



Bio-Research Facility Services

...ensuring the function of your facility meets the requirements of your operations.

FOCUSING ON QUALITY, SAFETY, SCHEDULE, AND YOUR INVESTMENT

The Centers for Disease Control (CDC) and the National Institute of Health (NIH) guidelines for Bio Research Facilities are extensive because bio-containment facilities for bio-research and animal housing are some of the most complex containment facilities to design and operate. CDC and NIH define these requirements in the Biosafety in Microbiological and Biomedical Laboratories (BMBL) publication. The BMBL publication addresses issues that directly relate to the safety of the occupants within the lab as well as the protection of the public outside of the lab.



The BMBL publication lists these requirements in the following categories:

- Laboratory Practices
- Safety Equipment
- Laboratory Facilities

While Laboratory Practices are largely dependant upon the type of research performed within the facility, the Safety Equipment and Laboratory Facilities are crucial to the integrity of the bio-containment barrier.

In these types of facilities, what goes on “behind the walls” is as important as what goes on in the lab. CEPro understands all aspects of the facility, from the infrastructure to the paint.

CEPro understands the unique and stringent requirements of a Bio-Research facility, and we know how to apply technologies to meet these requirements. Our comprehensive understanding of BMBL enables us to apply facility systems to meet the Owner’s Requirements. We understand that in a Bio-Research facility, the facility itself is a primary protection barrier, and proper construction and operation of that facility is critical to the protection of the public outside of the building as well as the occupants within the building.



CEPro utilizes dynamic, experienced individuals and teams to meet the unique needs of your project to provide the depth of hands-on performance required to accomplish the planning, design reviews, design professional interaction, construction verification, facility performance testing, and all the other field, office, and technical activities.

PROTECTING YOUR OCCUPANTS...AND YOUR RESEARCH



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Some of the services available through CEPro include:

- Development of Owner Project Requirements including space planning/programming
- Facility Sequence of Operation Development
- Design Consultation/Review
- Mechanical System Design to include mechanical system selection, HEPA filtration requirements, air-flow diagrams, ACH requirements, and dependencies on existing systems/facilities
- Contractor Qualification
- Enhanced Commissioning including Construction Management
- Test & Balance
- Pressure Decay Testing
- Facility Certification
- Routine Maintenance Planning and Management
- SOP Development
- Critical Flow Diagrams to define traffic patterns in support of operational SOP's
- Specification Development
- Construction Management/Consulting



For existing facilities, CEPro will perform an assessment to determine if the facility meets the requirements of BMBL for Bio-Research Facilities. As part of this assessment, CEPro will perform the following:



- Architectural design review to insure acceptable methods of ingress and egress
- Design Review to insure systems meet requirements for BSL-3 Facilities, including:
 - Mechanical and Controls
 - Electrical
 - Plumbing
- Complete Airflow Assessment / Test & Balance
 - Measure and document ALL supply and exhaust airflows to include ACH calculations
 - Measure and document door pressure drops
 - Document HEPA filter pressure drops
 - Document supply and exhaust fan system performance data
- Generate facility floor plan to document all of the above
- Verify mechanical system sequence of operations per the specifications, including "bubble-tight" damper operation:
 - Lead/Lag fan controls for exhaust fans
 - Failure sequence of exhaust fans and supply fan
 - Emergency shutdown
 - Decontamination mode
 - Room pressure control sequences and alarming

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