Millennium Tower Boston is the new 1.1 million sq ft, 60-story mixed-use tower that rises 685 feet into the Boston skyline in the heart of Downtown Crossing, Boston. The slender tower houses 442 condominiums, including 18 penthouse units. The Millennium Tower Boston will be the tallest residential building in Boston, and also has over 200,000sf of retail space at the base of the tower that opens onto the Downtown Crossing and ascends to the 4th floor.

Millennium Tower marks the resurgence and vitality of this part of Boston with a distinct geometric form and articulated profile to the sky. The crystalline character of the tower is emphasized by facetting the broad faces of the tower, and subtly sifting the geometry of the vertical planes. This shaping, combined with a dramatic shear at the penthouse terrace and the chamfered peak, accentuates the tower’s verticality while refracting the ever-changing colors of the sky. The effect is intended to be a softer and sensuous counterpoint to the stolid masonry downtown skyline.

The 650 foot vertiginous west corner of the tower leads the eye directly to Shopper’s Park, a new urban plaza inspired by the cobbled paved squares of Colonial-era Boston. Overlooking this active pedestrian environment is a five-story podium, a graceful transitional element linking the tower to the street fronts nearby, and framing the residential porte-cochere entrance.

**STRUCTURAL FRAMING SYSTEM**

Since this project was primarily for residential, the owner wanted to maximize sellable floor space and maximize the number of sellable floors. The structural steel with a composite slab and steel framing didn’t provide the right solution, and therefore the use of reinforced concrete flat slab with core shear walls was selected.

**UNIQUE STRUCTURAL AND/OR ARCHITECTURAL DESIGN CHALLENGES**

Both S&F Concrete (concrete contractor) and HarMAC (reinforcing bar fabricator) reviewed the structural details to find ways to make the reinforcement more efficient and maximize the actual fabrication time. Concrete slab reinforcement was changed from #4s to #5s with increased spacing for ease of construction. Also the shear wall reinforcing boundary elements and columns were fabricated in the shop and erected in the field.

**REASONS FOR CHOOSING REINFORCED CONCRETE**

- Use of high-strength concrete to minimize column sizes and provide adequate strength for core shear walls.
- Use of high-strength reinforcing steel (rebar) grade 75 to minimize congestion of reinforcing.
- Use of walking columns to minimize transfer beams to maximize clear floor to ceiling height.
- Incorporation of large transfer beams to change grid column layout between mixed-use spaces and residential areas.