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Campus Security Design Guidelines

These guidelines are to be used in conjunction with the University Design Guidelines and Performance Standards including but not limited to Appendix X — Physical Security Systems Standards.

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Introduction

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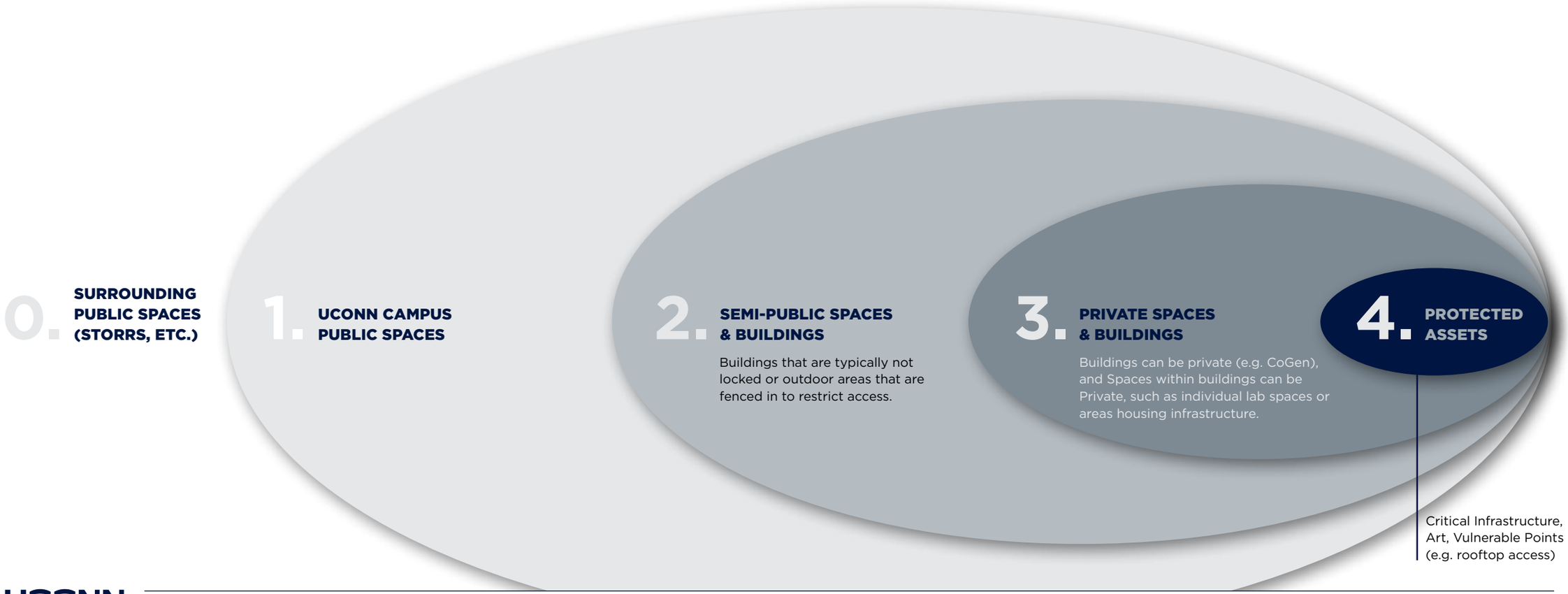
The UConn Campus Security Design Guidelines (or Guidelines) feature a layered, risk-based approach to achieve mitigation objectives that are proportionate to the threat and appropriate for the immediate campus environment. The Guidelines consider a wide variety of terrorist and general criminal threats through a threat, vulnerability, and risk assessment (TVRA). The layered approach accounts for variable threat environments and vulnerabilities amongst building and asset types to incorporate site, building, and technology design interventions. The figure below shows how the layered concept can be applied to organize the university's assets into different security zones. The subsequent figure expands on the zoning concept with specific examples of what features can be employed within each zone as well as how to enforce zone boundaries to maintain the security zone system. Section 5 provides diagrams tailored for other settings. These guidelines are to be used in conjunction with the University Design Guidelines and Performance Standards including but not limited to Appendix X — Physical Security Systems Standards.



Example: Academic Building Zoning

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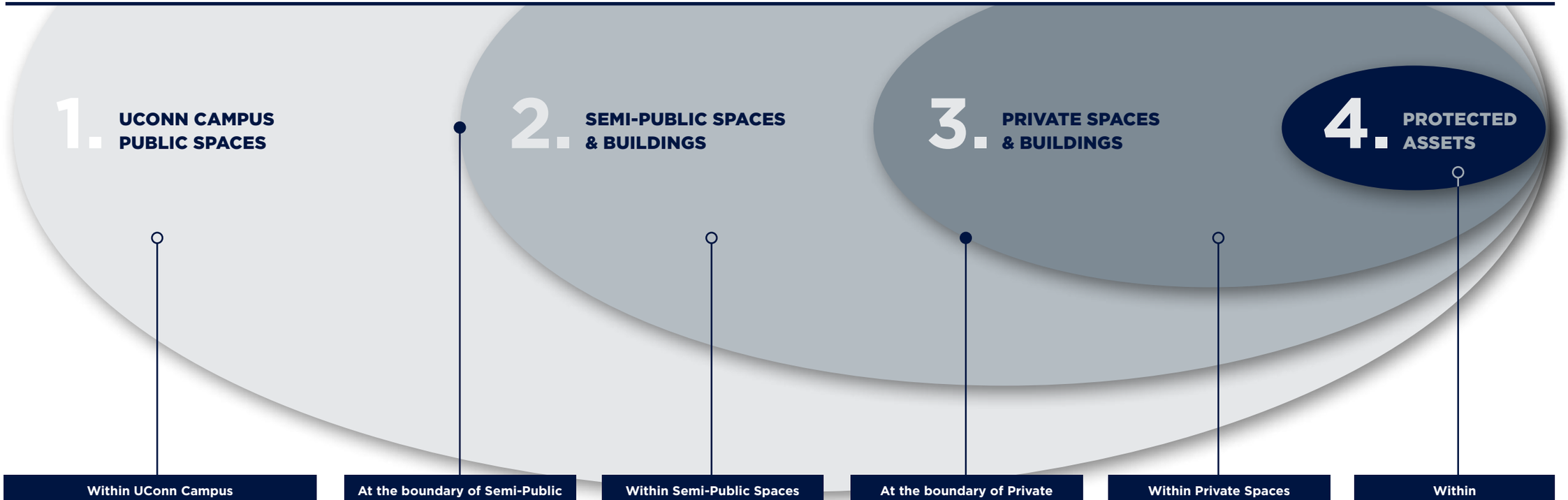

Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (M)
- Fences/Walls not necessary
- HVM, Permanent and/or Temporary (M)
- Traffic Calming (M)

Example Spaces:

- Landscaped area outside new academic building
- Academic courtyards in the immediate vicinity of building

At the boundary of Semi-Public Spaces and Buildings

BUILDING DESIGN

- Building Fabric (M)
- Laminated Glass – Exterior (M)
- Air intake placement (M)
- Controlling Access to Vantage Points (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Boundary of academic building

Within Semi-Public Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- General academic building circulation
- Typical class rooms, lecture halls

At the boundary of Private Spaces and Building

BUILDING DESIGN

- Laminated Glass – Interior (M)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Boundary of specific lab or academic functions with access restricted to only some students/staff/faculty (Individual research lab, datacenter, etc.)

Within Private Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Specific lab or academic functions with access restricted to only some students/staff/faculty (Individual research lab, datacenter, etc.)

Within Protected Assets

SPECIAL CONSIDERATIONS

- Consult your University Representative

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Campus Security Design Guidelines

1 Campus-wide Security Design Initiatives

What is CPTED?

- Crime Prevention Through Environmental Design (CPTED)
- Integrates security needs into the design process to achieve naturally safe, cohesive, and vibrant spaces for communities.
- Allows designers to move beyond traditional methods of reducing crime in urban spaces such as hardening the structure with walls, fences, cameras, and guards.
- Based on the concept that we can make spaces feel and become safer through intentional design

Example of campus design following the principles of CPTED, resulting in a space that is full of activity. Crime is discouraged through high visibility, effective lighting, and activity generators.

Potential Challenges of CPTED

- Some CPTED designs and principles can result in accidental or purposeful exclusion of certain groups. CPTED asks the community to determine who belongs and who does not through natural surveillance and territorial reinforcement. These are features that reinforce boundaries and emphasize control of an area by the local community. Visual transparency at a personal scale is key to discouraging crime by setting a tone that the community is aware and watching.
- Exclusionary features can be subtle, such as landscaping cues, path redirection, or signage. Alternatively, they could also be more overt such as walls or hostile vehicle mitigation.
- Examples of exclusionary design:
  - Making access to the area difficult by foot or public transport. For example, this approach is appropriate for the Water Pollution Control Facility, which is located in a less-trafficked corner of the campus.
  - Hostile architecture, such as spikes or sharp features that discourage rough-sleeping, loitering, or sitting on landscaping elements. These types of features are generally discouraged for designs at UConn.

Example of good visibility and place definition in a busy plaza through thoughtful landscaping and visible pavement features. Note the newer building to the right, which facilitates better natural surveillance through abundant windows facing the open space.

Principles of CPTED

The four principles of CPTED are summarized below and explained in greater detail in the following sections. The principles are not exclusionary but rather they tend to overlap with each other which offers natural methods of combining principles to maximize the effectiveness of interventions. Because they are mutually supporting, incorporating one principle in a space can often trigger or enhance another principle. While CPTED is typically applied to site design (outdoors), it offers useful guidance for the design of interior spaces as well. Natural surveillance, for example, should be applied while considering the relationship between the interior and exterior of a building via windows and elements that add transparency.

1. NATURAL SURVEILLANCE

This principle operates on the idea that a space is a less attractive target if the potential threat actor knows their actions can be observed by others. Designers should make choices which will encourage users and community members to have their “eyes on the street.”

2. TERRITORIAL REINFORCEMENT

This principle uses physical attributes to express ownership and promote feelings of propriety within legitimate users and community members. This instills an instinct to protect and steward the space and discourages criminal activity by making the space uncomfortable for illegitimate users and intruders.

3. SPACE MANAGEMENT AND MAINTENANCE

This focuses attention on the positive security benefits achieved from keeping a well-maintained space. Potential threat actors will feel the space is too risky to target. Design interventions should consider ease-of-maintenance in the broader design. This principle naturally supports the territorial reinforcement as it instills a sense of pride amongst the users.

4. NATURAL ACCESS CONTROL

Natural access control employs spatial definition cues to deny access to a target, guide users of a space through an area, and create a perception of heightened risk for threat actors.

Natural Surveillance Examples

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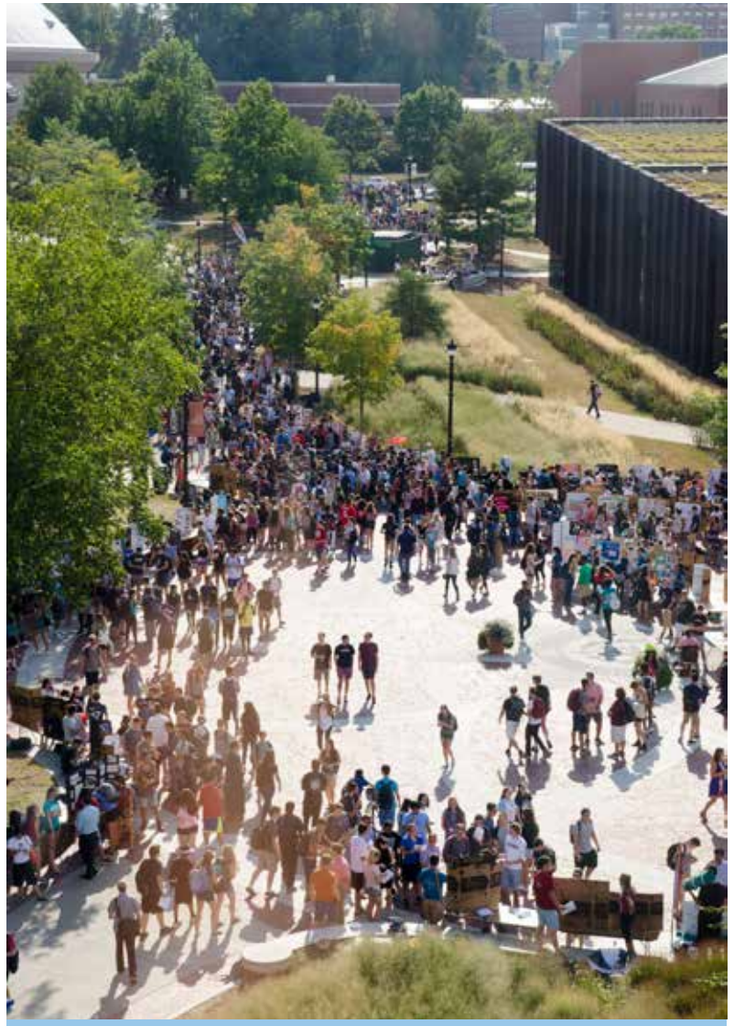
- Use open spaces and avoid interior corners to minimize blind spots and maintain good sightlines throughout a space.
- Ensure entryways are well-lit with layered lighting to maintain visibility at night.
- 2ft/6ft Rule for Landscaping: Keep shrubs and ground plants below 2’ and tree foliage at least 6’ above the ground.
- Use see-through railings for stairs in conjunction with transparent facades to increase visibility in stairwells and create a brighter, safer environment as opposed to isolated and threatening.
- Leverage UConn’s large plazas and quads which lend themselves to this principle by directing adjacent windows to face onto the landscaped areas with well-maintained landscaping.



2ft/6ft Rule: Note how easy it is to see below the tree foliage and above the shrubs in this busy plaza.

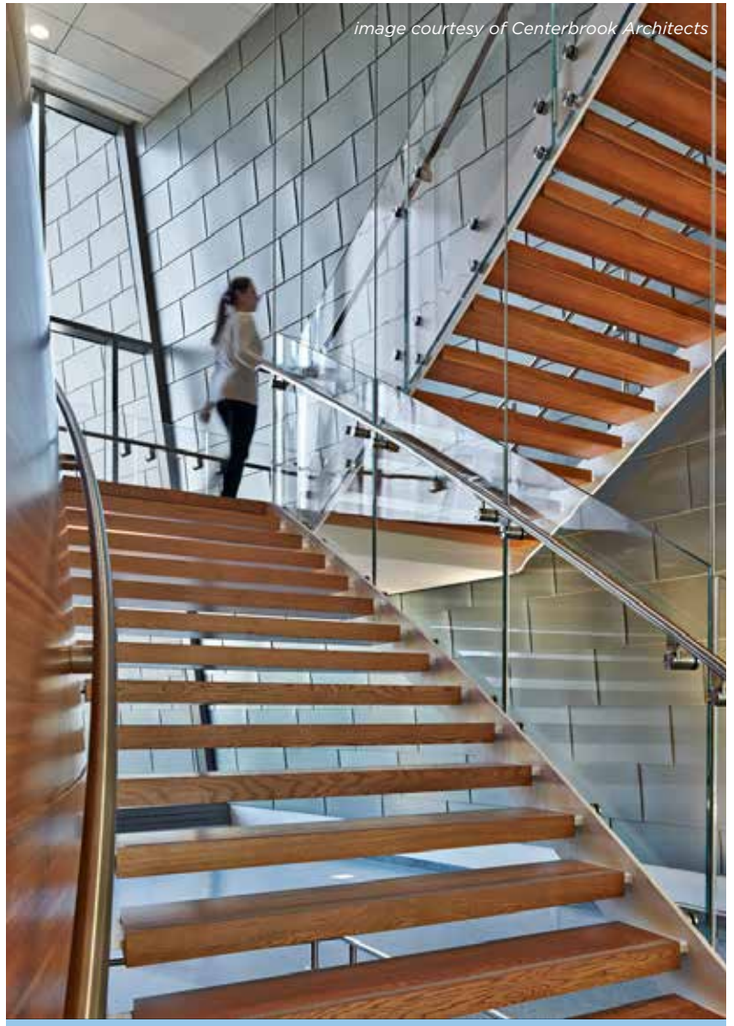
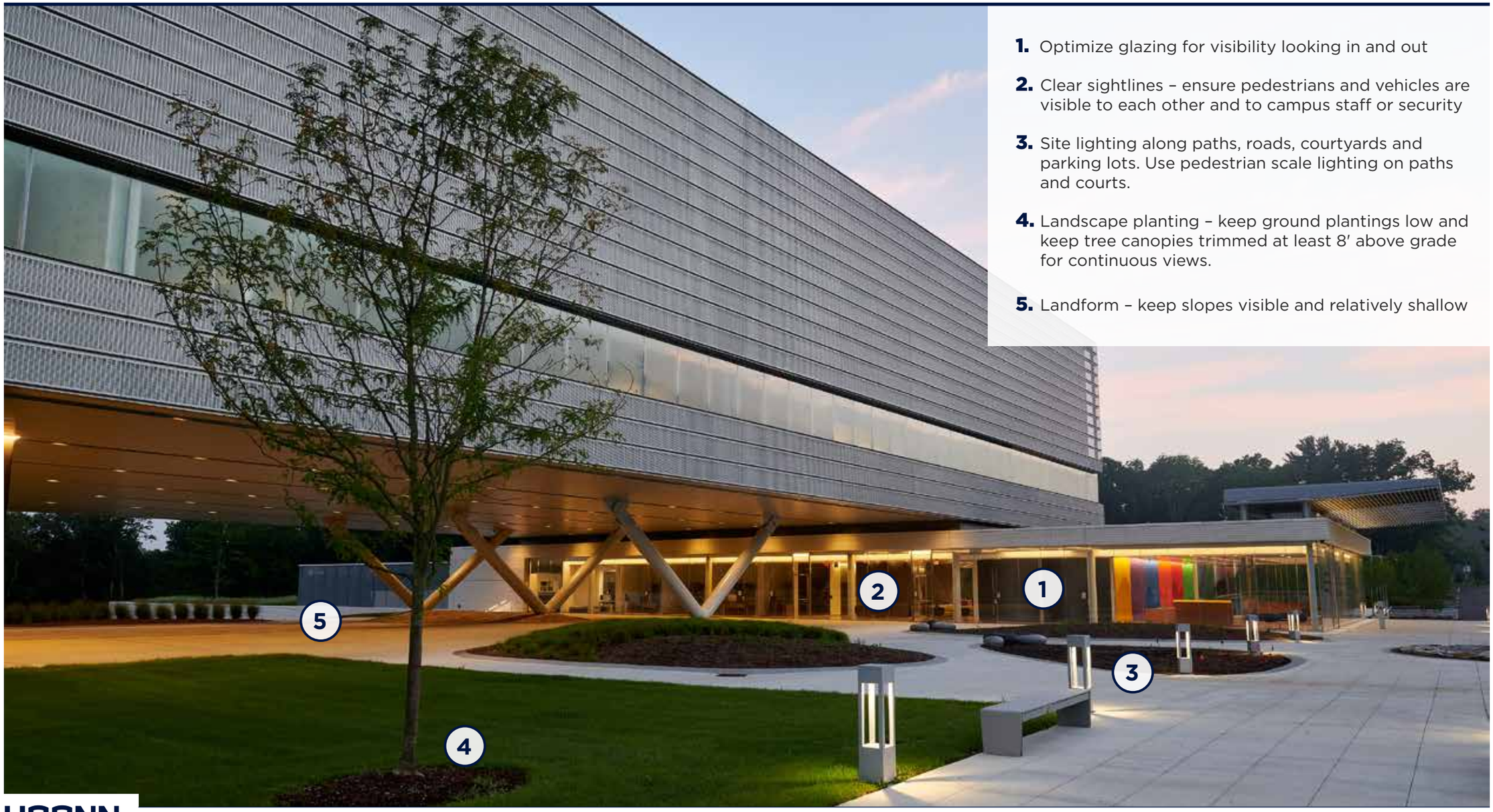


image courtesy of Centerbrook Architects

Natural Surveillance: See-through railings for stairs in conjunction with transparent facades to increase visibility in stairwells.

Natural Surveillance Examples



1. Optimize glazing for visibility looking in and out
2. Clear sightlines – ensure pedestrians and vehicles are visible to each other and to campus staff or security
3. Site lighting along paths, roads, courtyards and parking lots. Use pedestrian scale lighting on paths and courts.
4. Landscape planting – keep ground plantings low and keep tree canopies trimmed at least 8′ above grade for continuous views.
5. Landform – keep slopes visible and relatively shallow

Territorial Reinforcement

- Promote a sense of ownership with clearly defined property lines.
- Limit access to windows or other private/more vulnerable spaces with hostile vegetation or landscaping such as river rocks.
- Host community projects and gathering spaces to strengthen a feeling of shared ownership.
- Incorporate art installations to positively reinforce the space's shared identity with its community of legitimate users while discouraging potential criminal activity. Potential threat actors will feel less comfortable operating in a cohesive environment with a strong sense of community.

Territorial Reinforcement: Property lines defined


Territorial Reinforcement: Gathering spaces enforce shared ownership


Territorial Reinforcement: Art installation

Space Management Examples

- Design spaces to be easily maintained and reduce opportunities for vandalism.
- Use anti-graffiti materials and finishes.
- Ensure trash facilities are easy to use by the community and easy to empty for the maintenance staff.
- Avoid large, blank walls by using plants, windows, or other design features whether decorative or integrated with the building function.
- Avoid creating spaces where threat actors can conceal themselves. This will support efforts towards Natural Surveillance.

Space Management & Maintenance: Avoid large amounts of blank wall space

Space Management: Avoid large amounts of blank wall space

Natural Access Control Examples

- Use vegetation and landscaping to guide users of a space where to or not to go.
- Highlight main entrances to direct users.
- Use signage and wayfinding that makes legitimate users confident and comfortable in their journey.

Natural Access Control: Highlight main entrances


Natural Access Control: Vegetation and landscaping to guide users

Public Safety & Connectivity

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One approach to addressing security risks in public spaces include maximizing opportunities to incorporate both social and physical CPTED principles during the planning and design stage.

CPTED STRATEGIES AND EXAMPLES BY PROJECT STAGE

Stage	Strategies	Examples
Planning	Avoiding blind/entrapment spots	Minimizing isolated areas; avoiding blind spots of buildings and planted areas
	Vitality of public spaces	Adequate density and activity; proper land use; human scale
	Well-connected/integrated plan	Connected streets; proper mixed uses; good street pattern
	Green spaces	Controlled green spaces and parks
	Proper placement of lighting and security cameras	Good placement of street lighting and security cameras
	Anti-terrorist planning	Anti-terrorism planning for target: a temporary or permanent site or building that is sensitive to terrorism (e.g. fan zone, multi-activity hall type arena)
Design	Visibility	Landscape; planting; lighting illumination/color rendering/ uniformity; large glass windows
	Access control	Entry barriers, walls and fences, gates
	Site/target hardening	Soft target building/street hardening through security equipment (e.g. vehicle security barriers, windows and doors, locks, mesh and grilles) certified by relevant security performance standards
	Territoriality	Clear demarcation of space; design promotes a sense of community ownership/ responsibility
	Attractive design	Positive area image; attractive lighting and public art
	Robust materials	Vandal-resistant street furniture; convenient maintenance; integrity of devices used for networks (e.g. data, sensors, energy, water, has, high pressure steam, air intakes)
Site and social management	Maintenance	Design for ease of maintenance, to enable clean streets, greenery and well-groomed vegetation
	Surveilllance	Security camera for vulnerable spots; police/security guards targeting patrols
	Publicity activities	Active communication with the public; preventive messages and rules of conduct for the public

Source: BS ISO 22341:2021

Lighting Overviews

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Lighting shall serve as surface illumination, way finding elements, as well as a contribution to the creation of a safe. Specific elements of lighting can help to foster feelings of safety and inclusivity, creating a more enjoyable experience for students.

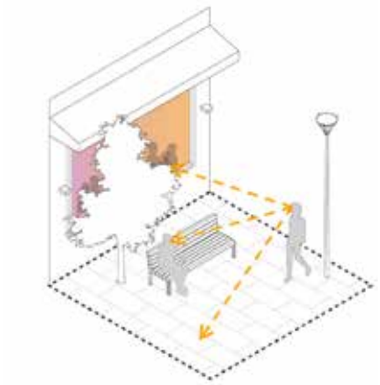
UCONN REQUIREMENT

“Although a minimum of 1.0 ft.-candles is required on all sidewalks in all locations, this lighting criteria shall also apply to five (5) feet on either side of the sidewalk.”

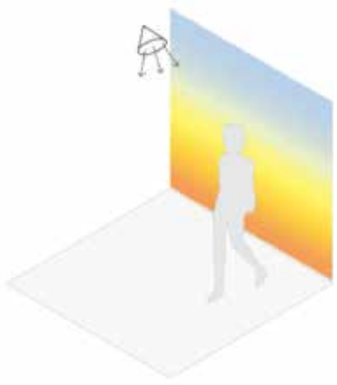
A minimum of 1-ft. candles is required at egress, but may not be appropriate across the entire site. Brighter doesn’t always mean safer — poorly considered lighting can sometimes cause more glare or imbalance in your perception of space. Designers should ensure that luminaires are well angled and their brightness adjusted after installation. This helps to avoid bright lights in front of a dark background causing discomfort, glare, and making the darker spaces appear even more dark. Use the principles of the following pages to provide a considered approach to lighting.

Lighting elements provide a layered approach using appropriately scaled lighting for the building for pedestrians along the path ways. Note the evenness of the lighting and minimal glare.

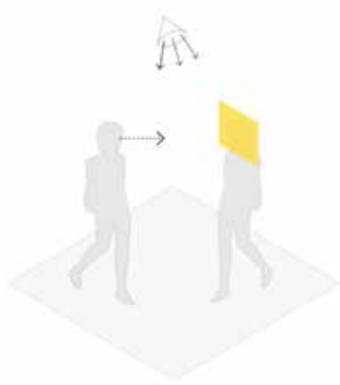
Safe by Design Lighting Layers & CPTED



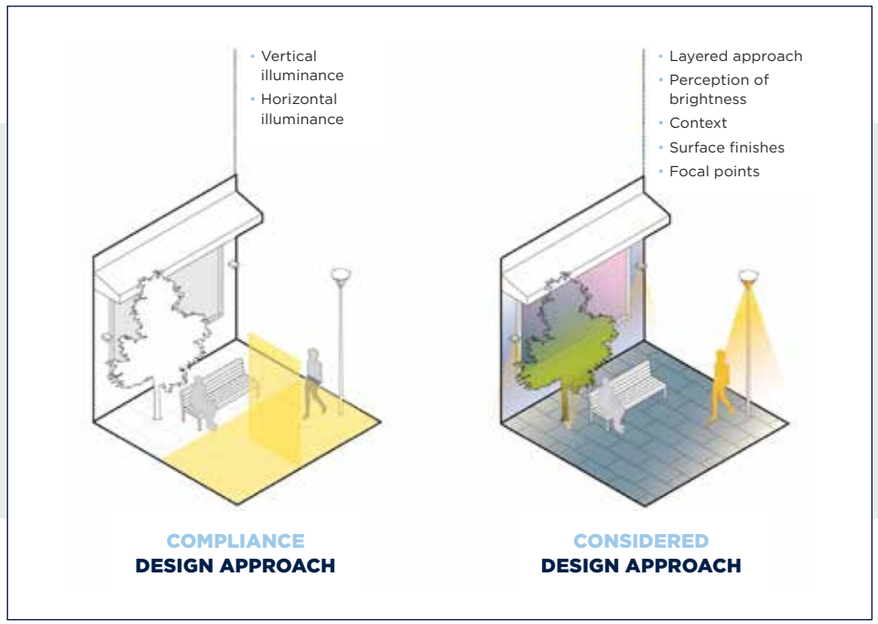
Visual Transparency allows for light to glow from within or behind walls, indicating there is human presence in the area and an intangible sense of “not being alone.”



Research has found that humans tend to prefer warmer color temperatures at night, as it offers a higher sense of comfort for a space.



Facial luminance is important in providing accurate assessment of the space in front of you. For example, it allows people to differentiate between a person walking towards them and a bush that is next to them.



Safer spaces typically provide the ability to clearly identify the path of travel and offer assurance that there are no unknowns in the shadows. Emphasizing not only the footpaths but the verticality of the surroundings will help to reduce hotspots/potential for shadows, providing a more uniformly-illuminated environment.

Lighting Hierarchy

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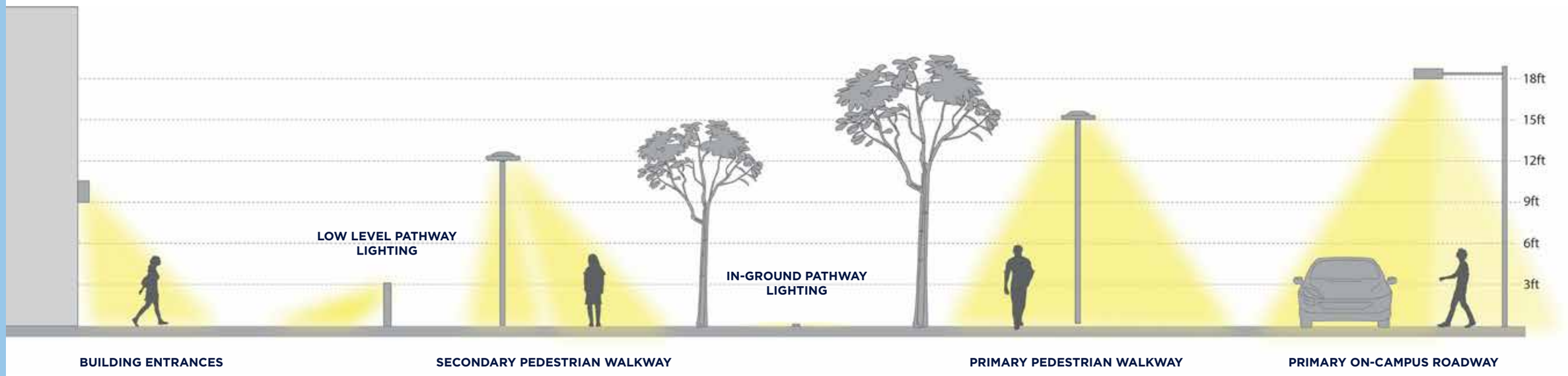
It is key to establish a clear visual hierarchy, creating a meaningful set of relationships between the various components of the campus setting and its residents. Independent yet fully integrated solutions for way finding and general lighting create nighttime illumination that is more specific and purposeful, providing a supportive environment for expanded visual communication.



Lighting Strategies

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A human-centered night-time design promotes a clear visual hierarchy, creating a meaningful set of relationships between the various components of the campus setting and its residents. Lighting also serves as a beacon in the night signifying a destination, a goal, a place of importance and can operate at various levels of scale, from telling a visitor how to find the campus to indicating points of interest within the campus.

- Illuminate natural surroundings providing good uniformity on walking paths and surfaces.
- Provide soft, warm low-level light to illuminate faces and gestures in a comfortable way, enhancing communication.
- Integrate lighting solutions that accommodate long distance communication and short distance private communication.
- Illuminate surrounding elements vertically, such as facade, walls or other backdrops to create visual transparency and enhance visual assessment of surroundings.

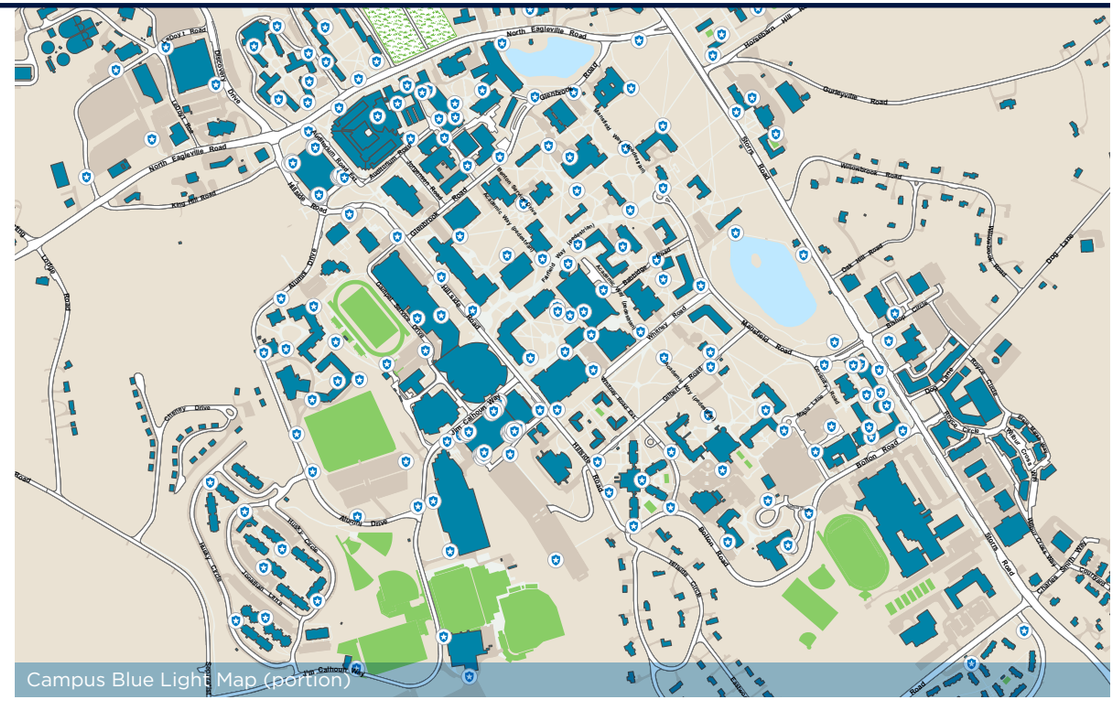
Emergency Blue Phones

Emergency blue phones are designed to provide quick and easy access to emergency assistance. The main aims of emergency blue phones are to:

- **Provide quick access to emergency services:** The blue phones provide direct access to UConn Police Department, enabling immediate access to help in emergency situations.
- **Improve safety:** The presence of emergency blue phones can help deter crime and make people feel safer.

When designers are considering where to place new Emergency Blue Phones or whether new ones may be required as part of their project, they should consider the following:

- **Visibility:** Blue phones should be placed in visible locations, such as near well-lit areas or along well-traveled pathways. This makes it easier for people to locate the phone in an emergency and increases the likelihood that it will be used.
- **Proximity to high-risk areas:** The phones should be placed in areas that are perceived to be high-risk, such as near parking lots, residential buildings, or areas with poor natural surveillance.
- **Accessibility:** The phones should be placed in locations that are easily accessible, with clear pathways and minimal obstacles.



Campus Blue Light Map (portion)

At the UConn campus, Emergency Blue Phones are located with the intent that at least one is always visible from any location on site. When considering an Emergency Blue Phone locations for a new building project, one should typically be located within line-of-sight of the main entrance of a building. Along paths or sidewalks, a maximum distance of 1000′ can be considered, however it's likely that pragmatic design considerations will result in distances between phones that are shorter than this.

Final placement of Emergency Blue Phones will be coordinated with the UConn project design representative and appropriate University Safety stakeholders.

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Campus Security
Design Guidelines

2

District and Project Site Design Considerations

Enforced Standoff

Many security threats are most effectively mitigated by keeping clear distance between the threat and the asset to be protected. This is particularly true of vehicle-based threats to security and safety. Enforced standoff measures seek to provide vehicle-free zones near crowded buildings and busy pedestrian routes. This is achieved with varying levels of enforcement, from signage and measures that discourage unauthorized vehicle access through to the use of temporary road closures for major events.

By considering the parking, delivery, and other access needs early in the design stages of a project, enforced standoff can be used to create a safe, pedestrian-friendly experience while meeting the operational needs of each facility.

Levels of Protection — Enforced Standoff

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Low

- Seek to move or locate all parking and vehicle circulation 30’ or more away from the building, with particular attention to accommodate routes of pedestrian travel.
- Eliminate parking for unknown vehicles (e.g. general public) within 20’ of the building. Consider the designation of separate residents’ and visitors’ parking areas with credentialed use of residents’ spaces.
- Eliminate parking within 10’ of the building for all vehicles. Enforce this via landscaping and road layout design.
- Where parking and/or vehicle circulation is allowed near the building, signage should discourage unauthorized access.
- Consider Landscape design to discourage interaction between pedestrian and vehicle traffic.

Medium

- Design for Card Access at Main Access/Egress Points (front and back entrance, loading docks)
- When feasible, locate all parking and vehicle circulation 50’ or more away from the building, with particular attention to accommodate routes of pedestrian travel.
- Eliminate parking for unknown vehicles (e.g. general public) within 50’ of the building.
- Eliminate parking and vehicle circulation immediately adjacent to the building for all vehicles.
- Where parking and/or vehicle circulation is allowed near the building, use signage, paving styles or materials, a defined circulation layout, and other means to discourage unauthorized access.
- Consider the use of parking barriers and access control for vehicles requiring access close to the building.

High

- In general, seek to provide 100’ of standoff from crowded outdoor gathering areas from busy vehicle circulation routes and parking.
- *The following apply during event times; however, they may have permanent features or infrastructure required to achieve the design goal.*
  - Design to locate all parking and unscreened vehicle circulation 100’ or more away from the building/ gathering space, with particular attention to accommodate routes of pedestrian travel.
  - Eliminate parking for unknown/unscreened vehicles (e.g. general public) within 100’ of the building/gathering space.
  - Eliminate parking and vehicle circulation immediately adjacent to the building/gathering space for all vehicles except emergency vehicles and vehicles critical to the operation of the event.
  - Use temporary checkpoints or screening operations in order to enforce road closures.
  - Provide infrastructure and facilities to support additional security presence if required by UConn PD and/or Event Security.

Fences and Walls

As part of the open and welcoming character of the University architecture, fences and walls for security purposes are generally excluded apart from at Critical Operations Facilities, events with limited attendance.

The University has a preference for site walls. The implementation of such walls should be considered early in the design in order to coordinate access needs with security goals for this and other mitigation categories.

At this location, the footpath is delineated by landscaping with low walls. These are also effective natural access control and emphasize the pedestrianized, vehicle-free zone.

Levels of Protection — Fences and Walls

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Medium

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- Incorporate architectural pedestrian fence or low wall; no anti-climb rating or measures are required. Chain-link fences may be considered for operations or sports facilities, consistent with the University Architectural Design Guidelines.

High

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- For ticketed / managed events:
  - Outdoor Gatherings should be provided with a 6’ tall (minimum) anti-pedestrian fence that does not include anti-climb features (e.g. topping). Consider using a taller (8’ or more) fence or walls for permanent outdoor gathering spaces that enclose ticketed venues.
  - Seek to eliminate gaps that would allow unauthorized access, paying close attention to the interface with other buildings/assets/infrastructure.
  - Limit the number of access and egress points and align their location with emergency services / event planning.

Hostile Vehicle Mitigation (HVM)

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Hostile vehicle mitigation is a site-focused design element comprising measures that seek to prevent unauthorized access or malicious activity by persons in a vehicle, such as the use of a vehicle as a weapon or delivery of other threats (e.g. an improvised explosive device).

For environments where little mitigation is necessary, landscaping, traffic calming, and designing to reduce interactions between pedestrian and vehicle traffic generally suffice. For design conditions that require more protection, a wide variety of measures could be used, such as bollards, street furniture, landscaping or boulders, low walls, pedestrian seating elements and many more.

By carefully considering the landscaping, building design, and pedestrian wayfinding early in a project, it is possible to integrate HVM into thoughtful, aesthetically pleasing landscape designs, where it doesn't stand out as 'security' elements.

Huntco 6" Bollard – Surface Mounted


Huntco 6" Bollard – Surface Mounted


Engineered Boulders


Secure USA Sidewalk SSB 3608-4 (6" Foundation Depth)

Site Design Considerations

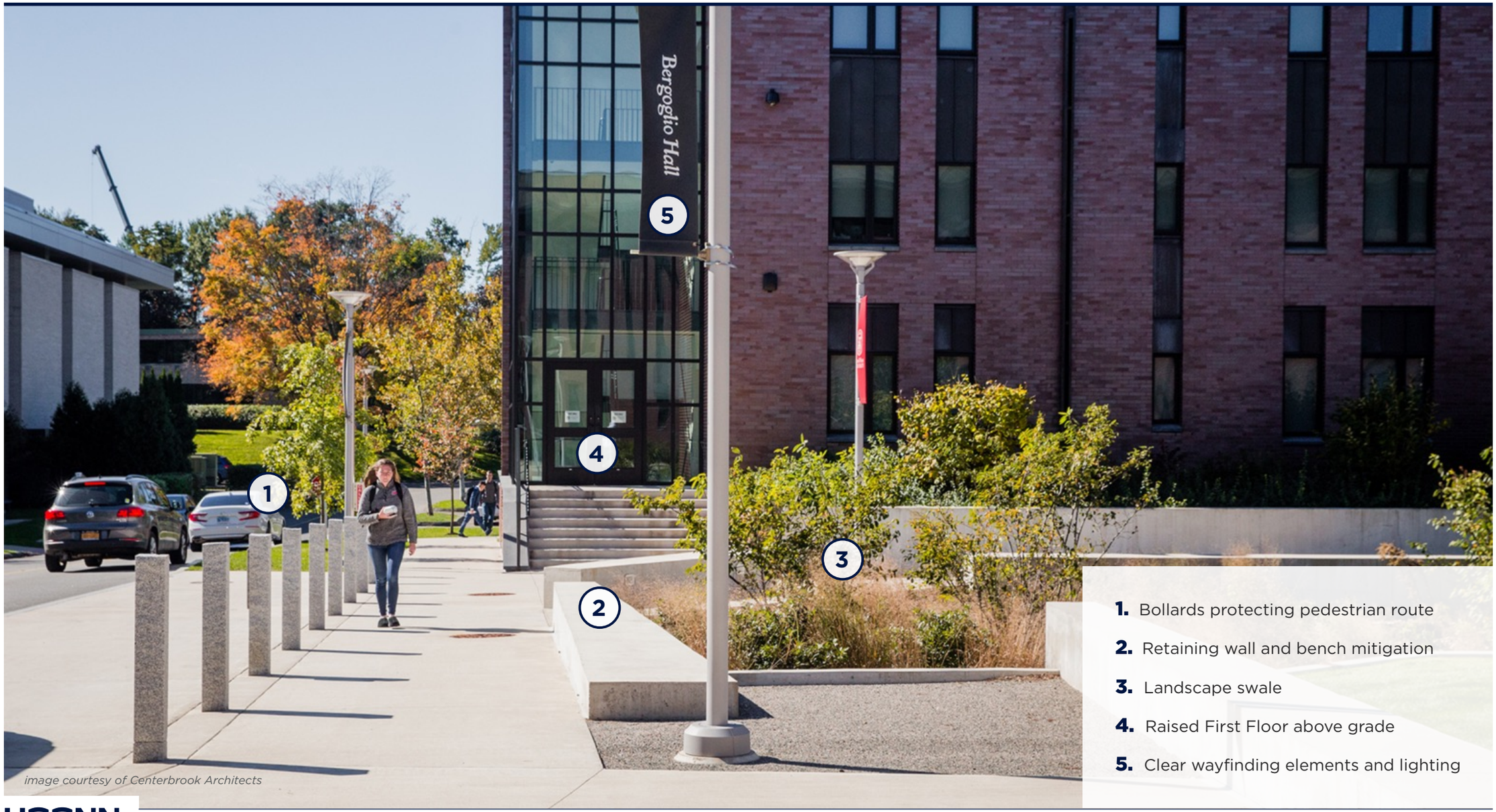

image courtesy of Centerbrook Architects

1. Bollards protecting pedestrian route
2. Retaining wall and bench mitigation
3. Landscape swale
4. Raised First Floor above grade
5. Clear wayfinding elements and lighting

Levels of Protection — Permanent HVM

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Baseline

- Consider installation of flexible delineator posts to guide vehicle traffic.
- Evaluate the benefit of bollards at primary pedestrian access points to/from parking areas considering how busy the parking area may be and the likelihood for interactions between vehicles and pedestrians in that area.
- Seek to provide large paths and resting areas for pedestrians to cross vehicle routes safely. If pedestrian routes are adjacent to high-speed vehicle routes, evaluate the benefit from bollards or fencing to discourage interaction between pedestrians and vehicles at locations away from safe crossing points.

Low

- Design to deter hostile vehicle access via street furniture, landscaping, and measures that are not impact tested or rated. Placement of measures does not need to form a full perimeter around the space, but instead should be focused on protecting likely pedestrian routes and potential interaction points between vehicles and pedestrians.

Medium

- Design for vehicle interdiction with landscaping as an HVM solution. The proposed mitigation may or may not be impact-rated or tested, but pose as a deterrent.
- For new buildings, consider raising the first floor above grade in order to avoid vehicle access.
- Design to deter hostile vehicle access via street furniture, landscaping, and untested measures. Seek to create a continuous line of mitigation measures that discourage hostile vehicle access with gaps minimized while considering project access requirements.
- Consider products or mitigation solutions such as: bollards, berms, planters, swales, adapted signage and wayfinding elements, topography and level changes (e.g. retaining walls, steps), seating/benches, etc.

High

- Design for vehicle interdiction with HVM solutions and/or landscaping features that are impact-rated according to ASTM F2656 or equivalent international standard (e.g. IWA 14:2013 or PAS 68) or engineered to provide equivalent performance to these standards.
- The layout of the HVM measures should create a continuous perimeter around vulnerable parts of the event space, such as areas where crowds gather for ingress / egress, areas of extensive glazing, etc. For new buildings, consider raising the first floor above grade in order to avoid vehicle access.
- Consider products or mitigation solutions such as: bollards, berms, planters, swales, adapted signage and wayfinding elements, topography and level changes (e.g. retaining walls, steps), seating /benches, etc.

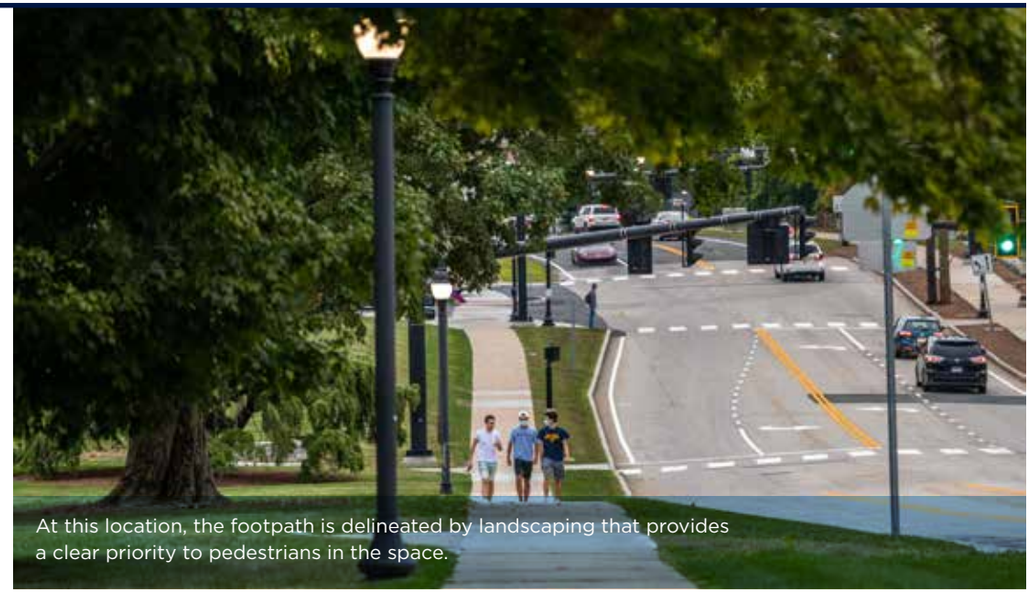
Traffic Calming

While hostile vehicle mitigation seeks to exclude and control vehicles, traffic calming creates safer and more livable streets by slowing down vehicular traffic and prioritizing the needs of pedestrians, cyclists, and other non-motorized traffic. It aims to shift the focus from high-speed, vehicle-centric environments to a more balanced and inclusive approach, encouraging safer and more responsible driving. By integrating traffic calming measures into the general vehicle circulation design of the UConn campus, errant vehicles will be slower and pose less of a threat to public safety.

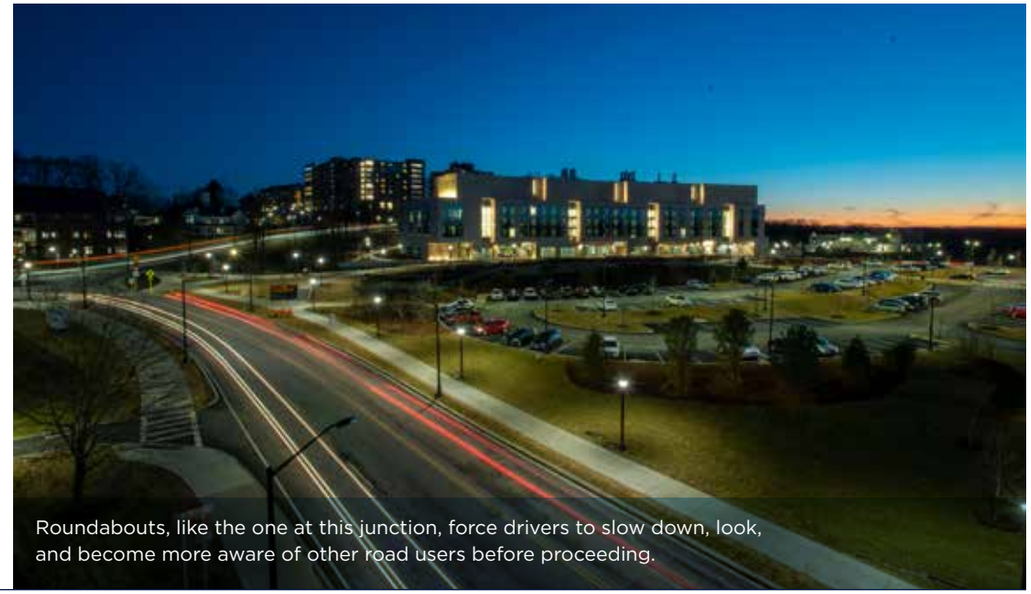
Traffic calming measures should be integrated into the overall road design for maximum effectiveness. Speed bumps, roundabouts, and narrower vehicle lanes can all be effective ways of slowing traffic. Elements that prioritize pedestrian routes, such as increased visibility and creating islands for wider road crossings, are often helpful in making pedestrians feel safer in their journey.

CHICANE IMAGE PENDING

A chicane on lower-traffic routes can be an effective measure to slow traffic by forcing lateral deviation of traffic along an otherwise straight path.



At this location, the footpath is delineated by landscaping that provides a clear priority to pedestrians in the space.



Roundabouts, like the one at this junction, force drivers to slow down, look, and become more aware of other road users before proceeding.

Levels of Protection — Traffic Calming

ARUP
CENTERBROOK

Medium

!!

- Design to divide pedestrian and vehicular traffic. Provide measures to slow vehicles on roads such as speed bumps, landscaped islands, expanded crossing areas, appropriate signage, etc.

High

!!!

- Divide pedestrian and vehicular traffic. Provide measures to slow vehicles on roads such as speed bumps, landscaped islands, expanded crossing areas, appropriate signage, etc.
- Use strategies to provide defensive zones for pedestrian crossing, such as islands with waiting areas, expanded curb waiting areas at crossings, etc.
- Use chicanes or other redirection and narrowing of lanes to slow traffic before it arrives near the Event venue

Levels of Protection — Site Mitigations

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Summary Table

PROJECT TYPE	ENFORCED STANDOFF				FENCES / WALLS				PERMANENT HVM				TEMPORARY HVM				TRAFFIC CALMING			
	MEASURE LEVEL OF PROTECTION																			
	B	L	M	H	B	L	M	H	B	L	M	H	B	L	M	H	B	L	M	H
Academic			X		N/A						X				X				X	
Administration			X		N/A					X				X					X	
Residential		X			N/A					X				X			N/A			
Critical Operations			X				X				X				X		N/A			
Environment / Health & Safety		X			N/A						X				X		N/A			
Events				X	N/A							X				X				X
Outdoor Gathering Areas				X				X				X				X				X
Landscaped and Other Outdoor Areas		X			N/A						X		N/A						X	
Parking	N/A						X		X				N/A				N/A			

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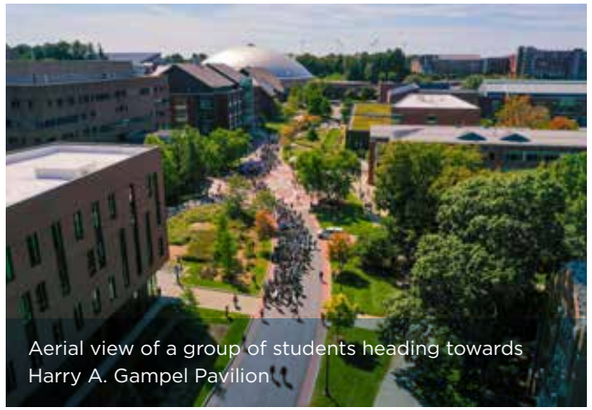
Campus Security Design Guidelines

3

Building Security Design

Controlling Access to Vantage Points

Locations that provide expansive views over busy areas of the campus are uniquely vulnerable to two threats: actions from single-interest and/or protest groups, who wish for their message to be widely seen, and actions from individuals who would seek to harm large numbers of people from such a vantage point. As a result, practical security measures, such as locked access to these locations, are to be included as a typical provision throughout the University. For those locations at higher risk, such as buildings next to outdoor gathering areas, this is to be coupled with the ability to monitor the status of access points.



Aerial view of a group of students heading towards Harry A. Gampel Pavilion

While most roof space at the University is pitched, some roofs are flat. These kinds of vantage points present a unique risk for those with unauthorized access.

Levels of Protection — Controlling Access to Vantage Points

ARUP
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Low

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.

Medium

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.
- Provide monitoring contact to confirm closed position for roof access doors and a standalone audible alarm for held-open access to roof.

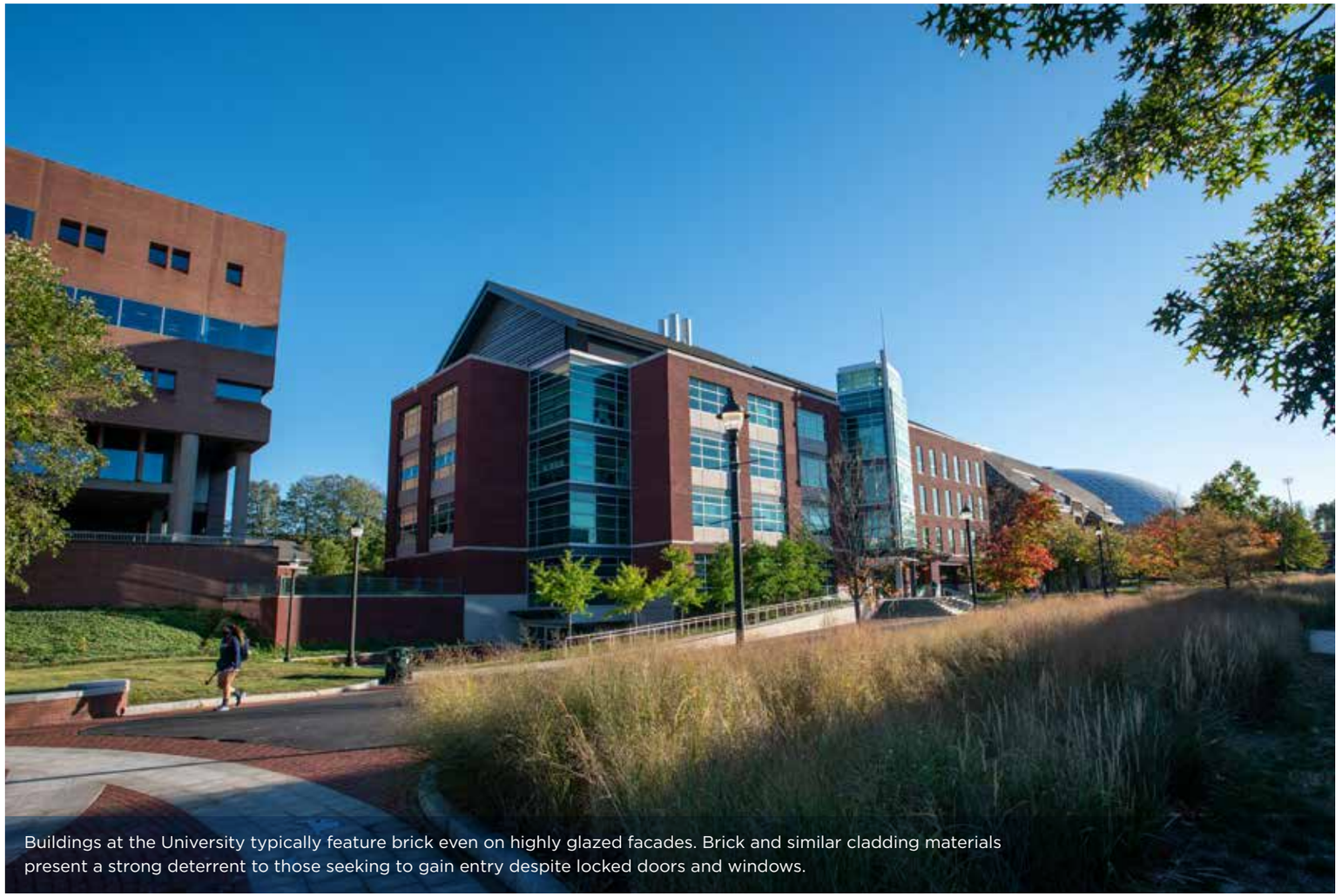
High

- For Buildings at or adjacent to Outdoor Gathering Areas, provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.
- Provide monitoring contact to confirm closed position for roof access doors and a standalone audible alarm for held-open access to roof.

Forced Entry Hardening — Building Fabric

Similar to the site-wide mitigation concepts of CPTED, the choice of materials and finishes for the exterior of a building can also deter opportunistic crime. By choosing materials that project an impression of strength and provide a reasonable, basic robustness against damage from hand tools, designers can make a building's entrances unattractive to opportunistic threats. Doors and windows at ground level are the most vulnerable elements for opportunistic attack, and consideration or use of forced-entry resistant building elements are to be included on University projects.

The architectural style of the University, heavily featuring brick and robust finishes is aligned well with the goals of this mitigation. By building in alignment with these style guidelines and incorporating pragmatic forced-entry resistance (according to ASTM 476), the buildings will deter and delay potential threat actors.



Buildings at the University typically feature brick even on highly glazed facades. Brick and similar cladding materials present a strong deterrent to those seeking to gain entry despite locked doors and windows.

Levels of Protection — Forced Entry Hardening — Building Fabric

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CENTERBROOK

Low

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. Consider the use of ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

Medium

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. At a minimum, materials should meet ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

HVAC — Air Intake Placement

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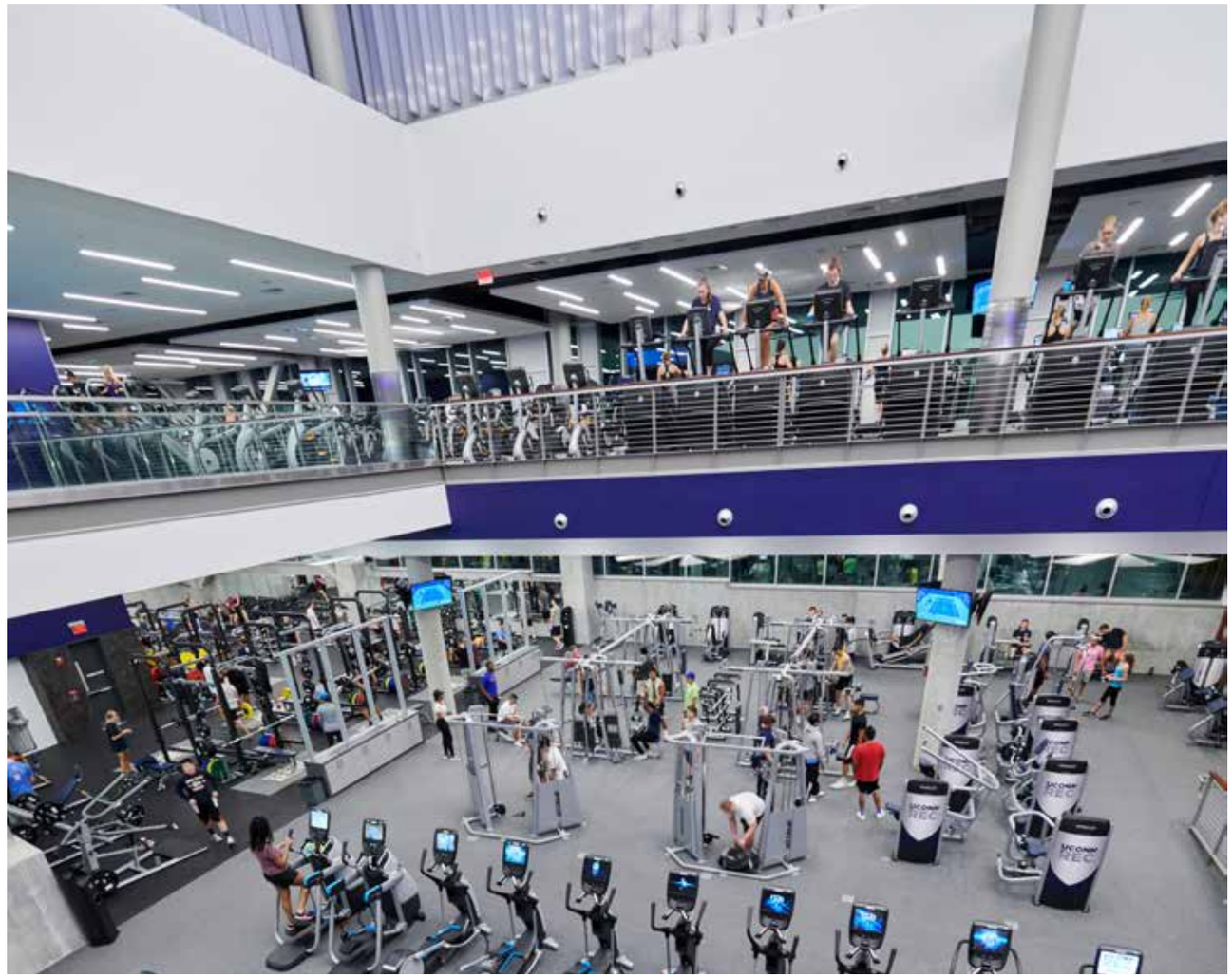
Correct air intake placement is important for Heating, Ventilation, and Air Conditioning (HVAC) for the systems' correction function, and it also has impacts on security. Security can be enhanced by placing air intakes away from potential sources of contamination, whether that contamination is intentional (such as pollutants or irritants) or non-malicious (such as odors or dust). Intakes at UConn are to be placed away from ground level to minimize these risks.

Additional, non-security benefits from correct intake placement typically include:

- Better balanced airflow, allowing proper distribution of conditioned air throughout the space
- Reduced recirculation of stale air, leading to better indoor air quality
- Increased efficiency associated with reduced workload for the HVAC system.



Levels of Protection — HVAC — Air Intake Placement

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Low

- Air intakes are to be located according to building functional requirements and away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building.
  - Consider concealment and/or elevation of air intakes taking into account building function.

Medium

- Air intakes are to be placed at elevated locations away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building.
- In situations where the intake cannot be elevated, conceal below ground level and have lockable steel grating.

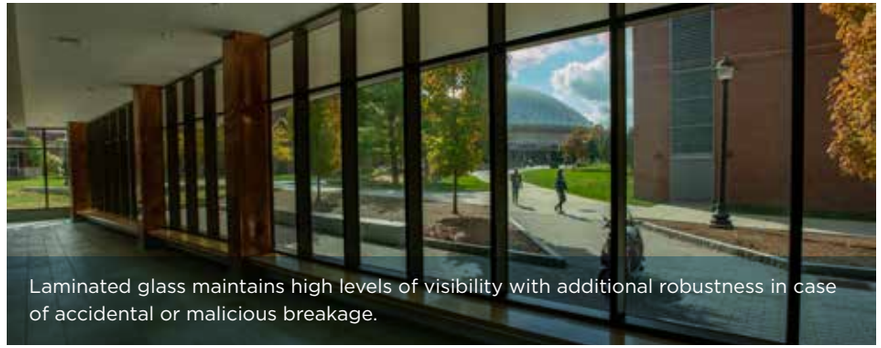
High

- Air intakes are to be placed at elevated locations away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building.
- In situations where the intake cannot be elevated, conceal below ground and have lockable steel grating.

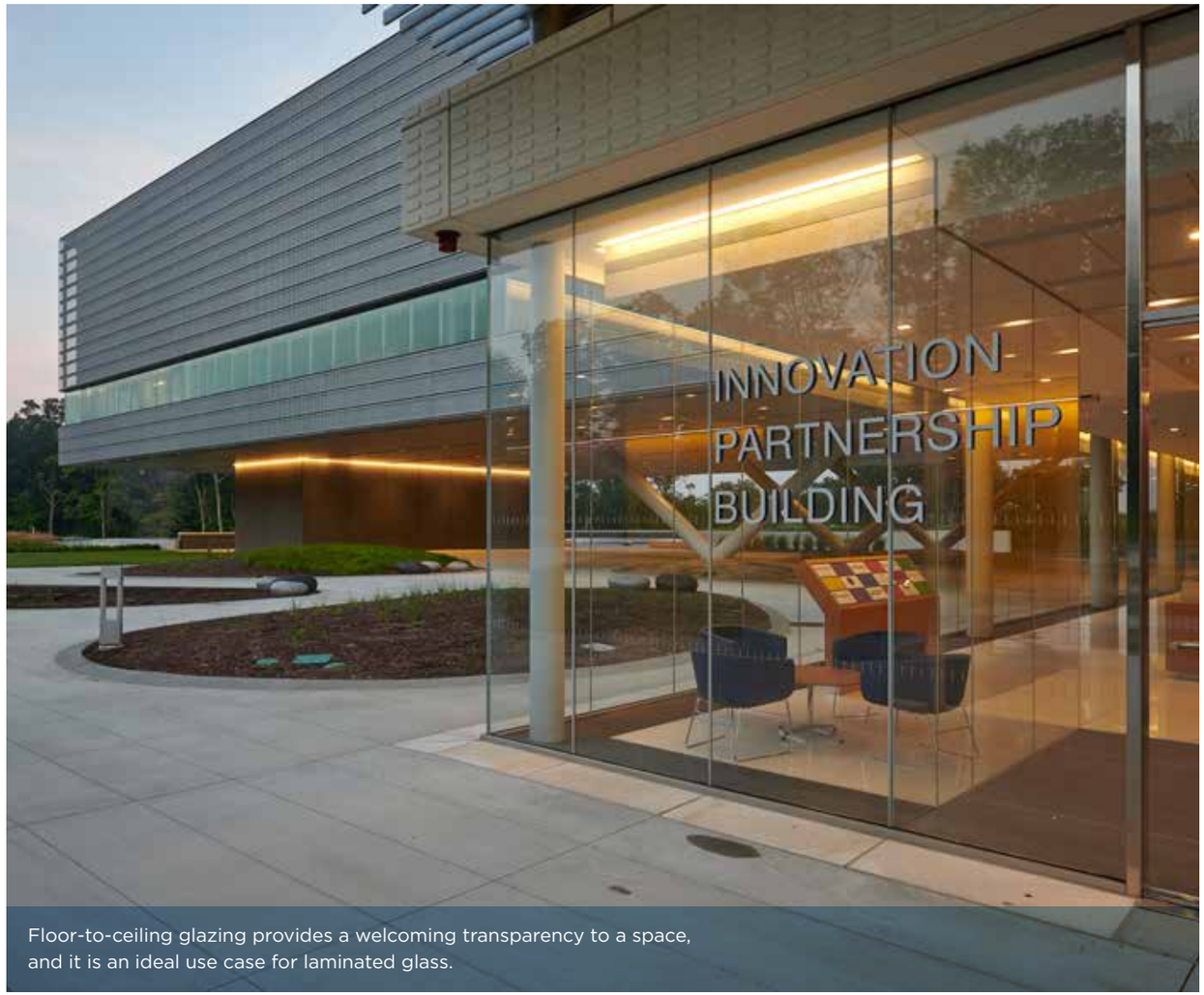
Specification of Laminated Glass

Laminated glass offers significant safety and security benefits due to its unique construction. It consists of two or more layers of glass bonded together with a polymer interlayer, typically polyvinyl butyral (PVB) or another clear plastic. In the event of breakage, the interlayer holds the glass fragments together, reducing the risk of injury from sharp shards. This makes laminated glass highly resistant to impacts, including forced entry attempts, and it maintains its integrity even when cracked. These qualities make it highly beneficial for windows, doors, and other applications where safety, security, and transparency are all important.

By including laminated glass on the exterior of buildings, opportunistic crimes are deterred. Additionally, by including laminated glass at key interior locations, safety is enhanced in case of accidental or intentional breakage. The Underwriters Laboratory (UL) 972 standard provides a baseline for security glazing throughout buildings at UConn.



Laminated glass maintains high levels of visibility with additional robustness in case of accidental or malicious breakage.



Floor-to-ceiling glazing provides a welcoming transparency to a space, and it is an ideal use case for laminated glass.

Levels of Protection — Specification of Laminated Glass

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Low

- Exterior glazing at ground-level shall have a UL 972 burglary resistant rating.

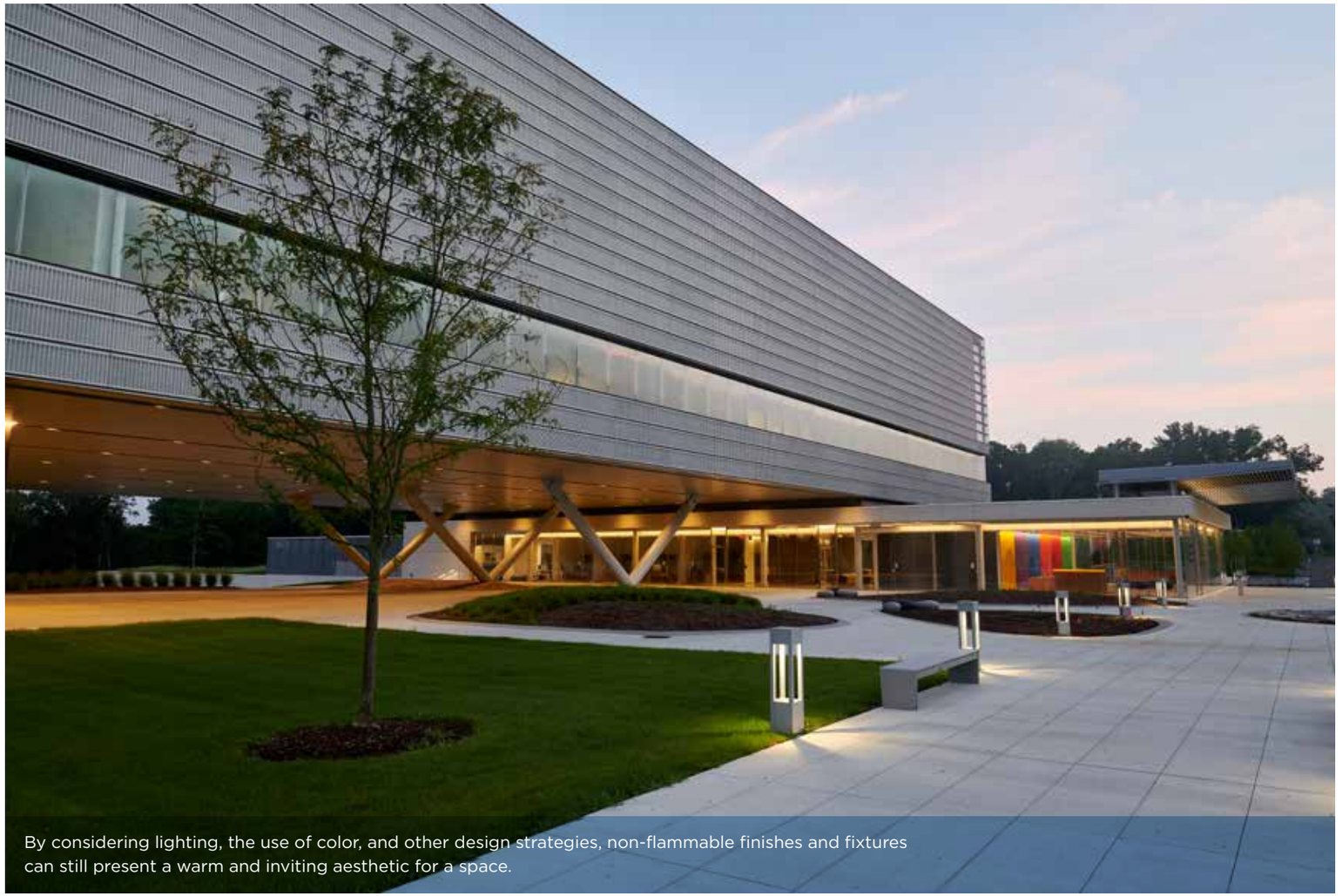
Medium

- Exterior glazing at ground-level shall have a UL 972 burglary resistant rating.
- Interior glazing that provides a view into high occupancy spaces shall be laminated.

Specification of Non-Flammable Materials

Building and furnishing material choices can be very effective to discourage minor acts of arson. While perhaps viewed by the perpetrator as mischief, the act of setting fire to furnishings within a building can result in substantial danger to persons and damage to property. By designing and specifying furnishings and building finishes that are non-flammable, the opportunity for such crime is drastically reduced. While this is not appropriate for all campus settings, creative design solutions can result in non-flammable, built-in furnishings that maintain the comfort, aesthetic, and functionality of the space.

While not mandated, these approaches should be considered for most facility types on the UConn Campus.



By considering lighting, the use of color, and other design strategies, non-flammable finishes and fixtures can still present a warm and inviting aesthetic for a space.

Levels of Protection — Specification of Non-Flammable Materials

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Baseline

- Consider the use of integrated (immovable), noncombustible furnishings in common areas.

Low

- Use noncombustible materials and finishes appropriate to maintain the style of the facility.
- Evaluate the opportunity to use noncombustible materials for street furniture, landscaping features, and structures.
- Consider the use of integrated (immovable), noncombustible furnishings.

Levels of Protection — Building Mitigations

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Summary Table

PROJECT TYPE	CONTROLLING ACCESS TO VANTAGE POINTS				FORCED ENTRY HARDENING – BUILDING FABRIC				HVAC – AIR INTAKE PLACEMENT				SPECIFICATION F LAMINATED GLASS				SPECIFICATION OF NON- FLAMMABLE MATERIALS			
	MEASURE LEVEL OF PROTECTION																			
	B	L	M	H	B	L	M	H	B	L	M	H	B	L	M	H	B	L	M	H
Academic		X					X				X				X			X		
Administration		X					X				X				X			X		
Residential		X				X					X			X			X			
Critical Operations		X					X			X				X			X			
Environment / Health & Safety		X					X					X			X		N/A			
Events			X				X				X				X			X		
Outdoor Gathering Areas				X	N/A				N/A				N/A				N/A			
Landscaped and Other Outdoor Areas		X			N/A				N/A				N/A					X		
Parking	N/A					X			N/A				N/A				N/A			

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Campus Security
Design Guidelines

4

Security Technology Design

Security Technology Design

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Security Technology on UConn projects feature the appropriate deployment of Access Control Systems (ACS), Intrusion Detection Systems (IDS), and Video Surveillance Systems (VSS). While ACS function to deter or delay a security threat, IDS and VSS are more effective to detect a threat and enable law enforcement response. For all projects, also refer to the University Design Guidelines and Performance Standards including Appendix X — Physical Security Systems Standards.

ACCESS CONTROL SYSTEMS delay a threat by denying access to unauthorized persons via locks on doors, gates or fences. They can be centrally managed, electronic, card-based systems or they can use basic mechanical locks.

INTRUSION DETECTION SYSTEMS at UConn focus on unauthorized access at doors through held open or forced door alarms. Other types of intruder detection, such as volumetric sensors, glass break detectors, or VSS analytics may be appropriate for specific high-value assets (e.g. works of art or cultural heritage), and these would warrant a site-specific approach.

For certain spaces with high vulnerability, duress buttons are an additional measure that enables notification of law enforcement. These are addressed separately from the main Technology mitigations because they are applicable only to particular design situations.

VISUAL SURVEILLANCE SYSTEMS (sometimes referred to as CCTV) enable response to a threat and coordination of that response by improving situational awareness. After a security incident has taken place, recordings from the VSS contribute to evidence when an investigation is necessary. VSS placement at UConn is coordinated on a functional basis, providing cameras that are efficiently placed to ensure correct views.

Access Control

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Access Control is a Technology-focused design element comprising measures to monitor and restrict access to an area. Access control systems can range from simple physical locks and keys to complex, networked systems that use biometrics, smart cards, or other technologies to verify identity and authorization.

At UConn, the current approach features the use of proximity, magnetic stripe, and smart technology photo ID badges to provide access through card reader-controlled doors on the Genetec system.

Access Control should be provided in the building design according to the layered approach for security throughout the UConn campus environment. For example, the following access control provisions would be in alignment with this guideline:

- **Access to general campus environment:** No restriction; CPTED including emphasis on territorial reinforcement through signage and landscaping.
- **Access to new academic building from exterior:** Scheduled lock/unlock. Card access for locked times when appropriate students, staff, faculty are able to access. This includes side doors that are for limited usage. Egress only doors should remain locked from the outside at all times.
- **Access to spaces storing high-value items within new academic building:** Card access managed for specific individuals at specific locations.

Access Control Door


Example of a integrating access control into a historic main entrance setting.

images courtesy of Centerbrook Architects


This entrance promotes natural surveillance while enabling access control at the main entrance.

Levels of Protection for Access Control Systems

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Low

- Design for card Access at Main Access/Egress Points.
- Evaluate the benefit of a second layer of Access Control/ Card Access Point at entrance from common and visitor areas into circulation leading to sensitive and/or personal spaces.
- **For Parking:** Design for Card Access or Payment/Ticket Registration at Main Access/Egress Points.

Medium

Design for Card Access at Main Access/Egress Points (front and back entrance, loading docks)

- Loading Docks: Provide access with video intercom at perimeter doors.
- Provide an additional second layer of security egress point interior from the loading dock external doors which may be left open for extended periods of time.
- Provide Second Layer of Access Control (second card access point) at entrance to following locations if present in building:
  - Areas where controlled substances (e.g. hazardous chemicals, radioactive sources, etc.), items of historical or cultural significance, items of significant theft potential (e.g., concealable, portable items of high value) are held (e.g. audio visual control rooms).
  - Areas where student access is restricted (e.g. specialized labs, critical infrastructure within academic settings, etc.).
- Access control for second layer of security may use additional card reader for central access control system or alternative if required by the project (e.g. number pad/keypad, local ID card reader, lock and key, etc.).
- Provide manual measures to enable Shelter-in-Place or Lockdown of individual classrooms or low-occupancy rooms via door hardware only. (Non-networked, e.g. dead bolt or mortice lock).
- For ticketed or attendance-managed events:
  - Coordinate screening/security at access points with event requirements from University Safety. These may include walk through metal detectors, hand-held metal detectors, bag restrictions, etc. facilitated by Event Security or University Safety.
  - Provide infrastructure and facilities to support additional security presence if required by University Safety and/or Event Security.

High

- For ticketed or attendance-managed events:
  - Limit the number of access/egress points.
  - Keep access/egress points away from areas where crowds are anticipated to gather.
  - Where possible, provide measures to prevent direct line-of-sight from screening locations to the location of main crowd via location or alignment of screening areas and/or via hoarding/fencing (whether temporary or permanent).
  - Coordinate screening and security at access points with event requirements from University Safety. These may include walk through metal detectors, hand-held metal detectors, bag restrictions, etc. facilitated by Event Security or University Safety.
  - Provide infrastructure and facilities to support additional security presence if required by University Safety and/or Event Security.

Levels of Protection for Access Control Systems

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Summary Table

	ACCESS CONTROL		
	MEASURE LEVEL OF PROTECTION		
PROJECT TYPE	Low	Medium	High
Academic		X	
Administration		X	
Residential	X		
Critical Operations		X	
Environment / Health & Safety	X		
Events		X	
Outdoor Gathering Areas			X
Landscaped and Other Outdoor Areas		N/A	
Parking	X		

Intrusion Detection Systems

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An intrusion detection system (IDS) is a technology mitigation that is designed to detect unauthorized entry into a building or other secure area. It typically consists of a combination of hardware and software components that work together to monitor access points, such as doors and windows, and to alert security personnel in the event of a potential intrusion.

IDS use various technologies to detect intrusions, including:

- **Motion sensors:** These sensors detect movement within a defined area and can be used to detect intrusions by people or vehicles.
- **Glass break detectors:** These sensors use microphone technology to detect the sound of breaking glass and can be used to detect intrusions through windows.
- **Door and window contacts:** These devices detect the opening of doors and windows and can be used to detect intrusions.
- **Video surveillance system analytics:** These analytics identify motion or features, such as an abandoned package, within VSS views, alerting security personnel upon identification of a threat.

An IDS can play an important role in protecting buildings and other secure areas from unauthorized entry and helping to ensure the safety of the people and assets within.

At UConn, IDS design is focused on utilization of door contacts and hold-open alarms, which can also be thought of as part of the ACS design. For protected areas or assets, such as art installations, cultural artifacts, or regulated materials or lab spaces consideration should be given to the potential addition of other elements of IDS such as those identified above.

Levels of Protection for Intrusion Detection Systems

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!

Low

- Design for forced door or held-open door alarm capability for doors on access control.
- Emergency egress only doors should have the capability to be monitored with local audible alarm for held-open door (e.g. stairwells).
- Second layer of security should be monitored with local audible forced door and held-open door alarm.

!!

Medium

- Design for forced door or held-open door alarm capability for all doors that are on access control.
- Equip all exterior doors with status monitoring via door contacts and with optional request-to-exit.
- Emergency egress only doors should be monitored and provided with local audible alarm for held-open door (e.g. stairwells) at a minimum.
- Second layer of security should be monitored and provided with local audible forced door and held-open door alarm.
- Provide a specific audible alarm for unauthorized access to spaces containing high-value assets (e.g., art pieces, historically significant items, controlled substances).

!!!

High

- For items of cultural significance, high value (e.g. art pieces), controlled substances, hazardous area, or similar areas with special considerations, consult your University Representative.

Levels of Protection for Intrusion Detection Systems

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Summary Table

	INTRUSION DETECTION		
	MEASURE LEVEL OF PROTECTION		
PROJECT TYPE	Low	Medium	High
Academic		X	
Administration		X	
Residential	X		
Critical Operations	X		
Environment / Health & Safety		X	
Events	X		
Outdoor Gathering Areas	X		
Landscaped and Other Outdoor Areas	N/A		
Parking	N/A		

Video Surveillance

Video Surveillance is a Technology-focused design element that enables response to a threat and coordination of that response by improving situational awareness. After a security incident has taken place, recordings from the VSS contribute to evidence when an investigation is necessary.

VSS design and implementation at UConn is to be coordinated on a functional basis, providing cameras that are efficiently placed to ensure correct views.

One of the most important aspects of VSS design is the placement of cameras. The decision on camera placement and resolution should be made by the security design team in order to meet the functional requirements of the camera view. These functional requirements are outlined in more detail in the following pages.

Careful camera placement can ensure that cameras blend in with lighting and other devices while providing adequate views.

Cameras are placed along this curved hallway to facilitate a view of the doorway and to ensure adequate views all around the corner.

Video Surveillance Scenes

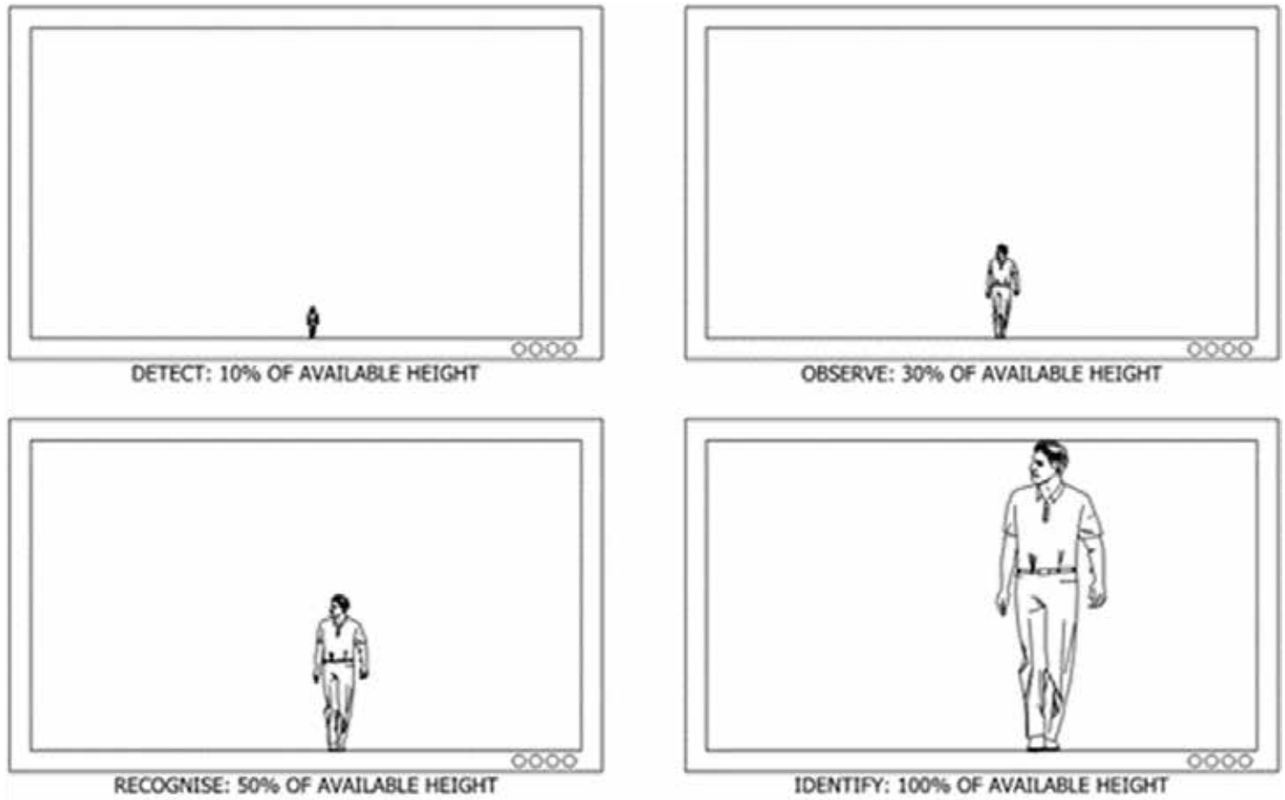
The placement of cameras during the design of the VSS will be based on achieving a particular video surveillance scene. Each project will utilize four (4) primary categories of video surveillance scenes. Each scene should be calculated using a baseline height of 5'-9" for the person of interest (POI).

DETECT: The POI occupies at least 10% of the available screen height. After an alert, an observer would be able to search the display screens and ascertain with a high degree of certainty whether or not a person is present.

OBSERVE: A POI should occupy between 25% and 30% of the screen height. At this scale, some characteristic details of the individual, such as distinctive clothing, can be seen, whilst the view remains sufficiently wide to allow some activity surrounding an incident to be monitored.

RECOGNIZE: When the POI occupies at least 50% of screen height, viewers can say with a high degree of certainty whether or not an individual shown is the same as someone they have seen before.

IDENTIFY: When the POI occupies at least 100% of the screen height, picture quality and detail should be sufficient to enable the identity of an individual to be established beyond a reasonable doubt.



Example of Video Surveillance Scenes

In order to maximize the effectiveness of each video surveillance scene, the resulting image quality (pixels-per-foot) for each camera must be considered in addition to the percentage of available screen height occupied. Parameters such as the camera's resolution, lighting, distance to the target, and lens size will all play a part in determining the image quality.

Video Surveillance Image Quality

To establish image quality, these standards define the needed resolution of the camera based on its operational requirements. Select an appropriate focal point within the FoV we define the pixel count required to achieve the operational goal. The operational goal and pixel count are defined as follows:

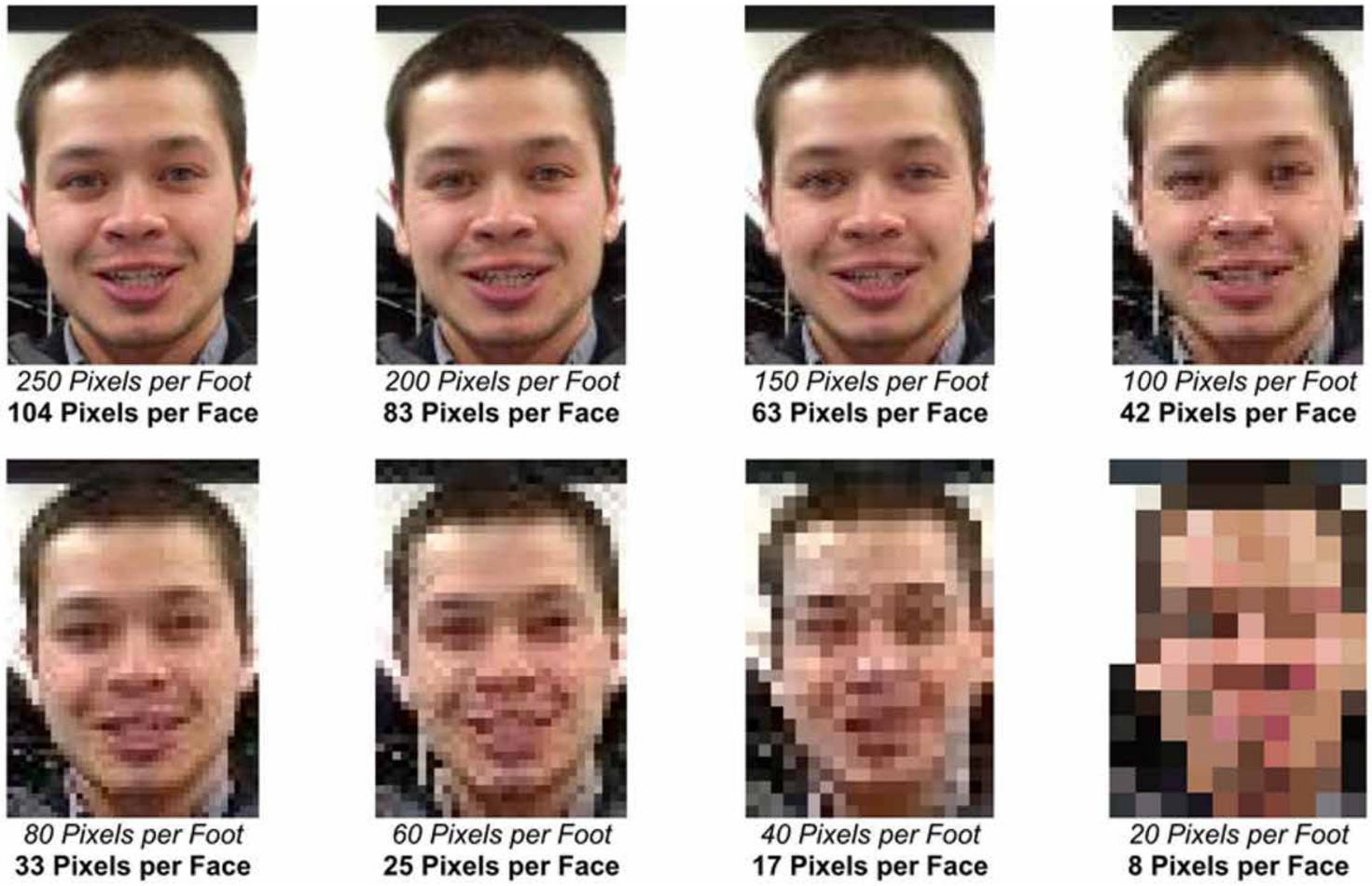
IDENTIFICATION (non-controlled conditions):
80 horizontal pixels/face

IDENTIFICATION (controlled conditions):
40 horizontal pixels/face

RECOGNITION: 25 horizontal pixels/face

DETECTION: 10 horizontal pixels/face

As shown in the image, the percentage of available screen height occupied by the POI is constant, but the viewer's ability to definitively identify the POI varies based on the image quality.



Security Image 02: Representative Example of Image Quality

Example of Typical Camera Placements for VSS

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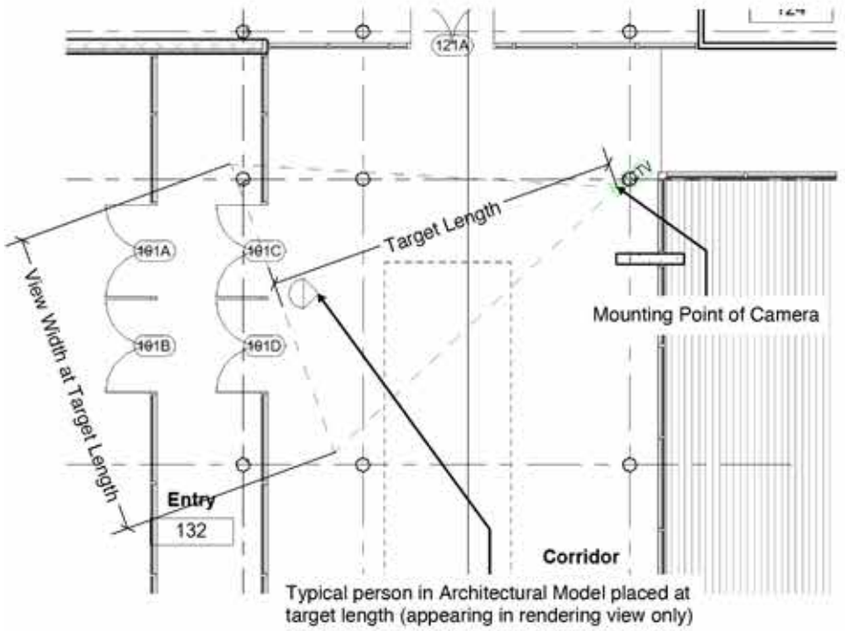
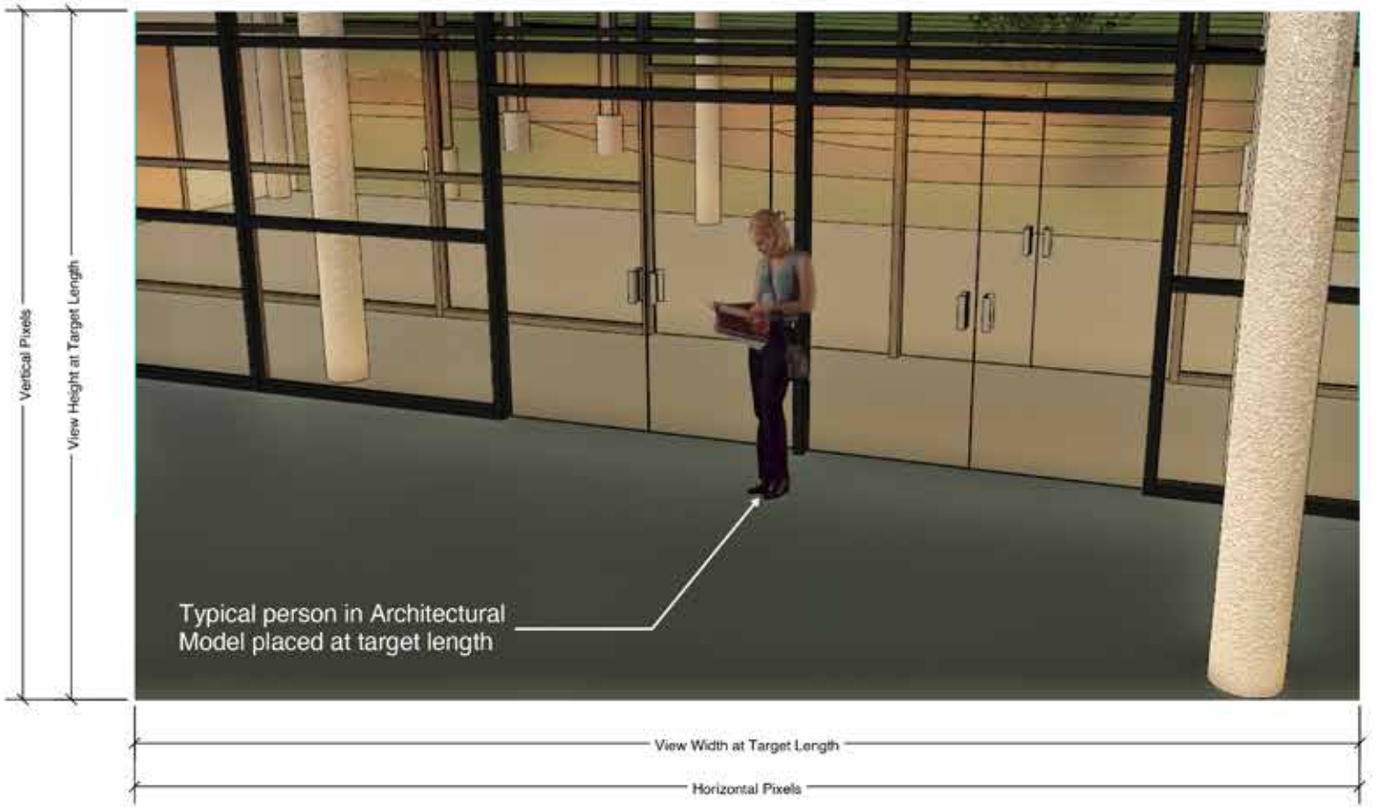
TYPICAL FIXED CAMERA FIELD OF VIEW FLOORPLAN



TYPICAL FIXED CAMERA FIELD OF VIEW RENDERING



$$\text{Pixels Per Foot at Target Length (ppf)} = \frac{\text{Vertical Pixels}}{\text{View Height at Target Length}} = \frac{\text{Horizontal Pixels}}{\text{View Width at Target Length}}$$

Levels of Protection for VSS

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Low

Provide a level of surveillance coverage at main thoroughfares throughout the Storrs campus where it can be achieved through the pragmatic use of existing camera mounting locations, such as existing buildings:

- Detect level coverage at routes of primary pedestrian and vehicular travel.
- Resolution of 20ppf minimum.

Medium

Provide coverage at Main Access/Egress Points:

- Identify level coverage across threshold (100% extents), resolution of 100ppf and in access stairwells for parking garages.
- Observe level coverage to exterior of building.

Provide coverage in circulation areas and areas to congregate:

- Observe level coverage across main thoroughfares / lobbies (75%extents).
- Observe level coverage throughout public areas of parking structures (100% extents) and Detect level coverage at external lots. Resolution of 40ppf minimum.
- For Areas where Second Layer of Access Control is required, evaluate treating the same as Access / Egress Point.

Provide a level of surveillance coverage for buildings that include areas of Second Line of Access Control (due to labs, critical infrastructure, restricted areas, etc.):

- Recognize level coverage at all access points including egress only (100% coverage extents, Resolution of 40ppf).

High

Provide a level of surveillance coverage at Access / Egress Points of buildings:

- Identify level coverage across threshold (100% extents), resolution of 100ppf.
- Observe level coverage to exterior of building.
- Provide a level of surveillance coverage in pathways and areas to congregate within buildings:
- Observe level coverage across full area (100% extents).
- Resolution of 40ppf minimum.

Provide a level of surveillance coverage for buildings that include areas of Second Line of Access Control (due to labs, critical infrastructure, restricted areas, etc.):

- Observe level coverage around full perimeter (100% of immediate perimeter).
- Resolution of 40ppf.
- For Areas where Second Layer of Access Control is required, evaluate treating the same as Access / Egress Point.

For outdoor gathering spaces:

Provide a level of surveillance coverage at main circulation points into and out of the gathering area (e.g. natural choke point between two buildings on a quad):

- Observe level coverage across typical main ingress and egress routes, resolution of 40ppf.

Provide a level of surveillance coverage in the main gathering area:

- Detect level coverage across full gathering area, which should be achieved by cameras that are located either on standalone poles or on neighboring buildings or infrastructure.
- Resolution of 20ppf minimum.

Levels of Protection for VSS

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Summary Table

PROJECT TYPE	VIDEO SURVEILLANCE		
	MEASURE LEVEL OF PROTECTION		
	Low	Medium	High
Academic			X
Administration			X
Residential		X	
Critical Operations		X	
Environment / Health & Safety		X	
Events		X	
Outdoor Gathering Areas			X
Landscaped and Other Outdoor Areas	X		
Parking		X	

Notes:

1. While the VSS protection level for buildings is focused primarily at entrances, exits, and secondarily in circulation spaces, the use of cameras for outdoor spaces must be adjusted appropriately for the space. VSS deployment around the outdoor campus areas is focused on specific outdoor Gathering Areas, where there is a precedent for organized events or for large groups of students to congregate. The high protection level at these areas is focused on providing situational awareness for the University Police.
2. VSS coverage is subject to the following limitations:
   - Cameras are not provided in elevators. Instead, cameras should cover the entrances/exits for elevators.
   - Requirements for privacy strictly preclude installation of cameras in bathrooms, shower rooms, locker rooms, general and private office spaces, and in residential dormitory rooms and halls except for cameras facing elevator doors on each floor of a dorm building.

Duress Alarms

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A duress alarm (sometimes referred to as panic alarm) is a device installed in a concealed location and in select visible areas that notifies the University Police Department of a silent alarm activation. Due to the immediate and serious nature of a duress alarm activation, the University reserves their use only for the most vulnerable circumstances and subject to careful design consideration.

There are multiple areas throughout the University where faculty, staff, or others may come into contact with highly emotional or irate individuals. The first priority in these areas is to provide design and situational mitigations that reduce the potential for harm, such as:

- Providing access to multiple routes of escape.
- Providing natural surveillance of the space via windows or an open-plan environment, where privacy permits.
- Ensuring that other faculty, staff, or colleagues are within ear-shot and aware of the planned activity.

Despite these mitigations and other strategies, some locations and activities may still present vulnerabilities that warrant the installation of a duress alarm. High traffic areas do not automatically warrant duress alarms. The following risk criteria will be considered along with an objective threat assessment by University Safety in order to establish whether duress alarms are warranted:

- Areas of drug dispensing, mental health counseling, or high volume cash collection.
- Offices for the President, UCH CEO, Provost, Dean of Students, and select Human Resource spaces.
- Areas or work that is isolated, after-hours, and where previous incidents of actual acts of violence have occurred.

Where duress alarms are installed, VSS camera coverage of the area must also be coordinated in order to provide timely situational awareness to the University Police Department in their response.

Most parts of the University have opportunities to mitigate vulnerable situations without duress alarms via natural surveillance, building design features, and carefully considered operational protocols.

Levels of Protection — Security Technology Design

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Summary Table

PROJECT TYPE	ACCESS CONTROL SYSTEMS				INTRUSION DETRECTION				VIDEO SURVEILLANCE			
	MEASURE LEVEL OF PROTECTION											
	B	L	M	H	B	L	M	H	B	L	M	H
Academic			X				X					X
Administration			X				X					X
Residential		X				X					X	
Critical Operations			X			X					X	
Environment / Health & Safety		X					X				X	
Events			X			X					X	
Outdoor Gathering Areas				X		X						X
Landscaped and Other Outdoor Areas	N/A				N/A					X		
Parking		X			N/A						X	

Note: Duress alarms are not typical, and are considered on a case-by-case basis in line with the considerations noted previously.

5

Summary of Design Requirements for UConn Projects

Introduction

The following Design Guidelines were compiled following a Threat, Vulnerability and Risk Assessment (TVRA) process and in consultation with the university and relevant stakeholders. Each recommendation in the Design Guidelines is included in order to mitigate security risks that were identified in the TVRA. The intent is that a project Designer will apply these guidelines as relevant to the project type at the outset as a part of the basis of design. Changes to the specific design would be possible in consultation with the relevant stakeholders.

These guidelines are to be used in conjunction with the University Design Guidelines and Performance Standards including but not limited to Appendix X — Physical Security Systems Standards.

Duress alarms are not typical and are considered on a case-by-case basis. Therefore, they are not included in the following design summaries. Consideration of their inclusion should be in consultation with University Safety according to the principles laid out in the 'Technology' section of these Guidelines.

The Design guidelines are structured as follows:

Individual guidelines requirements are grouped by asset category (e.g. Academic, Administration, etc. as listed below) to address the differing risk profiles at each type of facility.

The asset categories are as follows:

1. Academic
2. Administration
3. Residential
4. Critical Operations
5. Environment / Health, & Safety
6. Event Spaces and Venues
7. Outdoor Gathering
8. Landscaped and Other Outdoor Areas
9. Parking

Further, the guidelines are then broken down within each facility type into three groupings based on the affected scope of mitigation design:

1. Technology design and implementation
2. Building design
3. Site design

There are up to six types of mitigation to be considered within each grouping of Technology, Building, and Site design. Each of these mitigation types is unique to that category and their respective mitigation type are shown below:

1. **Technology**
   - **a.** Access Control
   - **b.** Intrusion Detection System
   - **c.** Video Surveillance

2. **Building**
   - **a.** Controlling Access to Vantage Points
   - **b.** Forced Entry Hardening – Building Fabric
   - **c.** HVAC – Air Intake Placement
   - **d.** Specification of laminated glass
   - **e.** Specification of non-flammable materials

3. **Site**
   - **a.** Emergency Blue Phones
   - **b.** Enforced Standoff (Bollards, Knee Wall, Vehicle Interdiction)
   - **c.** Fences / Walls
   - **d.** Hostile Vehicle Mitigation (Permanent)
   - **e.** Hostile Vehicle Mitigation (Temporary)
   - **f.** Traffic Calming

Under each mitigation type there are individual security product types and design guidelines for that specific asset category and mitigation design group.

Academic Building Typical Zoning

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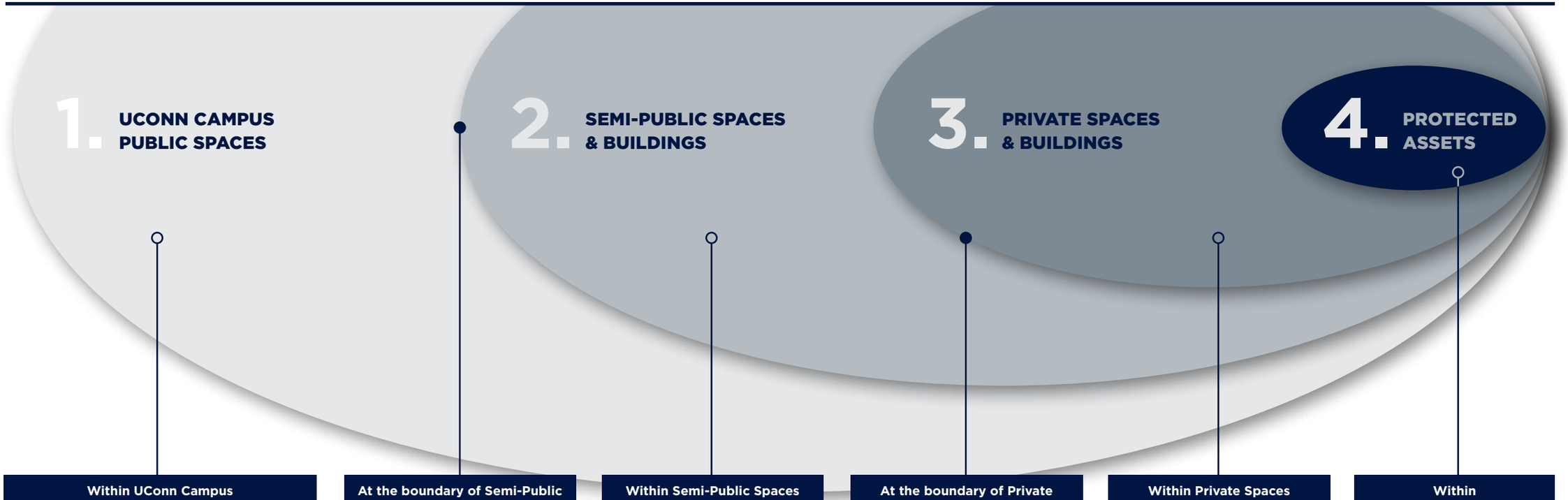

Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (M)
- Fences/Walls not necessary
- HVM, Permanent and/or Temporary (M)
- Traffic Calming (M)

Example Spaces:

- Landscaped area outside new academic building
- Academic courtyards in the immediate vicinity of building

At the boundary of Semi-Public Spaces and Buildings

BUILDING DESIGN

- Building Fabric (M)
- Laminated Glass – Exterior (M)
- Air intake placement (M)
- Controlling Access to Vantage Points (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Boundary of academic building

Within Semi-Public Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- General academic building circulation
- Typical class rooms, lecture halls

At the boundary of Private Spaces and Building

BUILDING DESIGN

- Laminated Glass – Interior (M)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Boundary of specific lab or academic functions with access restricted to only some students/staff/faculty (Individual research lab, datacenter, etc.)

Within Private Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Specific lab or academic functions with access restricted to only some students/staff/faculty (Individual research lab, datacenter, etc.)

Within Protected Assets

SPECIAL CONSIDERATIONS

- Consult your University Representative

1. Academic

1.1 TECHNOLOGY

1.1.1 Access Control (M)

- Design for Card Access at Main Access / Egress Points (front and back entrance, loading docks).
  - Loading Docks
    - Provide card access with video intercom at perimeter doors.
    - Provide an additional second layer of security egress point interior from the loading dock external doors which may be left open for extended periods of time.
- Provide Second Layer of Access Control (second card access point) at entrance to following locations if present in building:
  - Areas where controlled substances (e.g. hazardous chemicals, radioactive sources, etc.), items of historical or cultural significance, items of significant theft potential (e.g., concealable, portable items of high value) are held (e.g. audio visual control rooms).
  - Areas where student access is restricted (e.g. specialized labs, critical infrastructure within academic settings, etc.).
- Access control for second layer of security may use additional card reader for central access control system or alternative if required by the project (e.g. number pad / keypad, local ID card reader, lock and key, etc.).
- Provide manual measures to enable Shelter-in-Place or Lockdown of individual classrooms or low-occupancy rooms via door hardware only. (Non-networked, e.g. dead bolt or mortice lock).

1.1.2 Intrusion Detection System (M)

- Design for forced door or held-open door alarm capability for all doors that are on access control.
  - Equip all exterior doors with status monitoring via door contacts and with optional request-to-exit.
  - Emergency egress only doors should be monitored and provided with local audible alarm for held-open door (e.g. stairwells).
  - Second layer of security should be monitored and provided with local audible forced door and held-open door alarm.

1.1.3 Video Surveillance (H)

- Provide a level of surveillance coverage at Access / Egress Points:
  - Identify level coverage across threshold (100% extents), resolution of 100ppf.
  - Observe level coverage to exterior of building.
- Provide a level of surveillance coverage in pathways and areas to congregate:
  - Observe level coverage across full area (100% extents).
  - Resolution of 40ppf minimum.
- Provide a level of surveillance coverage for buildings that include areas of Second Line of Access Control (due to labs, critical infrastructure, restricted areas, etc.):
  - Observe level coverage around full perimeter (100% of immediate perimeter).
  - Resolution of 40ppf.
- For Areas where Second Layer of Access Control is required, evaluate treating the same as Access / Egress Point.

1. Academic continued

1.2 BUILDING

1.2.1 Controlling Access to Vantage Points (L)

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.

1.2.2 Forced Entry Hardening – Building Fabric (M)

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. At a minimum, materials should meet ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

1.2.3 HVAC – Air Intake Placement (M)

- Air intakes are to be placed at elevated locations away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building. In situations where the intake cannot be elevated, conceal below ground level and have lockable steel grating.

1.2.4 Specification of laminated glass (M)

- Exterior glazing at ground-level shall have a UL 972 burglary resistant rating.
- Interior glazing that provides a view into high occupancy spaces shall be laminated.

1.2.5 Specification of Non-Flammable materials (L)

- Use noncombustible materials and finishes appropriate to maintain the style of the facility.
- Consider the use of integrated (immovable), noncombustible furnishings.

1.3 SITE

1.3.1 Emergency Blue Phones (L)

- Locate an Emergency Blue Phone within line-of-sight of the main entrance of the building.
- Locate Emergency Blue Phones generally along path or sidewalk at a distance not exceeding 1000’ from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

1.3.2 Enforced Standoff (M)

- When feasible, locate all parking and vehicle circulation 50’ or more away from the building, with particular attention to accommodate routes of pedestrian travel.
  - Eliminate parking for unknown vehicles (e.g. general public) within 50’ of the building.
  - Eliminate parking and vehicle circulation immediately adjacent to the building for all vehicles.
- Where parking and/or vehicle circulation is allowed near the building, use signage, paving styles or materials, a defined circulation layout, and other means to discourage unauthorized access.
- Consider the use of parking barriers and access control for vehicles requiring access close to the building.

1.3.3 Fences / Walls (N/A)

- Not applicable.

1. Academic continued

1.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (M)

- Design for vehicle interdiction with landscaping as an HVM solution. The proposed mitigation may or may not be impact-rated or tested, but pose as a deterrent.
- For new buildings, consider raising the first floor above grade in order to avoid vehicle access.
- Design to deter hostile vehicle access via street furniture, landscaping, and untested measures. Seek to create a continuous line of mitigation measures that discourage hostile vehicle access with gaps minimized while considering project access requirements.
- Consider products or mitigation solutions such as: bollards, berms, planters, swales, adapted signage and wayfinding elements, topography and level changes (e.g. retaining walls, steps), seating / benches, etc.

1.3.5 Hostile Vehicle Mitigation (HVM) (Temporary) (M)

- Specify substantial deployable obstacles (e.g., jersey barriers, boulders, planters, concrete blocks) provided around main gathering spaces for events, providing deterrent from vehicle attack. Deployment should focus on access and egress points and predictably crowded spaces.
- Consideration should be given to the broader perimeter of the area. A gap should be provided between crowded areas and the measures.

1.3.6 Traffic Calming (M)

- Design to divide pedestrian and vehicular traffic. Provide measures to slow vehicles on roads such as speed bumps, landscaped islands, expanded crossing areas, appropriate signage, etc.

Administration Building Typical Zoning

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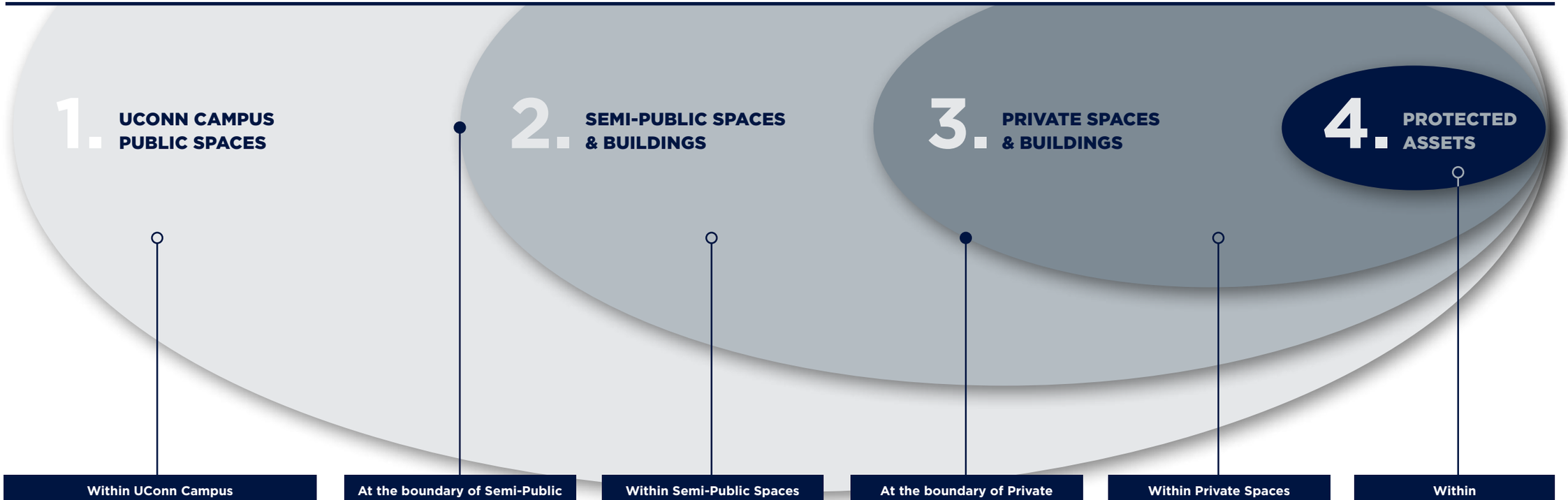


Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (M)
- Fences/Walls not necessary
- HVM, Permanent and/or Temporary (L)
- Traffic Calming (M)

Example Spaces:

- Landscaped area outside new building
- Courtyards in the immediate vicinity of the building

At the boundary of Semi-Public Spaces and Buildings

BUILDING DESIGN

- Building Fabric (M)
- Laminated Glass – Exterior (M)
- Air intake placement (M)
- Controlling Access to Vantage Points (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Boundary of administrative building

Within Semi-Public Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- General administration building circulation and public-facing lobby

At the boundary of Private Spaces and Building

BUILDING DESIGN

- Laminated Glass – Interior (M)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Boundary of specific office areas or administrative functions with access restricted to certain roles or individuals.

Within Private Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (M)
- VSS (H)

Example Spaces:

- Office areas or administrative functions with access restricted to certain roles or individuals.

Within Protected Assets

SPECIAL CONSIDERATIONS

- Consult your University Representative

2. Administration

2.1 TECHNOLOGY

2.1.1 Access Control (M)

- Design for Card Access at Main Access / Egress Points (front and back entrance, loading docks).
  - Loading Docks
    - Provide card access with video intercom at perimeter doors.
    - Provide an additional second layer of security egress point interior from the loading dock external doors which may be left open for extended periods of time.
- Provide Second Layer of Access Control (second card access point) at entrance to following locations if present in building:
  - Areas where controlled substances (e.g. hazardous chemicals, radioactive sources, etc.), items of historical or cultural significance, items of significant theft potential (e.g., concealable, portable items of high value) are held (e.g. audio visual control rooms).
  - Areas where student access is restricted (e.g. specialized labs, critical infrastructure within academic settings, etc.).
- Access control for second layer of security may use additional card reader for central access control system or alternative if required by the project (e.g. number pad / keypad, local ID card reader, lock and key, etc.).
- Provide manual measures to enable Shelter-in-Place or Lockdown of individual classrooms or low-occupancy rooms via door hardware only. (Non-networked, e.g. dead bolt or mortice lock).

2.1.2 Intrusion Detection System (M)

- Design for forced door or held-open door alarm capability for all doors that are on access control.
  - Equip all exterior doors with status monitoring via door contacts and with optional request-to-exit.
  - Emergency egress only doors should be monitored and provided with local audible alarm for held-open door (e.g. stairwells).
  - Second layer of security should be monitored and provided with local audible forced door and held-open door alarm.
- Provide a specific audible alarm for unauthorized access to spaces containing high-value assets (e.g., art pieces, historically significant items, controlled substances).

2.1.3 Video Surveillance (H)

- Provide a level of surveillance coverage at Access / Egress Points:
  - Identify level coverage across threshold (100% extents), resolution of 100ppf.
  - Observe level coverage to exterior of building.
- Provide a level of surveillance coverage in areas to congregate and in areas with high value items or collection points:
  - Observe level coverage across full area (100% extents).
  - Resolution of 40ppf minimum.
- Provide a level of surveillance coverage for buildings that include areas of Second Line of Access Control (due to labs, critical infrastructure, restricted areas, etc.):
  - Observe level coverage around full perimeter (100% of immediate perimeter).
  - Resolution of 40ppf.
- For Areas where Second Layer of Access Control is required, evaluate treating the same as Access / Egress Point.

2. Administration continued

2.2 BUILDING

2.2.1 Controlling Access to Vantage Points (L)

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.

2.2.2 Forced Entry Hardening – Building Fabric (M)

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. At a minimum, materials should meet ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

2.2.3 HVAC – Air Intake Placement (M)

- Air intakes are to be placed at elevated locations away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building. In situations where the intake cannot be elevated, conceal below ground level and have lockable steel grating.

2.2.4 Specification of laminated glass (M)

- Exterior glazing at ground-level shall have a UL 972 burglary resistant rating.
- Interior glazing that provides a view into high occupancy spaces shall be laminated.

2.2.5 Specification of Non-Flammable materials (L)

- Use noncombustible materials and finishes appropriate to maintain the style of the facility.
- Consider the use of integrated (immovable), noncombustible furnishings.

2.3 SITE

2.3.1 Emergency Blue Phones (L)

- Locate an Emergency Blue Phone within line-of-sight of the main entrance of the building.
- Locate Emergency Blue Phones generally along path or sidewalk at a distance not exceeding 1000’ from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

2.3.2 Enforced Standoff (M)

- Seek to move or locate all parking and vehicle circulation 50’ or more away from the building, with particular attention to accommodate routes of pedestrian travel.
- Eliminate parking for unknown vehicles (e.g. general public) within 50’ of the building.
- Eliminate parking and vehicle circulation immediately adjacent to the building for all vehicles.
- Where parking and/or vehicle circulation is allowed near the building, use signage, paving styles or materials, a defined circulation layout, and other means to discourage unauthorized access.
- Consider the use of parking barriers and access control for vehicles requiring access close to the building.

2.3.3 Fences / Walls (N/A)

- Not applicable.

2. Administration continued

2.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (L)

- Design to deter hostile vehicle access via street furniture, landscaping, and measures that are not impact tested or rated. Placement of measures does not need to form a full perimeter around the space, but instead should be focused on protecting likely pedestrian routes and potential interaction points between vehicles and pedestrians.

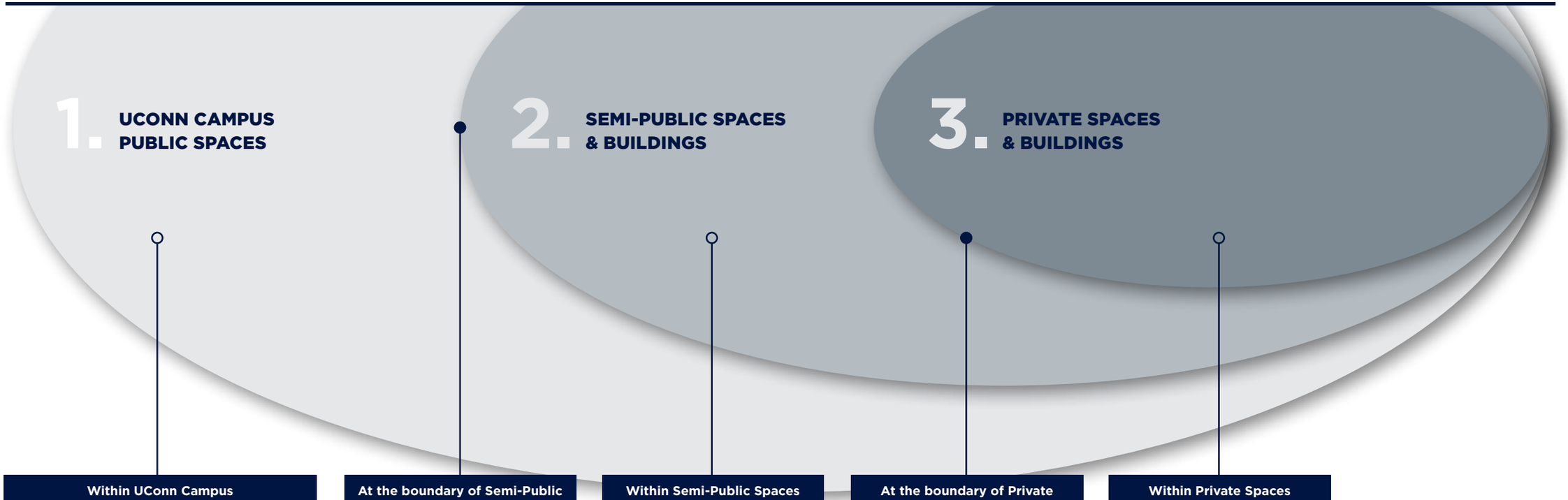
2.3.5 Hostile Vehicle Mitigation (HVM) (Temporary) (L)

- Provide movable fence structures and similar obstacles around main gathering area, providing deterrent from vehicle attack. Deployment should focus on access and egress points and predictably crowded spaces. A gap should be provided between crowded Areas and the measures.

2.3.6 Traffic Calming (M)

- Divide pedestrian and vehicular traffic. Provide measures to slow vehicles on roads such as speed bumps, landscaped islands, expanded crossing areas, appropriate signage, etc.

Residential Building Typical Zoning



Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (L)
- HVM (L)

Example Spaces:

- Landscaped and circulation area outside new residential building

At the boundary of Semi-Public Spaces and Buildings

BUILDING DESIGN

- Building Fabric (L)
- Laminated Glass – Exterior (L)
- Air intake placement (M)
- Controlling Access to Vantage Points (L)

TECHNOLOGY DESIGN

- Access Control (L)
- IDS (L)
- VSS (M)

Example Spaces:

- Boundary of residential building

Within Semi-Public Spaces and Buildings

BUILDING DESIGN

- Non-Flammable Materials (B)

TECHNOLOGY DESIGN

- Access Control (L)
- IDS (L)
- VSS (M)

Example Spaces:

- Common entrance lobby or circulation space

At the boundary of Private Spaces and Building

TECHNOLOGY DESIGN

- Access Control (L)
- IDS (L)

Example Spaces:

- Entrance from common and visitor areas to circulation leading to resident personal spaces

Within Private Spaces and Buildings

- Residential spaces locked per residential requirements; no exceptional security design requirements.

Example Spaces:

- Resident spaces and associated circulation areas.

3. Residential

3.1 TECHNOLOGY

3.1.1 Access Control (L)

- Design for card Access at Main Access / Egress Points.
- Evaluate the benefit of a second layer of Access Control / Card Access Point at entrance from common and visitor areas into circulation leading to resident personal spaces.

3.1.2 Intrusion Detection System (L)

- Design for forced door or held-open door alarm capability for doors on access control.
  - Emergency egress only doors should be monitored and provided with local audible alarm for held-open door (e.g. stairwells).
  - Second layer of security should be monitored with allowance for future capability for local audible forced door and held-open door alarm.

3.1.3 Video Surveillance (M)

- Provide coverage at Main Access / Egress Points:
  - Identify level coverage across threshold (100% extents), resolution of 100ppf.
  - Observe level coverage to exterior of building.
- Provide coverage at entrance to elevators on each floor:
  - Observe level coverage across main thoroughfares/lobbies specific to the elevator entry/exit (75% extents).
  - Resolution of 40ppf minimum.
  - No coverage in private and sensitive areas.

3.2 BUILDING

3.2.1 Controlling Access to Vantage Points (L)

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.

3.2.2 Forced Entry Hardening – Building Fabric (L)

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. Consider the use of ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

3.2.3 HVAC – Air Intake Placement (M)

- Air intakes are to be placed at elevated locations away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building. In situations where the intake cannot be elevated, conceal below ground and have lockable steel grating.

3.2.4 Specification of laminated glass (L)

- Exterior glazing at ground-level shall have a UL 972 burglary resistant rating.

3.2.5 Specification of Non-Flammable materials (B)

- Consider the use of integrated (immovable), noncombustible furnishings in common areas.

3. Residential continued

3.3 SITE

3.3.1 Emergency Blue Phones (L)

- Locate an Emergency Blue Phone within line-of-sight of the main entrance of the building.
- Locate Emergency Blue Phones generally along path or sidewalk at a distance not exceeding 1000’ from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

3.3.2 Enforced Standoff (L)

- Seek to move or locate all parking and vehicle circulation 30’ or more away from the building, with particular attention to accommodate routes of pedestrian travel.
- Eliminate parking for unknown vehicles (e.g. general public) within 20’ of the building. Consider the designation of separate residents’ and visitors’ parking areas with credentialed use of residents’ spaces.
- Eliminate parking within 10’ of the building for all vehicles. Enforce this via landscaping and road layout design.
- Where parking and/or vehicle circulation is allowed near the building, signage should discourage unauthorized access.

3.3.3 Fences / Walls (N/A)

- Not applicable.

3.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (L)

- Design to deter hostile vehicle access via street furniture, landscaping, and measures that are not impact tested or rated. Placement of measures does not need to form a full perimeter around the space, but instead should be focused on protecting likely pedestrian routes and potential interaction points between vehicles and pedestrians.

3.3.5 Hostile Vehicle Mitigation (HVM) (Temporary) (N/A)

- Not applicable.

3.3.6 Traffic Calming (N/A)

- Not applicable.

Critical Operations Facility Typical Zoning

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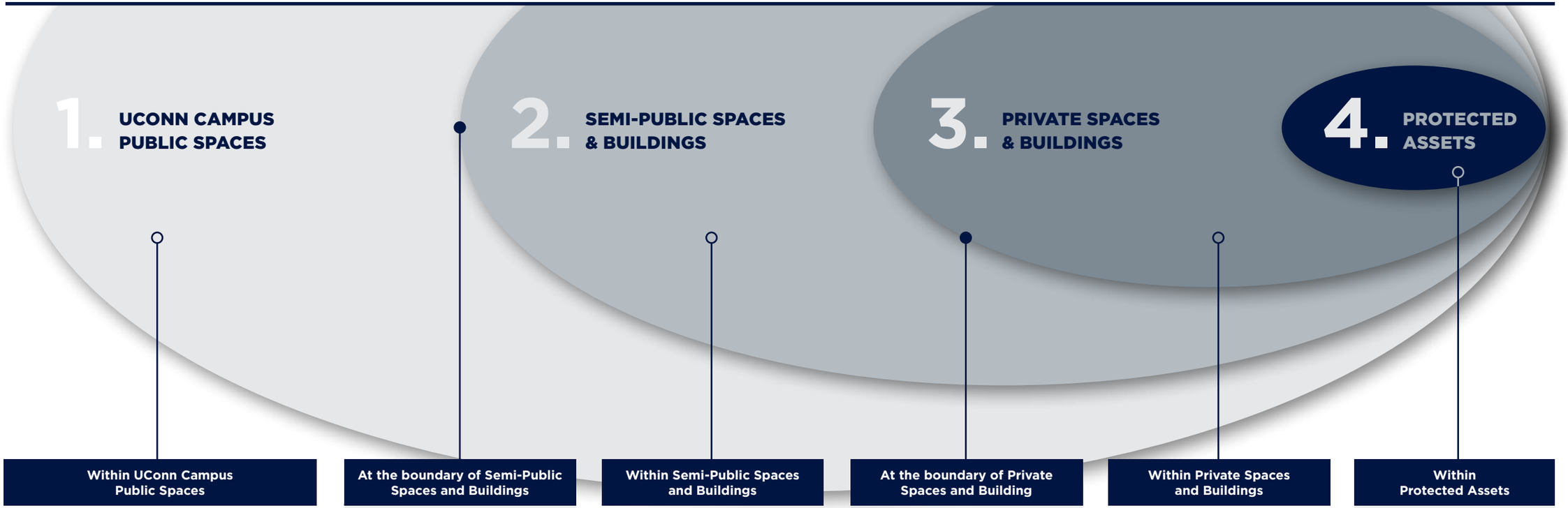

Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (M)
- Fences/Walls (M)

Example Spaces:

- Landscaped area near Critical Infrastructure.

At the boundary of Semi-Public Spaces and Buildings

BUILDING DESIGN

- Building Fabric (M)
- Laminated Glass – Exterior (L)
- Air intake placement (M)
- Controlling Access to Vantage Points (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (L)
- VSS (M)

Example Spaces:

- Boundary of facility or enclosed site

Within Semi-Public Spaces and Buildings

BUILDING DESIGN

- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (L)
- VSS (M)

Example Spaces:

- Lobby for public-facing elements of Critical Operations. It is likely that this zone will be minimal at most Critical Operations Facilities. At some facilities, with no public-facing element, the building should be treated as Private at a minimum. For other facilities, it may be appropriate to consider this zone to be the area enclosed within a site fence.

At the boundary of Private Spaces and Building

BUILDING DESIGN

- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (L)
- VSS (M)

Example Spaces:

- All spaces except explicitly public-facing lobbies or welcome areas should be considered Private or Protected for these facilities. This forms the boundary between public areas and the remaining facility.

Within Private Spaces and Buildings

BUILDING DESIGN

- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (L)
- VSS (M)

Example Spaces:

- All spaces except explicitly public-facing lobbies or welcome areas should be considered Private or Protected for these facilities.

Within Protected Assets

SPECIAL CONSIDERATIONS

- Consult your University Representative

4. Critical Operations

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4.1 TECHNOLOGY

4.1.1 Access Control (M)

- Design for Card Access at Main Access / Egress Points (front and back entrance, loading docks).
  - Loading Docks
    - Provide card access with video intercom at perimeter doors.
    - Provide an additional second layer of security egress point interior from the loading dock external doors which may be left open for extended periods of time.
- Provide Second Layer of Access Control (second card access point) at entrance to following locations if present in building:
  - Areas where controlled substances (e.g. hazardous chemicals), items of significant theft potential (e.g., concealable, portable items of high value) are held.
  - Areas where student and/or staff access is restricted (e.g., specialized labs, critical infrastructure control and/or equipment areas, etc.).
  - Access control for second layer of security may use additional card reader for central access control system or alternative if required by the project (e.g. number pad / keypad, local ID card reader, lock and key, etc.).
- Provide manual measures to enable Shelter-in-Place or Lockdown of individual offices or low-occupancy rooms via door hardware only. (Non-networked, e.g., dead bolt or mortice lock).

4.1.2 Intrusion Detection System (L)

- Design for forced door or held-open door alarm capability for doors on access control.
  - Emergency egress only doors should have the capability to be monitored with local audible alarm for held-open door (e.g. stairwells).
  - Second layer of security should be monitored with local audible forced door and held-open door alarm.

4.1.3 Video Surveillance (M)

- Provide a level of surveillance coverage at Access / Egress Points:
  - Identify level coverage across threshold (100% extents), resolution of 100ppf.
  - Observe level coverage to exterior of building.
- Provide a level of surveillance coverage in main circulation areas and areas to congregate:
  - Observe level coverage across main thoroughfares (75% extents).
  - Resolution of 40ppf minimum.
- For Areas where Second Layer of Access Control is required, evaluate treating the same as Access / Egress Point.

4.2 BUILDING

4.2.1 Controlling Access to Vantage Points (L)

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.

4.2.2 Forced Entry Hardening – Building Fabric (M)

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. At a minimum, materials should meet ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

4.2.3 HVAC – Air Intake Placement (L)

- Air intakes are to be located according to building functional requirements and away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building.
  - Consider concealment and/or elevation of air intakes taking into account building function.

4. Critical Operations continued

4.2.4 Specification of laminated glass (L)

- Exterior glazing at ground-level shall have a UL 972 burglary resistant rating.

4.2.5 Specification of Non-Flammable materials (B)

- Consider the use of integrated (immovable), noncombustible furnishings in common areas.

4.3 SITE

4.3.1 Emergency Blue Phones (L)

- Locate Emergency Blue Phones generally along path or sidewalk at a distance not exceeding 1000' from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

4.3.2 Enforced Standoff (M)

- Design to locate all parking and vehicle circulation 50' or more away from the building, with particular attention to accommodate routes of pedestrian travel.
- Eliminate parking for unknown vehicles (e.g. general public) within 50' of the building.
- Eliminate parking and vehicle circulation immediately adjacent to the building for all vehicles.
- Where parking and/or vehicle circulation is allowed near the building, use signage, paving styles or materials, a defined circulation layout, and other means to discourage unauthorized access.
- Consider the use of parking barriers and access control for vehicles requiring access close to the building.

4.3.3 Fences / Walls (M)

- Incorporate architectural pedestrian fence or low wall; no anti-climb rating or measures are required.

4.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (M)

- Design for vehicle interdiction with landscaping as a HVM solution. The proposed mitigation may or may not be impact-rated or tested.
- For new buildings, consider raising the first floor above grade in order to avoid vehicle access.
- Design to deter hostile vehicle access via street furniture, landscaping, and untested measures. Seek to create a continuous line of mitigation measures that discourage hostile vehicle access with gaps minimized while considering project access requirements.
- Consider products or mitigation solutions such as: bollards, berms, planters, swales, adapted signage and wayfinding elements, topography and level changes (e.g. retaining walls, steps), seating / benches, etc.

4.3.5 Hostile Vehicle Mitigation (HVM) (Temporary) (N/A)

- Not applicable.

4.3.6 Traffic Calming (N/A)

- Not applicable.

Environmental, Health & Safety Facility Typical Zoning

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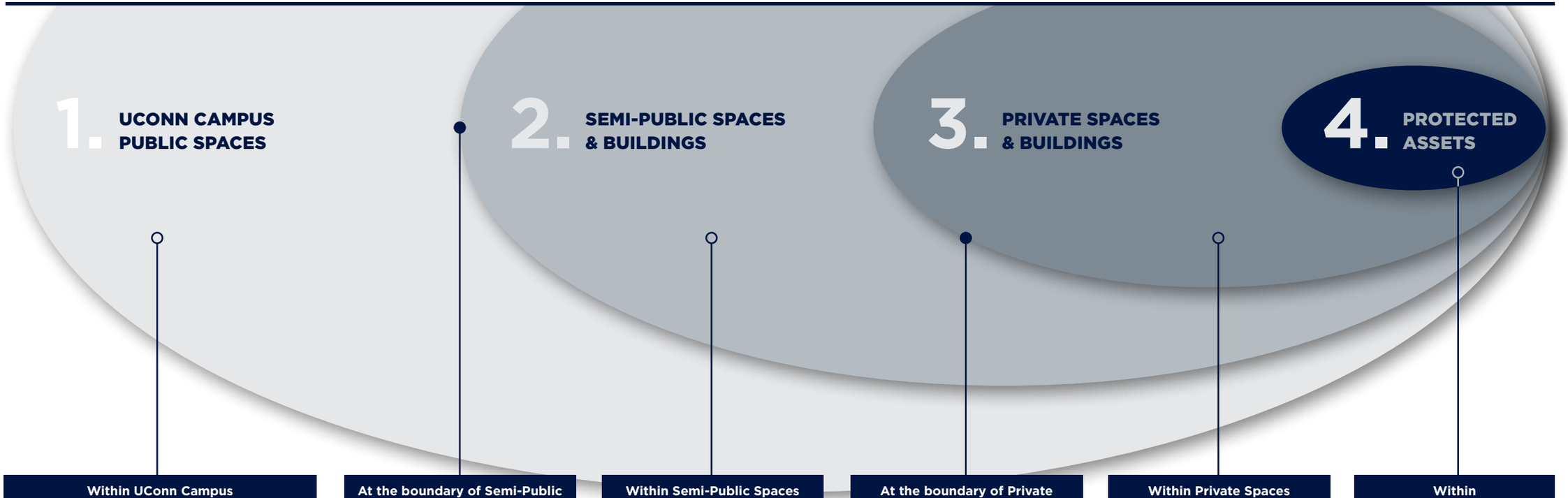


Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (B)
- Enforced Standoff (L)
- HVM< Permanent (M)

Example Spaces:

- Landscaped area outside new building

At the boundary of Semi-Public Spaces and Buildings

BUILDING DESIGN

- Building Fabric (M)
- Laminated Glass – Exterior (L)
- Air intake placement (H)
- Controlling Access to Vantage Points (L)

TECHNOLOGY DESIGN

- Access Control (L)
- IDS (M)
- VSS (M)

Example Spaces:

- Boundary of EHS building

Within Semi-Public Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)

TECHNOLOGY DESIGN

- Access Control (L)
- IDS (M)
- VSS (M)

Example Spaces:

- Public-facing lobby for an EHS facility

At the boundary of Private Spaces and Building

BUILDING DESIGN

- Laminated Glass – Interior (M)

TECHNOLOGY DESIGN

- Access Control (L)
- IDS (M)
- VSS (M)

Example Spaces:

- Typical University Staff spaces in EHS facilities should be regarded as private. If there is a door between any public facing lobby, then this door would be the boundary.

Within Private Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)

TECHNOLOGY DESIGN

- Access Control (L)
- IDS (M)
- VSS (M)

Example Spaces:

- Typical University Staff spaces in EHS facilities should be regarded as private.

Within Protected Assets

SPECIAL CONSIDERATIONS

- Consult your University Representative

Example Assets:

- Hazardous materials and/or working spaces
- Materials that are controlled by legislation

5. Environment / Health, & Safety

5.1 TECHNOLOGY

5.1.1 Access Control (L)

- Design for Card Access at Main Access / Egress Points (front and back entrance, loading docks).
  - Loading Docks
    - Provide card access with video intercom at perimeter doors.
    - Provide an additional second layer of security egress point interior from the loading dock external doors which may be left open for extended periods of time.
- Provide Second Layer of Access Control (second card access point) at entrance to following locations if present in building:
  - Areas where controlled substances (e.g. hazardous chemicals, radioactive sources, etc.), items of historical or cultural significance, items of significant theft potential (e.g., concealable, portable items of high value) are held (e.g. audio visual control rooms).
  - Areas where student and/or staff access is restricted (e.g. specialized labs, critical infrastructure within academic settings, etc.).
  - Access control for second layer of security may use additional card reader for central access control system or alternative if required by the project (e.g. number pad / keypad, local ID card reader, lock and key, etc.).

5.1.2 Intrusion Detection System (M)

- Design for forced door or held-open door alarm capability for all doors that are on access control.
  - Equip all exterior doors with status monitoring via door contacts and with optional request-to-exit.
  - Emergency egress only doors should be monitored and provided with local audible alarm for held-open door (e.g. stairwells).
  - Second layer of security should be monitored and provided with local audible forced door and held-open door alarm.
- Provide an audible alarm for forced or held-open condition on any door that provides access into spaces and/or facilities that hold restricted substances. Provide the local capability to silence the alarm by persons with the correct credentials (e.g. via keypad or card swipe).

5.1.3 Video Surveillance (M)

- Provide a level of surveillance coverage at Access / Egress Points:
  - Identify level coverage across threshold (100% extents), resolution of 100ppf.
  - Observe level coverage to exterior of building.
- Provide a level of surveillance coverage in main circulation areas and areas to congregate:
  - Observe level coverage across main thoroughfares (75% extents).
  - Resolution of 40ppf minimum.
- For Areas where Second Layer of Access Control is required, evaluate treating the same as Access / Egress Point.

5. Environment / Health, & Safety continued

5.2 BUILDING

5.2.1 Controlling Access to Vantage Points (L)

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.

5.2.2 Forced Entry Hardening – Building Fabric (M)

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. At a minimum, materials should meet ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

5.2.3 HVAC – Air Intake Placement (H)

- Air intakes are to be placed at elevated locations away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building.
- In situations where the intake cannot be elevated, conceal below ground and have lockable steel grating.

5.2.4 Specification of laminated glass (M)

- Exterior glazing at ground-level shall have a UL 972 burglary resistant rating.
- Interior glazing that provides a view into high occupancy spaces shall be laminated.

5.2.5 Specification of Non-Flammable materials (N/A)

- Not applicable.

5.3 SITE

5.3.1 Emergency Blue Phones (B)

- Locate along path or sidewalk, no more than 1000’ from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

5.3.2 Enforced Standoff (L)

- Design seeking to locate all parking and vehicle circulation 30’ or more away from the building.
- Eliminate parking for unknown vehicles (e.g. general public) within 20’ of the building. Consider the designation of separate staff and visitors’ parking areas.
- Eliminate parking within 10’ of the building for all vehicles. Enforce this via landscaping and road layout design.
- Where parking and/or vehicle circulation is allowed near the building, signage should discourage unauthorized access.

5.3.3 Fences / Walls (N/A)

- Not applicable.

5.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (M)

- Design for vehicle interdiction with landscaping as a HVM solution. The proposed mitigation may or may not be impact-rated or tested.
- For new buildings, consider raising the first floor above grade in order to avoid vehicle access.
- Design to deter hostile vehicle access via street furniture, landscaping, and untested measures. Seek to create a continuous line of mitigation measures that discourage hostile vehicle access with gaps minimized while considering project access requirements.

5. Environment / Health, & Safety continued

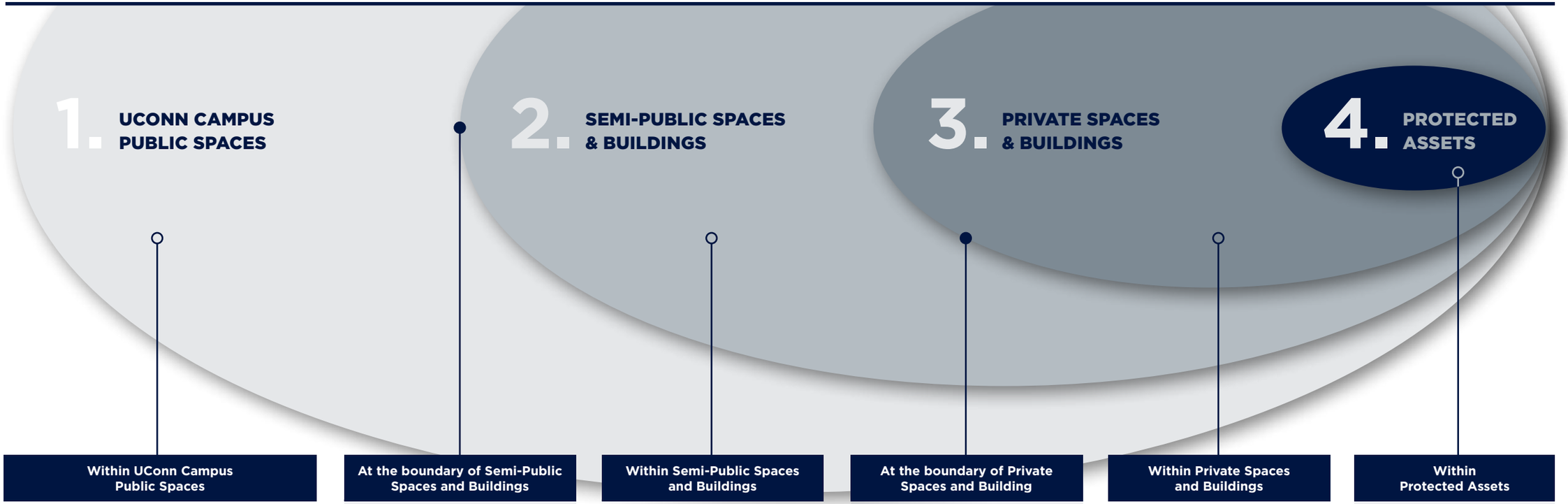
5.3.5 Hostile Vehicle Mitigation (HVM) (Temporary)

- Not applicable.

5.3.6 Traffic Calming (N/A)

- Not applicable.

Event Space Typical Zoning



Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (H)
- Fences/Walls not necessary
- HVM, Permanent and/or Temporary (H)
- Traffic Calming (H)

Example Spaces:

- Sidewalk and circulation areas outside Event Venues

At the boundary of Semi-Public Spaces and Buildings

BUILDING DESIGN

- Building Fabric (M)
- Laminated Glass – Exterior (M)
- Air intake placement (M)
- Non-Flammable Materials (L)
- Controlling Access to Vantage Points (M)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (L)
- VSS (M)

Example Spaces:

- Entrance to event venue and building exterior

Within Semi-Public Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (L)
- VSS (M)

Example Spaces:

- Event venue circulation, ticketed attendance areas

At the boundary of Private Spaces and Building

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (L)
- VSS (M)

Example Spaces:

- Entrances to locker rooms, back-of-house facilities, and restricted areas

Within Private Spaces and Buildings

BUILDING DESIGN

- Laminated Glass – Interior (M)
- Non-Flammable Materials (L)

TECHNOLOGY DESIGN

- Access Control (M)
- IDS (L)
- VSS (M)

Example Spaces:

- Back-of-house facilities and restricted areas

Within Protected Assets

SPECIAL CONSIDERATIONS

- Consult your University Representative

6. Event Spaces and Venues

6.1 TECHNOLOGY

6.1.1 Access Control (M)

- Design for Card Access at Main Access / Egress Points (front and back entrance, loading docks).
  - Loading Docks
    - Provide card access with video intercom at perimeter doors.
    - Provide an additional second layer of security egress point interior from the loading dock external doors which may be left open for extended periods of time.
- Provide Second Layer of Access Control (second card access point) at entrance to following locations if present in building:
  - Areas where controlled substances (e.g. hazardous chemicals, radioactive sources, etc.), items of historical or cultural significance, items of significant theft potential (e.g., concealable, portable items of high value) are held (e.g. audio visual control rooms).
  - Areas where student access is restricted (e.g. specialized labs, critical infrastructure within academic settings, etc.).
  - Access control for second layer of security may use additional card reader for central access control system or alternative if required by the project (e.g. number pad / keypad, local ID card reader, lock and key, etc.).
- Provide manual measures to enable Shelter-in-Place or Lockdown of individual classrooms or low-occupancy rooms via door hardware only. (Non-networked, e.g. dead bolt or mortice lock).
- For ticketed or attendance-managed events:
  - Coordinate screening/security at access points with event requirements from UConn Police Department and/or University Safety. These may include walk through metal detectors, hand-held metal detectors, bag restrictions, etc. facilitated by Event Security or UConn PD.
  - Provide infrastructure and facilities to support additional security presence if required by UConn PD and/or Event Security.

6.1.2 Intrusion Detection System (L)

- Design for forced door or held-open door alarm capability for all doors that are on access control.

6.1.3 Video Surveillance (M)

- Provide a level of surveillance coverage at Access / Egress Points:
  - Identify level coverage across threshold (100% extents), resolution of 100ppf.
  - Observe level coverage to exterior of building.
- Provide a level of surveillance coverage in main circulation areas and areas to congregate:
  - Observe level coverage across main thoroughfares (75% extents).
  - Resolution of 40ppf minimum.
  - For Areas where Second Layer of Access Control is required, evaluate treating the same as Access / Egress Point.

6. Event Spaces and Venues continued

6.2 BUILDING

6.2.1 Controlling Access to Vantage Points (M)

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.
- Provide monitoring contact to confirm closed position for roof access doors and a standalone audible alarm for held-open access to roof.

6.2.2 Forced Entry Hardening – Building Fabric (M)

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. At a minimum, materials should meet ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

6.2.3 HVAC – Air Intake Placement (M)

- Air intakes are to be placed at elevated locations away from parking spaces, loading docks, and exhaust fans and from the visible perimeter of the building. In situations where the intake cannot be elevated, conceal below ground and have lockable steel grating.

6.2.4 Specification of laminated glass (M)

- Exterior glazing at ground-level shall have a UL 972 burglary resistant rating.
- Interior glazing that provides a view into high occupancy spaces, shall be laminated.

6.2.5 Specification of Non-Flammable materials (L)

- Use noncombustible materials and finishes appropriate to maintain the style of the facility.
- Consider the use of integrated (immovable), noncombustible furnishings.

6.3 SITE

6.3.1 Emergency Blue Phones (L)

- Locate Emergency Blue Phones generally along paths or sidewalks at a distance not exceeding 1000’ from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

6.3.2 Enforced Standoff (H)

The following apply during event times; however, they may have permanent features or infrastructure required to achieve the design goal.

- Design to locate all parking and unscreened vehicle circulation 100’ or more away from the building, with particular attention to accommodate routes of pedestrian travel.
- Eliminate parking for unknown/unscreened vehicles (e.g. general public) within 100’ of the building.
- Eliminate parking and vehicle circulation immediately adjacent to the building for all vehicles except emergency vehicles and vehicles critical to the operation of the event.
- Use temporary checkpoints or screening operations in order to enforce road closures and/or traffic redirections.

6.3.3 Fences / Walls (N/A)

- Not applicable.

6. Event Spaces and Venues continued

6.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (H)

- Design for vehicle interdiction with HVM solutions and/or landscaping features that are impact-rated according to ASTM F2656 or equivalent international standard (e.g. IWA 14:2013 or PAS 68) or engineered to provide equivalent performance to these standards.
- The layout of the HVM measures should create a continuous perimeter around vulnerable parts of the event space, such as areas where crowds gather for ingress / egress, areas of extensive glazing, etc.
- For new buildings, consider raising the first floor above grade in order to avoid vehicle access.
- Consider products or mitigation solutions such as: bollards, berms, planters, swales, adapted signage and wayfinding elements, topography and level changes (e.g. retaining walls, steps), seating / benches, etc.

6.3.5 Hostile Vehicle Mitigation (HVM) (Temporary) (H)

- Provide HVM measures that seek to create a continuous anti-vehicle perimeter around vulnerable parts of the event space, such as areas where crowds gather for ingress / egress, areas of large, seated crowds, or critical back-of-house and/or operations spaces.
  - The measures can be combined with temporary fencing or hoarding for ticketed / managed events.
  - The temporary HVM measures should be deployable HVM products or other measures that are either impact-rated and/or assessed by a qualified professional for performance against a hostile vehicle attack.
  - The HVM measures should be impact tested according to ASTM F2656 or equivalent international standard (e.g. IWA 14:2013, etc.).

6.3.6 Traffic Calming (H)

- Divide pedestrian and vehicular traffic. Provide measures to slow vehicles on roads such as speed bumps, landscaped islands, expanded crossing areas, appropriate signage, etc.
- Use strategies to provide defensive zones for pedestrian crossing, such as islands with waiting areas, expanded curb waiting areas at crossings, etc.
- Use chicanes or other redirection and narrowing of lanes to slow traffic before it arrives near the Event venue.

Outdoor Gathering Area Typical Zoning

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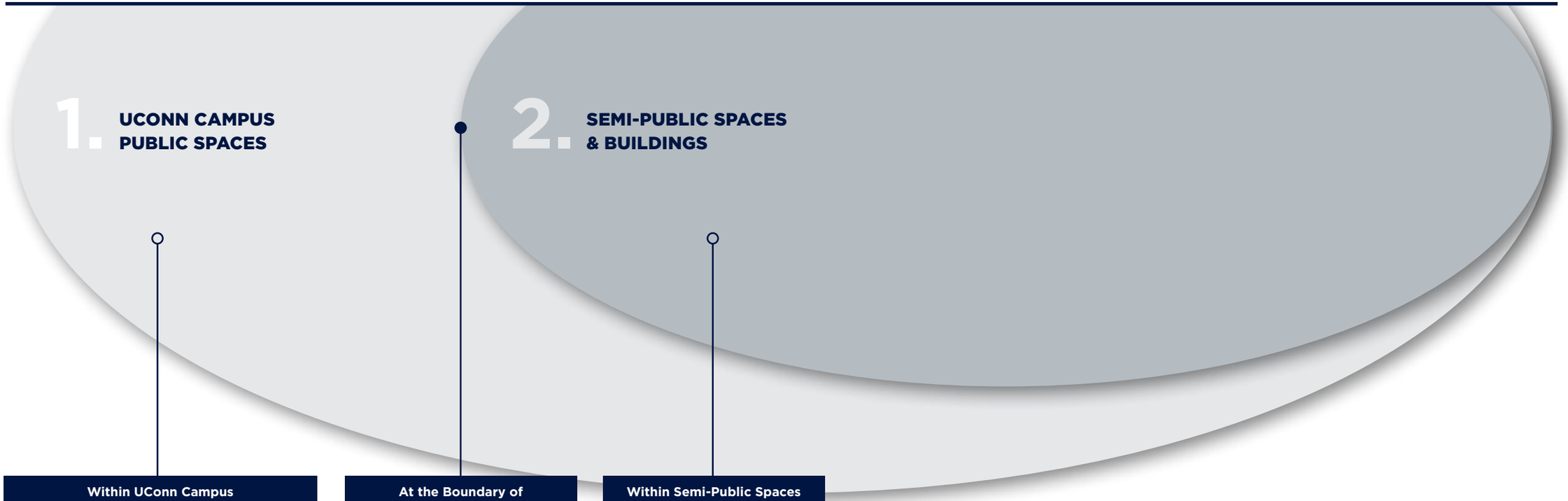

Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (H)
- Fences/Walls recommended for ticketed events
- HVM, Permanent and/or Temporary (H)
- Traffic Calming (H)

Example Spaces:

- Student Union Mall

At the Boundary of Public Gathering Spaces

BUILDING DESIGN

- Controlling Access to Vantage Points (H) (for buildings adjacent to Gathering Areas)

TECHNOLOGY DESIGN

- Access Control (H) for ticketed events
- IDS (L)
- VSS (H)

Example Spaces:

- Entrance to the Student Union Mall

Within Semi-Public Spaces and Buildings

Example Spaces:

- Ticketed, Outdoor Events at the University

7. Outdoor Gathering

7.1 TECHNOLOGY

7.1.1 Access Control (H)

- For ticketed or attendance-managed events:
  - Limit the number of access / egress points.
  - Keep access / egress points away from areas where crowds are anticipated to gather.
  - Where possible, provide measures to prevent direct line-of-sight from screening locations to the location of main crowd via location or alignment of screening areas and/or via hoarding/fencing (whether temporary or permanent).
  - Coordinate screening and security at access points with event requirements from UConn Police Department (PD) and/or University Safety. These may include walk through metal detectors, hand-held metal detectors, bag restrictions, etc. facilitated by Event Security or UConn PD.
  - Provide infrastructure and facilities to support additional security presence if required by UConn PD and/or Event Security.

7.1.2 Intrusion Detection System (L)

- For outdoor venues with permanent buildings or facilities, design for forced door or held-open door alarm capability for all doors that are on access control.

7.1.3 Video Surveillance (H)

- Provide a level of surveillance coverage at main circulation points into and out of the gathering area (e.g. natural choke point between two buildings on a quad):
  - Observe level coverage across typical main ingress and egress routes, resolution of 40ppf.
- Provide a level of surveillance coverage in the main gathering area:
  - Detect level coverage across full gathering area, which should be achieved by cameras that are located either on standalone poles or on neighboring buildings or infrastructure.
  - Resolution of 20ppf minimum.

7.2 BUILDING

7.2.1 Controlling Access to Vantage Points (H)

- For Buildings at or adjacent to Outdoor Gathering Areas, provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.
- Provide monitoring contact to confirm closed position for roof access doors and a standalone audible alarm for held-open access to roof.

7.2.2 Forced Entry Hardening – Building Fabric (N/A)

- Not applicable.

7.2.3 HVAC – Air Intake Placement (N/A)

- Not applicable.

7.2.4 Specification of laminated glass (N/A)

- Not applicable.

7.2.5 Specification of Non-Flammable materials (N/A)

- Not applicable.

7. Outdoor Gathering continued

7.3 SITE

7.3.1 Emergency Blue Phones (L)

- For areas used for organized events, ensure that an Emergency Blue Phone is within line-of-sight of the main access routes to the area.
- Locate Emergency Blue Phones generally along paths or sidewalks at a distance not exceeding 1000’ from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

7.3.2 Enforced Standoff (H)

- In general, seek to provide 100’ of standoff from crowded outdoor gathering areas from busy vehicle circulation routes and parking.
- The following apply during organized outdoor event times; however, they may have permanent features or infrastructure required to achieve the design goal.
  - Locate all parking and unscreened vehicle circulation 100’ or more away from the gathering space, with particular attention to accommodate routes of pedestrian travel. Enforce this with HVM, whether permanent or temporary.
  - Eliminate parking for unknown/unscreened vehicles (e.g. general public) within 100’ of the gathering space.
  - Eliminate parking and vehicle circulation immediately adjacent to the gathering space for all vehicles except emergency vehicles and vehicles critical to the operation of the event.
  - Use temporary checkpoints or screening operations in order to enforce road closures and/or traffic redirections.

7.3.3 Fences / Walls (H)

- For ticketed / managed events:
  - Outdoor Gatherings should be provided with a 6’ tall (minimum) anti-pedestrian fence that does not include anti-climb features (e.g. topping). Consider using a taller (8’ or more) fence or walls for permanent outdoor gathering spaces that enclose ticketed venues.
  - Seek to eliminate gaps that would allow unauthorized access, paying close attention to the interface with other buildings/assets/infrastructure.
  - Limit the number of access and egress points and align their location with emergency services / event planning.

7.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (H)

- Design for vehicle interdiction with HVM solutions and/or landscaping features that are impact-rated according to ASTM F2656 or equivalent international standard (e.g. IWA 14:2013 or PAS 68) or engineered to provide equivalent performance to these standards.
- The layout of the HVM measures should seek to create a continuous perimeter around vulnerable parts of the event space, such as areas where crowds gather or areas of ingress and egress.
- Consider products or mitigation solutions such as: bollards, berms, planters, swales, adapted signage and wayfinding elements, topography and level changes (e.g. retaining walls, steps), seating / benches, etc.

7. Outdoor Gathering continued

7.3.5 Hostile Vehicle Mitigation (HVM) (Temporary) (H)

- For events that create a more vulnerable setting for crowds at Outdoor Gathering areas, provide temporary HVM measures that seek to create a continuous anti-vehicle perimeter around vulnerable parts of the event space, such as areas where crowds gather for ingress / egress, areas of large, seated crowds, or critical back-of-house and/or operations spaces.
  - The measures can be combined with temporary fencing or hoarding for ticketed / managed events.
  - The temporary HVM measures should be deployable HVM products or other measures that are either impact-rated and/or assessed by a qualified professional for performance against a hostile vehicle attack.
  - The HVM measures should be impact tested according to ASTM F2656 or equivalent international standard (e.g. IWA 14:2013, etc.).

7.3.6 Traffic Calming (H)

- Divide pedestrian and vehicular traffic. Provide measures to slow vehicles on roads such as speed bumps, landscaped islands, expanded crossing areas, appropriate signage, etc.
- Use strategies to provide defensive zones for pedestrian crossing, such as islands with waiting areas, expanded curb waiting areas at crossings, etc.
- Use chicanes or other redirection and narrowing of lanes to slow traffic before it arrives near the gathering area. These may be augmented by temporary versions of the same features (e.g. funneling) as needed for events.

Landscape and Other Outdoor Typical Zoning

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1. UCONN CAMPUS PUBLIC SPACES

Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (L)
- Fences/Walls not necessary
- HVM, Permanent (M)
- Traffic Calming (M)

BUILDING DESIGN

- Controlling Access to Vantage Points (L)

TECHNOLOGY DESIGN:

- VSS (L)

8. Landscaped and Other Outdoor Areas

8.1 TECHNOLOGY

8.1.1 Access Control (N/A)

- Not applicable.

8.1.2 Intrusion Detection System (N/A)

- Not applicable.

8.1.3 Video Surveillance (L)

- Provide a level of surveillance coverage at main thoroughfares throughout the Storrs campus where it can be achieved through the pragmatic use of existing camera mounting locations, such as existing buildings:
  - Detect level coverage at routes of primary pedestrian and vehicular travel.
  - Resolution of 20ppf minimum.

8.2 BUILDING

8.2.1 Controlling Access to Vantage Points (L)

- For buildings in this context, provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.

8.2.2 Forced Entry Hardening – Building Fabric (N/A)

- Not applicable.

8.2.3 HVAC – Air Intake Placement (N/A)

- Not applicable.

8.2.4 Specification of laminated glass (N/A)

- Not applicable.

8.2.5 Specification of Non-Flammable materials (L)

- Evaluate the opportunity to use noncombustible materials for street furniture, landscaping features, and structures.
- Consider the use of integrated (immovable), noncombustible outdoor furnishings.

8.3 SITE

8.3.1 Emergency Blue Phones (B)

- Locate Emergency Blue Phones generally along paths or sidewalks at a distance not exceeding 1000’ from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

8.3.2 Enforced Standoff (L)

- Consider Landscape design to discourage interaction between pedestrian and vehicle traffic.

8.3.3 Fences / Walls (N/A)

- Not applicable.

8.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (M)

- Design for vehicle interdiction with landscaping as a HVM solution. The proposed mitigation may or may not be impact-rated or tested.
- Design to deter hostile vehicle access via street furniture, landscaping, and untested measures. Seek to create a continuous line of mitigation measures that discourage hostile vehicle access with gaps minimized while considering project access requirements.

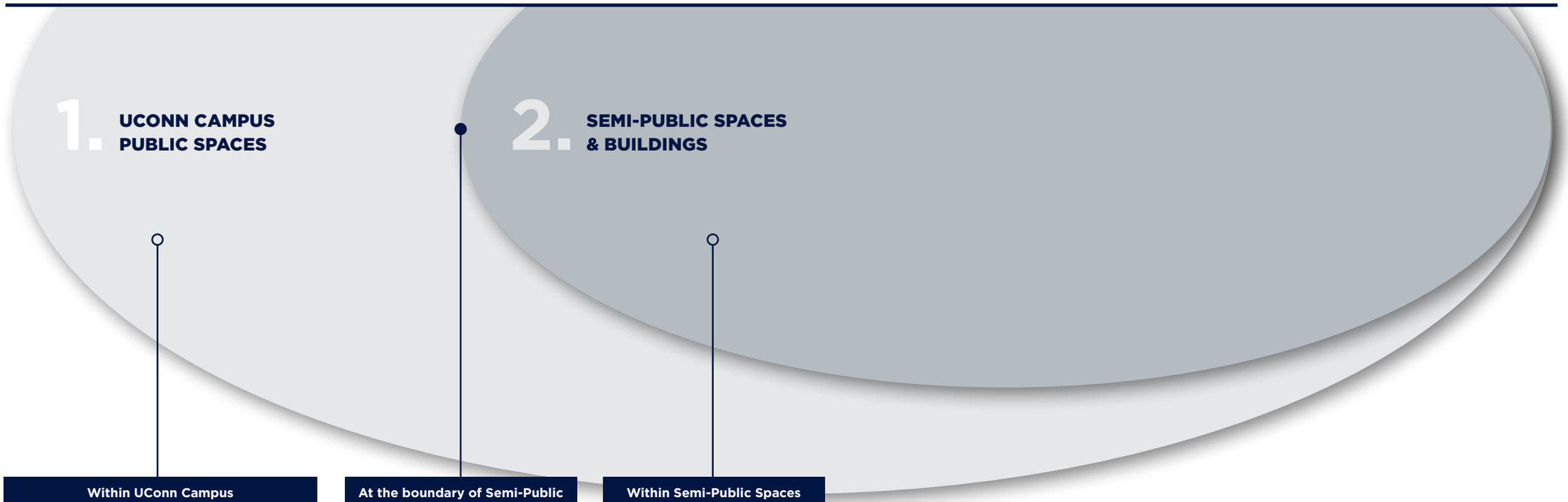
8.3.5 Hostile Vehicle Mitigation (HVM) (Temporary) (N/A)

- Not applicable.

8.3.6 Traffic Calming (M)

- Divide pedestrian and vehicular traffic. Provide measures to slow vehicles on roads such as speed bumps, landscaped islands, expanded crossing areas, appropriate signage, etc.

Parking Areas Typical Zoning



Within UConn Campus Public Spaces

CAMPUS-WIDE SECURITY DESIGN INITIATIVES

- Emergency Blue Phone (L)
- Enforced Standoff (M)
- Fences/Walls not necessary
- HVM (B)
- Traffic Calming (H)

At the boundary of Semi-Public Spaces and Buildings

BUILDING DESIGN

- Building Fabric (L)
- Controlling Access to Vantage Points (L)

TECHNOLOGY DESIGN

- Access Control (L)
- VSS (M)

Example Spaces:

- Boundary of Parking Area or Parking Structure

Within Semi-Public Spaces and Buildings

TECHNOLOGY DESIGN

- VSS (M)

Example Spaces:

- Within parking structure

9. Parking

9.1 TECHNOLOGY

9.1.1 Access Control (L)

- Design for Card Access or Payment / Ticket Registration at Main Access / Egress Points.

9.1.2 Intrusion Detection System (N/A)

- Not applicable.

9.1.3 Video Surveillance (M)

- Provide a level of surveillance coverage at Access / Egress Points:
  - Identify level coverage across threshold (100% extents), resolution of 100ppf and in access stairwells for parking garages.
  - Observe level coverage to exterior of building (where applicable).
- Provide a level of surveillance coverage in main circulation areas and areas to congregate:
  - Observe level coverage throughout public areas of parking structures (100% extents) and Detect level coverage at external lots.
  - Resolution of 40ppf minimum.

9.2 BUILDING

9.2.1 Controlling Access to Vantage Points (L)

- Provide physical locks to roof access doors and/or roof access ladders to deter unauthorized use.
- For parking garages that have parking on the upper exterior of the space or where parking exists at an elevated position relative to the surroundings, consider the use of opaque walls or fencing to the external edges of the parking area to restrict views of the surrounding areas.

9.2.2 Forced Entry Hardening Building Fabric (L)

- For ground-level opaque elements, use materials that give the impression of strength to discourage opportunistic attempts at intrusion. Consider the use of materials should meet ASTM F 476 Grade 10 forced entry resistance requirements, adapted to suit the element.
- Doors shall meet ASTM F 476 Grade 10 at a minimum.

9.2.3 HVAC – Air Intake Placement (N/A)

- Not applicable.

9.2.4 Specification of laminated glass (N/A)

- Not applicable.

9.2.5 Specification of Non-Flammable materials (N/A)

- Not applicable.

9. Parking continued

9.3 SITE

9.3.1 Emergency Blue Phones (B)

- Locate Emergency Blue Phones generally along paths or sidewalks at a distance not exceeding 1000’ from another Emergency Blue Phone and within line-of-sight of another Emergency Blue Phone.

9.3.2 Enforced Standoff (N/A)

- Not applicable.

9.3.3 Fences / Walls (M)

- Provide an architectural pedestrian fence or low wall at the building or outdoor lot with no anti-climb rating or similar measures.

9.3.4 Hostile Vehicle Mitigation (HVM) (Permanent) (B)

- Consider installation of flexible delineator posts to guide vehicle traffic.
- Evaluate the benefit of bollards at primary pedestrian access points to/from the parking area considering how busy the parking area may be and the likelihood for interactions between vehicles and pedestrians in that area.
- Seek to provide large paths and resting areas for pedestrians to cross vehicle routes safely. If pedestrian routes are adjacent to high-speed vehicle routes, evaluate the benefit from bollards or fencing to discourage interaction between pedestrians and vehicles at locations away from safe crossing points.

9.3.5 Hostile Vehicle Mitigation (HVM) (Temporary) (N/A)

- Not applicable.

9.3.6 Traffic Calming (N/A)

- Not applicable.