

Repair and Renovation of the NC State University Memorial Bell Tower

The Memorial Bell Tower, a monument to alumni killed in World War I, is in dire need of repair and renovation. Work is set to begin summer 2008 on the first three problems described here. The fourth problem will be resolved as funding is identified.

- **Problem:** Water is entering into the tower through the small windows and leaky mortar joints causing damage to the tower interior including corrosion at the steel framing components and severe freeze-thaw damage to the marble-line shrine room.
- **Solution:** Reduce the leaks at the roof slab, seal the window openings, and waterproof the second floor slab. Then repair and paint the steel beams and steel plates.



- **Problem:** Years of weathering have discolored the granite stone and deteriorated the exterior mortar joints, especially at the masonry below the 44 foot elevation level where the first phase of construction stopped.
- **Solution:** Repoint exterior mortar and wash tower.

- **Problem:** Marble ceiling and wall panels in the shrine room have been severely damaged by water infiltration.
- **Solution:** Dismantle and store the marble ceiling, wall, and floor panels. Construct a waterproof enclosure to encapsulate the room. Reset the marble. Install a small air handling unit at the second floor slab to provide air circulation within the shrine room.



- **Problem:** Granite cobblestone pavers just outside the tower are subsiding and uneven and the concrete pavement at the courtyard is badly cracked and also has subsided.
- **Solution:** Remove granite cobblestones, recompact the subgrade, install a subgrade drainage mat, and reinstall the cobblestones. Demolish concrete pavement, recompact the subgrade, and cast and install new concrete panels.