

Millennium Hall

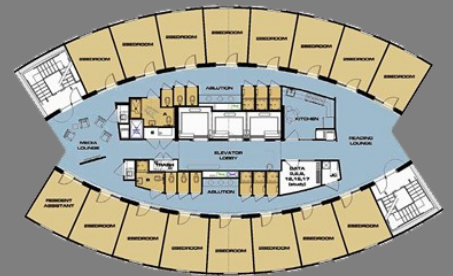
At Drexel University



Architectural

Architect: Erdy McHenry Arch.

The Millennium Hall building sits on a confined site requiring a very small footprint. This constraint forced the building seventeen stories into the air so it could accommodate 241 dorm rooms. Containing all of its utilities and structural elements in a central core, the design of the building allows the rooms to radiate outward and be free of any obstructions to the beautiful surrounding views. The building's spiraling effect comes from offsetting each floor.



General

Location: Philadelphia, PA
Owner: Drexel University
Size: 153,000 SF/17 Stories
Cost: \$42 Million
Occupancy: Residency Hall
Date of Construction:
Aug. 2006 - Aug. 2009
Construction Manager:
InTech Construction
Civil Engineer:
Pennoni Associates

Structural

Structural Engineer: The Harman Group

Two main systems make up the building's structure. The majority of the ground floor is a steel moment frame supporting a slab on metal deck. The design of the tower utilizes a reinforced concrete one way slab system. Two radial lines of columns circle the central core and provide all of the strength for the tower's gravity load. These 22" x 58" columns spaced approximately 10' apart extend the entire seventeen story height. Beams connect each column and provide strength for the supported slabs, which cantilever outward 15' to the exterior of the building. Lateral forces are resisted using ordinary concrete shear walls and moment frames.

MEP

MEP Engineer: AKF Engineers

The MEP system for the building uses a highly efficient design. Geothermal heat pumps provide cooling in the summer and heating in the winter. 89 cooling units are located ranging in size from 15. to 5 tons. Supply fans are variable frequency drive. The main power supply comes through a 3000-amp substation located on the first floor. The majority of the building uses compact fluorescent light fixtures. Metal halide light fixtures provide light on the exterior of the building.

Bryan Darrin

Structural Option

www.engr.psu.edu/ae/thesis/portfolios/2011/btd5007