

# Using SOPs to Cover BSL3 Facility Gaps



**cornerstone  
commissioning, inc.**

Establishing a Foundation for Performance

# Introduction

An abundance of time, effort and cost is spent on BSL3 facilities.

Designing

Contracting

Procurement

Construction

Commissioning

Training

Certifying

Furnishing

Operating

Repairing

Maintaining

Adjusting

Cleaning

Using...

# Introduction

Among the most costly  
BSL3 facility compliance  
components...

- Building controls
- Mechanical systems
- Electrical systems
- Plumbing systems
- Life safety systems
- Biosafety systems

# Agenda

- Simplification Pros and Cons
- Problematic Areas and Systems
- Using SOPs to Solve Problems

# Best Practices

Developing a Culture of Care and Safety...



...with people and systems

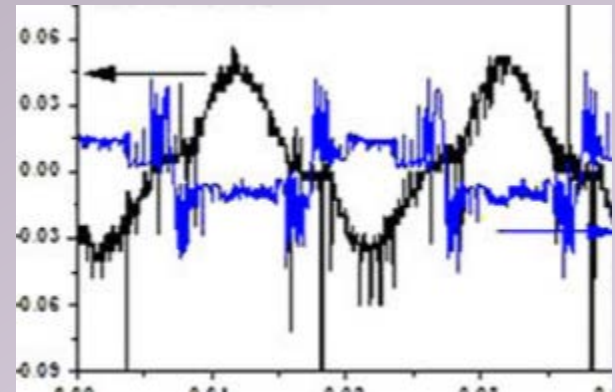


# Simplification

Simplification can cause problems

*Examples of airflow direction challenges*

- Manual dampers in BSL3 areas
- Non-redundant exhaust fans
- No speed control on fans





# Simplification

Simplification can resolve problems

- Tell-tale tissue in lieu of DP meters that don't stay calibrated
- Gravity backdraft dampers on redundant fans stabilize duct pressure control



***Sophistication can cause a plethora of problems!***

# Problematic Areas and Systems

- Compliance-challenged facilities
- Interlocked doors
- Transfer of materials from dirty to clean
- Nuisance room differential pressure alarms



# Compliance-challenged Facilities

- Containment labs in developing countries

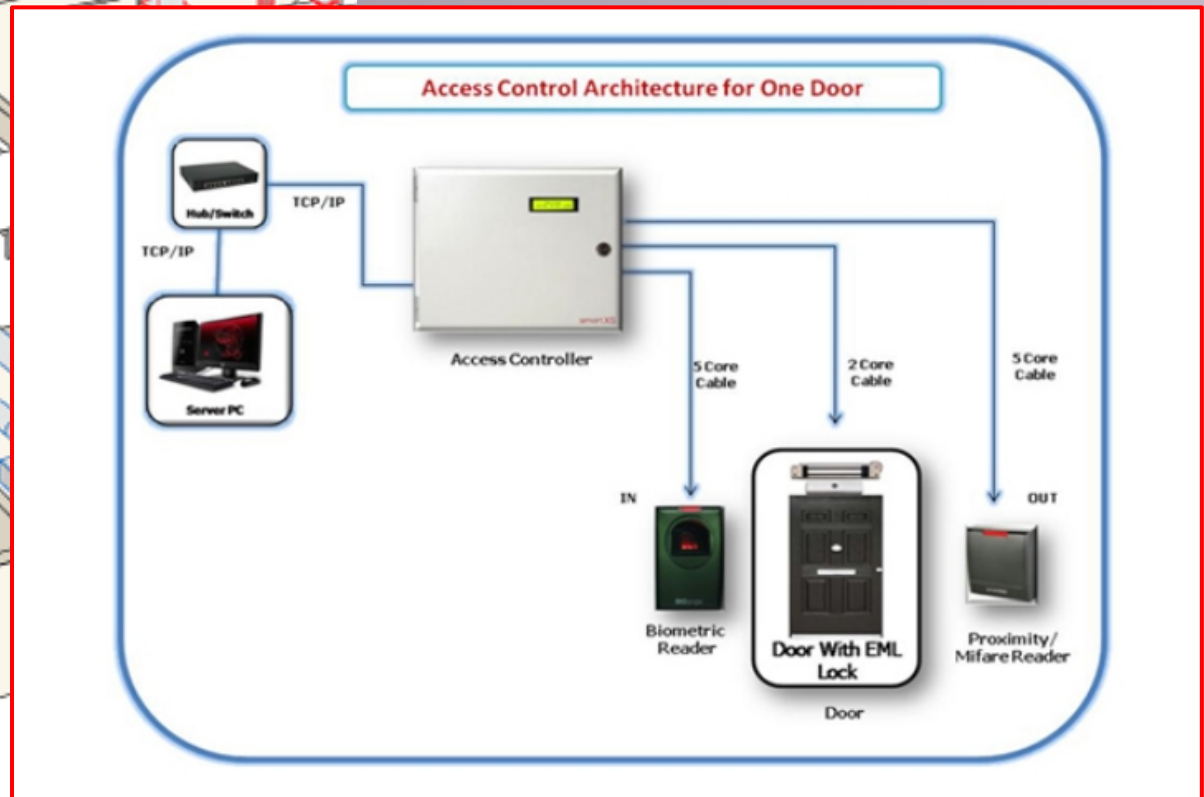
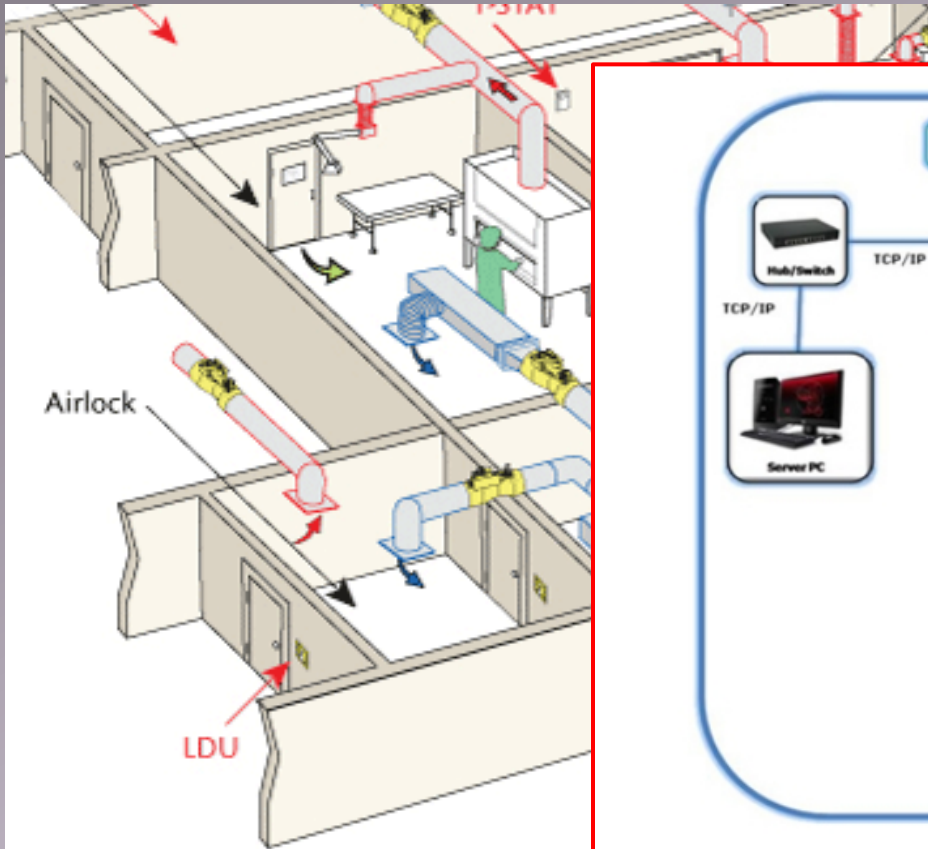


# Compliance-challenged Facilities

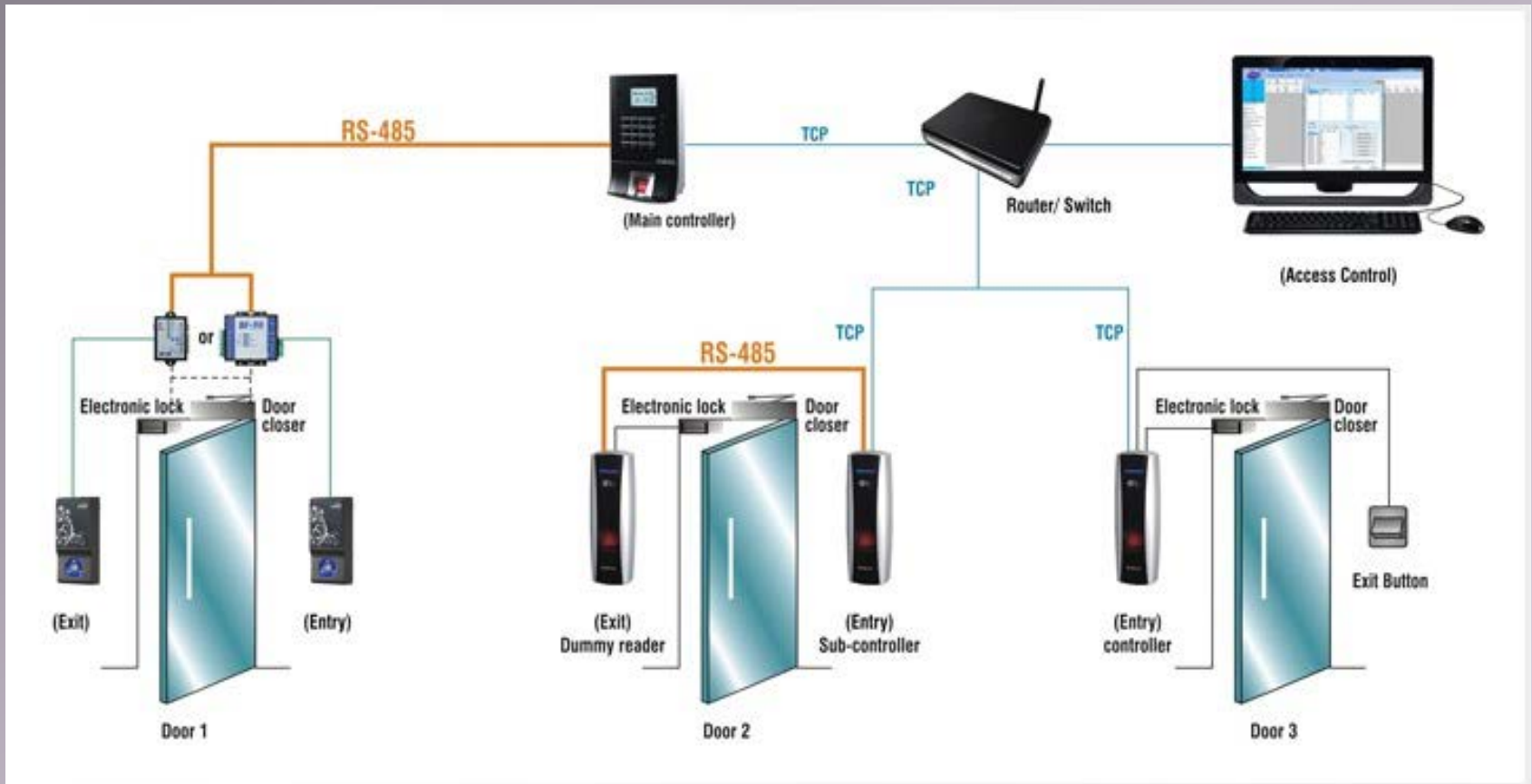
- Temporary labs



# Interlocked Doors



# Interlocked Doors



# Interlocked Doors



Interlocked doors  
with magnetic locks

VS

SOPs



# Transfer from dirty to clean areas

Decon-out vs Pass-through boxes and dunk tanks



# Transfer from dirty to clean areas

Decon-out vs Pass-through boxes and dunk tanks





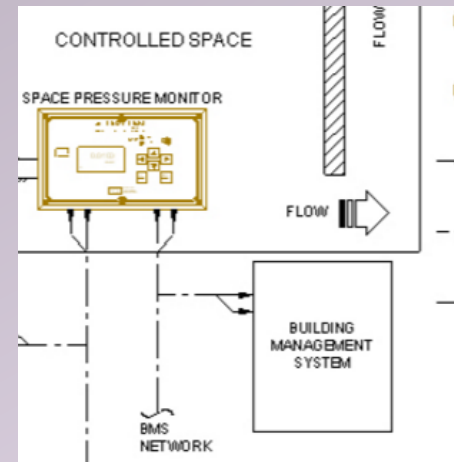
# Nuisance Room Differential Pressure Alarms



# Nuisance Room Differential Pressure Alarms

Apply time delays

- 30 second delay for local alarms
- 30 more seconds before remote alarm to Building Automation System



# Using SOPs to Solve Problems



- What to Avoid when developing SOPs
- Well-developed SOPs
  - Airflow Reversals
  - Decontamination Strategies

# What to Avoid with SOPs

Uninformed decisions can be costly if SOP implications are overlooked

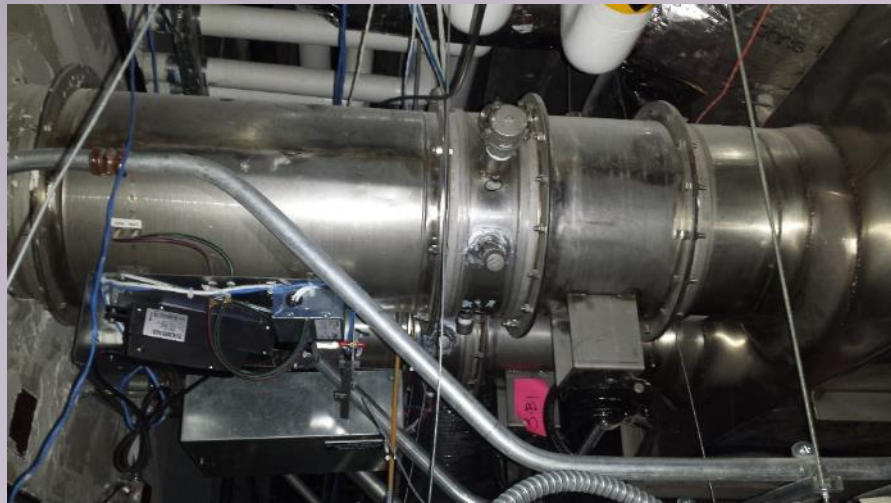
- Safety
- Operational
- Functional
- Interdepartmental



UPS Power

# Using SOPs to Solve Problems

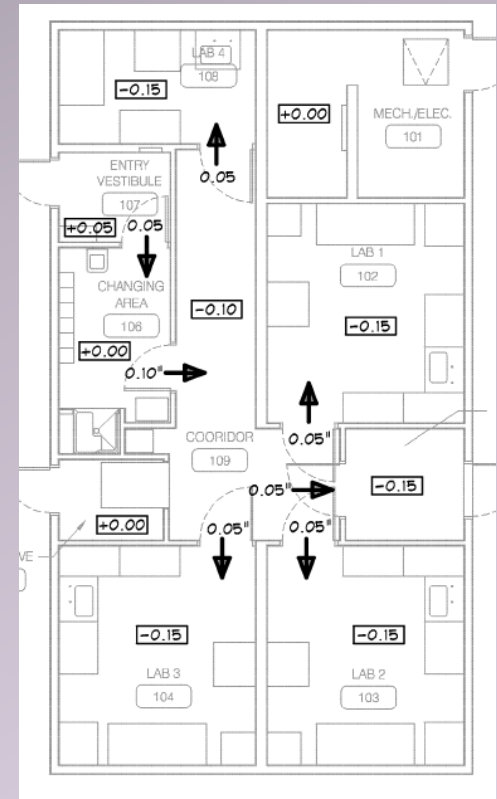
- Well-developed SOPs simplify and improve operation
- Well-developed SOPs reduce costs
- Some facility features simplify operation and reduce overall costs



# Using SOPs to Solve Problems

## Airflow reversals

- Start with a definition of reversals that all parties agree is suitable and appropriate
  - Across two doors
  - Agree on how it's verified
  - Add low-cost features



# Using SOPs to Solve Problems

Room decontamination methods

Consider the options

- Risk-based selection
- Fumigation vs surface decontamination
- Applying HVAC controls to fumigation



# Summary

- Biocontainment labs are costly to design, construct, maintain and operate
- Informed decisions on SOPs relative to current facility features can enhance the safety, ease and cost of operation.
- Consider the implications of SOPs so more problems are not created.

**Thank you!**

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