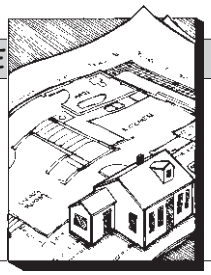
Spec Office Buildings



by Gordon Tully

Last month I noted that the only way to have predictable costs and schedules is to do the same thing over and over—and nowhere is this more true than in spec office buildings. Yes, there are corporate headquarters and law offices that demand custom design and construction, but the vast majority of office projects are routine, built on a low budget in the shortest possible time. This is not an arena for perfectionists.

Multi-Tenant Structures

One important decision a developer has to make in a spec office building is whether the building will house one tenant or many, and if many, how many and of what size? This is a crucial point, since each tenant should have a separate HVAC system, two means of egress and access to an entry, and toilet facilities.

Implicit in the multi-tenant building is that tenants will come and go over time, as opposed to a corporate headquarters custom designed for one company. This leads to an important characteristic of nearly every suburban spec office building: the outside and inside are completely separate projects.

The outside or "shell" consists of the foundations, structure, roof, enclosing walls (usually finished on the inside), basic HVAC, electrical service, plumbing core, lobby, sitework and parking. The inside or "tenant improvements" consist of the ceiling, flooring, lighting and power, HVAC distribution and controls, partitions and doors, and any special construction required by the tenant, such as a computer room. Caught in the middle and therefore of special interest, is the sprinkler system.

Each tenant should have a separate HVAC system, two means of egress, and access to toilet facilities.

If a tenant is identified before the building sprinklers have to go in, they can be designed to suit the tenant's space layout. Otherwise, a layout has to be assumed, since most building departments will not allow a section of a building to remain unoccupied for a long period without sprinklers.

The Ceiling Sandwich

The split between shell and tenant work results in a logical but curious ceiling construction. Think for a moment: the shell is clearly outside, the tenant work inside. But in the ceiling, the two types of work overlap.

The solution to this spatial problem is to "layer" the ceiling. At the top is the floor slab. Then comes the steel deck and the steel structure supporting the deck, usually from 14 to 30 inches thick.

Under and between the beams run the HVAC mains. These are designed in conjunction with the structure, so that the biggest ducts do not correspond to the deepest beams. If for some reason (as usually happens) a big duct runs under a big beam, there is no way to avoid a section of lowered ceiling.

All this work so far is part of the shell. Below this run two more layers, the upper for the sprinkler piping, the lower for the light fixtures (and almost incidentally—the ceiling).

The HVAC distribution ductwork is more flexible than either sprinklers or lights, and runs around among them to the distribution boxes. Big distribution boxes are often hard to locate.

These lower layers are designed around the tenant office layout. Those partitions that must run to the ceiling simply run up until they hit something, often an HVAC main. When this happens, be sure they are fastened and braced to the structure and not to the ducts, or duct noise will be transmitted into the partition. This is easier said than done.

Return air usually runs within the suspended ceiling, picked up by central ductwork, rather than being ducted from individual spaces. Exhaust ducts and fans serve conference rooms and special areas (cafeterias, print rooms).

Electrical work runs in conduit out to partitions or other drops, perhaps through "power poles" (a ghastly but practical invention) or up to the floor above through holes "punched through" the slab. Note that power feeds to open areas on the lowest floor must be worked out before the slab is poured to avoid power poles—another area where careful coordination is required.

Telephone lines run like electric lines. In a ceiling which is also used as an HVAC return plenum, these lines must be teflon coated. Telephone lines need their own conduits within the first floor slab. In downtown high-rises, all these lines can run through underfloor raceways, but these are too expensive and inflexible for low-rise office space.

The Omnipotent Lease

I am only half joking to say that tenant-improvement work is designed by the lawyers who draft the lease. Owners usually provide a tenant-improvement package as part of the lease deal, and offer to "fit up" or "build out" the tenant's space using the Owner's GC (usually the same GC who put up the shell). Tenants will often hire the owner's architect, which accounts for the low architectural fees charged for shell work—architects make their profits on tenant-improvement work picked up along the way.

The lease defines the level of finish and quality of services included in the tenant work. If the tenant wants something better than the bare minimum partitions, carpet, lighting, ceiling, etc., included in most lease packages, he gets back a fixed allowance for the omitted work and negotiates a price for the higher priced stuff during lease negotiations.

The tenant wants to fix his entire cost of ownership before signing on the dotted line. Also, the owner is much more likely to upgrade the tenant improvements than to lower the rent, since the tenant allowance is only a one-time cost. On the other hand, it is easy for the tenant to give up special carpeting or lighting as a compromise to lower his costs.

For the builder, the lease has a great deal to do with scheduling. One element of the lease is the date at which the work can be turned over to the tenant. Assuming the shell is finished or nearly so, the faster tenant-improvement work can be completed, the quicker the owner can see a return.

Delay in occupancy costs the owner money, and the owner uses this cost as a bargaining chip in the lease negotiations. Therefore, even if the tenant has his own designer or GC, the schedule is determined by the owner and cast in stone as a penalty clause.

A further complication is that the tenant carries on with his improvements after the basic work is done. Usually he will install half-high partitions, which are set up just like furniture and belong to the tenant (the rest of the fit-up belongs to the owner, because it is fastened down). This work cannot be started until the basic tenant work is nearly done.

This work is usually done by contractors working directly for the tenant. If the building construction work is union, it is crucial that the tenant's separate contractors be able to work on a union job. A typical suburban compromise might be for a union electrician to wire up half-high partitions installed by a non-union contractor, but this is unlikely to work downtown.

Changing the Shell to Suit the Tenant

What happens when a tenant takes over a whole building and wants to tailor it to his use? If the changes can be identified before the work is done, and if they do not make it impossible or impractical to convert the building back into a multi-tenant facility, most owners will go along (the tenant pays, of course).

Typical examples are framing up for but omitting loading docks and secondary entrances, adding remote kitchens or drinking fountains, increasing the amount of electrical service or adding special breakers, moving ductwork mains, upgrading the HVAC system, improving the site amenities, adding structural stiffeners for heavy point loads, etc.

If the tenant signs up early enough, basic changes are possible, such as higher ceilings, heavier structure, a change in the HVAC system (from distributed to central perhaps, or to a heat-pump loop)—all for a price. However, most owners will not convert a multi-tenant building irreversibly into a single-tenant one, and in fact most single tenants can get along tine in a multi-tenant building.

How Should the GC Behave?

Residential builders moving into the office building field must make some big changes in how they do business. From my perspective as an architect, the following differences seem obvious.

1. Maintain iron-fisted control over your costs and schedule. No one will get on the GC's case if a partition is several inches out of line, but everyone will be on his case if he loses a day. Hold regular job meetings, with good notes showing clearly who is to do what when. Hire a top-notch superintendent to keep the work going, and a top-notch project manager to keep track of decisions and coordinate with architect, owner, and tenant.

2. Buy competitively, flexibly, and fairly. Keep looking for the best price until you have to sign up. Be ready to change vendors in case of delay. Maintain good working relationships with vendors of key products with long lead times, such as HVAC terminal boxes, door frames, and lighting fixtures. Be assertive, but be honest. You may outsmart a vendor once and get a good price; he will he waiting for you next time you need him.

3. Develop a stable of reliable subs who know the ropes. If you are starting out, the subs can provide a lot of the experience you are missing; or they can drag you into a disaster.

4. Learn the critical items on the schedule. This not only means learning the delivery and installation time for each item, but the time it takes a designer to get the drawings out and the time it takes to get approvals.

On both these counts, sprinklers are often a crucial element, because they have to be designed and then approved before they can be fabricated. Once fabricated, they are very difficult to change. Therefore, the office layout must be hardened up before sprinklers are designed. And sprinklers have to go in before the ceiling and lighting.

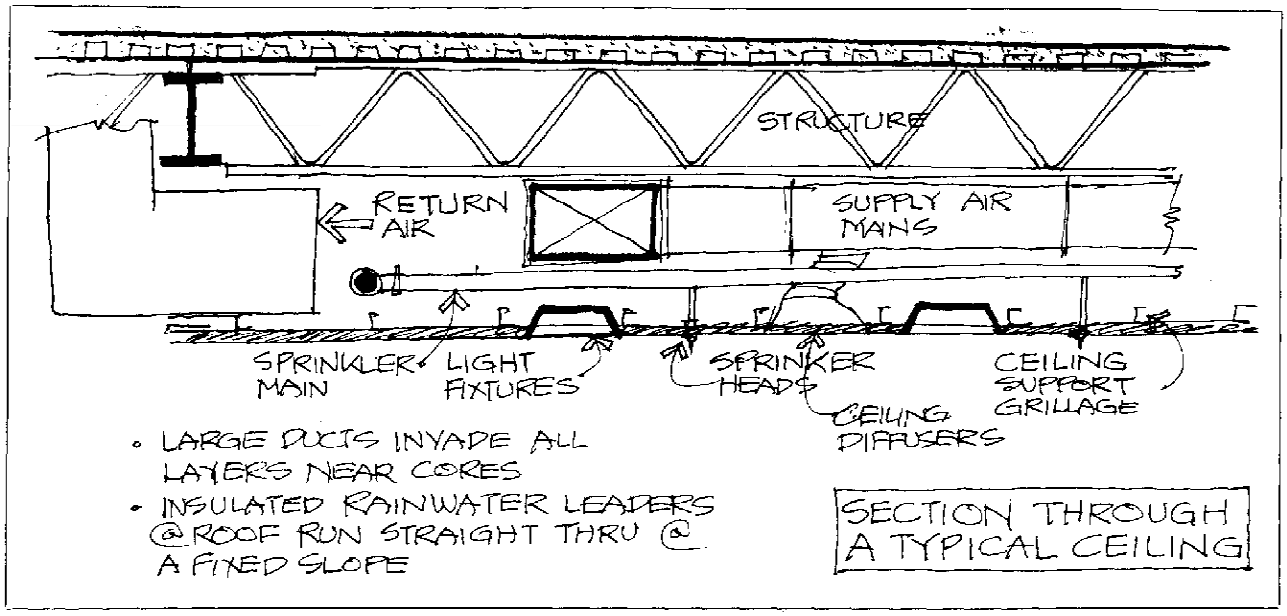
5. Develop a style to deal with errors. One approach is to hire ordinary talent, and go back over mistakes—add band-aids and paint over the boo-boo. Another approach is to hire good people to do it right and fast the first time. In neither case can you afford to be obsessive.

I have worked happily with both sorts of contractor, but obviously admire the latter approach. And I think in the long run it is the best way. Thoughtful management which tries to predict errors is more likely to keep you out of unexpected, major disasters. However, finding a really good, thoughtful superintendent is not easy, and the band-aid approach may be the only practical one for most GC's.

How Can Spec Office Buildings be Improved?

Even assuming the low standards prevailing in the industry, there are many small ways of upgrading an otherwise routine building. I am told that in a tight market, the well-built and attractive buildings rent while the dogs go begging. Here are a few ways to build a better mousetrap:

- Higher ceilings
- More power
- Better, centralized HVAC system (variable-air volume)
- Rolled floor sections rather than bar-joists (much stiffer floor, no need for visible cross-bracing)
- Better brick on the skin
- Better parking layout: smaller areas, trees, no parking against the building
- Handsome lobby without a ludicrously oversized atrium—just a nice skylight
- Better siting—make the building fit the landscape rather than vice-versa
- Better planting, landscape features, parking lighting, etc.
- Gas or oil-fired heating—after the



next energy crisis, you won't want an all-electric building

Avoid silly stylistic frills, such as the Post-Modernist arches and pediments one sees plastered on otherwise blah buildings. These things date your building and reduce its future value. Meat and potatoes, please. ■

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