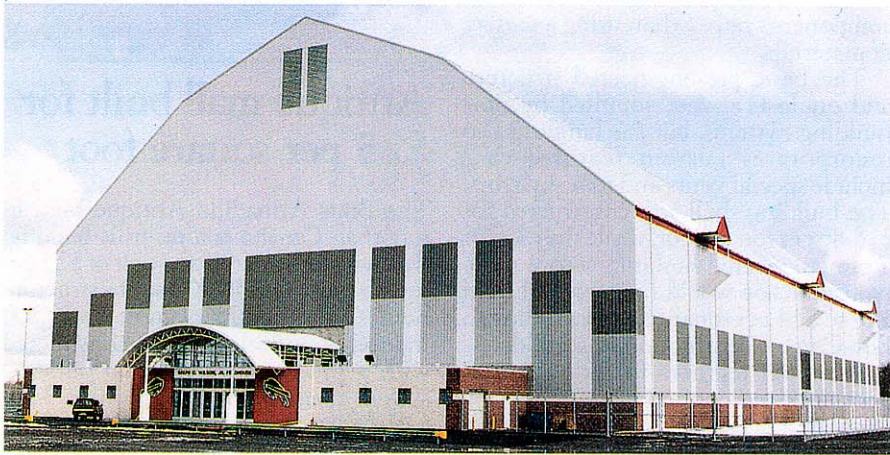


An update on applications and resources for pre-engineered metal building systems



The metal exterior wall panels of the Ralph C. Wilson Jr. Fieldhouse are finished in three colors to help reduce the facility's visual massiveness.

Field house integrates conventional and systems framing

The Ralph C. Wilson Jr. Fieldhouse, a new \$10 million indoor practice facility for the Buffalo Bills football team, was constructed with a structural system that combined the use of conventional steel and the economy of a pre-engineered building system.

The practice facility's ceiling rises to a height of 125 feet, providing adequate room for players to exercise their maximum punting ability. This height requirement led to the use of a heavy fabrication construction approach.

The primary framing system consists of custom-fabricated steel, but the cladding and secondary framing are standard American components supplied by American Buildings Co.'s heavy fabrication division. The framing system utilized 911 tons of steel.

The facility is 224 feet by 424 feet in plan, and has an eave height of 60 feet. The standing seam metal roof incorporates two pitches — 5:12 for the top portion and 10:12 for its lower section.

A major design requirement was to incorporate sufficient wind resistance to withstand Buffalo's often severe weather, according to Joe Kopec of the project's architect, Duchscherer Oberst Design, P.C. of Buffalo. The building is as tall as an 11-story building, and the impact of the wind is magnified by the facility's large wall area in relation to its

total structural weight.

The building is designed for a wind uplift rating of UL 90, starting with the foundations. "You think of the foundation as holding a building up," Kopec observed. "The reality was that we designed this one to resist uplift."

The field house's columns were anchored to caissons buried 15 to 30 feet below ground. Caissons on opposite sides of the building are linked by tension cables.

A 20-ft.-wide running track provides a buffer between the practice field and the field house walls. The facility also incorporates stands and catwalks for video crews and equipment.

Construction began in March 1995 and was completed in six months. It was estimated that the construction time would have been at least 10 months if other building systems had been used.

The project's construction manager was Ciminelli-Cowper Co. of Buffalo and the general contractor was Manning, Squires & Hennig of Batavia, N.Y. Structural steel, insulation and other accessories were supplied by N.H. Van Son Construction Co. of Alexander, N.Y.

The field enclosed by the practice facility is an exact replica of the one in neighboring Rich Stadium, where Bills' home games are played. □

"Art barn" maximizes design potential of basic materials

Rutgers University needed a 20,000-sq.-ft. Visual Arts Building in a hurry. It had already begun negotiations with Butler Manufacturing Co. builder Fenton Construction Co. of Warren, N.J., to provide a pre-engineered metal building system for the facility, which was to be built on its Piscataway, N.J., campus. Rutgers then turned to architect Biber Partnership of Summit, N.J., to maximize the design appeal of a building that would be constructed with basic materials.

Architect Peter Biber met with Rutgers officials just before Easter, and was told that the building needed to be completed by Labor Day.

The building's main section is a 10,000-sq.-ft. rectangle. However, this basic plan was embellished by incorporating L-shaped, 5,000-sq.-ft. sections that wrap around two of its corners.

Rather than attempting to hide the structure's humble roots, HVAC and other building systems were highlighted with bright colors. Although the building exterior is clad with flat metal panels, interest was added to the building interior by using ribbed metal liner panels on the portion of walls that extend above the facility's 10-ft.-high partitions. □



L-shaped elements at two of its corners add interest to the basic rectangular plan of Rutgers University's Visual Arts Building.

Photo: Insight Photography/Steve Berg