SAFE SCHOOL ENVIRONMENTS

PRESENTATION TO THE SANDY HOOK ADVISORY COMMISSION, FEBRUARY 15, 2013

RICH CONNELL, AIA – AIA CT

JAMES LAPOSTA JR, FAIA – JCJ ARCHITECTURE

RICHARD MUNDAY, AIA – NEWMAN ARCHITECTS

GLENN GOLLENBERG, AIA – THE S/L/A/M COLLABORATIVE

RANDALL LUTHER, AIA – TAI SOO KIM PARTNERS

AIA CONNECTICUT

AGENDA

INTRODUCTION

SITUATIONAL AWARENESS

PHYSICAL ENVIRONMENT

ENHANCED PROTECTION

RECOMMENDATIONS

1 IN 7: ODDS OF GETTING INTO A FIGHT IN SCHOOL

1 IN 13: ODDS OF BEING THREATENED OR INJURED BY A WEAPON IN SCHOOL

1 IN 1,000,000: ODDS OF CHILD LOSS IN SCHOOL TO HOMICIDE OR SUICIDE

*U.S. DOE & U.S. DOJ ANNUAL REPORT ON SCHOOL SAFETY, 1999

CONTEXT

1/5 OF US POPULATION ARE IN SCHOOL EVERYDAY

53,000,000 STUDENTS / 6,000,000 ADULTS

THERE IS AN ESSENTIAL UNIQUENESS TO EVERY SCHOOL AND EVERY SITE.

THERE IS NO RISK-FREE ENVIRONMENT AND NO ONE SOLUTION

- **IDENTIFYING INDIVIDUALS WHO HAVE THE IDEA OR INTENT OF ATTACKING**
- **ASSESSING WHETHER THE INDIVIDUAL IS A RISK**
- **MANAGING THE THREAT THE INDIVIDUAL POSES**

FINAL REPORT AND FINDINGS OF THE SAFE SCHOOL INITIATIVE:
(COLUMBINE) US SECRET SERVICE AND US DEPARTMENT OF EDUCATION

THREAT ASSESSMENT

THE DEVELOPMENT OF SAFE SCHOOLS MUST DRAW FROM PREVIOUS HISTORICAL EXPERIENCES, BUT MUST ALSO BE INFORMED BY EVENTS IN THE FUTURE WHICH WHILE DIFFICULT TO PREDICT STILL NEED TO BE TAKEN UNDER CONSIDERATION

DEFENSE IN DEPTH STRATEGY

EDGE OF SITE

SITE

BUILDING PERIMETER

POINTS OF ENTRY

INTERNAL CIRCULATION

FINAL DESTINATIONS; CLASSROOM, GYM, ETC.

UTILIZE PROTECTIVE DESIGN TO ENHANCE THE EDUCATIONAL EXPERIENCE

ALLOWS FOCUS ON LEARNING

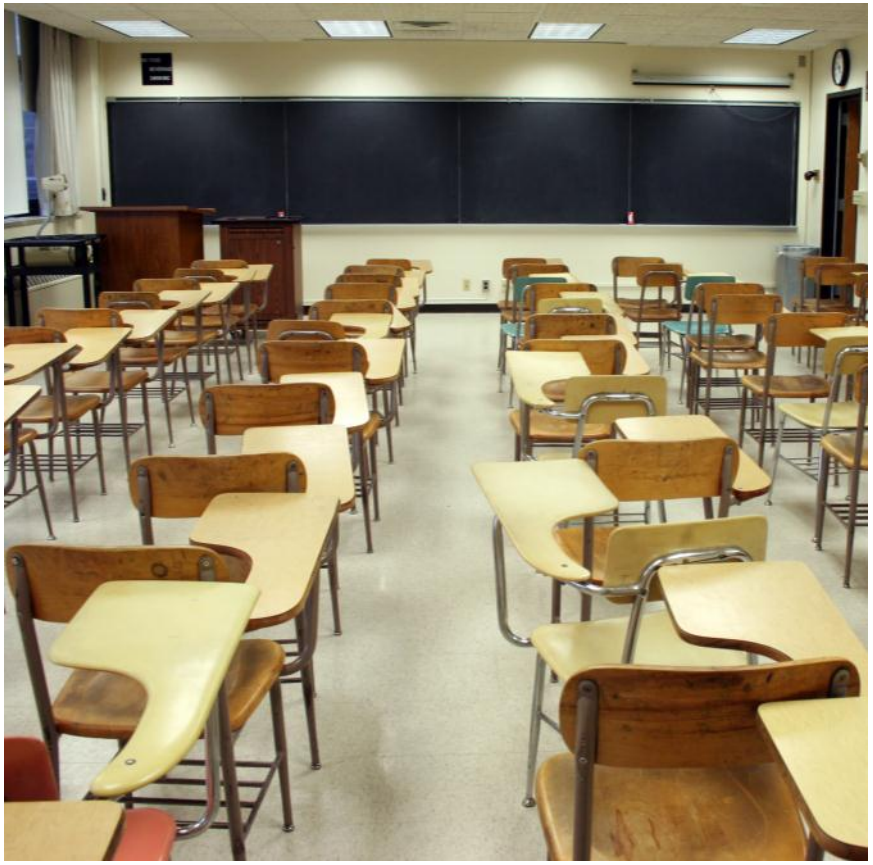
SUPPORT AN OPEN ENVIRONMENT

ENCOURAGE CROSS-POLLINATION OF IDEAS AND EXPERIENCES

ENGAGE PARENTS AND THE COMMUNITY

WHEN THE UNEXPECTED OCCURS

...IT CAN BE EFFICIENTLY MANAGED



THE ENVIRONMENT AS THE 3RD TEACHER

THE BUILDINGS WE CREATE REFLECT THE WORLD IN WHICH WE WANT TO LIVE

THE ENVIRONMENT AS THE 3RD TEACHER

WHERE DOES THE INFLUENCE END?

EXPANDING THE CONVERSATION

EDUCATIONAL ECOSYSTEM

PEOPLE

PHYSICAL ENVIRONMENT

TECHNOLOGY

SITUATIONAL AWARENESS

ASSESS THE CONDITIONS

DELAY THE AGGRESSION

PROTECT THOSE AT RISK

SITUATIONAL AWARENESS

- Threat assessment component of situational awareness; addressing site uniqueness
- Intelligence gathering and information sharing
  - YOU CANNOT PREPARE OR RESPOND IF YOU ARE UNAWARE
- Delaying the threat from having an effect on the occupants of the building; time and consequence management
- Understanding the event in progress
- Informing and expediting response mitigation

SITUATIONAL AWARENESS PLANNING

- Emphasize how we as professionals can engage and partner w/ emergency responders
  - UNDERSTANDING OF SITE AND BUILDINGS
  - UNDERSTANDING HOURS OF OPERATION AND ACTIVITIES
  - PROVIDING FLEXIBILITY IN INCIDENT MANAGEMENT RESPONSE
  - CONSIDER MULTIPLE LOCATIONS FOR ASSESSMENT AND STAGING
  - THE VALUE OF MULTIPLE ENTRY POINTS
  - UNDERSTANDING OF WHERE OCCUPANTS ARE LOCATED
  - PLANNING FOR OCCUPANT MOVEMENT AND RELOCATION

SITUATIONAL AWARENESS

- People – Behavioral Recognition / Information Sharing
  - STAFF: ADMINISTRATORS, EDUCATORS, SUPPORT
  - PARENTS
  - STUDENTS

SITUATIONAL AWARENESS

- **People – Behavioral Recognition / Information Sharing**
  - STAFF: ADMINISTRATORS, EDUCATORS, SUPPORT
  - PARENTS
  - STUDENTS

SITUATIONAL AWARENESS

- **People – Behavioral Recognition / Information Sharing**
  - **STAFF: ADMINISTRATORS, EDUCATORS, SUPPORT**
  - **PARENTS**
  - **STUDENTS**

SITUATIONAL AWARENESS

- Use of Technology
  - VIDEO SURVEILLANCE; GATHERING, DISPLAYING, RECORDING
  - VOICE COMMUNICATION [RADIO, CELL PHONES, PUBLIC ADDRESS]
  - CONVERGED NETWORK

SITUATIONAL AWARENESS

- **Use of Technology**
  - VIDEO SURVEILLANCE
  - VOICE COMMUNICATION [RADIO, CELL PHONES, PUBLIC ADDRESS]
  - CONVERGED NETWORK

SITUATIONAL AWARENESS

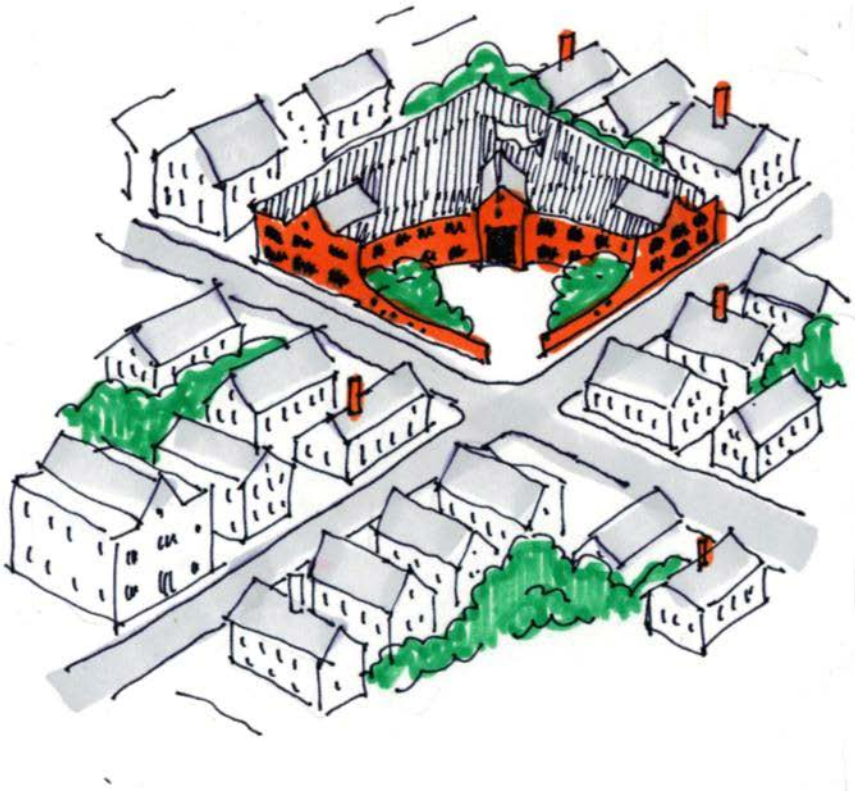
- **Use of Technology**
  - VIDEO SURVEILLANCE
  - VOICE COMMUNICATION [RADIO, CELL PHONES, PUBLIC ADDRESS]
  - **CONVERGED NETWORK; ON AND OFF PREMISES**

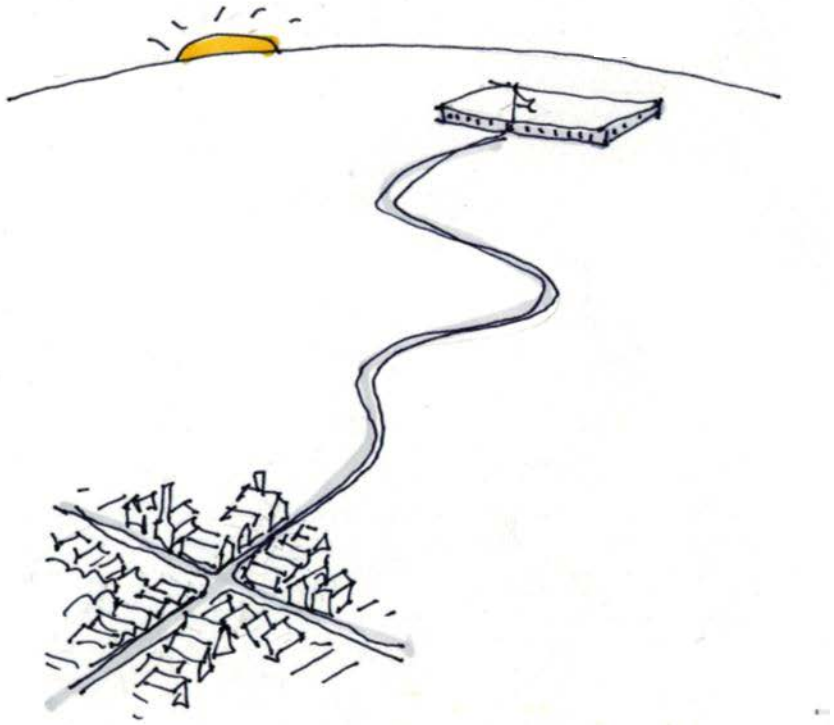
SITUATIONAL AWARENESS

- Physical Environment; Existing or New
  - SCHOOL BUILDING
  - PLAYGROUND / PLAYFIELDS
  - DROP-OFF / PARKING

SCHOOLS AS CENTERS OF COMMUNITY

SCHOOLS AS CENTERS OF COMMUNITY





SOME SAFE AND SECURE SITE PRINCIPLES

PRIMARY POINT OF ACCESS

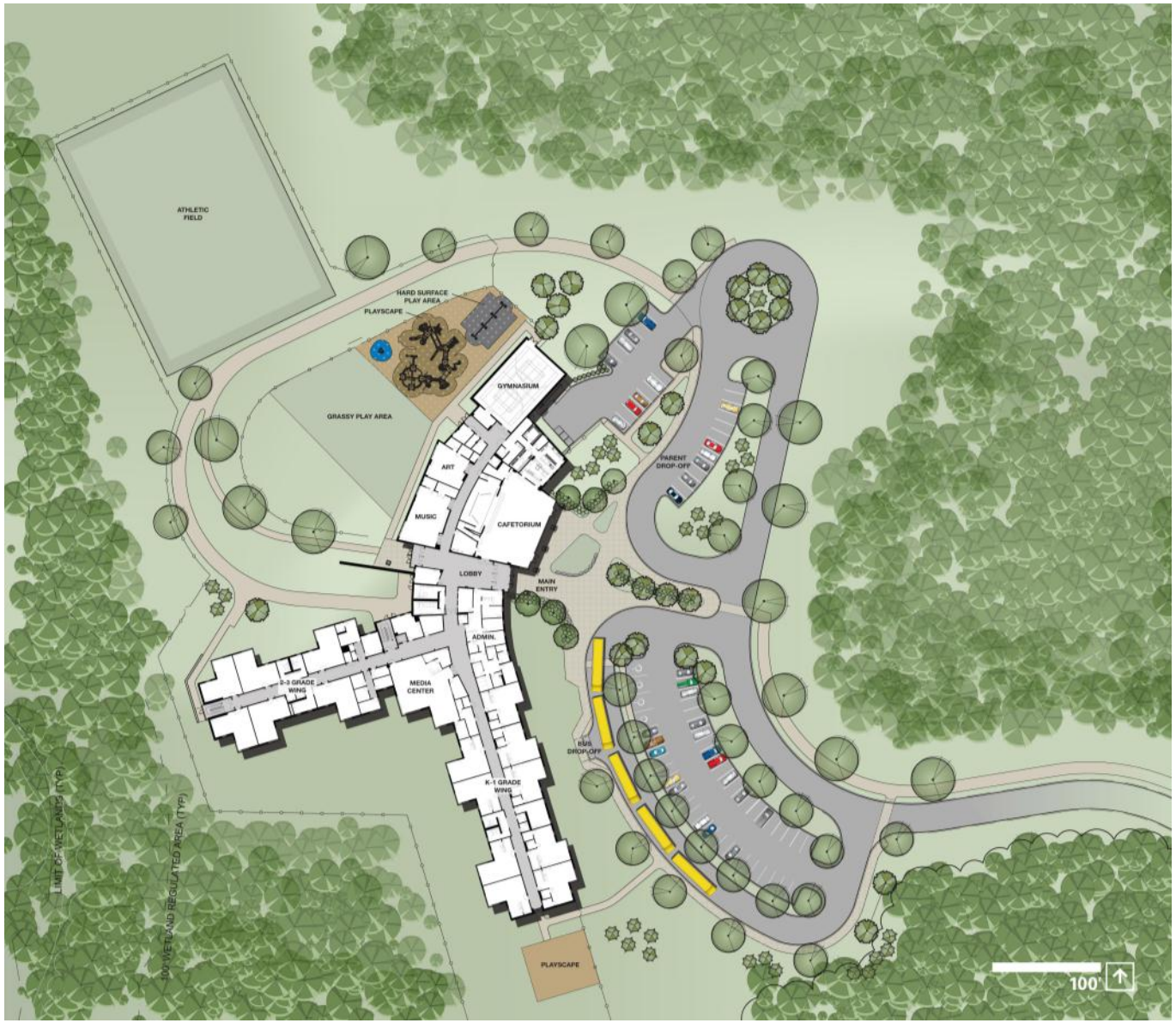
SEPARATE PARENT, BUS AND STAFF CIRCULATION

BUFFER BETWEEN PARKING AND MAIN ENTRY

VIEWS FROM OFFICE

BUILDING AS BUFFER BETWEEN PARKING AND PLAYFIELDS

MULTIPLE POINTS FOR INCIDENT RESPONSE



SOME SAFE AND SECURE SITE PRINCIPLES

PRIMARY POINT OF ACCESS AND CONTROL

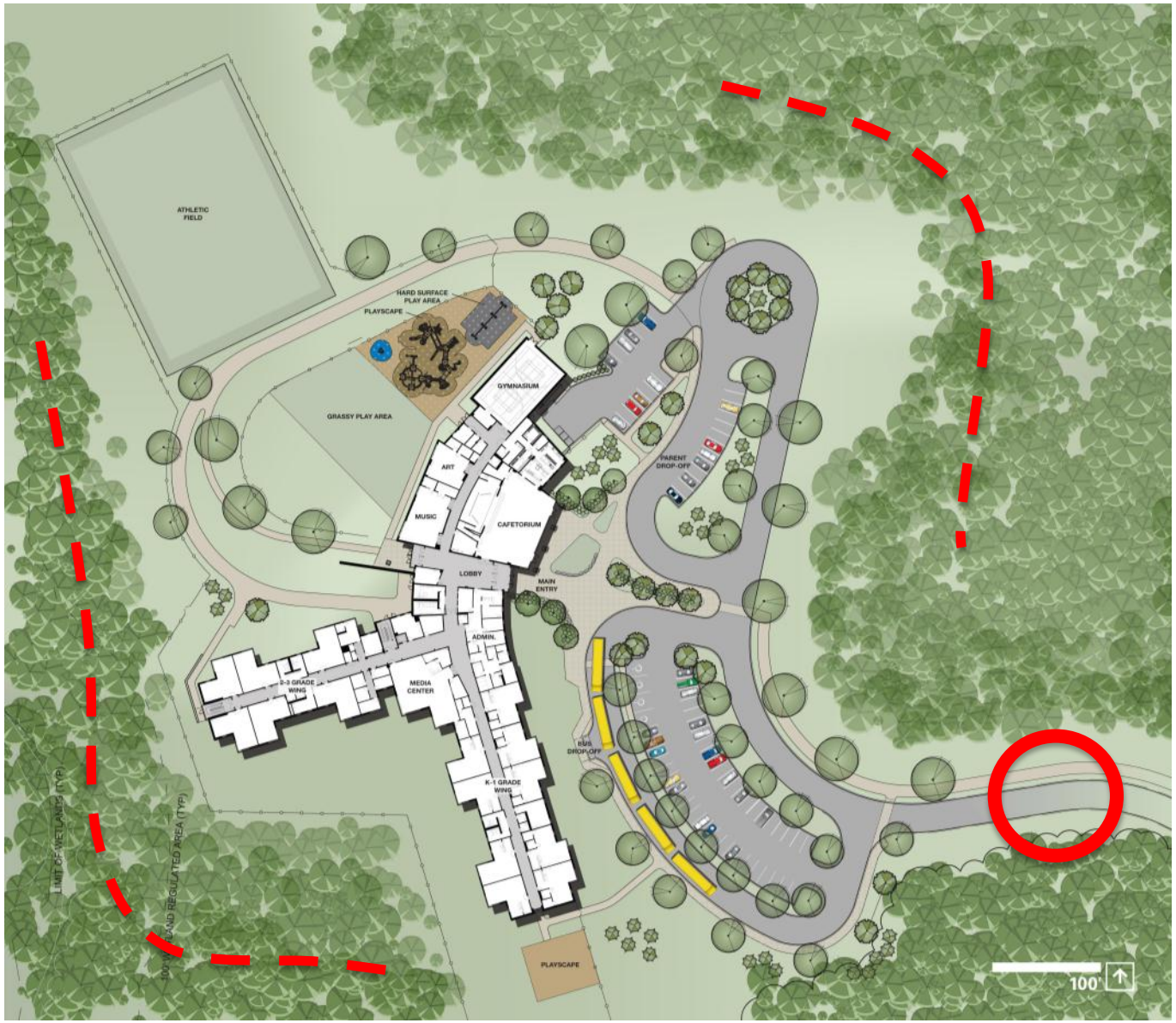
SEPARATE PARENT, BUS AND STAFF CIRCULATION

BUFFER BETWEEN PARKING AND MAIN ENTRY

VIEWS FROM OFFICE

BUILDING AS BUFFER BETWEEN PARKING AND PLAYFIELDS

MULTIPLE POINTS FOR INCIDENT RESPONSE



SOME SAFE AND SECURE SITE PRINCIPLES

PRIMARY POINT OF ACCESS

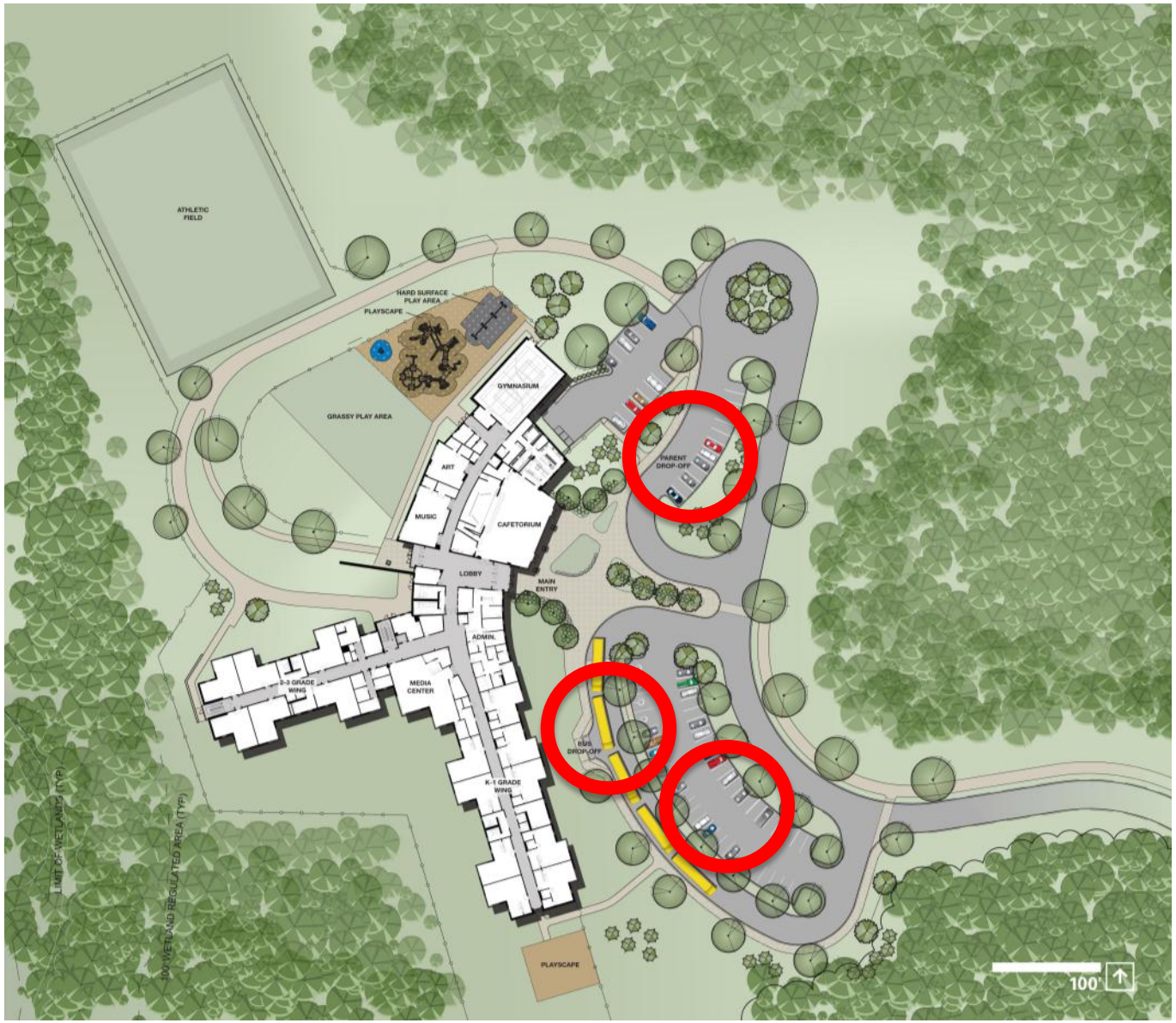
SEPARATE PARENT, BUS AND STAFF CIRCULATION

BUFFER BETWEEN PARKING AND MAIN ENTRY

VIEWS FROM OFFICE

BUILDING AS BUFFER BETWEEN PARKING AND PLAYFIELDS

MULTIPLE POINTS FOR INCIDENT RESPONSE



SOME SAFE AND SECURE SITE PRINCIPLES

PRIMARY POINT OF ACCESS

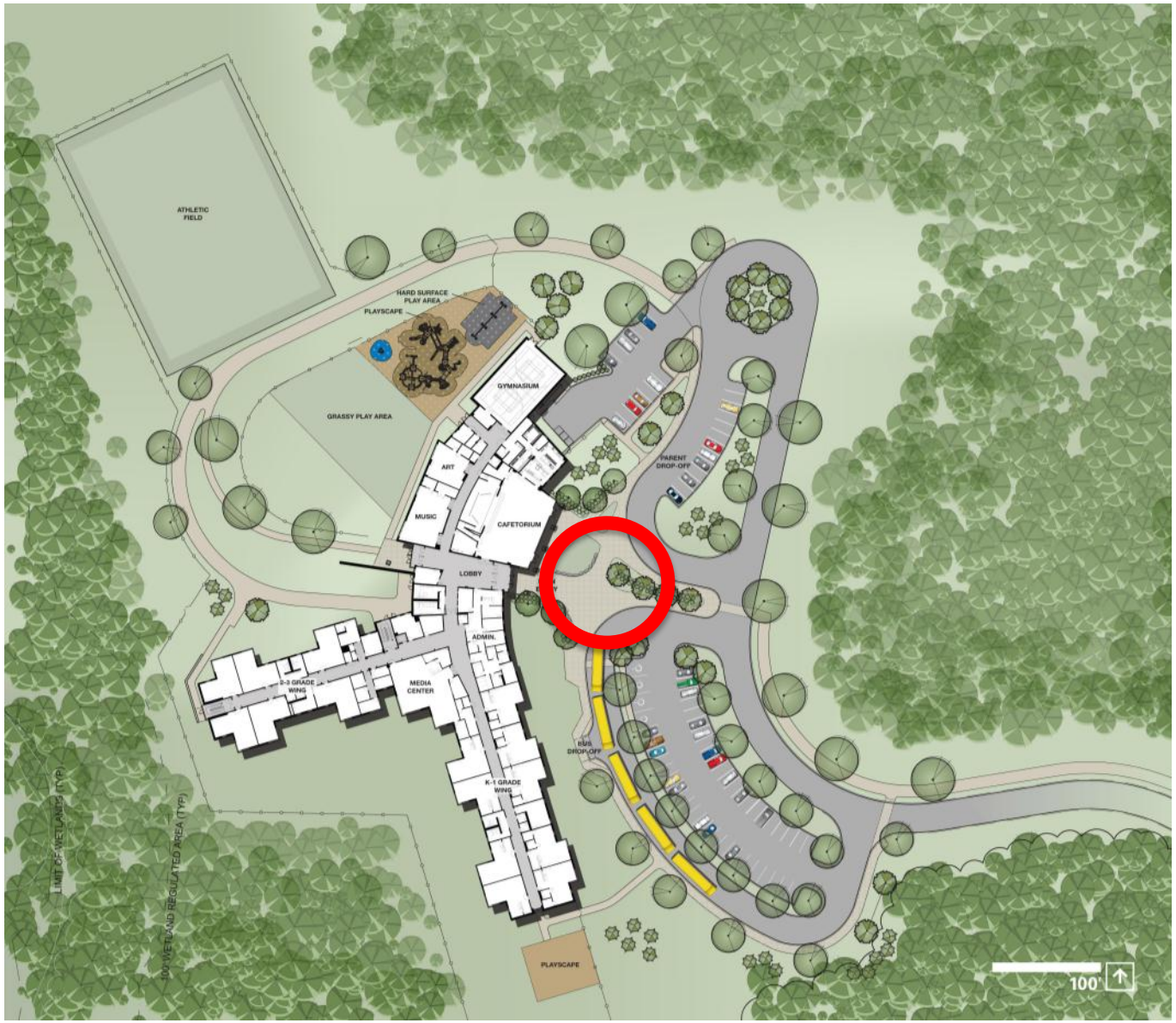
SEPARATE PARENT, BUS AND STAFF CIRCULATION

BUFFER BETWEEN PARKING AND MAIN ENTRY

VIEWS FROM OFFICE

BUILDING AS BUFFER BETWEEN PARKING AND PLAYFIELDS

MULTIPLE POINTS FOR INCIDENT RESPONSE



SOME SAFE AND SECURE SITE PRINCIPLES

PRIMARY POINT OF ACCESS

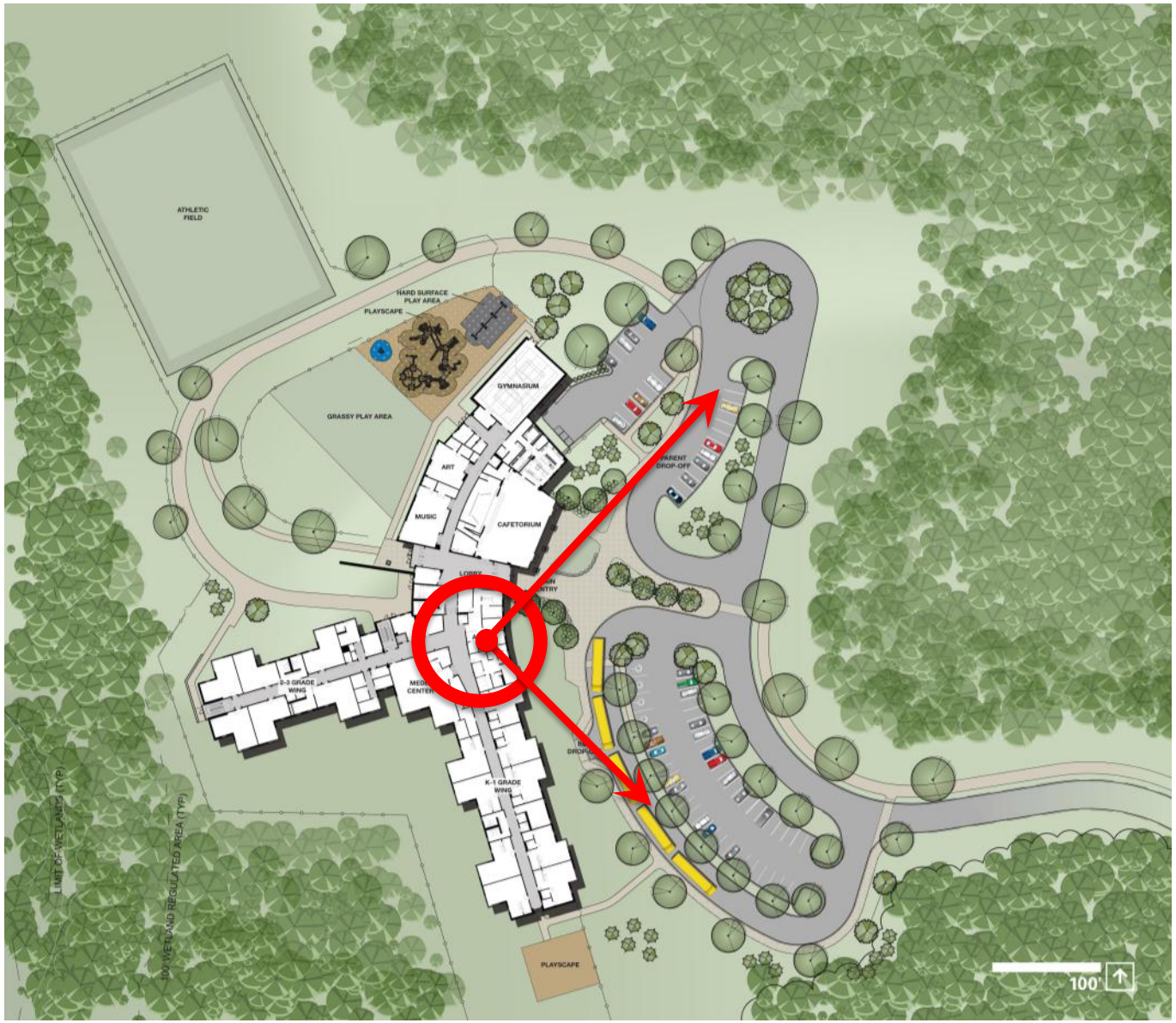
SEPARATE PARENT, BUS AND STAFF CIRCULATION

BUFFER BETWEEN PARKING AND MAIN ENTRY

VIEWS FROM OFFICE

BUILDING AS BUFFER BETWEEN PARKING AND PLAYFIELDS

MULTIPLE POINTS FOR INCIDENT RESPONSE



SOME SAFE AND SECURE SITE PRINCIPLES

PRIMARY POINT OF ACCESS

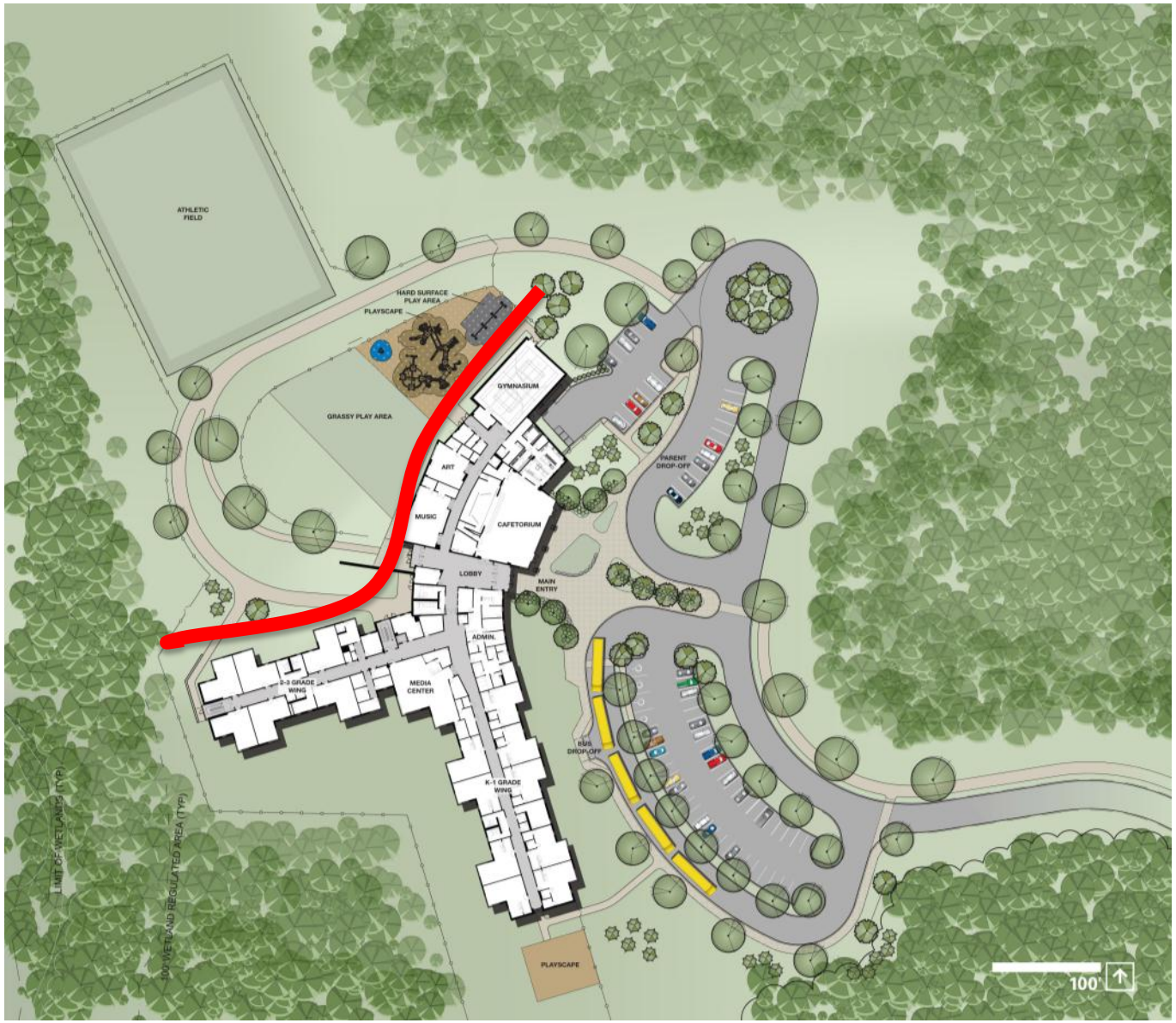
SEPARATE PARENT, BUS AND STAFF CIRCULATION

BUFFER BETWEEN PARKING AND MAIN ENTRY

VIEWS FROM OFFICE

BUILDING AS BUFFER BETWEEN PARKING AND FIELDS TO SEPARATE POPULATIONS

MULTIPLE POINTS FOR INCIDENT RESPONSE



SOME SAFE AND SECURE SITE PRINCIPLES

PRIMARY POINT OF ACCESS

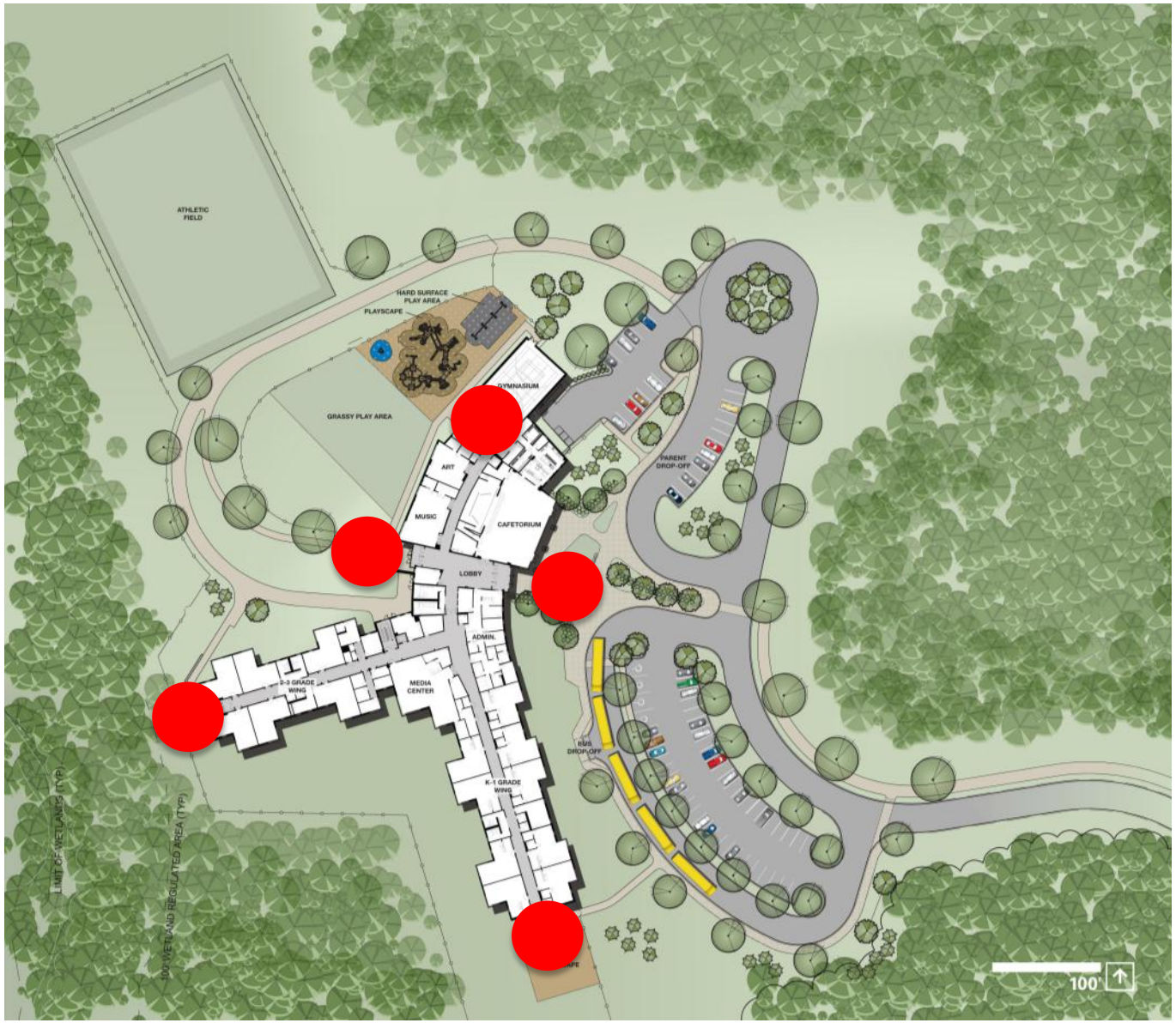
SEPARATE PARENT, BUS AND STAFF CIRCULATION

BUFFER BETWEEN PARKING AND MAIN ENTRY

VIEWS FROM OFFICE

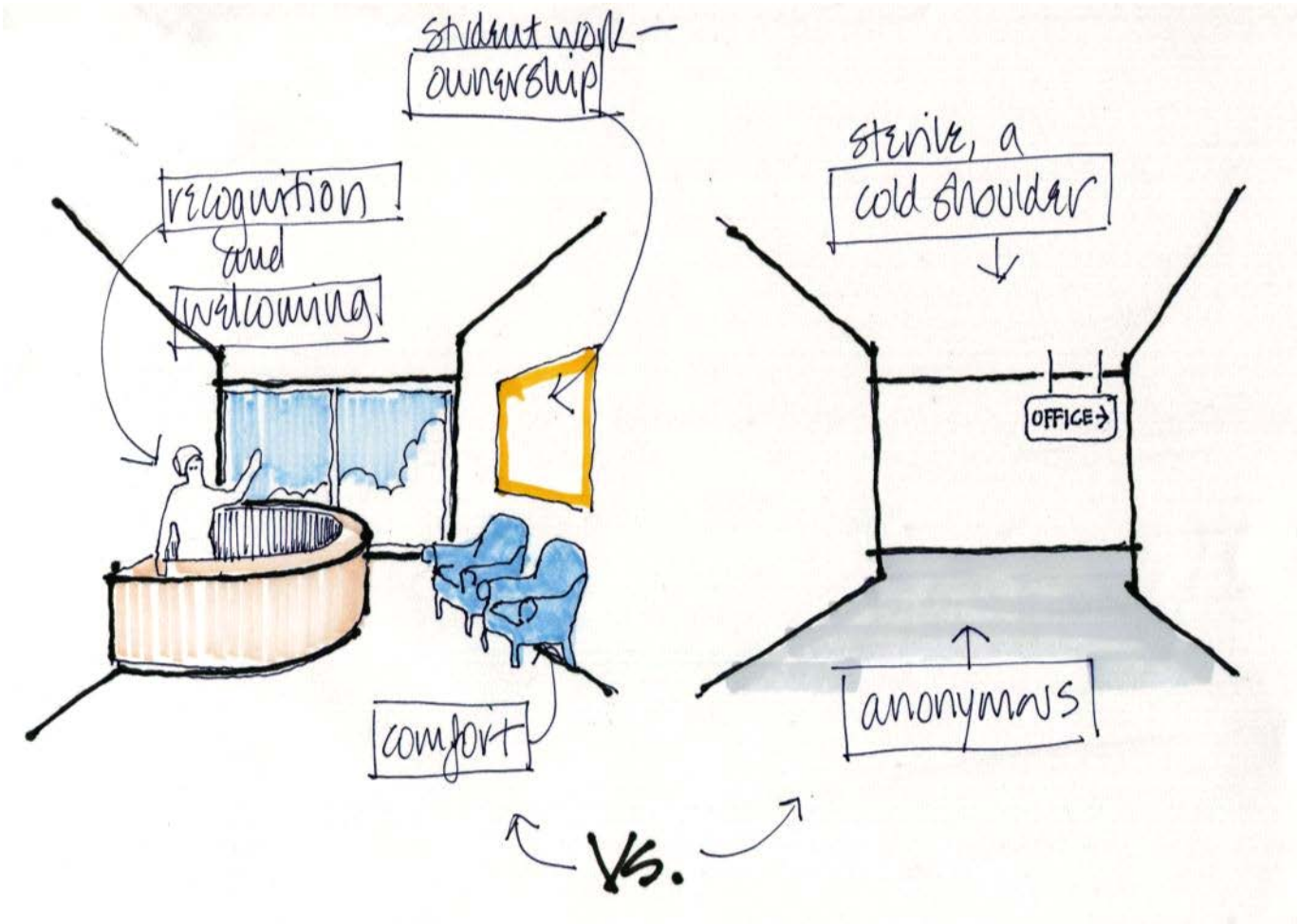
BUILDING AS BUFFER BETWEEN PARKING AND PLAYFIELDS

MULTIPLE POINTS FOR INCIDENT RESPONSE MANAGEMENT DEVELOPED WITH EMERGENCY RESPONDERS



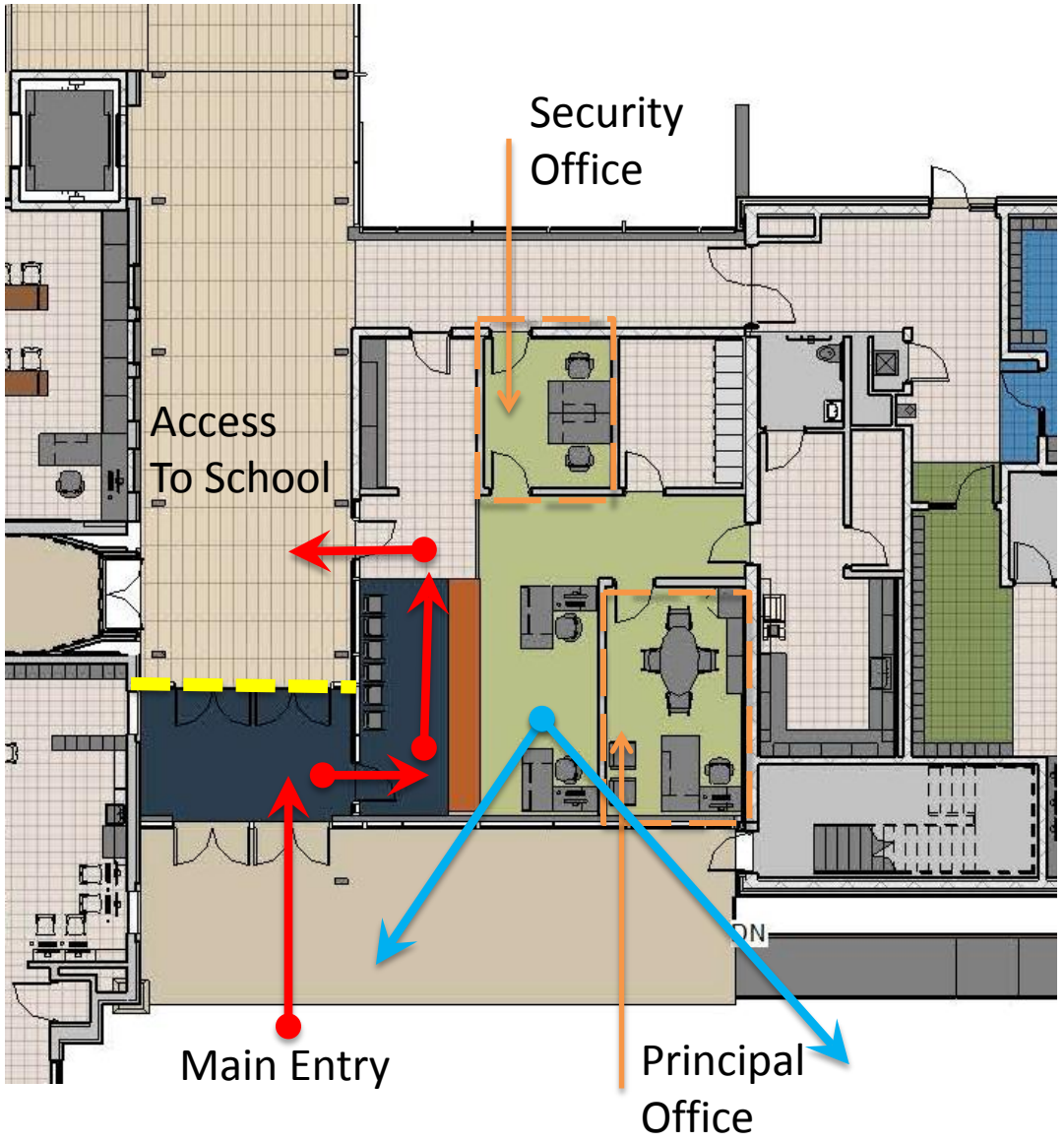
AIA CONNECTICUT

WELCOMING / RECOGNITION / CONTROL



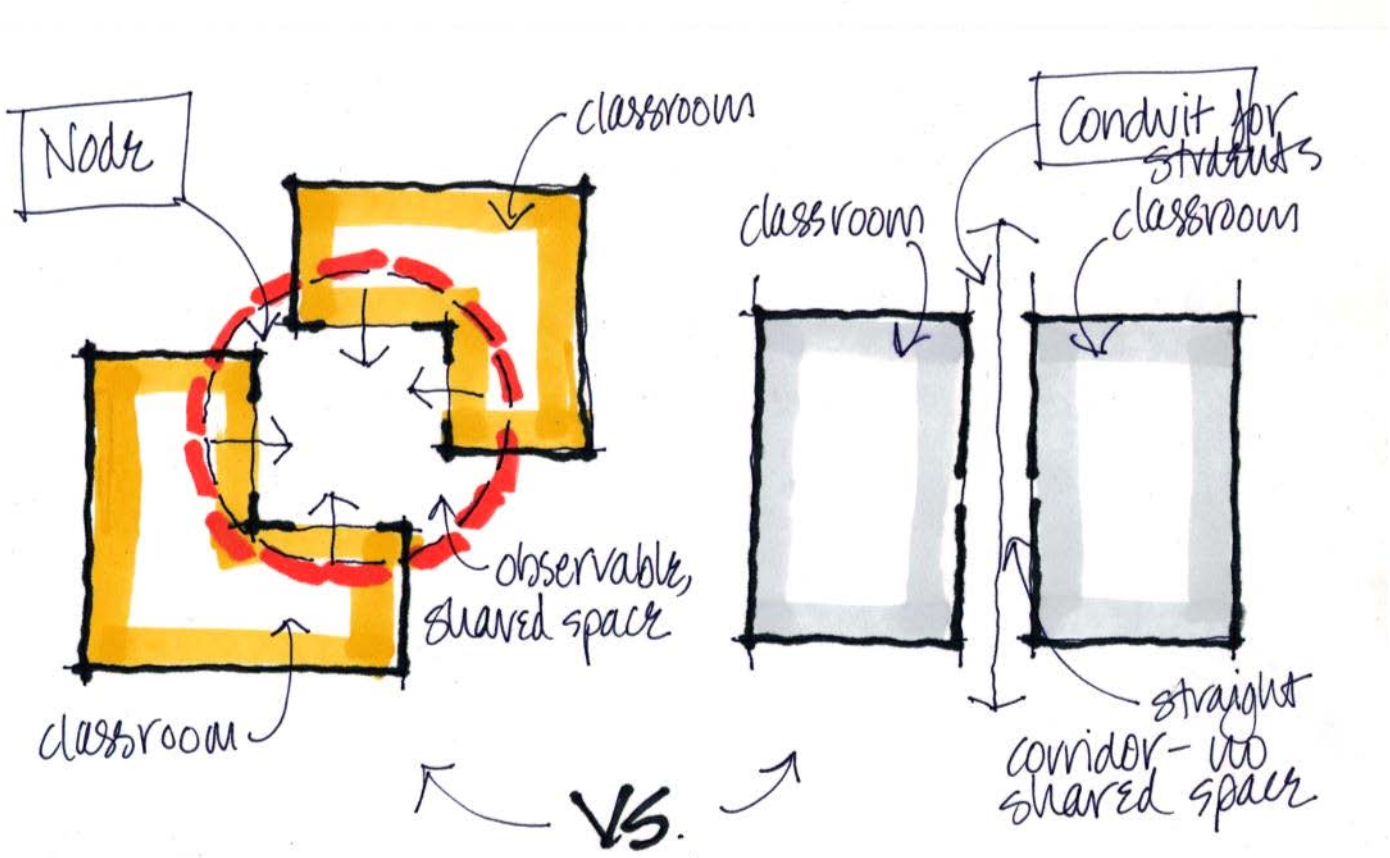
WELCOMING / RECOGNITION / CONTROL

View to Entry
Control Access
Adjacent Admin
Adjacent Security



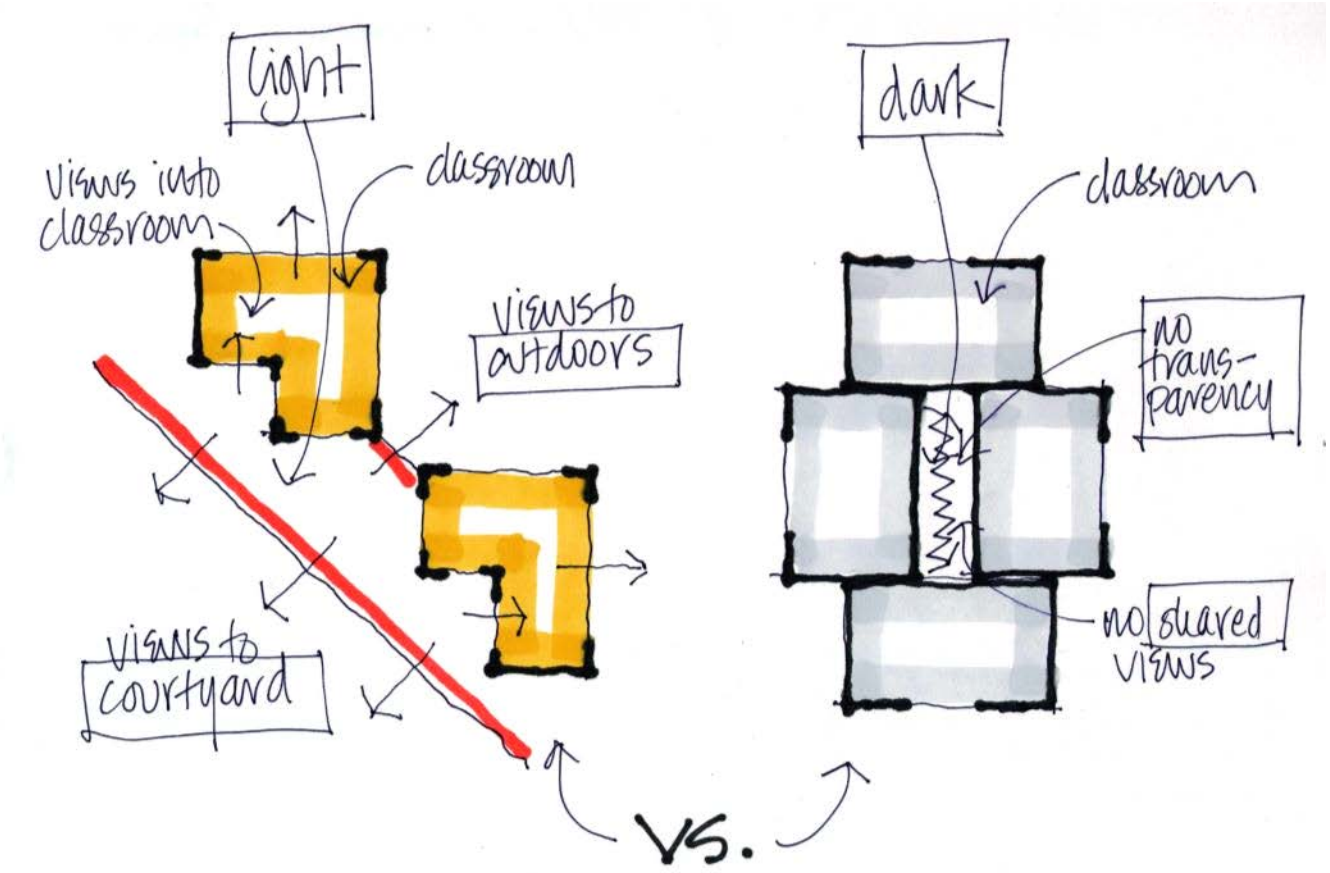
RECOGNITION/CONTROL/WAYFINDING

INTEGRATION VS. SEPARATION

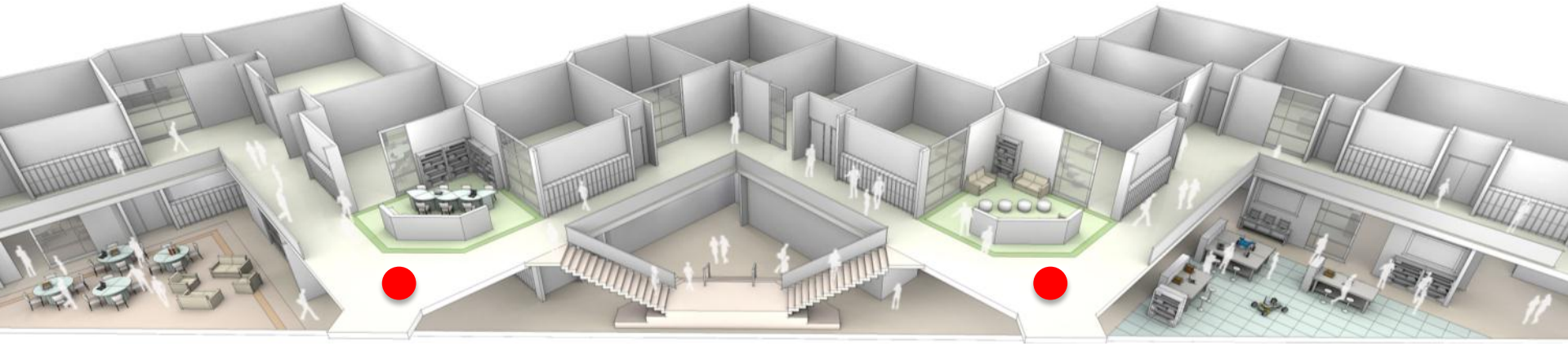


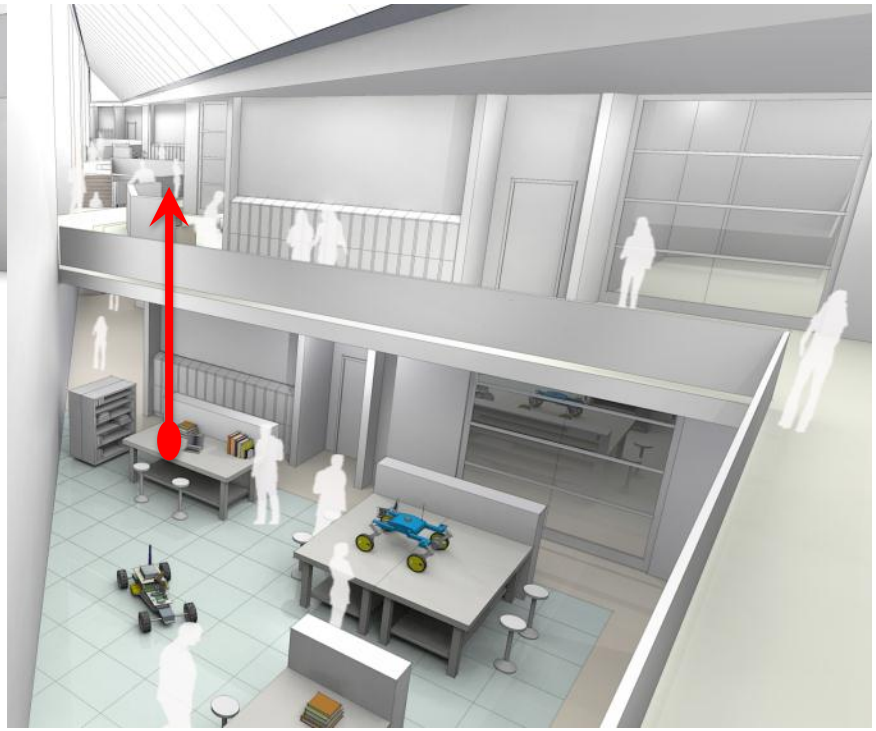
INTEGRATION VS. SEPARATION

TRANSPARENCY: SEEING IN / SEEING OUT



TRANSPARENCY: SEEING IN / SEEING OUT

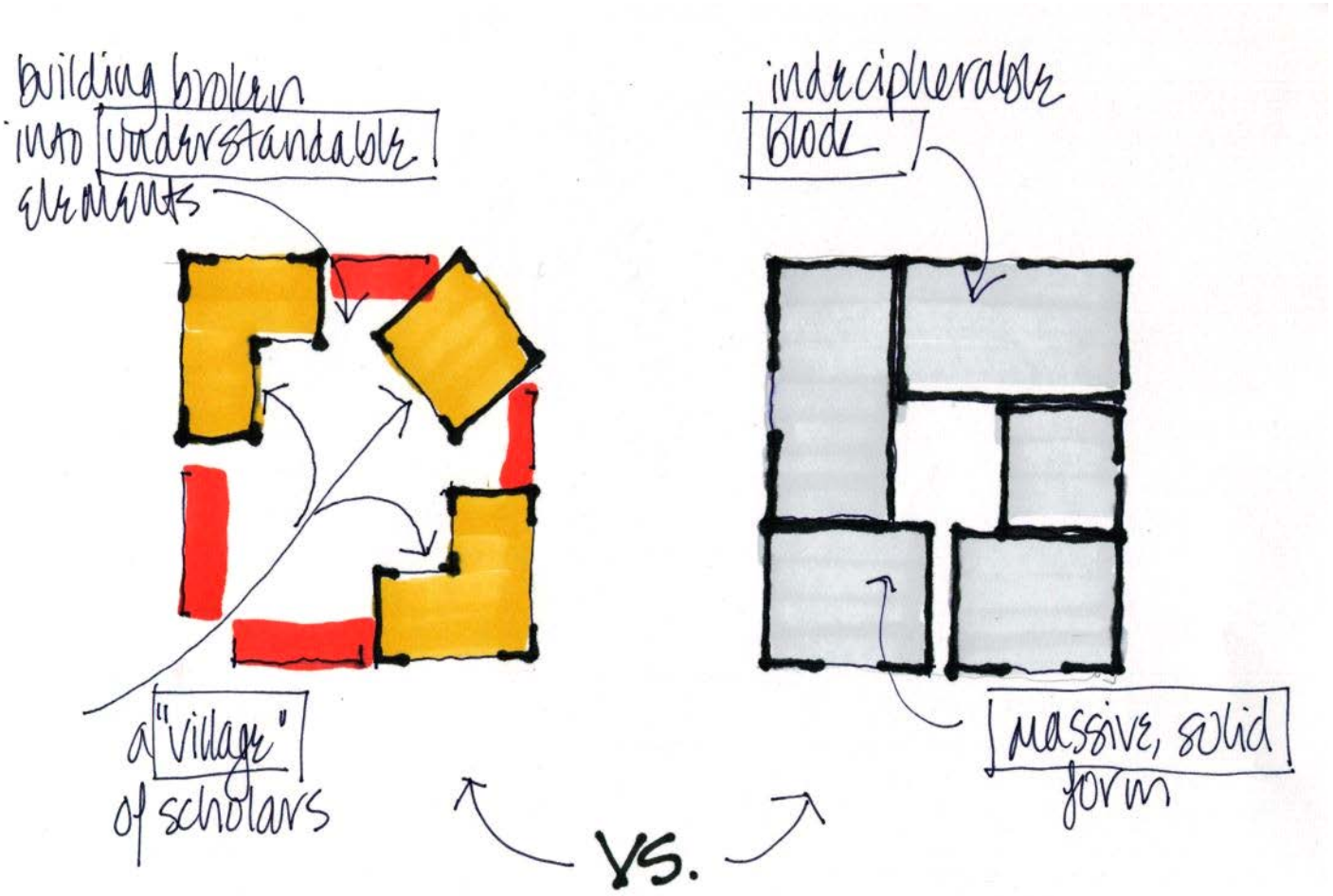




TRANSPARENCY: SEEING IN / SEEING OUT

SMALL LEARNING COMMUNITIES

INCREASE AWARENESS/MINIMIZE EXPOSURE

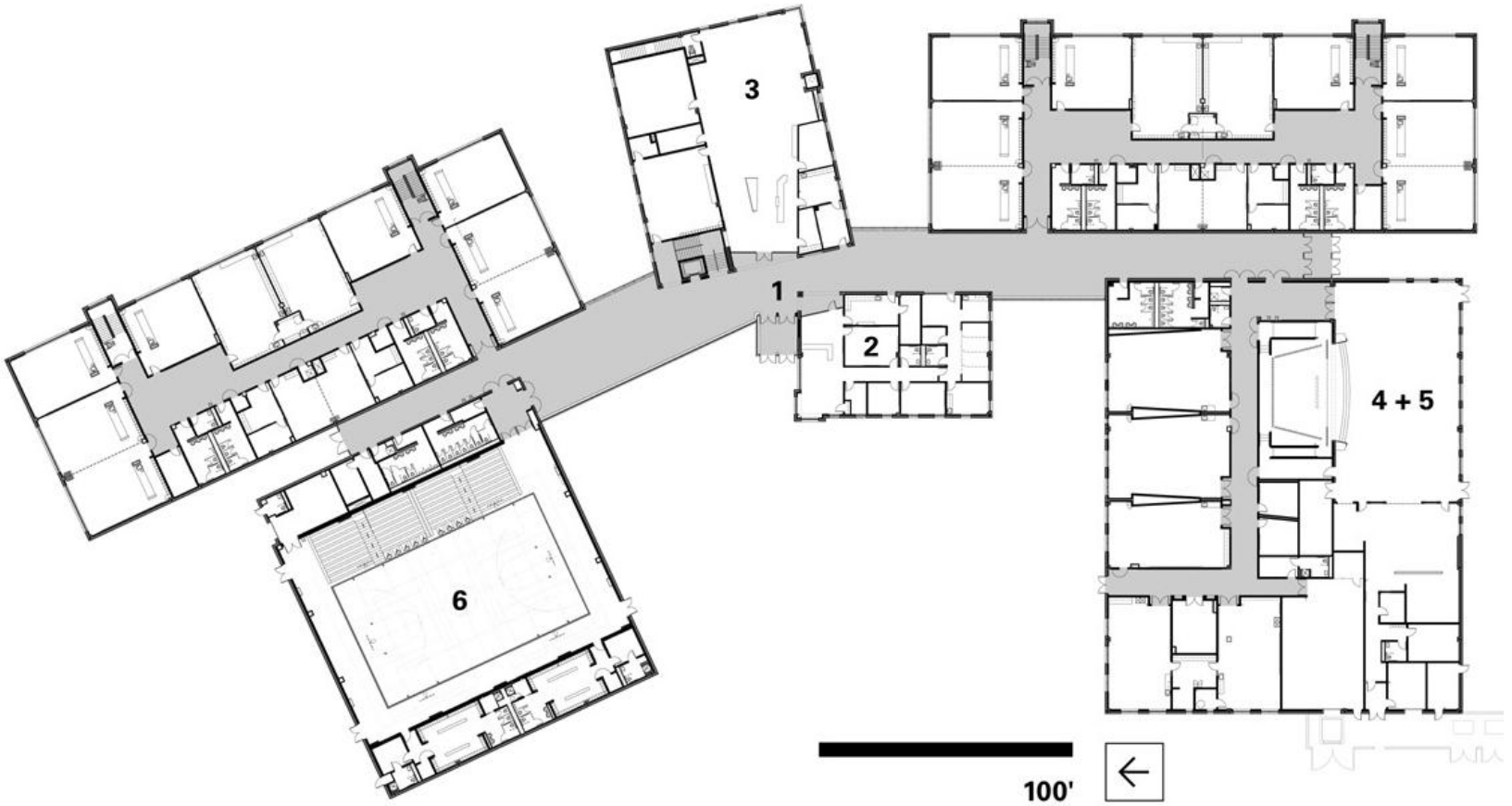


SMALL LEARNING COMMUNITIES

SMALL LEARNING COMMUNITIES

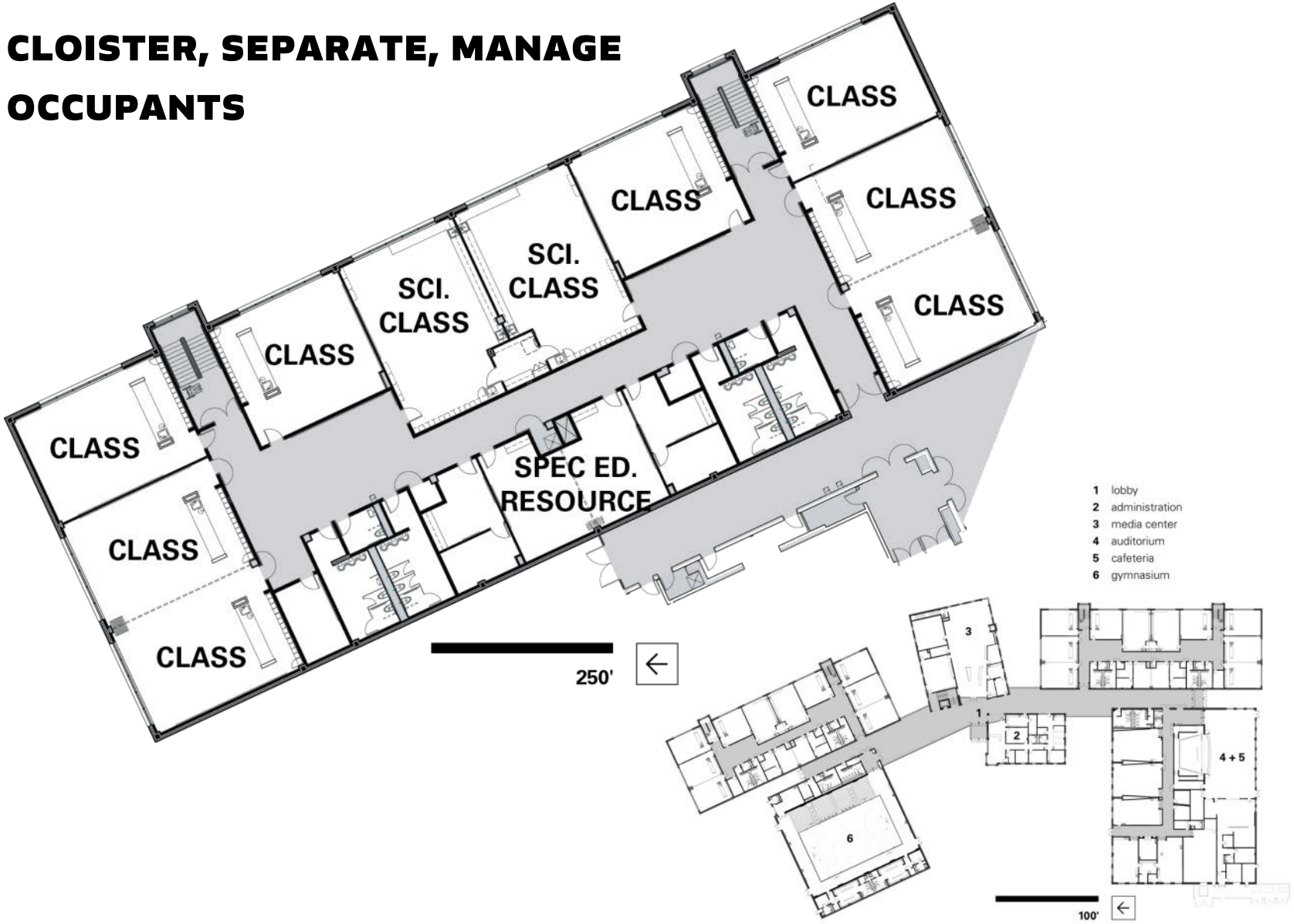
CLOISTER, SEPARATE, MANAGE OCCUPANTS

1 lobby
2 administration
3 media center
4 auditorium
5 cafeteria
6 gymnasium



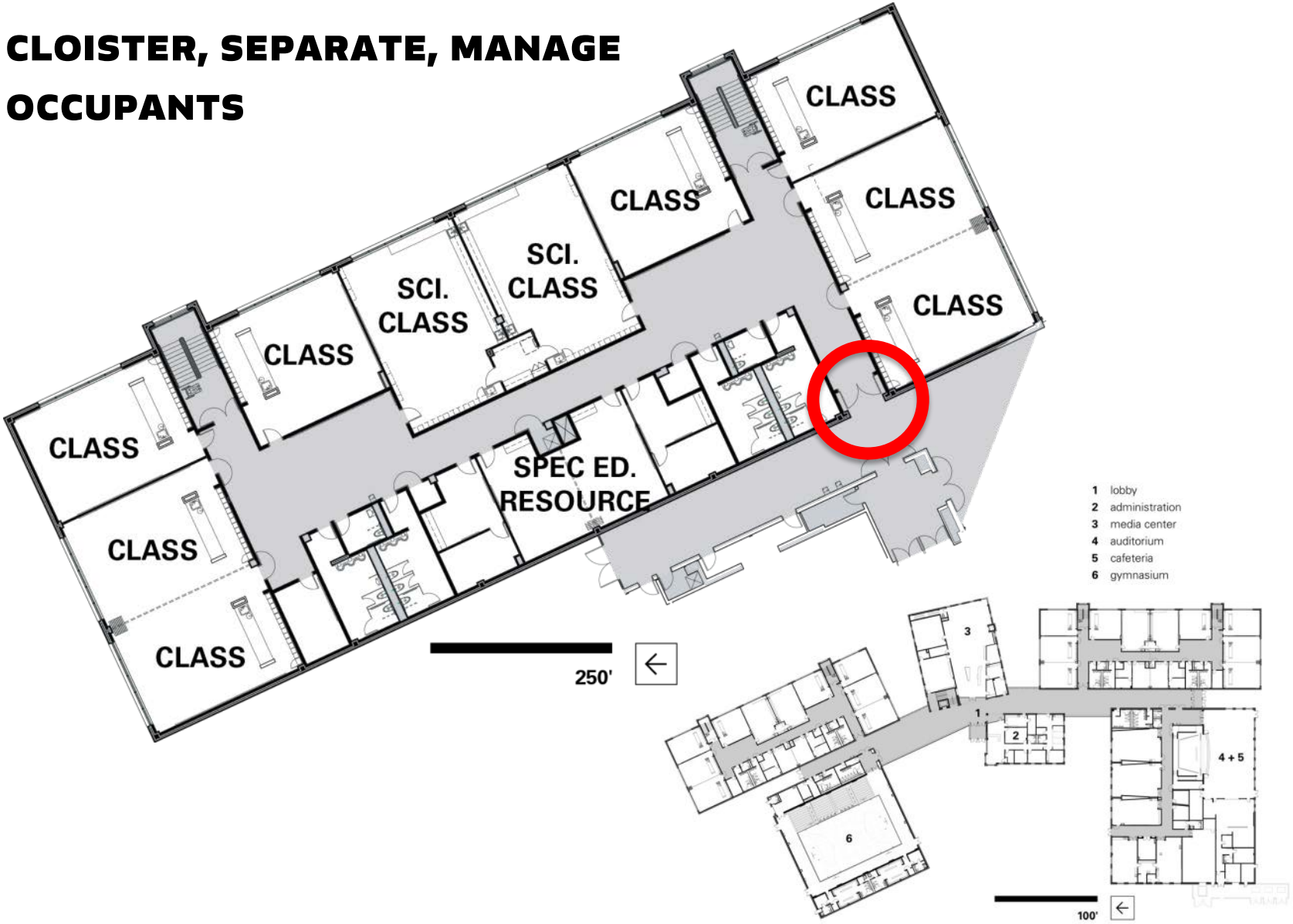
SMALL LEARNING COMMUNITIES

CLOISTER, SEPARATE, MANAGE OCCUPANTS



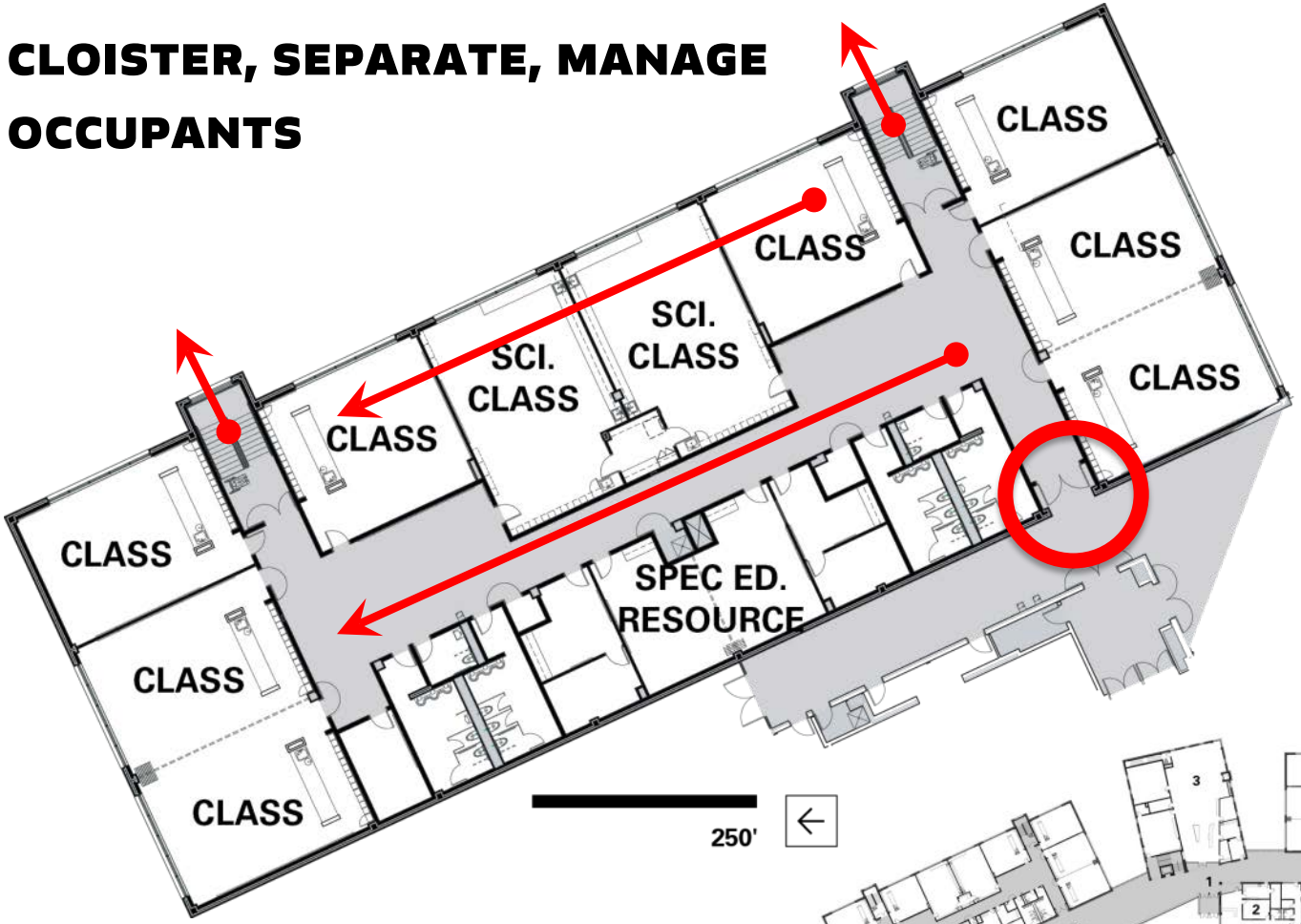
SMALL LEARNING COMMUNITIES

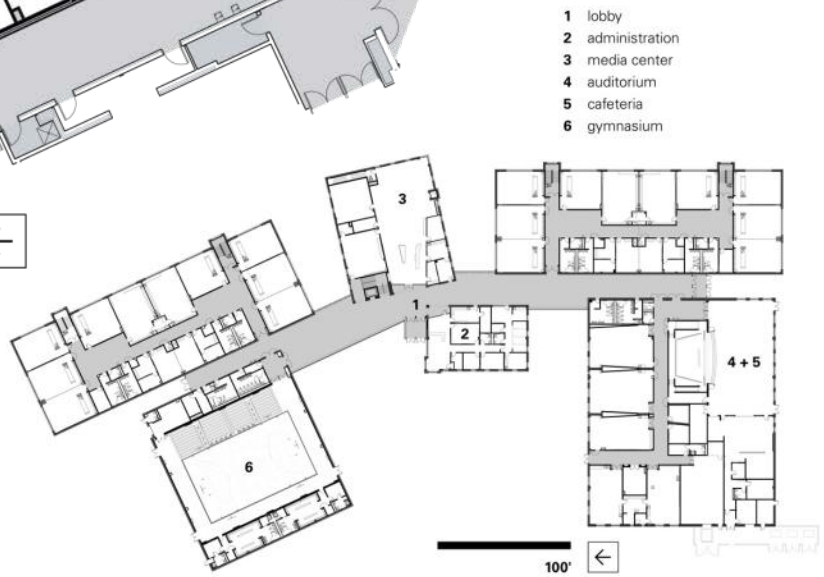
CLOISTER, SEPARATE, MANAGE OCCUPANTS



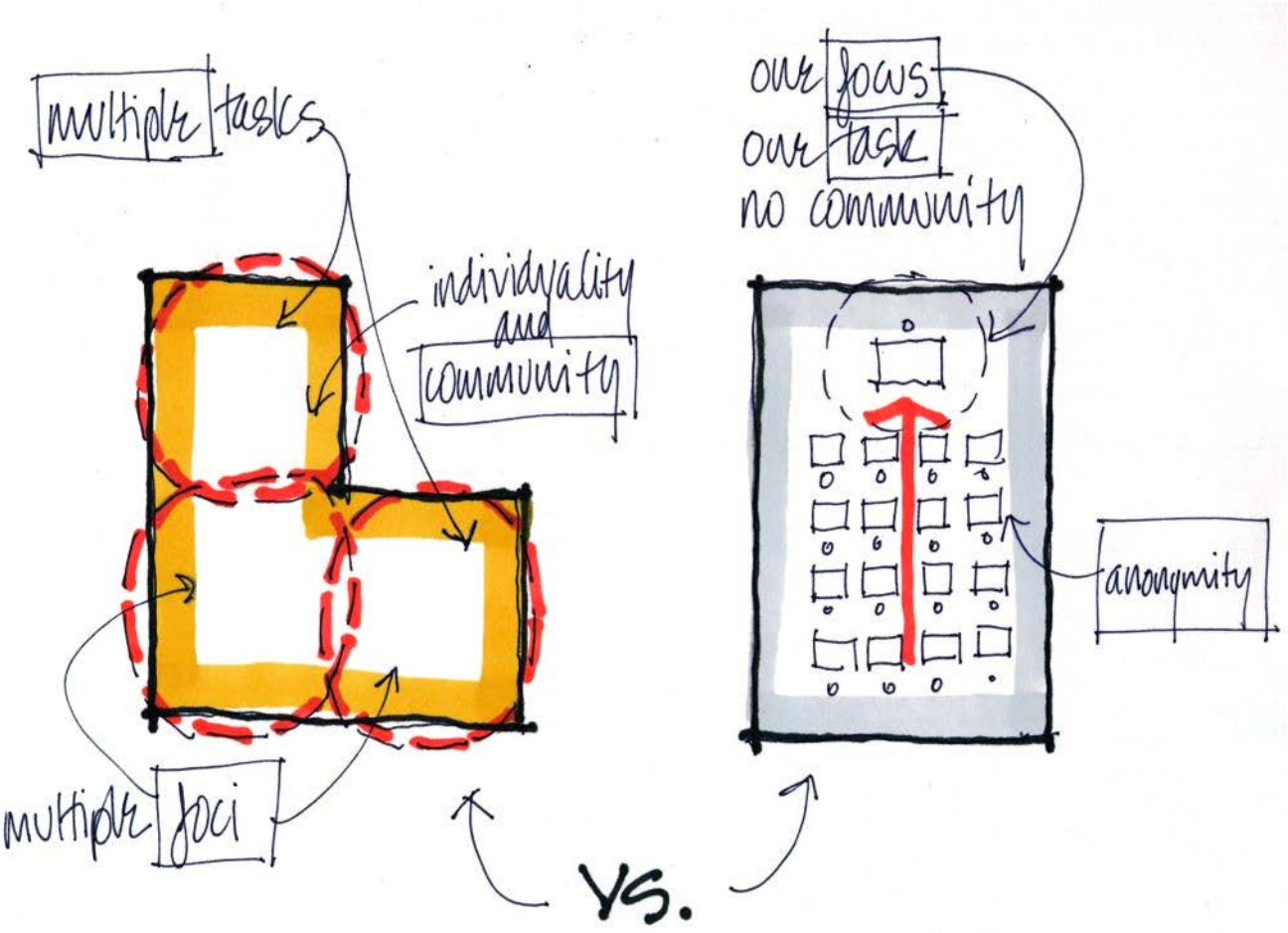
SMALL LEARNING COMMUNITIES

CLOISTER, SEPARATE, MANAGE OCCUPANTS



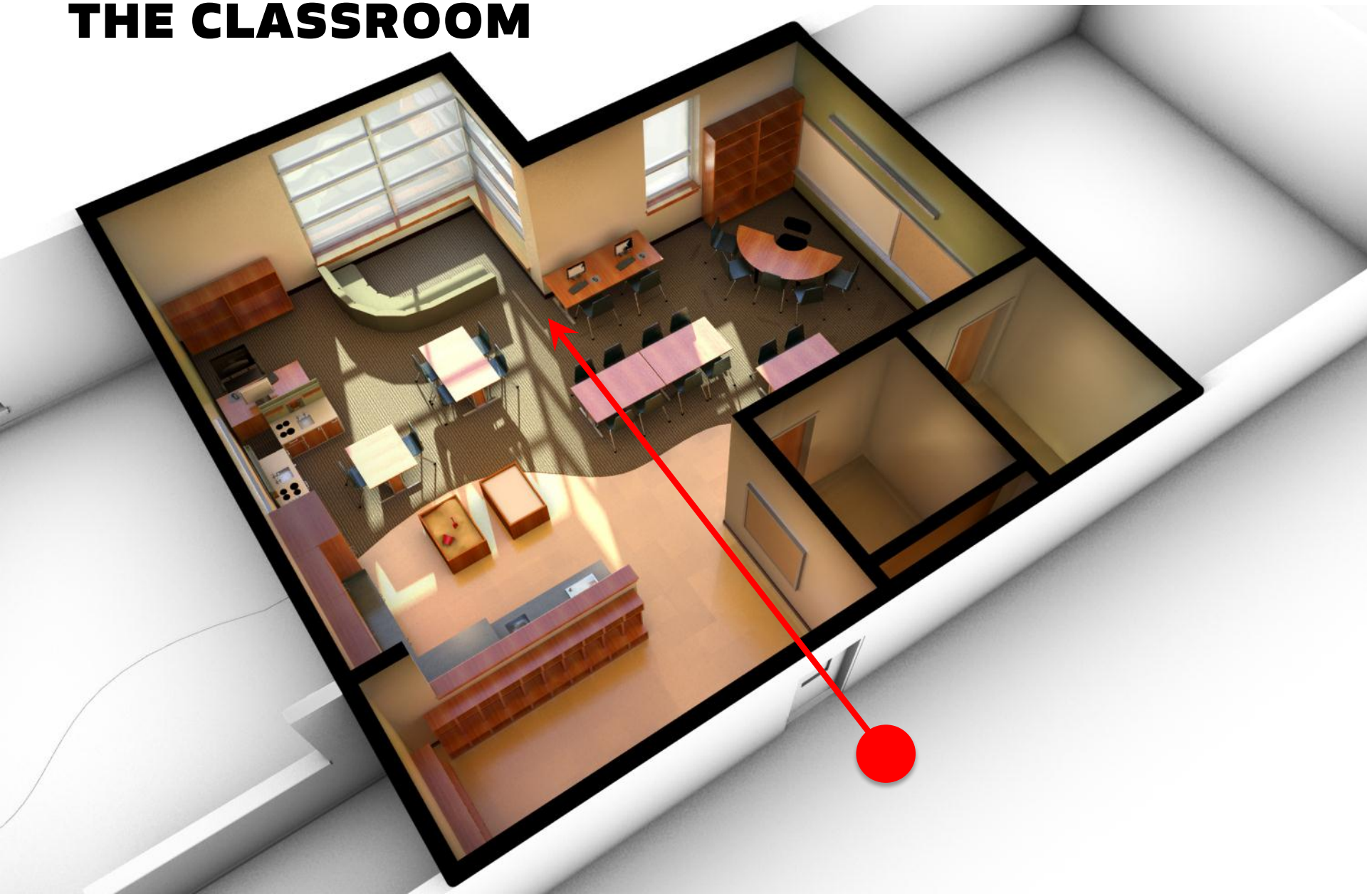


THE CLASSROOM

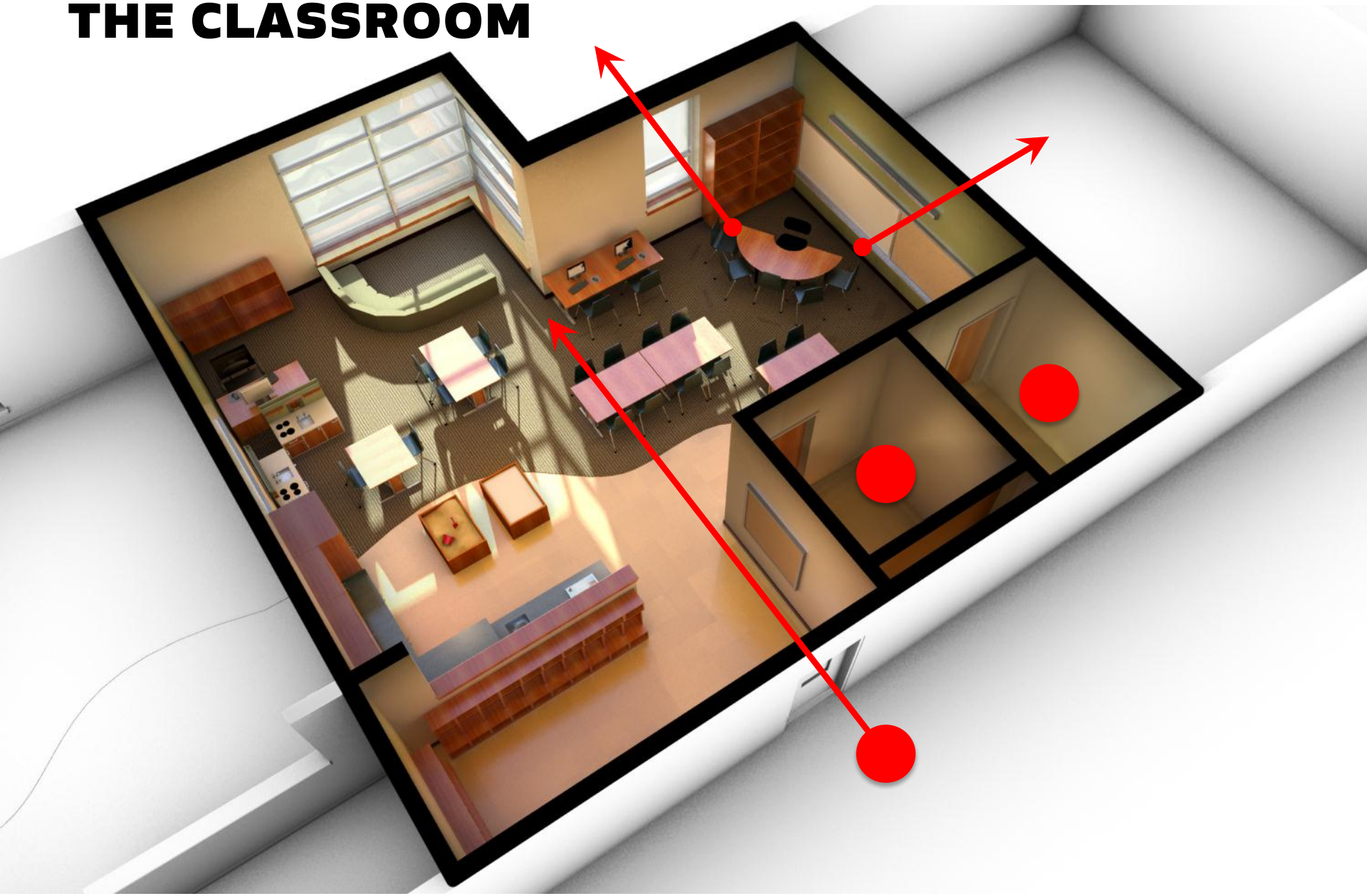


THE CLASSROOM

THE CLASSROOM



THE CLASSROOM



SECURE WALLS, DOORS, WINDOWS

OPPORTUNITIES FOR ENHANCED PROTECTION

SAMPLE GUIDELINES

VERIFY & ASSESS SYSTEMS:

ACCESS CONTROLS

INTRUSION DETECTION

VIDEO SURVEILLANCE

DESIGN REVIEWS

GUIDELINES

SAFE SCHOOL ENVIRONMENTS

PERFORMANCE
MAINTAINABILITY
SUSTAINABILITY
COST

1,180 EXISTING PUBLIC AND PRIVATE CONNECTICUT SCHOOLS
615,000 STUDENTS AND TEACHERS
2013 PUBLIC SCHOOL PRIORITY LIST OF 27 FACILITIES ~$510M

AIA CONNECTICUT

DOOR ASSEMBLIES

DOOR ASSEMBLIES

Designation: F 1450 – 05

Designation: F 1450 – 05

Standard Test Methods for Hollow Metal Swinging Door Assemblies for Detention and Correctional Facilities[1]

This standard is issued under the fixed designation F 1450; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 These test methods cover requirements for mechanical tests, simulated service test, and testing equipment for determining the performance characteristics of swinging detention hollow metal door assemblies of various styles and types of construction for use in wall openings designed to incarcerate inmates in detention/correctional institutions.

1.2 These test methods test the capability of a swinging door assembly to prevent, delay, and frustrate escape, to limit or control access to unauthorized or secure areas, and to resist common types of vandalism.

1.3 These test methods apply primarily to detention door assemblies to and from secure areas generally found inside detention/correctional facilities, such as: day rooms, control rooms, cells, and sally ports.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:* [2]

E 2074 Test Method for Fire Tests of Door Assemblies, Including Positive Pressure Testing of Side-Hinged and Pivoted Swinging Door Assemblies

F 1577 Test Methods for Detention Locks for Swinging Doors

F 1592 Test Methods for Detention Hollow Metal Vision Systems

F 1643 Test Methods for Detention Sliding Door Locking Device Assembly

F 1758 Test Methods for Detention Hinges Used on Detention-Grade Swinging Doors

F 1915 Test Methods for Glazing for Detention Facilities

2.2 *ANSI Standard:*[3]

ANSI/NAAMM/HMMA 863 Guide Specifications for Detention Security Hollow Metal Doors and Frames

2.3 *NFPA Standard:*[4]

252 Methods of Fire Tests of Door Assemblies

2.4 *UL Standards:*[5]

UL-10 (B) Fire Tests of Door Assemblies

UL-10 (C) Fire Tests of Door Assemblies

UL-437 Standard for Key Locks

UL-752 Bullet Resisting Equipment

UL-1034 Standard for Burglary Resistant Electric Locking Mechanisms

3. Terminology

3.1 *Definitions:*

3.1.1 *bolt*—metal bar which, when actuated, is projected (or thrown) either horizontally or vertically into a retaining member, such as a strike plate, to prevent a door from moving or opening.

3.1.2 *bolt projection (or bolt throw)*—distance from the edge of the door or frame, at the bolt center line, to the farthest point on the bolt in the projected position.

3.1.3 *component*—a subassembly, as distinguished from a part, that combines with other components to make up a total door assembly.

3.1.3.1 *Discussion*—The prime components of a door assembly include the following: door, lock, hinges, wall, and door frame (includes hinge jamb, strike jamb, and header).

3.1.4 *detention security*—assurance of the restriction of mobility of inmates to designated areas within a correctional or detention facility.

[1] These test methods are under the jurisdiction of ASTM Committee F33 on Detention and Correctional Facilities and are the direct responsibility of Subcommittee F33.01 on Physical Barriers.

Current edition approved April 1, 2005. Published April 2005. Originally approved in 1992. Last previous edition approved in 2004 as F 1450 – 97 (2004).

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

[4] Available from National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02269-9101.

[5] Available from Underwriters Laboratories (UL), Corporate Progress, 333 Pfingsten Rd., Northbrook, IL 60062.

3.1.5 *door assembly*—unit composed of a group of parts or components that make up an opening barrier for a passageway through a wall.

3.1.5.1 *Discussion*—For the purpose of these test methods, a door assembly consists of the following parts: door; hinges; locking device or devices; operation contacts (such as handles, knobs, or flush pulls); security glazing and glazing molding; miscellaneous hardware and closers; the frame, including the head and jambs plus anchorage devices to the surrounding wall; and a portion of the surrounding wall extending 32 in. (81.3 cm) from each side of the jambs and 16 in. (40.65 cm) above the head.

3.1.6 *frame*—assembly of members surrounding and supporting a door or doors.

3.1.7 *hinged door*—door equipped with hinges that permit it to swing about the vertical hinge axis, either right-hand, left-hand, right-hand reverse bevel, or left-hand reverse bevel, depending upon hardware configuration.

3.1.8 *hollow metal*—term used in reference to such items as doors, frames, partitions, enclosures, and other items that are fabricated from metal sheet, typically cold-rolled or hot-rolled pickled-and-oiled carbon steel.

3.1.8.1 *Discussion*—These products are internally reinforced but hollow, hence the term *hollow metal*. Typically, the voids in doors and partitions are filled with insulation. When installed in masonry walls, the voids in frame jambs, headers, and mullions may be grouted or left hollow.

3.1.9 *manufacturer*—party responsible for the fabrication of the test samples.

3.1.10 *panel*—for the purposes of these test methods, the *panel* is a steel plate at least 0.375 in. (9.5 mm), installed in order to transfer impact energy to the glazing stops and the assembly.

3.1.11 *performance characteristic*—response of the door assembly in any one of the tests described herein.

3.1.12 *test completion*—conduct of one test sequence for each of the door assemblies.

3.1.13 *testing laboratory*—independent materials testing laboratory not associated with the manufacturer.

4. Significance and Use

4.1 A major concern for prison administrative officials is security barriers used in detention/correctional facilities. These test methods are designed to aid in identifying levels of physical security for swinging detention hollow metal door assemblies.

4.2 These test methods are not intended to provide a measure of resistance for a door assembly subjected to attack by corrosive agents, by high-powered rifles, explosives, sawing, or other such methods. These test methods are intended to evaluate the resistance of a door assembly to violent attacks using battering devices, such as benches, bunks, or tables; by handguns up to and including .44 magnum; by prying devices; by devices used to deform the door and render it inoperable; and by fires started by using mattresses, books, and other flammable materials.

4.3 The primary purpose or result of these test methods is to approximate the levels of abuse to which door assemblies may be subjected in the field. The desired result of its use is to help provide insurance of protection to the public, to facility administrative personnel, and to the inmates themselves.

4.4 It is recommended that detention/correctional facility administration provide adequate training, supervision, and preventative maintenance programs to enable door assemblies to function as intended throughout the expected service life.

5. Sampling

5.1 Sample door and frame assemblies shall be constructed in accordance with Section 6.1.

5.2 The manufacturer shall permanently mark the test samples and retain them at the manufacturing facility for future reference for a period of at least one year from test date. Instead of test samples, the manufacturer may contract with the testing laboratory to provide a certified procedure for the construction of tested assemblies with factory follow-up service as an option (see 8.2).

5.3 Test reports shall include complete details of the test assemblies, details, photographs, or a combination thereof, of the testing apparatus, and installation instructions including templates for all items of hardware (see Section 9).

5.4 In the event of failure in one or more of the performance tests, the manufacturer shall provide another complete test sample including door, frame, and hardware assembly along with test wall where applicable. If the test is performed only on the door, as in the door rack test (7.4), only the door need be provided for retesting.

6. Specimen Preparation

6.1 *Construction*:

6.1.1 The construction and size of the test door assemblies consisting of single doors, frames, and all hardware components shall be representative of the application under investigation within the following guidelines:

6.1.1.1 The same construction and size of test doors and assemblies shall apply to all tests.

6.1.1.2 Each test door shall be equipped with a 100 in.^{2} (64 516 mm^2) vision light with impact panel installed, 4 by 25 in. (102 by 635 mm) clear opening positioned generally as shown in Fig. 1.

6.1.1.3 The first door shall swing on three full mortised butt hinges and shall be locked using a door-mounted, pocket-type detention security lock with bolt size not to exceed 2 in. (51 mm) high by ¾ in. (19 mm) wide and latch bolt engagement not to exceed ⅞ in. (22.3 mm).

6.1.1.4 The second door shall swing on three full mortised butt hinges and shall be locked using a jamb-mounted security lock with bolt size not to exceed 2 in. (51 mm) high by ¾ in. (19 mm) wide and latch bolt engagement not to exceed ⅞ in. (22.3 mm).

6.1.1.5 Required results indicated in Table 1 are based upon a nominal door size of 3 by 7 ft (914 by 2133 mm).

6.2 *Impact Test Fixture*:

6.2.1 The door assembly support fixture and wall shall simulate the rigidity normally provided to a door assembly in a building by the ceiling, floor, and walls. Fig. 2 illustrates an acceptance fixture.

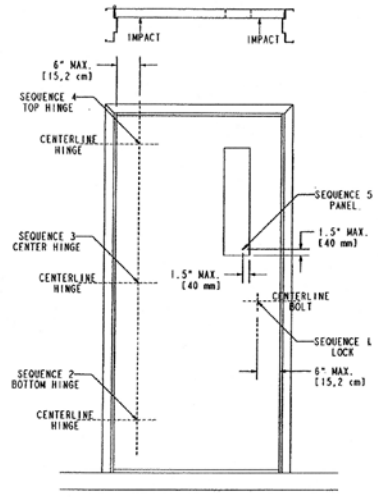


FIG. 1 Test Assembly Elevation Location of Strike Points Described in Table 1

6.2.2 The fixture is designed to accommodate two test samples; however, it is permissible to construct a test fixture that accommodates one sample only, if the manufacturer so chooses.

6.2.3 *Description of the Test Wall*—The door assembly shall be mounted in a vertical wall section constructed suitably to retain the sample(s) throughout the testing procedure. Typical wall details shown in Figs. 2-5 describe an acceptance wall. The wall specification shall be included as part of the test report.

6.3 *Mounting for Impact Testing*:

6.3.1 Mount the swinging doors so as to open away from the working area. Position the impact test ram opposite the door side of the assembly so that the door opens away from the ram.

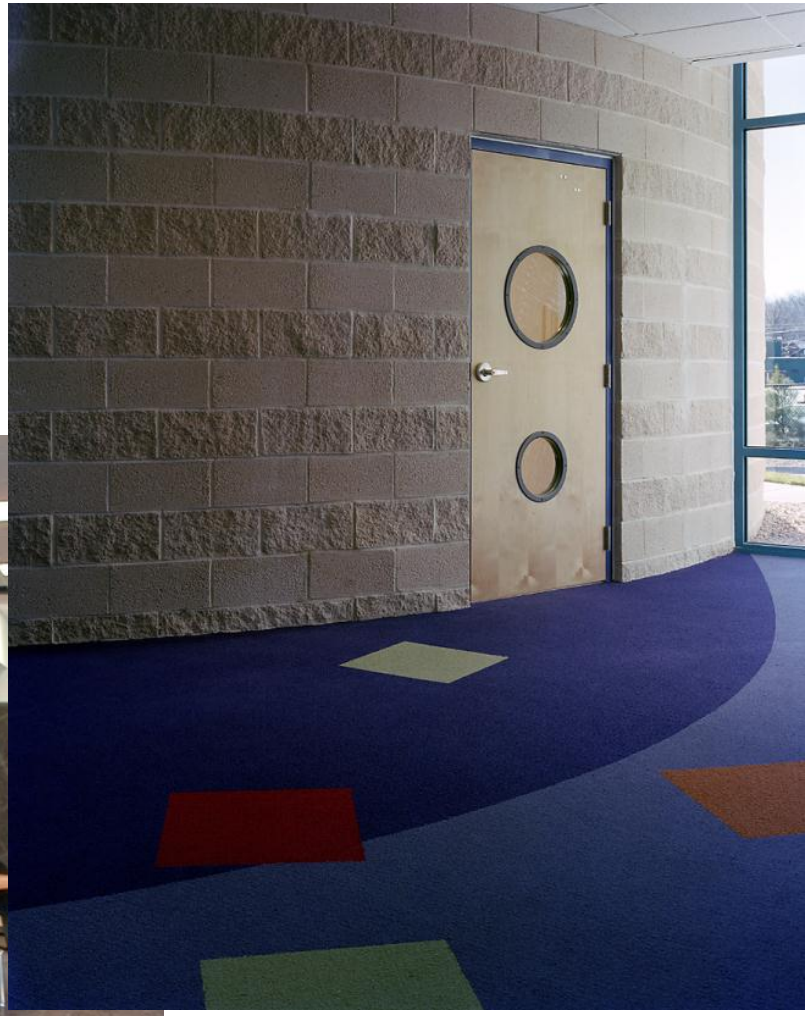
6.3.2 Prepare doors and door jambs for the installation of locksets and hinges in conformance with the hardware manufacturer's instructions and templates. Follow the hollow metal door assembly manufacturer's instructions for fastening the jamb to the support fixture described in 7.2.

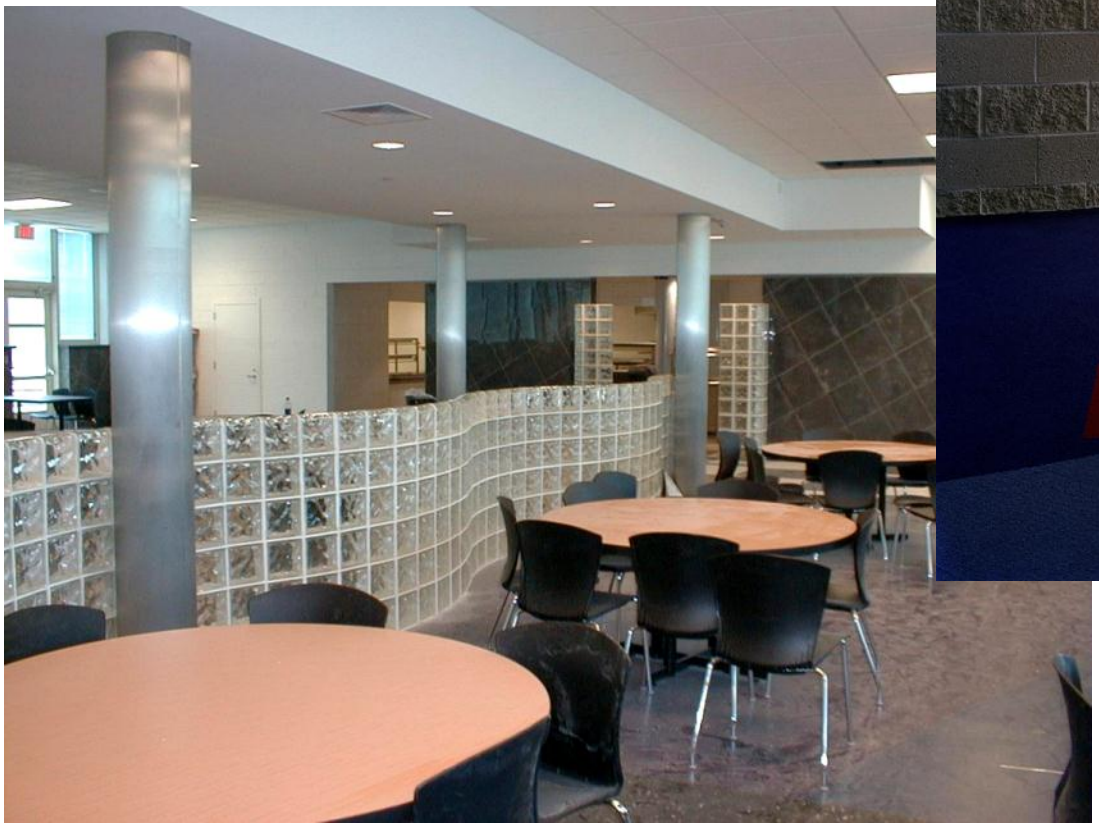
6.3.3 Install components such as test doors, door frames, hinges, and hardware in the component test fixture described in 7.2. Provide clearances on the lock side, hinge side, and top of the door ⅛ ± 1/32 in. (3.2 ± 0.8 mm) maximum. Clearance at the threshold is not considered critical in these tests.

7. Procedures

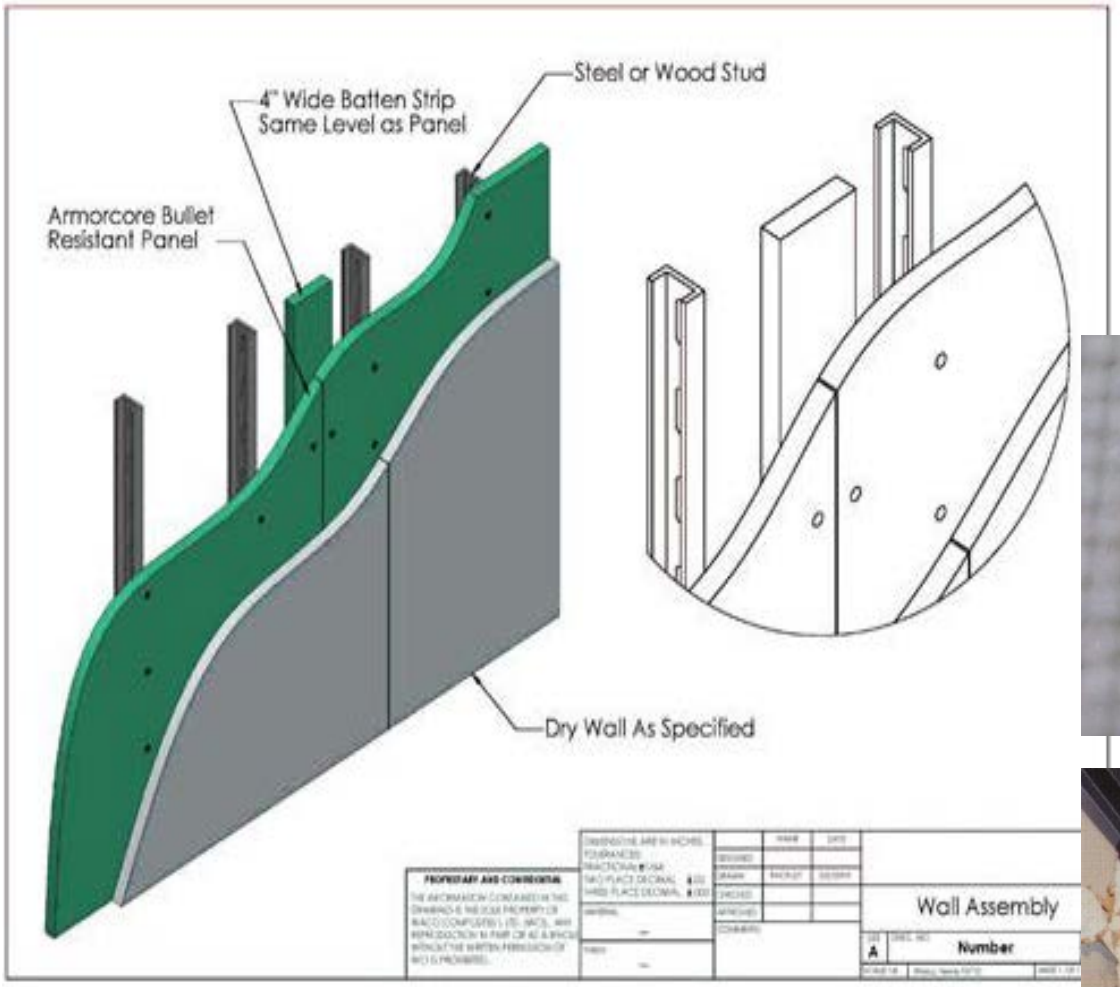
7.1 *Bullet Penetration*:

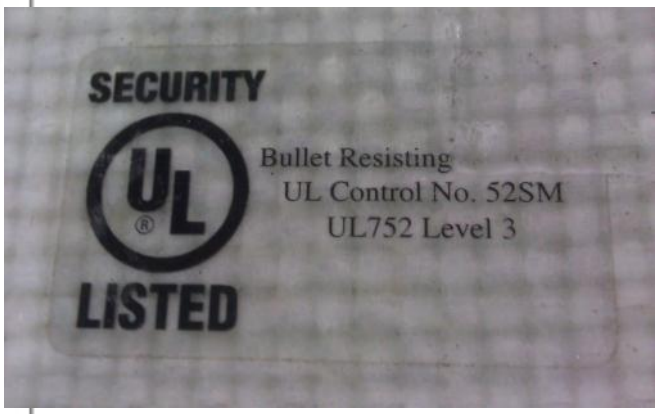
WALL ASSEMBLIES





WALL ASSEMBLIES





WINDOW GLAZING

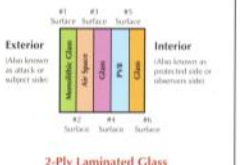
A Splash of Color

GLASS AND INTERLAYERS

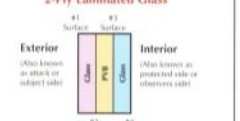
COLOR SPLASH:
Low iron, super tints, reflective, transparent or standard mirrors, Low E glass and interlayer colors are just some of the choices available for inclusion within most glass and glass-clad polycarbonate laminates. **Frost-Lite®**, a translucent white product with smooth surfaces for easy cleaning, is opaque from a 4" distance and transmits 63% of all light. It is not harmful to most plants. **Fade-Safe®**, a clear laminate, prevents fading of fabrics and papers; filters 99.95% of UV rays at a wavelength of 380 nanometers (nm) or less. Solutia's **OptiColor System™** (brochures available) provides over 650 transparent and translucent color options which may require low iron glass to maintain color trueness over thick to thin laminates. To ensure aesthetic concerns are achieved, mock-ups are highly recommended. The surface number is required for coated glass. Selected raw materials determine maximum sizes.

READING "SURFACES"

2-Ply Laminated Insulated Unit



2-Ply Laminated Glass



TRANSPARENT MIRROR GLASS:
provides hidden observation for interior applications when lighting is properly planned. We recommend a 10:1 light ratio (subject side to observation side). Mirror must always face subject. Within a security product, it is ideal for hospital and correctional institutions. This mirror cannot be Chem-Tem processed but may be placed behind a lite of Chem-Tem on the number 3 surface or, on the number 1 or 2 surface of heat strengthened glass (distortion may be seen). Mock-ups are recommended.

Pyrolitic coated 1/4" transparent mirror is available (silver on grey substrate). Exterior applications are not recommended. Perimeter lighting sources cannot achieve consistent light conditions needed during overcast days and night hours.

For non-security applications, laminated glass products are available with a maximum size of 84" x 204" where the coating may be located on the number 1 surface, as permitted by the manufacturer. Proper cleaning instructions are available upon request.

Hurricane - Wind-Pane

HURRICANE GLAZING:
Globe Amerada Architectural Glass' **Wind-Pane®** series hurricane glazing is "Weather Tough" & "Weather Proven". These products and their corresponding frame systems have passed the stringent tests mandated for all building types within Florida's Dade, Broward and Palm Beach Counties codes. The tested system (glazing installed in a window, door, curtain wall or skylight) must resist prolonged cyclic wind pressures and large/small missile impacts. Tests replicate sustained winds up to 120 mph, wind gusts and airborne debris impacts. Tested systems must also pass stringent design pressure tests for air and water infiltration. Dade County requires zero leakage for 15 minutes at 55% design pressure. The largest glazing lite is typically tested at the highest pressure.

In receipt of our Product Control Notice of Acceptance and Dade County Product Approval (MDCA) for Wind-Pane, these glass-clad polycarbonates include P-series products P380 and P916. Wind-Pane L-series laminates such as L716 are included within Solutia's MDCA-Saflex Approval. MDCA Approvals are in accordance with the South Florida Building Code (SFBC) 1994 Edition for Miami-Dade County. Locations are determined as required by SFBC Chapter 35.

Sizes fluctuate based upon tested frame and glass assemblies. Maximum product sizes include: P380 Series (Product Code 221) 48" X 96"; P380 Series (Product Code 222), P916 Series (Product Code 332) and L716 (Product Code WPCT) 60" X 96" or 54" X 110".

Wind-Pane® systems are available meeting Florida's Turtle Codes and additionally offer security from smash-and-grab burglary attempts. For further details on **Wind-Pane** systems or additional Wind-Pane products, contact us at 1-800-633-2513.

Product Classification Code	STC	Thickness Tolerance Min.	Thickness Tolerance Max.	Weight Lbs./Sq. Ft. Kg/m²	Product Color	AVERAGE Daylight Transmittance	AVERAGE Shading Coefficient	AVERAGE U-Value Summer/Winter
P 380 PRODUCT CODE 221	35	.348" 8.84mm	.412" 10.47mm	3.65 17.82	CLEAR	82%	.82	.88 / .95
					BRONZE	57%	.68	.91 / .96
					GREY	51%	.67	.91 / .96
PRODUCT CODE 222	35	.400" 10.16mm	.476" 12.09mm	4.00 19.53	LOW E CLEAR	77%	.73	.88 / .95
					LOW E BRONZE	58%	.63	.88 / .95
					LOW E GREY	52%	.62	.88 / .95
P 916 PRODUCT CODE 332	37	.530" 13.46mm	.606" 15.39mm	5.64 27.54	CLEAR	80%	.75	.87 / .94
					BRONZE	54%	.60	.87 / .94
					GREY	45%	.56	.87 / .94
					LOW E CLEAR	74%	.67	.87 / .94
					LOW E BRONZE	49%	.55	.87 / .94
					LOW E GREY	41%	.51	.87 / .94
L 716 PRODUCT CODE WPCT	37	.450" 11.43mm	.488" 12.40mm	5.00 24.42	CLEAR	85%	.78	.91 / .96
					BRONZE	49%	.58	.91 / .96
					GREY	42%	.58	.91 / .96
					LOW E CLEAR	70%	.60	.89 / .96
					LOW E BRONZE	47%	.50	.89 / .96
					LOW E GREY	39%	.47	.89 / .96

NOTES: Low E data is calculated with coating on #2 surface. Above figures for solar data are calculated per ASHRAE standards, not as tested. STC ratings are calculated from comparable tests by Yerges Acoustics.

Security Glazing for Burglar, Bullet, Institutional & Fire Resistance

INSTITUTIONAL GLAZING:
Globe Amerada Architectural Glass' involvement with security glazing has spanned 24 years. Our multi-faceted products meet the needs of this challenging and ever changing market. **Secur-Tem®, Secur-Lite X®, Secur-Tem + Poly®, Inferno-Lite®, PowR-Lite LP™ and PowR-Lite LP™/AV** are high performance institutional glazing products offered for use within correctional facilities, psychiatric hospitals, federal buildings and other hostile environments. Secur-Tem, Secur-Lite X and Secur-Tem + Poly products are covered by our Single Responsibility® Program.

Secur-Tem and **Secur-Lite X** laminates containing Chem-Tem glass and pvb offer prolonged physical attack resistance but **do not offer bullet resistance. They have been installed in over 830 security facilities.** They meet the 1000 foot pound impact energy and hand tool attack required to protect high risk psychiatric patients when properly framed.

Secur-Tem + Poly glass-clad polycarbonate laminates utilizing Chem-Tem glass offer extensive physical attack and ballistic protection. **These laminates have been installed in over 1125 security facilities.** Unique products approved for State of California facilities meet the CDC-860-95a and preceding test standards. Also reference ASTM C 1349, a quality standard.

PowR-Lite LP and PowR-Lite LP/AV laminated plastics are designed to combine ballistic performance with attack resistance. They have been tested internationally and by WJE, U/L and H.P. White Laboratories. Discreetly manufactured for overseas customers for close to 6 years, they are now offered to meet domestic demands. Air Gap Systems are offered.

Secur-Tem + Poly and PowR-Lite LP have been tested to ASTM F 1915-98 security glazing test method as part of GANA's Security Glazing Test Program. Current maximum size for institutional glazing products is 60" X 96" (1525mm X 2440mm).

Silicone secondary sealed IG units are only available for products with glass on both sides of an airspace. Also see color, transparent mirror and "Reading Surfaces" data. Call 1-800-633-2513 to request a copy of "In the Clear", "Improving Security Glazing Reliability with Routine Testing", a psychiatric glazing brochure, installation lists and specification sheets.

Secur-Tem, Secur-Lite X, Secur-Tem + Poly, PowR-Lite LP and Inferno-Lite products have been installed in over 2060 correctional and psychiatric facilities.

BULLET RESISTANT GLAZING:
Bullet Resistant (BR) asymmetrical glass laminates, in sizes 12" x 12" or larger, are U.L. listed to Standard 752. Smaller sizes require testing. U.L. frame systems are mandatory. **BR laminates are not physical attack resistant and are not ideal for most areas of correctional facilities.** One pass-through plus one speak hole is permitted per lite of BR glass. To maintain the U.L. listing, **holes must be covered with U/L listed devices of the same performance level.** Orders require written verification. IG units are not recommended. **Armored vehicle glazing** is required by 49 CFR Part 571, which incorporates ANSI Z 26.1, to have a minimum 69% light transmission which will be affected by the tint and performance level selected.

BURGLAR RESISTANT GLAZING:
Secur-Lite® annealed glass laminates are designed to prevent "smash-and-grab" burglary attempts directed at retail establishments, jewelry and fur shops. Insurance discounts are usually available. Developed in 1968, it currently remains U.L. listed to Standard 972. **5/16" U.L. Listed Secur-Lite® also meets Solutia's KeepSafe™ Program criteria, Level I of ASTM F 1233 Forced Entry Test Standard.**

Maximum sizes range from 84" X 120" (2130mm X 3046mm) to 84" X 204" (2130mm X 5178mm) dependent on glass thickness. **Secur-Lite is not ballistic or prolonged physical attack resistant and is inappropriate for correctional facilities.**

CURVED PARTS:
Globe Amerada Architectural Glass, in concert with Standard Bent Glass, offers curved U.L. Listed Bullet Resistant (BR) laminates for both vehicle and architectural applications. Products offered include our 1-1/8" nominal Armor Car Level 2 (357 Mag) and 1-7/16" nominal Armor Car Level 4 (30-06 Rifle).

	Product Classification	Nominal Thickness	STC	Thickness Tolerance Min.	Thickness Tolerance Max.	Weight Lbs./Sq. Ft. Kg/m²	Transmittance Daylight	Shading Coefficient	U-Values Average Sum/Win
Burglar Resistant	Secur-Lite 9/32" Non-U.L.	9/32" 7.14mm	35	.263" 6.68mm	.289" 7.34mm	3.25 15.87	87.3%	.89	1.00
	Secur-Lite 5/16" U.L. Listed	5/16" 7.95mm	35	.289" 7.34mm	.329" 8.36mm	3.75 18.31	87.3%	.89	1.00
	Secur-Lite 7/16" Non-U.L.	7/16" 11.13mm	37	.419" 10.64mm	.459" 12.62mm	5.00 24.42	85.5%	.82	.96
	Secur-Lite 7/16" U.L. Listed	7/16" 11.13mm	37	.433" 11.00mm	.475" 12.07mm	5.00 24.42	85.5%	.79	.95
	Secur-Lite 9/16" Non-U.L.	9/16" 14.30mm	39	.497" 12.62mm	.549" 13.94mm	6.50 31.74	85.5%	.82	.96
	Secur-Lite 9/16" U.L. Listed	9/16" 14.30mm	39	.526" 13.36mm	.580" 14.73mm	6.50 31.74	85.5%	.79	.95
	Secur-Lite 13/16" Non-U.L.	13/16" 20.65mm	42	.775" 19.69mm	.854" 21.69mm	10.25 52.49	82.1%	.71	.88
Bullet Resistant	BR-Level I UL Listed BR 123*	1-7/32" 30.96mm	44	1.16" 29.46mm	1.32" 33.53mm	14.71 71.83	76.4%	.60	.85
	BR-Level I UL Listed BR 136**	1-7/32" 30.96mm	44	1.15" 29.21mm	1.31" 33.27mm	14.71 71.83	75.6%	.56	.82
	BR-Level II UL Listed BR 155	1-55/64" 46.99mm	46	1.73" 43.94mm	1.95" 49.53mm	21.11 103.08	70.5%	.48	.73
	BR-Level III UL Listed BR 233	2-3/32" 53.16mm	46	1.999" 50.78mm	2.252" 57.20mm	25.40 124.03	68.2%	.45	.72
	BR-Level IV UL Listed BR 212	2-1/8" 53.98mm	47	1.996" 50.70mm	2.245" 57.02mm	25.66 125.30	66.1%	.45	.74
Institutional - Attack Resistant	Secur-Tem 3 Minimum Security	1/2" 12.70mm	38	.486" 12.34mm	.540" 13.72mm	4.75 23.19	83.0%	.74	1.01
	Secur-Tem 4 Medium Security	11/16" 17.48mm	40	.678" 17.22mm	.750" 19.05mm	6.50 31.74	79.8%	.65	.83
	Secur-Tem 5 Maximum Security	7/8" 20.95mm	42	.870" 22.10mm	.960" 24.38mm	8.25 40.28	76.6%	.57	.78
	Super-Secur-Tem 5 Maximum Security	15/16" 24.00mm	42	.873" 22.17mm	1.051" 26.70mm	9.70 47.37	76.6%	.56	.75
	Secur-Lite 3X Minimum Security	7/16" 11.13mm	38	.387" 9.83mm	.511" 12.98mm	4.75 23.19	84.7%	.80	1.00
	Secur-Lite 4X Medium Security	9/16" 14.30mm	40	.528" 13.41mm	.652" 16.56mm	6.50 31.74	88.2%	.72	.88
	Secur-Lite 5X Maximum Security	13/16" 20.65mm	42	.777" 19.76mm	.963" 24.46mm	8.25 40.28	79.7%	.66	.83

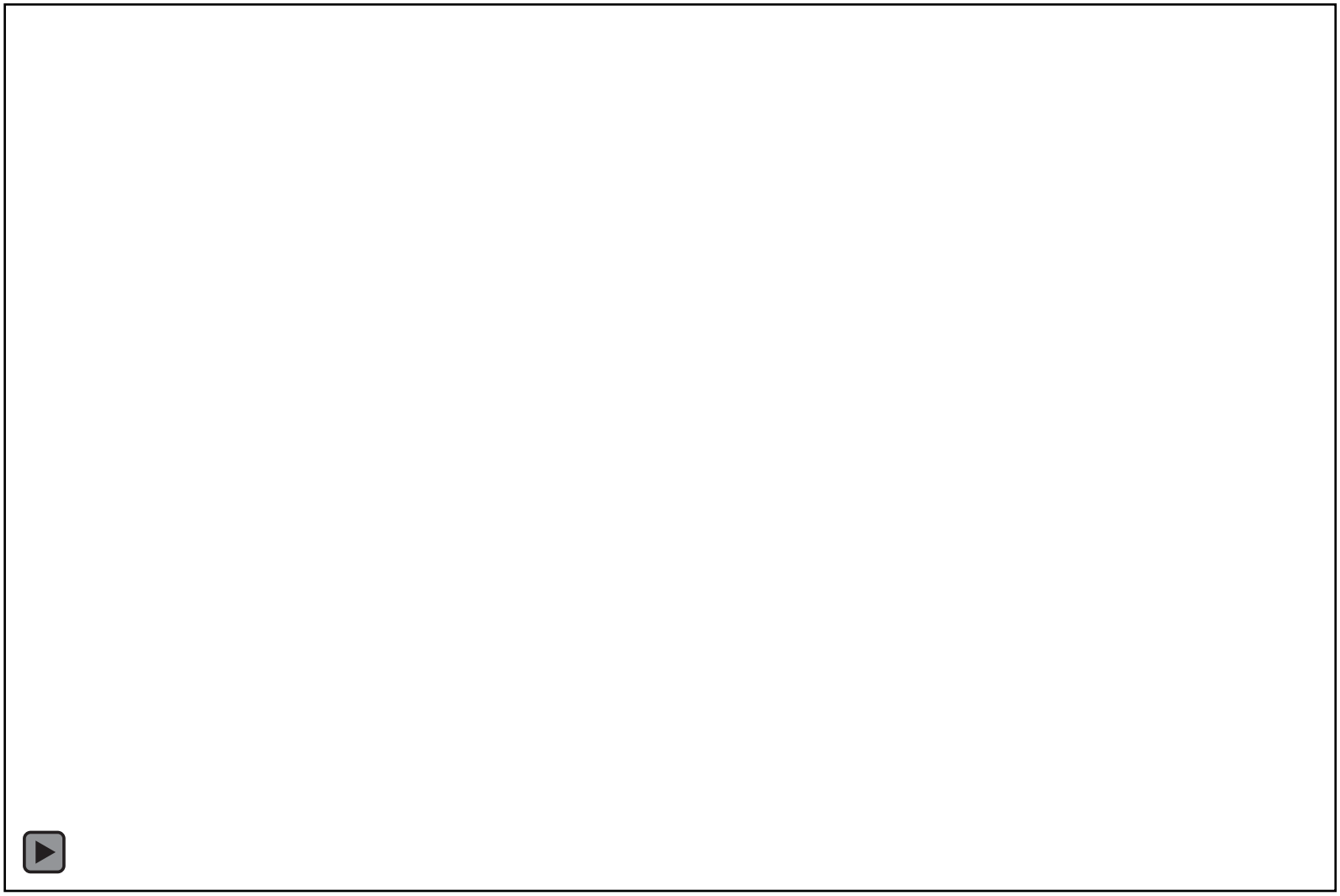
NOTE: Above figures for light transmission and solar data are calculated per ASHRAE standards, not as tested. All products above are clear. STC ratings are calculated from comparable tests by Yerges Acoustics. *BR 123 has a maximum size of 60"x96" (1525mm x 2440 mm). For larger sizes reference **BR136 which has a maximum size to 72"x130" (1828mm x 3302mm).

WINDOW GLAZING

SECURITY GLASS

Detention / Physical Security Glass Clad Polycarbonate (GCP) Glazing Options:					
Protection Level	**Thickness**	**% Light Transmission**	**Weight** (Lb./Sq. Ft.)	**Symmetrical** (Balanced)	**Spall** Low / No
H.P. White TP-0500.01 Level A-1 Approx. 5-8 Minute	.47"	86	4.6	YES	LOW
H.P. White TP-0500.02 Level A1 Approx. 8-10 Minute	.53"	86	5.0	YES	LOW
H.P. White 0500.01 Level A1 Approx. 10-15 Minute	.59"	85	5.3	YES	LOW
H.P. White 0500.02 Level B1 Approx. 15-18 Minute	.61"	85	5.4	YES	NO
H.P. White 0500.01 Level B1 Approx. 18-22 minute	.72"	84	6.2	YES	LOW
H.P. White 0500.02 Level B2 WMFL Level III, 30 Minute Approx. 30-36 Minute	.73"	84	6.2	YES	LOW
H.P. White 0500.02 Level B2 H.P. White 0500.02 Modified .357 Magnum WMFL Level III, 30 Minute Approx. 38-50 Minute	.75"	84	6.3	YES	LOW
H.P. White 0500.02 Level B2 H.P. White 0500.02 Modified .357 Magnum WMFL Level II, 60 Minute Approx. 60 minute	.87"	83	7.0	YES	LOW
H.P. White 0500.02 Level C3 WMFL Level I, 60 Minute Approx. 60-70 Minute	1.25"	79	10.5	YES	LOW

SECURITY GLASS FORCED ENTRY TEST



AIA CONNECTICUT

RECOMMENDATIONS

Connecticut's Action Plan regarding school facilities should be a Prescribed Process, not a Prescribed Solution.

COMMUNITY DIFFERENCES

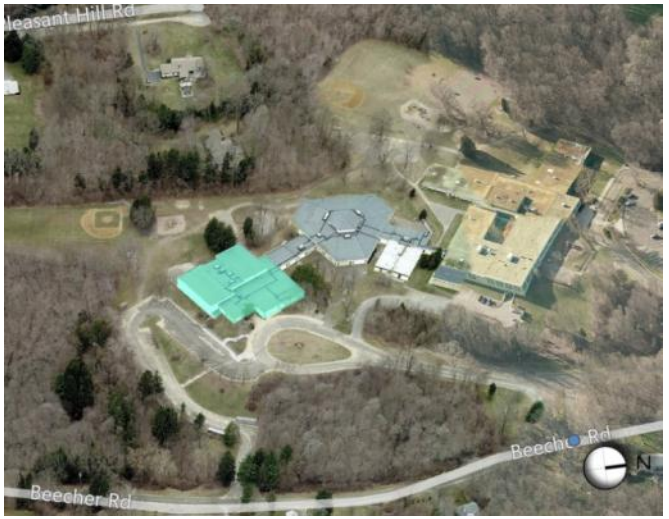
- **First responders**
  - (Staffing, Training, Resources, Capabilities)
- **Programs/Functions within our School Facilities**
- **School Site + Building Layout**
  - (Access, Configuration)
- **Threats**

COMMUNITY DIFFERENCES

- **First responders**
  - (Staffing, Training, Resources, Capabilities)
- **Programs/Functions within our School Facilities**
- **School Site + Building Layout**
  - (Access, Configuration)
- **Threats**

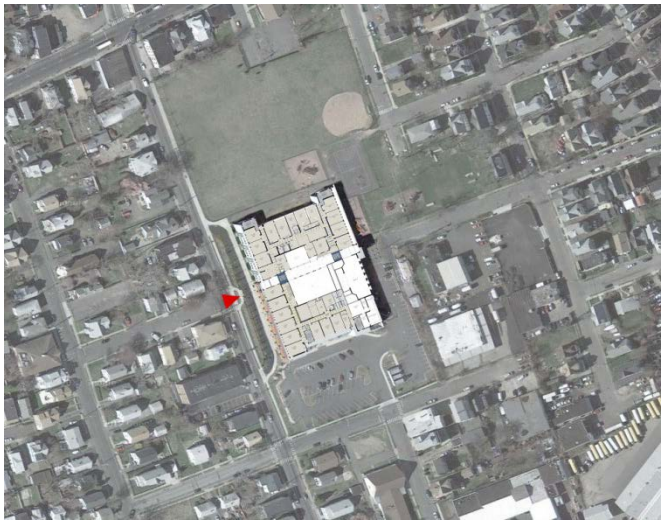
COMMUNITY DIFFERENCES

- **First responders**
  - (Staffing, Training, Resources, Capabilities)
- **Programs/Functions within our School Facilities**
- **School Site + Building Layout**
  - (Access, Configuration)
- **Threats**



COMMUNITY DIFFERENCES

- **First responders**
  - (Staffing, Training, Resources, Capabilities)
- **Programs/Functions within our School Facilities**
- **School Site + Building Layout**
  - (Access, Configuration)
- **Threats**



COMMUNITY DIFFERENCES

- **First responders**
  - (Staffing, Training, Resources, Capabilities)
- **Programs/Functions within our School Facilities**
- **School Site + Building Layout**
  - (Access, Configuration)
- **Threats**

PROPOSAL SPECIFICS

LEGISLATE A PROCESS FOR STRATEGIC REVIEW

PROCESS A: NEW CONSTRUCTION/EXPANSION

PROCESS B: EXISTING SCHOOLS

PROCESS A: NEW CONSTRUCTION/EXPANSION

- Educational Specifications should include strategies (physical + operational) for desired level of security;
- Reporting on security measures to SDE/BSF at designated milestones;
- Seek input of appropriate community stakeholders (Emergency Responders, Staff, Outside Consultants, Designated Community Representatives);
- Post Completion Commissioning w/ key stakeholders (ERs);

Connecticut's prescribed components – Educational Specifications

- Rationale for Project
- Long Range Educational Plan
- Learning / Educational Activities
- Enrollment Data / Proposed Capacity
- Detailed Description (Equipment, etc.
- Building Systems
- Interior Building Environment
- Site Development
- Construction Bonus Requests
- Community Uses
- **Safety / Security Criteria**

PROCESS A: NEW CONSTRUCTION/EXPANSION

- Educational Specifications should include strategies (physical + operational) for desired level of security;
- Reporting on security measures to SDE/BSF at designated milestones;
- Seek input of appropriate community stakeholders (Emergency Responders, Staff, Outside Consultants, Designated Community Representatives);
- Post Completion Commissioning w/ key stakeholders (ERs);

PROCESS A: NEW CONSTRUCTION/EXPANSION

- Educational Specifications should include strategies (physical + operational) for desired level of security;

- Reporting on security measures to SDE/BSF at designated milestones;

- Seek input of appropriate community stakeholders (Emergency Responders, Staff, Outside Consultants, Designated Community Representatives);

- Post Completion Commissioning w/ key stakeholders (ERs);

PROCESS A: NEW CONSTRUCTION/EXPANSION

- Educational Specifications should include strategies (physical + operational) for desired level of security;

- Reporting on security measures to SDE/BSF at designated milestones;

- Seek input of appropriate community stakeholders (Emergency Responders, Staff, Outside Consultants, Designated Community Representatives);

- Post Completion Commissioning w/ key stakeholders (ERs);

PROCESS B: EXISTING SCHOOL

- Periodic Review of Existing Facility w/ stakeholders (Emergency Responders, Staff, Outside Consultants, Designated Community Representatives);
- Filing of School Facility Survey (SDE form ED050) – Add Security Criteria;
- Modifications to State Construction Grant Applications: Add new type of project. SU = Safety / Security Upgrades

Potential Immediate Actions

- **Enforce traffic and parking rules**
- **Remove obstructions from sight lines**
- **Review exterior exit pathways**
- **Review keying and door security**
- **Review condition of window shades and blinds**
- **Review communications systems**
- **Review & Reinforce building policies & procedures**
- **Make building and site plans available**
- **Partner with responders**

PROCESS B: EXISTING SCHOOL

- Periodic Review of Existing Facility w/ stakeholders (Emergency Responders, Staff, Outside Consultants, Designated Community Representatives);
- Filing of School Facility Survey (SDE form ED050) – Add Security Criteria;
- Modifications to State Construction Grant Applications: Add new type of project. SU = Safety / Security Upgrades

SCHOOL FACILITIES SURVEY : ED050, REV AUGUST 2011

School Facilities Survey
ED050, Rev August 2011
Statutory Ref: C.G.S. 10-220

State of Connecticut
Department of Education
Bureau of School Facilities
165 Capitol Avenue
Hartford, CT 06106-1630

Data submission due date:
October 31, 2011

Completed by: _____ Title: _____ Telephone: _____ Fax: _____

Town: _____ Town code: _____

School: _____ School code: _____

Check box if this facility is no longer used for school purposes ☐ Year facility closed: _____

Section 1: Using the instruction booklet accompanying this survey, review the description of each item and respond accordingly.

1 Year of original construction: _____
2 Total square footage: _____
3 Total site acreage: _____
4 Year of last major renovation: _____
5 Number of general classrooms (perm): _____
6 Number of portable classrooms: _____
6a Portable classrooms in use since (year): _____
7 Handicapped accessibility (check one):
a) None _____
b) General areas only _____
c) All programs _____
d) All areas _____
8 Major code update since 1988 (Y/N): _____
9 Building capacity: _____

Section 2: Using the instruction booklet accompanying this survey, review the description of the choices that are provided for each item and select the one that best describes your school. Select one answer only for each item and report the number associated with that choice in the space provided.

Building Features: Rating (Scale: 4 = excellent, 3 = good, 2 = fair, 1 = poor, 0 = missing. See instructions for detailed explanation)

Dedicated Specialty Areas

10 Art Room(s) _____
11 Music Room(s) _____
12 All-Purpose Room (Gym/Aud/Caf.) _____
13 Gymnasium _____
14 Auditorium _____
15 Cafeteria _____
16 Outdoor Play Area(s) _____
17 Outdoor Athletic Facilities _____

Systems

25 Internal Communications _____
26 Technology Infrastructure _____
27 Air Conditioning _____
28 Heating _____

Appearance/Upkeep

33 Building Facade _____
34 Grounds/Landscaping _____
35 Classrooms _____
36 Lavatories/Fountains _____

Rating

18 Technology in the Classroom _____
19 Science Lab(s) _____
20 Library Media Center _____
21 Language Lab(s) _____
22 Technical/Career Education _____
23 Office/Administrative Space _____
24 Guidance/Student Services _____

29 Interior Lighting _____
30 Exterior Lighting _____
31 Roadways and Walks _____
32 Plumbing/Lavatories _____

37 Entrance/Hallways _____
38 Lighting/Fixtures _____
39 Cafeteria _____
40 Code Compliance _____

Building Conditions:

Indoor Air Quality (IAQ)

41 Has this facility been constructed, extended, renovated or replaced on or after January 1, 2003? ____ (Y/N)
If yes, please continue. If no, go to Question 45.

42 Has the district provided for a uniform inspection and evaluation program of the indoor air quality within this building, such as the Environmental Protection Agency's (EPA) Indoor Air Quality Tools for Schools Program? ____ (Y/N)
If yes, please continue. If no, go to question 45.

43 Please indicate the program chosen: ___EPA Tools for Schools ___ Other Name of other program: _____

44 If EPA Tools for Schools, please enter latest date trained by State Dept. of Public Health _____(date) or indicate here ___ that training is pending. If "Other" was selected above, please indicate whether or not the selected program provides for reviews, inspections, and evaluations of each of the following:

___ HVAC systems
___ Ventilation systems
___ Pest infestation
___ Structural elements
___ Moisture incursion
___ Radon levels in air
___ Microbiological particles
___ Hazardous substances
___ Use of space
___ Overall cleanliness
___ Degree of pesticide usage
___ Chemical compounds
___ Plumbing
___ Staff maintenance training

PROCESS B: EXISTING SCHOOL

- Periodic Review of Existing Facility w/ stakeholders (Emergency Responders, Staff, Outside Consultants, Designated Community Representatives);
- Filing of School Facility Survey (SDE form ED050) – Add Security Criteria;
- Modifications to State Construction Grant Applications: Add new type of project. SU = Safety / Security Upgrades

BUREAU OF SCHOOL FACILITIES

Abbreviation	Type of Project
A	Alteration
A/TCH	Technology Infrastructure
CV	Code Violation
E	Extension
EA	Extension and Alteration
EC	Energy Conservation
HV	Health Violation (Asbestos Abatement)
IAQ	Certified Indoor Air Quality Emergency
N	New School
OT	Oil Tank
PF	Purchase of a Building
PS	Site Acquisition
RE	Relocatable Classrooms (Portables, Modulars)
RNV	SDE-Approved Renovation
RR	Roof Replacement
VE	Vocational Agriculture Equipment
SU	Security Upgrades

PRECEDENT

- **Connecticut Manual for High Performance Buildings**
  - regulates a process intended to raise the level of energy conservation and
  - indoor air quality in Connecticut public schools.

Connecticut
Building Standard Guidelines
Compliance Manual for High Performance Buildings
September 2011
Prepared For
The Connecticut Office of Policy and Management
by:
Northeast Energy Efficiency Partnerships
With Technical Support provided by

ers
energy & resource solutions

Connecticut's Action Plan regarding school facilities should be a Prescribed Process, not a Prescribed Solution.

RECOMMENDATIONS

PROCESS A: NEW CONSTRUCTION/EXPANSION

PROCESS B: EXISTING SCHOOLS

SAFE SCHOOL ENVIRONMENTS

PRESENTATION TO THE SANDY HOOK ADVISORY COMMISSION, FEBRUARY 15, 2013

RICH CONNELL, AIA – AIA CT

JAMES LAPOSTA JR, FAIA – JCJ ARCHITECTURE

RICHARD MUNDAY, AIA – NEWMAN ARCHITECTS

GLENN GOLLENBERG, AIA – THE S/L/A/M COLLABORATIVE

RANDALL LUTHER, AIA – TAI SOO KIM PARTNERS

AIA CONNECTICUT