BioSite

San Diego, CA

Team

Owner:
Iverness Medical Innovations
Waltham, MA

Architect:
Architects | Delawie Wilkes Rodrigues Barker, San Diego, CA

Engineer:
Hope Engineering, San Diego, CA

General Contractor:
Reno Contracting Inc., San Diego, CA

Total Project Cost:
$110 million

Total Project Size:
350,000 sq ft

Award:
2008 CRSI Design Award Winner–Commercial Buildings Category

Photography:
©Scot Conti Photography

STRUCTURAL FRAMING SYSTEM

The owners of BioSite required their new building to provide the flexibility to expand and adjust to new uses in response to as-yet undetermined forces in their marketplace. To maximize that capability, designers chose a structural system of reinforced tilt-up concrete wall panels with floors and roofs framed of structural steel and metal decking with concrete fill. The structures were entirely site-cast and made from conventionally reinforced concrete.

Designed in a contemporary Bauhaus style, the buildings incorporate ribbon windows and large sections of storefront glazing that span across recessed reinforced concrete panels to distinguish it from more traditional tilt-up structures.

The framing systems were designed to support the relatively heavy live loads associated with the company's research and development spaces, even in areas where the corporate headquarters are currently located, in case needs change. Roofs are capable of supporting much higher than normal density of equipment to support the functions inside the building.

UNIQUE DESIGN FEATURES

The architect's goal was to use the reinforced concrete's natural beauty as an accent for the building's overall look. The panels' plastic quality allowed patterns and relief to be created on both interior and exterior walls, with a reactive stain used on some exterior walls to create a natural mottling effect to add texture and color.

Many of the reinforced tilt-up concrete panels feature multiple steps on both sides, complicating their fabrication. Pilasters and reduced panel thickness for upper levels were created to lighten panel weights, while exterior sides features recesses for glazing over panels and complicated reveal patterns.

The reinforced concrete structural system was designed with sturdy perimeter walls so the owners could construct a second floor on portions of the building, allowing them to vary the use of those areas over the lifespan of the campus.

REASONS FOR CHOOSING REINFORCED CONCRETE

Reinforced tilt-up concrete panels were specified to meet the owners' needs for adaptability, efficient construction and economical materials. The reinforced concrete panels allowed for the construction of a structural system that was capable of supporting the heavy cumulative loading associated with the research occupancies while providing an aesthetically pleasing, economical and easy-to-maintain building envelope.

The reinforced concrete panels provided adaptability, efficient construction and economical materials.

CRSI Concrete Reinforcing Steel Institute
www.crsi.org