HEALTHY BUILDINGS

RESET

INTERNATIONAL STANDARD

Air STANDARD

FOR CORE & SHELL v2.1

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2.4.0 Preface

The **RESET** Air **Standard** is a continuous monitoring and reporting standard for indoor air quality. The standard defines performance targets and requirements around monitoring performance, installation, and deployment to collect the highest quality data for indoor air quality.

The intent of the **RESET** Air **Standard** is to:

- **Standardize how indoor air quality is measured**
  and communicated to provide the highest data quality, including for reporting purposes.
- **Promote performance-based systems**
  that leverage continuous monitoring, where solutions are active and automated rather than static to achieve optimal air quality in indoor built environments.
- **Expedite the communication of requirements**
  for the implementation of healthier indoor environments with a quantitative approach instead of a qualitative approach.
- **Establish the roles and relationships between tenants and landlords**
  by setting the responsibilities for each party in maintaining healthy indoor air quality.
- **Raise public awareness of indoor air quality**
  and its impacts on environmental and occupant health, foster education, and promote social equity.

2.4.1 Introduction

The **RESET Air Standard for Core & Shell** is a performance-based standard targeting the air quality performance of mechanical HVAC systems. It monitors, tracks, and communicates the quality of air being provided by the project's mechanical HVAC system to tenant spaces.

The standard is used for projects pursuing **RESET Air Project Certification** and can be used as a best practice guideline for setting up continuous induct air quality monitoring of their mechanical HVAC systems.

The **RESET Air Standard for Core & Shell** defines the following:

- Performance Targets & Data Analysis
  Performance targets for multiple IAQ metrics, including PM2.5, CO2, TVOC, Temperature, and Relative Humidity, along with the logic for how the data should be analyzed when comparing against the performance targets.
- System Requirements for Data Collection
  The standard requires real-time continuous monitoring, so system requirements describe the necessary software and hardware requirements for data collection.
- Monitor Installation and Deployment
  Requirements regarding how monitors should be installed and where they should be deployed to collect the best data with the best data quality for measuring the air quality delivered by the mechanical systems.

2.4.1.1 Purpose and Approach

The purpose of the **RESET Air Standard for Core & Shell** is to establish guidelines and rules for **RESET Air Projects**. **RESET Air Projects**:

- Focuses on data and performance instead of solutions, establishing guidelines around collecting high-quality data while leveraging continuous monitoring of air quality.
- Demonstrate and prove that the interior space has good indoor air quality by showing the performance data via continuous monitoring with IAQ sensors and monitors.
- Are certified and data is continuously audited by a third party in **RESET**.
- Are ready for reporting purposes and automation services.

The approach of the **RESET Air Standard for Core & Shell** is:

- **Quantitative**
  Certification is performance-based, represented by the data collected via continuous monitoring.
- **Non-prescriptive and solutions agnostic**
  The standard focuses on high-quality continuous monitoring data collection instead of prescribing mandatory solutions. Instead of being a Design Standard, **RESET** is a Data Standard.
- **Applicable to all Built Environments w/ HVAC Systems**
  Can be applied to any built environment that has an HVAC system, especially centralized systems, including new or existing buildings.

2.4.1.2 Typologies and Usage

The **RESET Air Standard** consists of standards for two typologies:

- **RESET Air Standard for Interiors**
  Interiors targets and measures the air quality performance of air breathed by the occupants in an interior space. Requires monitors to be installed in the breathing zone.
- **RESET Air Standard for Core & Shell**
  Core & Shell targets and measures the quality performance of the air being delivered to tenants and public spaces by the building's central mechanical air and HVAC systems. Requires monitors to be installed in the air ducts.

The built environment requires constant maintenance and upkeep. This requires collaboration between what are often disparate parties: the tenant and the landlord. The **RESET Air Standard** helps facilitate communication between the tenant and landlord by identifying their respective areas of responsibility.

RESET Air Standard for Core & Shell decouples the mechanical system data from that of the tenant data via **RESET Air Standard for Interiors**, allowing for more effective troubleshooting, remediation, and communication efforts.

This document is for the **RESET Air Standard for Core & Shell**. For **RESET Air Standard for Interiors**, please refer to Section 2.2.

2.4.2 Performance Targets and Data Analysis

The **RESET Air Standard for Core & Shell** establishes the requirements for Induct Air Quality Performance Targets and how it is measured when running the data analysis.

Induct monitors are air quality monitors designed to be used in mechanical HVAC systems to measure the air quality within the ducts before they have been delivered into tenant spaces.

RESET Air Standard for Core & Shell requires the monitoring of the following air quality parameters:

- PM2.5 (Particulate Matter)
- CO2
- TVOC
- Temperature
- Relative Humidity

Additional IAQ parameters can also be optionally reported and logged for the Data Audit.

2.4.2.1 Induct Air Quality Performance Targets

The **RESET Air Standard for Core & Shell** establishes recommended induct air quality performance targets for air being delivered by HVAC systems that are tracked through continuous monitoring. Performance targets are established as limits that are used to compare against the daily average of a project over operating hours. For more details on how the data is calculated, please refer to Section 2.4.2.3.

Performance targets are based on industry best practices and international standards.

$PM_{2.5}$ Particulate Matter	CO_2 Carbon Dioxide	TVOC Total Volatile Organic Compounds	Temp Temperature	RH Relative Humidity
Required ≤ 12 µg/m³ or ≥ 75% reduction*	Required < 800 ppm	Required < 400 µg/m³	Monitored	Monitored
			Although there are no requirements for temperature and humidity, both must be monitored given their impact on sensor readings for $PM_{2.5}$ and TVOC.	

**i.e. When outdoor PM2.5 is ≤ 48µg/m³, indoor levels can be no more than 12µg/m³. When outdoor PM2.5 is > 48µg/m³, filtration at the level of the air handling unit must remove 75% of PM2.5 at a minimum.*

2.4.2.2 Optional Air Quality Parameters

Alongside the main parameters, additional optional parameters can be added to a project for auditing and verification. Performance targets can be assigned for each parameter.

Optional Parameters include:

- PM0.5, PM1, PM5, PM10
- Ozone
- Formaldehyde
- SOx
- NOx (recommended for the lowest floor in places with a lot of cars)
- CO (recommended in all combustible spaces)
- Radon
- Atmospheric Pressure
- Air flow velocity (for Induct Monitors)

Air quality parameters not in the above list can be added upon request.

2.4.2.3 Data Interval and Data Analysis Algorithm

To calculate the performance of a project to compare against performance targets, the **RESET Air Standard** uses a multi-tier algorithm to parse the data, summarized as follows:

1. The continuous monitoring data collected is expected to have an initial data interval of 5 minutes per data reading, which is then compiled into 30-minute averages for use in project calculations.
2. The data analysis algorithm then compiles the 30-minute averages into daily averages, calculated from hours of occupancy, which are assigned per project, and compares them against the performance targets established for the project.

For detailed information about the algorithm, refer to **RESET Air Data Analysis Methodology** (Section 2.9) for more information.

For the purposes of **RESET Air Project Certification**, data must be submitted to **RESET Cloud**, RESET's data analysis platform, via a **RESET Accredited Data Provider**.

To qualify for Certified status for **RESET Air for Core & Shell**, results from the data analysis must not exceed acceptable limits for a period of 3 consecutive months.

2.4.3 System Requirements for Data Collection

The **RESET Air Standard for Core & Shell** is performance-based with continuous monitoring requirements, therefore, there are minimum system requirements for data collection.

RESET Air Projects requires data to be collected by physical IAQ monitors on site, which is then aggregated by the data provider, a software platform.

For certification, summary data must be automatically compiled and sent daily to the **RESET Cloud** for auditing and verification.

The following pages describe the Data Provider requirements and the Monitor requirements for data collection requirements that are necessary for good data quality.

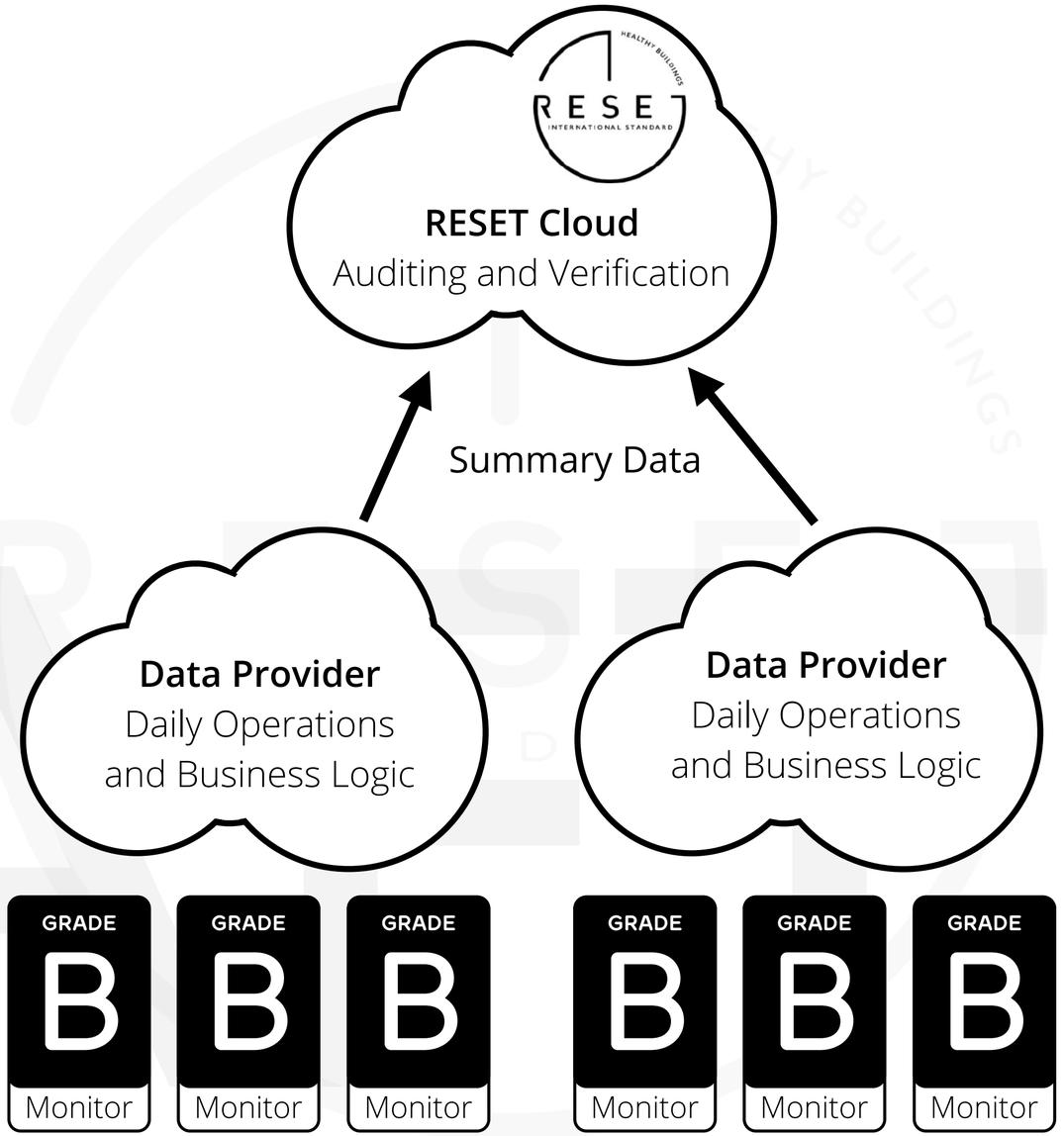


Diagram showing how data is organized for RESET Air Projects.

2.4.3.1 Data Provider Requirements

Data Providers are software platforms responsible for collecting and aggregating IAQ data for **RESET Air Projects**. **RESET Accredited Data Providers** fulfill data reporting and data display requirements:

Data Reporting
Projects must use a **RESET Accredited Data Provider** (Section 2.8). Data providers are in charge of collecting continuous monitoring data and transferring it to the **RESET Cloud** for assessment purposes. **RESET Accredited Data Providers** are audited and confirmed able to submit data for the Data Audit.

Data Display
RESET Air Projects must provide project occupants with data access to indoor air quality. Project occupants include tenants, employees (full and part-time, as well as maintenance and cleaning staff), guests, and visitors, who at any time occupy the project for more than one hour per day.

Acceptable methods of data access include visual display screens in public, community, or shared work areas, phone apps, web apps, and graphic signage with a web address or QR code that directly connects users to the app or website where the data can be viewed.

To view current available **RESET Accredited Data Providers**, please go to: https://reset.build/directory/dataproviders. For details on **RESET Air Accredited Data Provider**, refer to the **RESET Air Accredited Data Provider Standard** (Section 2.8).

2.4.3.2 Monitor Requirements

Projects pursuing **RESET Air for Core & Shell** require continuous monitoring of the air quality in the HVAC ducts. This is achieved by continuously monitoring induct air quality monitors that are installed within air ducts.

The accuracy of air quality monitors is of critical importance to determine how IAQ is impacting occupant health in the built environment. It is also of critical importance to appropriately guide HVAC operations and maintenance.

Market-available monitors range widely in quality, accuracy, and reliability, therefore, **RESET Air** sets standards for the performance, maintenance, and calibration of IAQ monitors with the **RESET Air Accredited Monitor Standard**.

For project certification, **RESET Air Accredited Monitors** are required by default for induct monitors, but not for outdoor monitors.

To view current available **RESET Air Accredited Monitors**, please go to: https://reset.build/directory/monitors/air. For details on **RESET Air Accredited Monitors**, please refer to the **RESET Air Accredited Monitor Standard** (Section 2.6) for full requirements.

2.4.4 Monitor Installation and Deployment

In order to certify for **RESET Air for Core & Shell**, projects must be able to demonstrate that the building's mechanical (HVAC) system delivers air to building occupants adhering to the performance targets.

In order to do so, a baseline must be established via outdoor air quality monitoring. Induct air quality monitors are then "paired" with outdoor air monitors so that the aggregated data can be used for comparison purposes.

The installation and deployment of the outdoor and induct air quality monitors can vastly change the results of the data. Monitor Installation Requirements establishes the rules and requirements around individual monitor installation for both outdoor and induct monitors. This includes mainly rules around where the monitors need to be placed within the HVAC system to be representative of outdoor air quality or air being delivered to indoor spaces.

Monitor Deployment Requirements establishes the rules and requirements around where and how many monitors are to be deployed in a project space. Monitor Deployment has just one main concept:

- Total Air Volume Coverage
  To measure the IAQ of the air being delivered by the mechanical HVAC system, monitors need to be installed in the air ducts. **RESET Air Standard for Core & Shell** requires that 30% of the total air volume delivered by the HVAC system be covered by IAQ monitoring.

2.4.4.1 Outdoor Monitor Installation Requirements

Outdoor air monitoring is used to establish an outdoor air quality baseline for comparison against the building's indoor air quality.

Outdoor monitors must be installed according to the following requirements:

a. **Required monitor parameters**
   Outdoor air quality monitors must report PM2.5, CO_2, Temperature, and Relative Humidity. TVOC is not required because typical levels of outdoor TVOC is negligible.

b. **Installation distance from air intake**
   Monitor must be located within 5 meters (16 feet) of air intake.

c. **Pre-Filtration and Pre-Mixing**
   Monitor is to be Installed at a location that is pre-filtration and pre-mixing.

d. **Outdoor Monitor Accreditation**
   RESET Air for Core & Shell does not currently require outdoor monitors to be a **RESET Air Accredited Monitor** to be used in a project.

2.4.4.2 Induct Monitor Installation Requirements (1/2)

Induct air quality monitor deployment is based on a project's total air volume; the sum of air volume designed by the mechanical (HVAC) system to be delivered to all occupied spaces within the project boundary. Mechanical (HVAC) systems that are not designed with constant air volume (CAV), but use variable air volume (VAV) or similar, must calculate total air volume based on the highest capacity airflow for which the system is designed.

To achieve **RESET Air for Core & Shell**, at least 30% of the total air volume must be monitored.

Indoor monitors must be installed according to the following requirements:

a. **Required monitor parameters**
   RESET Air Accredited Monitors (Section 2.6) reporting $PM_{2.5}$, CO_2, TVOC, Temperature, and Relative Humidity.

b. **Post-Filtration and Post-Mixing**
   Monitors must be installed post-filtration and post-mixing. If there is no air mixing in the HVAC system, then post-filtration is enough.

2.4.4.2 Induct Monitor Installation Requirements (2/2)

c. **Dampers and Air Flow**
Monitors are to be installed prior to dampers that may limit airflow to a branch of (a) supply duct(s).

d. **Outdoor monitor "Pairing" Consideration**
The first two induct air monitors must be "paired" with an outdoor air monitor. That means they are part of the same air duct network, with the outdoor monitor at the air intake and the induct monitor installed to measure the air quality post-filtration and post-mixing.

Once all outdoor monitors have been paired, induct monitors can be installed in other air ducts at the project's discretion. The recommendation is to aim to have them distributed across the project to get the largest range of different situations possible.

2.4.4.3 Monitoring Station Deployment Requirements

The **RESET Air Standard** establishes deployment requirements to make sure a project space can acquire holistic data across all relevant HVAC ducts in a project. Each deployment will be called a Monitoring Station.

The following section provides a step-by-step process to determine monitor deployment of outdoor and induct air quality monitors for a **RESET Air for Core & Shell Project**. Below is the list of steps:

1. Define the project boundary
2. Total Air Volume Calculation
3. Target Monitoring Volume Calculation
4. Outdoor Monitor Deployment
5. Induct Monitor Deployment

2.4.4.3 Monitoring Station Deployment Requirements
1. Project Boundary (1/3)

Defining the project boundary is the first step to monitoring station deployment. The project boundary establishes the size and boundaries of the project.

Drawing the Project Boundary
For Core and Shell, a project boundary is based on a building's mechanical system. The project boundary must include all mechanical systems associated with the project that support its operation.

A project boundary, once defined, must remain consistent for all subsequent air volume calculations. The project boundary will include all spaces and systems within the boundary.

For Certification
Project teams must submit a detailed statement that defines and clarifies what is deemed a project boundary for their specific project. The statement must include sufficient information to substantiate the boundary as selected. There is flexibility as to where the project boundary is drawn as long as the narrative describing why the project boundary was drawn like that makes sense.

Refer to **RESET Air Certification Process for Core & Shell** (Section 2.5) for full documentation requirements.

2.4.4.3 Monitoring Station Deployment Requirements

1. Project Boundary (2/3)

Sample Project

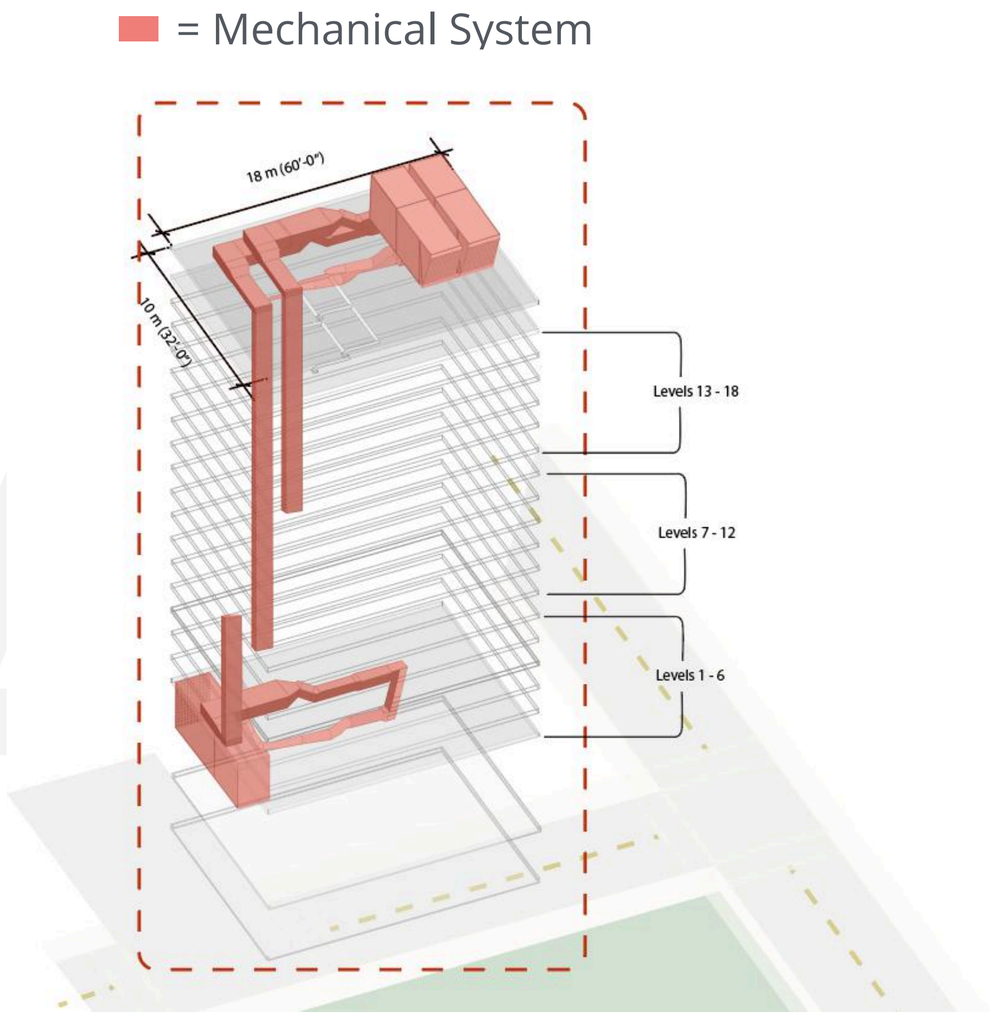
w/

18 Occupied Levels

3 Air intake locations

Project Boundary drawn with the red dotted line.

This project boundary includes the entire building.



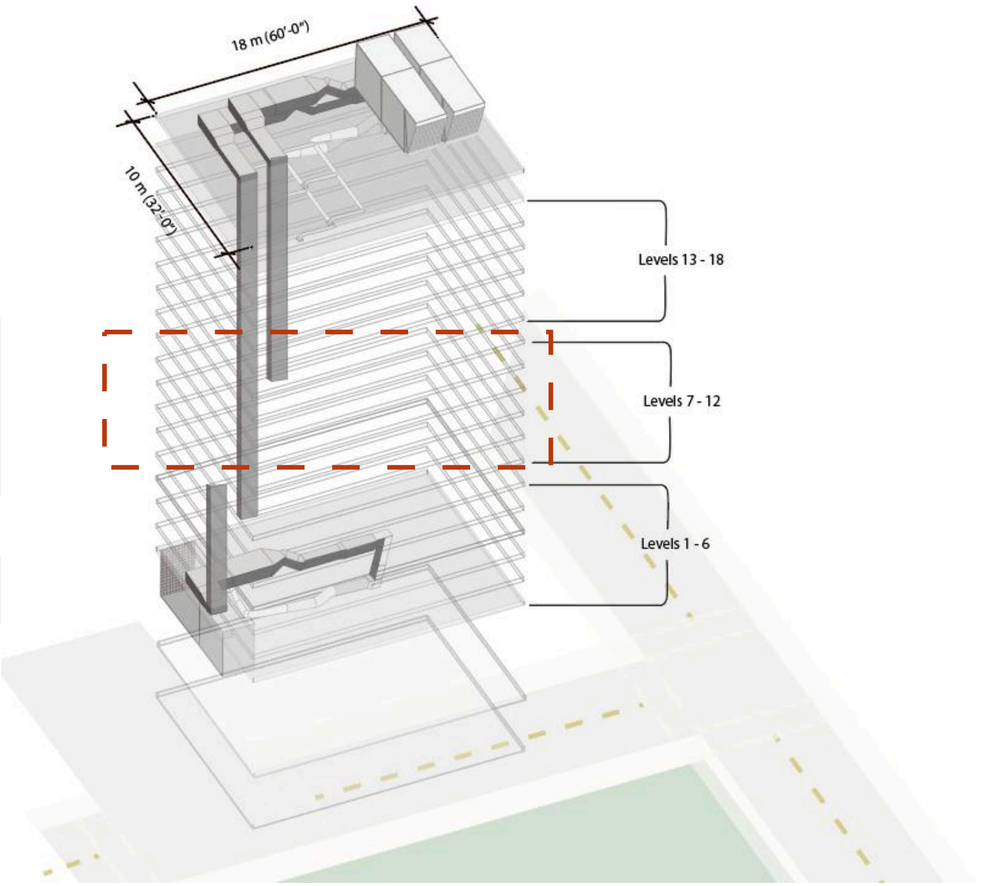
2.4.4.3 Monitoring Station Deployment Requirements
1. Project Boundary (3/3)

Sample Project
w/
18 Occupied Levels
3 Air intake locations

Optionally, project boundaries can be assigned to specific occupied floors instead of the entire building.

For example, this would select the floors of 7-12, which have its own dedicated HVAC system.

Mechanical floors can be excluded if there is no regular occupancy in those spaces.



2.4.4.3 Monitoring Station Deployment Requirements

2. Total Air Volume Calculation (1/2)

Based on the project's mechanical design and equipment specifications, calculate the total air volume that is designed to be delivered to all occupied spaces within the project boundary.

Calculating Total Air Volume

Total air volume is calculated by adding up the air volume of all the HVAC air handling units that are delivering air to a space, which typically uses the following measurement units:

- **cmh** (cubic meter per hour)
- **cfm** (cubit feet per minute)

Avoid Double Counting

If there are multiple layers of air handling, including PAUs (Primary Air Handling Units) and AHUs (Air Handling Units), avoid double counting and only count the units that are closest to the air being delivered to the tenant.

For Certification

Teams must submit equipment schedules, mechanical (HVAC) plans, and any other helpful documentation necessary to illustrate the mechanical system and how they arrived at their total air volume calculations.

Project teams are advised to consult with their mechanical engineer to ensure the correct interpretation of mechanical plans and equipment information.

2.4.4.3 Monitoring Station Deployment Requirements

2. Total Air Volume Calculation (2/2)

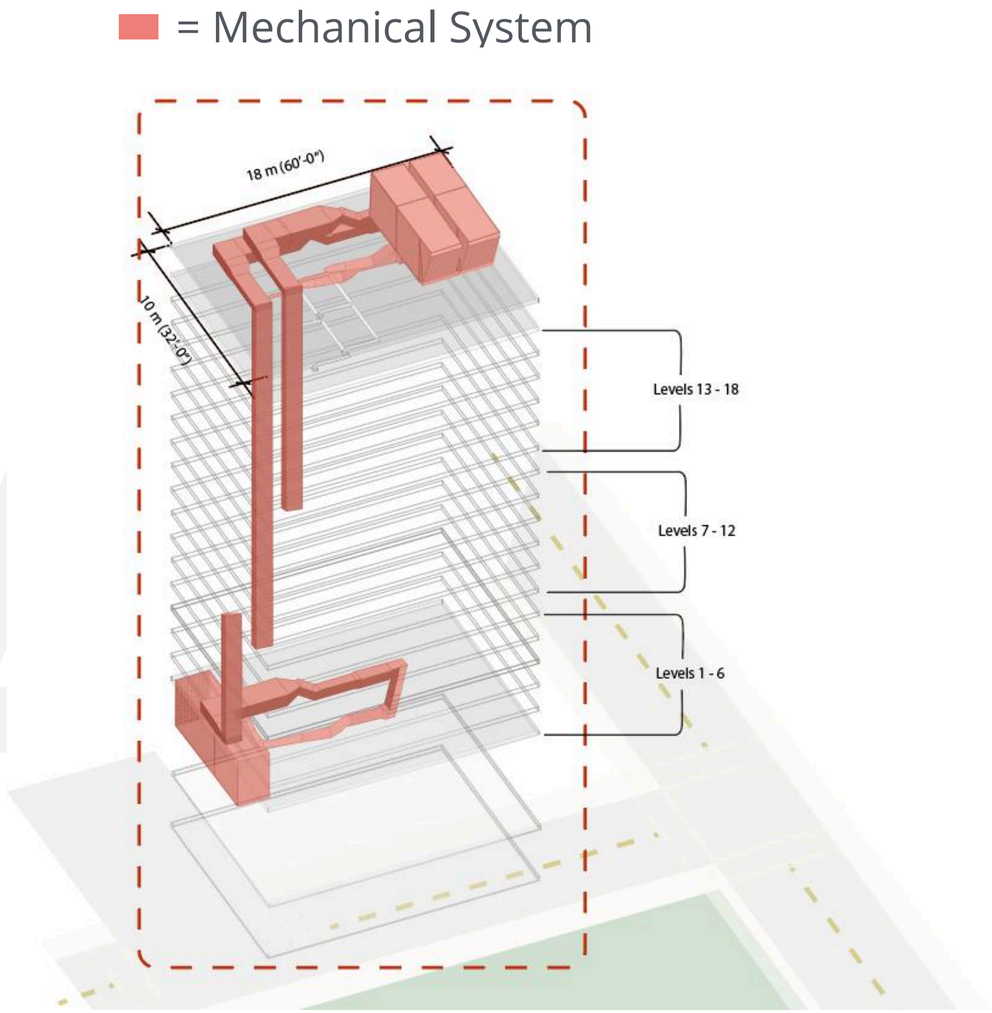
Sample Project

w/
18 Occupied Levels
3 Air intake Locations

Each AHU = 17,000 cmh
(10,000 cfm)

The mechanical (HVAC) system is designed with 3 AHUs delivering air to 18 occupied floors. Each AHU is specified to deliver 17,000 cmh (10,000 cfm) to 6-floor blocks.

Total Air Volume Calculation
3 AHUs x 17,000 cmh (10,000 cfm)
= 51,000 cmh (30,000 cfm)



2.4.4.3 Monitoring Station Deployment Requirements

3. Target Monitoring Volume Calculation

RESET Air for Core & Shell requires a minimum monitoring coverage of 30% of the total air volume, used to determine the number of induct monitors required.

Calculating Target Monitoring Volume

Calculate 30% of the total air volume by multiplying the total air volume from the previous step by 30%, rounding up to the nearest whole percent. 30% is the minimum requirement. Optionally, projects can aim for higher targets, which can be highlighted.

For Certification

The calculated result is used to determine the number of monitors needed to cover the 30% volume of air being delivered to the project's occupied spaces.

Target Monitoring Volume Calculation: 30% of Total Air Volume
Total air volume x 30% = Induct monitoring coverage 51,000 cmh x 30% = 15,300 cmh (30,000 cfm x 30% = 9,000 cfm)

2.4.4.3 Monitoring Station Deployment Requirements

4. Outdoor Monitor Deployment (1/3)

With the calculations out of the way, it's time to start the deployment of air quality monitors, starting with outdoor monitors.

Outdoor Monitor Deployment

There are two possibilities for outdoor monitor deployment: deploy 1 monitor or deploy 2 monitors. In all scenarios, you are deploying only 1 outdoor monitor unless the following are all fulfilled to deploy 2 monitors:

- the project boundary is higher than 11 floors
- there are 2 or more air intakes
- there are 2 or more induct monitors required to cover the minimum target volume requirements

When deploying only one monitor, deploy it where the outdoor air intake has the worst air quality. This is normally on lower floors as opposed to higher floors. When deploying two outdoor monitors, deploy them as far away as possible from each other to get the biggest range of differences.

For Certification

Outdoor monitors do not need to be a **RESET Air Accredited Monitor** (Section 2.6), but must still be connected to a **RESET Accredited Data Provider**.

2.4.4.3 Monitoring Station Deployment Requirements

4. Outdoor Monitor Deployment (2/3)

Deploy outdoor monitors according to project type using the table below:

	Floors	Outdoor air intakes	Outdoor monitors required	Deployment location
a.	≤10	1	1	within range of this outdoor air intake
b.	≤10	>1	1	within range of air intake representative of the poorest outdoor air conditions
c.	≥11	1	1	within range of said outdoor air intake
d.	≥11	>1	2	1 within range of the lowest air intake and 1 within range of the highest air intake
e.	≥11	>1	1	If only 1 induct monitor is necessary, then only 1 paired outdoor monitor is needed

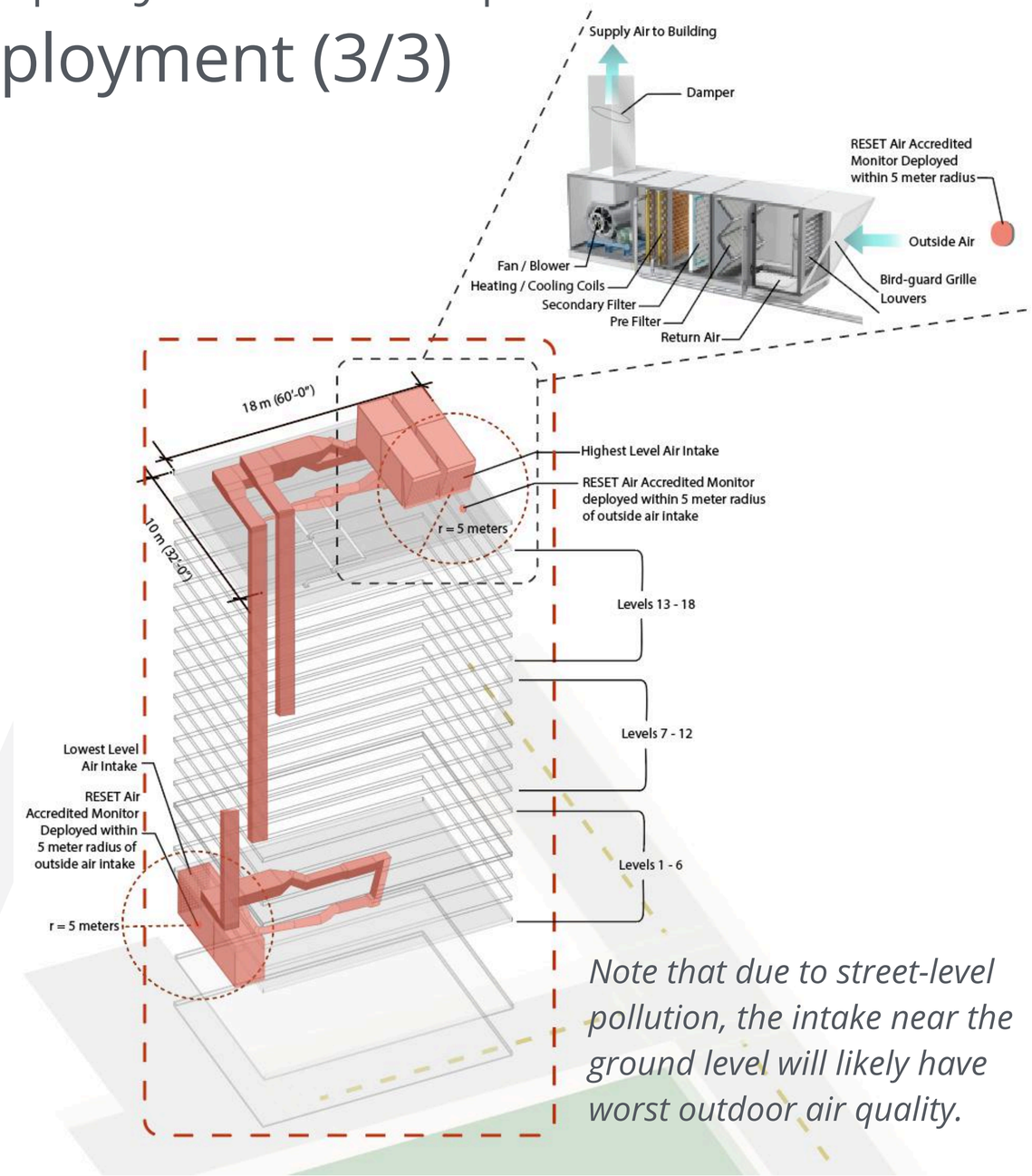
2.4.4.3 Monitoring Station Deployment Requirements

4. Outdoor Monitor Deployment (3/3)

This project has **18 floors** and is designed with an HVAC system that has **3 air intakes**.

Since it has **11 or more floors** with **multiple air intakes**, that means it will need **2 outdoor air monitors**, one at the top, and one at the bottom to give the largest range.

But if only one induct monitor is needed, the project can decrease the number of outdoor monitors to 1.



Note that due to street-level pollution, the intake near the ground level will likely have worst outdoor air quality.

2.4.4.3 Monitoring Station Deployment Requirements

5. Induct Monitor Deployment (1/2)

The last part of deployment is induct monitor deployment. Induct monitor coverage must meet at least 30% of the total air volume measured.

Induct Monitor Deployment

The project team must deploy indoor monitors, co-locating them to outdoor monitor locations. Once all outdoor monitors are paired with an induct monitor, any remaining induct monitors that are needed to reach the minimum 30% coverage must be evenly distributed across the project.

In the scenario that one induct monitor is sufficient to meet the 30% requirement, a project can choose to decrease the number of outdoor monitors to one and pair that one outdoor monitor with the one induct monitor.

For Certification

Induct monitors deployed to each monitoring station must be a **RESET Air Accredited Monitor** (Section 2.6) and must be installed according to **RESET Air for Core & Shell: Induct Monitor Installation Requirements** (Section 2.4.4.2).

The project team must submit documentation to illustrate and explain deployment locations.

Refer to **RESET Air Certification Process for Core & Shell** (Section 2.5) for full documentation requirements.

2.4.4.3 Monitoring Station Deployment Requirements

5. Induct Monitor Deployment (2/2)

In our example, the mechanical system is designed with:

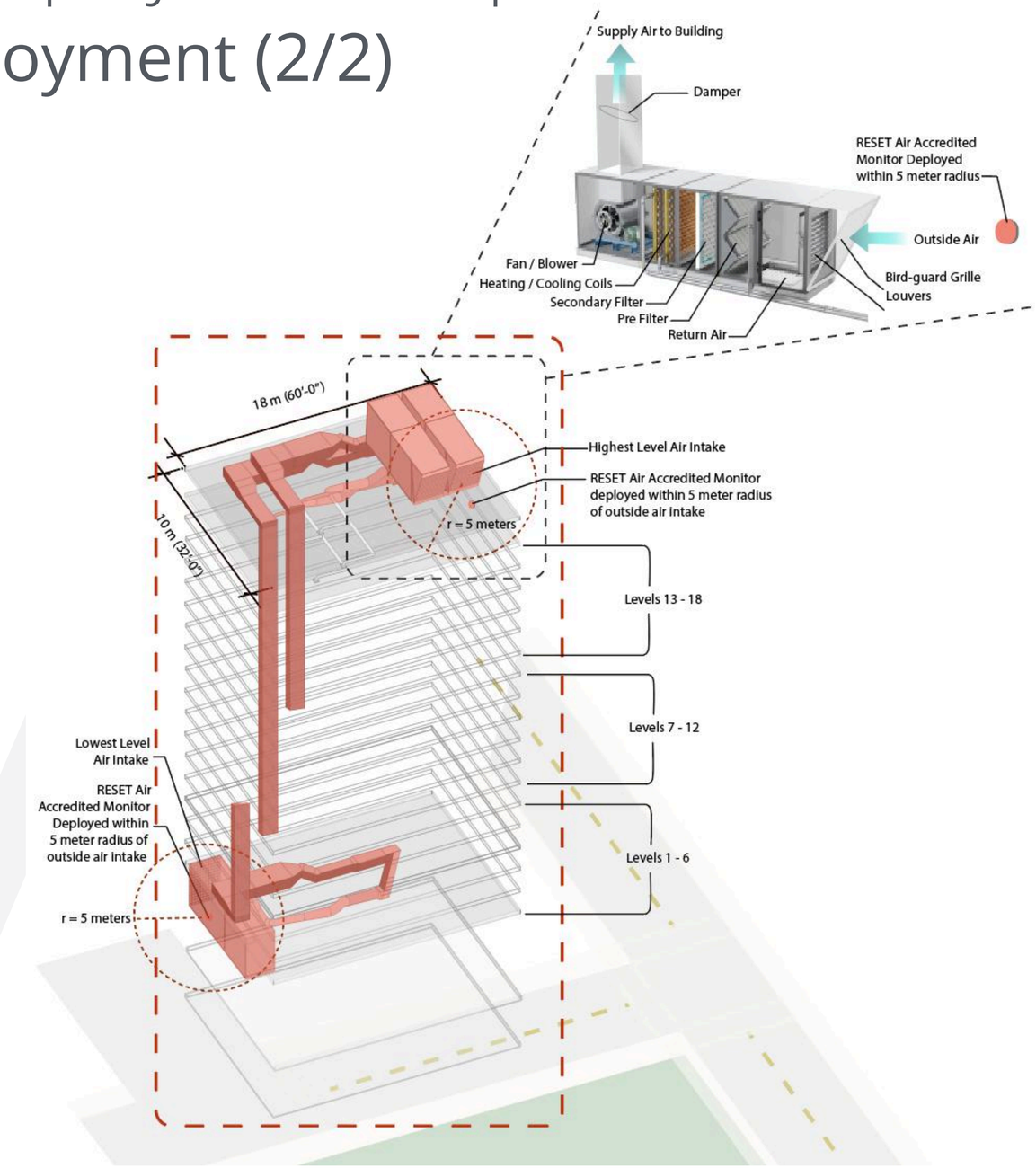
AHUs delivering 17,000 cmh (10,000 cfm) per 6-floor block

15,300 cmh (9,000 cfm) is the total that must be covered

Total indoor monitors required = 1

In our example, one (1) indoor monitor is needed based on the 30% total air volume calculation.

The induct monitor is “paired” with a outdoor monitor to satisfy the intent of accruing air quality information for the purposes of data comparison.



2.4.5 Certification Requirements and Process

Projects pursuing the **RESET Air Standard for Core & Shell** can be certified via a series of audits, including:

1. **Documentation Audit**
   Project teams submit the documentation detailing the project's information and monitor deployment, defining and defending the inclusion or exclusion of monitoring stations.
2. **Site Audit**
   A review of the physical project space to confirm that all monitors are installed according to the Documentation Audit with all monitoring stations active and submitting data to the **RESET Cloud**.
3. **Data Audit**
   The Data Audit consists of a daily review of performance data sent to the **RESET Cloud** for compliance with the Standard and eventual certification. The Data Audit must be maintained for project certification.

By following the requirements in the **RESET Air Standard for Core & Shell** and completing the above audits, a project can achieve the following project statuses, including:

- **RESET Air Pre-Accredited** (after completing the Documentation Audit)
- **RESET Air Accredited** (after completing the Site and Data Audit)
- **RESET Air Certified** (after passing the performance targets for 3 consecutive months)

This document provides information about the targets and requirements for the **RESET Air Standard for Core & Shell**. For the certification process, please refer to the **RESET Air Certification Process for Core & Shell** (Section 2.5) for more information.

2.4.6 Trust & Transparency Score

The Transparency & Trust Score, also known as the TT Score, is a method to incentivize additional trust and transparency above and beyond the basic requirements of accreditation and certification.

The **RESET Air Project TT Score** does not affect the accreditation and is used to incentivize projects to go above and beyond the base requirements. It also plays a big role in **Alternative Pathways**.

The **RESET Air Project TT Score** will be updated once a year. Historical scoring methodologies will always be available for viewing (once 2024 is released, the 2023 score will still be available for viewing).

Details about the **RESET Air Project TT Score** can be found on the **RESET Website:**
https://reset.build/programs/projects/air/tts

The **RESET Air Project TT Score** will be displayed in the **RESET Projects Directory:**
https://reset.build/directory/projects

2.4.7 Alternative Pathways

Alternative Pathways are alternative ways in which a project can achieve accreditation or certification. It is designed to provide more flexibility around implementation.

Depending on the Alternative Pathway, it can limit the project status to Accredited or affect the Trust & Transparency Score.

The following pages will showcase Alternative Pathways that are available to projects and what limitations or affect they might have on the Project Status and Trust & Transparency Score. Each Alternative Pathway will include:

- Alternative Pathway title and what part of the standard the alternative pathway is for
- Default Requirement of the original pathway
- Alternative Pathway requirement
- How to access the alternative pathway (upon request + case-by-case basis)

Applying for New Alternative Pathways

To request an Alternative Pathway, an official way to apply is available with the following requirements:

- All Alternative Pathways must be backed by data
- All Alternative Pathways must provide a Case Study, which will include reasoning as to why it will work, the actual implementation used, the data collected, and a conclusion.
- The Alternative Pathway will be used in at least one pilot project.
- New Alternative Pathways will be reviewed and considered on a case-by-case basis.

2.4.7.1 Alternative Pathways
Definable Performance Targets

Alternative Pathway for 2.4.2.1 Induct Air Quality Performance Targets

By default, the RESET Air Standard for Core & Shell uses the recommended performance targets when establishing the threshold for indoor air quality.

An alternative pathway is available for projects to establish their own targets. The change in targets is often due to the different circumstances or situations in the spaces. This alternative pathway will:

- affect the project's Trust & Transparency Score, positively or negatively depending on the new target.
- Require the alternative Performance Targets to be made public.

This alternative pathway can be accessed upon request and will be reviewed on a case-by-case basis. The alternative pathway can be applied to any of the performance targets, including PM2.5, CO2, and TVOC.

An explanation for why the changes were made with the necessary data to back up the decision will be required. In the scenario that a project is making the Performance Targets stricter, no additional information needs to be provided. If making the Performance Targets looser, then it requires one of the following:

- A data comparison of how the space performs when unoccupied vs. occupied.
- For TVOC, a spot test that lists out what chemicals are in the air during occupancy.

2.4.7.2 Alternative Pathways
Using Non-Accredited Induct Monitors

Alternative Pathway for 2.4.3.2 Monitor Requirements

By default, induct IAQ monitors being used for project certification must be RESET Air Accredited Monitors.

Two alternative pathways are available for using non-accredited induct monitors.

The first alternative pathway is using an induct monitor that has not been accredited. This alternative pathway will:

- limit the project to RESET Air Accredited status (cannot achieve RESET Air Certified status)
- affect the project's Trust & Transparency Score.

The second alternative pathway is using an accredited indoor (as opposed to induct) monitor with an induct casing around it. This alternative pathway will:

- affect the project's Trust & Transparency Score.

Both of these alternative pathways can be accessed upon request and will be reviewed on a case-by-case basis.

Non-accredited monitors must still be able to connect with a RESET Accredited Data Provider for submitting data to the RESET Cloud for the Data Audit.

2.4.7.3 Alternative Pathways

Outdoor Monitor Installation Distance Options

Alternative Pathway for
2.4.4.1 Outdoor Monitor Installation Requirements - b. Installation distance from air intake

By default, outdoor monitors must be located within 5 meters (16 feet) of air intake.

An alternative pathway is available for installation at different distances or within an outdoor air plenum.

This alternative pathway can be accessed upon request and is reviewed on a case-by-case basis. Alternative installation locations can be considered as long as the air being measured is representative of outdoor air quality pre-filtration and pre-mixing.

2.4.7.4 Alternative Pathways

Outdoor Monitor Accreditation Options

Alternative Pathway for
2.4.4.1 Outdoor Monitor Installation Requirements - d. Outdoor Monitor Accreditation

By default, outdoor monitors do not need to be RESET Air Accredited Monitors.

An alternative pathway is available for the monitor to be an indoor or induct monitor instead of an outdoor monitor.

This alternative pathway can be accessed upon request and is reviewed on a case-by-case basis. The main consideration will be whether or not it has enough weather proofing to be used in the environment it has been installed in.

2.4.7.5 Alternative Pathways

Alternative Target Monitoring Volume

Alternative Pathway for
2.4.4.3 Monitoring Station Deployment Requirements - 3. Target Monitoring Volume Calculation

By default, a minimum monitoring coverage of 30% of the total air volume is required.

An alternative pathway is available for lowering or increasing the percentage of monitoring coverage of the total air volume. This alternative pathway will:

- affect the project's Trust & Transparency Score, positively or negatively depending on the new percentage target.

This alternative pathway can be accessed upon request and will be reviewed on a case-by-case basis. If lowering the percentage target, there will need to be sufficient explanation and reasoning for why this alternative pathway is needed for this project. If increasing the percentage target, no additional explanation is needed.

2.4.8 Glossary

The following glossary provides additional context or description related to terms, vocabulary, and air quality parameters.

air handling unit (AHU or AH)

A central unit consisting of fan(s), blower, heating and cooling elements, filter racks or chamber, dampers, humidifier, and other central equipment in direct contact with airflow in order to provide ventilation in a building. This does not include the ductwork that goes through the building.

ASHRAE

American Society of Heating, Refrigerating, and Air-Conditioning Engineers www.ashrae.org

constant air volume (CAV)

A type of heating, ventilating, and air-conditioning (HVAC) system where the supply air flow rate is constant, but the supply air temperature is varied to meet the thermal loads of space.

damper

A plate or gate placed in a duct to control airflow by increasing friction in the duct.

2.4.8 Glossary

duct or ductwork
The housing, conduits, or passages used in heating, ventilation, and air conditioning (HVAC) systems that serve to contain, deliver and remove air, including supply air, return air, and exhaust air.

fresh air intake
An opening through which outside air is drawn into the building, either to replace the air in the building that has been exhausted by the ventilation system or to provide fresh air.

HVAC (heating, ventilation, and air conditioning)
The technology of indoor environmental comfort and air quality.

monitor
A device designed to hold individual sensors within it for the purposes of monitoring. A monitor typically consists of an outer housing in order to protect the sensors employed inside. Monitors may also be designed to include electrical ports, wiring, and/or cabling for connection to electrical sources, including but not limited to, wifi, ethernet, LED screens, visual display screens, and other vendor-specific features. In order to be utilized in a **RESET Air Project**, a monitor must be Grade A or Grade B accredited. (Refer to **RESET Air Accredited Monitor Standard**)

2.4.8 Glossary

occupant
Occupants are any individuals, be they employees, visitors, clients, or other users inhabiting a space within the project boundary for more than one hour per day.

occupied space
An enclosed space intended for human activities, excluding those spaces that are intended primarily for other purposes, such as storage rooms and equipment rooms, and that are occupied only occasionally and for short periods of time (ASHRAE 62.1–2010)

project boundary
The project boundary for the project is used to determine the scope and the price for certification. Included in the boundary are spaces associated with the project that support its typical operations.

For **RESET Air for Core & Shell**, the project boundary includes the associated HVAC system(s). Project boundaries can be drawn if the space is considered separate, distinct, and function independently. For example, in a building with two distinct sections of the building supplied by different air systems, such as an office tower and retail podium, the office tower may be considered independent of the retail podium and vice versa.

2.4.8 Glossary

regularly occupied space
An area where one or more individuals normally spend time (more than one hour per person per day on average) seated or standing as they work, study, or perform other focused activities inside a building. The one-hour timeframe is continuous and should be based on the time a typical occupant uses the space. For spaces that are not used daily, the one-hour timeframe should be based on the time a typical occupant spends in the space when it is in use. (USGBC LEEDv4)

return or return air
The side of the duct system that draws air from within the building to be exhausted, reconditioned, and/or filtered depending on mechanical design.

sensors
Individual technology uniquely developed for the detection of specific air pollutants. A wide variety of sensor technology exists. Some examples include Tapered Element Oscillating Microbalance (TEOM), Beta Attenuation Mass (BAM), Non-dispersive Infrared Gas Detectors (NDIR), Photoionisation Detection (PID), etc.

supply air
The side of the duct system that provides the conditioned or filtered air, depending on mechanical design, back into the building.

2.4.8 Glossary

variable air volume (VAV)
An HVAC system that has a stable supply-air temperature, and varies the air flow rate to meet the temperature requirements. Compared to constant air volume systems, these systems conserve energy through lower fan speeds during times of lower temperature control demand. Most new commercial buildings have VAV systems. VAVs may be bypass-type or pressure dependent. Pressure-dependent type VAVs save energy while both types help in maintaining the temperature of the zone that it feeds.

End of **RESET** Air STANDARD for Core & Shell