HOW DOES FLEX TECH HELP THE SCIENCE SECTOR ADAPT TO INDUSTRY DEMANDS?

Good infrastructure is critical for a research and development facility

By Tim Schulze and Kevin Perry

When it comes to planning and support of our front front-line workers, the US has become complacent. In the past decade, we have concentrated on refining and squeezing efficiencies from what had become the norm, which has actually narrowed the range of options to consider as a result. Planning in this way has left us ill-prepared for a crisis (compared to the mobilized community response during the 2005 SARS outbreak). Meanwhile, natural disasters, violence in the community, and the ongoing frustrating fight against proliferating virus variants threaten to increase the number of reasons for caregiver stress.

For example, in San Diego aerospace and defense has been and continues to be a desirable tenant occupying spaces around the metro area. However, in recent years, the growth in the life science market has revealed how useful and adaptive a flex tech space can be: a flex tech floorspace previously held by aerospace is easily adapted and fitted to the needs of life science tenants who have very different equipment, air movement, and technology needs within their laboratories and offices.

When we approach what a flex tech building is or has that makes it so desirable, what we're talking about is infrastructure—the elements that are hard to install or replace after-the-fact:

- High floor-to-floor heights (15 ft. to 16 ft. minimum) and high door heights for equipment access
- Heavier floor loading—125lbs/sf min
- Adequate power availability (50 watts/sq. ft.)
- A large floorplate and optimized (preferably steel) framing.

These elements build in flexibility to make the spaces adaptive and useful for life sciences tenants with unique technology needs. There are also considerations for support areas such as creating areas for truck loading and delivery with an adjacent service elevator, separate bulk storage areas, and extra space on the site for an equipment yard, hazmat shed, amenities, or loading and unloading. You can ensure you'll have that space by making sure the roof loading is sufficient to hold your HVAC and other equipment, otherwise you're sacrificing parking or those onsite needs. You need balance in your site usage to ensure you have room for support and amenities both, and a flex tech building is going to have those options in place.

Life science clients expect to occupy intelligently design buildings that will have an easy flow and be easily reconfigurable—flex tech is the design response to that need.

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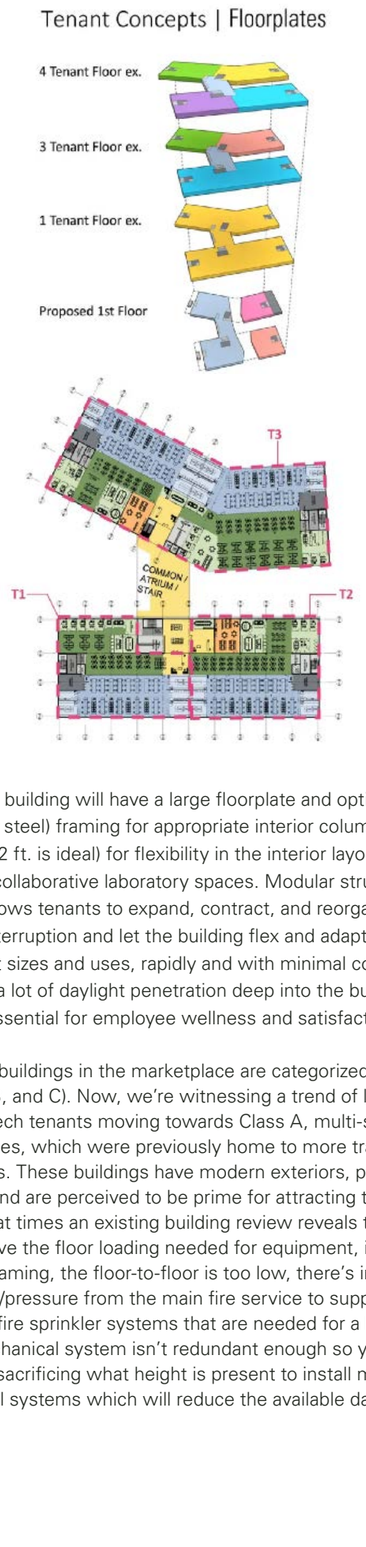

A flex tech building will have a large floorplate and optimized (preferably steel) framing for appropriate interior column spacing (33 ft. to 42 ft. is ideal) for flexibility in the interior layout and open and collaborative laboratory spaces. Modular structural bay spacing allows tenants to expand, contract, and reorganize with minimal interruption and let the building flex and adapt to tenants of different sizes and uses, rapidly and with minimal cost. It also allows for a lot of daylight penetration deep into the building, which is essential for employee wellness and satisfaction.

Generally, buildings in the marketplace are categorized by class (Class A, B, and C). Now, we're witnessing a trend of life science and high-tech tenants moving towards Class A, multi-story office spaces, which were previously home to more traditional workplaces. These buildings have modern exteriors, premiere locations and are perceived to be prime for attracting talent. However, at times an existing building review reveals the building doesn't have the floor loading needed for equipment, it lacks the floor framing, the floor-to-floor is too low, there's insufficient water flow/pressure from the main fire service to support the enhanced fire sprinkler systems that are needed for a laboratory, or the mechanical system isn't redundant enough so you're looking at sacrificing what height is present to install more robust mechanical systems which will reduce the available daylight.

It's problematic because without a costly overhaul the structure is going to generate vibration issues for tenants with sensitive equipment, not allow access to enough natural light, or not allow for fast growth in staffing. In Southern California the demand is there to modify these structures regardless, but it's costly and in many cases time consuming, which slows bringing the building to market. This effort proves more costly than applying these principles at the outset or renovating a building that had these best practices in place from the start. A Class A office is not a Class A technical workplace—but it can be if it has these flex tech elements.

For companies in life sciences, the needs of their workspace will vary over time. Getting into a building that has flex tech principles is going to allow for more flexibility in their operations and in their growth plan.

A building that has a flex tech framework is going to allow for equipment movement, growth, and contraction, teams to reorganize organically around their needs rather than around what the space allows, and easily support the daily activity and long-term operational needs of the tenant without them having to worry about moving or "how are we going to reconfigure this space if we have to grow?" Because the floor framing has modularity built into it, growth and contraction is not only easy but extremely fast, which means greater speed-to-market.

In the case where a building is user-driven or purpose-built for the tenant by the tenant, the same principles still apply. The work being done in these sectors is laboratory driven. As 50 to 60 percent of the square footage of these facilities are laboratories, the adaptability becomes key. This is a workforce coming into the workplace daily—as there is no lab-from-home solution, so this workforce will continue in its need for physical space. You also must consider that when a high-tech or life science organization is planning a purpose-built facility, they're planning for the long haul. They don't know yet what technology or equipment they're going to need in 15 years, or how much of it. But as design professionals we do know their frames can't vibrate, their floors must support the weight, they must be able to potentially open a wall to install large equipment, and their mechanical system needs to be robust enough to adapt to changes in code.

Having a building with infrastructure that leaves possibilities open is essential, otherwise it's costly work 10 years from now. Boiled down, flex tech is an argument for "good bones," and defines what those bones should look like for a research and development facility.

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