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Meeting the challenges of life sciences construction - by Ryan LaVangie

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The current pace of breakthrough innovation in the life sciences sector, with its core disciplines of medicine and biology, is providing much hope with regard to vaccine development, as well as new insight into gene therapies, pharmaceutical discovery, telemedicine and other focuses. As such, life sciences construction is escalating, with this upward trend expected to continue.

Since specific design conditions are required for laser, chemical, wet labs and clean rooms, the challenges to construction in the life sciences segment are many, and specialized expertise is a necessity. Facilities and laboratories not only necessitate specialized skill and meticulous attention to exacting protocol, but also demand a complete understanding of the project's current and anticipated end-user needs. With a thorough understanding of the challenges inherent to managing the construction of secure, sterile, and meticulously precise facilities in compliance with rigorous government and environmental regulations, Acella Construction maintains a collaborative approach in construction to ensure facilities that meet both the present and future needs of the ever-evolving life sciences industry.

Based on our core foundation of learning and research, combined with the experience gained from our life science construction portfolio that includes the Massachusetts Institute of Technology's Laboratory for Nuclear Science Building, the Plata Lab at MIT and the Northeastern University Vespignani/Lazer Computational Space Lab, Research & Development Laboratories, our team has the skill to plan, coordinate and manage construction of unique and complex life science facilities. Specifically, we understand and can anticipate all the details that must be considered when building research and development laboratories, biotech facilities, clean rooms, biology laboratories and classrooms, data centers, pilot plants, BSL 1-3 laboratories, and cGMP manufacturing facilities.

In fact, successful life sciences projects balance on the construction manager's understanding of stringent industry requirements and regulations. Longer procurement time and scrupulous commitment to environmental and safety standards are critical, therefore selecting the right project construction team cannot be overstated. A strong collaborative relationship is essential between the client, design and construction team, architect and ancillary providers to create facilities that are energy efficient and able to accommodate future mechanical system changeouts. Acella – and our subcontractor partners – specialize in the procurement and management of critical equipment.

The life sciences laboratories of just a couple decades ago were typically windowless "top-secret" facilities. Today, with more attention to the health and wellness of employees, sustainable design features, more natural light and other amenities are incorporated into the design. Also, the increase in the number of researchers who primarily deal with chemicals, drugs and biological matter in liquid or volatile stages has placed a demand for laboratories to have increased open space.

Competition in breakthrough research engenders critical time-to-market challenges; yet the need to maintain an aggressive schedule cannot undermine quality or safety.

The work being conducted in today's life sciences facilities is groundbreaking – including the development of vaccines to better protect the world against future pandemics. The facilities we design and construct today must meet both the present and future needs of this ever-evolving industry.

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