



University of Pittsburgh

Addressing Challenges Associated with Consolidation and Decommissioning of ABSL-3 Facilities

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ABSL-3 Facility Overview

- 14 Animal Facilities
 - ~330,000 square feet
- 5 ABSL-3 Facilities
 - 4 separate buildings
 - 15,500 square feet





Why Consolidate?

- Increase efficiency of ABSL-3 program management
- Aging facilities
 - ~11 years old
 - Latest HVAC renovation ~6 years old
 - Cost/benefit analysis for consolidation vs recommissioning/renovation
- Increase efficiency for main ABSL-3 PI user group
 - Spaces in 3 buildings vs all spaces in 1 building on main campus



Can We Consolidate Successfully?

- Multiple logistical planning sessions with a large group of stakeholders
 - PI and lead research staff
 - What are current laboratory usage, square footage, and equipment requirements?
 - Department administration
 - How will costs associated with multiple relocations be handled?
 - Division of Laboratory Animal Resources
 - EHS



Decontamination of Facility

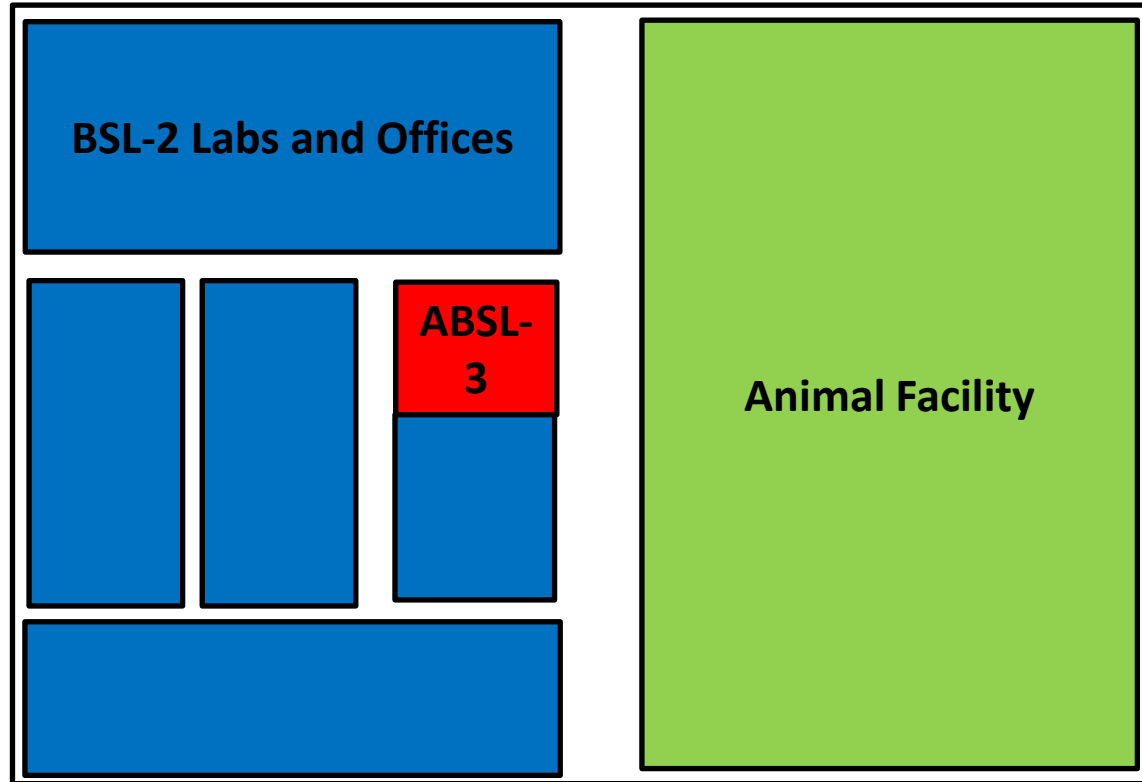
- Full surface disinfection by University personnel
- In house VHP vs contract decontamination services
 - Rodent ABSL-3 → Transgenic core facility
 - NHP ABSL-3 → Return to building management company for reoccupancy
 - Need to fully decontaminate ductwork



Rodent ABSL-3: Challenges



9th Floor of 17 Story High Rise



Surrounded by BSL-2 laboratories and common public traffic areas



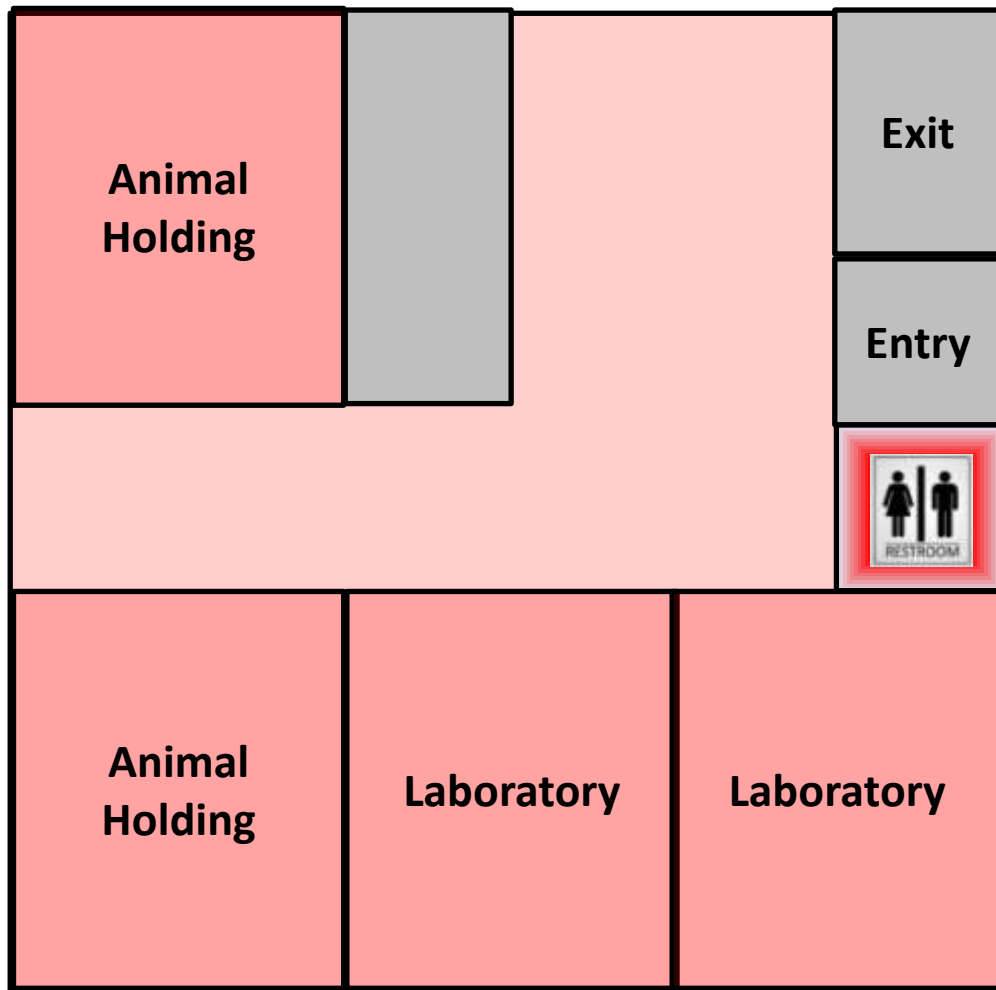
Rodent ABSL-3 Challenges: Timing of Gaseous Decontamination

- Samples out
- Mice out
- Full surface decontamination of ABSL-3 facility
- Immediate gaseous decontamination



Rodent ABSL-3 Challenges: HVAC

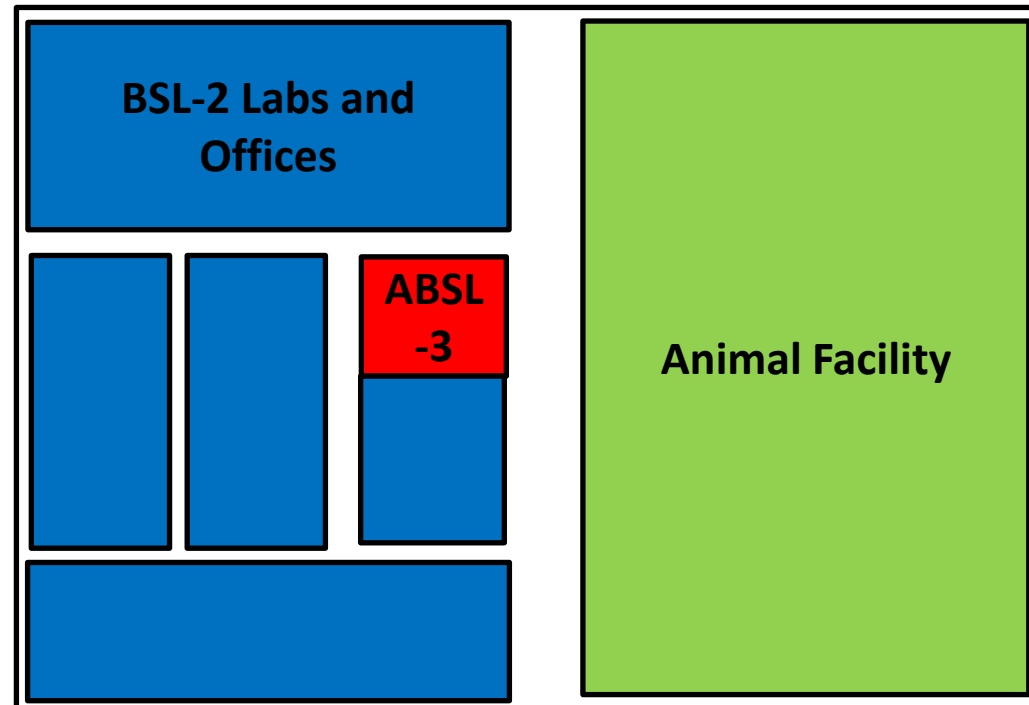
- + Dedicated, separate supply and exhaust systems
- + Removal of restroom in containment
- No as built drawings
- No penthouse
- Several stories of ductwork





Rodent ABSL-3 Challenges: Impact of Location

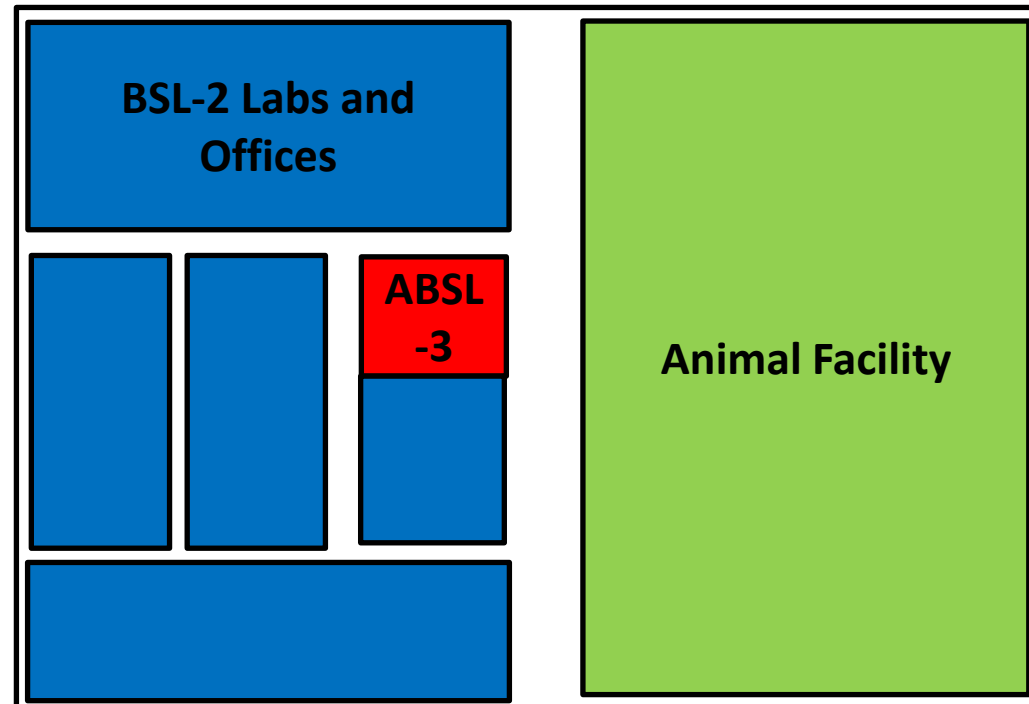
- 9th floor of 17 story building
 - Schedule gas injection after normal business hours
 - Clear floor above and floor below





Challenges: Impact of Location

- Communicate with all stakeholders
 - Department administrators
 - Building security
 - Housekeeping
 - Facilities management



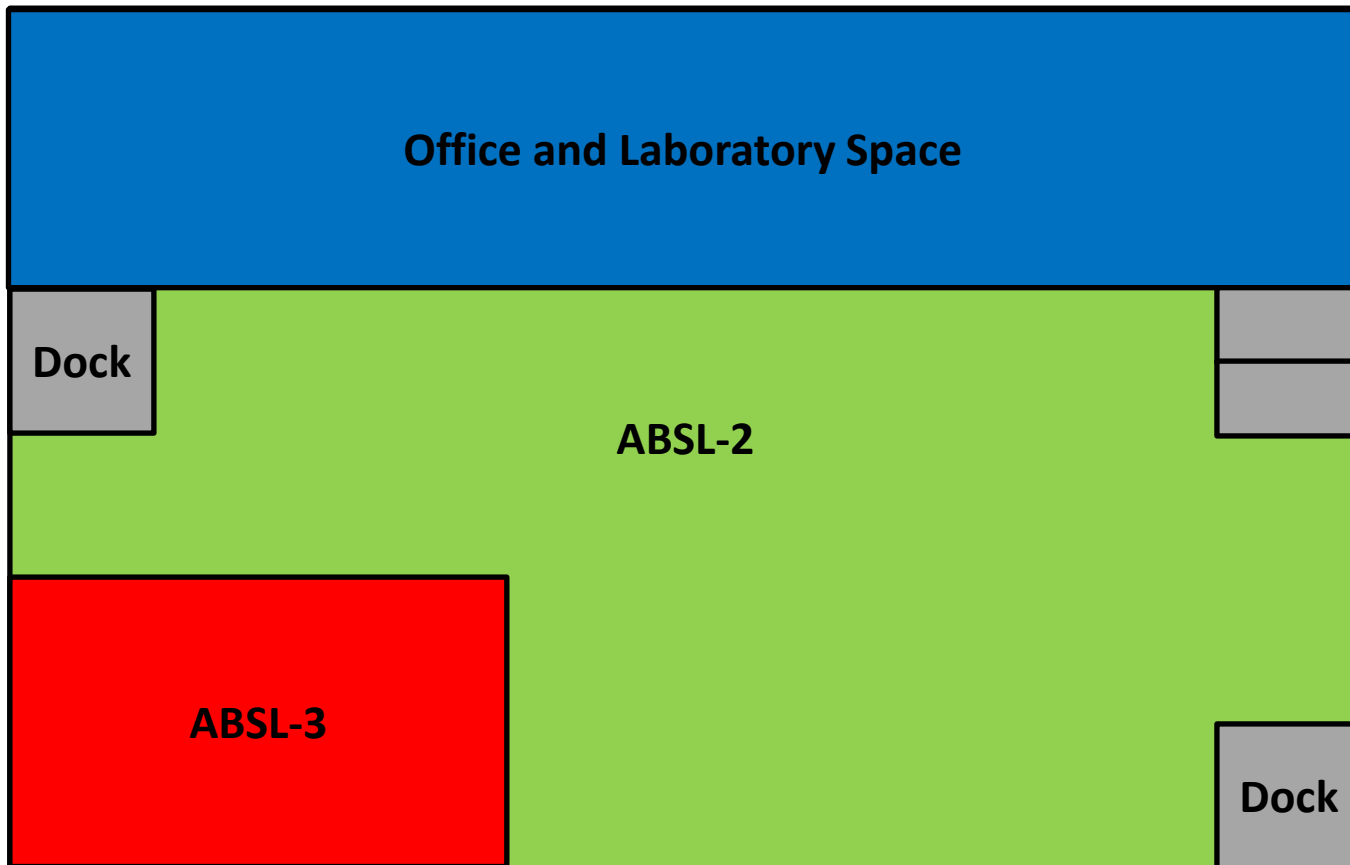


Non-Human Primate ABSL-3: Challenges





NHP ABSL-3: Challenges



Stand alone building at remote campus



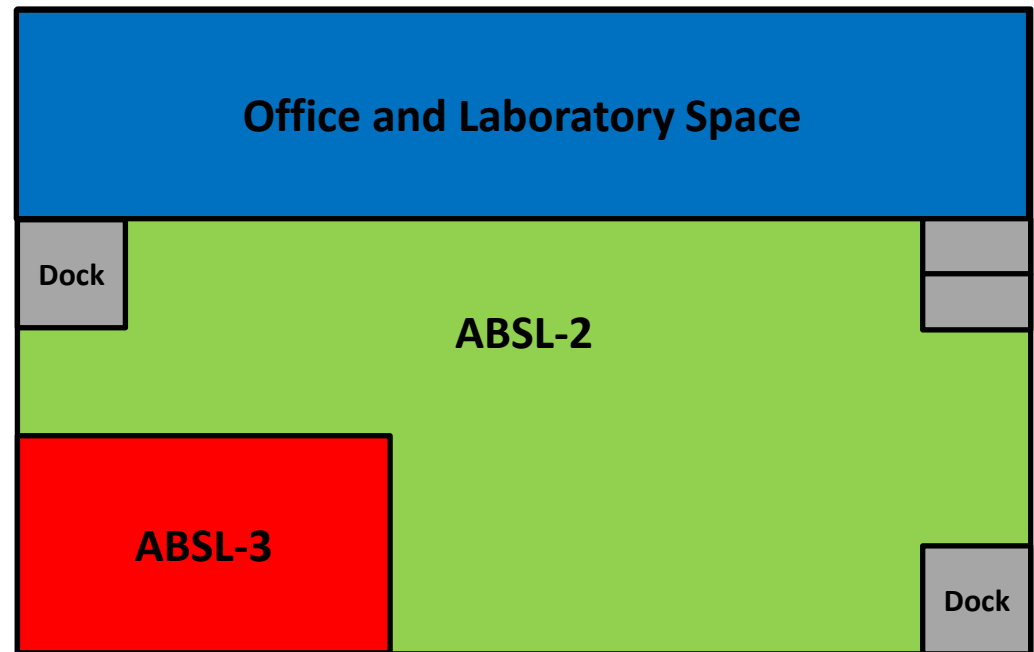
NHP ABSL-3 Challenges: Timing of Gaseous Decontamination

- Samples out
- Full surface decontamination of ABSL-3 suite
- All NHPs out of entire animal facility
- Gaseous decontamination



NHP ABSL-3 Challenges: HVAC

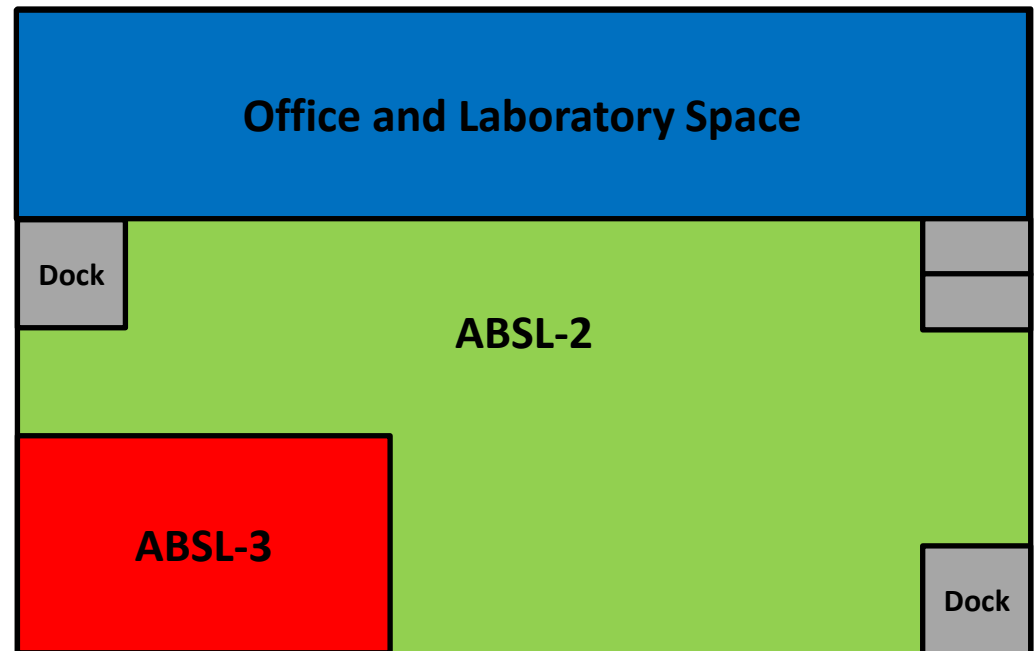
- Supply shared with other portions of NHP facility
 - ± BTD on supply?
- No as built drawings/control sequences
 - Exhaust bypass
 - Fan shutdown sequences





NHP ABSL-3 Challenges: Impact of Location

- Stand alone building
 - No animals present so no need for personnel
 - Research operations shutdown
- Contractor access to ABSL-3





Lessons Learned

- Engineering support and knowledge of all laboratory systems **crucial**
 - Do you have as builts?
 - Have you done renovations?
 - If not, do you have knowledgeable engineers to help contractor trace ductwork?



Lessons Learned

- Engineering support and knowledge of all laboratory systems **crucial**
 - Do a dry run of fan shutdown/restart
 - Are your control sequences accurate?
 - How is airflow reported by your control system?



Lessons Learned

- Engineering support and knowledge of all laboratory systems **crucial**
 - Do you know how many circuits you have in area and where the breakers are located?





Lessons Learned

- Do you know how to override your door interlocks?
 - Through building management system or a manual key?
 - Does anyone have possession of the key?
- Do you need to put your smoke detectors/fire alarms on standby?
 - Is a permit and/or fire watch required?



Lessons Learned

- Are your escorts prepared for emergencies?



Abort process?

- Is it possible to wait for gaseous decontamination until entire facility has been surface decontaminated?



Lessons Learned

- Yipee! The area is decontaminated and it's time to move equipment.
 - Who is going to move your decontaminated equipment into your hot BSL-3/ABSL-3 facility?
 - Hint: Not the University movers



Primary Lessons Learned

- Full time, ***dedicated*** engineering support crucial
- Logistics meetings with all stakeholders are critical
 - Specialized equipment?
 - Does your freezer etc fit through the door to the anteroom?
- Once the contractor arrives you probably won't be "hands off" during the decontamination process
 - Leaks?
 - Fan shutdown/restart
 - Escort?
 - Decontamination of equipment?



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