



Sustainable Modular SEED Classroom

Boyd's, MD

The Challenge

Montgomery Parks sought to develop an environmentally responsible educational facility at Black Hill Regional Park that would not only provide a healthy learning environment but also serve as a practical teaching tool about sustainable building practices. The challenge was to create a structure that demonstrated energy efficiency and innovative environmental design while complying with local regulations and accommodating up to 25 students and teachers.

The Solution

The SEED Classroom, a 1,000 sq. ft. modular building, was designed and constructed to meet these needs. Inspired by the Living Building Challenge, it features net-zero annual energy consumption achieved through rooftop solar panels, allowing 24-hour data monitoring of energy use. The building incorporates healthy materials, including low VOC paints and adhesives, and recycled content such as carpet with 45% post-consumer plastic bottle content. Water balance is maintained by utilizing rainwater for the green wall display and a compostable toilet. The classroom includes an Energy Recovery Ventilator to ensure healthy air and employs biophilic design with unique leaf-patterned carpet tiles. Serving as a teaching tool, the building exposes all systems to view, educating students on the construction and function of sustainable buildings. Additional features include energy-efficient windows and doors, a solar tube for natural light in the toilet room, and visible HVAC airflow. The SEED Classroom, classified under Business Use with an IBC educational use factor, is situated on previously developed land, minimizing its environmental impact.