

Bethesda – Chevy Chase Middle School #2

Sustainable Features Summary:

Bethesda-Chevy Chase Middle School #2 will be a sustainable, state of the art school. It is expected to achieve LEED Silver certification from the US Green Building Council, incorporating the latest techniques in sustainable design as follows:

- **Light pollution-- reducing site lighting**
Wall-mounted lighting fixtures will be installed on the exterior of the new building and will be shielded to protect adjacent residences from intrusive glare while maintaining light levels for safety and security. Pole-mounted parking area lighting fixtures will be 100% down-lighting to minimize light pollution into the night sky. All exterior light fixtures will be light emitting diode (LED). To conserve energy, all exterior lighting will operate on timers.
- **Optimizing Energy Performance –**
Heating and cooling for the school will be provided via a two-pipe water source hydronic heat pump (HHP) system. A geothermal field with over 400 wells located under the athletic fields acts as a heat sink for the geothermal heat pumps. Fresh air to learning spaces will be provided by utilizing roof mounted ventilation units with energy recovery. This HVAC design exceeds current energy code requirements.

Interior lighting will be high efficiency LED, with many fixtures coupled to occupancy sensors to limit energy waste. Lighting design exceeds ASHRAE 90.1-2010 energy requirements.

Energy efficient low-e windows will provide views and natural light for classroom and communal spaces while protecting against unwanted solar heat gain and winter heat loss.

- **Stormwater management –**
A new stormwater management system will be provided to meet Environmental Site Design (ESD) requirements and to meet the Montgomery County Department of Permitting Services requirements. ESD features include a vegetated roof on the new building, micro-bioretenion facilities, and preserving natural forested areas.
- **Bicycle storage and changing rooms –**
Bicycle rack parking will be provided for 5% of students, staff, and visitors. Racks are placed at both the upper and lower entrances for convenience. Sufficient shower and changing rooms will also be provided to further encourage bicycle commuting.
- **Maximize open space –**
Nearly 38% of the site will be open space or vegetated conserving existing trees and planting many new ones, providing recreation space, and creating a green buffer between the school and surrounding neighborhood.
- **Joint Use Facilities –**

The school is designed to accommodate both school and community related functions. The building will have a separate “activities” entrance allowing visitors access to areas such as the gymnasium, and cafeteria while restricting public access to classroom areas of the school. Additionally, athletic fields and courts are available for community use.

- Water use reduction –
Low flow and reduced capacity water fixtures will be used to conserve water and are expected to achieve a 34% reduction in water use.
- Enhanced commissioning –
This task will ensure that complex HVAC systems are working properly and in synchronicity. Facilities staff will receive specific, detailed operating instructions as well as an opportunity to give feedback to, or seek clarification with, the commissioning agent(s). Finally, this task indirectly provides a check that occupants are comfortable and satisfied with thermal conditions.
- Construction Waste Management –
This project plans to recycle and/or repurpose construction waste and will divert at least 75% of waste from landfills.
- Recycled Content and Regional Materials –
Building materials with high recycled and recyclable content will be used, including concrete, masonry, gypsum board, ceramic tile, ceiling tiles, carpet, and more. This will lessen the facility’s embodied energy. Materials will also be extracted, harvested, or manufactured locally, within a 500 mile radius of the school site.
- Acoustical Performance –
Learning spaces are designed to reduce reverberation time and lessen background noise. Classroom and learning spaces will have noise absorbing ceilings. Heat pump closets are located adjacent to classrooms, lessening air travel noise in ducts. Large pumps will be housed in sound isolating mechanical rooms with 12” thick grouted cmu walls.
- Green Housekeeping Plan –
The award-winning Healthy High Performance Cleaning (HHPC) program provided by Montgomery County Public Schools reduces the adverse effects of housekeeping tasks. The program includes both a plan to inform facility managers and educate the building service staff on how to achieve the "green housekeeping" requirements, as well as a plan for the implementation of cleaning and grounds care products and methods that reduce adverse impacts. This maintains a safe and healthy indoor environment for all building occupants.