# indoor air quality

### Credit 9

### Design Review Submission As Built Submission

|  |  |  |  |
| --- | --- | --- | --- |
| Total Points available: | 4 | Points claimed: | [#] |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Criteria** | **Description** | Points Available | Points Claimed |
| **9.1** | **Ventilation System Attributes** | The project has mitigated the entry of outdoor pollutants, the systems are designed for ease of maintenance and cleaning and the system has been cleaned prior to occupation and use. | 1 |  |
| NA |  |
| **9.2** | **Provision of Outdoor Air** | The nominated area is provided with sufficient outdoor air to ensure levels of indoor pollutants are maintained at acceptable levels. | 2 | [#] |
| NA |  |
| **9.3** | **Exhaust or Elimination of Pollutants** | The project has limited the effects of indoor pollutants by either eliminating or exhausting the pollutants. | 1 |  |
| NA |  |

## Project-specific technical questions (formerly tcs and cirs)

|  |  |
| --- | --- |
| There are no project-specific Technical Questions for this credit. |  |
| There are project-specific Technical Questions for this credit and all responses received from the NZGBC are attached. |  |

## 9. General Information

Provide a description of the project’s ventilation systems.

Please justify when NA is claimed.

## 9.1 ventilation system attributres

|  |  |
| --- | --- |
| 9.1.1 The entry of outdoor pollutants is mitigated in accordance with credit requirements |  |
| 9.1.2 The system is designed for ease of maintenance and cleaning in accordance with credit requirements; |  |
| 9.1.3 The system has been cleaned prior to occupation and use in accordance with credit requirements. |  |

9.1.1 Provide a description of how air intakes are located away from specific potential outdoor contaminants and are designed to minimise the entry of pollutants to occupied spaces in accordance with a recognised standard.

9.1.2 Provide a description of how the system was designed for ease of maintenance and cleaning.

9.1.3 Provide confirmation that all new and existing ductwork were cleaned prior to use and occupation.

Provide confirmation if the space is naturally ventilated.

Identify where this information can be found within the supporting documentation provided.

|  |  |
| --- | --- |
| **Supporting Documentation** (Name / title / description of document) | **Reference** (Page no. or section) |
| [####] | [####] |
| [####] | [####] |

## 9.2 provision of outdoor air

Please select the recognised standard that has been used by the project team:

|  |  |
| --- | --- |
| AS 1668.2:2012 The use of ventilation and air-conditioning in buildings –  Part 2: Mechanical ventilation in buildings |  |
| AS 1668.4:2012 The use of ventilation and air-conditioning in buildings –  Part 4: Natural ventilation of buildings |  |
| NZS 4303:1990 Ventilation for Acceptable Indoor Air Quality |  |
| ASHRAE 62.1:2003 Ventilation for Acceptable Indoor Air Quality |  |

Select the compliance pathway that has been demonstrated.

|  |  |
| --- | --- |
| **9.2A Comparison to Recognised Standard** Outdoor air is provided to the nominated area at a rate 50% greater than the minimum required by the recognised standard selected above. |  |
| Outdoor air is provided to the nominated area at a rate 100% greater than the minimum required by the recognised standard selected above. |  |
| **9.2B Performance Based Approach** Outdoor air is provided to the nominated area at a rate so that CO2 concentrations are maintained below 800ppm controlled by CO2 sensors. |  |
| Outdoor air is provided to the nominated area at a rate so that CO2 concentrations are maintained below 700ppm controlled by CO2 sensors. |  |
| CO2 sensors are located with (and as regularly as) temperature sensors and monitor an area no greater than 500m2. |  |
| Alternative thresholds from ASHRAE 62.1:2013 are used. Please provide a justification below: |  |
|  | |
| **9.2C Natural Ventilation** The project is naturally ventilated, and the nominated area meets the requirements of the recognised standard selected above. |  |
| Please justify how the nominated area will perform as a naturally ventilated space under all likely weather conditions. | |
|  | |

Provide a description of the system in place, occupancy rates, and how each space is provided with sufficient outdoor air.

Provide a description of any modelling (if relevant) to ensure the CO2 level threshold is maintained.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Summary of Mechanically Ventilated Spaces | | | | | | | | |
| **Air Handling Unit** | **Space/ Floor** | **Area (m2)** | **AS1668.2/NZS 4303 Requirements** | | | **Project Rates** | **% Improve-ment** | **Points claimed**  **[1, 2]** |
| Net Floor Area per person | Quantity (L/S/ Person) | Min OA per Space (L/s) | Min OA per Space (L/s) |
| [e.g. AHU – North] | **[e.g. 1st Floor]** | [100m2] | [10m2] | [e.g. 7.5l/s/ person] | [e.g. 75L/s] | [e.g. 115 L/s] | [e.g. 53%] | [e.g. 1 point] |
| [e.g. AHU – North] | **[e.g. Laboratory]** |  |  |  |  |  |  |  |
| [e.g. AHU – North] | **[e.g. 2nd Floor]** |  |  |  |  |  |  |  |

Please note: project teams may add more rows as required or use an attachment to display this information.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Summary of Naturally Ventilated Spaces | | | | |
| **Space/Floor** | **Nominated Area (m2)** | **Required Opening Size** | **Opening Provided** | **Compliant? (Y/N)** |
| **m2 open area** | **m2 open area** |  |
| [e.g. 1st Floor] | [m2] | [m2] | [m2] | [Y/N] |
| [e.g. Laboratory] |  |  |  |  |
| [e.g. 2nd Floor] |  |  |  |  |
| Please note: project teams may add more rows as required or use an attachment to display this information. | | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| Summary of Mixed Mode Spaces | | | |
| **Space/Floor** | **Nominated Area (m2)** | **Compliant with Mechanical Ventilation Requirements (Y/N)** | **Compliant with Natural Ventilation Requirements (Y/N)** |
| [e.g. 1st Floor] | [Mechanical Natural] | [Y/N] | [Y/N] |
| [e.g. Laboratory] |  |  |  |
| [e.g. 2nd Floor] |  |  |  |

|  |  |
| --- | --- |
| **Total Nominated Area** |  |
| **Total Compliance Area** |  |
| **% Area Compliant** |  |
| **Points Claimed** |  |

Identify where this information can be found within the supporting documentation provided.

|  |  |
| --- | --- |
| **Supporting Documentation** (Name / title / description of document) | **Reference** (Page no. or section) |
| [####] | [####] |
| [####] | [####] |

## 9.3 Exhaust or elimination of Pollutants

|  |  |
| --- | --- |
| The project has limited pollutants from the nominated area by either removing the source of pollutants or exhausting the pollutants to the outside as detailed below. |  |
| **9.3A Removing the source of Pollutants**  Sources of pollutants, such as printing or photocopy equipment, kitchen stoves or vehicles are compliant with minimum emissions standards or are not present within the nominated area in the project |  |
| **9.3B Exhausting the Pollutants Directly to the Outside**  Sources of pollutants are exhausted directly to the outside of the project in accordance with a recognised Standard; and/or physically separated from occupants. |  |

Provide a description of the pollutant sources included in the project

Provide a description of how indoor pollutants are either exhausted, eliminated or physically separated from building occupants.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Summary of Pollutant Exhaust | | | | | | |
| **Floor** | **Area (m2)** | **Required Exhaust rate (L/s/m2)** | **Required Air Flow Rate (L/s)** | **Air Flow Rate Provided (L/s)** | **Floor take off size capacity (L/s)** | **Floor take off size capacity as air floor rate (L/s/m2)** |
| **[Level 1]** |  |  |  |  |  |  |
| **[Level 2]** |  |  |  |  |  |  |
| **[Level 3]** |  |  |  |  |  |  |
| **[Level 4]** |  |  |  |  |  |  |

Identify where this information can be found within the supporting documentation provided.

|  |  |
| --- | --- |
| **Supporting Documentation** (Name / title / description of document) | **Reference** (Page no. or section) |
| [####] | [####] |
| [####] | [####] |

## DISCUSSION

Outline any issues you would like to highlight and clarify with the Certified Assessor(s).

## DECLARATION

I confirm that the information provided in this document is truthful and accurate at the time of completion.

Provide author details, including name, position and email address:

[Date]

––– **Report end** –––