HSS: DESIGNS FOR THE 21st CENTURY

Audubon Society Environmental Education Center, Falmouth, Maine

HSS HELPS AUDUBON SOCIETY MAKE ENVIRONMENTAL STATEMENT

RECYCLABILITY, LOW MAINTENANCE MEET SOCIETY'S GUIDELINES

When the Maine Audubon Society commissioned Architect Carole A. Wilson to design an Environmental Education Center at its Gisland Farm headquarters site in Falmouth, one guideline was that she make maximum use of recycled materials. Another was to design a building that would be as maintenance-free as possible.

A framework of steel Hollow Structural Sections (HSS) was a major element in meeting both of these requirements. And equally important in Ms. Wilson's eyes, the use of HSS made significant contributions to the building's aesthetic appeal and structural design.

Ms. Wilson's design, done in conjunction with another Portland architectural firm, Van Dam & Renner, takes maximum advantage of the natural beauty of the Society's Gisland Farms nature preserve. It was designed to be both the start and finish of a pathway that leads students and other visitors through the sanctuary's woodlands, marshes, orchards and other areas.

The architect says that Audubon Society officials favored "a sort of woodsy atmosphere" for the new Education Center, but at the same time weren't enthused about cutting down trees to achieve it.

"The use of hollow structural sections gave us a very different feeling, but the Society is thrilled with it," Ms. Wilson says. Part of the reason, she feels, is that the building's steel framework "mimics" an exposed timber frame.

'Sculptural' Appearance Makes Aesthetic Statement

"The hollow structural sections are sculptural in their appearance," Ms. Wilson says. "The use of HSS allows the Society to make an environmental statement, and at the same time the material helps the building make a real aesthetic statement. It's light, it's exciting and the structure's expressed on the inside. By using HSS, we've created some really nice spaces and effects."

Part of the aesthetic value, she says, is due to the way that the HSS sections have been joined together. "The ends of each section are bevel-cut, and the welds between sections have been ground smooth so they follow the same curvature," she says. "It's given us a beautiful, seamless frame that really highlights the structure on the inside."

Aesthetic considerations, as much as anything, led to the choice of HSS for the building's exposed framework. "I think there's something about tubular steel that people relate to," she says. "The wonderful thing about HSS sections is that they have a good feeling to them, and that the connections can be graceful and elegant."

Hall's Clear Span Relies on Strength of HSS

Another reason Ms. Wilson favored hollow steel sections was that the building was to contain three classrooms which could be

opened up into a single, large lecture hall. "We wanted a clear span," she says, "and if we had used wood, we would have required some pretty big members to do that."

Ms. Wilson credits the Steel Recycling Institute's New England office with educating her firm on the fact that steel has been recycled for decades and that today more steel is recycled than any other material. "That was one big reason why we elected to use steel."

The Education Center is a compact but visually appealing building, occupying about 6,000 square feet on its ground level. Visitors enter through a glass vestibule, from which they can see all the way down the 2-1/2-story-high spine of the building framed by HSS structural members.

HSS Frames Picture of Terrace, Orchard

On one side of the spine is a glass-walled exhibit gallery and a small souvenir shop, both of which look out upon an outdoor terrace and a picturesque apple orchard. On the other side are the three classrooms, which can be converted into a large lecture hall, and a wildlife observation room. The outer wall of that room is mostly glass and opens out into a forested area with a number of bird feeders that incorporate microphones, so that viewers can watch the birds and hear their calls.

At the far end of the structure is the Society's existing headquarters building.

Visitors—many of them schoolchildren—enter the lobby of the Education Center, where a two-floor-high wall called the Issues Wall displays information on a current environmental issue or an activity going on at Gisland Farms. They continue down the gallery, viewing the various exhibits displayed there, and exit at the far end of the building to a path leading around the headquarters building and into the sanctuary.

The roughly 40 tons of HSS used in the Education Center's structural framework was donated by five member companies of The Steel Tube Institute's HSS Committee—Atlas Tube, Bull Moose Tube, Copperweld Corp., Leavitt Tube and Welded Tube Co. of America.

Principal participants in the project, in addition to the architects, included Swift Engineering, structural engineer; Wright-Ryan Construction Co., general contractor; and James McBrady Corp., steel fabricator.

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