



SGA unveils “Vertical Cluster” design for life sciences facilities

December 17, 2019 - Design / Build

New York, NY SGA, a Boston and locally-based architecture, interior design, branded environments, planning and virtual design and construction firm, unveiled a life sciences facilities design fitted for today’s tight urban spaces. Known as the “Vertical Cluster,” this innovative design is ideal for densely populated cities.

The Vertical Cluster is a proposed 24-story, 750,000 s/f tower containing wet and dry labs integrated into a class-A vertical research tower that will serve as a next-generation building type for life-sciences developments in dense urban settings, where land values are prohibitive to low rise development.

“We’ve chosen to honor those working for our future through life sciences with a building type that reaches for the sky, while honoring the way in which they do their work,” says Brooks Slocum, AIA, studio manager at SGA. “The vertical nature of the prototype reflects local zoning and building codes, allowing SGA to stack the diverse programmatic needs typically found in a horizontal life-sciences and technology campus complex.”

The result is a contemporary facility that elevates the work of industry professionals and engenders a sense of community through integrated vertical collaboration spaces.

“With access to world-renowned universities, research hospitals, venture capital firms and the start-up community, life sciences have been the pulse of cities like Boston and San Francisco for some time now,” said Ratima Pisalyaput, AIA, and project manager at SGA. “Despite its wealth of talent and resources, New York is just beginning to join the movement and will lead the next wave with our design.”

Brooks Slocum, AIA, New York studio manager of SGA, said the New York life sciences industry’s slow start is the result of several factors. First, while many high-profile office and tech tenants have the means to meet New York’s exorbitant rents, early-stage life sciences New York-based tenants have not enjoyed the same level of funding or support as their counterparts in San Francisco, Washington D.C., New Jersey, Boston and the Research Triangle. Secondly, real estate firms aggressively seek to maximize rents immediately and in New York City, the rents for office space are currently very high, which has made many Life Sciences real estate investments financially

challenging.

“Clusters as currently defined are costly and take up a lot of horizontal space that is hard to find in tight urban environments like New York, Hong Kong or San Francisco,” said Jeff Tompkins, IIDA, LEED AP, and founding partner at SGA. “The idea of ‘vertical cluster’ solves the problem of the high cost of the land and creates an efficient state-of-the-art building.”

SGA is changing this paradigm. With its expertise in designing life sciences facilities and eco-systems that foster entrepreneurship among researchers, venture capitalists, biopharmaceuticals, academia, and technology, SGA has joined forces with a committed group of designers, engineers, entrepreneurs, real estate developers and investors who are advancing this evolutionary change in design.

The design features two key architectural elements. First is an efficient tower with 32,000 gross s/f floor plates configured to maximize the adaptability of laboratory operators and tenants. The tower’s steel superstructure is designed with 33-ft. structural bays and 15-ft. floor-to-floor heights, to accommodate the mechanical needs of the laboratories.

A lab-responsive core provides generous mechanical shaft space and a high-speed service elevator that links laboratories to an enclosed ground floor loading bay with lab-specific mechanical and storage areas. A mechanical floor mid-level in the building allows the air supply to run up and down the tower and avoids the need for oversized shaft ways at the valuable upper levels.

The modular configuration of mechanical equipment allows for future expansion as the needs of laboratory tenants change with the science. An efficient double skin façade improves thermal and acoustic comfort within the laboratory spaces and maximizes the energy efficiency to reduce operating costs. The base of the tower houses incubator/accelerator space, graduation space, and a dedicated vivarium for enhanced research and development efforts. Having the manufacturing visible to the investors and to the researchers helps build a sense of pride and personal satisfaction for the work they are doing in the tower above.

Other unique challenges that SGA has addressed include chemical processing and storage, along with strict ventilation requirements.

“There is quite a difference between the code required 100% outside air for a lab building, and the exhaust requirements for the fume hoods; versus an office building, which tries to stay as tight as possible,” said Scott Barnholt, AIA, project architect, SGA. “Then there are considerations for the flexibility of the labs to allow, for example, converting a lab that produces hazardous waste to one that needs to be highly sterile. This need makes the engineering of any Life Sciences building critical. There are air handler needs, power requirements, gas storage, plumbing and HVAC requirements – all of which SGA has considered in their design.”

The second key architectural element of the Vertical Cluster is a mix of interior and exterior collaboration spaces.

“We have included personal, collaborative and group spaces to rival any of top tech firm campuses. The flexible office-to-lab mix ensures that no matter the science, each floor has the ability to transition from one type of research to another with minimal disruption or downtime,” said Adam Spagnolo, partner, SGA.

This outward projection can be seen from the efficient floor plates of the central tower. The Vertical Cluster is a collection of spaces housed within articulated tectonic forms that facilitate vertical integration of floors by the use of monumental communicating stairs and visual connectivity between levels. The hairpin street profile is formed by interconnecting stairs that allow occupants to ascend the building within the Vertical Cluster and creates opportunities for discovery and interaction on each level. Landscaped exterior terraces tucked between the folding projections provide a sense of wellbeing to building occupants and allows them to enjoy sweeping views of the city and beyond. Transparency between programs and the interconnectivity of spaces encourages occupants to participate in the exchange of ideas, advancing the work of the life-sciences industry. Activities within “the vertical cluster” range from passive focus to active scripted or unscripted events that promote knowledge spillover and networking.

Finally, the Vertical Cluster will make sustainability easier than ever. The tower integrates responsible solutions like water purification systems, air filtration, reusable waste systems, emergency generators, heat recovery units, renewable energy and green building materials. Not only does this initiative make the building more sustainable, but it makes the building environment much healthier.

The building features a double glass wall façade between the exterior and interior glass wall, allowing for cooling when open and a warm-air buffer when closed. Advanced delivery methods (including Virtual Design and Construction) were used to assure delivery and reduce costs for this initiative.

“We are thankful for the incredible work being done to advance the health of humanity and the planet. We are all beneficiaries of this amazing work. We at SGA feel that the environment where this work is being done should not unfold in the dark, uninspired lab buildings of the past. It should be built as monumental structures within prime locations with all the grandeur and respect that their work deserves in our society,” concludes Walker Shanklin, AIA, project architect, SGA.

New York Real Estate Journal - 17 Accord Park Drive #207, Norwell MA 02061 - (781) 878-4540