LIFE SCIENCES

QUALIFICATIONS

bennett & pless

60 YEARS OF STRUCTURAL EXPERTISE

3.0M SF
of Research & Development Lab Spaces

50+
Life Science Projects

3.25M SF
of LIfe Science Manufacturing Space

LIFE SCIENCES

Bennett & Pless delivers highly specialized structural engineering solutions for Life Sciences facilities, providing the resilience, adaptability, and compliance essential for high stakes environments such as Research & Development laboratories, pilot plant manufacturing, and biotechnical production plants. Our expertise covers critical aspects of Life Sciences structural design, including precise vibration control, GMP-compliant structures, and robust support for complex process equipment, addressing the unique demands of this sector. We integrate advanced HVAC systems, central utilities and distribution piping, clean room technologies and process waste systems, frequently implementing structural upgrades that enhance adaptability to accommodate the rapid evolution in Life Science research and production needs. As a single-discipline firm with an exclusive focus on structural engineering, Bennett & Pless brings a highly responsive, expert driven approach and a wide geographic reach to every project. Our extensive team collaborates closely with clients to create state-of-the-art facilities that support innovative research, meet strict regulatory standards, and ensure long term operational success in this critical field.

Life Sciences Experience

R&D Laboratories - Renovation & Expansion

Select Listing

Bennett & Pless appreciates that R&D building facilities are a recruiting tool for talent and that a well-designed building is a welcoming space that fosters productivity, creativity and collaboration. At the same, these buildings must be high performing with advanced and reliable MEP systems, unobstructed flexible space and floors that are not susceptible to vibrations that disrupt focused research and sensitive equipment. Below is a select listing of existing building renovation and expansion projects that enable ground breaking research for acedemic institutions and private companies.

Icagen at Longfellow

Invitae

Alexandria Center for Life Science Node 1 Addition – Durham, NC
Structural design of the expansion to a central “node” between two lab buildings. The node was expanded on both the north and south sides with three levels of program space. The south side second floor was constructed by pouring a new concrete slab on the existing low roof with new sub-framing to support the additional load.

Alexandria Center for Life Science Exterior Improvements & Parking Garage – Durham, NC
ARE purchased the research campus from Glaxo Smith Kline to convert to leasable multi-tenant research space. Provided Structural design of the campus improvements to convert to multi-tenant research space and modernize the buildings purchased from Glaxo Smith Kline. Structural scope included extensive entrance canopies, re-cladding of ground level floors and a new stair tower. A new precast concrete1,000-car garage was constructed, and clad with decorative steel panels.

Invitae – Morrisville, NC
Structural design of the upfit of a 125,000 SF genetic testing facility. Invitae’s first East Coast laboratory and production facility includes labs and lab support areas, mechanical systems, shipping/receiving, open offices, conference and huddle rooms, training areas, administrative support, building core spaces, and amenities including a coffee bar, café, gym, and interior and exterior courtyards for gathering. The entire project was designed for maximum flexibility so that it can be rapidly reconfigured to quickly adapt to process changes if necessary.

Duke University Medical Center, Central Vivarium Primate Cage Washer Replacement
Structural design for the replacement of two side-by-side rack washers including demolition and reconstruction of a concrete pit with embedded stainless steel angle framing coordinated with the equipment vendor.

Icagen at Longfellow Real Estate Newcastle North – Durham, NC
Structural design of a 25,313 SF tenant fit-up in an existing one-story building including reinforcement of roof bar joists for new HVAC equipment and steel framing for a new overhead door in the existing exterior wall.

Life Sciences Experience

R&D Laboratories - Renovation & Expansion

Select Listing

Longfellow Discovery at Perimeter Park

Longfellow Discovery at Perimeter Park

Charles River Laboratories, Rooms R03, R07, and R16 Recycle Vivarium Renovations – Raleigh, NC

Structural design renovations to existing holding rooms flanking a central corridor. Structural scope included design of a new rack washer and autoclave pits at each room, coordinated with the equipment vendors. Autoclaves required lintels for large openings in existing CMU walls. Rack washers required steel framed platforms above to access equipment controls

Longfellow Real Estate Discovery at Perimeter Park - Morrisville, NC

Structural design of new freestanding entry canopy structures at five existing buildings framed with Architecturally Exposed Structural Steel (AESS) and roofed with decorative metal fins. Structural scope included the fit up of speculative and tenant specific laboratories including roof joist reinforcement for new rooftop HVAC units, generator foundations and framing for new roll-up doors. Renovated suites are as follows:

507 Airport Boulevard:
- Suite 260: 17,062 SF renovation

5151 McCrimmon Parkway Spec Lab:
- Suites A,B and C: 19,438 SF renovation
- Suite 240: 3,813 SF Enzerna renovation
- Suite 260: 6,542 SF DMC Bio renovation

2400 Perimeter Park Drive Spec Lab:
- Suites 110, 120, 130, 140, 150, and 160

2450 Perimeter Park Drive Spec Lab:
- Suite 100: 9,000 SF renovation
- Suite 300: 9,863 SF Glympse Bio renovation
- Suite 200: 13775 SF renovation for Inceptor Bio

2600 Perimeter Park Drive Spec Lab:
- Suite 140: 11,259 SF renovation
- Suite 160: 21,180 SF renovation for Encoded

Longfellow Real Estate Tripharma Office & Lab Improvement Morrisville, NC

Structural design of a 25,000 SF tenant fit-up of a one-story building with small scale manufacturing space, lab, and office. Structural scope included a rooftop generator platform, reinforcement of roof bar joists for new HVAC equipment and metal stud framed ceiling in a pressurized lab.

Greenlight Bio Tenant Fit-Up - Durham, NC

Fit up of 44,500 SF of laboratory and support space on the first and third floors of an existing tenant building at the Alexandria Center for Agtech. Structural scope included new slab on grade and framing for new rooftop HVAC equipment and associated shafts in the building.

Life Sciences Experience

R&D Laboratories - Renovation & Expansion

Select Listing

Suite 210: Isolere
Photo Credit: Hanbury

Lincoln Triangle Business Center – Durham, NC
Structural design of exterior improvements and tenant fit-ups at this existing multi-building complex. Structural scope included the design of steel framed entry canopies attached to existing columns at Buildings 4022 and 4025 and design of roof bar joist reinforcement for new laboratory HVAC units for multiple suites as follows:

Building 4020:
- Suite 312: 6,969 SF Renovation
- Suites 114 & 116: Combined 9,600 SF renovation
- Suites 107 & 109: Combined 12,368 SF renovation
- Suite 100: 18,852 SF renovation

Building 4021:
- Suite 220B: 6,125 SF renovation for Zymeron
- Suite 210: 5,430 SF renovation for Isolere
- Suite 300: 5,957 SF renovation
- Suite 100: 7,652 SF renovation

Suite 210: Isolere
Photo Credit: Hanbury

NC State University College of Veterinary Medicine, Swine Facility Renovation – Raleigh, NC
Structural design of a 4,000 SF facility for swine holding designed as a pre-engineered metal building with CMU divider wall and perimeter knee walls. Structural scope included foundation slab design with integral footings at rigid frame posts and trenches for washdown and the review of foundation rebar shop drawings and concrete mix design.

NC State University College of Veterinary Medicine, Equine CT Room Renovation – Raleigh, NC
Structural design of an existing suite with the installation of a new CT machine including a new slab on grade and pit for an adjustable platform table plus re-work of the existing CMU wall with new doors and an overhead hoist system.

NC State University College of Veterinary Medicine, Finger Barn #2, Swine Surgery Addition – Raleigh, NC
Structural design renovation of the east end of the existing barn to include demolition of the existing floor slab and replacement with sloped slabs and trenches, a surgery suite and holding rooms for swine including a new overhead hoist beam.

Oerth Bio LLC Tenant Fit-Up – Durham, NC
Structural design of a new office space elevated 4 feet and immediately adjacent to the existing office. Existing steps were removed and replaced with new steps and an ADA lift.

Life Sciences Experience

R&D Laboratories - Renovation & Expansion

Select Listing

Berryhill Hall Vivarium

UNC Chapel Hill McGavran Greenburg Hall BSL3 Lab Renovation Chapel Hill, NC
Structural design renovation of the NIH funded COVID-19 lab including an exterior generator foundation, a concrete ramp addition to the existing reinforced concrete floors at the existing loading dock, floor and wall louver openings and penthouse roof framing modifications for new HVAC units. The existing building is framed with reinforced concrete floors and a steel framed gable roof.

UNC-Chapel Hill, Division of Laboratory Animal Medicine, McGavran Greenburg Hall, Animal Facility Improvements – Chapel Hill, NC
Structural design renovation of the existing ground floor animal facility to provide a new holding area, autoclave suite new floor pit and lintels in masonry walls and new restrooms.

UNC-Chapel Hill, Division of Laboratory Animal Medicine Vivarium Renovations, Thurston Bowles Building – Chapell Hill, NC
Structural design of an existing cage washing facility including the reconfiguration of several pits for the installation of new equipment and lintels and bracing for new CMU walls.

UNC-Chapel Hill, Division of Laboratory Animal Medicine Vivarium Migration, Berryhill Hall - Chapel Hill, NC
Migrated the existing vivarium space in Berryhill Hall to new or renovated space in McGavran Greenberg Hall, Taylor Hall, the GMB, and Coker Hall. Structural scope included replacement of equipment and utilities, new openings in CMU walls, and an addition to McGavran Greenburg Hall.

Life Sciences Experience

R&D Laboratories - New Construction

Select Listing

Bennett & Pless appreciates that R&D building facilities are a recruiting tool for talent and that a well-designed building is a welcoming space that fosters productivity, creativity and collaboration. At the same, these buildings must be high performing with advanced and reliable MEP systems, unobstructed flexible space and floors that are not susceptible to vibrations that disrupt focused research and sensitive equipment. Below is a select listing of new building projects that enable ground breaking research for acedemic institutions and private companies.

Edgecombe Community College Biotech & Medical Simulation Center

Alexandria Center for Advanced Technologies, 4 Davis Drive and Parking Garage – Durham, NC
Structural design of a new 171,366 SF four-story speculative laboratory building with an adjacent 500-car parking garage. The building is framed with structural steel with dramatic overhang at the front corner and open atrium. The floors are designed to VD-C vibration criteria for light lab use. The building includes a penthouse and exterior HVAC units with screen wall. The parking garage is framed with precast concrete.

Edgecombe Community College, Biotech and Medical Simulation Center – Rocky Mount, NC
Structural design of a three-story, 45,000 SF facility for 18 study programs in health sciences, including curriculum and continuing education programs, and has simulated hospital spaces throughout, such as an OR, ER, imaging lab, exam rooms, and biotechnology lab. The building is framed with structural steel supported on cast-in-place concrete footings. The project was a Design-Build delivery.


Fujifilm Diosynth RTP Campus

Elon University Founders Hall and Innovation Hall Engineering & Physics Innovation Quad – Elon, NC
Structural design of 65,000 SF of facilities for engineering and physics and serves as a hub for STEM. Founders Hall is a two-story building including several labs and student engagement spaces. Innovation Hall is a three-story building with labs, classrooms, and faculty offices. Both buildings are steel structures with brick exteriors and metal stud walls.

Fujifilm Diosynth RTP Campus, Bioprocess Innovation Center 2 Research Triangle Park, NC
Structural design of the 89,000 SF building with laboratory space equipped with state-of-the-art analytical instrumentation, high throughput bioprocessing equipment, and automation technologies. The facility doubles the company's capacity to support process characterization programs, drug substance formulation and Quality Control testing capabilities complimenting enhanced capabilities at the FUJIFILM Diosynth Biotechnologies' United Kingdom facility.

Longfellow Via Labs at Hub RTP

Longfellow Real Estate Via Labs at Hub RTP – Durham, NC
Structural design of an eight-story, multi-tenant, lab|office building of approximately 227,850 SF constructed on a 1.16-acre parcel at the Research Triangle Foundation's acclaimed mixed use park, Hub RTP.

Life Sciences Experience

R&D Laboratories - New Construction

Select Listing

Longfellow Real Estate Triangle 54 – Durham, NC
Structural design of a new six-story multi-tenant state-of-the-art Class A lab and office building with setback penthouse. It is the first of two buildings on the 35-acre greenfield site. The floor plate is approximately 350 FT x 120 FT. Total building size is 285,000 SF, including the penthouse. The project site is visible from several main thoroughfares in RTP, including I-40, Highway 54, and TW Alexander Boulevard. Longfellow envisions a campus aesthetic that is recognizable, memorable, and aligned with their company's culture.

NC State University College of Veterinary Medicine Translational Research Facility – Raleigh, NC
Structural design of a new 3,600 SF facility for animal holding, surgery, recovery, and support. The building is constructed with cold formed steel trusses supported by CMU bearing walls on strip footings.

NC State University College of Veterinary Medicine, Swine Holding Facility –Raleigh, NC
New building to support the CVM programs for Biomedical Research and Swine Health & Production. The facility provides much needed holding space adjacent to research and surgery facilities at the main campus. Construction is a pre-engineered metal building with concrete slab and finishes designed for rigorous and frequent cleaning.

North Carolina Research Campus, David H. Murdock Core Laboratory – Kannapolis, NC
Structural design of the four-story, 311,000 SF The David H. Murdock Core Laboratory is one of the most comprehensive incubator core laboratories in the US.

North Carolina Research Campus, Duke Institute of Translation Medicine - Kannapolis, NC
Structural design of the four-story, 120,000 SF Duke Institute of Translational Medicine Laboratory including lab and office space for the extensive study and research of medicine and the affects it has on the human mind and body.

Life Sciences Experience

R&D Laboratories - New Construction

Select Listing

North Carolina Research Campus, UNC Nutritional Research Institute – Kannapolis, NC
Structural design of the four-story, 120,000 SF UNC Chapel Hill Nutrition Research Institute including the NCA&T Post Harvest Technical Center, the UNC-G Center for Bio Actives, and the NC Central Metabolism Center.

North Carolina Research Campus, NC State Institute of Fruit, and Vegetable Science – Kannapolis, NC
Structural design of the North Carolina State University Center for Agricultural Genetics agricultural research station including 45,000 SF of greenhouses. The building houses the NC State Institute of Fruit and Vegetable Science along with Dole Foods.

Oxford Research Commons, RTP – Durham, NC
Structural design of Phase 1 which consists of two buildings and a parking deck. Building 1 is a five-story 150,000 SF lab and office building and Building 2 is a four-story, 120,000 SF lab and office building. The parking garage is designed for 500 cars. The buildings are steel framed, and the garage is precast concrete.

UNC Chapel Hill Translational Research Building – Raleigh, NC
Structural design of a 160,000 SF, seven-story research facility including vivarium, wet lab, and support spaces. This expands the university's imaging and virology research and vaccine development through therapeutic and pre-clinical drug development. The building will be framed with cast-in-place concrete founded on micropile foundations.

UNC Chapel Hill Roper Hall Medical Education Building Raleigh, NC
Structural design of a 172,000 SF, eight-story building including a structural steel framed penthouse founded on drilled micro-piles, a two-story atrium opening to an exterior plaza with connectivity to the adjacent courtyard, and café space in Brinkhaus-Bullitt Hall. Adjacent to the atrium, the large 400-seat Active Learning Theatre is an open space spanned by steel transfer trusses supporting the learning and collaboration space on the floors above.

Life Sciences Experience

Pharmaceutical Manufacturing - Renovation & Expansion

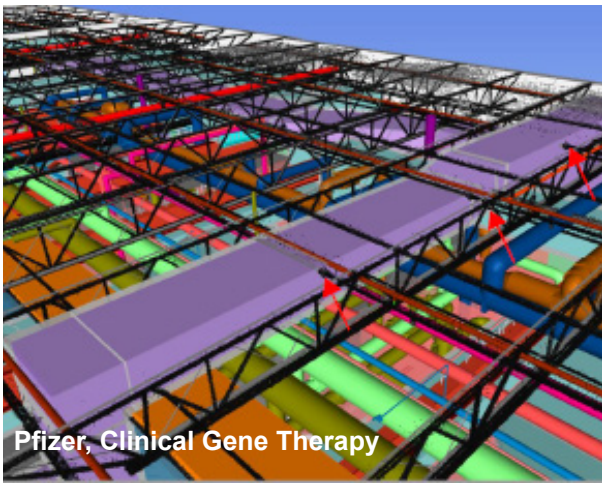
Select Listing

Bennett & Pless fully understands the demands of pharmaceutical manufacturing space where cGMP clean environments require heavy utilities, suspended clean room systems and special equipment requiring pits and/or access platforms. Manufacturing projects typically have an aggressive construction schedules to expediently bring a drug to market, where the structural design must be out ahead of the other disciplines. Below is a select listing of manufacturing renovation and expansion projects where Bennett & Pless had thrived in meeting these challenges.

Alcami Services Inc.

Aerie Pharmaceuticals, Phase 1 & 2 Renovations – Durham, NC
Structural design of a tenant fit-up for a Longfellow Real Estate property totaling 48,000 SF plus an 800 SF loading dock expansion. Phase 1 included formulation labs, office, and support space. Phase 2 included small scale cGMP formulation space. Structural scope included foundations and framing for the loading dock expansion, reinforcement of roof bar joists for a new lab HVAC units and steel framing for a new overhead door in the existing exterior wall.

Alcami Services, Inc. Microsphere cGMP Improvements Durham, NC
Structural design of a 4,250 SF small scale manufacturing renovation to an existing one-story building. Structural scope included a concrete floor pit and steel framed access platform for a process tank plus reinforcement of roof bar joists for new HVAC equipment.



Pfizer, Clinical Gene Therapy

Jaguar Gene Therapy Lab and Manufacturing Fit Up – Durham, NC
Structural fit-up of an existing 2-story shelled building with lab and manufacturing space. Structural scope included framing at new HVAC openings at the second-floor mechanical level and reinforcement of existing long span roof trusses for the weight of new rooftop HVAC units.

Pfizer, Clinical Gene Therapy Manufacturing Facility – Durham, NC
Structural design of the fit out of an existing 60,000 SF one-story high bay shell building with space for manufacturing, lab, office, and warehouse. Structural scope included an extensive mezzanine, clean room ceiling support framing, catwalks, bio-waste pit, pipe supports and exterior cooling tower support dunnage.
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Life Sciences Experience

Pharmaceutical Manufacturing - Renovation & Expansion

Select Listing

Novo Nordisk

Novo Nordisk - Line 36 Addition – Clayton, NC
Structural interior renovation to add a new filling line within the existing building. Structural scope included relocation of vertical steel wind and seismic bracing to open up the space plus modifications to the rooftop steel dunnage for new air handling units.

Cellectis, Clinical and Commercial Production Facility – Raleigh, NC
Structural design of Phase 1 consisting of the fit up of manufacturing and support space within the shell of an existing speculative warehouse building. Structural scope included a structural steel grid within the building to support the clean room walkable ceilings, a structural steel and concrete slab on deck platform above the roof to support a pre-fabricated modular mechanical penthouse. The penthouse accessed by a freestanding exterior stair tower, floor mounted racks to support piping and cable tray and exterior foundations for electrical gear.

Pro Kidney Lab & Manufacturing Renovation – Winston-Salem, NC
Structural design of an interior renovation including the reconfiguration and expansion of a steel framed mezzanine for HVAC equipment over manufacturing space.

Cellectis, Clinical and Commercial Production Facility

Life Sciences Experience

Pharmaceutical Manufacturing - New Construction

Select Listing

Bennett & Pless fully understands the demands of pharmaceutical manufacturing space where cGMP clean environments require heavy utilities, suspended clean room systems and special equipment requiring pits and/or access platforms. Manufacturing projects typically have an aggressive construction schedules to expediently bring a drug to market, where the structural design must be out ahead of the other disciplines. Below is a select listing of new construction projects where Bennett & Pless had thrived in meeting these challenges.

Novo Nordisk

Novo Nordisk - Fill Finish Expansion – Clayton, NC
This ambitious project is a multi-product production facility adjacent to Novo Nordisk's existing operations. Bennett & Pless designed all 1,400,000 SF of new construction as a design-build delivery and part-nered with deep foundation contractors, steel fabricators, and concrete contractors to fast-track construction while design progressed. The buildings are framed with structural steel on continuous flight auger-cast piles and clad with insulated metal panels. The $4.1 billion state-of-the-art facility is instrumental to manufacturing Novo Nordisk's innovative treatments for obesity and other chronic diseases. Construction will be finalized between 2027 and 2029. The project is pursuing LEED Gold certification.

Eli Lilly Concord

Eli Lilly Concord Campus - Concord, NC
Bennett & Pless performed structural design of this 1,200,000 SF project with 10 new buildings connected by a central spine on a 400-acre site. The campus includes manufacturing, packaging & logistics, ASRS warehouse, distribution warehouse, QA/AC labs, administration, and central utility plant. The core and shell for the entire plant was completed as a design-build delivery with a fast-track schedule. Structural scope also included fit-up of the manufacturing and logistics spaces with pipe sup-ports and equipment access platforms, also in a design-build arrange-ment with the fit-up contractors. The $2 billion investment will bring over 600 jobs to the county and will produce diabetes and obesity medicines.

Fresenius Kabi

Fresenius Kabi WSSL Facility - Wilson, NC
This $100 million investment is a state-of-the-art production facility for Fresenius Kabi's patented ready to administer freeflex IV bags. Ben-nett & Pless provided the structural design for 420,000 SF of space, including central utilities, formulation, sterilization, packaging, logistics, ASRS warehouse, QC lab, and administration. The buildings are framed with structural steel on footings on ground-improved soil and clad with insulated metal panels. The project was a design-bid-build delivery with a fast-track schedule.

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