

Architecture, Engineering & Construction



PROJECT	SPRINGFIELD LITERACY CENTER
LOCATION	SPRINGFIELD, PENNSYLVANIA, UNITED STATES
CUSTOMER	BURT HILL
AUTODESK TOOLS	REVIT® ARCHITECTURE SOFTWARE

Burt Hill Designs Innovative Springfield Literacy Center

Architecture and engineering firm Burt Hill's design of the Springfield Literacy Center in Pennsylvania looks to the future. Blending into a wooded hillside, the 50,000-square-foot complex is scheduled to open in the spring of 2010. It will serve kindergarten and first-grade students, and provide a library and an art program to support literacy and reading, as well as special activity and administrative spaces.

The building design has several innovative features, such as extensive use of daylighting, recycled materials, and a "green roof" system including soil and plants to reduce heating and cooling loads on the building, among other environmental benefits. These attributes not only will contribute to LEED certification and strong building environmental performance, but also will help educate students about environmental stewardship on a daily basis.

The Burt Hill team used building information modeling (BIM) with Revit® Architecture software to create the building design. Data from the Revit model was then integrated using Integrated Environmental Solutions (IES) to perform precise analysis for the project to ensure energy efficiency while maintaining optimal levels of daylighting for young students. This analysis included window size, orientation, location and glazing, in addition to factors such as how walls are assembled and natural ventilation options.

After assessing the original window design, Burt Hill architects determined that glare



would adversely affect the students' experience. In response, the firm came up with an alternative design of smaller windows positioned in a manner to resolve the problem while still providing abundant natural light.

Using BIM, Burt Hill creates realistic design visualizations that enhance coordination among team members and the production of accurate construction documents. The firm also uses visualizations to quickly identify and implement changes to the building information model and construction documents at the earliest possible stage, and to better inform community representatives and school officials about project status.

The experts at Burt Hill are long-time advocates of BIM to provide a holistic and more sustainable approach to building design and construction: "When the architectural design model is also the energy model, energy modeling and responsiveness become core components of the design process," says Dustin Eplee, leader of Burt Hill's Energy Analysis team. "For example, rooms are designed explicitly as 3D energy-consuming volumes, instead of just floor space bounded by walls."