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## What variables can affect office space planning when designing and building office buildings?

March 03, 2011 - Connecticut

After having designed a lot of corporate office spaces in numerous size buildings over a period of 31 years, I have many pointers to offer real estate developers who are planning to construct any new office buildings, but there is only room here for seven in this article.

The first bit of advice involves selecting an architect for such a project. It is important to ensure that the firm chosen has done a sizable amount of office space planning work because there are many variables that can affect the amount of space that a prospective tenant will require such as:

1. Window mullion spacing: Most office buildings usually come with a 5'-0" o.c. mullion spacing but every now and then I come across a project where I have to plan space in a building where the mullion spacing is as little as 4'-0" o.c. or as large as 6'-0" o.c. The problem with this is that in this day and age, with companies now having fewer tiers in their management structures, most company staff will either be assigned an open office work station of some size (either 6'x6', 6'x8' or 8'x8' in size) or a private office (roughly 10' w. x 12'-15' d.). When one has to plan office space in a building with a larger mullion spacing such as 6'-0" o.c., the company has to provide 20% more window perimeter for each (10' w.) office thus getting fewer people on the outside window wall.
2. Column size & spacing: Office buildings come framed in one of two ways: either steel frame and steel columns (which are relatively small - generally 1 to 2.5 s/f in area) or concrete frame and concrete columns. Poured concrete buildings are great for fireproofing and soundproofing. They also provide for superb impact sound resistance characteristics, but in concrete buildings that will have a minimum floor plate size of 25,000 - 30,000 s/f, these columns will generally be in the 12-15 s/f size, thus effectively blowing out a full work station.
3. Column spacing: It is fair to assume that a building with a larger column spacing makes it easier to plan reliant office space. An example of this is the former World Trade Center Towers. While their floor plate size was exactly 40,000 s/f (quite large for an office building in NYC), the entire floor plate was column free, from the central core to the outer wall.
4. Building shape: Quite simply, if a tenant wants to get a maximum number of employees in the least amount of space, then a building planned on an orthogonal grid is the most efficient one.
5. Floor plate size and shape: It is generally more appealing for a tenant to be in a space that has greater window perimeter and shallow floor depth to get more of their employees to enjoy daylight and view. For example, if a tenant is looking to rent only 10,000 s/f, he will generally end up in a better space if he moved into a building having a floor plate size of 20,000 s/f than into a building having a floor plate size of 40,000 s/f.
6. Core factor: What a tenant can actually only use is the net area of his space. So if he needs 10,000 net s/f, he will pay less rent overall, if he can get that amount of space in a building only having a 15% core factor vs. one having a 25% core factor.

7. Another issue that impacts the utility of a given floor plate is the location of the building core (where are the elevators, stairwells and bathrooms located). If it is eccentric (off center) or if the fire stairs aren't placed far enough apart, it will have a serious impact on the size of the tenant that can fit on a given floor, meaning only larger sized tenants can legally fit because of the issue of providing two means of egress.

Finally, following is an example of a project that summarizes how all of these issues can impact a real estate landlord's ease of landing a deal.

Several years ago I had a client that was growing quite rapidly out of its offices that were roughly 30,000 s/f in size and their programming requirements were such that they wanted to move to a new space that would be around 60,000 rentable s/f. I did a test fit plan in one building that had a rentable area of 32,000 s/f per floor and this company needed every bit of the full two floors to fit into this building. The building had a trapezoidal (hexagonal) shape with large concrete columns that were also oddly shaped both in the interior and at the exterior walls. The real estate broker found another nearby suitable building with a very conventional orthogonal grid (but with recessed corners), a very efficient core, and 5'-0" window mullion spacing. The recessed corners allowed for 8 (not just 4) corner offices per floor. The rentable area per floor was 27,000 s/f and my test fit plan in this building area easily fit into two floors, which came out to a total of 54,000 s/f. The client, however, wanted to be in the building requiring 11,000 more rentable s/f due to its location and amenities but couldn't justify the \$2 million greater rent over the 10 year rental period to his board of directors. When this information was conveyed to the building owner with the more expensive deal, he quickly agreed to a deal that narrowed the rental gap by \$1 million (in one hour). This allowed the company's president to more easily recommend the more expensive deal to his board. Not a bad return for spending 10 hours doing an alternate test fit plan.

Harvey Weber, AIA is principal at Weber & Associates, Stamford, Conn.