North Quad Residential and Academic Complex

Project Description

Combining sophisticated classroom and academic space with residence space for 460 students, the North Quad Residential and Academic Complex will provide classrooms, studios and offices for five information and communications-related university programs. The result will be an environment in which lively interactions among students and faculty spill seamlessly from classrooms to hallways to faculty offices to living quarters—all under the same roof. North Quad's design draws on the classic features of academic architecture. On the ground level, the brick and stone building encloses one continuous interior. Above ground, the complex appears as two separate buildings, an L-shaped seven-story academic tower and a 10-story residential tower arranged around interlocking courtyards, and connected by a cloister evocative of the Law Quad.

Energy Efficiency Measures

The North Quad design focused on maximizing energy efficiency and incorporates numerous energy conservation measures, including:

- Maximum insulation in foundation walls, exterior walls, and roof assemblies
- Energy efficient windows/glazing for increased thermal performance
- Use of increased inspections, including infrared scans during construction to identify missing insulation, gaps in the enclosure, and other wall/roof assembly deficiencies
- Reduction of lighting levels through use of occupancy sensors in residential bathrooms, corridors, and classrooms
- Variable water flow controls in lieu of constant volume controls on resident room fan coil units
- Controls to shut down air flow to conference rooms when rooms unoccupied
- Use of occupancy sensors to reset space temperatures to allow wider temperature swings when rooms are unoccupied (included in 26 major spaces such as classrooms)
- Increase thermostat deadbands (the gap between the heating setpoint and cooling setpoint during which no conditioning is provided)
- Use of controls to optimize fan speeds supplying air to VAV (variable air volume) boxes
- Variable flow exhaust hoods in kitchen
- Exhaust heat recovery (from residential bathroom exhaust)

Other Sustainability Features

- Use of an Erosion and Sedimentation Control Plan during construction to reduce pollution from construction by controlling soil erosion, waterway sedimentation, and airborne dust generation
- North Quad constructed on a previously developed site (former Frieze Building site) in lieu of a greenfield site
- North Quad sited on public and UM bus routes, encouraging use of public transit
- Installation of bike racks to encourage use of bicycles for transportation
- No new parking provided on-site (to reduce pollution and land development impacts)
- Use of water conserving plumbing fixtures, including low-flow shower heads, low-flow urinals, and dual-flush toilets

- The plaza/courtyard is a Green roof that covers a significant portion of the lower level
- Natural daylighting provided to underground spaces via sunken courtyards
- No increase in the amount of impervious surface– no stormwater run-off increase
- Use of select sustainable materials (eg terrazzo flooring, linoleum and cork flooring)
- Use of low-VOC materials (eg carpets, paints)
- Use of regional and local materials where possible (eg limestone, brick)
- Water-efficient landscaping

Project Data

- Budget: $175M
- Schedule: Completion scheduled for Summer 2010
- Square Feet: 360,000 gsf