

Lightweight Space Frame Roof With Solar Panels Tops Unique Storage Barn For Energy Efficiency



Architect

Gray Organschi Architecture

Date

Completed in 2009

Project Highlights

Located within a watershed conservancy area, a landscaping contractor outside of Washington, Connecticut needed to consolidate its materials to minimize the impact these bulky items had on the sensitive grounds. To do so, a 1,200-square-foot storage facility was built to house its stone and wood products in an orderly fashion. The basic structure was formed of tubular steel while a 72-by-28-foot space frame roof was designed and engineered by DSI Spaceframes to top it off. A space frame was chosen because it is lightweight and allows for a large expanse of column-free interior space. As a result, the articulated loader used to transport materials can easily maneuver and be stored inside the building. The space frame roof also projects out over a paved area to form a canopy and provide additional shelter from the elements. Electric work lights are integrated into the space frame structure. They are powered by a rooftop array of translucent photovoltaic panels that also serve as skylights to bring natural light inside the barn building. The bolted node-and-chord space frame that supports the solar panels was assembled by DSI Spaceframes on the ground and then lifted into place. Today, this energy-efficient system produces more electricity than is consumed.



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