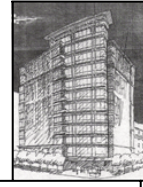


EXECUTIVE TOWER

NW WASHINGTON, DC



SEAN HOWARD
STRUCTURAL

BUILDING SYSTEMS

STRUCTURAL SYSTEMS

FLOOR SYSTEM

The floor system of the Executive Towers is a two-way flat plate concrete slab, a typical systems used in and around the DC area to allow a maximum number of floors to be constructed in a region with specific height restrictions. The typical thickness for this slab is 8" reinforced with #4 at 12" O.C. The slab around the exterior of the building has an additional 3½" thickness acting as wide exterior beams. Drop Panels at interior and exterior column locations of 10'x8'x8" allow of for the thinner slabs across the longer span.

COLUMN

The columns of the Executive Tower consist of all cast in-place-concrete, mostly rectangular spread out variably throughout the floor system as seen in figure 2.1. The flat plate concrete slab allows the column location to be irregular and having a typical bay is virtually non-existent in the Executive Tower. However, the typical column consists of 20"x20" with roughly 6 #10 bars of reinforcement.

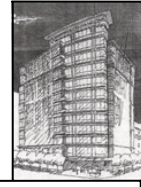
FOUNDATION

A mat foundation is utilized to maximize ground contact and distribution of the buildings loads. An additional 13'x13'x1' spread footings at column locations. The MAT is a 42" thick slab fully reinforced with #10@12" O.C. each way bottom steel and #7@12" O.C. each way top steel. Sheeting and shoring is placed on the north, south and west side of building and underpinning is required only on the east side.

LATERAL RESISTANCE

The lateral resisting system consists of six shear walls forming the enclosure of the elevator shafts in the center of the building. The shear walls are all 12" thick extending the height of the building and is reinforced with #6@8" horizontal steel through the height of the building.

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MECHANICAL SYSTEM

The mechanical rooms are located in the penthouse of the executive tower, which contains cooling towers that feed the 13 VAV water cooled A/C units located at on each floor including one for the fitness center, lobby and penthouse.

The building's entire central air system is monitored by the building's engineer in the penthouse. Through this system he can change cooling and heating temperatures, flow rates and change exchange ratios.



FIRE PROTECTION

Executive Towers uses 2 hour rating in most area such load bearing walls and columns. For non load bearing separations a one hour rating is used. Throughout the tenant spaces, lobby, and fitness room a wet sprinkler system is used with a standpipe in the main stairwell located in the center of the building.

PLUMBING

A Duplex booster pump with hydrocumulator tank located in the P1 parking level pumps the domestic water throughout the entire building and to two electric water heaters located in the penthouse mechanical room.

TRANSPORTATION

Executive Tower consists of a four elevator core in the center of the building which can be used to access the three below grade parking levels and to the 11th floor. The elevator 1 located in the top left corner of the core is used to access the penthouse and main roof. There is a single stairwell adjacent to the elevator core.