Minneapolis College of Art and Design
Confined Space Program Summary

This summary describes results of an initial confined space survey conducted by AES, Inc. on March 27-28, 2008 in MCAD-owned buildings on their Minneapolis campus. **Additional details on spaces should be added to the survey, as conditions change or new information becomes available.**

The following definitions were used to determine which identified confined spaces meet the definition of a Permit-Required Confined Space as defined by MN-OSHA under 29 CFR 1910.146, based on the available information on potential hazards.

Basis for Determination (from OSHA standard 29 CFR 1910.146)

Minnesota OSHA has adopted the federal confined space standard for general industry. Under this standard, the following definitions are used to identify a ***confined space, a permit-required confined space, and a non-permit space.***

A *confined space* **means a space that**:

- Is large enough and so configured that an employee can bodily enter and perform assigned work; ***and***
- Has limited or restricted means for entry or exit; ***and***
- Is not designed for continuous employee occupancy.
  Note: According to OSHA, limited or restricted means of entry or exit mean an entrant's **ability to escape in an emergency would be hindered**. OSHA has interpreted that HVAC equipment with access other than through a standard door is considered a confined space. If an employee must bend down to avoid striking the top of an opening or step over a raised threshold, OSHA considers the opening as restrictive to entry or exit.

  Ventilated areas that are designed for continuous human occupancy are **not** considered as confined spaces.

A *permit-required confined space* has **one or more** of the following:

- Contains or has a potential to contain a **hazardous atmosphere; or**
- Contains a material that has the potential for **engulfing an entrant**; **or**
- Has an **internal configuration** such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; **or**
- Contains any **other recognized serious safety or health hazard**.

A *non-permit confined space* **means a confined space that does not contain** (or, in the case of atmospheric hazards, have the **potential** to contain) any hazard capable of causing death or serious physical harm. **Note: The buddy system** is typically followed for entry into **non-permit** confined spaces to ensure prompt response in case of a medical emergency.

Spaces that do not meet the definition of a confined space must be re-evaluated if there are changes in use/configuration that might change the classification.

Permit-Required Confined Spaces
Identified in MCAD Buildings to Date:

- ***Spaces shown in italics may be entered by MCAD employees using the forms listed and following required program procedures.***

Space Description	MCAD Entry Policy
1. ***Air Handling Units*** (if unit can be physically entered, has limited access/egress, and space presents potential serious hazards)	MCAD employees or contractors must use ***Reclassification Form.*** These spaces can be reclassified as non-permit when hazards are eliminated, unless additional hazards are generated during work operations.
2. ***Ceiling Chases*** for exhaust fans	MCAD employees or contractors must use ***Short Form Entry Checklist*** (or equivalent).
3. ***Crawl Spaces***	MCAD employees or contractors must use ***Short Form Entry Checklist*** (or equivalent).
4. Elevator Pit (under-floor)	NO ENTRY BY MCAD EMPLOYEES – Authorized Contractors only. Contractors must use ***Reclassification Form***. These spaces can be reclassified as non-permit when hazards are eliminated, unless additional hazards are generated during work operations. **Note:** Elevator pits that are connected to building tunnel systems may require ***Confined Space Entry Permit.***
5. Elevator Shafts (above elevator cars)	NO ENTRY BY MCAD EMPLOYEES – Contractors only. Contractors must use ***Reclassification Form***. These spaces can be reclassified as non-permit when hazards are eliminated, unless additional hazards are generated during work operations. **Note:** Additional considerations include connections to building tunnel systems.
6. ***Fresh Air Intake Pit*** (South Main Boiler Room)	MCAD employees or contractors must use ***Confined Space Entry Permit.*** Note: A mechanical device must be available to retrieve personnel from vertical type permit spaces more than 5 feet deep.
7. ***Pipe Chases***	MCAD employees or contractors must address fall hazard and use ***Short Form Entry Checklist*** (or equivalent).
8. Sump Pit	NO ENTRY ALLOWED under current program.
9. ***Tunnels w/limited/restricted means for entry exit*** (if space has limited access/egress and space presents potential serious hazards)	MCAD employees or contractors must use ***Confined Space Entry Permit.***
10. Vault exhaust space	MCAD employees or contractors must use ***Reclassification Form.*** These spaces can be reclassified as non-permit when hazards are eliminated, unless additional hazards are generated during work operations.

Other Spaces Considered

*(These spaces did not meet the definition of a **permit-required** confined space.)*

- Air Handlers/HVAC units that cannot be bodily entered
- Duct work (if no serious potential hazards identified in space)
- Tunnels (if no serious potential hazards identified in space, or if access/egress is not limited)
- Mechanical rooms designed for continuous human occupancy
- Boilers that cannot be bodily entered
- Ceiling chase (if no serious potential hazards identified in space)

MCAD Building List – Buildings With Confined Spaces

1. Main Building
2. Morrison Building
3. Liberal Arts (LA) Building

BUILDING SURVEY OF CONFINED SPACES - MAIN BUILDING

Space Description	**Classification** • PR = Permit-required **(note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	**Basis for Determination** • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
1. Air Handling Unit - Rm 203. Includes: Spray Booth Make-up Air Handler, Fresh Air Chamber, and Tunnel for Dampers. Limited/ restricted entry and exit via access doors measuring approximately 5.5 feet high x 1.5 feet wide with 0.5 foot lip to step over. Labels needed:2	Air Handler Rm: (Door 1) • PR=Permit-required for entry ***Can be re-classified as a non-permit confined space if hazards are eliminated before entry, and no hazards are introduced during work operations.*** Fresh Air Chamber – w/filters and steam coils (Door 2): • PR=Permit-required for entry (burn hazard when changing filters on back side) ***Can be re-classified as a non-permit confined space if hazards are eliminated before entry, and no hazards are introduced during work operations.***	**Potential hazards:** • Hazardous energy **Potential hazards:** • Hazardous energy

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
	<u>Tunnel for Dampers (Door 3):</u> • NP = non-permit space (as long as no hazards are introduced).	• No serious hazards in space when guards are in place.
2. Air Handling Unit #7 - 3rd Floor Mechanical Rm - Limited/restricted entry and exit to mechanical room via 2 access doors: • 1-3 foot square ceiling access door has 12 foot ladder. Hatch is counterweighted for easy movement, but gets in the way when accessing space. • 1-3 foot square hatch in roof has 4 ft. ladder to plenum and second ladder to floor of mechanical space. AHU #7 has 2 return air filter access doors and 2 supply air fan motor access doors measuring approximately 5.5 feet high x 1.5 feet. Labels needed:<u>2</u> (1 on each supply air fan motor access door).	<u>Penthouse Mechanical Rm:</u> • NP = non-permit space (if no hazards generated during work operations) <u>Return air filter access:</u> • NP = non-permit space (if no hazards generated during work operations) <u>Supply air fan motor access:</u> • PR=Permit-required for entry (unless hazards are controlled with machine safeguarding and no hazards introduced). ***Can be re-classified as a non-permit confined space if hazards are eliminated before entry, and no***	• No serious hazards in space when guards are in place. • No serious hazards in space when guards are in place. **Potential hazards:** • Hazardous energy

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
	hazards are introduced during work operations.	
3. Air handling Units #1, #2, #3, #4, #5, #6, #12– Rooftop. Each unit has limited/restricted entry and exit via 4 access doors (2 return air filter access doors and 2 supply air fan motor access doors) measuring approximately 5.5 feet high x 1.5 feet. Labels needed: 19 (3 per unit on units #1-#6, 1 on unit #12)	Return air filter access: • NP = non-permit space (if no hazards generated during work operations) Supply air fan motor access: • PR=Permit-required for entry (unless hazards are controlled with machine safeguarding and no hazards introduced). ***Can be re-classified as a non-permit confined space if hazards are eliminated before entry, and no hazards are introduced during work operations.*** Return air fan motor access: • PR=Permit-required for entry (unless hazards are	• No serious hazards in space when guards are in place. **Potential hazards:** • Hazardous energy

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
	controlled with machine safeguarding and no hazards introduced). ***Can be re-classified as a non-permit confined space if hazards are eliminated before entry, and no hazards are introduced during work operations.***	
4. Air Handling Units #8 & #9 – 3rd Floor Restaurant Penthouse. Each Venmar unit has limited/ restricted entry and exit via 2 access doors (1 return air filter access and 1 supply air fan motor access) measuring approximately 5.5 feet high x 1.5 feet. Labels needed: 2 (1 on each supply air fan motor access door).	<u>Return air filter access:</u> • NP = non-permit space (if no hazards generated during work operations) <u>Supply air fan motor access:</u> • PR=Permit-required for entry (unless hazards are controlled with machine safeguarding and no hazards introduced). ***Can be re-classified as a non-permit confined***	• No serious hazards in space when guards are in place. **Potential hazards:** • Hazardous energy

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
	space if hazards are eliminated before entry, and no hazards are introduced during work operations.	
5. Ceiling Chases – for exhaust fans above Women's Restrooms on 4th Floor (North and South). Spaces have limited/restricted entry and exit via 1 access door (approx. 2 ft x 2 ft.). Labels needed: 2	• PR=Permit-required for entry. ***After lockout/tagout/ tryout completed and fall hazards controlled, may use portable ventilation in combination with the Short-Form Entry Checklist and procedures for entry.***	**Potential hazards:** • Hazardous atmosphere • Fall hazards
6. Crawl Space – Above 3rd floor Dark Rm 315. Limited/restricted entry and exit to access unventilated ceiling crawl space (50 feet long x 12 feet wide x 8 feet high space) Contains ductwork, reheat coils, actuators. Labels needed: 1	• PR=Permit-required for entry. ***After lockout/tagout/ tryout completed, may use portable ventilation in combination with the Short-Form Entry Checklist and procedures for entry.***	**Potential hazards:** • Hazardous atmosphere

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
7. Crawl Space - Return Fire Damper in Return Air Duct, accessed from 4th Floor Rm 445. Limited/restricted entry and exit to access unventilated crawl space (50 feet long x 12 feet wide x 5 feet high space) that serves as staging area for cleaning hot water reheat coils. To reach crawl space, contractor must crawl into ductwork (naturally ventilated), then crawl through holes in ductwork into crawl space. For cleaning, contractor reaches through access ports in ductwork. Labels needed: 1	• PR=Permit-required for entry. ***After lockout/tagout/ tryout completed, may use portable ventilation in combination with the Short-Form Entry Checklist and procedures for entry.***	**Potential hazards:** • Hazardous atmosphere
8. Dust Collector – Shop. Dust collector has side manhole for entry to change filters. Labels needed: 1	• PR=Permit-required for entry.	**Potential hazards:** • Hazardous atmosphere • Internal configuration (converging walls) • Hazardous energy
9. Elevator Pits (2) and Rooms. Labels needed: 2 (at entrance to South Freight Elevator pit and Cafeteria Elevator pit)	North Passenger Elevator - Walk-in elevator room • NCS = not a confined space South Freight Elevator Under-floor pit (approx. 4 feet deep) • PR=Permit-required for	• Does not meet the definition of a confined space, because entry/exit access would not be considered limited. **Potential hazards:** • Hazardous energy

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
	entry. District assumes hazardous energy is only hazard. ***NO ENTRY ALLOWED BY MCAD EMPLOYEES. ENTRY BY CONTRACTOR ONLY.*** ***Contractor may temporarily reclassify as non-permit space to enter pit and service unit as long as hazards are eliminated using lockout/tagout and no atmospheric hazards are introduced into space.***	
	<u>Cafeteria Elevator Under-floor pit (approx. 4 feet deep)</u> PR=Permit-required for entry. District assumes hazardous energy is only hazard. ***NO ENTRY ALLOWED BY MCAD EMPLOYEES. ENTRY BY CONTRACTOR ONLY.*** ***Contractor may temporarily***	**Potential hazards:** • Hazardous energy

Space Description	Classification • PR = Permit-required **(note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
	reclassify as non-permit space to enter pit and service unit as long as hazards are eliminated using lockout/tagout and no atmospheric hazards are introduced into space.	
10. Elevator shafts (3) – vertical shafts above elevator cars. Labels needed: 3	• PR = Permit required confined space. ***Can be re-classified as a non-permit confined space if all serious hazards are eliminated before entry, and no hazards are introduced during work operations.***	**Potential hazards:** • Hazardous energy • Fall hazards
11. Exhaust duct – 3rd Floor Restaurant Penthouse. Access door too small to bodily enter. Labels needed:0	• NCS = not a confined space	• Does not meet definition of a confined space, because employees cannot bodily enter space.
12. Foundry casting pit - located under foundry by casting area. Measures approximately 8 feet wide x 8 feet long x 8 feet deep. Pit is kept filled with sand. Labels needed:0	• NP = non-permit space (if no hazards introduced into space)	• No serious hazards in space under current conditions.

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
13. Fresh Air Intake Pit – Outdoors, South Main Boiler Room (approx. 10 ft. deep). Note: Occasional need for entry to retrieve dropped keys. Labels needed: 1	• PR=Permit-required for entry.	**Potential hazards:** • Hazardous atmosphere • Vertical space greater than 5 feet deep (A mechanical device must be available to retrieve personnel from vertical type permit spaces more than 5 feet deep.)
14. Plumbing Access Spaces – in Women's Restrooms on 1st Floor (North and South). Spaces have limited/restricted entry and exit via 1 access door (approx. 2 ft x 2 ft.). Labels needed: 2	• PR=Permit-required for entry. ***After lockout/tagout/ tryout completed, may use portable ventilation in combination with the Short-Form Entry Checklist and procedures for entry.***	**Potential hazards:** • Hazardous atmosphere
15. Pump Room – Rooftop. Room has limited/restricted entry and exit via 1 access door. Space contains **guarded** chilled water pumps and motors, and associated pipes. Labels needed:0	• NP = non-permit space (if no hazards generated during work operations)	• No serious hazards in space when guards are in place.
16. Sump Pit – Basement Mechanical Rm 06. Pit is approximately 6 feet deep, and contains two sump pumps. Access covers are sealed and bolted. All work is done from outside of spaces. Labels needed: 1	• PR = Permit required confined space. Program policy: **NO ENTRY ALLOWED.**	**Potential hazards:** • Hazardous atmosphere • Engulfment • Hazardous energy

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
17. Tunnel from Art Storage Rm 04. Tunnel approximately 5.5 ft. high and 50 ft. long with limited/restricted entry and exit. 1 access in and out via opening in Art Storage Rm 04. Contains: • Steam lines and steam traps • Electrical conduit • Debris Labels needed: 1	• PR=Permit-required for entry	**Potential hazards:** • Hazardous atmosphere • Internal configuration • Hazardous energy
18. Tunnel from Mechanical Rm 06. Tunnel approximately 5.5 ft. high and 50 ft. long with limited/restricted entry and exit. 1 access in and out via opening in Mechanical Rm 06. Contains: • Steam lines and steam traps • Electrical conduit • Front entry fan motor and ductwork Labels needed: 1	• PR=Permit-required for entry	**Potential hazards:** • Hazardous atmosphere • Internal configuration • Hazardous energy

BUILDING SURVEY OF CONFINED SPACES - MORRISON BUILDING

Space Description	**Classification** • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	**Basis for Determination** • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
1. Tunnel running under Morrison Building, connecting with Library tunnel. Morrison Building section of tunnel has sand floor and cement walls, and measures approximately 100 feet long x 6 feet wide x 5 feet high. Tunnel has limited/restricted entry and exit via 2 access openings (2 feet x 4 feet) located at each end (Morrison Rm M01 and Library hallway). Tunnel contains: • Steam lines and steam traps • Electrical conduit • Fan and steam coil for breezeway • Asbestos insulation Labels needed: 2	• PR=Permit-required for entry	**Potential hazards:** • Hazardous atmosphere • Internal configuration • Hazardous energy
2. Vault exhaust space – adjacent to Electrical Service Room M-17-A. Measures approximately 7 ft. high x 6 ft. wide x 10 ft. long. Contains: Fans, belts, motors. Labels needed: 1	• PR=Permit-required for entry (unless hazards are controlled with machine safeguarding and no hazards introduced). ***Can be re-classified as a non-permit confined space if hazards are eliminated before entry, and no hazards are introduced during work operations.***	**Potential hazards:** • Hazardous energy

BUILDING SURVEY OF CONFINED SPACES – L.A. WING

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
1. Ceiling Chase – for exhaust fan above women's restroom. Space has limited/restricted entry and exit via 1 access door (approx. 2 ft x 2 ft.). Labels needed: 1	• PR=Permit-required for entry. ***After lockout/tagout/ tryout completed and fall hazards controlled, may use portable ventilation in combination with the Short-Form Entry Checklist and procedures for entry.***	**Potential hazards:** • Hazardous atmosphere • Fall hazards
2. Ceiling Chase – under skyway between LA Bldg. and Main Building	• NP = non-permit space (as long as no hazards are introduced).	No serious hazards identified in this space.
3. Tunnel system runs under Library (from Morrison Building). 3- branch tunnel has cement floor and cement walls. Tunnel is return air duct for library HVAC unit. Library tunnel includes 2-50 foot branches and 1-30 foot branch run under library and hallway outside of library. Tunnel has limited/restricted entry and exit via 3 access openings covered with metal grilles in Library	• PR=Permit-required for entry	**Potential hazards:** • Hazardous atmosphere • Internal configuration • Hazardous energy

Space Description	Classification • PR = Permit-required (**note if *NO ENTRY ALLOWED)*** • NP = Non-permit • NCS = Not a confined space	Basis for Determination • Potential hazardous atmosphere • Potential engulfment • Internal configuration • Other serious hazard
and hallway, and 1 air duct access in Mechanical room next to book store. (Bulbs in tunnels are covered with protective guards.) Tunnel contains: • Condensate lines • Conduit • Drain pipes for sinks Labels needed: 4		