

# MEP's Letter of Assurance : WELL WELL v2 pilot, Q4 2021

## Instructions

WELL Certification is determined by onsite Performance Verification and documentation, including Letters of Assurance from the appropriate professionals overseeing the implementation of a specific WELL feature and component parts during design, construction or operations. The template should be completed, signed and submitted as part of the documentation package.

1. Place a checkmark at every part completed and leave blank those that are not being pursued or being completed by another team member.
2. Initial every feature completed and leave blank those that are not being pursued or being completed by another team member.
3. Sign and date at the bottom of this letter.

If an individual other than the MEP is responsible for any of the requirements contained in this Letter of Assurance, he/she is permitted to sign off on the respective requirements but must complete a separate Letter of Assurance for those specific requirements. This individual should submit a different copy of this form and check the boxes as it pertains to his/her own responsibility. On his/her own Letter of Assurance form(s), this individual should sign and complete the final page and include a description of his/her role on the project next to his/her signature.

The scope of this letter of assurance is as follows (please initial):

Intent stage  
(for Precertification only)

☐

The information contained in this document is accurate as of current designs and anticipated project operations.

Implementation stage  
(for Precertification or WELL Certification)

☐

This document is prepared in relation to final construction documents and/or implemented operations and policies.

Check	Air	Initials
	A01 Fundamental Air Quality	<input type="checkbox"/>

This project is designed to meet the parts selected below:

## Part 4: Meet Radon Threshold

*All Spaces:*

If project has a regularly occupied space at or below grade, one of the following requirements is met:

☐

a. The radon level is less than 0.15 Bq/L [4 pCi/L], as tested by a professional demonstrated not to have a conflict of interest. One test is conducted per 2,300 m<sup>2</sup> [25,000 ft<sup>2</sup>] of the lowest regularly occupied space at or below grade with natural ventilation.<sup>[CIT:65376]</sup>

☐

b. All regularly occupied spaces at or below grade meet the 'Mechanically ventilated spaces' option of Part 1: Ensure Adequate Ventilation in Feature A03: Ventilation Effectiveness.

A03 Ventilation Effectiveness

☐

This project is designed to meet the parts selected below:

## Part 1: Ensure Adequate Ventilation

*All Spaces except Dwelling Units:*

### *Mechanically ventilated spaces*

Projects utilizing mechanical ventilation comply with ventilation supply and exhaust rates set in one of the following:

- ☐ a. AS 1668.2-2012 or any more recent version. Note that projects that wish to comply with AS 1668.2 must assume a minimum density of 16 m<sup>2</sup> [170 ft<sup>2</sup>] per person.<sup>[CIT:65402]</sup>
- ☐ b. CIBSE Guide A: Environmental Design, version 2007 or any more recent version.<sup>[CIT:65403]</sup>
- ☐ c. ASHRAE 62.1-2010 or any more recent versions (Ventilation Rate Procedure or IAQ Procedure).<sup>[CIT:65398]</sup>
- ☐ d. CEN Standards EN 15251:2007 and EN 16798-3:2017 or any more recent versions. The requirements of CEN Standard EN 15251:2007 must be met as well as the performance requirements of CEN Standard EN 16798-3:2017 related to ventilation and room conditioning systems (excluding sections 7.3, 7.6, A.16 and A.17). Note that projects must meet Category I or II as described in the standards.<sup>[CIT:65400,CIT:65401]</sup>

OR-----

### *Naturally ventilated spaces*

Projects using natural ventilation only (no mechanical ventilation) meet the following requirements:

- ☐ a. Outdoor PM<sub>2.5</sub>, PM<sub>10</sub>, carbon monoxide and ozone levels within 4 km [2.5 mi] of the building are compliant with the levels specified in Feature A01: Air Quality Standards for at least 95% of all hours in the previous year.
- ☐ b. One of the following design criteria:
  - 1. Natural Ventilation Procedure in ASHRAE 62.1-2010 or any more recent version (as appropriate for number of floors above grade).<sup>[CIT:65398]</sup>
  - 2. CIBSE AM10: Natural Ventilation in Non-Domestic Buildings (2005 or any more recent version) section 2.4 – Natural ventilation strategies and chapter 4 – Design Calculations.<sup>[CIT:65404]</sup>

OR-----

### *Naturally ventilated spaces*

Projects using natural ventilation only (no mechanical ventilation) meet the following requirements:

- ☐ a. Outdoor air meets the following thresholds as an average for the previous year:
  - 1. PM<sub>2.5</sub> less than 25 µg/m<sup>3</sup>.<sup>[CIT:65372]</sup>
  - 2. PM<sub>10</sub> less than 50 µg/m<sup>3</sup>.<sup>[CIT:65372]</sup>
- ☐ b. One of the following design criteria:
  - 1. Natural Ventilation Procedure in ASHRAE 62.1-2010 or any more recent version (as appropriate for number of floors above grade).<sup>[CIT:65398]</sup>
  - 2. CIBSE AM10: Natural Ventilation in Non-Domestic Buildings (2005 or any more recent version) section 2.4 – Natural ventilation strategies and chapter 4 – Design Calculations.<sup>[CIT:65404]</sup>

OR-----

*Naturally ventilated spaces*

Projects using natural ventilation only (no mechanical ventilation) meet the following requirements:

☐

a. Outdoor air meets the following thresholds as an average for the previous year:

1. PM<sub>2.5</sub> less than 35 µg/m<sup>3</sup>.<sup>[CIT:65372]</sup>
2. PM<sub>10</sub> less than 70 µg/m<sup>3</sup>.<sup>[CIT:65372]</sup>

☐

b. One of the following design criteria:

1. Natural Ventilation Procedure in ASHRAE 62.1-2010 or any more recent version (as appropriate for number of floors above grade).<sup>[CIT:65398]</sup>
2. CIBSE AM10: Natural Ventilation in Non-Domestic Buildings (2005 or any more recent version) section 2.4 – Natural ventilation strategies and chapter 4 – Design Calculations.<sup>[CIT:65404]</sup>

OR-----

*Mixed-mode ventilated spaces*

Projects using mixed-mode ventilation meet one of the following requirements:

☐

a. Project complies with the requirements set for naturally ventilated spaces when mechanical system is not in use and the requirements for mechanical ventilation when the mechanical system is in use. Mechanical ventilation must be operated when outdoor air quality conditions are above the limits in Feature A01: Fundamental Air Quality.

☐

b. Operate with mechanical ventilation CIBSE AM13: Mixed Mode Ventilation, version 2000 or any more recent version.<sup>[CIT:65405]</sup>

*Dwelling Units:*

*Mechanically ventilated spaces*

Projects utilizing mechanical ventilation comply with ventilation supply and exhaust rates set in one of the following:

☐

a. ASHRAE 62.2-2016 (continuous or intermittent ventilation system requirements) or any more recent version.<sup>[CIT:65399]</sup>

☐

b. CEN Standards EN 15251:2007 or any more recent version. Note that projects must meet Category I or II as described in the standards.<sup>[CIT:65400]</sup>

☐

c. AS 1668.2-2012 or any more recent version.<sup>[CIT:65402]</sup>

☐

d. CIBSE Guide A: Environmental Design, version 2007 or any more recent version.<sup>[CIT:65403]</sup>

OR-----

*Naturally ventilated spaces*

Projects using natural ventilation only (no mechanical ventilation) meet the following requirements:

☐ a. Outdoor PM<sub>2.5</sub>, PM<sub>10</sub>, carbon monoxide, ozone and nitrogen dioxide levels within 4 km [2.5 mi] of the building are compliant with the thresholds specified in Feature A01: Air Quality Standards for at least 95% of all hours in the previous year.

☐ b. One of the following design criteria:

1. Natural Ventilation Procedure in ASHRAE 62.1-2010 or any more recent version.<sup>[CIT:65398]</sup>
2. CEN Standards EN 15251:2007 or any more recent version. Note that projects must meet Category I or II as described in the standards.<sup>[CIT:65400]</sup>
3. CIBSE Guide A: Environmental Design, version 2007 or any more recent version.<sup>[CIT:65403]</sup>

OR-----

#### *Naturally ventilated spaces*

Projects using natural ventilation only (no mechanical ventilation) meet the following requirements:

☐ a. Outdoor air meets the following thresholds as an average for the previous year:

1. PM<sub>2.5</sub> less than 25 µg/m<sup>3</sup>.<sup>[CIT:65372]</sup>
2. PM<sub>10</sub> less than 50 µg/m<sup>3</sup>.<sup>[CIT:65372]</sup>

☐ b. One of the following design criteria:

1. Natural Ventilation Procedure in ASHRAE 62.1-2010 or any more recent version.<sup>[CIT:65398]</sup>
2. CEN Standards EN 15251:2007 or any more recent version. Note that projects must meet Category I or II as described in the standards.<sup>[CIT:65400]</sup>
3. CIBSE Guide A: Environmental Design, version 2007 or any more recent version.<sup>[CIT:65403]</sup>

OR-----

#### *Naturally ventilated spaces*

Projects using natural ventilation only (no mechanical ventilation) meet the following requirements:

☐ a. Outdoor air meets the following thresholds as an average for the previous year:

1. PM<sub>2.5</sub> less than 35 µg/m<sup>3</sup>.<sup>[CIT:65372]</sup>
2. PM<sub>10</sub> less than 70 µg/m<sup>3</sup>.<sup>[CIT:65372]</sup>

☐ b. One of the following design criteria:

1. Natural Ventilation Procedure in ASHRAE 62.1-2010 or any more recent version.<sup>[CIT:65398]</sup>
2. CEN Standards EN 15251:2007 or any more recent version. Note that projects must meet Category I or II as described in the standards.<sup>[CIT:65400]</sup>
3. CIBSE Guide A: Environmental Design, version 2007 or any more recent version.<sup>[CIT:65403]</sup>

## **Part 2: Conduct System Balancing**

### *All Spaces:*

### *Mechanically ventilated spaces*

To verify compliance with the ventilation rate requirements specified in Part 1: Ensure Adequate Ventilation, the following requirements are met or are scheduled to be met (as applicable):

☐

a. Newly installed mechanical ventilation system or ventilation system that undergoes significant alterations is tested and balanced in accordance with ASHRAE 111.<sup>[CIT:65406]</sup>

☐

b. Existing mechanical ventilation system is tested and balanced every five years to verify that the minimum ventilation rates (as determined in Part 1: Ensure Adequate Ventilation) are within  $\pm 10\%$  of the minimum design values.

☐

c. Projects using the elevated air speed method for thermal comfort verify that air speed complies with design specifications.

## A06 Enhanced Ventilation

☐

This project is designed to meet the parts selected below:

### Part 1: Increase Outdoor Air Supply

*All Spaces:*

#### *Mechanically ventilated spaces*

The following requirement is met:

☐

a.

Projects exceed outdoor air supply rates described in ASHRAE 62.1-2010 by the percentages shown in the table below.<sup>[CIT:65420]</sup>

Thresholds	Points
30%	1
60%	2

OR-----

#### *Naturally ventilated spaces*

The following requirements are met:

☐

a. Projects meet Part 1: Provide Operable Windows in Feature A07: Operable Windows.

☐

b. Projects demonstrate that natural ventilation is sufficient to keep CO<sub>2</sub> levels less than the thresholds specified in the table below (measured at 1.2-1.8 m [4-6 ft] above the floor) at maximum intended occupancies in all regularly occupied spaces.<sup>[CIT:65418,CIT:65421,CIT:65422]</sup>

Thresholds	Points
900 ppm	1
750 ppm	2
600 ppm	3

### Part 2: Implement Demand-Controlled Ventilation

*All Spaces:*

All regularly occupied spaces meet the following requirements:

- ☐ a. A demand-controlled ventilation system regulates the outdoor ventilation rate to keep CO<sub>2</sub> levels at maximum intended occupancy less than the thresholds specified in the table below.<sup>[CIT:65418,CIT:65421,CIT:65422]</sup>

Thresholds	Points
900 ppm	1
750 ppm	2
600 ppm	3

- ☐ b. Carbon dioxide is measured at the air exhaust diffusers or in occupied space at 1.1-1.7 m [3.6-5.6 ft] above the floor (away from doors, windows, air supply and zones where occupants may exhale directly into the sensor). At least one sensor is used for each major occupancy zone (or per air handling unit if a single zone is served by multiple air handling units). If occupancy density/pattern/usage is different in two adjacent areas, each area must be considered a separate zone.

### Part 3: Implement Displacement Ventilation

*All Spaces:*

Projects implement a displacement ventilation system for heating and/or cooling, with one of the following as a basis for design:

- ☐ a. ASHRAE Guidelines RP-949.<sup>[CIT:65423]</sup>
- ☐ b. REHVA Guidebook No. 01 (Displacement Ventilation in non-industrial premises).<sup>[CIT:65424]</sup>
- ☐ c. ASHRAE's UFAD Guide: Design, Construction and Operations of Underfloor Air Distribution Systems.<sup>[CIT:65425]</sup> Air supply temperature is slightly cooler or warmer than the desired space temperature. Air distribution system is installed at a raised floor height whereby the underfloor area can be cleaned on an annual basis.

### Part 4: Implement Advanced Air Distribution

*All Spaces except Commercial Kitchen Spaces & Dwelling Units:*

At all workstations, the following requirements are met:

- ☐ a. Conditioned air is supplied via an individual diffuser that is positioned no further than 0.8 m [2.6 ft] from an occupant's head.<sup>[CIT:65426,CIT:65427]</sup>
- ☐ b. Occupants are given control over the direction of the supplied airflow and supply air speed (within 0.0-1.2 m/s [0.0-3.9 ft/s] in the head region).<sup>[CIT:65428]</sup>

☐ c. Supplied air uses one of the strategies specified in the table below:

Requirement	Points
Background mechanical system is used for ventilation	2
Dedicated outdoor air system is used for ventilation	3

## A07 Operable Windows

This project is designed to meet the parts selected below:

### Part 1: Provide Operable Windows

#### *All Spaces:*

The following requirements are met:

☐ a. Project meets one of the below:

1. At least 75% of regularly occupied spaces have operable windows that provide access to outdoor air.
2. The openable window area is equivalent to at least 4% of the net occupiable floor area of that space or floor plate.<sup>[CIT:65398]</sup>

☐ b. Project does not use radiant cooling systems if situated in climates with an annual relative humidity above 70%.

### Part 2: Manage Window Use

#### *All Spaces:*

#### *Outdoor air measurement*

The following requirements are met:

☐ a. Outdoor levels of ozone, PM<sub>2.5</sub> or PM<sub>10</sub>, and temperature are monitored at intervals of at least once per hour based on a data-gathering station located within 4 km [2.5 mi] of the building.

☐ b. Data collected are made available to building occupants.

#### *Window operation*

Indicator lights at windows and/or online notifications signal to regular occupants when outdoor air allows for open windows based on when the following thresholds are met:

☐ a. Ozone less than 51 ppb.

☐ b. PM<sub>2.5</sub> less than 15 µg/m<sup>3</sup>.

☐ c. PM<sub>10</sub> less than 50 µg/m<sup>3</sup>.

☐ d. Dry-bulb temperature within 8 °C [15 °F] of indoor air temperature setpoint.

This project is designed to meet the parts selected below:

### Part 1: Implement Indoor Air Monitors

*All Spaces:*

The following requirements are met:

☐

a. Data are analyzed for regularly occupied hours (e.g., median, mean, 75<sup>th</sup>, 95<sup>th</sup> percentile) and submitted annually through WELL Online.

☐

b. Monitors are recalibrated or replaced annually, with documentation attesting to their calibration or replacement submitted annually through WELL Online.

☐

c. Monitors measure at least three of the following within a regularly occupied or common space in the building:

1. PM<sub>2.5</sub> or PM<sub>10</sub> (accuracy 5 µg/m<sup>3</sup> + 15% of reading at values between 0 and 50 µg/m<sup>3</sup>).
2. Carbon dioxide (accuracy 50 ppm + 3% of reading at values between 400 and 2000 ppm).
3. Carbon monoxide (accuracy 1 ppm at values between 0 and 10 ppm).
4. Ozone (accuracy 10 ppb at values between 0 and 100 ppb).
5. Nitrogen dioxide (accuracy 20 ppb at values between 0 and 100 ppb).
6. Total VOCs (accuracy 20 µg/m<sup>3</sup> + 20% of reading at values between 150 and 2000 µg/m<sup>3</sup>).
7. Formaldehyde (accuracy 20 ppb at values between 0 and 100 ppb).

☐

d. Monitor density is minimum one per floor or one every 325 m<sup>2</sup> [3,500 ft<sup>2</sup>], whichever is more stringent. Monitors are sited at locations compliant with the following requirements:

1. 1.1-1.7 m [3.6-5.6 ft] above the finished floor at locations where occupants would typically be seated or standing.
2. Sampling points must be at least 1 m [3.3 ft] away from doors, windows and air supply/exhaust outlets.

☐

e. Measurements are taken at intervals of no longer than 10 minutes for particulate matter and carbon dioxide and no longer than one hour for other pollutants.

### A10 Combustion Minimization

This project is designed to meet the parts selected below:

### Part 1: Manage Combustion

*All Spaces except Commercial Kitchen Spaces:*

*Appliance and heater combustion ban*

The following requirement is met:



☐

a. Combustion-based fireplaces, stoves, space heaters, ranges and ovens are not used in regularly occupied spaces.<sup>[CIT:65463]</sup>

#### *Low-emission combustion sources*

The following equipment used by the project for heating, cooling, water heating, process heating or power generation (including back-up if used for more than 200 hours per year) meet California's South Coast Air Quality Management District rules, or approved equivalent, for pollution:

☐

a. Water heaters.<sup>[CIT:65464]</sup>

☐

b. Internal combustion engines.<sup>[CIT:65464]</sup>

☐

c. Furnaces.<sup>[CIT:65464]</sup>

☐

d. Boilers, steam generators and process heaters.<sup>[CIT:65464]</sup>

#### *Engine exhaust reduction*

The following requirement is met:

☐

a. Vehicle engine idling for more than 30 seconds is prohibited in all pick-up, drop-off and parking areas at the building site controlled by the project. "No idling" signage is present at these locations indicating this rule.

### A11 Source Separation

☐

This project is designed to meet the parts selected below:

#### **Part 1: Manage Pollution and Exhaust**

##### *All Spaces:*

All bathrooms, kitchens, rooms for cleaning and chemical storage, rooms with high-volume printers and copiers, and high-humidity areas meet one of the following requirements:

☐

a. Are separated from all adjacent regularly occupied spaces with self-closing doors and/or vestibules.

☐

b. Utilize exhaust fans so that return air is expelled outdoors rather than recirculated.<sup>[CIT:65373,CIT:65473]</sup>

##### *Commercial Kitchen Spaces:*

The following requirements are met:

☐

a. Canopy hoods have side or partial panels when allowable by code.<sup>[CIT:65495]</sup>

☐

b. Type II hood overhangs and setbacks comply with ASHRAE 154-2011 (Table 3 - Minimum Overhang Requirements for Type II Hoods) on all open sides, measured in the horizontal plane from the inside edge of the hood to the edge of the top horizontal surface of the appliance.<sup>[CIT:65496]</sup>

☐

c. The vertical distance between the front lower lip of the hood and cooking surface is less than or equal to 1.2 m [4 ft].<sup>[CIT:65496]</sup>

- ☐ d. Makeup air velocity near (or directed at) the hood is less than 0.25 m/s [75 fpm].<sup>[CIT:65495]</sup>
- ☐ e. Replacement air introduced directly into the exhaust hood cavity does not exceed 10% of the hood exhaust airflow rate.<sup>[CIT:65497]</sup>
- ☐ f. At least 50% of the air that replaces the exhaust air is conditioned transfer air rather than makeup air.<sup>[CIT:65498]</sup>
- ☐ g. Appliances are grouped under exhaust hoods according to effluent productions and associated ventilation requirements, as specified in ASHRAE 154-2011, per hood type (defined by the classifications used in ASHRAE 154-2011 for light, medium, heavy and extra-heavy appliance duty levels).<sup>[CIT:65496]</sup>
- ☐ h. Appliances have a rear seal between the appliance and the wall when allowable by code.<sup>[CIT:65499]</sup>
- ☐ i. Appliances located at the end of a cook line requiring exhaust airflow rates greater than 460 L/s/m [300 CFM/ft] have a full side panel or an end wall.<sup>[CIT:65496]</sup>

## A12 Air Filtration ☐

This project is designed to meet the parts selected below:

### Part 1: Implement Particle Filtration

*All Spaces:*

*Mechanically and Mixed-mode ventilated spaces*

The following requirements are met:

- ☐ a. Media filters are used in the ventilation system to filter outdoor air supplied to occupiable spaces in accordance with thresholds specified in the table below:<sup>[CIT:65479,CIT:65480]</sup>

Annual Average Outdoor PM <sub>2.5</sub> Threshold	Minimum Air Filtration Level
16 µg/m <sup>3</sup> or less	MERV 8 or G4
17–18 µg/m <sup>3</sup>	MERV 10 or M5
19–23 µg/m <sup>3</sup>	MERV 12 or M6
24–39 µg/m <sup>3</sup>	MERV 14 or F8
40–59 µg/m <sup>3</sup>	MERV 16 or E10
60 µg/m <sup>3</sup> or greater	MERV 16 preceded by MERV 8, or E10 preceded by G4

- ☐ b. Filter is equipped with on-board pressure sensors or filter change indicator that signal when filter requires replacement. Evidence that the filter has been replaced according to manufacturer's recommendation is submitted annually through WELL Online.

## A13 Active VOC Control ☐

This project is designed to meet the parts selected below:

### Part 1: Implement Carbon Filtration

*All Spaces:*

The following requirements are met:

☐

a. Projects utilize one of the below to remove VOCs from indoor air:

1. Activated carbon filters or a combination of particulate/carbon filters in the main air ducts to filter recirculated air.
2. A standalone air-cleaning device that utilizes a carbon filter to treat the air (one device per area coverage as specified by the manufacturer).<sup>[CIT:65490]</sup>

☐

b. Evidence that the filter or device has been replaced or maintained according to manufacturer's recommendation is submitted annually through WELL Online.

A14 Microbe and Mold Control

☐

This project is designed to meet the parts selected below:

**Part 1: Implement Ultraviolet Treatment for HVAC Surfaces**

*All Spaces:*

The following requirements are met:

☐

a. Project utilizes one of the below:

1. Projects with a forced-air cooling system use ultraviolet lamps to irradiate the surfaces of the cooling coils and drain pans of the mechanical system supplies.<sup>[CIT:65436]</sup>
2. Projects without a forced-air cooling system use standalone ultraviolet germicidal irradiation air sanitizers in all spaces with more than 10 regular occupants.

☐

b.

Evidence that the device has been replaced or maintained according to manufacturer's recommendation is submitted annually through WELL Online.

Check

Water

Initials

W05 Water Quality Consistency

☐

This project is designed to meet the parts selected below:

**Part 2: Filter Drinking Water**

*All Spaces:*

*Treatment Devices*

All water from drinking water dispensers is treated within the building with the following:

☐

a. A filter designed to remove suspended solids tested with standard NSF 42 or EN 13443-2.

☐

b. A UV disinfection system rated by NSF/ANSI Standard 55 (Class A or B) or a device rated by NSF/ANSI Standard Standard 53 or 58 for cyst removal or reduction.

☐

c. A device rated by NSF/ANSI Standard 53 or 58 for copper or lead reduction.

#### *Device Maintenance*

The following requirement is met:

☐

a. Projects submit annually through WELL Online evidence that water treatment devices have been properly maintained as per the manufacturer's recommendation.

### W07 Moisture Management

☐

This project is designed to meet the parts selected below:

#### Part 3: Manage Interior Liquid Water

##### *All Spaces:*

To prevent leaks and water damage, one of the following is installed:

☐

a. Readily accessible, single-throw manual shut-off (governed or activated per use) or automatic shut-off at point-of-connection for all hard-piped fixtures (such as toilets, dishwashers, icemakers and clothes washers).

☐

b. Building-wide plumbing leak detection system.

Check

Thermal Comfort

Initials

T01 Thermal Performance

☐

This project is designed to meet the parts selected below:

#### Part 1: Support Thermal Environment

##### *All Spaces except Commercial Kitchen Spaces & Dwelling Units:*

##### *Mechanically ventilated spaces*

The following requirements are met:

☐

a. During 98% of the standard occupied hours of the year, 95% of regularly occupied spaces achieve thermal conditions representing Predicted Mean Vote (PMV) levels within +/- 0.5; PPD ≤ 10% (as per ASHRAE 55-2013, ISO 7730: 2005 or EN 15251:2007).<sup>[CIT:66010,CIT:66042,CIT:66043]</sup> Project describes outdoor weather conditions under which PMV and PPD levels would not be achieved, including historical weather data demonstrating that they are not expected to occur more than 2% of standard occupied hours per year.

☐

b. During all standard occupied hours of the year, all regularly occupied spaces achieve thermal conditions representing Predicted Mean Vote (PMV) levels within +/- 0.7; PPD ≤ 15%.

☐

c. Projects submit assumptions of clothing insulation and metabolic rate (and for projects using the elevated air speed method, air speed at a height between 0.6 and 1.7 m [2 to 5.6 ft]) used in design calculations.

OR-----

*Naturally ventilated spaces*

One of the following requirements is met:

☐

a. 80% acceptability limit (as per ASHRAE 55-2013) in regularly occupied spaces.<sup>[CIT:66010]</sup>

☐

b. Class I or II acceptability limit (as per EN 15251:2007) in regularly occupied spaces.<sup>[CIT:66043]</sup>

*Commercial Kitchen Spaces:*

The following requirement is met:

☐

a. The operative temperature in the kitchen does not exceed 27 °C [80 °F] at any time.

*Dwelling Units:*

All regularly occupied spaces meet one of the following requirements:

☐

a. Satisfy the conditions listed for "All spaces."

☐

b. Meet the below:

1. If the local climate requires cooling, each dwelling unit has the flexibility to accommodate the installation of cooling device(s) that allow tenants to maintain desirable comfort conditions in bedrooms and living spaces.
2. Project owner identifies at least three types of cooling mechanisms (e.g., split systems, ceiling fans or other systems that improve thermal comfort) and provides installation assistance for the cooling mechanism selected by a tenant.
3. Project owner educates or assists tenants with maintaining their cooling mechanism(s).
4. Projects provide a heating system to meet minimum temperature requirements from ASHRAE 55:2013, ISO 7730:2005 or EN 15251:2007.

T02 Enhanced Thermal Performance

☐

This project is designed to meet the parts selected below:

**Part 1: Enhance Thermal Environment**

*All Spaces except Commercial Kitchen Spaces:*

*Mechanically ventilated spaces*

The following requirement is met:

☐

a.

During all standard occupied hours of the year, all regularly occupied spaces achieve thermal conditions representing Predicted Mean Vote (PMV) levels within  $\pm 0.5$ ; PPD  $\leq 10\%$  (as per ASHRAE 55-2013, ISO 7730:2005 or EN 15251:2007).<sup>[CIT:66010,CIT:66042,CIT:66043]</sup>

OR-----

*Naturally ventilated spaces*

During all standard occupied hours of the year, all regularly occupied spaces achieve one of the following thermal conditions:

☐

a. 90% acceptability limit (as per ASHRAE 55-2013).<sup>[CIT:66010]</sup>

☐

b. Class I acceptability limit (as per EN 15251:2007).<sup>[CIT:66043]</sup>

T03 Thermal Zoning

☐

This project is designed to meet the parts selected below:

**Part 1: Ensure Thermostat Control**

*All Spaces except Commercial Kitchen Spaces:*

The following requirements are met for all regularly occupied spaces equipped with a heating and/or cooling system:

☐

a.

All regularly occupied spaces contain thermal zones, as shown in the table below (note: individual rooms less than 30 m<sup>2</sup> [320 ft<sup>2</sup>] or 5 occupants are still considered separate zones):

Zone Density	Points
Minimum 1 thermal zone per 60 m <sup>2</sup> [650 ft <sup>2</sup> ] or per 10 occupants (whichever results in fewer thermal zones)	1
Minimum 1 thermal zone per 30 m <sup>2</sup> [320 ft <sup>2</sup> ] or per 5 occupants (whichever results in fewer thermal zones)	2

☐

b. Temperature sensors are positioned at least 1 m [3.3 ft] away from direct sunlight, air supply diffusers, mechanical fans and heaters and away from exterior walls, windows and doors or any other significant source of heat or cold.

☐

c. All regular occupants have control over temperature through either:

1. Thermostats Present within the thermal zone.
2. Digital interface available on a computer or phone.

**Part 2: Promote Free Address**

*Office Spaces:*

Projects meet the following requirements:

☐

a. The building provides a thermal variation of at least 3 °C [5 °F] across open workspaces over 200 m<sup>2</sup> [2,150 ft<sup>2</sup>], between rooms with more than 10 people and/or between floors.

☐

b. All office spaces with employees performing tasks that require similar workstations use free address to allow employees to select a work space with a desired temperature.

## T05 Radiant Thermal Comfort

☐

This project is designed to meet the parts selected below:

### Part 1: Implement Radiant Systems

*All Spaces except Commercial Kitchen Spaces:*

At least 50% of the floor area of regularly occupied spaces within the project boundary is serviced by one of the following systems:

☐

a. Hydronic radiant heating and/or cooling systems.<sup>[CIT:66064]</sup>

☐

b. Electric radiant systems.<sup>[CIT:66064]</sup>

### Part 2: Implement Dedicated Outdoor Air Systems

*All Spaces:*

*Mechanically ventilated spaces*

Regularly occupied spaces use an independent system for heating and/or cooling (a dedicated outdoor air system) that meets one of the following requirements:

☐

a. The system complies with ASHRAE Design Guide For Dedicated Outdoor Air Systems (2017).<sup>[CIT:66066]</sup>

☐

b. A detailed design review of the proposed system is conducted by an independent, qualified and registered professional mechanical engineer demonstrated not to have a conflict of interest. The review addresses thermal comfort (dry-bulb temperature, humidity and air velocity, at a minimum) and ventilation rates, as well as overall serviceability and system reliability. Reports must demonstrate satisfactory compliance with ventilation standards of Part 1: Ensure Adequate Ventilation in Feature A03: Ventilation Effectiveness .

## T06 Thermal Comfort Monitoring

☐

This project is designed to meet the parts selected below:

### Part 1: Monitor Thermal Environment

*All Spaces:*

*Thermal comfort monitors*

Projects monitor dry-bulb temperature, relative humidity, air speed and mean radiant temperature in regularly occupied or common spaces within the building, satisfying the following requirements:

☐

a. Measurements are taken in occupied zones at least 1 m [3.3 ft] away from exterior walls, doors, direct sunlight, air supply/exhausts, mechanical fans, heaters or any other significant source of heat or cold.

☐

b. The sensor placement density is minimum one per floor or one every 325 m<sup>2</sup> [3,500 ft<sup>2</sup>], whichever is more stringent.

☐

c. Measurements are taken at intervals and heights specified in the table below:

Parameter	Sampling Interval	Sampling Height Above the Floor
Dry-bulb temperature	10 minutes or less	1.1–1.7 m [3.6–5.6 ft]
Relative humidity	10 minutes or less	1.1–1.7 m [3.6–5.6 ft]
Air speed (only if elevated air speed is used)	3 months or less	1.1–1.7 m [3.6–5.6 ft]
Mean radiant temperature	3 months or less	1.1–1.7 m [3.6–5.6 ft]

☐

d. Data are analyzed for regularly occupied hours (e.g., median, mean, 75<sup>th</sup> and 95<sup>th</sup> percentile) and annually submitted through WELL Online.

☐

e. Dry-bulb temperature and relative humidity sensors are recalibrated or replaced annually and certificates attesting their calibration or replacement are annually submitted through WELL Online. Air speed and mean radiant temperature sensors used for quarterly measurements are calibrated as per manufacturer's specification.

#### *Environmental measures display*

Real-time display of dry-bulb temperature and relative humidity is made available to occupants through one of the following:

☐

a. At least one monitor screen prominently positioned at the height of 1.1–1.7 m [3.6–5.6 ft] per 930 m<sup>2</sup> [10,000 ft<sup>2</sup>] of regularly occupied space.

☐

b. A website or phone application. At least one visible sign is positioned per 930 m<sup>2</sup> [10,000 ft<sup>2</sup>] of regularly occupied space indicating the website or phone application where the data may be accessed.

### T07 Humidity Control

☐

This project is designed to meet the parts selected below:

#### Part 1: Manage Relative Humidity

##### *All Spaces:*

All regularly occupied spaces, except high-humidity areas, meet one of the following requirements:

☐

a. The mechanical system has the capability of maintaining relative humidity between 30% and 60% at all times by adding or removing moisture from the air.<sup>[CIT:66043,CIT:66074]</sup>

☐

b. The modeled relative humidity levels in the space are between 30% and 60% for at least 98% of all business hours of the year.



Check	Materials	Initials
	X01 Fundamental Material Precautions	<input type="text"/>

This project is designed to meet the parts selected below:

## Part 2: Limit Mercury

*All Spaces:*

All newly installed products meet the following:

- ☐ a. Illuminated exit signs, thermostats, switches and electrical relays are mercury-free.<sup>[CIT:66354]</sup> or meet RoHS restrictions.
- ☐ b. Low-mercury or mercury-free lamp technology meets the following specifications:<sup>[CIT:66354]</sup>

Fluorescent Lamp	Maximum Mercury Content
Compact, integral ballast	3.5 mg
Compact, non-integral ballast	3.5 mg
T-5, circular	9 mg
T-5, linear	2.5 mg
T-8, eight-foot	10 mg
T-8, four-foot	3.5 mg
T-8, two- and three-foot	3.5 mg
T-8, U-bent	6 mg
High-Pressure Sodium Lamp	Maximum Mercury Content
400 W or less	10 mg
Over 400 W	32 mg

## Part 3: Restrict Lead

*All Spaces:*

All newly installed building materials meet the following materials composition requirements:

- ☐ a. Drinking water systems and plumbing products are lead-free as defined by the Safe Drinking Water Act (SDWA) and certified by an ANSI Accredited third-party certification body.<sup>[CIT:66416,CIT:66417]</sup>
- ☐ b. Indoor paints and surface coatings contain less than 90 ppm total lead.<sup>[CIT:66355]</sup>

By signing below, I represent that, to the best of my knowledge, all of the responses provided on this form are accurate and made in good faith.

Printed Name: \_\_\_\_\_

Signature: \_\_\_\_\_

If the individual using this form is not in the role of MEP, provide a description of the individual's project role, including justification of their ability to sign off on the above requirements, here:

Project Role: \_\_\_\_\_

Explanation: \_\_\_\_\_  
\_\_\_\_\_