

**Kingston Center of SUNY Ulster, S.T.R.I.V.E. Project
Environmental Highlights**

By reusing an existing building in the community, improving its energy efficiency, and better managing stormwater, the STRIVE project has transformed a closed formed elementary school to a state of the art educational facility and model of green design.

Site Location - Reuse of the site takes advantage of the urban location and optimizes smart growth principles. Students can easily walk to the site from other locations in the City of Kingston. Sidewalks have been extended or upgraded, bicycle racks were installed to encourage cycling, and a walkway to Kingston High School was installed. The site was redesigned specifically with bus and transit connections in mind. In addition, an **electric vehicle charging station** was also installed to help promote greener transportation options.

Building Reuse - Reuse of this historic structure included minimizing demolition and other alterations which would have disturbed its historic character. This approach also greatly reduced the need for new material and maximized the reuse of the existing materials. Potentially hazardous materials, including lead and asbestos, were removed from the structure through a meticulous abatement process.

Energy Efficiency-By both improving the efficiency of building equipment, and increasing the ability to conserve energy when not needed, the redesign of the building remarkably reduces the overall energy demand of the facility and increased occupant comfort in the facility.

- **Lighting**- Existing lighting was replaced with high efficiency lighting. New lighting includes LED interior lighting and LED parking lot lighting as well as other LED exterior lighting. Occupancy sensors were installed, ensuring that lights are turned off in spaces which aren't being used.
- **HVAC** equipment- Energy efficient cooling equipment and fans were installed. Additionally, the flexibility to independently cool classrooms allows for space which may not be utilized in the summer months to not be cooled, saving additional energy.
- **Windows**- Existing single pane windows were replaced with energy efficient thermopane windows improving energy efficiency as well as allowing better use of daylight throughout the building further reducing the lighting demand.

Domestic Water- Low-flow fixtures were installed including dual flush toilets to reduce domestic water consumption. Water fountains include bottle filling stations to encourage the use of reusable water bottles.

SUNY Extension Center at Kingston, S.T.R.I.V.E. Project
Environmental Highlights Continued

Stormwater- Significant site improvements, funded by a **\$439,000 grant** from the NYS Environmental Facilities Corporation Green Innovation Grant Program, were made to dramatically change the way stormwater is managed on the site. To the maximum extent practicable, stormwater is treated on site. Infiltration to the ground is promoted and stormwater entering the municipal storm system is minimized through a suite of green infrastructure design techniques including the following measures.

- **Permeable Pavement** is designed to convey rainfall through the pavement surface into an underlying reservoir where it can infiltrate, thereby reducing stormwater runoff from a site. This project includes an extensive permeable asphalt parking area as well as pervious pavers at the main entrance and in the rear courtyard.
- **Bioretention Systems** are shallow vegetated depressions often referred to by a variety of names, such as bioinfiltration areas, biofilters, rain gardens, bioswales, or recharge gardens. They are very effective at removing pollutants and reducing stormwater runoff. The water which collects on the surface, ponds and then is used by the vegetation in evapotranspiration and infiltrated into the soil. The use of native species results in a system that is resistant to insects, disease, pollution, and climatic stresses. This project includes multiple rain gardens including a large area in the courtyard as well as a bioretention area on the north end of the parking lot. All areas are extensively planted with native vegetation.
- **Green Walls** are typically vertical systems which consist of a modular container to hold growing media, the growing media itself, and vegetation. Vegetation can be rooted in the ground or in modular containers, growing blocks or growing mats located at various heights along the face of the structure. Green walls provide air quality and stormwater benefits and help to reduce energy use. This project includes a green wall which utilizes plants in modular containers.
- **Downspout Disconnection** is the removal of roof runoff from a direct connection to the combined or storm sewer. By redirecting the rain to a designated vegetated pervious area, runoff volume can be greatly reduced and water quality benefits can be achieved. When disconnecting a downspout, the runoff is directed to a vegetated and pervious area where plant and soil can filter and infiltrate the water. Multiple practices in this project treat roof water runoff which was previously directed to the storm sewer helping to significantly reduce the peak stormwater volumes running off the stie.