

Continuity of Operations Planning When Renovating a BSL-3 Laboratory and/or Upgrading its HVAC System



Presented to:



Presented by:



Presentation Available
Through:



Presenter:

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**Chesapeake Area Biological Safety Association
Lifetime Achievement Award Recipient**

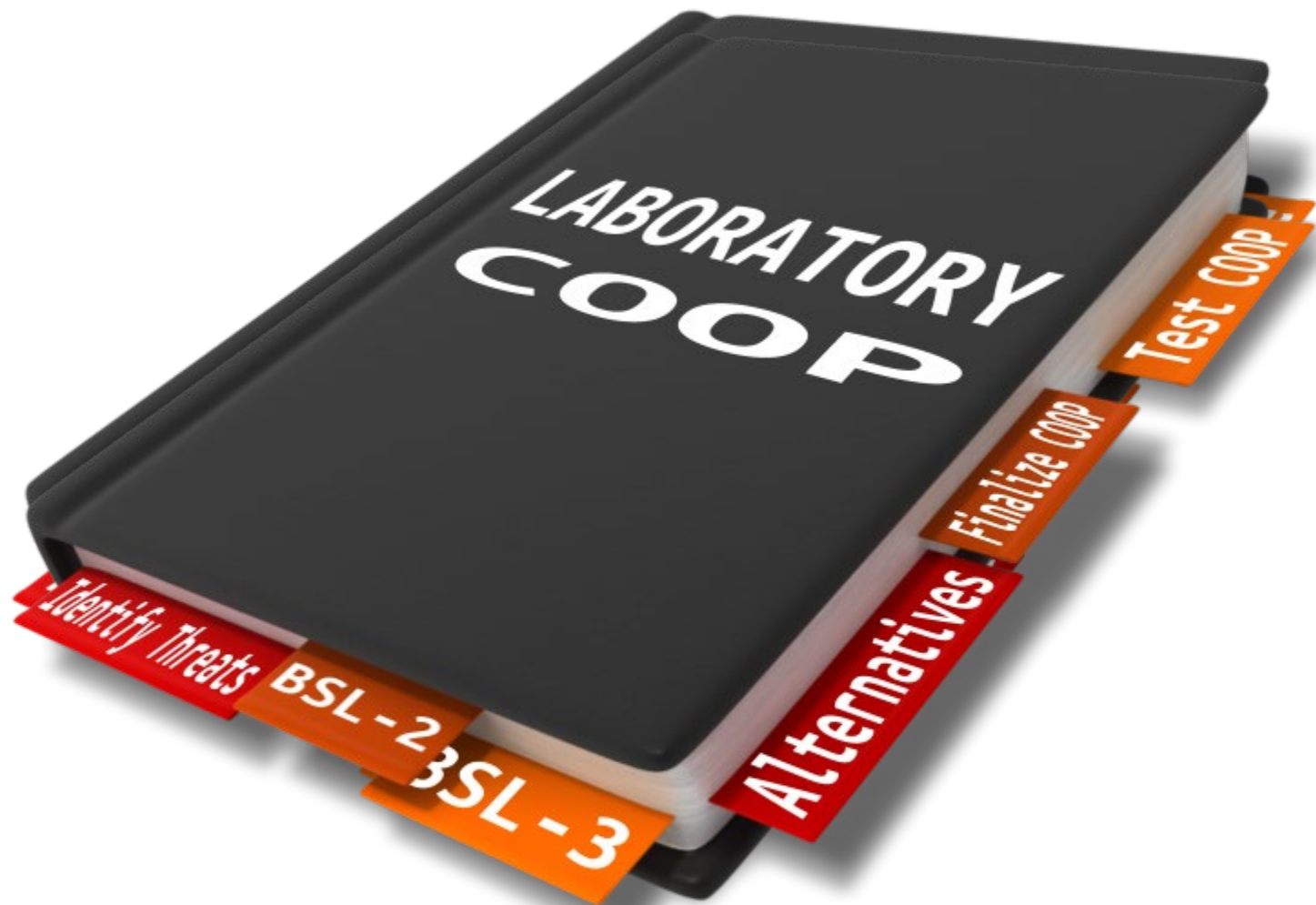


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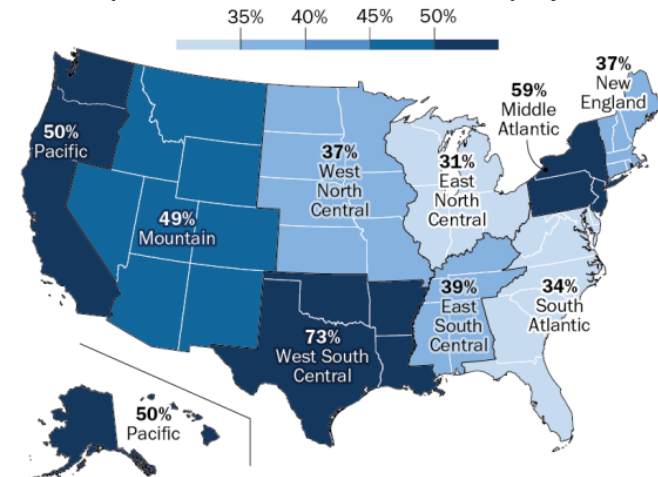




Two-thirds of U.S. adults see extreme weather events happening more often

% of U.S. adults who say ...

Experienced extreme weather in local area in the past year



Extreme weather events in U.S. are happening ___ than in the past

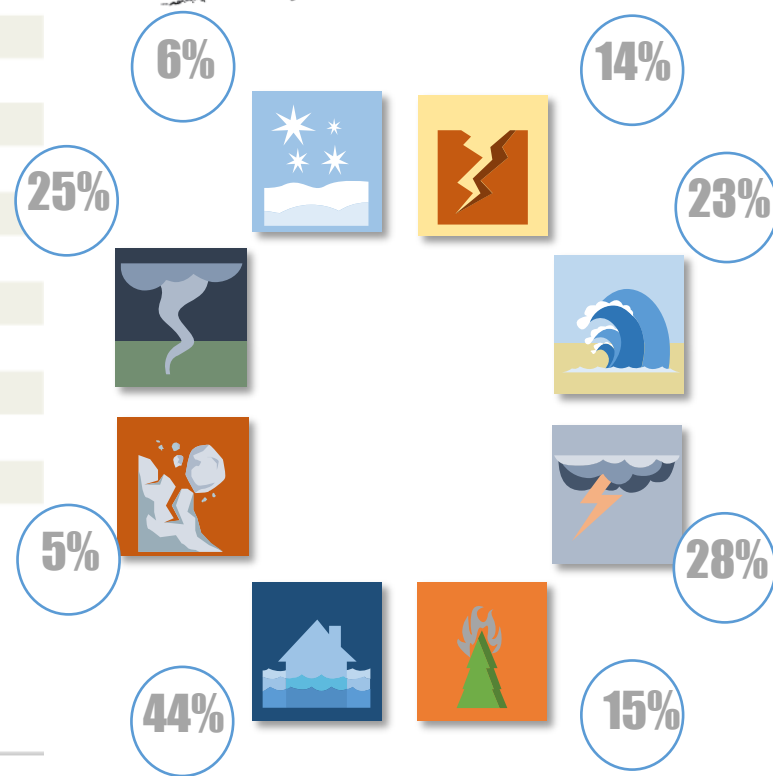
More often About as often Less often

U.S. adults	67%	28%	4%
CENSUS DIVISION			
New England	78	20	2
Mid-Atlantic	72	25	3
East North Central	65	31	4
West North Central	63	32	4
South Atlantic	64	31	5
East South Central	56	37	7
West South Central	70	26	4
Mountain	60	35	5
Pacific	74	21	4

Note: Respondents who gave other responses or did not give an answer are not shown.

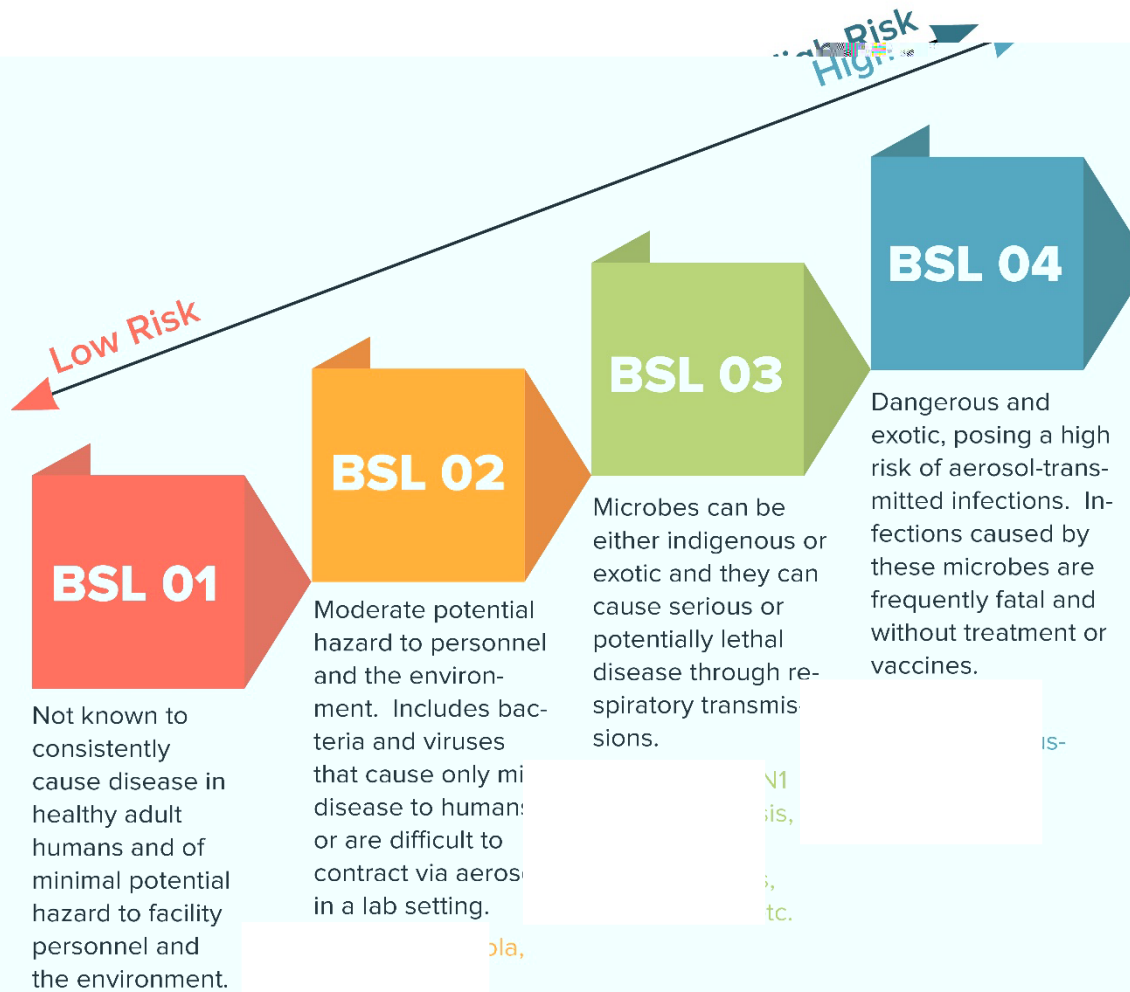
Source: Survey conducted Sept. 13-19, 2021.

PEW RESEARCH CENTER





CDC CLASSIFICATION OF BIOSAFETY LEVELS



Continuity of Operations Planning (COOP) from the Laboratory Level



Laboratory Vulnerabilities

1) Leaks = Mold = Laboratory Shutdown

- a. Pipe burst from above
- b. Window leak
- c. Building envelope leak

2) Renovations = Laboratory Shutdown

- a. New Equipment = New receptacle
- b. Lighting Conversion = Light emitting diode (LED) fixture
- c. Upgrade of the laboratory ventilation system



3) Lightning Strike to Exhaust Fans



High Plume Fan System



Stack Fan System

BSL-2 Labs

Versus

BSL-3 Labs



BMBL Pg. 42 D9. There are **no** specific requirements for ventilation systems. However, the planning of new facilities considers mechanical ventilation systems that provide an inward flow of air without recirculation to spaces outside of the laboratory.



BMBL Pg. 49 D9. A ducted mechanical air ventilation system is required. This system provides **sustained directional airflow** by drawing air into the laboratory from “clean” areas toward “potentially contaminated” areas.

Solution for BSL-2



Plus
(+)



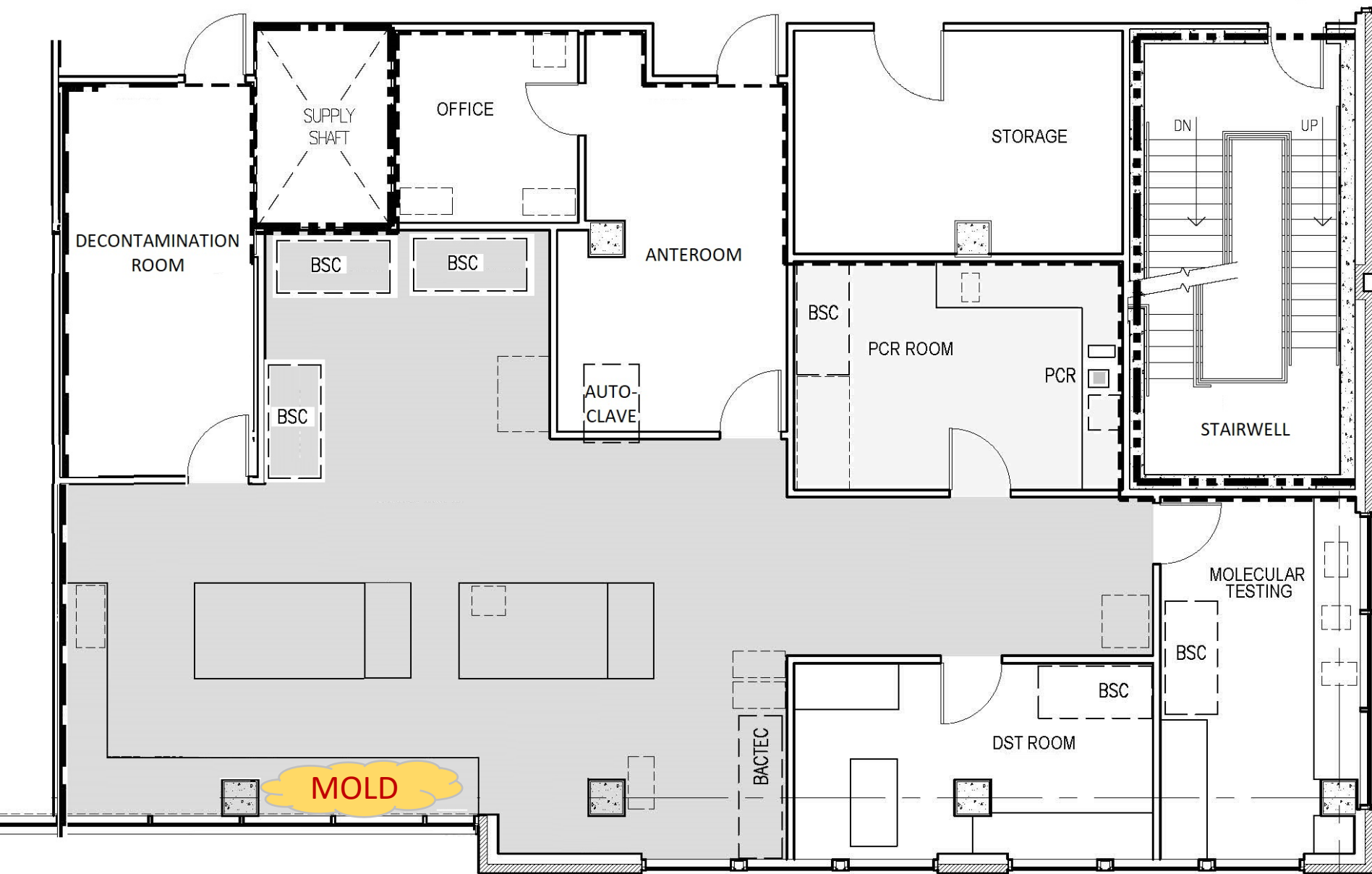
BSL-3 Labs + FSAP Laboratories

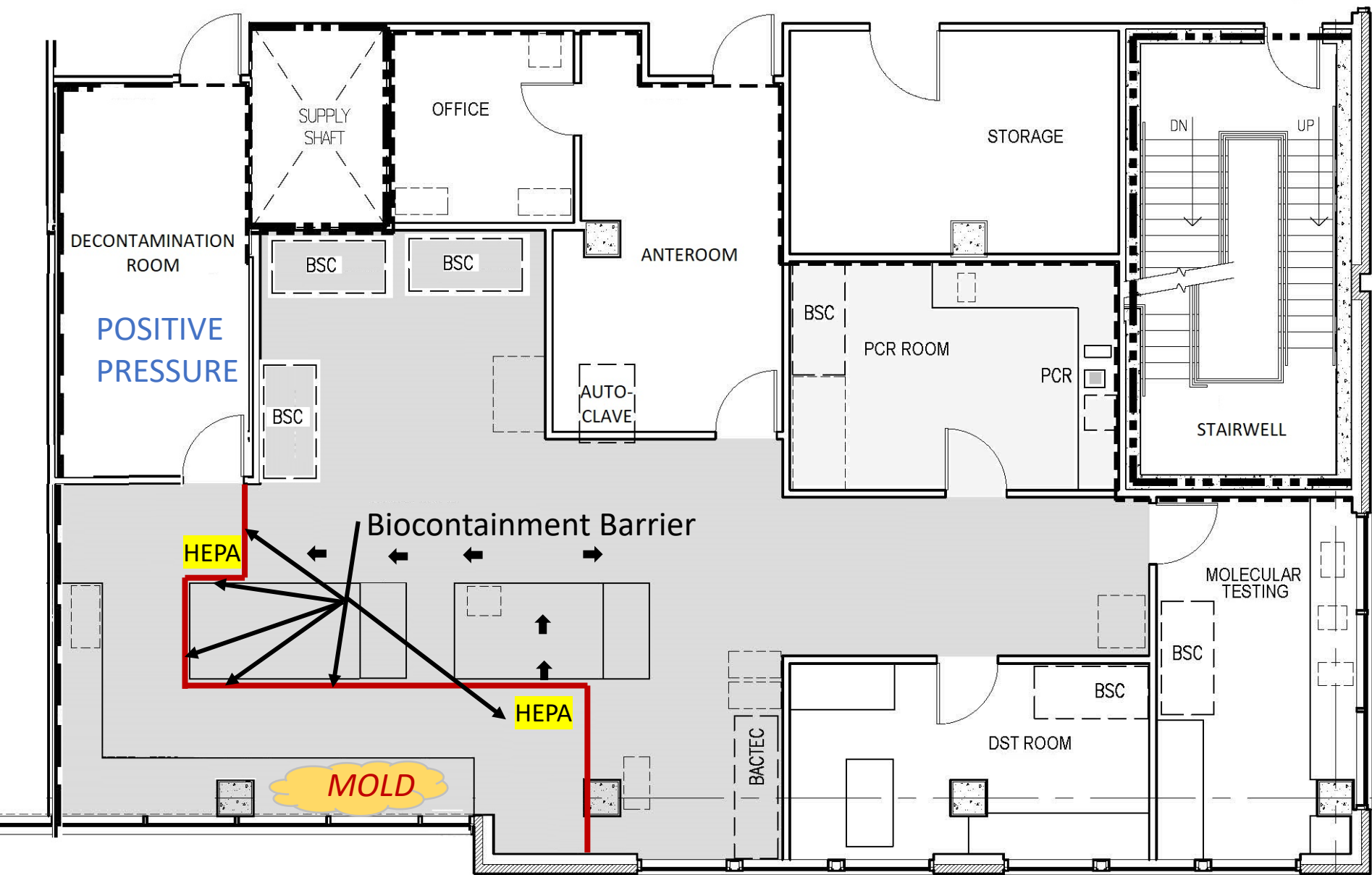


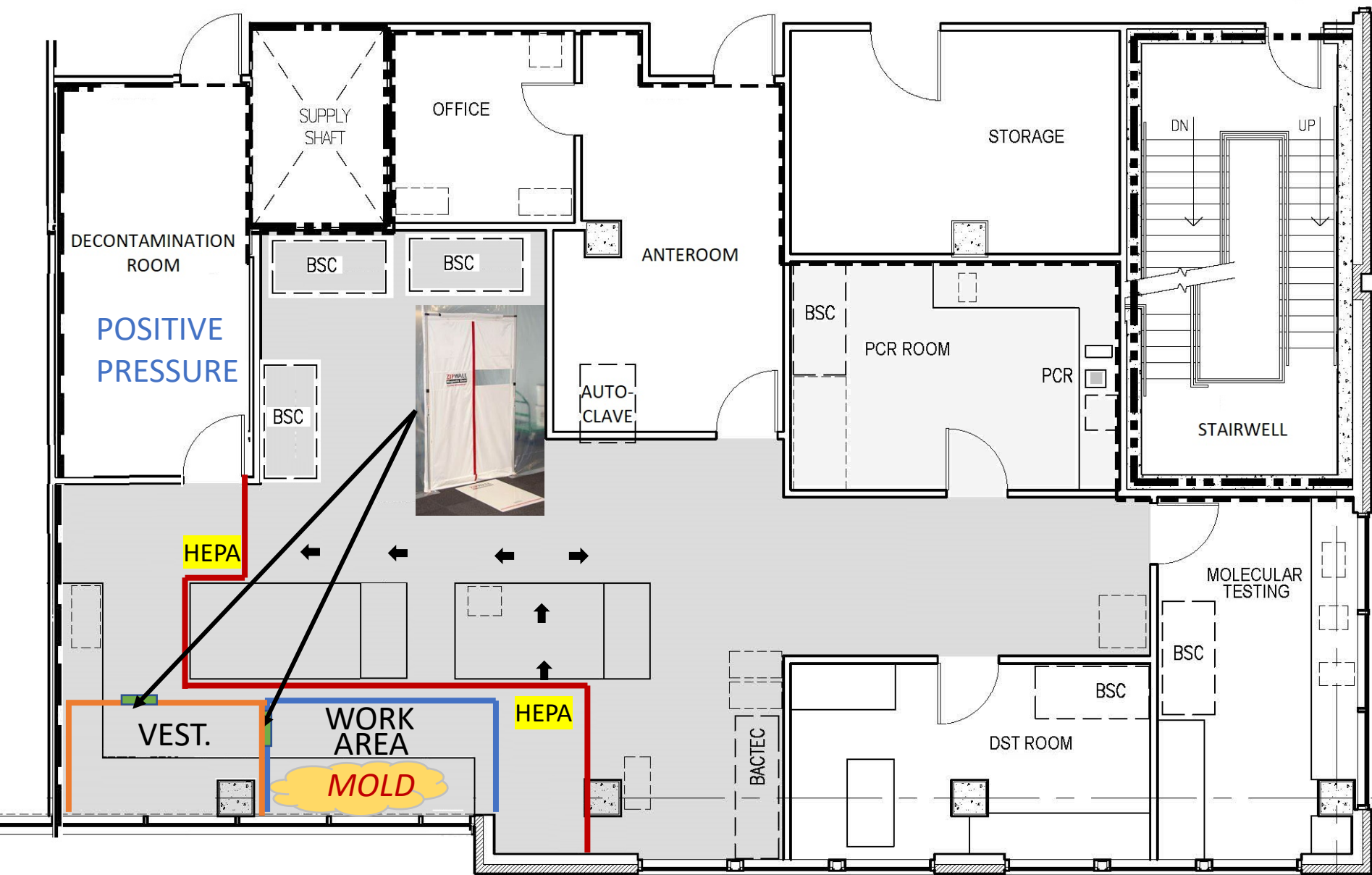
BMBL Pg. 49 D9. A ducted mechanical air ventilation system is required. This system provides **sustained directional airflow** by drawing air into the laboratory from “clean” areas toward “potentially contaminated” areas.

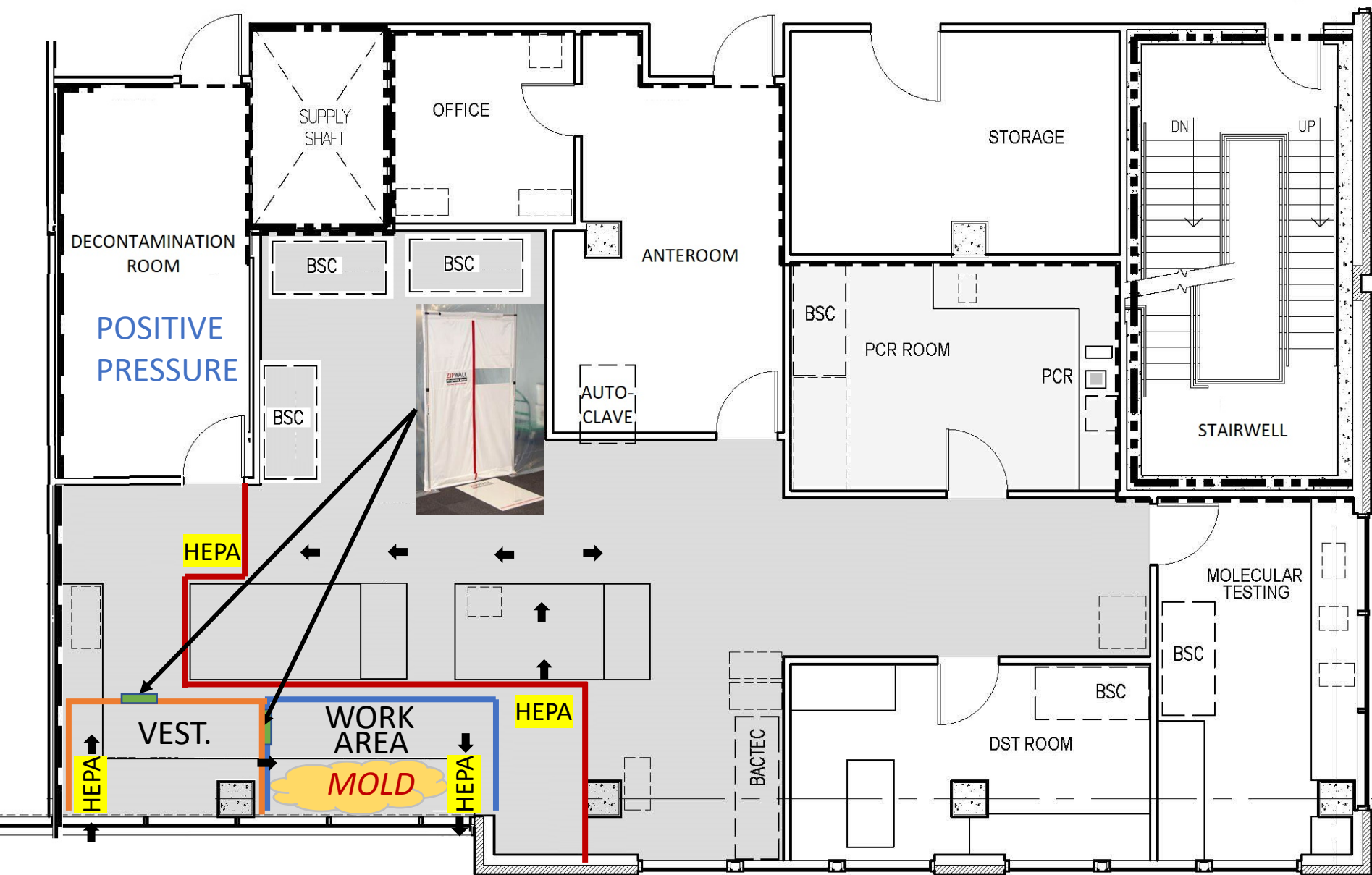
FSAP Policy Statement, BSL-3/ABSL-3 HVAC Verification:

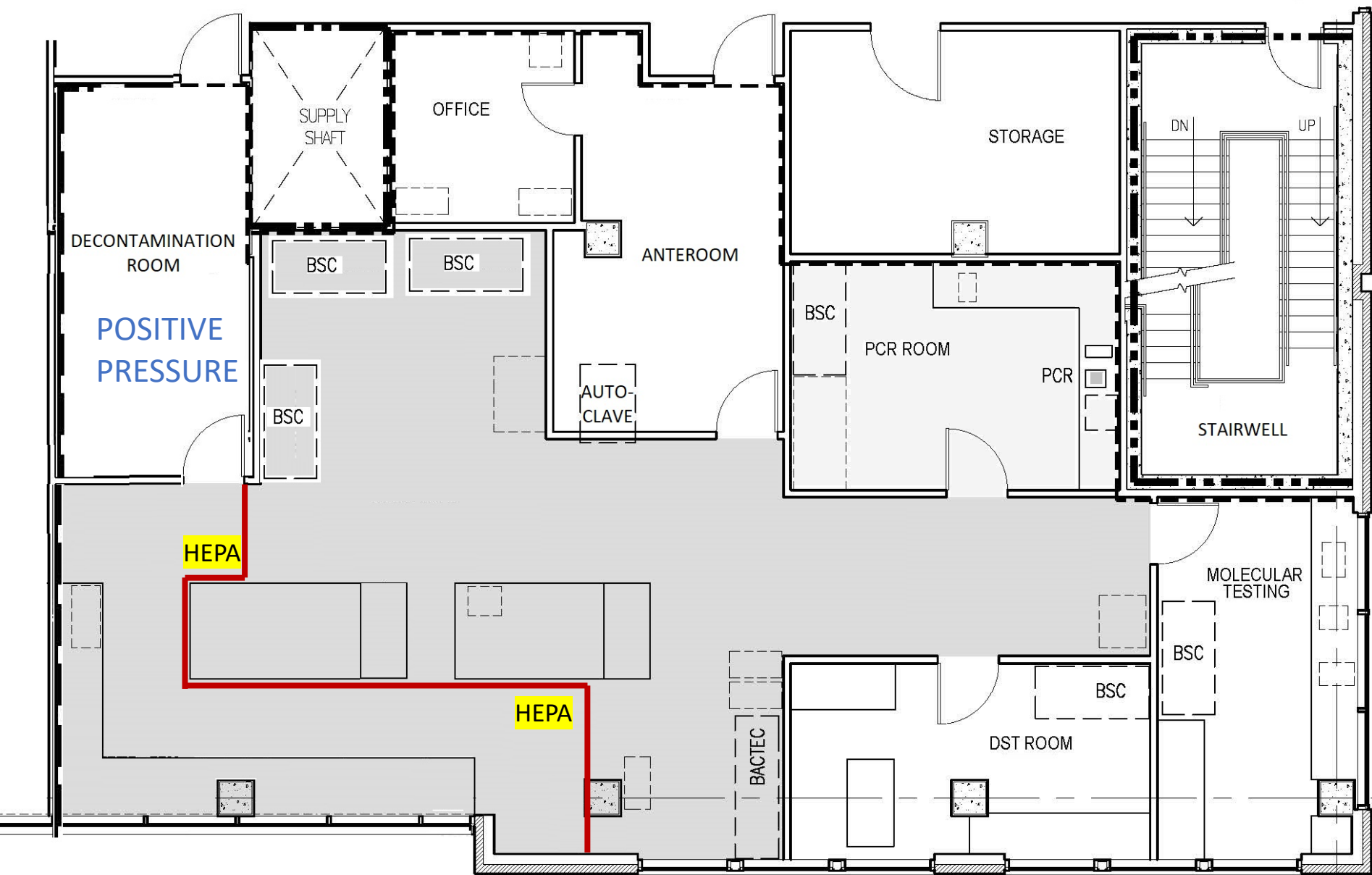
- Replacement of exhaust or supply fans that serve the BSL-3/ABSL-3 containment areas,
- Replacement of ductwork valves or dampers that serve these areas,
- Replacement or repair of HVAC system control wiring,
- Building automation system logic programming changes,
- Structural changes to the BSL-3/ABSL-3 rooms, or
- Addition or removal of hard-ducted BSCs or fume hoods.



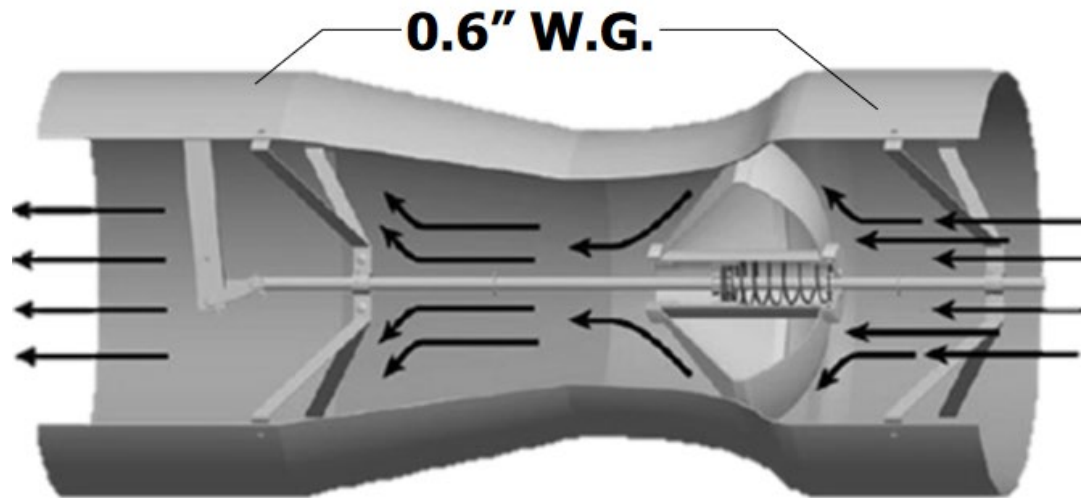








Ventilation Control Valve Upgrade



575 CFM



Continuity of Operations Planning (COOP)



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