## **TD Asset Management**

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# **TD Greystone Global Real Estate House View** U.S. Life Science/Lab Office Real Estate

## Introduction

The U.S. Life Sciences industry has experienced significant growth over the last decade and continues to achieve record high job growth and record levels of fundraising for research and development. These factors tend to drive demand for real estate space and, in turn, rental growth. In addition, real estate life sciences is a very specialized sector, leading to high barriers to entry and limited new supply. The COVID-19 pandemic has demonstrated the critical role of the life sciences industry and the vital role that U.S. biotechnology and pharmaceutical firms play in addressing current and future global healthcare dynamics. Funding from the National Institute of Health (NIH) increased 37.4% between 2015 and 2020 while healthcare venture capital funding hit a record ~\$32 billion in Q3 2021.<sup>1</sup> Biotechnology represents the fastest growing sector in terms of funding.



#### Figure 1: U.S. Life Sciences Venture Capital Funding

Source: CB Insights, CBRE Limited. Annual sum ending Q3 2021.

The global pandemic has proven the need for rapid drug discovery and medical therapy production, with Pfizer and Moderna using mRNA technology to develop an effective COVID-19 vaccine in a record 11 months, which is 80% faster than a typical production period of 55 months.<sup>2</sup> In fact, a decade ago Moderna was part of an incubator and in 2018, became the largest biotech IPO in history. Such rapid drug discovery is made possible using advanced technologies to efficiently analyze genome data, streamline clinical trials and ultimately result in an increasing number of drug approvals. This backdrop of increased R&D funding, technological advancements and increased demand for rapid drug development should continue to support strong lab office real estate demand over the next several years.

## Life Science Industry Expansion Is Here to Stay

The life science industry has attracted significant capital investments driven by strong economic, demographic, and technological advancement. Life sciences real estate will play an essential role in optimizing innovation by accelerating development and production of treatments and therapies, and positioning biotech and pharmaceutical companies for growth.

## **Rising Healthcare Costs**

U.S. national health spending is projected to grow 1.1% faster than U.S. GDP over the next decade, rising to 19.7% of GDP by 2028, which is up from 16.8% in 2019.<sup>3</sup> The U.S. spends more per capita on healthcare than other Organization for Economic Cooperation and Development (OECD)<sup>4</sup> countries, a spending premium that has widened over the last 30 years. Health spending per person in the U.S. was ~\$11,000 in 2019, 42% higher than Switzerland, which is the country with the next highest per capita health spending.

- <sup>2</sup> RBC Imagine: Life Science Real Estate April 30, 2021.
- <sup>3</sup> OECD Health Statistics. As at Dec 31, 2019.
- <sup>4</sup> OECD Organisation for Economic Co-operation and Development with 38 member countries.





Source: OECD Health Statistics. As at Dec 31, 2020.

Such high relative health spending in the U.S. is largely due to greater use of medical technology and higher drug and health service prices. The life science industry is critical to the reduction of healthcare costs through improved efficiencies in R&D and the use of technology in the development of low-cost drugs and therapies.

## **Ageing Population & Health Care Spending**

As the U.S. population continues to age, this demographic shift has led to an increase in chronic illnesses and its resulting implications on the healthcare sector. An ageing population implies strong long-term demand for the development of therapeutics and treatments for known diseases. The senior population of the U.S. currently accounts for 17% of the entire U.S. population and is expected to grow to 21% by 2030.<sup>5</sup>



#### Figure 3: Share of Health Care Spending by Age Group

Source: Health System Tracker, 2019.

<sup>5</sup> U.S. Census Bureau.



In 2016, the 55+ population made up 29% of the population but accounted for 56% of all health care spending. For seniors, personal health care spending is over 5 times more on average than the under 19 population and almost 3 times more than adults aged 19 to 64. As the senior population increases along with increasing average life expectancy, there should be a resulting increase in personal healthcare spending, which is expected to create significant demand for pharmaceutical-related products.

#### **Technological Advancements**

Technological advancements provide scientists with the tools needed to accelerate drug development through more efficient data analytics and data mining, as well as the use of smart technology to streamline the clinical trial process. As more diseases are discovered, the healthcare sector will require innovation in drug discovery and increased drug production, as well as improvements in healthcare services, including surgical procedures, medical devices and testing. According to Alexandria Real Estate (ARE), there are ~10,000 known diseases in the world, but only 500 are currently treatable.

## **Capital Markets**

Biotech and pharmaceutical firms receive funding from both public and private institutions to support research and development activities. Funding and Research and Development (R&D) spending have grown significantly over the last two decades, with venture capital establishing itself as a large source of funds in more recent years. In addition, Big Pharma firms are increasingly looking to invest in biotech firms to leverage the cutting-edge research done at biotech start-ups and diversify their research portfolios. As the drug development pipeline ramps up at biotech firms, so will the demand for employees and lab office space, as drugs move to the clinical trial stage.



#### Figure 4: U.S. Food and Drug (FDA) Approvals

Over the past several years, FDA novel drug approvals have been on the rise, exceeding their 10-year average over the last 4 years. With increased FDA transparency and collaboration, life science companies will likely see improvements in drug production and profitability, thereby amplifying real estate demand.

Source: FDA, Q2 2021.

## **U.S. Life Science Real Estate Market**

## **Characteristics of Lab Office**

A typical lab building would consist of 60% dedicated lab space with the remaining 40% being traditional office space. Lab offices are highly specialized buildings with similarities to traditional office buildings but with distinct structural differences, development costs and tenant base.

Structurally, life science buildings require higher floor-to-floor clear ceiling heights (13-16 feet) to accommodate stronger HVAC systems and quick ventilation, higher floor load capacity to hold special equipment, larger floor plates, loading bays and freight elevators for materials handling. Additionally, life science buildings tend to be "low and wide" as certain hazardous materials can only be stored on lower levels for safety.

Life science buildings typically cost ~10-20%<sup>6</sup> more than traditional office buildings to develop, given the specialized nature of the asset. However, ongoing leasing costs tend to be lower for lab space, with higher retention rates and reusability of space. Due to the very specific physical space requirements and locations near clusters, lab office tenants are more likely to renew leases and stay in the same space for a longer duration. Top credit tenants in the lab office space are typically large cap pharmaceutical companies, large biotechnology firms, well-funded research institutions, and medical device companies.

#### **Clusters**

Lab office tenants prefer to be in top-tier cluster markets. These cluster markets are collaborative ecosystems consisting of a concentration of life sciences, biotechnology and tech companies, venture capitalists to seed start-ups, top universities for the talent pool, research institutions and large teaching hospitals for clinical trials. Clusters vary in characteristics and maturity; however, clusters all have two factors in common: a highly educated workforce and a thriving research community.

Premier life science cluster markets include Boston/ Cambridge, San Francisco, Seattle, Charlotte/Raleigh in North Carolina, and San Diego. Venture capital drives life science real estate demand as it ensures long-term activity in an industry that requires material research and development spending. In fact, in 2021, San Diego, the San Francisco Bay Area and Boston-Cambridge Area accounted for 70% of 2021's venture capital funding.<sup>7</sup> In addition to these premier clusters, other emerging clusters include Seattle, Raleigh/ Durham, New York and Washington D.C.



#### **Figure 5: Premier Life Sciences Cluster Market Vacancy Rates**

<sup>6</sup> Green Street, Q1 2021.

<sup>7</sup> CBRE Life Sciences Trends 2021. As at Sep 30, 2021.

The demand for Class A lab space continues to meet/exceed supply, while vacancy rates are at record lows and rent growth has outperformed traditional office rent growth. The lack of space availability in these markets has prompted developers to proceed on projects on a speculative basis in the Boston, San Francisco and San Diego markets. Occupancy data in these markets indicate that these speculative projects have delivered to market and are nearly fully leased in markets like Boston/Cambridge.



#### Figure 6: NOI Growth - Life Science vs. Office

Source: Green Street, Dec 2021.

In addition to speculative development, redevelopers are increasingly taking traditional offices offline for conversion. Conversions are difficult to properly execute due to the highly specialised nature of lab office assets and would need to be carried out by highly technical developers.

#### Performance

The life science real estate sector has outperformed the office sector in the private market since 2015 due to stronger NOI growth and cap rate compression. Although prior to the pandemic, life science assets had traded at higher cap rates than traditional office assets, life science assets now generally trade at an approximate 60 bps<sup>8</sup> spread below office assets, due to the lower cap-ex and higher long-term NOI growth expected from the sector. Over a 10-year annualized period, NOI growth for life science assets outperformed traditional office assets by 340 bps.

#### Life Science Real Estate Investment Drivers

The life science real estate sector presents an attractive investment opportunity given the growing investable market, high occupancy, relatively stable cashflows and the counter-cyclical health care industry. Investment drivers include:

**High barriers to entry:** The life sciences sector is highly concentrated given the specialized nature of the industry's requirements as they relate to geographic location, building specifications, and the need for a highly specialized talent pool. Accordingly, new entrants in this niche real estate market are faced with a variety of challenges that limit their scalability (e.g. development costs, specialized building layout/ structure, tenant preference to deal with limited established partners, competitive deal market, etc.). As such, successful entry into this niche real estate market should be prudently achieved through strategic partnerships with like-minded investors.

<sup>&</sup>lt;sup>8</sup> Green Street Life Science Insights, July 15, 2021.

**Supply and demand imbalance:** Life science real estate has a strong demand backdrop which is accompanied by a limited supply of Class A product, as well as barriers to increasing that supply. For instance, life science tenants typically require 2 to 3 times the square footage per employee compared to traditional office tenants. While supply in top cluster markets is growing with increasing investor interest, demand is also growing.



#### Figure 7: Lab Office Supply & Demand

Speculative Space Under ConstructionTenant Requirements Seeking Space

**Non-cyclical industry:** Given the non-cyclical nature of the pharmaceutical industry and the life science real estate market's material exposure to the industry, the lab office sector has experienced consistent performance throughout economic cycles. For example, during the pandemic when work-fromhome became the norm for most traditional office employees, the necessity of a physical presence in labs to conduct experiments and operate machinery caused life science tenant utilization rates to remain relatively constant, thereby maintaining occupancy and profitability.

**Premium rents and high reuse opportunity:** Life science space in top submarkets attract a large premium to rent. In Kendall Square, East Cambridge, where vacancy is 0%, lab office buildings attract some of the highest rents in the U.S. at over \$100/square foot<sup>9</sup> on a triple-net basis, compared to traditional office rents in the same submarket of \$50-60/square foot. In addition, as life science tenants advance into the expansion stage of their life cycle, they may require additional lab space or may need to migrate to larger spaces. With migration to larger spaces, these vacant lab spaces become readily available for second-generation lab space.

#### Figure 8: Lab Office Markets

| Submarket              | Inventory (sq. ft., M) | Vacancy Rate | Asking Rents (\$/sf) |
|------------------------|------------------------|--------------|----------------------|
| Boston-Cambridge       | 42.1                   | 1.1%         | \$94.62              |
| San Francisco Bay Area | 32.7                   | 2.6%         | \$75.48              |
| San Diego              | 17.7                   | 2.2%         | \$67.08              |
| Washington, D.C.       | 12.0                   | 1.9%         | \$38.74              |

Source: CBRE Research, Q3 2021.

Source: CBRE Research, Q3 2021.

9 Source: JLL.





## Conclusion

Life science real estate assets have offered an attractive risk-adjusted return dynamic in the current environment and are expected to continue in the medium to long-term. The strong life science demand backdrop driven by structural changes, limited high-quality life science assets and substantial public and private funding to the sector should lead to growing space demand, higher rents, lower vacancies, and more attractive life science development opportunities.

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