



## **Minneapolis Rowing Club**

### ***Wood Design and Building Magazine***

By Jim Taggart

Contemporary Modernism, while retaining its emphasis on the expression of function, has by and large abandoned the idea of an international style, in favor of a more contextual approach.

Physical, cultural or historical, this context is most often acknowledged in the building form through the use of metaphors or abstractions. This approach can enrich even the simplest structures with layers of meaning, and elevate basic archetypal forms to the level of architecture. Paradoxically perhaps, it is often the more refined abstractions, rather than the bold formal metaphors that result in the most satisfying architecture.

This is certainly the case with the Minneapolis Rowing Club by Vincent James Associates whose subtle evocations of the power and grace of rowing lend the building a degree of sophistication that belies its straightforward program and modest budget.

The new structure, which replaces one destroyed by fire, sits above the flood plain of the Mississippi River, at the base of a 60-ft. escarpment beyond which spreads the city of Minneapolis. Descending a winding access road, one is struck by the dynamic quality of the roof, which seems to be in wave-like motion as the viewer's point of view changes.

Seen from grade, the roof takes on a remarkable lightness and delicacy, in contrast to the solid rectilinear volume below. The windowless ground floor of the 9,000 sf building accommodates the storage racks for the rowing sculls. The continuity of the black-painted shiplap siding is interrupted only by copper-clad sliding access doors and corner reveals. This counterpoint between the earthbound and the ephemeral is further emphasized by bands of clerestory polycarbonate glazing that expand to story height at the upturned corners of the roof. Behind the glazing, mezzanine galleries house exercise areas that have sweeping views of the Mississippi River.

Internally, the careful manipulation and repetition of the slender, highly articulated structure recalls both the rhythmic quality of rowing and the finely crafted artifacts that one associates with the sport. The mezzanines, their supporting columns lost to view amid the stacked boat hulls, appear to float within the space. Like the roof, the walls are

uninsulated so that the structure is laid bare. This gives the building a powerful, skeletal quality that not only conveys the nature of the building process, but also captures the essential spirit of its program.

The building measures 123-ft. x 46-ft. with a structure of glulam frames set at 2-ft. 8-in. centers along the length of the building. Each frame comprises perimeter glulam columns of 9-in. x 3-1/8-in. supporting a clear spanning inverted king post truss with a glulam top chord of 12-in x 3-1/8-in.

The lower chord of each truss is a steel cable held away from the glulam top chord by a steel V-brace. The connection between cable and V-brace takes the form of a steel ring reminiscent of an oarlock. The V configuration supports the span at two intermediate points, and enabled structural engineer Bruno Franck to reduce the depth of the glulam beam to 12-in. from the 14-1/2-in. that would have been necessary with a single point of support.

The roof curve is a hyperbolic paraboloid, formed by the slight rotation of each truss in succession along the length of the building. Longitudinal shear resistance is provided by diagonal bracing between the trusses at intervals along the building.

Each glulam top chord is identical and the steel plate that connects it to the perimeter column is designed to accommodate the variations in connection geometry. As a result, the only custom cutting required was to the top of each column.

The roof is sheathed in two layers of 3/4-in. plywood screwed and glued to the top chords of the trusses to act as a single diaphragm. The majority of the building's lateral stability, however, comes from the mezzanine floor structures which are tied into the perimeter walls, but support internally on glulam columns with moment connections to concrete footings at the base.

Perimeter foundations are concrete caissons, above which runs a continuous concrete grade beam. Precut concrete pavers laid by club members make up the floor. Perimeter columns are secured to the grade beam by concealed steel plates designed as pin connections. Despite its visual complexity, the structure is extremely economic in its use of materials and in its repetition of a small number of simple details.

