taken a leadership role in maximizing sustainable strategies into their learning environment. Phase one includes a public energy display that is tied-into the Seimen's campus energy monitoring system. This display shows a roll screen with various graphics indicating the current energy consumption of the building as well as presenting broader MCC campus-wide sustainability commitments.

In phase two a 34.5kw photovoltaic array on an exterior loading dock canopy and roof was incorporated. Currently, this amount of renewable energy is not enough to apply for a LEED point, but MCC found value in showcasing the array as an educational device that can be incorporated into the curriculum, as well as producing renewable energy for its lifespan, generating approximately $7,303 in annual energy savings. These strategies speak well for MCC and how they, as an institution, see value in teaching their students about future technologies that will help us sustain the environment for generations to come.

The USGBC's mission is to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy and prosperous environment that impr oves the quality of life.

LEED®, which stands for Leadership in Energy and Environmental Design, is a third-party Green Building Rating System and is the nationally accepted benchmark for the design, construction and operations of high performance green buildings.

The USGBC has four levels of LEED certification:
LEED-Certified
LEED-Silver
LEED-Gold
LEED-Platinum

LEED
LEARDERSHIP IN ENERGY & ENVIRONMENTAL DESIGN

The MCC Building 9 Project was designed and constructed using the LEED for New Construction (LEED-NC) rating System, Version 2.2.

Monroe County and MCC challenged the Design Team to produce a project that would earn, at a minimum LEED silver Certification from the USGBC. Collectively, the project team worked toward a goal of achieving the LEED- Gold level of Certification. The required documentation for certification was submitted to the USGBC on December 14th, 2011, and the project was awarded its certification on Februrary, 2012

This 82,100 SF renovation to the MCC Brighton Campus has replaced the College's original classrooms, labs and faculty offices that were built in the 1960's; and these new spaces will allow for changes in technology, program, and teaching methods in the future, assuring a longer life-cycle for the facility.

First cost investments in Sustainable Design Strategies such as additional HVAC systems or high-efficiency lighting will be returned in approximately three years. However, this up front investment can save the County of Monroe +/- $1,210,000 in Energy Costs over the next twenty years.

Key Results:

- **Energy usage: 17.7% reduction in energy usage and 30.2% reduction in energy costs** from a baseline building as de-

fined by ASHRAE Standard 90.1, 2004 Edition.

- **Water usage: 51.8% reduction in potable water** usage from Energy Policy Act of 1992 Fixture Performance Requirements through the installation of low-flow fixtures. This amount allowed us to to achieve exemplary performance.
- Building 9 has **increased controllability of HVAC systems,** providing improved individual comfort for its occupants.
- **20.7% of the construction materials purchased for this project contain recycled content** (exclusive of M/E/P equipment and specialty systems), reducing the demand and impacts from extracting and processing new materials.
- **23.3% of the construction materials purchased for this project contain regionally harvested and manufactured materials** (exclusive of M/E/P equipment and specialty systems), supporting indigenous resources and reducing the environmental impacts resulting from transportation.
- **2.5% of the construction materials purchased for this project are rapidly renewable.** These are materials that have a 10 year or less harvest cycle and helps lessen the burden on reliability on old growth forests.
- **Indoor Air Quality Management Plans and the specification of Low-VOC products** - including paints, adhesives and carpet products - reduced air quality problems common to new construction in order to help sustain the comfort and well-being of construction workers and building occupants.

The MCC Building 9 Project incorporates many economical and environmental strategies, each of which works with the others as a system to provide an improved, high-performance building.

The LEED Rating System for New Construction, LEED-NC, Version 2.2, is structured as a system of 7 required Prerequisites (PR) and 69 optional credits (Cr) over six different categories of environmental impact. These are graphically explained in the column to the right.

As noted above, each credit contains a specific number of points which can be achieved. The final LEED-NC certification ratings are awarded according to the following scale:

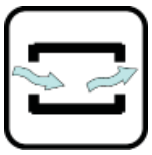
Certification	**26-32 points**
Silver	**33-38 points**
Gold	**39-51 points**

Sustainable Sites (SS)
1 Prerequisite
14 Credits
14 Points

Water Efficiency (WE)
0 Prerequisite
5 Credits
5 Points

Energy+Atmosphere (EA)
3 Prerequisite
6 Credits
17 Points

Materials+Resources (MR)
1 Prerequisite
8 Credits
13 Points



Indoor Envi. Quality (EQ)
2 Prerequisite
15 Credits
15 Points

Innovation in Design (ID)
0 Prerequisite
5 Credits
5 Points

Sustainable Sites (SS)

The following sustainable design techniques and strategies were incorporated in the MCC Building 9 Project

The MCC Building 9 Project has earned 9 of 14 possible rating system points for Sustainable Site Design.

Prior to the development of the MCC Building 9 Project, a Storm Water Pollution Prevention Plan had been completed that considered land use, parking and stormwater conditions. This plan has served MCC in the development of several building projects, of which the Building 9 was the third in a series of LEED efforts on the campus.

SS PR 1 Construction Activity Pollution Prevention The project earned this prerequisite by following the standard practices required by New York State to manage erosion and runoff during construction.

SS Cr 1 Site Selection This existing Campus site qualifies for this credit as it is not prime farmland, not previously undeveloped land whose elevation is lower than 5 feet above the elevation of the 100-year flood as defined by FEMA, is not previously undeveloped land within 50 feet of a water body, is not identified as a habitat for any endangered species, is not within 100 feet of a wetland, and is not acquired public parkland.

SS Cr 2 Development Density and Community Connectivity MCC is in a location that meets the LEED qualifications for Community Connectivity. This category favors development near urban areas, and existing infrastructure - protecting greenfields, habitats and natural resources. The MCC Building 9 Project is connected with the existing built fabric of MCC and provides the opportunity to access many community businesses and services within a half-mile radius. Having a dense, adjacent residential development nearby also supports development at this site.

SS Cr 4.1 Alternative Transportation: Public Transportation Access MCC's Brighton Campus has excellent public transportation access. The campus is served by several public bus lines that bring students to and from the main campus entrance, lessening the pollution and land development impacts associated with automobile use.

SS Cr 4.2 Alternative Transportation: Bicycle Storage and Changing Rooms MCC has terrific capability to accommodate bicyclists. The project has utilized the showers and changing facilities provided within the adjacent Building 10 at the College for cyclists that require them.

SS Cr 4.4 No new parking was created.

SS Cr 5.2 Site Development: Maximize Open Space MCC has chosen to allot campus property equal to the footprint of the Building 9 Renovation project to be permanently dedicated as open space suitable for a natural habitat. The MCC Building 9 Project has addressed the criteria for the this credit through the dedication of a naturally designed, existing area of "wet pond", which also serves to provide a significant, natural, beautiful open space for the campus.

Designed according to the NYSDEC standards for a "wet pond" (P-2), the facility acts as a free form detention/retention pond. Its pool and marsh areas create suitable growing conditions for emergent vegetation, micro-terrains designed to provide stormwater pollutant removal opportunities and species habitats. The pool area is designed to be maintained through the dry season and an island within the pond adds to the potential habitats for wildlife at this site. Side slope gradients are minimal and vegetated. MCC has committed to preserving the pond in the future.

SS Cr 6.1 Stormwater Management: Quantity Control

SS Cr 6.2 Stormwater Management: Quality Control MCC has designed an exceptional natural pond system to manage the quantity and quality of its stormwater for Building 9 and all of its Brighton Campus construction. This system filters stormwater, improving the quality of the water, and reduces the quantity of stormwater leaving the site, lessening the impacts to our municipal systems. While there was limited site design scope within this project, the stormwater management infrastructure and capacity already in place at MCC satisfied the LEED requirements this credit.

SS Cr 7.2 Heat Island Effect: Roof Building 9 has installed a white roof system, or "Cool Roof", to lessen the detrimental environmental impacts of "Urban Heat Island Effect" caused by dark roof surfaces.

AERIAL - HIGH ALBEDO ROOF + PHOTOVOLTAICS FIGURE 2.1

Water Efficiency (WE)

The MCC Building 9 Project has earned 4 of 5 possible rating system points for Water Efficiency.

While many parts of the United States are currently finding water in short supply, Monroe County has a tremendous asset in its affordable, clean, municipal water system. Seeking to preserve this resource, The MCC Building 9 Project has invested in water-saving technologies.

WE Cr 1 Water Efficient Landscaping No irrigation systems were installed as a part of this project.

WE Cr 3 Water Use Reduction High-performance water fixtures were installed that will save half of the building's annual water usage.

NORTH ENTRY - WATER EFFICIENT LANDSCAPING FIGURE 2.2

Energy+Atmosphere (EA)

The MCC Building 9 Project has earned 8 of 17 possible points in this category.

Buildings utilize approximately 37% of the energy and 68% of the electricity produced in the United States annually, according to the U.S. Department of Energy. The fossil fuel sources that provide energy impact the environment in many adverse ways from extraction to transportation, refining and distribution. Reduction of demand for energy is an important step in reducing environmental impacts, and the better the energy performance for a building, the lower its operational costs. The MCC Building 9 Project has been designed to save roughly 18% of the energy used by a similar, baseline building.

EA PR 1 Fundamental Commissioning of the Building Energy Systems Though a specific return on investment at Building 9 cannot be determined, Commissioning verifies that a building is performing to the level to which it was designed. Even basic commissioning can provide significant benefits. In the long term, commissioning has been shown to have very strong improvements in system performance and reduced operating costs. Case studies have shown that commissioning frequently pays for itself in less than a 1-year period.

The Commissioning process included the following:

- Designating Commissioning Authority.
- Review of Owner's Project Requirement (OPR) and Basis of Design (BOD).
- Commissioning documentation was created and OPR and BOD requirements were incorporated in construction documents.
- Commissioning plan was developed and implemented.
- Equipment instillation was verified and its performance checked by the pre-functional test, and finally commissioned.
- A summary report of commissioning was completed.
- Commissioning design review was completed prior to mid construction.
- Contractor submittals were reviewed.
- System manual was created to help with understanding and operation of commissioned system.
- Requirements and completion of operators and building occupant's training were confirmed.
- Building is pending a 10 month review of its operation and customer satisfaction.

EA PR 2 Minimum Energy Performance This prerequisite requires that the team establish the minimum level of energy efficiency for the proposed building and systems.

EA PR 3 Fundamental Refrigerant Management The MCC Building 9 Project has no CFC-based refrigerants in new base building HVAC&R systems and does not connect to any systems containing CFCs.

SUSTAINABLE DESIGN AT BUILDING 9
B. RATING SYSTEM

EA Cr 1 Optimize Energy Performance This classroom and office building will save 30.2% in energy costs annually through the sustainable design strategies it has incorporated. These include: Improved Levels of Building Envelope Insulation, High Performance Window Glazing, Exterior Solar Sunshades, High-Efficiency Lighting, Daylighting Harvesting Controls in Lounge Area, Occupancy Sensors to reduce HVAC use, and others.

The building utilizes external source for its heating and cooling. The campus's central boilers and chillers were carefully planned for its building envelope. The envelope was constructed with pressure barriers to avoid air infiltration and heat loss through the building. The HVAC system is equipped with adjustable speed drives (ASDs) to provide only the needed amount of air to the building. The Siemens building control system is equipped with programmable algorithms to optimize energy efficient operation, utilizing temperature, humidity, CO2 and occupancy sensors to determine space needs and required system response. High efficiency light fixtures are installed throughout the building and integrated with occupancy sensor controls. System ventilation modes are adjusted based on monitoring of CO2 in dedicated spaces and common return air system. The building is served by VAV units to apportion supply air in levels required to thermally balance the system according to prescribed temperature setpoints.

Featured Energy Strategies

- Strategy 1: Improved Levels of Building Envelope Insulation
- Strategy 2: High Performance Window Glazing
- Strategy 3: Exterior Solar Sunshades
- Strategy 4: High Albedo Roof
- Strategy 5: High efficiency Lighting
- Strategy 6: Daylighting Harvesting Controls in Lounge Area
- Strategy 7: Enthalpy Economizer on AHU-1, 2,3 and 4
- Strategy 8: Discreet Air Temperature Reset
- Strategy 9: Occupancy Sensors for VAV Optimization
- Strategy 10: Premium Efficiency Motors
- See Appendix B for detailed information on Energy Systems.

EA Cr 4 Enhanced Refrigerant Management. The

NORTH FACADE @ CENTER ENTRY -DAYLIGHTING FIGURE 2.3

TYPICAL CLASSROOM -CONTROLLED DAYLIGHT FIGURE 2.4

BREAK OUT SPACE - BORROWED DAYLIGHT FIGURE 2.5

Materials+Resources (MR)

The Building 9 Renovation has earned 10 of 13 possible points in this category.

Building materials choices are important in sustainable design due to the extensive network of extraction, processing and transportation steps required to process them. These efforts can lead to pollution, the destruction of natural habitats and the depletion of natural resources. LEED seeks to reduce environmental impacts through the reduction of waste, encouraging the selection of materials with recycled content, regional availability, and those that are rapidly renewable.

MR PR 1 Storage and Collection of Recyclables Building 9 has a recycling program that allows its occupants to sort paper, cardboard, glass, and metal from waste materials, keeping recyclable products out of the waste stream.

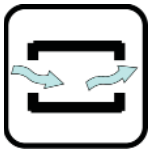
MR CR1.1 + 1.2 Building Reuse Maintain a minumun of 75%, based of surface area, of the existing structure and envelope (excluding window assemblies and non-structural roof elements). Building 9 achieved 97%.

MR CR 4 Recycled Content 20.7% of the total materials cost for the project was comprised of recycled content. This increases demand for building products that incorporate recycled content materials, reducing the impacts resulting from extraction and processing of virgin materials.

MR CR 5 Regional Materials 23.3% of the products used in this project were manufactured and harvested within 500 miles of the site. This supports regional businesses and reduces the costs and environmental impacts related to transportation.

MR CR 6 Rapidly renewable materials on building 9 equalled 2.5% allowing us to get one point. The intent of this credit is to reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.

MR CR 7 Certified Wood 77% of the wood in this project is certified in accordance with Forest Stewardship Council Principles and Criteria. These are forestry practices established to ensure the long-term health of forests for timber production, wildlife habitat, clean air and water supplies, and climate stabilization as well as the long-term community employment that comes from stable forestry operations.



Indoor Environmental Quality (EQ)

The MCC Building 9 Project has earned 12 of 15 possible rating system credits for Indoor Environmental Quality.

Americans spend 90% of their time indoors, where the U.S. Environmental Protection Agency reports that levels of pollutants run two to five times – and occasionally 100 times - higher than outdoor levels. The use of better products and practices helps to prevent indoor environmental quality problems. These methods include specifying materials that release fewer and less harmful chemical compounds, protecting materials and air handling systems during construction to reduce exposure to contaminants, and increasing ratios of filtered outside air and ventilation rates as well as the use of sensors and controls to maintain air quality.

EQ PR 1: Minimum IAQ Performance
Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings and contribute to the comfort and well-being of the occupants.

EQ PR 2: Environmental Tobacco Smoke (ETS) Control
This minimizes exposure of building occupants, indoor surfaces, and ventilation air distribution systems to Environmental Tobacco Smoke (ETS). MCC's current no-smoking policy extends beyond that of New York State to meet the requirements as defined in this prerequisite.

EQ CR 1: Outdoor Air Delivery Monitoring
Permanent monitoring systems are installed that provide feedback on ventilation system performance to ensure that the system maintains design minimum ventilation requirements. All monitoring equipment is configured to generate an alarm when the conditions vary by 10% or more from the setpoint, via a building automation system alarm to the building operator.

EQ CR 3.1: Construction IAQ Management Plan: During Construction
Reduce indoor air quality problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants

EQ CR 4.1 - 4.4:
- EQ CR 4.1: Low-Emitting Materials: Adhesives & Sealants
- EQ CR 4.2: Low-Emitting Materials: Paints & Coat-

ings
- EQ CR 4.3: Low-Emitting Materials: Carpet Systems
- EQ CR 4.4: Low-Emitting Materials: Composite Wood & Agrifiber Products

Volatile Organic Compounds (VOCs) are emitted as gases from certain products and are particularly noticeable in new construction. They can be odorous and irritating, but some of these airborne chemicals may have also produce short- and long-term adverse health affects. In the design of Building 9 low-VOC paints, adhesives, carpet, and composite wood products were specified with the intent to prevent indoor air quality problems from arising. This worked in conjunction with the IAQ management plans noted above in improving the air quality in the new building for its occupants.

EQ CR 5: Indoor Chemical & Pollutant Source Control
Permanent Entryway systems are installed at the main entrance to the facility. This system allows for drainage and cleaning underneath, helping to capture dirt and particulates at the entrance to the building where it is directly connected to the outdoors. Walk-off mats are provided at a secondary entrance. Per the USGBC, these are required to be maintained weekly, but are actually maintained daily through MCC's maintenance program. Where hazardous gases or chemicals may be present or used, such as custodial areas, each space is exhausted sufficiently to create negative pressure with respect to adjacent spaces with the doors to the room closed. Self-closing doors and deck to deck partitions are provided.

EQ CR 6.1: Controllability of Systems: Lighting
Individual lighting controls are provided for 95.2% of the building occupants to enable adjustments to suit individual task needs and preferences. The MCC Building 9 Project was designed for flexibility and its rooms may serve different users and different programmatic needs. The MCC Building 9 Project accommodates this through flexibility in its lighting design. Controls are located near entry doors and near teaching stations and workstations that provide multi-level (0, 33, 67 and 100% levels) switching and occupancy sensor control.

EQ CR 6.2: Controllability of Systems: Thermal Comfort
The MCC Building 9 project has provided controls and systems to give the building occupants a larger degree of individual control over the HVAC system. Each office has a separate control point, sensor and VAV box for individual comfort. Multi-occupant spaces also have a control and temperature sensor. Each temperature sensor senses the space temperature and allows the occupant to adjust for their comfort. Occupancy sensor control will increase the space control levels to an occupied level when someone is sensed in the room.

EQ CR 7.1: Thermal Comfort: Design
The building thermal comfort conditions follow those recommended by ASHRAE 55-2004. The HVAC system is a variable air volume with hot water reheat system sized to maintain these conditions and to provide individual space control. The building control system has temperature sensors and programming to maintain the intended conditions. All offices, classrooms, conference rooms and meeting spaces will have individual area control.

EQ 7.2: Thermal Comfort: Verification
MCC will issue a thermal comfort survey to the building occupants after a year of occupancy. A custom method for measurement of customer satisfaction was developed (see sample survey in Appendix E). If more than 20% of the occupants are dissatisfied with the thermal conditions of the spaces then MCC will develop a plan to make improvements for occupant comfort. Before improvements are made the thermal conditions in the areas under review will be measured as described in ASHRAE 55-2004. This will help determine if the spaces are being maintained to the design parameters. This project has separate controls in individual offices which will make tailoring of spaces to the individuals much easier.

If actions are needed to improve the thermal conditions within the building the occupant concerns will be reviewed, commonalities between complaints will be compiled and corrective action will be developed. Once the corrective action is implemented a period of time will be allowed before another occupant questionnaire is resent. this will determine if the actions taken have improved the building thermal conditions so that less than 20% of the occupants experience thermal discomfort. Potential corrective actions include widening of allowable thermal setting on individual space controls, relocation of supply diffusers within spaces, relocation of thermal sensors within spaces, increasing the air flow to a space by VAV box settings or even increasing duct sizes. Actual actions taken will be determined by the occupant comments.

Innovation in Design (ID)

The MCC Building 9 Project has earned 2 of 5 potential points in this category.

Sustainable Design strategies and measures are constantly evolving improving. The purpose of this category is to recognize projects for innovative building features and sustainable building knowledge. Occasionally a strategy results in building performance that greatly exceeds what is required by an existing LEED Credit. Other strategies may not be addressed by any other LEED prerequisite or Credit but warrant consideration for their sustainability benefits. LEED is also most effectively implemented in an integrated process and this category addresses the use of a LEED Accredited professional in that process.

ID Cr 1.1 The MCC Building 9 Project recieved an additional point for exemplary performance in the water savings category. The building achieved an impressive 51.8% water savings from a baseline case by using water effecient and low flow fixtures.

ID Cr 2 LEED Accredited Professional This project has several LEED Accredited Professionals as part of the Architectural and M/E/P design team.

SUSTAINABLE DESIGN AT BUILDING 9

B. LEED CHECKLIST

This project has achieved LEED-Gold Certification, earning a total of 46 points in the LEED Rating System. The following checklist represents the full range of credits and the specific points achieved by in the MCC Building 9 Project.

LEED-NC 2.2 Proposed Project Credit Matrix

			ATTAINABLE CREDITS		
Sustainable Sites (14 possible points)			yes	poss.	no
SS	Prereq 1	Construction Activity Pollution Prevention	REQ		
SS	Credit 1	Site Selection	1		
SS	Credit 2	Development Density & Community Connectivity	1		
SS	Credit 3	Brownfield Redevelopment			1
SS	Credit 4.1	Alternative Transportation, Public Transportation Access	1		
SS	Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rms.	1		
SS	Credit 4.3	Alternative Transportation, Low Emitting & Fuel-Efficient Vehicles			1
SS	Credit 4.4	Alternative Transportation, Parking Capacity	1		
SS	Credit 5.1	Site Development, Protect or Restore Habitat			1
SS	Credit 5.2	Site Development, Maximize Open Space	1		
SS	Credit 6.1	Stormwater Design, Quantity Control	1		
SS	Credit 6.2	Stormwater Design, Quality Control	1		
SS	Credit 7.1	Heat Island Effect, Non-Roof			1
SS	Credit 7.2	Heat Island Effect, Roof	1		
SS	Credit 8	Light Pollution Reduction			1
		Subtotal Sustainable Sites	9	0	5
Water Efficiency (5 possible points)			yes	poss.	no
WE	Credit 1.1	Water Efficient Landscaping, Reduce by 50%	1		
WE	Credit 1.2	Water Efficient Landscaping, No Potable Use or No Irrigation	1		
WE	Credit 2	Innovative Wastewater Technologies			1
WE	Credit 3.1	Water Use Reduction, 20% Reduction	1		
WE	Credit 3.2	Water Use Reduction, 30% Reduction	1		
		Subtotal Water Efficiency	4	0	1
Energy & Atmosphere (17 possible points)			yes	poss.	no
EA	Prereq 1	Fundamental Commissioning of the Building Energy Systems	REQ		
EA	Prereq 2	Minimum Energy Performance	REQ		
EA	Prereq 3	Fundamental Refrigerant Management	REQ		
EA	Credit 1	Optimize Energy Performance (10 possible points)	8		2
EA	Credit 2	On-Site Renewable Energy (3 possible points			3
EA	Credit 3	Enhanced Commissioning			1
EA	Credit 4	Enhanced Refrigerant Management	1		
EA	Credit 5	Measurement & Verification			1
EA	Credit 6	Green Power		1	
		Subtotal Energy & Atmosphere	9	1	7
			ATTAINABLE CREDITS		
Materials & Resources (13 possible points)			yes	poss.	no
MR	Prereq 1	Storage & Collection of Recyclables	REQ		
MR	Credit 1.1	Building Reuse, Maintain 75% of Existing Walls, Floors & Roof	1		
MR	Credit 1.2	Building Reuse, Maintain 95% of Existing Walls, Floors & Roof	1		
MR	Credit 1.3	Building Reuse, Maintain 50% of Interior Non-Structural Elements			1
MR	Credit 2.1	Construction Waste Management, Divert 50% from Disposal	1		
MR	Credit 2.2	Construction Waste Management, Divert 75% from Disposal	1		
MR	Credit 3.1	Materials Reuse, 5%			1
MR	Credit 3.2	Materials Reuse, 10%			1
MR	Credit 4.1	Recycled Content, 10% (post-consumer + 1/2 pre-consumer)	1		

MR Credit 4.2	Recycled Content, 20% (post-consumer + 1/2 pre-consumer)	1		
MR Credit 5.1	Regional Materials, 10% Extracted, Processed & Manuf. Regional	1		
MR Credit 5.2	Regional Materials, 20% Extracted, Processed & Manuf. Regional	1		
MR Credit 6	Rapidly Renewable Materials	1		
MR Credit 7	Certified Wood	1		
	Subtotal Materials & Resources	**10**	**0**	**3**

Indoor Environmental Quality (15 possible points)		yes	poss.	no
EQ Prereq 1	Minimum IAQ Performance	REQ		
EQ Prereq 2	Environmental Tobacco Smoke (ETS) Control	REQ		
EQ Credit 1	Outdoor Air Delivery Monitoring	1		
EQ Credit 2	Increased Ventilation			1
EQ Credit 3.1	Construction IAQ Management Plan, During Construction	1		
EQ Credit 3.2	Construction IAQ Management Plan, Before Occupancy			1
EQ Credit 4.1	Low-Emitting Materials, Adhesives & Sealants	1		
EQ Credit 4.2	Low-Emitting Materials, Paints & Coatings	1		
EQ Credit 4.3	Low-Emitting Materials, Carpet Systems	1		
EQ Credit 4.4	Low-Emitting Materials, Composite Wood & Agrifiber Products	1		
EQ Credit 5	Indoor Chemical & Pollutant Source Control	1		
EQ Credit 6.1	Controllability of Systems, Lighting	1		
EQ Credit 6.2	Controllability of Systems, Thermal Comfort	1		
EQ Credit 7.1	Thermal Comfort, Design	1		
EQ Credit 7.2	Thermal Comfort, Verification	1		
EQ Credit 8.1	Daylight & Views, Daylight for 75% of Spaces			1
EQ Credit 8.2	Daylight & Views, Views for 90% of Spaces			1
	Subtotal Indoor Environmental Quality	**11**	**0**	**4**

Innovation & Design Process (5 possible points)		yes	poss.	no
ID Credit 1.1	Innovation in Design: Water savings 40%	1		
ID Credit 1.2	Innovation in Design: Energy Consumption Display			1
ID Credit 1.3	Innovation in Design:TBD			1
ID Credit 1.4	Innovation in Design: TBD			1
ID Credit 2	LEED Accredited Professional	1		
	Subtotal Innovation & Design Process	**2**	**0**	**3**

	yes	poss.	no
PROJECT TOTALS (pre-certification estimate) - 69 Possible Points	**45**	**1**	**23**

Certified Level: 26 - 32 points
Silver Level: 33 - 38 points
Gold Level: 39 - 51 points
Platinum Level: 52 - 69 points

SUSTAINABLE DESIGN AT BUILDING 9
C. COSTS

Project Cost

Project cost not including furniture, fit-out and equipment (FFE):	$12,663,366
Soft costs, includes LEED fees noted below and other "soft" project costs:	$3,507,124
Furniture, fit-out and equipment (FFE) costs:	$2,053,481
TOTAL:	**$18,223,970**

Cost and Payback Description

Design

Design Fees toward LEED measures, documentation & certification:	$95,500

Construction

Estimated Incremental Costs for Energy Efficiency Measures only:	$60,942
Estimated additional Construction Costs for LEED measures:	$331,121
Total Construction Costs related to LEED:	$392,063
Subtotal, Additional First Costs related LEED:	$487,563

Incentives

NYSERDA incentive value	(-$146,094)
Total, Additional First Costs related LEED, less incentives:	$341,469

Estimated annual savings from green+sustainable technologies, strategies+design:	$43,154
(Extrapolated 20-year life cycle energy savings from sustainable strategies (no escalation):	$1,210,000
Simple Payback Period (all fees and costs / annual savings):	7.9 years

First Cost Design fees as a percentage of project cost:	0.52%
First Cost Construction fees as a percentage of project cost:	2.15%
All investments related to LEED, less incentives, as a percentage of total project cost:	1.87%

SUSTAINABLE DESIGN AT BUILDING 9
C. COSTS

Below is a table summarizing first costs for a sustainable strategy considered for the building*.

It is valuable to note that this item below is a strategy that enhances a building's energy performance beyond that of a building designed to meet the prescribed code. The item below is an elevated standard of practice that the County and MCC had desired independent of the concern for Building 9 as a LEED building.

It is also important to understand that, while this item is documented independently below, many items act together - as a system - in providing a high-performance building. Were one item to be singled out and deleted from the project for its higher initial cost or its independent simple payback period, the projects overall performance would be impacted.

For example, the cost of added building envelope insulation and its lengthy payback period of nearly 8 years may not be seen independently as a sound investment compared to High-Performance Window Glazing, but it contributes meaningfully to the building's overall performance and without that one energy efficiency measure, the building's systems and the other energy efficiency measures may not be as effective.

Together, the effective payback period on these investments is only 7.8 years, after which these components continue to provide savings to the County and the College.

Table 1-1

ECM No.	Energy Conservation Measure Description	Qty	Unit	Total Incremental Cost	Cost Reference	Comments
1	High Performance Lighting	1020 90LF	ea	$ 60,942	TA	The larger quantity of luminaires needed to meet the baseline LPD gave a negative incremental cost, therefore no incremental cost is shown.
	Total Incremental Cost			**$ 60,942**		

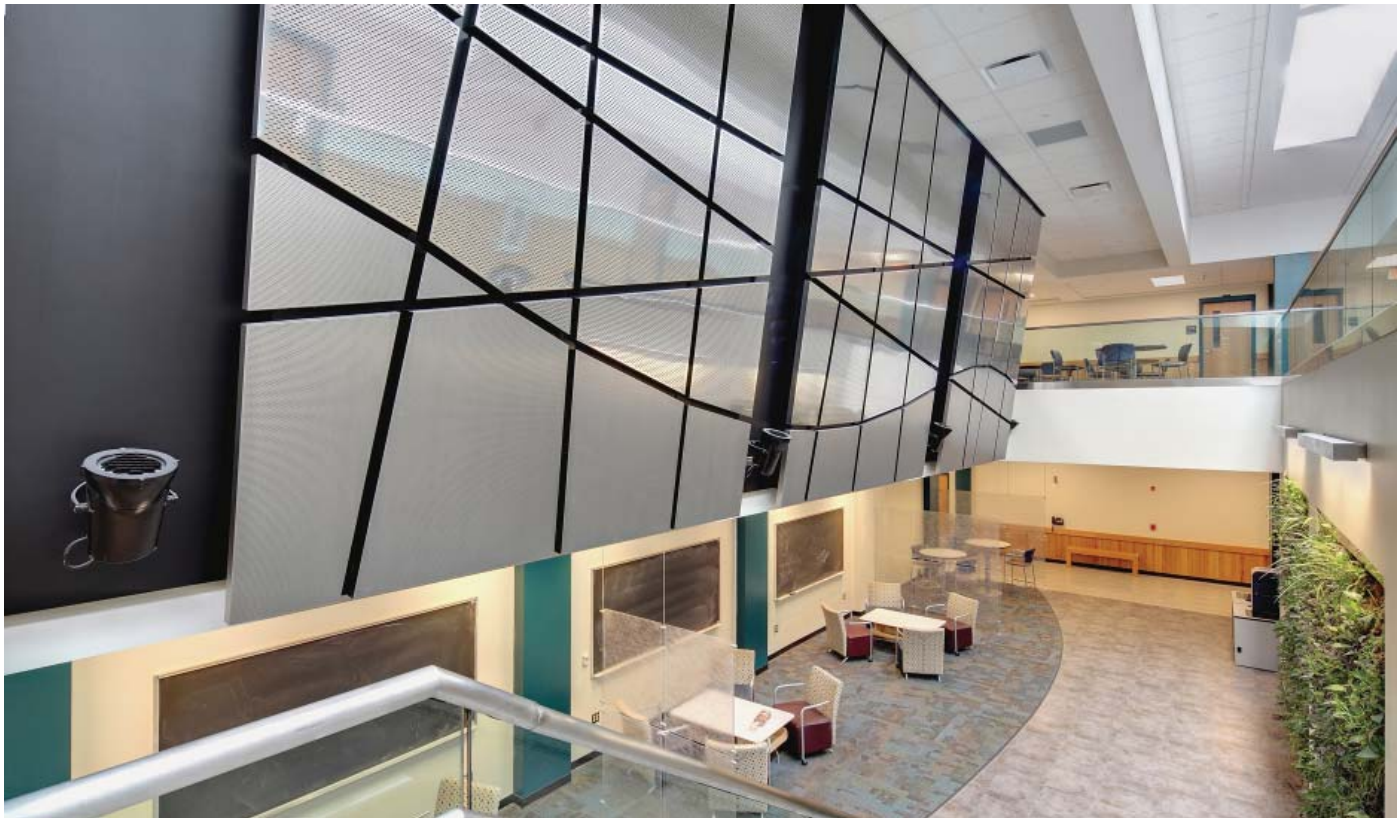
* This data is excerpted of the Technical Assistance Study in Support of New Construction Program completed by Stantec for Monroe Community College.

SUSTAINABLE DESIGN AT BUILDING 9
D. PHOTOS

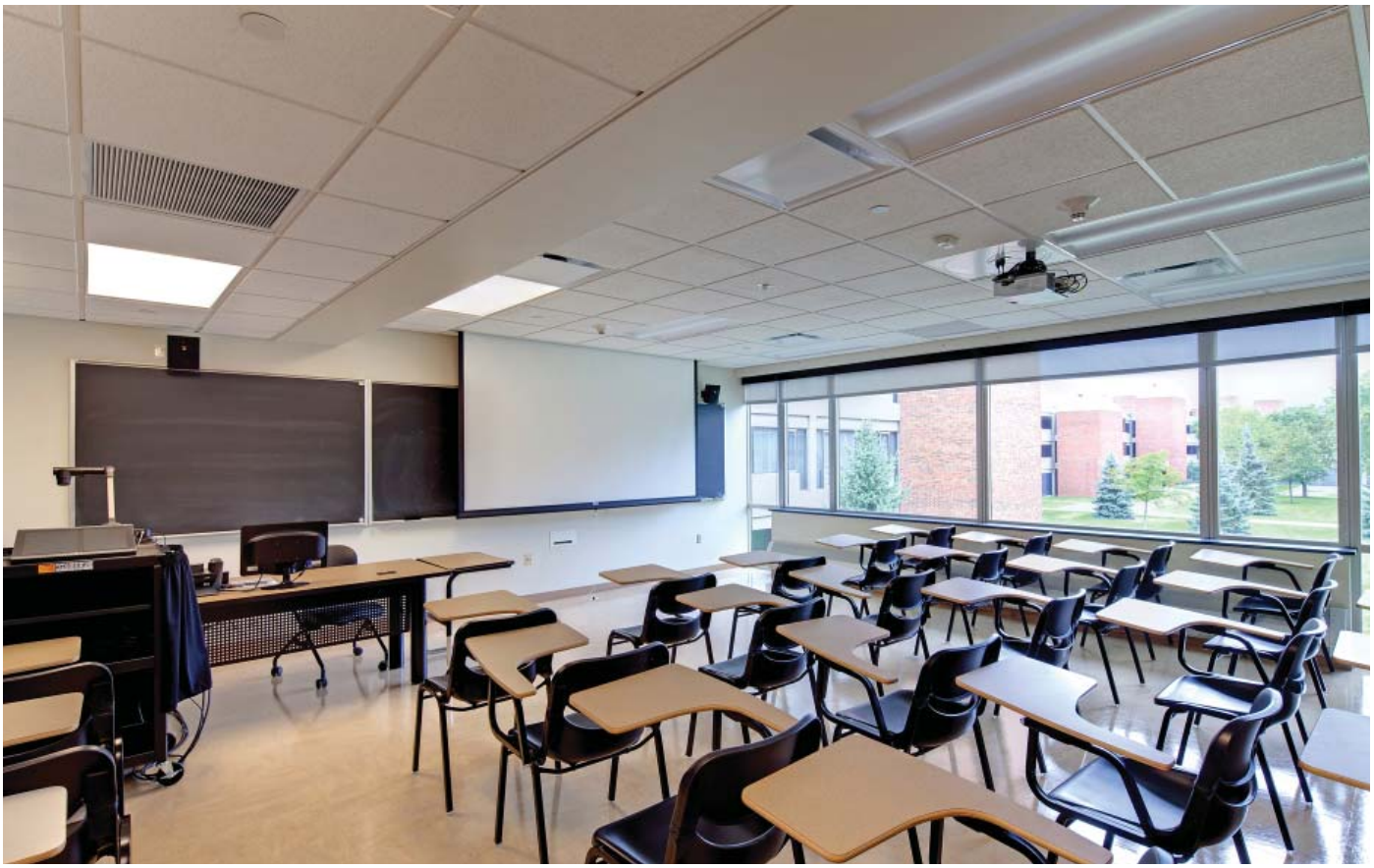
SOCIAL SPACE -COLLABORATIVE SEATING FIGURE

SOCIAL SPACE - VERTICAL GARDEN

SOCIAL SPACE - BORROWED DAYLIGHT/VISUAL CONNECTIVITY



SOCIAL SPACE - BORROWED DAYLIGHT/MATERIALITY



TYPICAL CLASSROOM -NATURAL DAYLIGHT FIGURE

BREAK OUT ROOM - BORROWED DAYLIGHT

SUSTAINABLE DESIGN AT BUILDING 9

D. PHOTOS

CLASSROOM - LEARNING ON DISPLAY

CLASSROOM - LEARING ON DISPLAY

SUSTAINABLE DESIGN AT BUILDING 9
D. PHOTOS

INTERIOR - LEARNING ENVIRONMENT

NORTH ENTRY - EFFICIENT THERMAL ENVELOPE

SUSTAINABLE DESIGN AT BUILDING 9

D. PHOTOS

NORTH ENTRY - APPROPRIATE LANDSCAPING FIGURE

AERIAL - WHITE ROOF/SOLAR PANELS

Full Program Description

The Monroe Community College Gleason Hall of Science and Technology (Building 9) project involved renovations to the entire 82,100 square feet of existing 2-story building area. This building was considered by MCC to be the most under-utilized building in regards to building area on their campus, and had never undergone a significant renovation since its construction in the mid-1960's. Additionally, there was an n abandoned, tiered Lecture Hall space that was considered a waste of space for the limited storage it offered, and the Nursing program moving out into the recently completed Wolk addition. For these reasons, the building was targeted for a substantial renovation, with the current uses (Engineering Technology, Sciences, Occupational Computer Programming [OCP], and general-use classrooms) expanded into additional assignable space created by the renovation scope.

Strategies to increase the Net Assignable Square Footage available for use in Building 9 for educational and support functions included removing the tiered seating slab and structure in the old Lecture Hall and inserting new foundations, columns, and floor structure to allow the area to be recaptured as space for new classrooms on both floors, as well creating an open, atrium-like Study Lounge with a stair connecting the two levels and an informal seating area on the First Floor. Additionally, area from four former interior Mechanical Rooms on the Second Floor was captured by replacement of the existing HVAC equipment with large, self-contained rooftop units located on the roof of the high single-story southern half of Building 9. Finally, the area vacated by the Nursing program offered expansion space for the programs currently located on the First Floor.

The overall project was separated into several smaller capital projects for funding purposes, consisting of a window and entrance replacement project and two phases of interior/exterior renovations. Phase I Renovations consisted of installation of the rooftop mechanical units, a roofing replacement of the entire building with a reflective white TPO single-ply membrane system, interior mechanical, electrical and fire protection infrastructure work, and renovation of about 6,300 SF of interior space for electronics, mechanical technology, and networking labs. Additionally, a new exit stair tower addition was constructed on the north side of the building to allow existing, unenclosed stairs to be removed as part of the next phase of work. Phase II Renovations consisted of a full gut renovation of the remaining areas of Building 9, divided into a series of sub-phases that progressed the work through the building on both floors from west to east, to allow partial occupancy and use of the building throughout construction.

The fully renovated Building 9 now contains the following occupants:

- Radiology Tech program
- Massage Therapy/Stress Management program
- Public Safety offices and locker rooms
- Facilities storage including Hazardous Material Waste collection
- Office space for Adjunct instructors
- Engineering Technology: Engineering Design/Prototyping Lab, Construction Technology Labs, Computer Labs, Optics Labs, Electronics Technology, Mechanical Technology, and the ELT Learning Center
- Sciences: Greenhouse/Headhouse, Natural Science Learning Center
- Occupational Computer Programming: Hardware Lab, Networking Lab, 6 OCP Labs, OCP Learning Center, OCP Storage
- General-use Classrooms: 4 A.L.E. (Advanced Learning Environment) Classrooms, 23 General Classrooms including 7 set up as Math Classrooms

Key Project Design Objectives

- Provide flexible and appropriate facilities within the MCC standards, and per the goals and objectives defined in MCC's Campus Master Plan document.
- Replace the old and outdated mechanical and electrical systems in the building with modern, energy-efficient systems.
- Add a wet-pipe sprinkler Fire Protection system to the building to increase life safety and allow design flexibility (atrium/open stairs, non-rated corridor walls and doors).
- Bring the facility up to current New York State Building Codes for exiting, life safety, accessibility, and increasing the plumbing fixture counts to accommodate the proposed number of occupants, plus the additional load of the Building 9A classrooms.
- Expand existing program facilities where justified by need and demand. Establish Learning Centers for Engineering Technology, Sciences, and OCP.
- Increase the total number of General-use Classrooms accommodated in the building to meet increasing demand; these are income-generators for the College.
- Provide visual connections into technology labs to promote the activities within and aid in recruitment for these programs.

• Achieve LEED-NC certification for the project, with a minimum objective of LEED Silver level.

• Improve maintainability of building systems through improved equipment access and location in dedicated mechanical zones.

• Seek opportunities to introduce natural light into interior spaces (Building 9 traditionally has had a northern single-loaded corridor with windows on the north side, but almost no educational spaces have windows).

Design Criteria

• Organizing elements: Existing and new stairs, atrium/study lounge, traditional and new corridor layout, repetitive teaching spaces (classrooms, OCP Labs).

• Create collaborative, shared and flexible learning spaces.

• Increase building Net-to-Gross area efficiency by reclaiming previously non-assignable area.

• Provide adequate storage and support space for equipment and supplies.

• Improve the image and character of space in this heavily-used and travelled building.

• Provide a modest student gathering area intended to support small group study activities.

• Maintain partial occupancy of the building throughout construction to prevent class cancellations that affect program continuity and income generation potential.

• Incremental strategy for Phase II abatement, demolition and construction to work with phasing plans, including incremental addition of utility distribution from infrastructure installed during Phase I.

• Maintain project master schedule and approved budget.

• Modular labs will allow for change in technology and program.

• All rooms will be “smart” classrooms with suitable infrastructure.

• Possibility of having simulator Labs with specialty 3-D imaging in future.

Site Design

The project included several site features that were designed with sustainability as a primary goal.

• Existing asphalt pavement at the loading dock area was replaced with light colored concrete, thereby lowering the heat island effect and reducing maintenance and harmful effects of future asphalt sealing.

• Existing plantings that could no longer remain where they were, were salvaged and relocated elsewhere. Some of these were used to screen the loading dock area.

• A roof canopy was provided at the loading dock to provide protection from the weather when loading and unloading vehicles at the dock. This will help minimize maintenance of snow clearing and help preserve the interior floor finishes.

• Three sets of bike racks were added, making space for up to 54 bikes, in hopes of encouraging bicycle transportation and reducing vehicular transporation.

• A remote area designated for smoking was located approximately 100 ft from the nearest building entrance. This area included a concrete pad, benches, plantings and ash urns.

• On the north side of the building, a grass strip approximately 10 ft wide located between the sidewalk and the building was replaced with plantings and mulch. This was done in large part to eliminate the need to mow this area, which helps to maintain the glass building facade.

Water service

The building has a water service in the Wolk School of Nursing which was an addition to the Building 9. Building 9 is served from this service with a 4” line. Domestic hot water is supplied by a water heater in Building 10.

Storm Sewer

The building storm sewer collects the rain water from the roof and discharges it to the campus storm system through two 8” lines. The building roof area was not changed and these lines are still adequate for this use.

Sanitary Sewers

Three 4” and one 6” existing sanitary lines serve the building. These connect to the site sanitary system. Due to the condition of several lines the vast majority of the existing underslab lines were relined as part of the project.

Electric

The building is served from the Building 8 substation with an 800A 480/277V circuit. The building uses the 480/277V for mechanical loads and lighting (277V). Transformers are used to obtain 208/120V which sup-

plies the receptacles and miscellaneous loads. Distribution uses wire in conduit and thermal magnetic circuit breakers in panelboards.

Gas Main

A 4-inch gas main will need to be relocated to the west out of the proposed building footprint. There is an option of running the gas main through the existing Building 9 for cost saving and future ease of access. The main shall be sized to include the proposed Field House Addition.

Codes and Standards

All work will comply with the following:

- Plumbing Code of New York.
- Energy Conservation Construction Code of New York State.
- NFPA-13, Installation of Sprinkler Sys tems.
- ICC/ANSI A117.1 – Standard on Acces sible and Usable Buildings and Facilities
- Domestic Water System – Cold, Hot and Re-circulating:

Domestic cold water will be connected to the campus water main. A water meter assembly will be provided.

The water service will be equipped with reduced pressure zone backflow preventers (BFP) installed in a duplex arrangement. A drain, sized to carry the full backflow relief valve discharge, will be provided. The backflow preventers will be located such that the relief valve discharge will flow by gravity. The existing water service in Building 8 will be back fed off of the proposed BFP.

Hot water supply and return will tie into the existing system served off of a heat exchanger in Building 8. All piping shall be thermally insulated.

A water cooler will be provided for each floor in a common area.

Sanitary Waste and Vent Systems:

All waste from fixtures and floor drains located in Toilet Rooms, Mechanical Rooms, etc. will be considered sanitary waste and will be disposed to the campus sanitary system.

Storm Water Drainage System:

All drainage from roof drains will be transmitted to the campus storm water system. Roof drains will be added to the affected areas of existing roof, located at mid-spans of beams to improve performance. A secondary storm drainage system will be provided at locations where the roof perimeter construction extends above the roof such that water will become entrapped if the primary system becomes disabled for some reason.

HVAC

The building environment is conditioned by four air handling units and a variable volume distribution system. The air supplied by these units is heated from the campus hot water system or cooled from the chilled water system. This air is distributed to the individual rooms and controlled by variable air volume boxes with reheat coils. Only the amount of air to satisfy the building spaces is supplied to minimize the energy used. The individual spaces each have temperature sensors which control the temperature and the amount of the air supplied. All of the densely populated spaces have CO2 sensors to provide only the amount of air needed to properly ventilate the space. Occupancy sensors are used to reduce the required amount of ventilation air to a space and to widen the temperature needs when a space is not used. All of these methods maintain optimum environmental conditions for the occupants and reduce the energy used.

A new air handling unit will be provided to serve the addition and west part of the existing Building 9. The air handling unit will be designed to deliver 35,000 CFM and will be a variable volume system. The air handling unit will be a custom unit and will be located at the roof of the existing building. The air handling unit will be a blow through configuration and consist of supply fan, return fan, economizer, chilled water coil, hot water preheat coil and filter sections.

The supply air distribution system will be provided with variable air volume terminal units with reheat coils for each zone. The supply air distribution system will be fully ducted. The return air distribution system will be partially ducted utilizing the space above the ceiling as a plenum return system. The proposed zoning for the air distribution system is shown on Drawing H-1 and H-2.

The chilled water and heating hot water for the air handling unit will be piped to the unit from the existing mains in the corridor of the first floor. Two way control valves will be provided on each coil. The heating hot water will also be piped to all the reheat coils or at the air terminal units.

The toilet rooms on the first and second floors will be served by an exhaust system. The exhaust fan will be located at the roof. Existing toilet room will be connected to new exhaust fan.

Tele/data closets at the first and second floors will be served by Liebert Mini Mate Dx unit. The air cooled condensing units will be located at the roof.

SUSTAINABLE DESIGN AT BUILDING 9
E. PROJECT DETAILS

The electric room at the first floor will be provided with an exhaust system to remove heat from the transformer(s) located in the space. Room VAV boxes will be interlocked with the space occupancy sensor to setback ventilation air at unoccupied periods.

All new HVAC equipment will be provided with direct digital controls (DDC) connected to the existing campus control system for controlling and monitoring the new equipment.

Where hazardous gases or chemicals may be present or used (i.e. custodial areas) each space is exhausted sufficiently to create negative pressure with respect to adjacent spaces with the doors to the room closed. Self-closing doors and deck to deck partitions are provided. The exhaust rate is minimum 0.50 cfm/sq.ft., with no air recirculation with adequate pressure differential with the surrounding spaces.

Minimum Efficiency Reporting Value (MERV) of 13 Air filtration media is provided. Filtration is applied to process both return and outside air that is to be delivered as supply air.

Design for adaptability to future uses

The Wolk Center building is designed with a simple plan such that the labs and offices spaces can easily serve another similar tenant or be retrofitted to adapt to new use or future needs.

Information and software tools:
The building control system was manufactured Siemens.

Other information resources and software tools that were most helpful in the creation of this project include: LEED-Online, AutoCAD, EQuest (v 3.6)/DOE-2.2, and Adobe Acrobat.

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Identifying Information

Short Project Name:	Building 9
Full project name:	The Gleason Hall of Science+Technology
Project owner:	Monroe Community College
Owner type:	Public
Project size:	82,100 SF
Default units of measurement:	English
Floors above Ground Plane:	2
Construction Classification Code:	1B
Occupancy Classification Code:	Group B
Project Building Code:	N.Y.S. Building Code
Full-Time Equivalent occupants:	904 (Please see "Appendix A" for details)

Site size

Total Property Area: (in Square Feet)	56,628,000
Gross Square Footage: (in Square Feet)	82,100
Total Building Footprint: (in Square Feet)	55,500
Surface parking spaces: added	None
Structure Parking Spaces:	0
Undisturbed Site Area:	0
Site Context/Setting:	Suburban
Site Conditions:	Previously Developed

Site conditions

[ ] Pristine land (greenfield)
[ ] Previously undeveloped land
[X] Previously developed land
[ ] Brownfield site
[ ] Wetlands
[X] Lake/pond
[ ] Running water
[ ] Sensitive habitat
[ ] Agricultural land
[ ] Preexisting structure(s)

Context/Setting

Address:	1000 E. Henrietta Road Rochester, NY 14623
Latitude Degrees Minutes [N/S]:	N 43° 05' 59.0"
Longitude Degrees Minutes [E/W]:	W -77° 36'38.5"
Elevation:	514' ASL +/-
Site context/setting:	Suburban, Campus

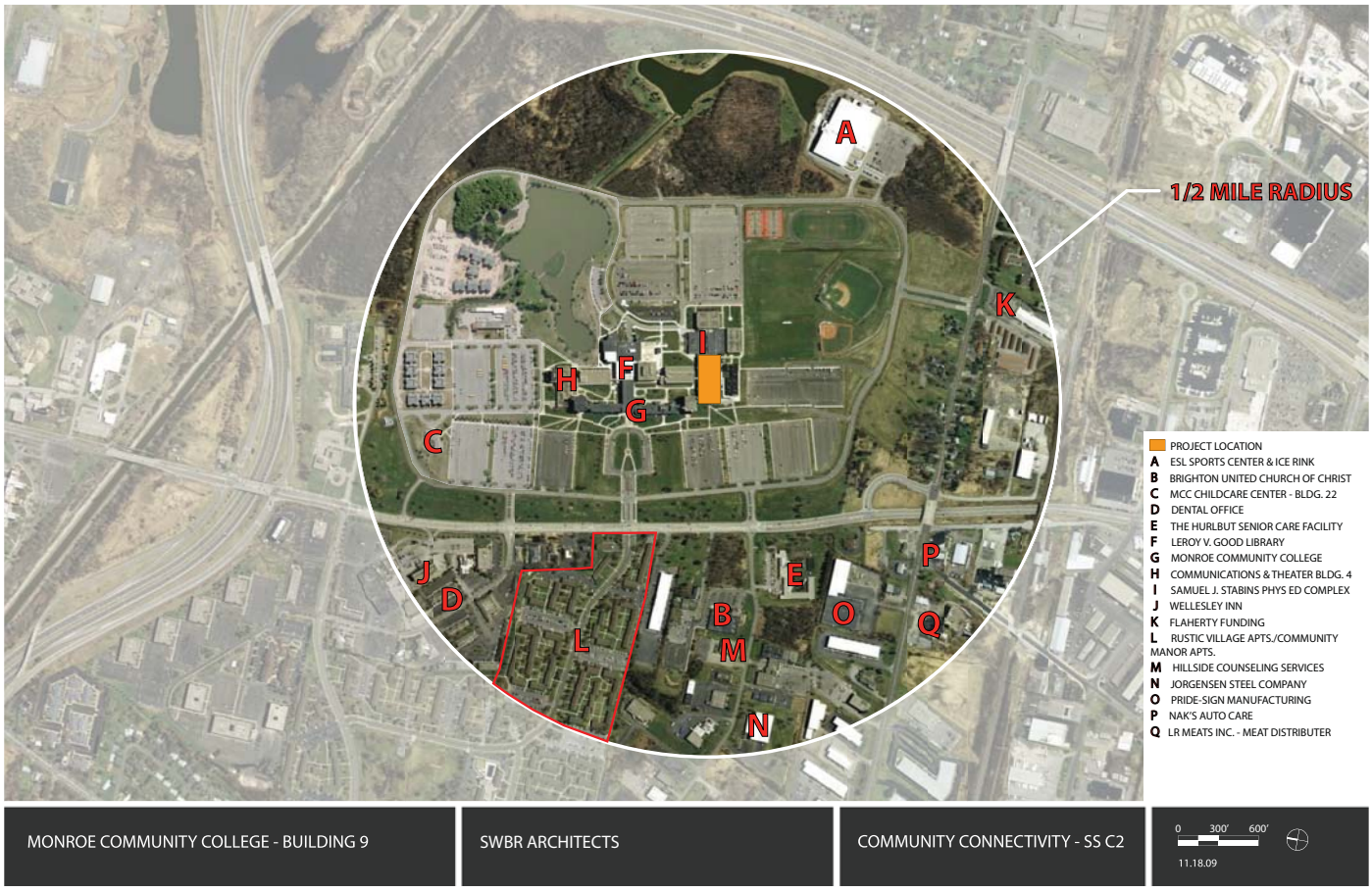


Illustration from LEED Sustainable Sites Credit 2, Community Connectivity

Occupancy

Primary occupant type:	Not for Profit
Owner occupied:	Yes
Typical number of permanent occupants:	18 people
Average hours per permanent occupant:	varies
Typical number of visitors per week people:	869 people
(includes student occupancy)	
Average hours per visitor hours per week:	6.2 hours

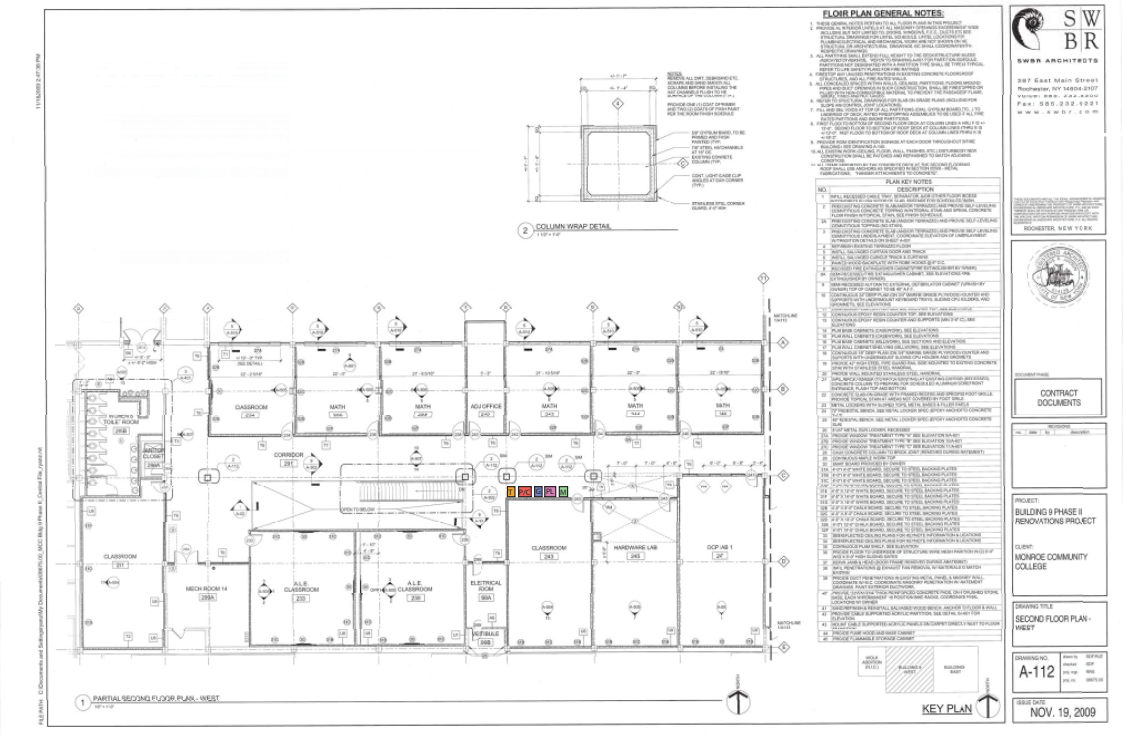
Details about occupancy:
Predominantly a mix of techical classrooms and labs and office spaces; learning center, staff/student lounge and required support areas are also provided.

History and completion date

Percent New:	15%
Percent renovation:	85%
Historic:	No
Year of construction:	2009-2011
Year of last major renovation:	N/A
Date of completion /occupancy:	August 2011
Completion date notes:	None

Building types

[ ] Commercial office
[ ] Industrial (manufacturing, warehouse, recycling center, public works)
[X] Laboratory
[ ] Restaurant
[ ] Retail (store, supermarket, art gallery)
[ ] Financial & communications (bank, post office, data center)
[ ] Single-family residential
[ ] Multi-unit residential (apartments, townhouses, dor mitories, barracks)
[ ] Special needs housing (assisted living, long-term care)
[ ] Hotel/resort
[ ] Daycare
[ ] K-12 education
[X] Higher education
[ ] Recreation
[ ] Library
[ ] Health care
[ ] Animal care (veterinary, kennel)
[ ] Interpretive Center (museum, nature center, aquari um, zoo)
[ ] Assembly (conference center, community center, convention center, place of worship, performing



MONROE COMMUNITY COLLEGE - BUILDING 9	SWBR ARCHITECTS	STORAGE + COLLECTION OF RECY-CLABLES - MR P1	12.21.09

Illustration from LEED Materials + Resources Prerequisite 1, Storage and Collection of Recyclables

arts, movie theater)
[ ] Stadia & arenas
[ ] Public order & safety (police station, fire station, cor rectional facility, courthouse)
[ ] Transportation (airport, train station, bus station)
[ ] Park (greenway, recreation space, wildlife)
[X] Campus (corporate campus, school)
[ ] Community (neighborhood, residential develop ment)
[ ] Military base
[ ] Regional plan
[X] Other: Academic Office

Indoor spaces

[X] Animal care
[ ] Living quarters
[ ] Cafeteria
[X] Lobby/reception
[ ] Child care
[ ] Manufacturing
[X] Circulation
[X] Mechanical systems
[X] Classroom
[ ] Medical treatment
[ ] Conference
[X] Office
[ ] Data processing
[ ] Public assembly
[ ] Detention
[X] Restrooms
[ ] Dining
[ ] Retail food
[ ] Elder care
[ ] Retail general
[X] Electrical systems
[ ] Structured parking
[ ] Greenhouse
[ ] Warehouse
[ ] Gymnasium
[ ] Maintenance
[ ] Laboratory
[X] Storage
[X] Lab/Classrm Support

Keywords

Process
[ ] Integrated team
[ ] Design charrette
[ ] Training
[ ] Green framework
[ ] Simulation
[X] Green specifications
[ ] Contracting
[X] Commissioning

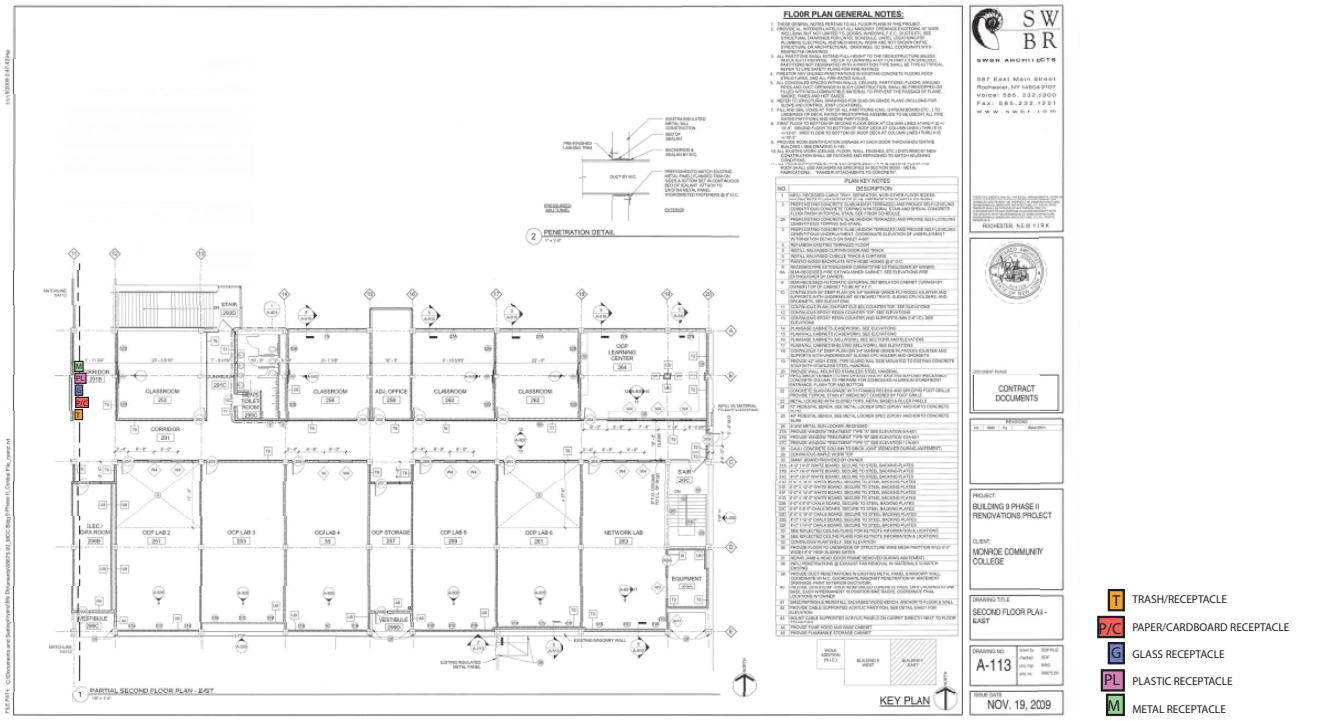


Illustration from LEED Materials + Resources Prerequisite 1, Storage and Collection of Recyclables

[ ] Performance measurement and verification
[ ] Operations and maintenance

Community

[X] Transportation benefits
[ ] Brownfield redevelopment
[X] Open space preservation

Site & Water

[X] Wildlife habitat
[ ] Wetlands
[X] Indigenous vegetation
[X] Stormwater management
[ ] Water harvesting
[ ] Efficient fixtures and appliances
[ ] Efficient irrigation
[X] Drought-tolerant landscaping
[ ] Graywater
[ ] Wastewater treatment

Energy

[ ] Massing and orientation
[ ] Insulation levels
[X] Glazing
[ ] Airtightness
[ ] Passive solar
[X] HVAC
[X] Lighting control and daylight harvesting
[ ] Efficient lighting

Materials

[ ] Adaptable design
[ ] Durability
[ ] Benign materials
[ ] Salvaged materials
[X] Recycled materials
[X] Local materials
[X] Certified wood
[ ] C&D waste management
[X] Occupant recycling

Indoor Environment
[ ] Connection to outdoors
[ ] Daylighting
[ ] Natural ventilation
[X] Ventilation effectiveness
[ ] Moisture control
[X] Thermal comfort
[ ] Noise control
[X] Low-emitting materials
[X] Indoor air quality monitoring

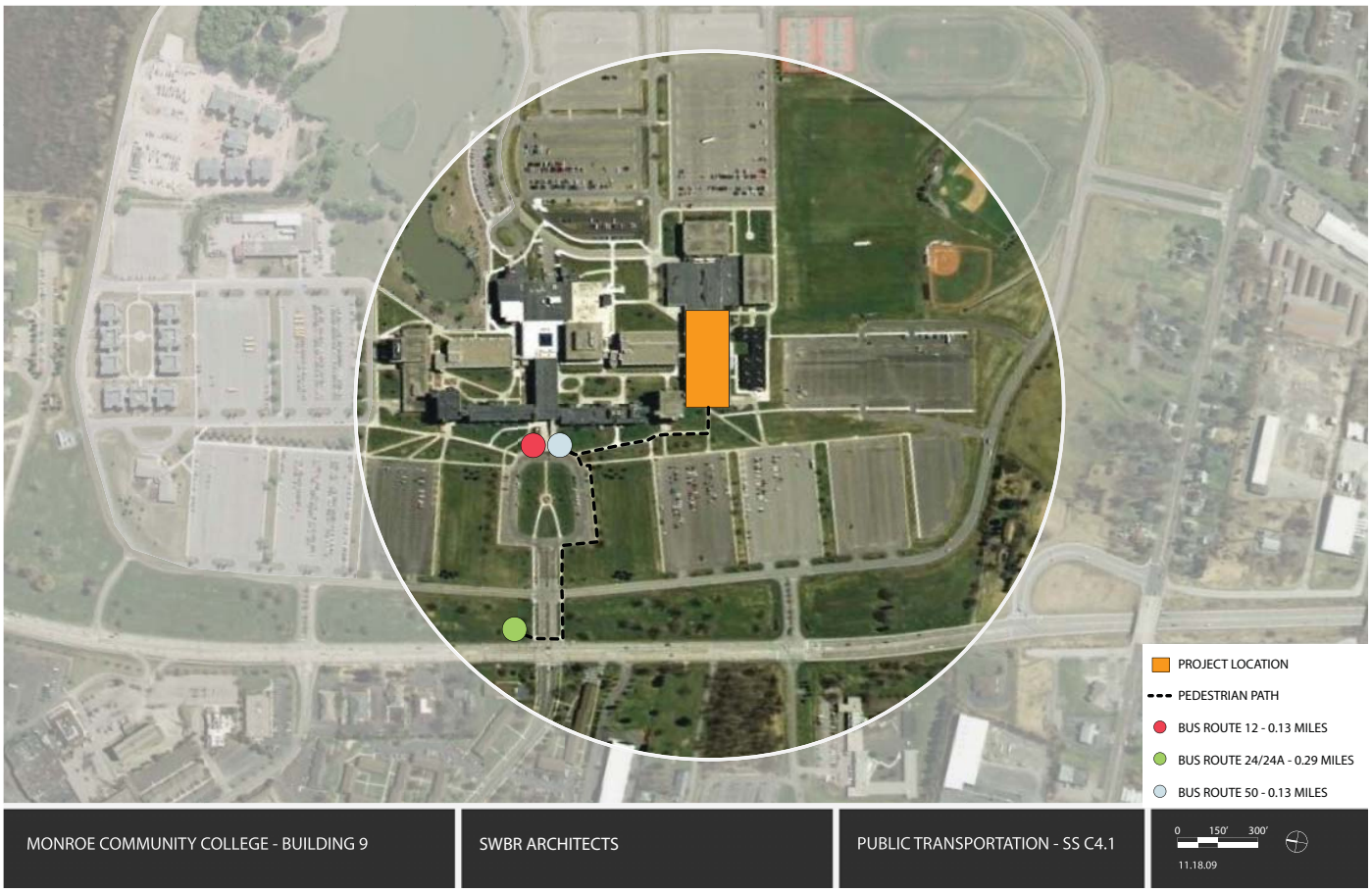


Illustration from LEED Sustainable Sites Credit 4, Alternative Transportation -Public Transit Proximity

Financing mechanisms

Credit enhancement

[ ] Loan guarantees-public (NYS)
[ ] Loan guarantees-private

Equity

[ ] Cash
[ ] Government appropriation
[ ] Historic tax credits
[ ] Affordable housing tax credits
[ ] Green building tax credits
[X] Other tax credits (NYSERDA)

Grant

[X] Public agency
[X] Private

Loans

[ ] Public institution
[ ] Private (bank, insurance)
[ ] Bond

Procurement process

[X] Design-bid-build (CM)
[ ] Design-build
[ ] Performance based contracts

SUSTAINABLE DESIGN AT BUILDING 9
F. PROJECT TEAM

Owners
Monroe County
50 West Main Street, suite 7100
Rochester NY 14614
tel.: 585.760.7541
fax: 585.324.1222

Monroe Community College
Department of Facilities
Building 21, Room 106
Brighton Campus
1000 East Henrietta Road
Rochester, NY 14623
tel.: 585.292.2000

Architect, Structural, Interiors,
Project Management, LEED Consultant:
SWBR Architects
387 East Main Street
Rochester, New York 14604-2197
tel: 585.232.8300
fax: 585.232.9221

Mechanical/Electrical/Plumbing Engineer,Commissioning Agent:
M/E Engineering, P.C.
150 North Chestnut Street
Rochester, NY 14604
tel.: 585.288.5590
fax: 585.288.0233

Civil Engineer (Phase I):
Parrone Engineering
349 W. Commercial Street, Suite 3200
East Rochester, NY 14445
tel: 585.586.0200

Landscape Architect (Phase II):
SWBR Architects
387 East Main Street
Rochester, NY 14604-2197
tel: 585.232.8300

Environmental Engineering:
Ravi Engineering & Land Surveying, P.C.
2110 South Clinton Avenue, Suite 1
Rochester, NY 14618
tel: 585.223.3660

Energy Modeling Consultant:
M/E Engineering, P.C.
150 North Chesnut Street
Rochester, NY 14604
tel: 585.288.5590

NYSERDA Outreach Project Consultant:
Sustainable Performance Consulting, Inc.
City View Suite 100
1630 Empire Boulevard
Webster, NY 14580
tel: 585.671.8110

Construction Manager (Phase I):
The Pike Company
1 Circle Street
Rochester, NY 14607
tel: 585.271.5256

Construction Manager (Phase II):
DiMarco Constructors LLC
1950 Brighton-Henrietta Townline Road
Rochester, NY 14623
tel: 585.272.7760

General Contractor (Phase I):
Javen Construction

Electrical Contractor (Phase I):
Connors-Haas Electric

Mechanical Contractor (Phase I):
Crosby-Brownlie, Inc.

Plumbing Contractor (Phase I):
Thurston Dudek Plumbing

General Contractor (Phase II):
Pepe Construction

Electrical Contractor (Phase II):
Hewitt-Young Electric

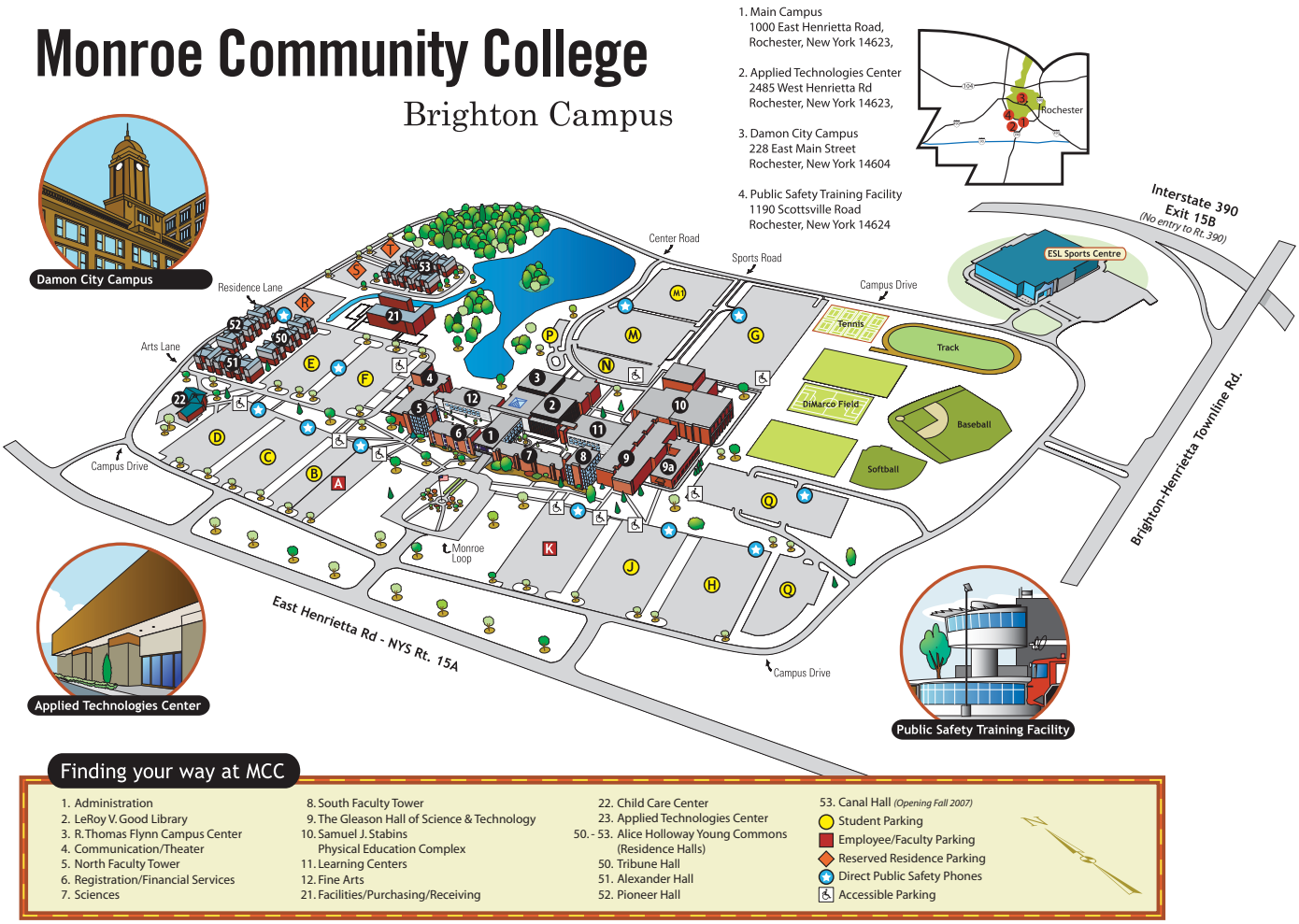
Mechanical Contractor (Phase II):
Leo J. Roth

Plumbing Contractor (Phase II):
United Mechanical Corp.

A. Learn More
B. Sources

MONROE COMMUNITY COLLEGE

COUNTY OF MONROE
STATE OF NEW YORK



Visiting options

Guided tours are available. For more information and to arrange a tour, contact MCC at:

Monroe Community CollegeBrighton Campus1000 East Henrietta RoadRochester, New York 14623Phone: (585) 292-2000

Directions:

To reach the MCC Brighton Campus from:
The West (Buffalo):
Take Thruway 90 east to exit 46; take 390 north to exit 16, the second East Henrietta Rd. (Rt. 15A) exit; turn left and continue south on 15A for about 1/2 mile to the main campus entrance.

The East (Syracuse): Take Thruway 90 west to exit 46 and proceed as above.

South (Geneseo): Take 390 north to exit 16 - the second East Henrietta Road exit and proceed as above.

Brockport/Spencerport: Take Route 531 east to 490 east and then to 390 south; take exit 16B (East Henrietta Rd. - Rt. 15A); turn right and proceed for about 1/2 mile to the main campus.

Please consult the http://www.monroecc.edu/ website to find the latest campus maps;

The information provided in this map is valid as of: December 2008 and can be found at: http://www.monroecc.edu/webdbs/WebMP.nsf/CampusMaps?OpenForm&BrMap1

ADDITIONAL INFORMATION
B. SOURCES

Data reliability

The foregoing constitutes the author's understanding and interpretation of provided documentation.

Not for publication.

The information provided here is valid as of: December 2011

Information in this document was provided by the following sources:

SWBR Architects
Monroe Community College
M/E Engineering, P.C.
Stantec Engineers

Photos

For questions regarding use of photography or digital files, please contact SWBR Architects at:

SWBR Architects
387 East Main Street Rochester, NY 14604-2197
tel: 585.232.8300 fax: 585.232.9221

Appendix 04

A. Full Time Equivalent (FTE) Employees
B. Energy Data Tables
C. Memo Regarding decision to pursue LEED Certification
D. Tabular summary of the first costs and life-cycle savings
E. Sample thermal comfort survey
F. Technical Assistance Study in Support of New Construction Program

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FTE Employees A

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Energy Data Tables B

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Memo for LEED Certification C

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First Costs + Life Cycle Savings D

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Sample Thermal Comfort Survey E

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Technical Assistance Study F