SCRAP METAL RECYCLING

CASE STUDY

WASTE RECYCLING APPLICATIONS

WHEN NEW JERSEY air quality regulations required an enclosed bin for sorting and processing lightweight materials, a major recycling company chose to partner with Legacy Building Solutions.

"The regulations essentially required a three-sided building with a roof," said Greg Margeson, director of engineering. "We chose to go a step further and design one building that could be used to stockpile recycled materials and house the shredding equipment."

LOCATION
New Jersey

MARKET SECTOR
Waste

APPLICATION
Scrap Metal Recycling

SIZE
74 ft x 150 ft with 87 ft x 150 ft lean-to (21,975 sq ft)

SPECIAL FEATURES
Building with varying column heights; building-supported conveyor and fire suppression

INSTALLATION
Legacy in-house crews

LEGACY BUILDING SOLUTIONS

EXCLUSIVE ExxoTec™ PVC FABRIC

Specs called for the building to be built around concrete containment bins where product is piled up to 35 feet high. An overhead tripper conveyor is used to move product in and out of the building, which required an additional 15 feet of clearance. While searching for a building that could be 50 feet high and suit their operation, Margeson and the team found Legacy Building Solutions. “We compared Legacy Building Solutions to other alternatives, and Legacy seemed to provide the best value,” said Margeson.

Soil conditions at the site further complicated the project. “The building is constructed on a former channel,” said Margeson. “We worked with Legacy to design a pile foundation, which worked with our poor soil conditions and supported the stout concrete walls we needed.”

The finished building is 74 feet wide and 150 feet long, with a lean-to measuring 87 feet by 125 feet. The divided lean-to area provides a separated bin for sorted materials, while the enclosed side supports the overhead conveyor system and three 40 feet wide by 22 feet high door openings. The entire envelope is protected by a building supported chemical fire suppression system.

Initially, staff at the recycling company had some concerns about the effectiveness of the conveyor attached to the frame. Excessive vibration, or otherwise unstable building frames, cause conveyors to run less effectively, requiring additional maintenance throughout the life of the building. Legacy’s team engineered the frames to support a fully loaded conveyor, as well as the additional loads placed on the building. “The building is working out better than we thought it would,” said Margeson. “The tripper is supported from the frame and works just as planned – which basically doesn’t ever happen.”

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While the state regulations called for a three-sided structure with a roof, the finished building has all four walls enclosed. Framed doorways along the sidewall give the option of fully enclosing the building if needed to adhere with future requirements.

Keeping debris and shredding equipment in one structure, along with the conveyors and loaders required to move piles, allows the recycling operation to work more efficiently while complying with air quality regulations.