

SPOTLIGHT ON LIFE SCIENCES & PHARMACEUTICAL BUILDING



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Following the Science

Genomic breakthroughs are reshaping pharma facilities

By Dan Naumovich

Mark Goodman & Associates, a Chicago-based real estate firm, is building a 16-story life sciences building featuring 492,000 sq ft of leading-edge office and lab space in the city's Fulton Market district.

WHAT'S INSIDE

- ◆ Radical Schedule Reduction on Life Sciences Projects
- ◆ Healthy Environments through Smart Air Purification
- ◆ Building Optimal Environments to Advance Innovation
- ◆ Standard Building Design Platform Provides Lean Approach

Drug Customization Leads to Smaller, More Flexible Research Facilities



Rendering of Merck's FLEx Center in New Jersey

Traditionally, the pharmaceutical industry's dominant model for research and development has emphasized discovering (and marketing) the next blockbuster drug. These are the mass-produced and prescribed drugs, such as Lipitor or Humira, that bring in sales of over \$1 billion annually. More recently, advancements in technology and scientific discovery have sent the industry down a different path that is impacting not only how new drugs are developed, but also where.

"At the beginning of 2000, the Human Genome Project was completed, which basically allowed the development of medications that are personalized for each person's unique genetic composition," says Nancy Kelley, president and CEO of Nancy J Kelley + Associates. "In response, they needed to find a new model, so they identified areas of the country where new drug discovery was taking place and began locating to smaller, more flexible facilities nearby."

This has led to a migration from large facilities in suburban industrial parks, to urban centers in places such as Boston, New York and San Francisco where academic institutions have been leading the way in genomic drug development. The genetic customization of drugs has not only impacted location, but how these facilities are designed.

"In terms of the new and emerging cell and gene therapies, you need smaller production suites that are close to the clinics so that you can harvest

the patient's cells, treat them and put them back in the patient's body," Kelley says.

Robert Thomsen is executive vice president with Lendlease, a leading global real estate group that Nancy J. Kelley + Associates partners with on projects for science and medical clients.

"Flexibility and agility are words that are permeating the industry, not only with the startups and incubators, but in the world of Big Pharma as well," Thomsen says. "Some of our larger projects are buildings that are more convertible with more clean room spaces. The equipment being used is more adaptable to different modalities and production cycles."

Another development impacting the industry is the desire to bring production back to the United States. Before the pandemic, pharmaceutical companies utilized overseas facilities to batch manufacture their vaccines. Kelley believes that domestic end-to-end solutions will not only be more environmentally friendly, but they will also help ensure that global disruptions do not prevent Americans from getting their medicines.

While the way in which facilities are being designed is being transformed, there remains a constant when it comes to construction.

"Because they're in the business of health and safety, the pharmaceutical industry has always taken the lead in protecting workers in ways that have spread to the entire construction industry," Thomsen says. ♦

Radical Schedule Reduction without Sacrificing Safety

Speed to market is always a critical design driver in the Life Sciences industry. This was especially true as the science community focused on developing and manufacturing a COVID-19 vaccine.

"Pharmaceutical leaders are looking for innovative delivery solutions that will accelerate the design and construction process to achieve the radical schedule reductions required to get lifesaving products to market," says Mark Butler, president and managing director-Americas for IPS-Integrated Project Services.

Key considerations to radically reduce design and construction schedules include the following:

- Understand why—decision-making drivers
- Integrated delivery versus traditional design-bid-build
- Utilize EPCM savvy
- Incorporate pre-engineered components
- Increasing the modularity of labs
- Improved quality control and cleaner, safer job sites
- Strategies to accommodate change

"It has become vitally important to reduce the time it takes to bring potential vaccines to market. These strategies can accelerate the design and construction process for research and manufacturing facilities and more quickly get lifesaving drugs to the patients who need them," Butler says. ♦



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