

Physical Protection for Bioscience Laboratories
Case Study – Physical Security

For this case study, your group functions as a university biorisk committee, which includes: biosafety officers, responsible officials – for select agent laboratories, human resource personnel, security personnel and principle investigators. You need to review one of the research protocols and determine what physical security measures you will require to be implemented prior to the protocol being approved and work starting in the laboratory. You will need to present a short summary of your physical security plans.

1. Identification of the assets

a. Where in the laboratory space will the agents be stored and used in your protocol?

b. Where is the isolate repository (freezer room)?

2. Define the Security System Strategy and explain why?

Deny

Contain

Deter

3. Design System

a) Define any *special exclusions* and *exclusion areas*

b) Define the *limited areas*

- c) Define the points of entry into the limited and exclusion areas

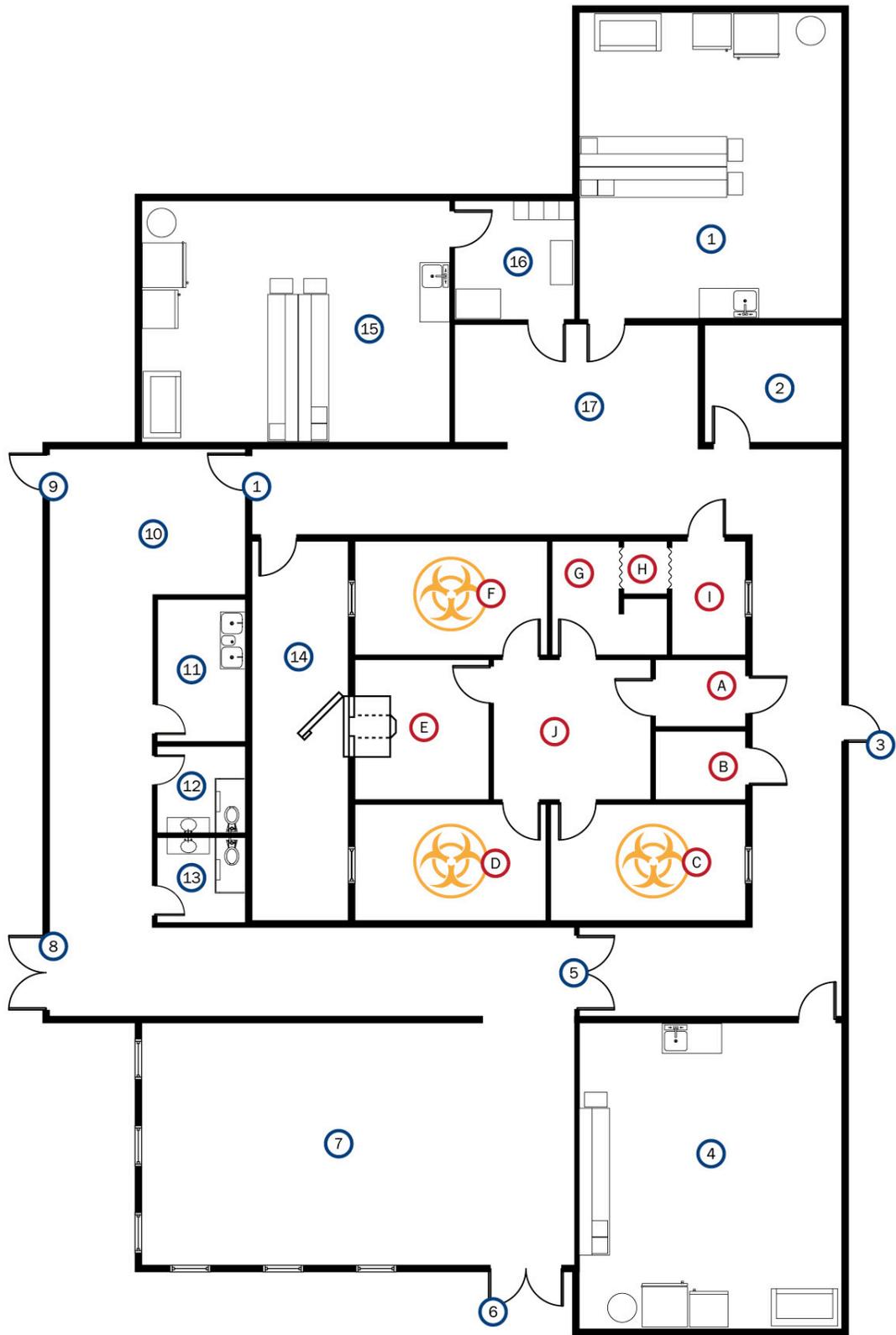
- d) Define where access control systems should be used and why

- e) Define where intrusion detection systems and alarms should be used and explain how alarm information should be communicated and displayed, and to whom?

- f) Which individuals should be included in the review of the physical security system? With whom should MOUs be established? Do any existing MOUs need to be updated?

Access Controls

Type of Access Control	Process	Pros	Cons
<p>Mechanical key</p> 	Controlled keys	Familiar to user; inexpensive	Can be copied, relatively easy to defeat; must be recovered when authorization is terminated
<p>Guard verification of identity</p> 	May use photo badges or ID cards	Easy to implement; Recognize personnel	Labor intensive; Easy to tamper with badge
<p>Proximity card</p> 	Induction powered (Coded Radio Frequency (RF) transmitter)	Hands-free operation; Can be worn under Personal Protective Equipment; Difficult to counterfeit	Requires maintenance; Identifies the badge, not the person
<p>Magnetic stripe badge</p> 	Two magnetic “strengths” (Coercivity: The intensity of the magnetic field needed to reduce the magnetization of a magnetic material to zero.)	Widespread use of magnetic stripes; Users are familiar with the technology; Easy to use; Difficult to counterfeit high coercivity card	Requires maintenance (replacement cards); Easy to counterfeit low coercivity card; Identifies the badge, not the person
<p>Smart card</p> 	Credit-card-sized device; Allows storage of ID information, including Personal Identification Number (PIN) / password, and biometric information	Easy to use; Difficult to counterfeit; Capable of doing encryption	Relatively high cost; Requires maintenance (replacement cards)



General Facility Callouts

1. Lab 2 (BSL II)
2. Freezer
3. East emergency exit
4. Lab 3 (BSL II)
5. Limited Area entrance
6. Main building entrance
7. Offices and work areas
8. Delivery entrance / West emergency exit 1
9. West emergency exit 2
10. Break area
11. Utility closet
12. Men's restroom
13. Women's restroom
14. Autoclave access area
15. Lab 4 (BSL II)
16. Dressing room
17. Anteroom

Lab 1 (BSL III) Callouts

- A. Airlock
- B. Mechanical room
- C. Lab 1a
- D. Lab 1b
- E. Autoclave
- F. Lab 1c
- G. Change room
- H. Shower
- I. Entry
- J. Central area