# Appendix B Site Survey Forms and Certificates

The following forms are to be used to conduct a site survey of the facility. The forms include gathering the following:

* Rooms Site Survey
* HVAC System Site Survey

Once the data is collected an assessment form is provided. Once the assessment is completed a blank certificate form is provided. It is to be completed and signed by the site survey inspector. The assessment and certificate forms are:

* Contagion Mitigation Level Assessment
* Building Management Assessment
* Room Contagion Mitigation Certificate Details
* Building Contagion Mitigation Certificate Details
* Room Contagion Mitigation Certificate
* Building Contagion Mitigation Certificate

### Room Site Survey

**Number**  **Room Name**

**Length** **Width** **Height** **Cubic Feet**

**1. If the room ventilation is Natural Ventilation using windows:**

Number of Windows Fully Open o Yes o No Not Blocked o Yes o No

If Windows are open Door is Fully Open o Yes o No Not Blocked o Yes o No

If windows are open AUC is 4 if the door is open and not blocked or there is other cross ventilation AUC is 37. If windows are closed or blocked w-AUC = 0.

**w-AUC**

**2. If the room ventilation uses Exhaust Fans:**

Number of Exhaust Fans

Intake vents Fully Open o Yes o No Not Blocked o Yes o No

Total Exhaust Fans CFM

If the room is serviced by exhaust fans the AUC = Fan CFM / Room Cubic Feet

**f-AUC**

**3. If the room ventilation uses Forced Air System:**

Is the Room Serviced By a Forced Air Heating System o Yes o No

Is the Room Serviced By a Forced Air Heating and Cooling System o Yes o No

Is there a Fan On option on the HVAC system o Yes o No

Number of Exhaust Vents Fully Open o Yes o No Not Blocked o Yes o No

Number of Intake Vents Fully Open o Yes o No Not Blocked o Yes o No

Visual Streamers on all Ventilation Vents o Yes o No

If there was a room Ventilation Test performed: Total Room CFM

AUC = Test CFM / Room Cubic Feet

t-AUC

Transfer a-AUC from the HVAC Site Survey Form

a-AUC

Note: If a test was performed and it deviates from the HVAC survey then an analysis must be performed to determine the source of the difference. For example there could be mechanical dampers that are closed or leaking ducts.

When t-AUC is available then h-AUC = t-AUC; otherwise h-AUC = a-AUC.

**h-AUC**

**4. If the room ventilation uses UV-C System:**

Number of UV-C Fixtures Model

Total Watts (eAUC typically 24) **eAUC**

Public View On/Off Indicators o Yes o No Automated Alarms o Yes o No

**5. If the room ventilation uses Far UV System:**

Number of Far UV Fixtures Model

Total Watts (eAUC typically 4) **eAUC**

Public View On/Off Indicators o Yes o No Automated Alarms o Yes o No

**6. If the room ventilation uses Room Air Sanitizer System:**

Number of Air Sanitizers Model

Total CFM

s-AUC = CFM X 60 / Room Cubic Feet **s-AUC**

Public View On / Off Indicators o Yes o No Automated Alarms o Yes o No

**7. If the room ventilation uses Room Photocatalytic Oxidizer or other System:**

Number of Units Model

Claimed effective ep-AUC Test Authority

Total CFM

p-AUC = CFM X 60 / Room Cubic Feet or ep-AUC **p-AUC**

Public View On / Off Indicators o Yes o No Automated Alarms o Yes o No

**8. Full Room AUC assessment:**

Total AUC = h-AUC + e-AUC + s-AUC + p-AUC (Forced air systems) or

Total AUC = w-AUC + e-AUC + s-AUC + p-AUC (Natural ventilation systems) or

Total AUC = f-AUC + e-AUC + s-AUC + p-AUC (Exhaust Fans ventilation systems)

Massive w-AUC or f-AUC will reduces all other AUC levels and make them ineffective.

**Total AUC**

**9. Large Space Mitigation:**

If AUC is greater than 4 there is a Large Space Mitigation factor that will increase the Final AUC. Use the following factors to calculate the Final AUC.

|  |  |  |
| --- | --- | --- |
| **Cubic Feet** | **Large Space Mitigation Factor** | If Total AUC is less than 4:  Final AUC = Total AUC  Else:  **Final AUC** = Total AUC X Large Space Mitigation Factor |
| 400,000 | o 7.75 |
| 300,000 | o 5.94 |
| 200,000 | o 4.14 |
| 100,000 | o 2.35 |
| 50,000 | o 1.49 |
| 20,000 | o 1.06 |
| < 20,000 | o 1.00 |

**LS Factor**  **Final AUC**

**10. Additional site survey data:**

Room Occupancy Sign Posted o Yes o No Occupancy Number

Public Present During Site Survey o Yes o No

Data Entered Directly Into Computer o Yes o No

Printout Attached To This Form o Yes o No

**11. Contagion Mitigation Level (CML) Assessment**

Using the Contagion Mitigation Level Assessment Form enter the following information:

Note: Large spaces have a factor that increases the AUC to account for dilution.

LS Factor AUC CML Color

Transfer this information to the Room Contagion Mitigation Certificate.

**12. Notes and Observations:**

Inspector Signature Date

### HVAC System Site Survey

**Forced Air Heating System** o Yes o No

**Forced Air Heating and Cooling System** o Yes o No  
  
**HVAC Zone Name**   
  
**HVAC Model Number**    
  
**HVAC Fan Size CFM**    
Physically examine unit to find fan size or examine model number and cross reference to find the fan size. Do not trust the HVAC maintainer or original design documentation.  
  
**Number of Rooms Serviced by this Zone**    
  
**Total Cubic Feet Serviced By This Zone**    
Identify each room by Room Survey Number and add the individual cubic feet to find the total cubic feet. List Room Survey Numbers:

**HVAC Zone a-AUC**    
If there is no Fan On option on the HVAC system enter 0. System must operate 100% of the time when the public is present not just when it is providing heating or cooling. If there is a Fan On option the AUC is the HVAC Fan Size in Cubic Feet Per Minute (CFM) X 60 minutes divided by Total Cubic Feet Serviced By This Zone. The a-AUC = CFM\*60/Cubic Feet. Go back and enter the a-AUC into the associated Room Site Survey Forms.

**Automated Alarms**  o Yes o No  
**Manual Dampers in Ducts** o Yes o No  
**Thermostat Control** o Facility Maintainers o Users (do not check if locked)  
**Thermostat Locks Removed** o Yes o No  
**Visible Vent Manually Controlled** o Yes o No  
  
**System Fans on 100% of the time 24/7**  o Yes o No  
**System Fans on 100% of the time when public is present** o Yes o No  
 **Notes and Observations:**  
  
  
  
**Inspector Signature**   **Date**

### Contagion Mitigation Level Assessment

The Contagion Mitigation Level (CML) assessment is performed by examining the final AUC for each room and comparing it to the CML Scale. The scale is a follows.

Table 16 Contagion Mitigation Level Scale

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CML Scale** | **State** | **Final AUC** | **AUC Range** | **Infection Risk Window Time** | **Airborne Contagion Mitigation System Building Condition** | **Likely Technologies** |
| 6 | Green | 120 | 120+ | 30 sec | Approaches outside ventilation conditions | Exhaust fans previously used to remove smoke filled public spaces |
| 5 | Green | 50-100 | 50-120 | 1.2 min | Similar to operating room without PPE conditions in all public affected spaces | Large HVAC system + UV and or other Open windows + open doors + large fans |
| 4 | Yellow | 24 | 24-50 | 2.5 min | Similar to WHO patient room airborne precautions in all public affected spaces | Small HVAC system + UV and or other Large HVAC system Open windows |
| 3 | Yellow | 10-24 | 10-24 | 6 min | Similar to WHO patient room airborne precautions in most public spaces but not all | Small HVAC system + UV and or other or Large HVAC system |
| 2 | Orange | 4 | 4-10 | 15 min | Marginal mitigation | Medium HVAC system (usually heater + cooling) |
| 1 | Red | 1 | 1-4 | 1 hour | No mitigation, School data suggests infection happens | Small HVAC system (usually heater only) |
| 0 | Red | 0 | 0-1 | full time | No ventilation | No windows, no mechanical, no UV, no other |

Go back to each room assessment and enter the appropriate Level and Color based on the Final AUC. Once all the sheets are completed find the maximum and minimum AUC and CML assessment for the building and enter the data here:

Max AUC Min AUC   
  
Max CML Min CML   
  
Max CML Color Min CML Color

Transfer this information to the Room and Building Contagion Mitigation Certificate.

### Building Management Assessment

Once the ventilation assessment results are complete the Building Management Assessment needs to be performed. A system only works if it is running. Most systems are turned off. A series of questions were asked during the site survey that will be used to determine the building management results.

| **CML Rating** | **State** | **System Operation** | **Compromise Risk** |
| --- | --- | --- | --- |
| 6 | Green | Fully automated with alarms | Lowest |
| 4 | Yellow | Fully automated | Very Low |
| 3 | Yellow | Manually controlled by onsite dedicated maintenance staff | Low |
| 0 | Red | Manually controlled by building users | Very High |

Examples based on the site survey questions:

If windows are used and they are blocked or not opening the CML = 0.

If Exhaust Fans are used and there are no visual streamers on the intake then the CML = 0

If Exhaust Fans are used but they are manually controlled by building users the CML = 0.

If Exhaust Fans are used the level can increase based on the system operation criteria in the table.

If an HVAC system is used and there is no Fan On option the CML = 0

If an HVAC system is used and the exhaust or intake vents are blocked the CML = 0

If an HVAC system is used and there are no visual streamers on all vents the CML = 0.

If an HVAC system is used and there are Automated Alarms the CML = 6

If an HVAC system is used and there are manual dampers in ducts the CML = 0 until locked in place and tamper protected.

If an HVAC system has Thermostat Controls that can be accessed by users the CML = 0

If an HVAC system Thermostat Control Lock has been removed the CML = 0

If an HVAC system vents are Visible and can be Manually Controlled the CML = 0.

If there is a UV-C system and the public can access the On/Off switches the CML = 0.

If there is a UV-C system and there are Automated Alarms the CML = 6.

If there is a Far UV system and the public can access the On/Off switches the CML = 0.

If there is a Far UV system and there are Automated Alarms the CML = 6.

### Room Contagion Mitigation Certificate Details

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CML Rating** | **State** | **AUC Range** | **Risk Window** | **Airborne Contagion Mitigation System Building Condition** | **Room** place X |
| 6 | Green | 120+ | 30 sec | Approaches outside ventilation conditions |  |
| 5 | Green | 50-120 | 1.2 min | Similar to operating room without PPE conditions |  |
| 4 | Yellow | 24-50 | 2.5 min | Similar to WHO patient room airborne precautions |  |
| 3 | Yellow | 10-24 | 6 min | Similar to WHO patient room airborne precautions |  |
| 2 | Orange | 4-10 | 15 min | Marginal mitigation |  |
| 1 | Red | 1-4 | 1 hour | No mitigation, data suggests infection happens |  |
| 0 | Red | 0-1 | full time | No ventilation, infection happens |  |

AUC Large Space Factor

CML Color

Room Operational Management Assessment

| **CML Rating** | **State** | **System Operation** | **Compromise Risk** | **Room** place X |
| --- | --- | --- | --- | --- |
| 6 | Green | Fully automated with alarms | Lowest |  |
| 4 | Yellow | Fully automated | Very Low |  |
| 3 | Yellow | Manually controlled by onsite dedicated maintenance staff | Low |  |
| 0 | Red | Manually controlled by building users | Very High |  |

CML Color

Final Building CML rating (lowest value from above)

CML Color

**Self Inspection Signature Date**

**Independent Inspector Signature Date**

**Government Inspector Signature Date**

Only one signature is needed others are optional

### Building Contagion Mitigation Certificate Details

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CML Rating** | **State** | **AUC Range** | **Risk Window** | **Airborne Contagion Mitigation System Building Condition** | **# of Rooms** |
| 6 | Green | 120+ | 30 sec | Approaches outside ventilation conditions |  |
| 5 | Green | 50-120 | 1.2 min | Similar to operating room without PPE conditions |  |
| 4 | Yellow | 24-50 | 2.5 min | Similar to WHO patient room airborne precautions |  |
| 3 | Yellow | 10-24 | 6 min | Similar to WHO patient room airborne precautions |  |
| 2 | Orange | 4-10 | 15 min | Marginal mitigation |  |
| 1 | Red | 1-4 | 1 hour | No mitigation, data suggests infection happens |  |
| 0 | Red | 0-1 | full time | No ventilation, infection happens |  |

Max AUC Min AUC

Max CML Min CML

Max CML Color Min CML Color

Building Operational Management Assessment

| **CML Rating** | **State** | **System Operation** | **Compromise Risk** | **# of Rooms** |
| --- | --- | --- | --- | --- |
| 6 | Green | Fully automated with alarms | Lowest |  |
| 4 | Yellow | Fully automated | Very Low |  |
| 3 | Yellow | Manually controlled onsite dedicated maintenance staff | Low |  |
| 0 | Red | Manually controlled by building users | Very High |  |

CML Color

Final Building CML rating (lowest value from above)

CML Color

**Self Inspection Signature Date**

**Independent Inspector Signature Date**

**Government Inspector Signature Date**

Only one signature is needed others are optional

### Room Contagion Mitigation Certificate

**Building Owner Operator:**

**Building Name:**

**Building Address:**

**Room Name:**

**Room Number:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Equipment Level**   |  |  |  | | --- | --- | --- | | **CML Rating** | **State** | **Room** | | 6 | Green |  | | 5 | Green |  | | 4 | Yellow |  | | 3 | Yellow |  | | 2 | Orange |  | | 1 | Red |  | | 0 | Red |  |   Place only one X | **Controls Level**   | **CML Rating** | **State** | **Room** | | --- | --- | --- | | 6 | Green |  | | 4 | Yellow |  | | 3 | Yellow |  | | 0 | Red |  |   Place only one X  **CML - Contagion Mitigation Level.**  **Level 6 is best Level 0 is worst.** |

The Contagion Mitigation Certificate details are available in the office.

**Signature Date**

O Self Inspection O Independent Inspector O Government Inspector (check one)

### Building Contagion Mitigation Certificate

**Building Owner Operator:**

**Building Name:**

**Building Address:**

**Number of Rooms:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Equipment Level**   |  |  |  | | --- | --- | --- | | **CML Rating** | **State** | **Building** | | 6 | Green |  | | 5 | Green |  | | 4 | Yellow |  | | 3 | Yellow |  | | 2 | Orange |  | | 1 | Red |  | | 0 | Red |  |   Place X or room count  in each applicable Level | **Controls Level**   | **CML Rating** | **State** | **Building** | | --- | --- | --- | | 6 | Green |  | | 4 | Yellow |  | | 3 | Yellow |  | | 0 | Red |  |   Place X or room count  in each applicable Level  **CML - Contagion Mitigation Level.**  **Level 6 is best Level 0 is worst.** |

The Contagion Mitigation Certificate details are available in the office.

**Signature Date**

O Self Inspection O Independent Inspector O Government Inspector (check one)

**License Key:**

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