

LaFontaine Cadillac - Pontiac GMC

Michigan's First New Traditional Green Dealership



Sustainable
Site
Development

Water
Efficiency

Energy
&
Atmosphere

Materials
&
Resources

Indoor
Environmental
Quality

Innovation
&
Design

Construction

This facility will earn LEED® certification by meeting standards established within each of six key areas of human and environmental health.

Sustainable Site Development

Roof will have a Solar Reflectance Index (SRI) value greater than 78.

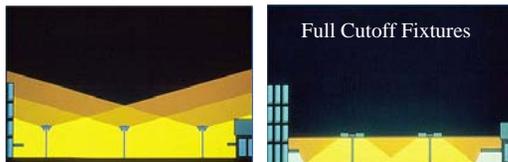
Benefits of cool roofs include reduced building heat-gain and saving on summertime air conditioning expenditures. By minimizing energy use, cool roofs do more than save money – they reduce the demand for electric power and resulting air pollution and greenhouse gas emissions.



Light Pollution Reduction

Full cutoff site lighting fixtures will be used to reduce light pollution and light trespass will be minimized from both the building and the site. (Foot candles will be less than .01 at 15 feet beyond the site)

Full cutoff fixtures ensure that light is only directed below the horizontal, which means less light is wasted through directing it outwards and upwards.



Alternative Transportation

A sustainable environment can be promoted through the encouragement of alternative forms of transportation, which this site will do by providing:

- Preferred Parking for carpool and low-emitting, fuel-efficient vehicles (5% of total available parking)
- Bicycle Storage & Changing Rooms



Storm Water Design Quality & Quantity Control

Site stormwater is pre-treated through bioswale structures prior to entering a clay lined irrigation retention pond. Overflow, or excess stormwater, then goes into a 100% retention pond with no stormwater discharge.



Water Efficiency



Water Efficient Plumbing Fixtures

Low-flush water closets and waterless urinals will be used and water efficient plumbing fixtures in all showers, lavatory faucets and kitchen sinks.



Landscaping & Irrigation

Whenever possible, native, draught tolerant vegetation will be used to minimize the amount of irrigation required. In addition, these plantings provide food and habitat for a variety of fauna and help prevent the spreading of aggressive invasive species.

A stormwater retention system will be used for irrigation eliminating the use of potable water for that purpose.

A Climate Based Irrigation Controller will utilize sophisticated methods of monitoring the irrigation usage, including adjusting daily to local weather and recognizing damaged or altered sprinkler heads or valves. The use of this system will reduce the amount of wasted water 25-30% compared to a conventional controller.



Carwash

The carwash system will recycle 85% of the water normally wasted in a conventional carwash.



Energy & Atmosphere

Building Integrated Photovoltaic (BIPV) Panels

Solar power will be utilized with the use Building Integrated Photovoltaic panels to charge onsite features such as:

- Battery charging for redundant lighting systems, generator and door operators.
- Charging of electric vehicles & GM hybrids.
- Lighting of display vehicles within the showrooms.

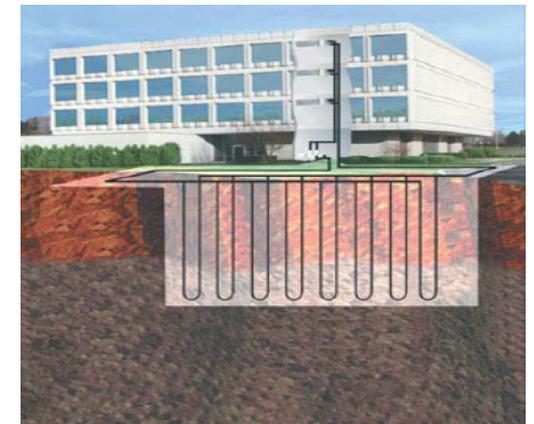
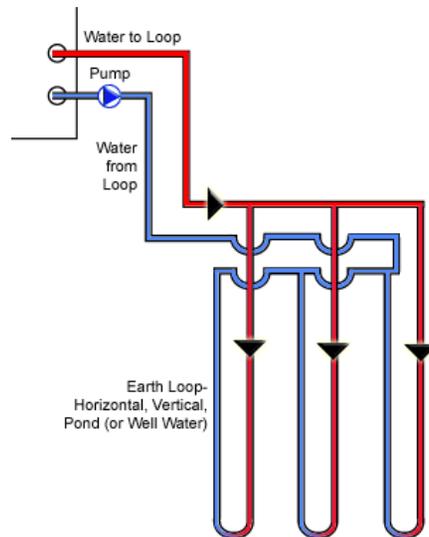


Geothermal Heating & Cooling System

The centerpiece of this highly energy-efficient building is its Geothermal Heating and Cooling System, which takes advantage of the earth's ability to store and maintain vast amounts of heat by "capturing" that energy and "moving" it from the earth to the building (and back).

The biggest benefit of Geothermal Heat Pump Systems (GHPs) is that they use 25%–50% less electricity than conventional heating or cooling systems. This translates into a GHP using one unit of electricity to move three units of heat from the earth. According to the EPA, geothermal heat pumps can reduce energy consumption—and corresponding emissions—up to 44% compared to air-source heat pumps and up to 72% compared to electric resistance heating with standard air-conditioning equipment. GHPs also improve humidity control by maintaining about 50% relative indoor humidity, making GHPs very effective in humid areas.

~U.S. Department of Energy



Materials & Resources

Green Masonry

All of the masonry used in this project will have 40% recycled content with a mortar mix that will have a fly ash mixture not to exceed 30%.

Steel

Steel bar joists are to be made of 90% recycled steel and made locally. The joists will come with a pre-finish of white to help reflect the light on the interior spaces.

EIFS Wall Covering

Exterior Insulated Finish System (EIFS) has been specified for the building that is made of a recycled synthetic material. The material has low VOC's, and improves building insulation and life cycles costs.

Custom Coping

All metal coping is specified to be made without the need for a wood nailer. This greatly reduces the amount requirement for lumber needed and reduces the impact on the environment as well as saves money on the initial building cost.



Recycled Aggregate

The aggregate used under the concrete will be crushed recycled concrete.

Regional Materials & Recycled Content

Appropriate materials are being used and re-used in the design and construction of the new facility. Use of recycled content supplied by firms within a 500 mile radius also promotes the local economy.



Certified Wood

To encourage environmentally responsible forest management, a minimum of 50% wood-based materials used will be certified in accordance with the Forest Stewardship Council's (FSC) Principles and Criteria for wood building components.



Storage & Collection of Recyclables

The facility is being designed with an onsite area dedicated to the collection and storage of non-hazardous materials for recycling, including paper, corrugated cardboard, glass, plastics and metals.



This program alone will greatly reduce the waste generated by building occupants that is hauled to and disposed of in landfills.

Indoor Environmental Quality

Ventilation

The naturally ventilated building will meet minimum IAQ (indoor air quality) performance and outdoor air ventilation will be increased greater than 30% above the minimum rates required.

Natural Lighting & Line of Sight

The facility will have 51 skylights and 31 solar tubes to provide natural daylight for over 75% of the occupants.

The building glazing system as designed, along with full glass overhead doors, will provide line of sight for 90% of the building occupants.

Service Department Hydraulic Lifts

The Service Department Hydraulic Lifts will utilize vegetable oil based fluids rather than caustic ones.



Low-Emitting Materials

Low-emitting materials are being used to reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

- Adhesives
- Sealants
- Paints
- Carpet Systems
- Composite Wood and Agrifibers



Thermal Comfort Design & Verification

The HVAC central control system will provide a comfortable thermal environment that supports the productivity and well-being of building occupants. Greater control will be achieved through the use of a higher number of heat pumps vs. traditional HVAC rooftop units and a survey of occupants will be conducted within a period of 6-18 months after occupancy.

Additional IEQ Integrations

- Environmental Tobacco Smoke (ETS) Control will minimize exposure of building occupants, indoor surfaces, and ventilation air distribution systems to Environmental Tobacco Smoke (ETS).
- Carbon Dioxide Detectors
- Indoor Air Monitoring
- Individual controllability of lighting systems to promote the productivity, comfort and well-being of building occupants.



Innovation & Design



LEED® Accredited Professional

At least one principal participant of the project team is a LEED® Accredited Professional.

This is to support and encourage the design integration required by a LEED® for New Construction green building project and to streamline the application and certification process.



Project Team



Alan Bloom
Thomas Ward
Gary Laundroche, LEED® AP
Timothy Healey
Thomas Derby

Education

The new LaFontaine Automotive Group campus will include a Science Center to be dedicated to the dissemination of local as well as global environmental news and information, and will serve as the host site for school and other non profit outings, tours, and educational and community events.



Construction



Construction IAQ Management

Indoor Environmental Quality during construction is being managed through use of MERV 8 Filtration Media as well as the protection of stored, onsite or installed absorptive materials from moisture damage.

IAQ Management Before Occupancy

HVAC system will be flushed completely before occupancy to remove any possible contaminants.

Construction Activity Pollution

Pollution from construction activities is being reduced by controlling soil erosion, waterway sedimentation and airborne dust generation.



Construction Waste Management

Recycling and/or salvaging of non-hazardous construction and demolition debris and diverting at least 75% from disposal in landfills and incinerators.

[Bloom General Contracting](#) has developed a waste management plan that identifies the materials to be diverted from disposal and provides onsite recycle bins for sorting.

Recyclable recovered resources are redirected back to the manufacturing process.

