

BANKING ON STEEL



Photo by Joe Romeo.

Thinking outside of the regional box when designing the new headquarters for Chevy Chase Bank in Bethesda, MD, BBGM/Architects & Interiors proposed using long-span steel construction for the project. The 750,000 sq.ft. twin-tower office building is home to one of the largest privately owned banks in the Mid-Atlantic and also incorporates 250,000 sq.ft. of office space leased to non-Chevy Chase tenants.

Bethesda, less than two miles from the Washington, DC border, has evolved into a bustling commercial community in its own right. The Chevy Chase Bank site, located at the corner of East-West Highway and Wisconsin Avenue, represents the last large development parcel in the downtown area.

The client, Chevy Chase Bank, identified several goals for the new building: create the best and highest use for

the property; accentuate the prominent location through appropriate massing and placement of the building, while respecting its immediate context; develop a project of quality, surpassing all other buildings in Bethesda; create an efficient yet flexible floor plate to create strong and immediate interest within the leasing community.

Inspired by classic urban skyscrapers, BBGM designed a 15-story, twin-tower building clad in granite, limestone and precast concrete. To create the most flexible and desirable floor plates, a variety of construction options were explored. Traditional concrete construction is the method of choice in the greater-DC area. It traditionally allows for more floors within the limited building heights permitted in the region, but also requires 20'x20' column grids. While this method was considered, along with long-span post tension concrete, long-span steel

Domenic Giordano, A.I.A.

Long-span steel bucks the regional trend and meets the challenges of limited floor-to-floor heights with fewer interior columns in the new headquarters for Chevy Chase Bank in Bethesda, MD.



Construction is nearly topped out on the east tower of the Chevy Chase Bank building, as final precast elements are put into place over the steel.

Photo by Joe Romeo.

construction was determined to offer the greatest flexibility, efficiency and value for the project, while introducing a unique product to the market.

The long-span steel method allowed for the same floor-to-floor heights as traditional framing without the interruption of interior columns. HVAC ducts are run directly through openings in the steel beams, which also allowed for maximum ceiling heights. The long-span steel allowed for nearly column-free floors, assuring the most flexibility of office layout, with all core functions grouped at the center of the towers.

Original in its market, the steel structure measures 48'-9" column to column. While steel construction is often perceived as a premium in the DC area, its faster erection time renders the cost difference negligible. In the Chevy Chase project, the choice to use steel reduced the number of columns on a typical floor by 12 and had a cost impact of approximately \$2 per sq.ft. However, the true impact was closer to \$1 per sq.ft., accounting for the shortened construction time, which correlates to reduced interest on

construction loans. Also, the larger spans provided more flexible space.

While the selection of long-span steel provided many opportunities, it came with its own set of challenges. The construction of each floor became thicker, using 22" to 24" deep beams with a 5" floor slab could have an obvious effect on the ceiling heights, as ducts, sprinklers and other mechanical systems had to be incorporated. This problem was resolved, and the desired 9' ceiling heights were maintained by using heavier steel with gusset plates reinforcing around hotels to accommodate all necessary ductwork and reducing the floor-ceiling sandwich to be comparable with traditional concrete construction.

On typical tower floors, only four interior columns were necessary. BBGM designed these columns to be absorbed into the pantry, copy rooms and other service areas, with no other columns present to interrupt the floor plate.

By not limiting ourselves to regional preferences, BBGM was able to design a building that satisfied our client's immediate and long-term goals, without

sacrificing the key issues of budget and time.

Domenic Giordano, A.I.A., is a partner with Brennan Beer Gorman Monk /Architects & Interiors in Washington, D.C.

STRUCTURAL ENGINEER

Tadger Cohen Edelson,
Silver Spring, MD

STEEL FABRICATOR, ERECTOR, DETAILER

Lynchburg Steel & Specialty Company, Monroe, VA
(AISC & SEAA members)

CONTRACTOR

Clark Construction, Bethesda, MD

SOFTWARE

AutoCad, RAM Structural System