# ODOUR EXTRACTION SUMMARY REPORT
# MCFC NORTH STAND EXPANSION
# MANCHESTER
# JOHN SISK & SON LTD
# OESR-30131-26-192
# MAY 2026



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## Current Document Details

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[redacted] …

**Issued by**

[redacted] …

**Document Revisions**

| Rev | Date | Author | Approved | Issued | Remarks |
|---|---|---|---|---|---|
| 0 | 13/05/26 | KRJ | KRJ | KRJ | Final |
| 1 | 26/05/26 | KRJ | KRJ | KRJ | Clarification added to paragraph 3.3 |

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## SECTION 1 INTRODUCTION

1.1 Merebrook Consulting Limited has been commissioned by John Sisk & Son Ltd ('Sisk') to produce an Odour Extraction Summary Report in support the discharge of Condition 38 attached to planning permission granted by Manchester City Council (MCC) in October 2023 (ref: 136763/FO/2023).

1.2 The planning permission includes alterations to the Etihad Stadium North Stand and the erection of a 8 storey, 401 bed hotel. 7 No. commercial kitchens are proposed as part of the development comprising 6 No. in the North Stand and 1 No, associated with the Hotel immediately to the north. The ground floor North Stand (west and east) kitchens and the Hotel (Level 01) kitchen are the largest with the remainder comprising smaller kitchens/concessions. The site plan enclosed in Appendix 1 indicates the North Stand and Hotel in the context of the overall site. Floor plans showing the locations of the individual kitchens are also enclosed in Appendix 1.

1.3 Planning condition 38 states:

*'Prior to the first use of each section of the development hereby approved as shown on Plan Ref: ZZ-ZZ-DR-J-000083 RevP01, received by the City Council, as Local Planning Authority, on the 15 July 2025 the development, details of a scheme to extract fumes, vapours and odours from the premises shall be submitted for approval in writing by the City Council, as Local Planning Authority. The approved scheme shall then be implemented prior to the first use of that section and thereafter retained and maintained in situ'*.

1.4 The objectives of this report are to:

*i.* Set out the legislative context, regulatory requirements and industry standard guidance relating to odour from commercial kitchens;

*ii.* Present an assessment of the risk of odour impacts from the proposed commercial kitchens;

*iii.* Provide an overview of the proposed extraction systems;

*iv.* Outline mitigation measures proposed to abate odour emissions commensurate with the assessed level of risk; and,

*v.* Set out maintenance requirements;

1.5 This report has been prepared for Sisk for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult the Sisk and Merebrook as to the extent to which the findings may be appropriate for their use.

## SECTION 2 STATUTORY REQUIREMENT & GUIDANCE

### 2.1 ENVIRONMENTAL PROTECTION ACT 1990

2.1.1 The Environmental Protection Act 1990 sets out provisions for the regulation of statutory nuisance caused by odours. Section 79 (1)(d) sets out this statutory nuisance as, '*any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance'*.

2.1.2 Section 80 requires that, where a complaint of a statutory nuisance is made to it by a person living within its area, a Local Authority must take steps to investigate the complaint and decide whether the odour is prejudicial to health or a nuisance. Odours for consideration include those which cause changes in behaviours, such as avoiding use of the garden, closing windows, making complaints and keeping odour diaries.

### 2.2 MANCHESTER CORE STRATEGY (2012)

2.2.1 The following policies relate either directly or indirectly to the issue of odour from new developments:

Spatial Principles Policy SP1

'*Development in all parts of the City should:*

*Make a positive contribution to neighbourhoods of choice including:*

- *Creating well designed places to enhance or create character.*
- *Making a positive contribution to the health, safety and wellbeing of residents.*
- *Considering the needs of all members of the community regardless of age, gender, disability, sexuality, religion, culture, ethnicity or income.*
- *Protect and enhance the built and natural environment*

*Minimise emissions, ensure efficient use of natural resources and reuse previously developed land wherever possible'.*

Development Management Policy DM1

*'All development should have regard to the following specific issues for which more detailed guidance may be within a supplementary planning document:*

*Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise'.*

### 2.3 EMAQ+, GUIDANCE

2.3.1 This report considers the EMAQ+ (2nd Edition) guidance[1], prepared by Ricardo Energy & Environment, which updates earlier DEFRA (2005) guidance on the control of odour and noise from commercial kitchen exhaust systems.

2.3.2 The document recognises that commercial cooking emissions—including grease, smoke, vapours, and odorous compounds—can significantly affect local amenity, particularly in mixed-use and residential environments.

2.3.3 This guidance provides a risk-based methodology for assessing and controlling odour emissions from commercial kitchen extract systems. It is widely adopted by local authorities, environmental health officers, and planning bodies as the primary reference for determining acceptable odour impact and appropriate mitigation measures.

2.3.4 A key principle of the guidance is that odour control requirements should be proportionate to the level of risk.

2.3.5 The level of risk is determined based on:

*i.* Type and intensity of cooking (e.g. frying, chargrilling)

*ii.* Duration and hours of operation

*iii.* Location and proximity to sensitive receptors (e.g. residential properties)

*iv.* Discharge characteristics (height, position, dispersion)

2.3.6 Based on these factors, a kitchen extract system is assigned a risk category (low, medium, high, or very high), which dictates the expected level of odour control.

## SECTION 3 RISK ASSESSMENT

3.1 The EMAQ+ guidance adopts a risk-based assessment methodology in which key factors, including cooking type, size of kitchen, proximity to receptors and discharge characteristics, are assigned relative scores. These factors are combined to determine an overall odour risk classification (low to very high). The resulting risk category informs the level of odour abatement required, ensuring that control measures are proportionate to the potential impact on surrounding receptors.

3.2 The overall risk of impacts is determined, based on the resulting score in accordance with the table below.

[1] Dr Nigel Gibson (2022). EMAQ Control of Odour and Noise from Commercial Kitchen Exhaust Systems. Ricardo EMAQ+, Didcot.

Table 1: Odour control requirements based on EMAQ+ risk assessment

| Impact Risk | Odour Control Requirement | Significance Score |
|---|---|---|
| Low to Medium | Low level | <20 |
| High | High level | 20 -35 |
| Very High | Very high level | >35 |

3.3 Only the North Stand (Section 1) and Hotel (Section 2) contain kitchens. The Commercial Building (Section 3), City Square (Section 4) and External Works (Section 5) do not contain any kitchen elements. Risk assessments for each of the kitchens have been undertaken by Sisk in accordance with the guidance.

3.4 In undertaking the risk assessment, Sisk has made the following assumptions:

*i.* 30 – 100 covers per day for the North Stand City Kitchens (at L1 and L2) and greater than 100 covers per day for the support kitchens (L0) and hotel kitchen.

*ii.* All kitchens contain fryers therefore the odour and grease loading has been assumed to be 'very high' for all kitchens

*iii.* The nearest off-site residential receptors are located circa 250 m to the east, however, Sisk has included adjacent hotel residents as relevant receptors for the purpose of the risk assessments. For the hotel kitchen, the proximity of receptors is 'close' (within 20 m of the discharge) and for all other kitchens the proximity is assessed as 'medium' (within 20-100 m of discharge).

*iv.* The hotel kitchen discharges via façade louvres at Level 01 as indicated on Figure 2. The North Stand kitchens also discharge via façade louvres at Level 03 and dispersion from this location is expected to be impacted by the overhanging Sky Bar above as indicated on Figure 1.

3.5 Risk assessments for the individual kitchens are presented in Appendix 2 with a summary provided below.

Table 2: Summary of odour risk assessment

| Kitchen | Dispersion | Proximity of receptors | Size of kitchen | Cooking type | Total score | Odour control required |
|---|---|---|---|---|---|---|
| Support Kitchen-L0-West | 20 | 5 | 5 | 10 | 40 | Very High level |
| Support Kitchen-L0-East | 20 | 5 | 5 | 10 | 40 | Very High level |
| City Kitchen -L01-West | 20 | 5 | 3 | 10 | 38 | Very High level |
| City Kitchen -L01-East | 20 | 5 | 3 | 10 | 38 | Very High level |
| City Kitchen -L02-West | 20 | 5 | 3 | 10 | 38 | Very High level |
| City Kitchen -L02-East | 20 | 5 | 3 | 10 | 38 | Very High level |
| Hotel-Level 01 Kitchen | 15 | 10 | 5 | 10 | 40 | Very High level |

3.6 Risk assessments for all kitchens indicate that a 'very high' level of odour control is required.

3.7 The corresponding odour controls for different levels of risk are outlined below.

**Odour arrestment plant performance**

Low to medium level control may include:

1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.1 second residence time).
2. Fine filtration followed by counteractant/neutralising system to achieve the same level of control as 1.

High level odour control may include:

1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.2 - 0.4 second residence time).
2. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1.

Very high level of odour control may include:

1. Fine filtration or ESP followed by carbon filtration (carbon filters rated with a 0.4 – 0.8 second residence time).
2. Fine filtration or ESP followed by carbon filtration and by counteractant/neutralising system to achieve the same level of control as 1.
3. Fine filtration or ESP followed by UV ozone system to achieve the same level of control as 1.

*In some instances where very high levels of control are required combinations or sacrificial levels of filtration may be employed.*

Maintenance must be carried out to ensure these performance levels are always achieved.

Source: EMAQ+ Guidance (2022)

## SECTION 4 PROPOSED KITCHEN EXTRACTION AND ODOUR CONTROL SYSTEM

### 4.1 OVERVIEW

4.1.1 The key elements of the grease and odour control system are as follows:

*i.* Panel, bag and HEPA filters to remove smoke and airborne particles from the air stream;

*ii.* Electrostatic Precipitators (ESP)

*iii.* UVO filters installed in kitchen ductwork; and,

*iv.* Carbon filters to remove excess Ozone from UVO filters.

4.1.2 The Contractor shall design and install a kitchen extract system compliant with HVCA Kitchen Ventilation System Specification DW172:2018 (extract) and DW144 (supply). The Contractor installed kitchen extract ductwork shall be provided with good access for cleaning at a maximum spacing of 2 metres between access points and at every change of direction.

4.1.3 The Stainless Steel canopy shall be fitted with KSA grease separators and Secondary Coalesce Filters. Full pollution control Air Handling Unit (AHU) ecology units combining panel, bag, HEPA and carbon filters will also form part of the odour abatement system for the support and hotel kitchens.

4.1.4 The full service and maintenance regime should be installed along with an approved service company and an appointed specialist periodic duct cleaning specialist. All systems must have a central remote monitoring access solution with primary and secondary alarm modes. On activation of second alarm, the full system must be interlocked to shut down.

4.1.5 Canopy grease separators shall comply with testing criteria, as required within *HVCA Specification for Kitchen Ventilation Systems DW172:2018* and be of non-combustible construction.

4.1.6 Canopy manufactured throughout using 1.2 mm thick grade 304 satin-finish stainless steel formed, folded and welded construction with all joints and seams being liquid tight.

4.1.7 A full-length, fully insulated make-up-air plenum shall be incorporated to the front face of the canopy fitted with removable stainless steel perforated plate diffuser complete with primary equalising plates. Make-up-air plenum supplied as standard with balancing damper.

4.1.8 A full-length extract plenum shall be liquid tight with sloping grease filter collection channel and removable grease collection drawer. Extract plenum spigots supplied as standard with balancing damper.

4.1.9 Grease filters shall be 500mm x 330mm x 51mm heavy-duty stainless steel, multi-cyclone type.

4.1.10 Canopy sections supplied as standard with hinged roof panels complete with LED vapour proof IP65 rated lights effecting 500 lux at the working surface.

4.1.11 Testing and balancing (TAB) ports supplied as standard allowing easy access for accurate measurement and simple balancing/commissioning.

4.1.12 Flakt Woods AHU to be installed comprising a three-stage filtration system to reduce airborne particulate (smoke) to minimum 0.3 micron size. The filters should be designed to assist in removing cooking odours, smoke and grease from the discharge air and be supplied, installed by the contractor. The AHU filtration system shall include a primary panel and bag filter section, HEPA filtration to 0.3 microns, and active NFX carbon filter to adsorb any residual ozone. The system shall be designed to ensure the discharge level of ozone does not exceed levels as recommended by the World Health Organisation (WHO).

4.1.13 AHUs will be constructed in accordance with BS EN 1886:2007 and BS EN 13053:2019. AHU Pollution Control Units will be constructed to Eurovent standards. All disposable filters incorporated within the units are to comply with BS ISO 16890-1.

4.1.14 The filtration system will report filter life status via SMS and / or cloud-based software connection and shuts down the extract fan if the filter overload warning is exceeded or if build-up of grease deposits in the extract ductwork exceeds 200 microns.

4.1.15 The control system incorporates:

*i.* Full cloud-based Interface control panel

*ii.* UV control sensors

*iii.* UV healthy / maintenance required interlock

*iv.* Extract fan interlock on / off switch interface

*v.* Fire alarm and interlock

*vi.* Landlords Controls / BMS interlocks

*vii.* Make up air interlock

4.1.16 The system has been configured so that, should the extract fan or a UV tube fail, the electric cooking shall be disabled. The control system is interfaced with the fire alarm and is capable of remote alarm and monitoring.

4.1.17 The UV unit lamps shall be monitored for failure so that if the operating efficiency of the UV tubes drops by 10%, the electric supply to the kitchen equipment will shut down and remain isolated until the system is returned to 100% efficiency. A notice period of not more than 24 hours (cooking time) shall be permitted between UV failure and supply shut down for repairs. A minimum 30% redundancy in the number of tubes is recommended.

4.1.18 A differential pressure switch or similar approved, across the extract fan shall be interlocked with the cooking electrical supply so that the supply remains off when the extract fan is not operating.

4.1.19 The interface panel and the motor control panel must be interlocked with the fire alarm such that in the event of a fire alarm signal all plant is shut down.

4.1.20 A differential pressure switch shall be installed across the Pollustop Ecology unit which shall be interlocked with the kitchen's main electrical supply so that the electric supply remains off when the Ecology unit is not operating.

## 4.2 KITCHEN CANOPIES

4.2.1 Canopy drawings for both the North Stand and Hotel kitchens are enclosed in Appendix 3.

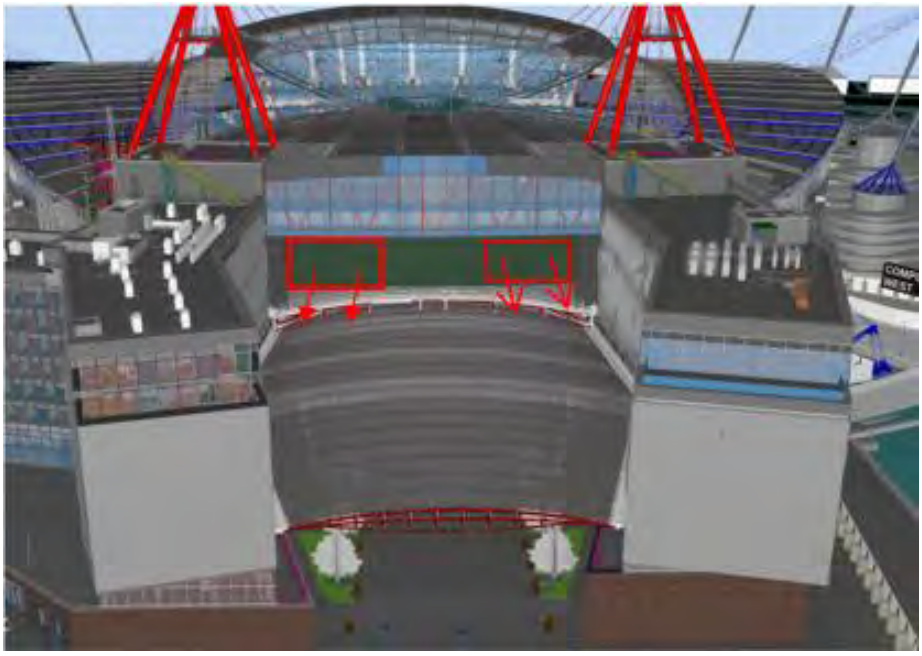
## 4.3 EXTRACTION DUCTWORK & ECOLOGY UNITS

4.3.1 Ecology units serving the two support kitchens and hotel kitchen will perform final filtration prior to discharge of extracted air. Equipment schedules for the ecology units) are enclosed in Appendix 4.

4.3.2 North Stand Kitchens

4.3.2.1 The ecology units serving the two support kitchens are installed at Level 03 Mezz and discharge to atmosphere at this point as indicated on the figure below.

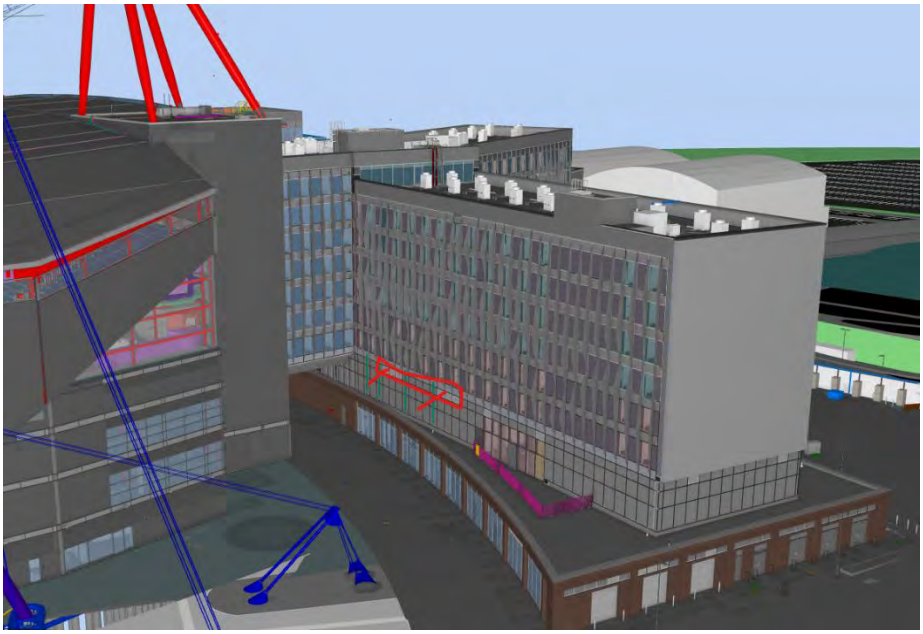
Figure 1: Discharge location for North Stand Kitchens



4.3.3 Hotel Kitchen

4.3.3.1 The ecology unit is installed in the ceiling void of the kitchen and discharges straight to the façade as indicated on the figure below.

Figure 2: Discharge location for Hotel Kitchen



## SECTION 5 ODOUR ABATEMENT MEASURES

### 5.1 INTRODUCTION

5.1.1 All kitchens have been assessed as requiring a very high level of odour control which, in accordance with the EMAQ+ guidance, may comprise fine filtration or electrostatic precipitation (ESP) followed by either carbon filtration (0.4 – 0.8 second residence time) or an ultraviolet ozone (UVO) system which achieves the same level of odour control.

5.1.2 Following initial filtration as described in Section 4, the system relies upon duct-mounted, Purified Air UV-O-500 and 1000 modules which perform ultraviolet and ozone-based oxidation of grease and odorous compounds. This forms part of the overall odour abatement strategy, alongside particulate filtration and carbon polishing.

5.1.3 The UV-O range uses UV-C technology to produce ozone and hydroxyl free radicals to oxidise cooking odours through a process of ozonolysis. The units are located outside of the kitchen extract duct and are connected via a spigot and small diameter ducting.

5.1.4 Although it is widely accepted that the best way to apply UV-C light is directly in-line with the air stream itself, performance is impacted as the lamps become soiled.

5.1.5 In the case of the UV-O-500 units, the air flow does not come from the exhaust duct but from the ambient air around the unit, which is filtered on entry. This means that it is able to provide a uniform supply of ozone and hydroxyl free radicals into the extract system with an extremely low pressure-loss.

5.1.6 For optimum performance a dwell time of between 2 & 6 seconds is recommended to allow the ozone to work effectively upon the odorous air within the duct.

5.1.7 The final stage of the odour abatement process is performed by the ecology units which are part of the AHUs. The units contain panel and bag, HEPA and carbon filters to remove any residual odours and ozone.

## SECTION 6 MAINTENANCE

6.1 Maintenance requirements are subject to the intensity of use and type of cooking and therefore frequency of cleaning and filter replacement shall be adjusted to suit and be remotely monitored throughout the life of the system. The Operator shall ensure the following minimum levels of maintenance are adhered to:

*i.* Canopy Grease / separators filters – Daily check / clean;

*ii.* UV lamps - quarterly clean, replace lamps after 13,000 hours of operation;

*iii.* Pre- filter (Bag) - quarterly clean or when remote monitoring indicates dirty filter;

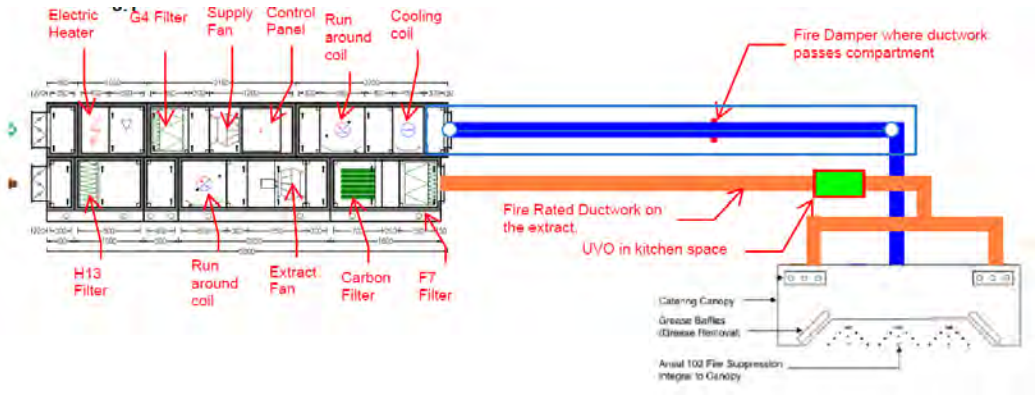
*iv.* HEPA filter – Change quarterly or when indicated as dirty via the monitoring system; and,

*v.* Carbon Filter – Change annually or when indicated as dirty via the monitoring system

6.2 Ductwork is to be under a constant monitoring system and an additional visual inspection quarterly. Cleaning frequencies shall be determined as a result of both the monitoring and inspection. Note, where high levels of grease and smoke are produced from the cooking process, inspection and cleaning levels shall be increased accordingly to mitigate any risks of fires in the ductwork system both upstream and downstream of the filtration equipment.

6.3 The operator shall generate reports on a quarterly basis detailing checks undertaken, defects noted and works carried out. The report should note the differential pressures across the filtration systems and compare against the manufacturer's recommended operating and maximum levels. Maintenance checks and cleaning / replacement of filters shall be increased as necessary to ensure the system works effectively.

Figure 3: Example diagram of controls interlocks (North Stand Support Kitchens)




## SECTION 7 CONCLUSIONS

7.1 This Odour Extraction Summary Report has been prepared in support of the discharge of condition 38 attached to planning permission ref: 136763/FO/2023 Relating to proposed alterations to the Etihad Stadium North Stand and the erection a new hotel.

7.2 Seven commercial kitchens are proposed as part of the development comprising six in the North Stand and one associated with the Hotel immediately to the north.

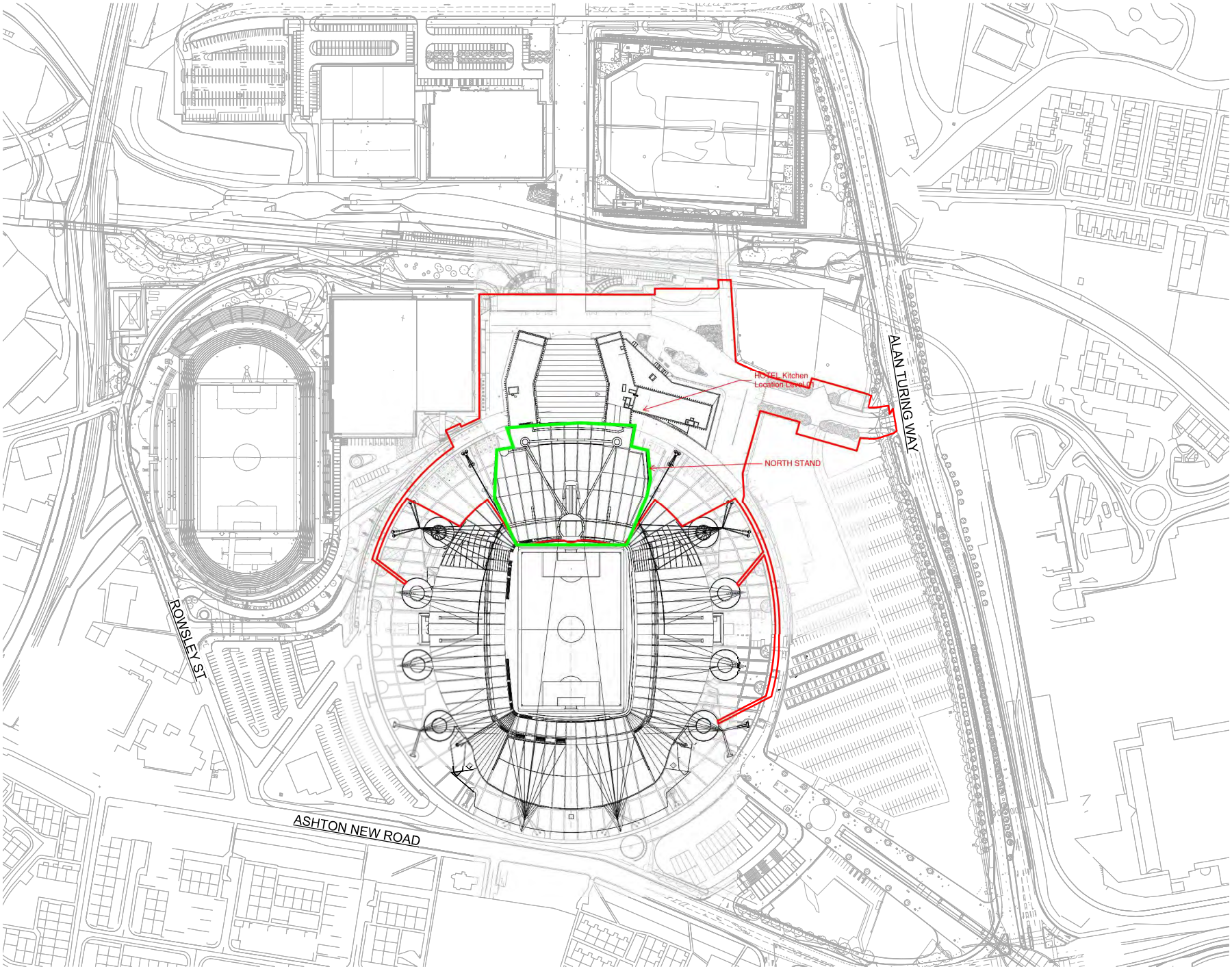
7.3 Risk assessments to determine the required level of odour abatement have been undertaken in accordance with industry standard guidance. The risk assessments for all kitchens concluded that a very high level of odour abatement is required.

7.4 The proposed extraction system relies on initial filtration (to remove grease, smoke and a proportion of odorous compounds) followed by UVO treatment and, finally, filtration through an ecology unit to remove residual odours and ozone from the extracted air prior to discharge.

7.5 The proposed extraction system is considered to provide a very high level of odour abatement in accordance with the relevant requirements. As such, Condition 38 is deemed to have been met and can be discharged.

**APPENDIX 1**

- Drawings




REVISIONS

| REV | DATE | DESCRIPTION |
|---|---|---|
| P00 | 28.02.23 | ISSUED FOR STAGE 3 |
| P01 | 17.04.23 | ISSUED FOR PLANNING |
| C01 | 01.12.23 | ISSUED FOR CONSTRUCTION |

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PROJECT NAME

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PROPOSED SITE PLAN

| STATUS | RIBA STAGE | PROJECT NO. |
|---|---|---|
| A5 | 5 | 4348 |

| DATE | SCALE | SIZE |
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| DRAWN | CHECKED | APPROVED |
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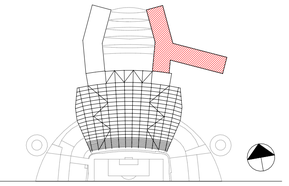
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REVISIONS

| REV | DATE | DESCRIPTION |
|---|---|---|
| C01 | 29.02.24 | ISSUED FOR CONSTRUCTION |
| C02 | 18.06.24 | ISSUE FOR CONSTRUCTION. MER UPDATED |
| C03 | 26.06.24 | HOTEL GA UPDATE |
| C04 | 21.08.24 | ISSUED FOR CONSTRUCTION - UPDATED TO EAI 22 |
| C05 | 23.09.24 | ISSUED FOR CONSTRUCTION - UPDATED TO EAI 31 |

KEY PLAN



Previous WATG drawing: **NSE-WATG-HT-01-DP-A-010101**

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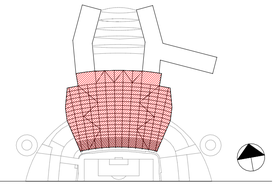
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Status A: Approved

REVISIONS

| REV | DATE | DESCRIPTION |
|---|---|---|
| P00 | 20.01.23 | ISSUED FOR STAGE 3 DESIGN FREEZE |
| P01 | 28.02.23 | ISSUED FOR STAGE 3 |
| P02 | 06.04.23 | STAGE 3 UPDATE |
| P03 | 24.04.23 | GA PLAN UPDATE |
| P04 | 15.05.23 | ISSUED FOR BUILDING REGULATIONS APPLICATION |
| P05 | 19.07.23 | GA PLANS - FOR INFORMATION |
| C01 | 01.12.23 | ISSUED FOR CONSTRUCTION |
| C02 | 05.12.23 | ISSUED FOR CONSTRUCTION |
| C03 | 05.03.24 | CONSTRUCTION UPDATE |
| C04 | 14.06.24 | UPDATED FOR CI 167,168 |
| C05 | 14.08.24 | STAGE 5 - EAI 25 - WHITE BOX |
| C06 | 23.08.24 | ISSUED FOR CONSTRUCTION - SKYBAR LOBBY CONFIRMED |
| C07 | 13.12.24 | ISSUED FOR CONSTRUCTION |
| C08 | 12.02.25 | ISSUED FOR CONSTRUCTION |

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| A5 | 5 | 4348 |

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|---|---|---|
| 20/01/23 | 1 : 200 | A1 |

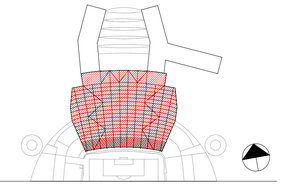
| DRAWN | CHECKED | APPROVED |
|---|---|---|
| DT | PH | MT |

| PROJECT | ORIGIN. | ZONE | LEVEL | TYPE | ROLE | DRAWING | REV |
|---|---|---|---|---|---|---|---|
| NSE | POP | NS | 00 | DR | A | 000100 | C08 |

Status B; Approved with comments

| REVISIONS | | |
|---|---|---|
| **REV** | **DATE** | **DESCRIPTION** |
| P00 | 20.01.23 | ISSUED FOR STAGE 3 DESIGN FREEZE |
| P01 | 28.02.23 | ISSUED FOR STAGE 3 |
| P02 | 06.04.23 | STAGE 3 UPDATE |
| P03 | 24.04.23 | GA PLAN UPDATE |
| P04 | 15.05.23 | ISSUED FOR BUILDING REGULATIONS APPLICATION |
| P05 | 19.07.23 | GA PLANS - FOR INFORMATION |
| C01 | 01.12.23 | ISSUED FOR CONSTRUCTION |
| C02 | 14.08.24 | STAGE 5 - EAI 25 - WHITE BOX |
| C03 | 12.02.25 | ISSUED FOR CONSTRUCTION |
| C04 | 31.07.25 | ISSUED FOR CONSTRUCTION |
| C05 | 15.08.25 | ISSUED FOR CONSTRUCTION |

KEY PLAN



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ARCHITECT

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**TELEPHONE +44 (0)20 8874 7666 FACSIMILE +44 (0)20 8874 7470**

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PROJECT NAME

# MCFC NORTH EXPANSION

DRAWING TITLE

## L01 - CLUB LEVEL
## GENERAL ARRANGEMENT PLAN

| STATUS | RIBA STAGE | PROJECT NO. |
|---|---|---|
| A5 | 5 | 4348 |

| DATE | SCALE | SIZE |
|---|---|---|
| 16/09/22 | 1 : 200 | A1 |

| DRAWN | CHECKED | APPROVED |
|---|---|---|
| DT | CM | MT |

| PROJECT | ORIGIN. | ZONE | LEVEL | TYPE | ROLE | DRAWING | REV |
|---|---|---|---|---|---|---|---|
| NSE | POP | NS | 01 | DR | A | 000101 | C05 |

Status B; Approved with comments

ETFE AIR HANDLING
3 m²

ETFE AIR HANDLING
3 m²

GOODS LIFT GL01
9 m²

GOODS LIFT GL02
9 m²

FIREFIGHTING LOBBY
18 m²

LOBBY
8 m²

FIREFIGHTING LIFT PLOT

R&R
22 m²

LIFT LOBBY
8 m²

RISER
4 m²

CIRCULATION
39 m²

STAIR
47 m²

STAIR
48 m²

RISER
5 m²

RISER
6 m²

BAR
141 m²

FAN PORTAL

FAN PORTAL

BAR
28 m²

CITY KITCHEN
53 m²

CITY KITCHEN
53 m²

STORE
17 m²

KEG ROOM
23 m²

WCS
97 m²

WCS
83 m²

WCS
88 m²

WCS
99 m²

CITY BAR
28 m²

WCS
23 m²

WCS
59 m²

R&R
7 m²

AWC
5 m²

FIRST AID
22 m²

FIREFIGHTING LOBBY
16 m²

FIREFIGHTING STAIR
6 m²

CIRCULATION
38 m²

STAIR
48 m²

STAIR
49 m²

FAN PORTAL

FAN PORTAL

BAR
28 m²

STORE
17 m²

KEG ROOM
23 m²

WCS
99 m²

CITY BAR
28 m²

WCS
59 m²

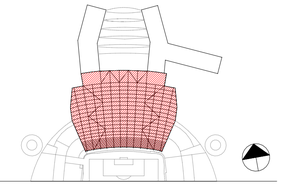
WCS
23 m²

R&R
7 m²

AWC
5 m²

| REVISIONS | | |
|---|---|---|
| **REV** | **DATE** | **DESCRIPTION** |
| P00 | 20.01.23 | ISSUED FOR STAGE 3 DESIGN FREEZE |
| P01 | 28.02.23 | ISSUED FOR STAGE 3 |
| P02 | 06.04.23 | STAGE 3 UPDATE |
| P03 | 24.04.23 | GA PLAN UPDATE |
| P04 | 15.05.23 | ISSUED FOR BUILDING REGULATIONS APPLICATION |
| P05 | 19.07.23 | GA PLANS - FOR INFORMATION |
| C01 | 01.12.23 | ISSUED FOR CONSTRUCTION |
| C02 | 14.08.24 | STAGE 5 - EAI 25 - WHITE BOX |
| C03 | 12.02.25 | ISSUED FOR CONSTRUCTION |

KEY PLAN



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ARCHITECT

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PROJECT NAME

MCFC NORTH EXPANSION

DRAWING TITLE

L02 - UPPER CONCOURSE
GENERAL ARRANGEMENT PLAN

| STATUS | RIBA STAGE | PROJECT NO. |
|---|---|---|
| A5 | 5 | 4348 |

| DATE | SCALE | SIZE |
|---|---|---|
| 16/09/22 | 1 : 200 | A1 |

| DRAWN | CHECKED | APPROVED |
|---|---|---|
| CM | CF | MT |

| PROJECT | ORIGIN. | ZONE | LEVEL | TYPE | ROLE | DRAWING | REV |
|---|---|---|---|---|---|---|---|
| NSE | POP | NS | 02 | DR | A | 000102 | C03 |

Status B; Approved with comments

**APPENDIX 2**

- Odour Risk Assessments

## Risk Assessment for Odour- North stand -L01 City Kitchen -East

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

| Impact Risk | Odour Control Requirement | Significance Score* |
|---|---|---|
| Low to Medium | Low level odour control | Less than 20 |
| High | High level odour control | 20 to 35 |
| Very high | Very high level odour control | more than 35 |

* based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type.

| Criteria | Score | Score | Details |
|---|---|---|---|
| Dispersion | Very poor | 20 | Low level discharge, discharge into courtyard or restriction on stack. |
| | Poor | 15 | Not low level but below eaves, or discharge at below 10 m/s. |
| | Moderate | 10 | Discharging 1m above eaves at 10 -15 m/s. |
| | Good | 5 | Discharging 1m above ridge at 15 m/s. |
| Proximity of receptors | Close | 10 | Closest sensitive receptor less than 20m from kitchen discharge. |
| | Medium | 5 | Closest sensitive receptor between 20 and 100m from kitchen discharge. |
| | Far | 1 | Closest sensitive receptor more than 100m from kitchen discharge. |
| Size of kitchen | Large | 5 | More than 100 covers or large sized take away. |
| | Medium | 3 | Between 30 and 100 covers or medium sized take away. |
| | Small | 1 | Less than 30 covers or small take away. |
| Cooking type (odour and grease loading) | Very high | 10 | Pub (high level of fried food), fried chicken, burgers or fish & chips. |
| | High | 7 | Kebab, Vietnamese, Thai or Indian. |
| | Medium | 4 | Cantonese, Japanese or Chinese. |
| | Low | 1 | Most pubs, Italian, French, Pizza or steakhouse. |

## Risk Assessment for Odour- North stand -L01 City Kitchen-West

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

| Impact Risk | Odour Control Requirement | Significance Score |
|---|---|---|
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| Criteria | Score | Score | Details |
|---|---|---|---|
| Dispersion | Very poor | 20 | Low level discharge, discharge into courtyard or restriction on stack. |
| | Poor | 15 | Not low level but below eaves, or discharge at below 10 m/s. |
| | Moderate | 10 | Discharging 1m above eaves at 10 -15 m/s. |
| | Good | 5 | Discharging 1m above ridge at 15 m/s. |
| Proximity of receptors | Close | 10 | Closest sensitive receptor less than 20m from kitchen discharge. |
| | Medium | 5 | Closest sensitive receptor between 20 and 100m from kitchen discharge. |
| | Far | 1 | Closest sensitive receptor more than 100m from kitchen discharge. |
| Size of kitchen | Large | 5 | More than 100 covers or large sized take away. |
| | Medium | 3 | Between 30 and 100 covers or medium sized take away. |
| | Small | 1 | Less than 30 covers or small take away. |
| Cooking type (odour and grease loading) | Very high | 10 | Pub (high level of fried food), fried chicken, burgers or fish & chips. |
| | High | 7 | Kebab, Vietnamese, Thai or Indian. |
| | Medium | 4 | Cantonese, Japanese or Chinese. |
| | Low | 1 | Most pubs, Italian, French, Pizza or steakhouse. |

## Risk Assessment for Odour- Hotel- Level 01 Kitchen

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

| Impact Risk | Odour Control Requirement | Significance Score |
|---|---|---|
| Low to Medium | Low level odour control | Less than 20 |
| High | High level odour control | 20 to 35 |
| Very high | Very high level odour control | more than 35 |

* based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

| Criteria | Score | Score | Details |
|---|---|---|---|
| Dispersion | Very poor | 20 | Low level discharge, discharge into courtyard or restriction on stack. |
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| | Good | 5 | Discharging 1m above ridge at 15 m/s. |
| Proximity of receptors | Close | 10 | Closest sensitive receptor less than 20m from kitchen discharge. |
| | Medium | 5 | Closest sensitive receptor between 20 and 100m from kitchen discharge. |
| | Far | 1 | Closest sensitive receptor more than 100m from kitchen discharge. |
| Size of kitchen | Large | 5 | More than 100 covers or large sized take away. |
| | Medium | 3 | Between 30 and 100 covers or medium sized take away. |
| | Small | 1 | Less than 30 covers or small take away. |
| Cooking type (odour and grease loading) | Very high | 10 | Pub (high level of fried food), fried chicken, burgers or fish & chips. |
| | High | 7 | Kebab, Vietnamese, Thai or Indian. |
| | Medium | 4 | Cantonese, Japanese or Chinese. |
| | Low | 1 | Most pubs, Italian, French, Pizza or steakhouse. |

## Risk Assessment for Odour- North stand -L02 City Kitchen-West

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

| Impact Risk | Odour Control Requirement | Significance Score |
|---|---|---|
| Low to Medium | Low level odour control | Less than 20 |
| High | High level odour control | 20 to 35 |
| Very high | Very high level odour control | more than 35 |

* based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

| Criteria | Score | Score | Details |
|---|---|---|---|
| Dispersion | Very poor | 20 | Low level discharge, discharge into courtyard or restriction on stack. |
| | Poor | 15 | Not low level but below eaves, or discharge at below 10 m/s. |
| | Moderate | 10 | Discharging 1m above eaves at 10 -15 m/s. |
| | Good | 5 | Discharging 1m above ridge at 15 m/s. |
| Proximity of receptors | Close | 10 | Closest sensitive receptor less than 20m from kitchen discharge. |
| | Medium | 5 | Closest sensitive receptor between 20 and 100m from kitchen discharge. |
| | Far | 1 | Closest sensitive receptor more than 100m from kitchen discharge. |
| Size of kitchen | Large | 5 | More than 100 covers or large sized take away. |
| | Medium | 3 | Between 30 and 100 covers or medium sized take away. |
| | Small | 1 | Less than 30 covers or small take away. |
| Cooking type (odour and grease loading) | Very high | 10 | Pub (high level of fried food), fried chicken, burgers or fish & chips. |
| | High | 7 | Kebab, Vietnamese, Thai or Indian. |
| | Medium | 4 | Cantonese, Japanese or Chinese. |
| | Low | 1 | Most pubs, Italian, French, Pizza or steakhouse. |

## Risk Assessment for Odour- North stand -Support Kitchen-East

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

| Impact Risk | Odour Control Requirement | Significance Score |
|---|---|---|
| Low to Medium | Low level odour control | Less than 20 |
| High | High level odour control | 20 to 35 |
| Very high | Very high level odour control | more than 35 |

* based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

| Criteria | Score | Score | Details |
|---|---|---|---|
| Dispersion | Very poor | 20 | Low level discharge, discharge into courtyard or restriction on stack. |
| | Poor | 15 | Not low level but below eaves, or discharge at below 10 m/s. |
| | Moderate | 10 | Discharging 1m above eaves at 10 -15 m/s. |
| | Good | 5 | Discharging 1m above ridge at 15 m/s. |
| Proximity of receptors | Close | 10 | Closest sensitive receptor less than 20m from kitchen discharge. |
| | Medium | 5 | Closest sensitive receptor between 20 and 100m from kitchen discharge. |
| | Far | 1 | Closest sensitive receptor more than 100m from kitchen discharge. |
| Size of kitchen | Large | 5 | More than 100 covers or large sized take away. |
| | Medium | 3 | Between 30 and 100 covers or medium sized take away. |
| | Small | 1 | Less than 30 covers or small take away. |
| Cooking type (odour and grease loading) | Very high | 10 | Pub (high level of fried food), fried chicken, burgers or fish & chips. |
| | High | 7 | Kebab, Vietnamese, Thai or Indian. |
| | Medium | 4 | Cantonese, Japanese or Chinese. |
| | Low | 1 | Most pubs, Italian, French, Pizza or steakhouse. |

## Risk Assessment for Odour- North stand -Support Kitchen-West

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

| Impact Risk | Odour Control Requirement | Significance Score |
|---|---|---|
| Low to Medium | Low level odour control | Less than 20 |
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* based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

| Criteria | Score | Score | Details |
|---|---|---|---|
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| | Poor | 15 | Not low level but below eaves, or discharge at below 10 m/s. |
| | Moderate | 10 | Discharging 1m above eaves at 10 -15 m/s. |
| | Good | 5 | Discharging 1m above ridge at 15 m/s. |
| Proximity of receptors | Close | 10 | Closest sensitive receptor less than 20m from kitchen discharge. |
| | Medium | 5 | Closest sensitive receptor between 20 and 100m from kitchen discharge. |
| | Far | 1 | Closest sensitive receptor more than 100m from kitchen discharge. |
| Size of kitchen | Large | 5 | More than 100 covers or large sized take away. |
| | Medium | 3 | Between 30 and 100 covers or medium sized take away. |
| | Small | 1 | Less than 30 covers or small take away. |
| Cooking type (odour and grease loading) | Very high | 10 | Pub (high level of fried food), fried chicken, burgers or fish & chips. |
| | High | 7 | Kebab, Vietnamese, Thai or Indian. |
| | Medium | 4 | Cantonese, Japanese or Chinese. |
| | Low | 1 | Most pubs, Italian, French, Pizza or steakhouse. |

## Risk Assessment for Odour- North stand -L02 City Kitchen-East

Odour control must be designed to prevent odour nuisance in a given situation. The following score methodology is suggested as a means of determining odour control requirements using a simple risk assessment approach. The odour control requirements considered here are consistent with the performance requirements listed in this report.

| Impact Risk | Odour Control Requirement | Significance Score |
|---|---|---|
| Low to Medium | Low level odour control | Less than 20 |
| High | High level odour control | 20 to 35 |
| Very high | Very high level odour control | more than 35 |

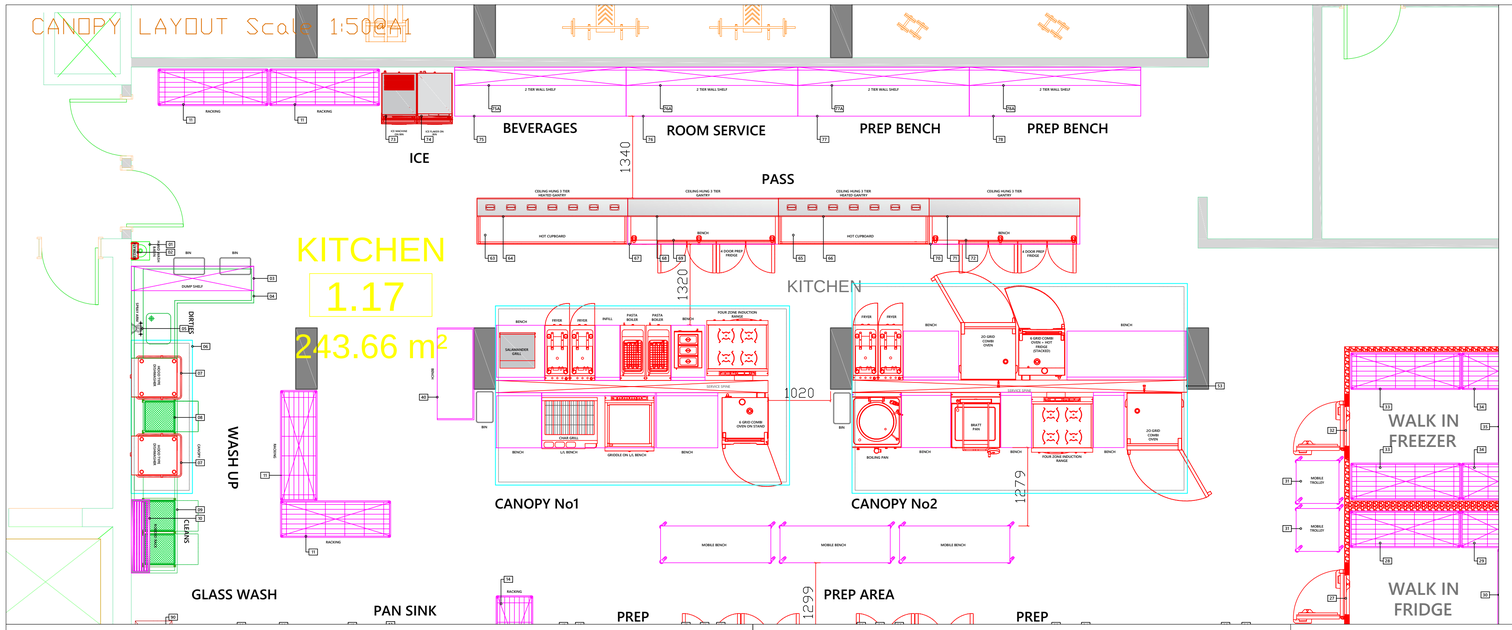
* based on the sum of contributions from dispersion, proximity of receptors, size of kitchen and cooking type:

| Criteria | Score | Score | Details |
|---|---|---|---|
| Dispersion | Very poor | 20 | Low level discharge, discharge into courtyard or restriction on stack. |
| | Poor | 15 | Not low level but below eaves, or discharge at below 10 m/s. |
| | Moderate | 10 | Discharging 1m above eaves at 10 -15 m/s. |
| | Good | 5 | Discharging 1m above ridge at 15 m/s. |
| Proximity of receptors | Close | 10 | Closest sensitive receptor less than 20m from kitchen discharge. |
| | Medium | 5 | Closest sensitive receptor between 20 and 100m from kitchen discharge. |
| | Far | 1 | Closest sensitive receptor more than 100m from kitchen discharge. |
| Size of kitchen | Large | 5 | More than 100 covers or large sized take away. |
| | Medium | 3 | Between 30 and 100 covers or medium sized take away. |
| | Small | 1 | Less than 30 covers or small take away. |
| Cooking type (odour and grease loading) | Very high | 10 | Pub (high level of fried food), fried chicken, burgers or fish & chips. |
| | High | 7 | Kebab, Vietnamese, Thai or Indian. |
| | Medium | 4 | Cantonese, Japanese or Chinese. |
| | Low | 1 | Most pubs, Italian, French, Pizza or steakhouse. |

**APPENDIX 3**

- Kitchen Canopy Plans

## CANOPY LAYOUT Scale 1:50@A1




### CANOPY No1 INFORMATION:

EXTRACT & SUPPLY CANOPY
4800 x 2925 x 500mm

2000mm TO UNDERSIDE OF CANOPY FROM FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE -3.04m³/S AT 100 PA
SUPPLY FLOW RATE - 2.58m³/S AT 40 PA

2 x EXTRACT SPIGOTS - 725 x 350mm
4 x SUPPLY SPIGOTS - 525 x 300mm

SPIGOTS FIXED IN FACTORY - YES

NUMBER OF BAFFLE FILTERS - 9No

LIGHTING - 8 x LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY AND WILL BE SUPPLIED WITH A 1.5m TAIL.

FINAL CONNECTION OF CANOPY LIGHTS TO LIGHTING CIRCUIT TO BE DONE BY ELECTRICAL CONTRACTOR. 240V REQUIRED.

CLADDING - N/A.

INFILLS - N/A.

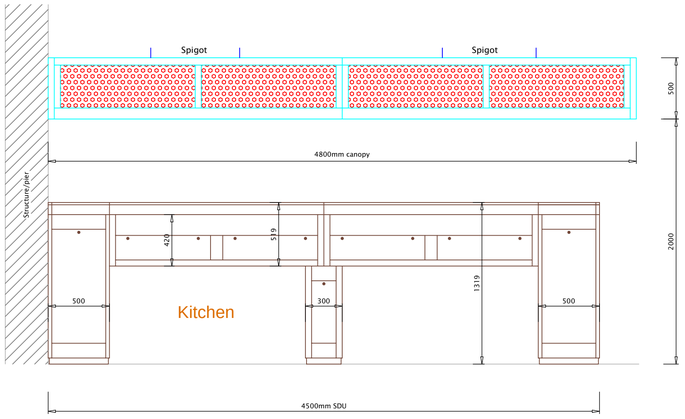
CANOPY APPROVED - YES...../NO.....

COMMENTS.....

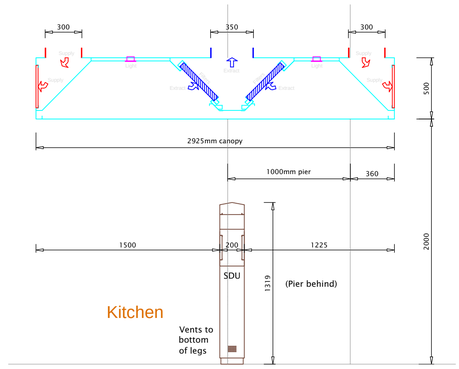
SIGNED.....

DATE.....

## FRONT ELEVATION Scale 1:25@A1




## CANOPY CROSS SECTION Scale 1:25@A1

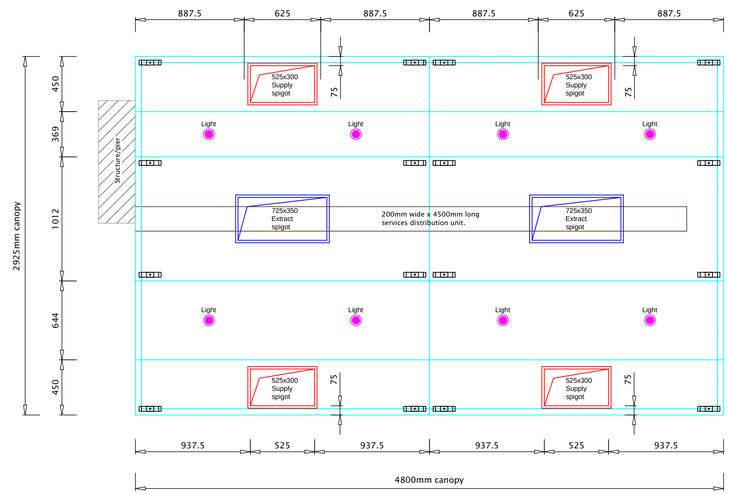



## CANOPY AIRFLOW CALCS

| | | | |
|---|---|---|---|
| Project | Manchester City North Stand. | Date | 07/02/2025 |
| Drawing | CANOPY 1 | Canopy Ref | 1 |
| Model | Island - Open Both Ends | Safety Factor | 5% |
| | | Extract Volume | 3.04 M³/S |
| | | Supply Volume | 2.58 M³/S |

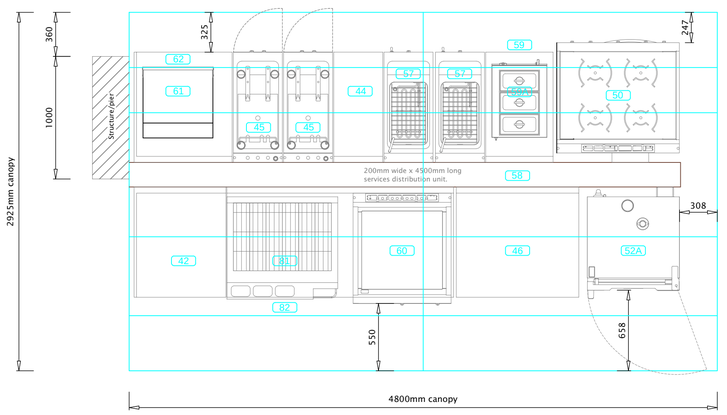
| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 42 | Bench / Worktops | 730 | 850 | N/A | 0.03 | 0 | 0.018615 |
| 44 | Bench / Worktops | 400 | 900 | N/A | 0.03 | 0 | 0.0108 |
| 45 | Deep Fat Fryer | 400 | 900 | Electric | 0.45 | 0 | 0.162 |
| 45 | Deep Fat Fryer | 400 | 900 | Electric | 0.45 | 0 | 0.162 |
| 46 | Bench / Worktops | 1000 | 900 | N/A | 0.03 | 0 | 0.027 |
| 50 | Solid Top Oven Range | 1000 | 900 | Electric | 0.51 | 0 | 0.459 |
| 52A | Combination Ovens 6 grid. | 750 | 760 | Electric | 0.3 | 0 | 0.171 |
| 57 | Pasta Cooker | 400 | 900 | Electric | 0.2 | 0 | 0.072 |
| 57 | Pasta Cooker | 400 | 900 | Electric | 0.2 | 0 | 0.072 |
| 59 | Bench / Worktops | 550 | 900 | N/A | 0.03 | 0 | 0.01485 |
| 59A | Bain Marie | 450 | 600 | Electric | 0.15 | 0 | 0.0405 |
| 60 | Chrome Griddle / Plancha | 800 | 900 | Electric | 0.4 | 0 | 0.288 |
| 61 | Salamander Grill | 570 | 580 | Electric | 0.55 | 0 | 0.18183 |
| 62 | Bench / Worktops | 800 | 900 | N/A | 0.03 | 0 | 0.0216 |
| 81 | Chargrill / Charbroiler | 905 | 835 | Electric | 0.52 | 0 | 0.392951 |
| 82 | Bench / Worktops | 1850 | 900 | N/A | 0.03 | 0 | 0.04995 |

## CANOPY/SPIGOT DIMENSIONS Scale 1:25@A1




## CANOPY OVERHANGS Scale 1:25@A1

42 Bench.
44 Bench.
45 Fryer.
45 Fryer.
46 Bench.
50 4 zone induction range.
52A 6 grid combi oven.
57 Pasta cooker.
57 Pasta cooker.
58 Service distribution unit.
59 Bench.
59A Bain marie.
60 Griddle.
61 Salamander grill.
62 Bench.
81 Chagrill.
82 Bench.




# REV-C01
## (02.07.2025)

DRAWING REVISION / AMENDMENT DETAILS
ORIGINAL -

CLIENT: MCFC
PROJECT: NORTH STAND EXTENSION
TITLE: HT-LO1-ALL DAY DINING KITCHEN CANOPY 1 DETAILS
DWG No: NSE-DWN-HT-01-DP-X-000010
REVISION: C01
STATUS: A5 DATE: 02.07.2025
SCALE: 1:50 / 1:25 PAPER SIZE: A1
DRAWN BY: Y N CHECKED BY: C H APPROVED BY: J R

DAWNVALE GROUP
RESTAURANT + BAR DESIGN + BUILD


UNITS 1-2 | ALBERT STREET | HOLLINWOOD | OLDHAM | OL8 3QP
TEL: 0161 684 7879 DAWNVALE.COM

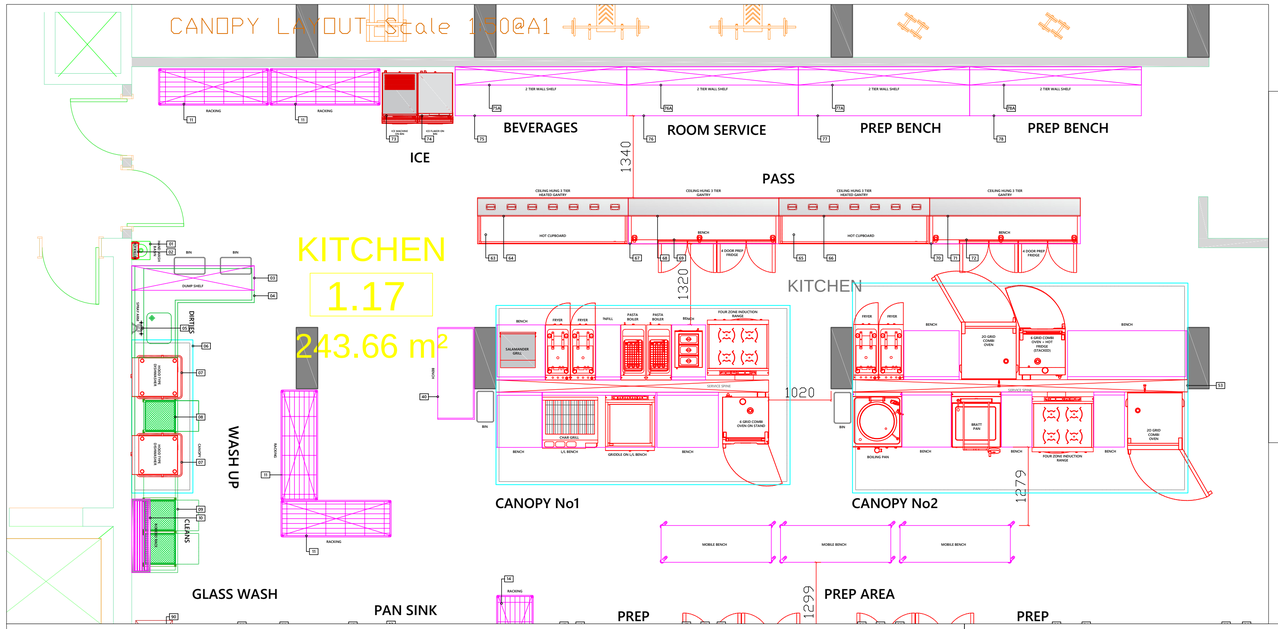


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Status A: Approved

# CANOPY LAYOUT Scale 1:50@A1




# CANOPY AIRFLOW CALCS

| | | | |
|---|---|---|---|
| **Project** | **Manchester City North Stand.** | **Date** | 07/02/2025 |
| **Drawing** | CANOPY No2 | **Canopy Ref** | 2 |
| **Model** | Island - Open Both Ends | **Safety Factor** | 5% |
| | | **Extract Volume** | 2.66 $M^3/S$ |
| | | **Supply Volume** | 2.26 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 43 | Bratt Pan | 800 | 732 | Electric | 0.5 | 0 | 0.2928 |
| 45 | Deep Fat Fryer | 400 | 900 | Electric | 0.45 | 0 | 0.162 |
| 45 | Deep Fat Fryer | 400 | 900 | Electric | 0.45 | 0 | 0.162 |
| 47 | Boiling Pan / Steam Kettle | 800 | 900 | Electric | 0.25 | 0 | 0.18 |
| 48 | Bench / Worktops | 800 | 900 | N/A | 0.03 | 0 | 0.0216 |
| 49 | Bench / Worktops | 500 | 900 | N/A | 0.03 | 0 | 0.0135 |
| 50 | Solid Top Oven Range | 1000 | 900 | Electric | 0.51 | 0 | 0.459 |
| 51 | Bench / Worktops | 500 | 900 | N/A | 0.03 | 0 | 0.0135 |
| 52 | Combination Ovens 20 grid. | 892 | 940 | Electric | 0.4 | 0 | 0.335392 |
| 52A | Combination Ovens 6 grid. | 753 | 747 | Electric | 0.3 | 0 | 0.1687473 |
| 55 | Bench / Worktops | 1950 | 750 | N/A | 0.03 | 0 | 0.043875 |
| 56 | Bench / Worktops | 900 | 800 | N/A | 0.03 | 0 | 0.0216 |

## CANOPY No2 INFORMATION:

EXTRACT & SUPPLY CANOPY
5475 x 3425 x 500mm

2000mm TO UNDERSIDE OF CANOPY FROM FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE- 2.66$m^3$/S AT 100 PA
SUPPLY FLOW RATE - 2.26$m^3$/S AT 40 PA

2 x EXTRACT SPIGOTS - 650x350mm
4 x SUPPLY SPIGOTS - 475x300mm

SPIGOTS FIXED IN FACTORY - YES

NUMBER OF BAFFLE FILTERS - 12No

LIGHTING - 8 x LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY AND WILL BE SUPPLIED WITH A 1.5m TAIL.

FINAL CONNECTION OF CANOPY LIGHTS TO LIGHTING CIRCUIT TO BE DONE BY ELECTRICAL CONTRACTOR. 240V REQUIRED.

CLADDING - N/A.

INFILLS - N/A.

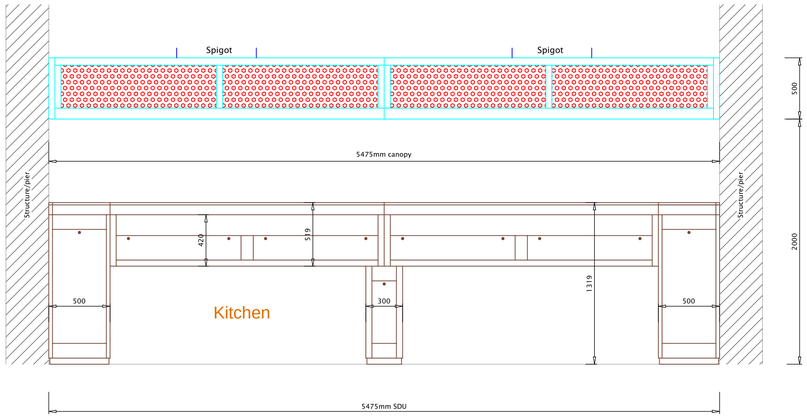
CANOPY APPROVED - YES...../NO.....

COMMENTS.....

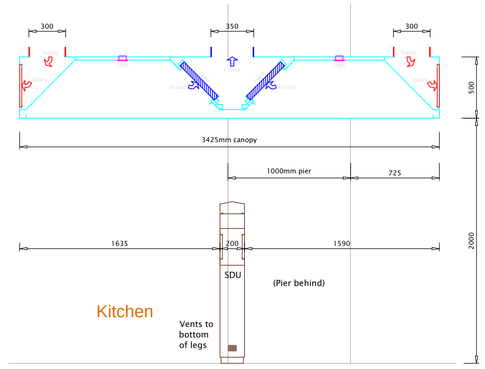
SIGNED.....

DATE.....

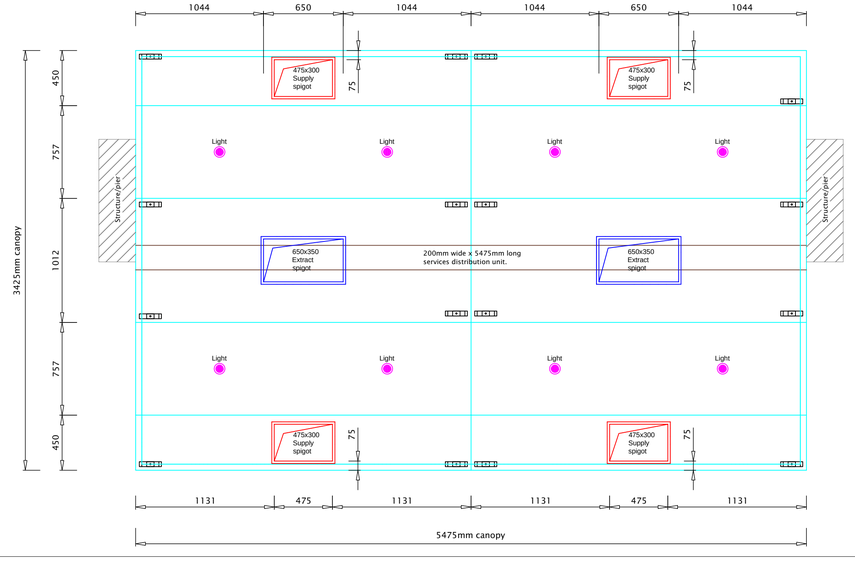
# FRONT ELEVATION Scale 1:25@A1




# CANOPY CROSS SECTION Scale 1:25@A1

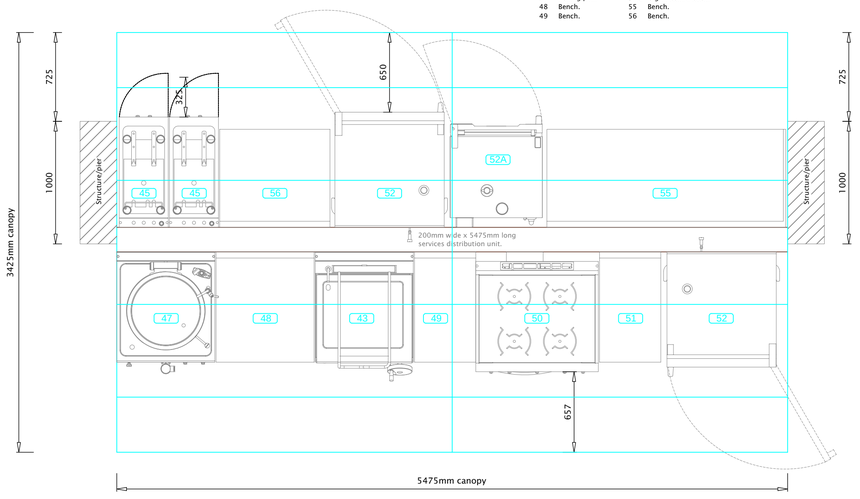



# CANOPY/SPIGOT DIMENSIONS Scale 1:25@A1




# CANOPY OVERHANGS Scale 1:25@A1

43 Bratt pan.
45 Twin fryer.
45 Twin fryer.
47 Boiling pan.
48 Bench.
49 Bench.
50 4 zone induction range.
51 Bench.
52 20 grid combi oven.
52A 6 grid combi oven.
55 Bench.
56 Bench.




**REV-C01**
**(02.07.2025)**

DRAWING REVISION / AMENDMENT DETAILS
ORIGINAL -

CLIENT: MCFC
PROJECT: NORTH STAND EXTENSION
TITLE: HT-L01-ALL DAY DINING KITCHEN CANOPY 2 DETAILS
DWG No: NSE-DWN-HT-01-DP-X-000011
REVISION: C01
STATUS: A5
DATE: 02.07.2025
SCALE: 1:50 / 1:25
PAPER SIZE: A1
DRAWN BY: Y N | CHECKED BY: C H | APPROVED BY: J R

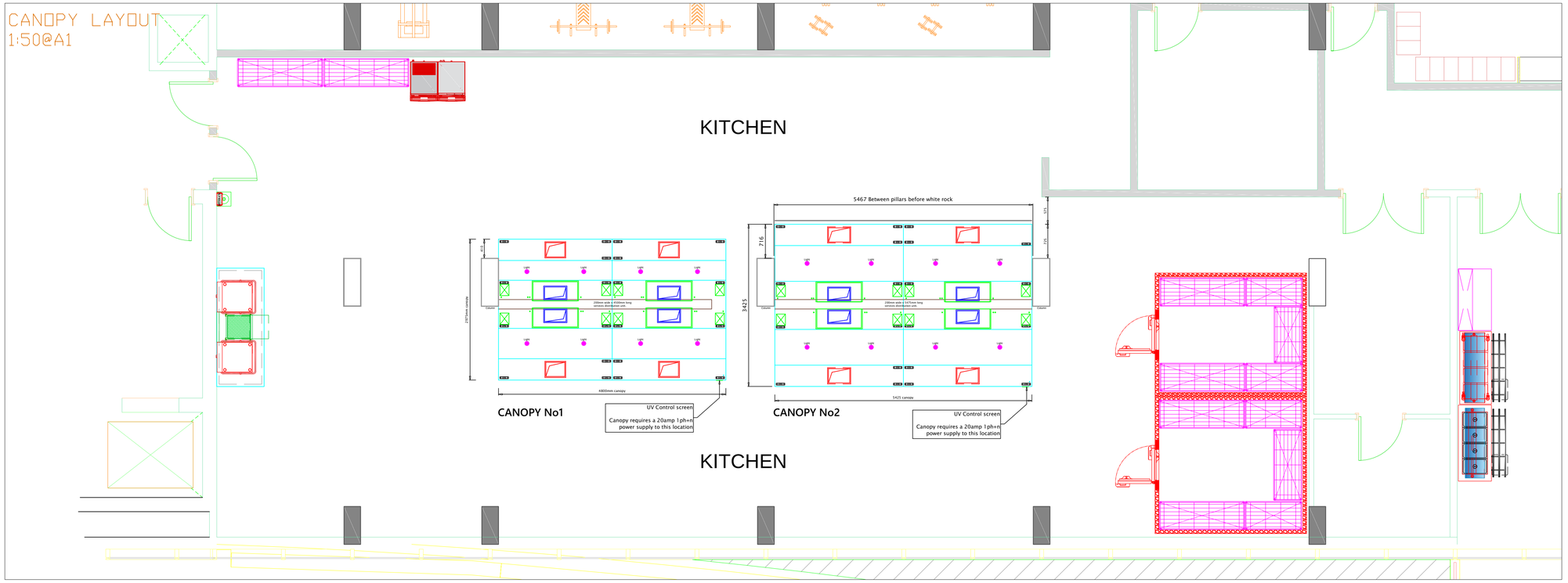

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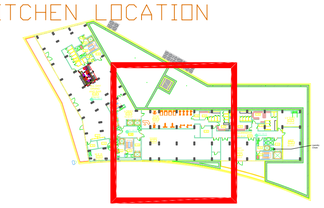
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Status A: Approved

# CANOPY LAYOUT
1:50@A1




# KITCHEN LOCATION



## CANOPY No1 INFORMATION:

EXTRACT & SUPPLY UV CANOPY
4800 x 2975 x 600mm

2000mm TO UNDERSIDE OF CANOPY FROM FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE -2.22m³/S AT 250 PA
SUPPLY FLOW RATE - 1.88m³/S AT 40 PA

4 x EXTRACT SPIGOTS - 450x250mm
4 x SUPPLY SPIGOTS - 400x300mm

SPIGOTS FIXED IN FACTORY - YES

NUMBER OF BAFFLE FILTERS - 10No

LIGHTING - 8 x LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY AND WILL BE SUPPLIED WITH A 15m TAIL.

FINAL CONNECTION OF CANOPY LIGHTS TO LIGHTING CIRCUIT TO BE DONE BY ELECTRICAL CONTRACTOR. 240V REQUIRED.

CLADDING - N/A.

INFILLS - N/A.

CANOPY APPROVED - YES...../NO.....

COMMENTS.....

SIGNED.....

DATE.....

## CANOPY No2 INFORMATION:

EXTRACT & SUPPLY UV CANOPY
5425 x 3425 x 600mm

2000mm TO UNDERSIDE OF CANOPY FROM FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE- 2.35m³/S AT 250 PA
SUPPLY FLOW RATE - 1.99m³/S AT 40 PA

4 x EXTRACT SPIGOTS - 450x250mm
4 x SUPPLY SPIGOTS - 450x300mm

SPIGOTS FIXED IN FACTORY - YES

NUMBER OF BAFFLE FILTERS - 12No

LIGHTING - 8 x LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY AND WILL BE SUPPLIED WITH A 15m TAIL.

FINAL CONNECTION OF CANOPY LIGHTS TO LIGHTING CIRCUIT TO BE DONE BY ELECTRICAL CONTRACTOR. 240V REQUIRED.

CLADDING - N/A.

INFILLS - N/A.

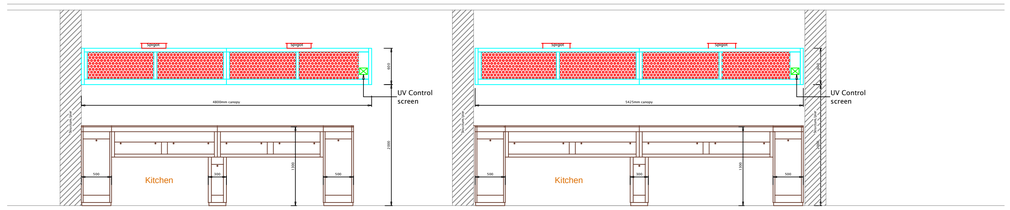
CANOPY APPROVED - YES...../NO.....

COMMENTS.....

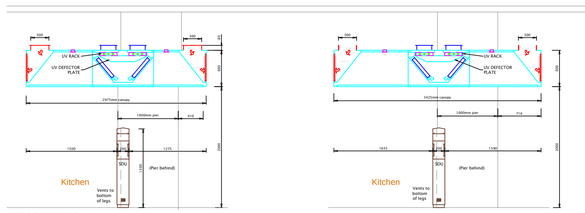
SIGNED.....

DATE.....

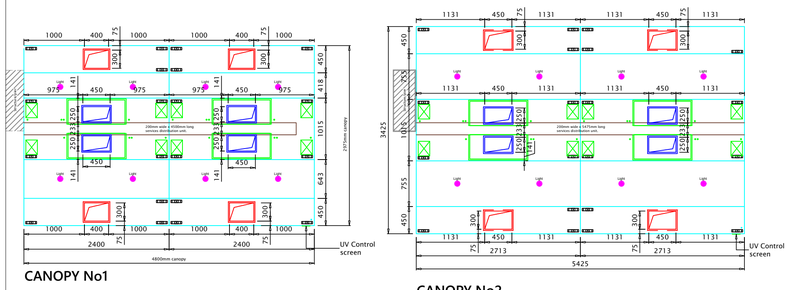
# FRONT ELEVATION
1:50@A1




# CANOPY CROSS SECTION
1:50@A1

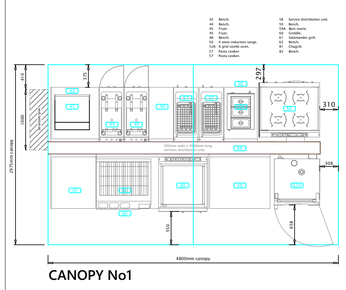



# CANOPY/SPIGOT DIMENSIONS
1:50@A1

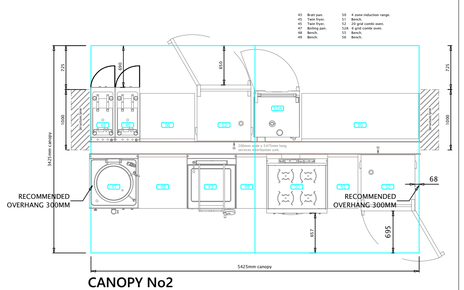



# CANOPY OVERHANGS
1:50@A1

CANOPY No1




CANOPY No2




# CANOPY AIRFLOW CALCS

**Leightec Thermal Convection Airflow Calculation**
In Accordance With BESA Specification DW/172-2018

| | | | |
|---|---|---|---|
| Project | MCFC - All Day Dining | Date | 19/09/2025 |
| Drawing | CANOPY No1 | Canopy Ref | 1 |
| Model | Island - Open Both Ends | Safety Factor | 0% |
| | | Extract Volume | 2.22 $M^3/S$ |
| | | Supply Volume | 1.88 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 45 | Deep Fat Fryer | 400 | 900 | Electric | 0.45 | 0 | 0.162 |
| 45 | Deep Fat Fryer | 400 | 900 | Electric | 0.45 | 0 | 0.162 |
| 50 | Open-Top Range & Oven | 1000 | 900 | Electric | 0.3 | 0 | 0.27 |
| 52A | Combination Ovens 6 grid. | 750 | 760 | Electric | 0 | 0 | 0 |
| 57 | Pasta Cooker | 400 | 900 | Electric | 0.2 | 0 | 0.072 |
| 57 | Pasta Cooker | 400 | 900 | Electric | 0.2 | 0 | 0.072 |
| 59A | Bain Marie | 450 | 600 | Electric | 0.15 | 0 | 0.0405 |
| 60 | Chrome Griddle / Plancha | 800 | 900 | Electric | 0.4 | 0 | 0.288 |
| 61 | Salamander Grill | 570 | 580 | Electric | 0.55 | 0 | 0.18183 |
| 81 | Chargrill / Charbroiler | 905 | 835 | Electric | 0.52 | 0 | 0.392951 |

**Leightec Thermal Convection Airflow Calculation**
In Accordance With BESA Specification DW/172-2018

| | | | |
|---|---|---|---|
| Project | MCFC - All Day Dining | Date | 19/09/2025 |
| Drawing | CANOPY No2 | Canopy Ref | 2 |
| Model | Island - Open Both Ends | Safety Factor | 0% |
| | | Extract Volume | 2.35 $M^3/S$ |
| | | Supply Volume | 1.99 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 43 | Bratt Pan | 800 | 732 | Electric | 0.5 | 0 | 0.2928 |
| 45 | Deep Fat Fryer | 400 | 900 | Electric | 0.45 | 0 | 0.162 |
| 45 | Deep Fat Fryer | 400 | 900 | Electric | 0.45 | 0 | 0.162 |
| 47 | Boiling Pan / Steam Kettle | 800 | 900 | Electric | 0.25 | 0 | 0.18 |
| 50 | Open-Top Range & Oven | 1000 | 900 | Electric | 0.3 | 0 | 0.27 |
| 52 | Combination Ovens 20 grid. | 892 | 940 | Electric | 0.4 | 0 | 0.335392 |
| 52 | Combination Ovens 20 grid. | 892 | 940 | Electric | 0.4 | 0 | 0.335392 |
| 52A | Combination Ovens 6 grid. | 753 | 747 | Electric | 0 | 0 | 0 |

**DRAWING REVISION / AMENDMENT DETAILS**

| | |
|---|---|
| CLIENT: | MCFC |
| PROJECT: | NORTH STAND EXTENSION |
| TITLE: | NS-L01-CLUB LEVEL ALL DAY DINING |
| DWG No: | NSE-DWN-HT-01-DP-X-001104 |
| REVISION: | C01 |
| STATUS: | A5 |
| DATE: | 15.12.2025 |
| SCALE: | 1:50 |
| PAPER SIZE: | A1 |
| DRAWN BY: | CDJ |
| CHECKED BY: | C J |
| APPROVED BY: | |


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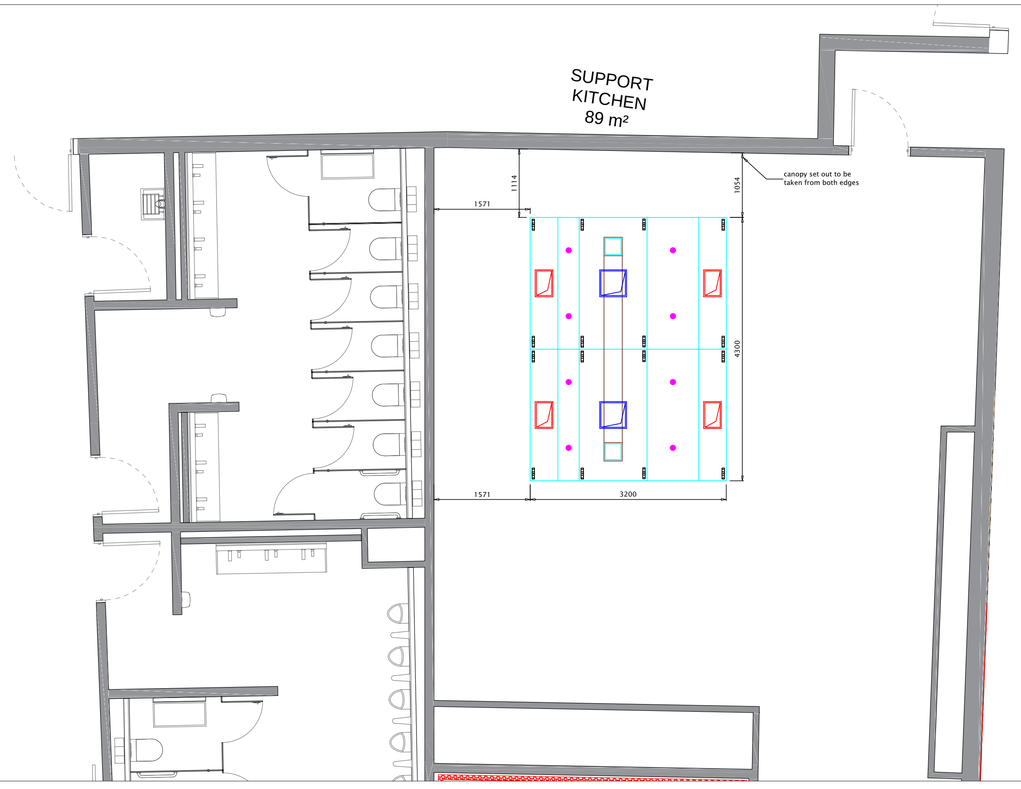
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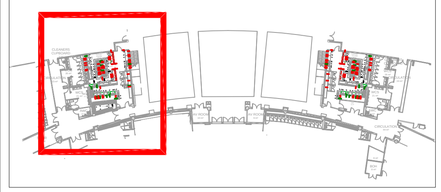
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Status A: Approved

# CANOPY LAYOUT
1:50@A1




# KITCHEN LOCATION



## CANOPY INFORMATION

EXTRACT & SUPPLY CANOPY
4300 X 3200 X 500

2000 UNDERSIDE OF CANOPY FROM
FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE 1.87 $M^3/S$ AT 75 PA
SUPPLY FLOW RATE 1.59 $M^3/S$ AT 40 PA
SPIGOTS ARE 80MM TALL WITH 20MM MEZ
CONNECTION

2 EXTRACT SPIGOT(S) @ 400x400
4 SUPPLY SPIGOTS(S) @ 400x250

SPIGOTS FIXED IN FACTORY- YES

NUMBER OF BAFFLE FILTERS-20

LIGHTING- 8 OFF LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY
AND WILL BE SUPPLIED WITH A 1.5M TAIL

FINAL CONNECTION OF CANOPY LIGHTS TO
LIGHTING CIRCUIT TO BE DONE BY
ELECTRICAL CONTRACTOR 240V REQUIRED.

CLADDING-N/A

INFILLS-N/A

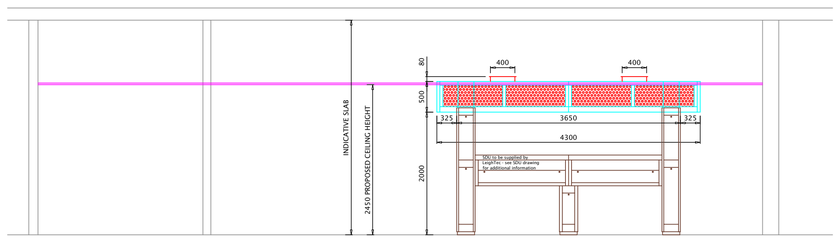
CANOPY APPROVED- YES...../NO.....

COMMENTS.....

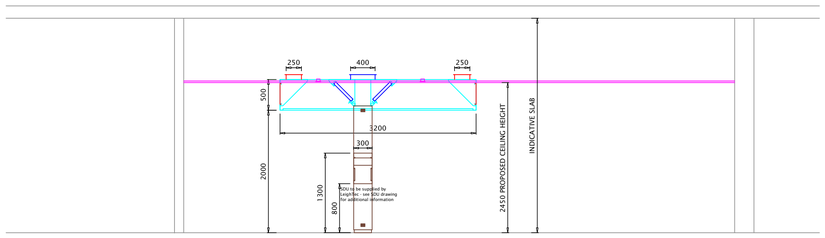
SIGNED.....

DATE.....

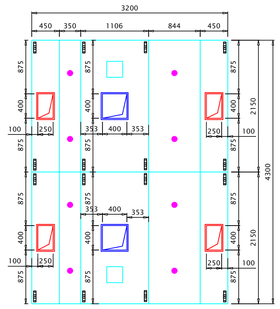
# FRONT ELEVATION
1:50@A1



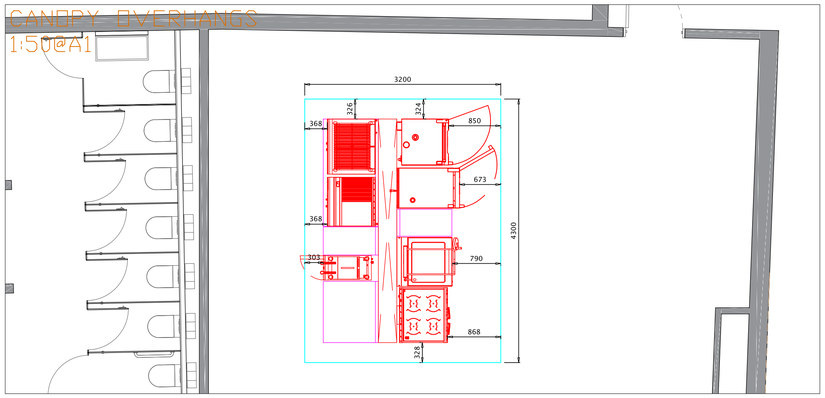

# CANOPY CROSS SECTION
1:50@A1




# CANOPY/SPIGOT DIMENSIONS
1:50@A1




# CANOPY OVERHANGS
1:50@A1




# CANOPY AIRFLOW CALCS

**Leightec Thermal Convection Airflow Calculation**

In Accordance With BESA Specification DW/172-2018

| | | | |
|---|---|---|---|
| Project | MCFC North Stand L00 City Hall Kitchen | Date | 12/09/2025 |
| Drawing | 001 Rev C | Canopy Ref | Main Canopy |
| Model | Island - Open Both Ends | Safety Factor | 0% |
| | | Extract Volume | 1.87 $M^3/S$ |
| | | Supply Volume | 1.59 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub-total |
|---|---|---|---|---|---|---|---|
| 0 | Combination Ovens 10 grid. | 600 | 800 | Electric | 0 | 0 | 0 |
| 0 | Combination Ovens 20 grid. | 600 | 800 | Electric | 0 | 0 | 0 |
| 0 | Bratt Pan | 600 | 800 | Electric | 0.5 | 0 | 0.24 |
| 0 | Open-Top Range & Oven | 600 | 800 | Electric | 0.3 | 0 | 0.144 |
| 0 | Deep Fat Fryer | 400 | 785 | Electric | 0.45 | 0 | 0.1413 |
| 0 | Chrome Griddle / Plancha | 600 | 785 | Electric | 0.4 | 0 | 0.1884 |
| 0 | Chargrill / Charbroiler | 900 | 785 | Electric | 0.95 | 0 | 0.67175 |

**DRAWING REVISION / AMENDMENT DETAILS**

| | |
|---|---|
| CLIENT: | MCFC |
| PROJECT: | NORTH STAND EXTENSION |
| TITLE: | NS-L00-CITY HALL<br>SUPPORT KITCHEN – CANOPY 01 |
| DWG No: | NSE-00-DWN-NS-00-DP-X-001100 |
| REVISION: | C02 |
| STATUS: | A5 |
| DATE: | 19.09.2025 |
| SCALE: | 1:50 |
| PAPER SIZE: | A1 |
| DRAWN BY: | CDJ |
| CHECKED BY: | C J |
| APPROVED BY: | |


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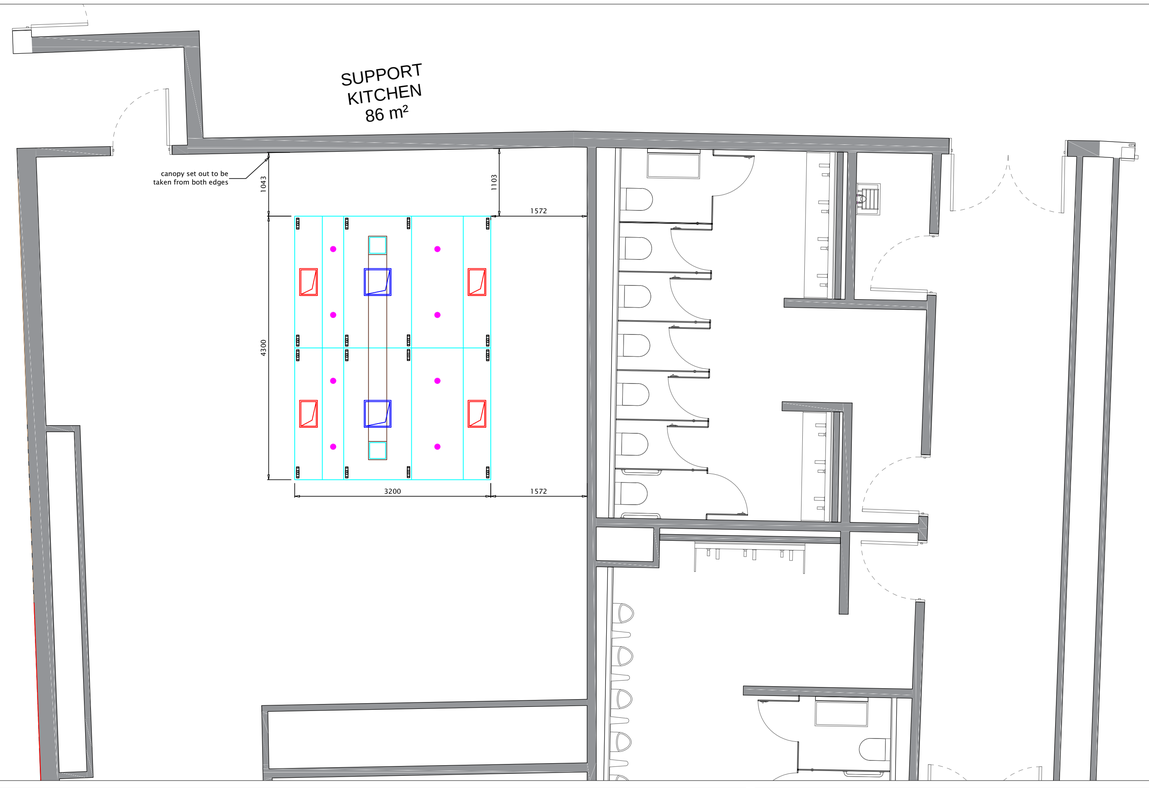
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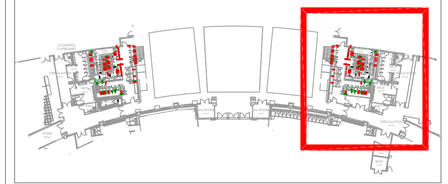
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Status A: Approved

# CANOPY LAYOUT
1:50@A1




# KITCHEN LOCATION



## CANOPY INFORMATION

EXTRACT & SUPPLY CANOPY
4300 X 3200 X 500

2000 UNDERSIDE OF CANOPY FROM
FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE 1.87 $M^3/S$ AT 75 PA
SUPPLY FLOW RATE 1.59 $M^3/S$ AT 40 PA
SPIGOTS ARE 80MM TALL WITH 20MM MEZ
CONNECTION

2 EXTRACT SPIGOT(S) @ 400x400
4 SUPPLY SPIGOT(S) @ 400x250

SPIGOTS FIXED IN FACTORY- YES

NUMBER OF BAFFLE FILTERS-20

LIGHTING- 8 OFF LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY
AND WILL BE SUPPLIED WITH A 1.5M TAIL

FINAL CONNECTION OF CANOPY LIGHTS TO
LIGHTING CIRCUIT TO BE DONE BY
ELECTRICAL CONTRACTOR 240V REQUIRED.

CLADDING-N/A

INFILLS-N/A

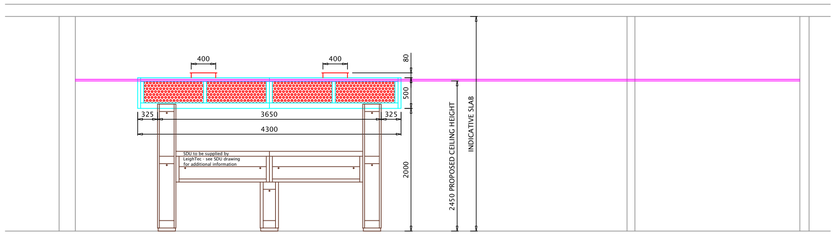
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COMMENTS.....

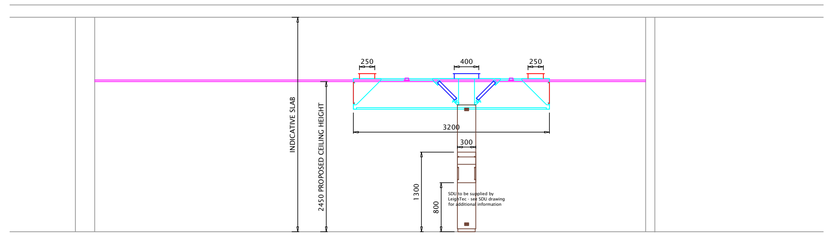
SIGNED.....

DATE.....

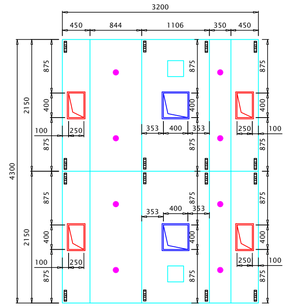
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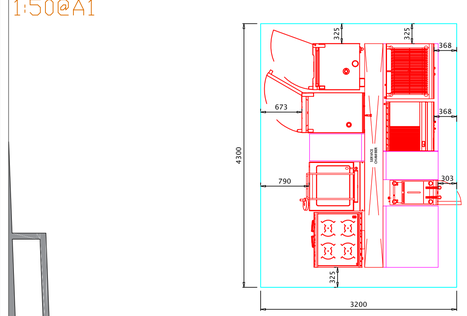

# CANOPY CROSS SECTION
1:50@A1

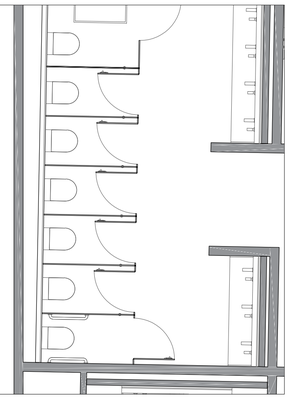



# CANOPY/SPIGOT DIMENSIONS
1:50@A1




# CANOPY OVERHANGS
1:50@A1



# CANOPY AIRFLOW CALCS

**Leightec Thermal Convection Airflow Calculation**

In Accordance With BESA Specification DW/172-2018

| | | | |
|---|---|---|---|
| **Project** | **MCFC North Stand L00 City Hall Kitchen** | **Date** | 12/09/2025 |
| **Drawing** | 001 Rev C | **Canopy Ref** | Main Canopy |
| **Model** | Island - Open Both Ends | **Safety Factor** | 0% |
| | | **Extract Volume** | 1.87 $M^3/S$ |
| | | **Supply Volume** | 1.59 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 0 | Combination Ovens 10 grid. | 600 | 800 | Electric | 0 | 0 | 0 |
| 0 | Combination Ovens 20 grid. | 600 | 800 | Electric | 0 | 0 | 0 |
| 0 | Bratt Pan | 600 | 800 | Electric | 0.5 | 0 | 0.24 |
| 0 | Open-Top Range & Oven | 600 | 800 | Electric | 0.3 | 0 | 0.144 |
| 0 | Deep Fat Fryer | 400 | 785 | Electric | 0.45 | 0 | 0.1413 |
| 0 | Chrome Griddle / Plancha | 600 | 785 | Electric | 0.4 | 0 | 0.1884 |
| 0 | Chargrill / Charbroiler | 900 | 785 | Electric | 0.95 | 0 | 0.671175 |

**DRAWING REVISION / AMENDMENT DETAILS**

| | |
|---|---|
| CLIENT: | MCFC |
| PROJECT: | NORTH STAND EXTENSION |
| TITLE: | NS-L00-CITY HALL<br>SUPPORT KITCHEN -CANOPY 02 |
| DWG No: | NSE-DWN-NS-00-DP-X-001101 |
| REVISION: | C02 |
| STATUS: | A5 |
| DATE: | 19.09.2025 |
| SCALE: | 1:50 |
| PAPER SIZE: | A1 |
| DRAWN BY: | CDJ |
| CHECKED BY: | C J |
| APPROVED BY: | |


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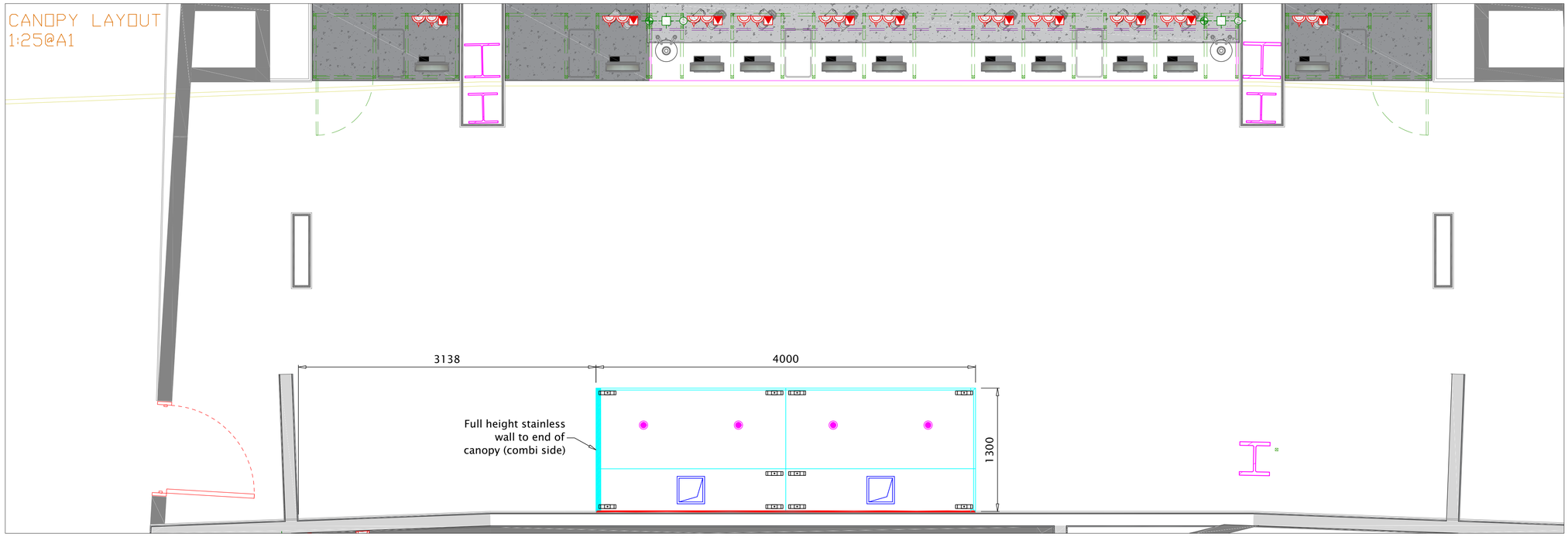
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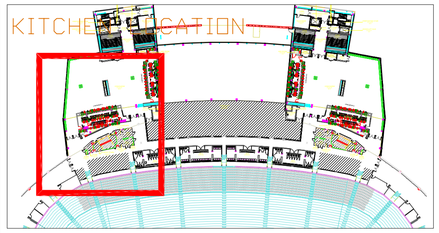
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Status A: Approved

## CANOPY LAYOUT
1:25@A1




## KITCHEN LOCATION



### CANOPY INFORMATION

EXTRACT ONLY CANOPY
4000 X 1300 X 500

2100 UNDERSIDE OF CANOPY FROM FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE 0.65 $M^3/S$ AT 100 PA

SPIGOTS ARE 80MM TALL WITH 20MM MEZ CONNECTION

2 EXTRACT SPIGOT(S) @ 250x250

SPIGOTS FIXED IN FACTORY- YES

NUMBER OF BAFFLE FILTERS-80

LIGHTING- 4 OFF LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY AND WILL BE SUPPLIED WITH A 1.5M TAIL

FINAL CONNECTION OF CANOPY LIGHTS TO LIGHTING CIRCUIT TO BE DONE BY ELECTRICAL CONTRACTOR 240V REQUIRED.

CLADDING-TO REAR

INFILLS-FULL HEIGHT STAINLESS WALL TO ONE END OF CANOPY 400MM TALL TO TOP OF CANOPY

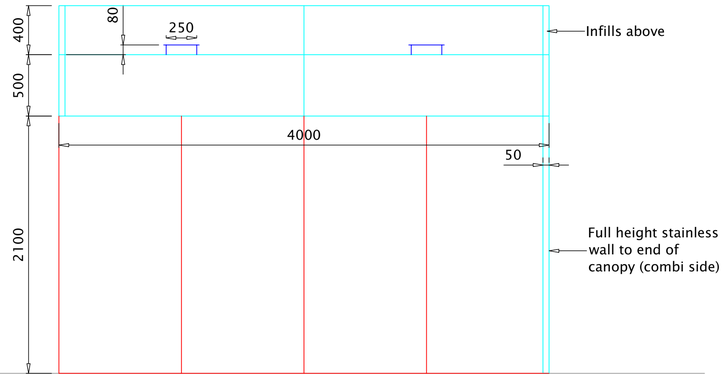
CANOPY APPROVED- YES...../NO.....

COMMENTS.....

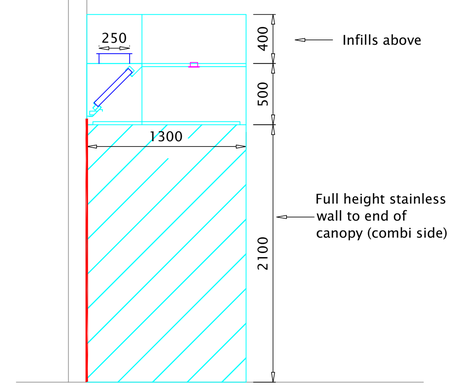
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DATE.....

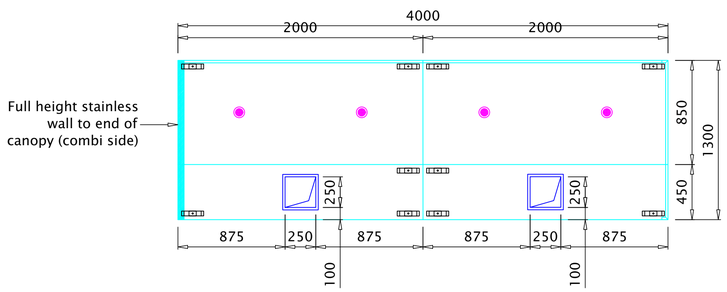
## FRONT ELEVATION
1:25@A1



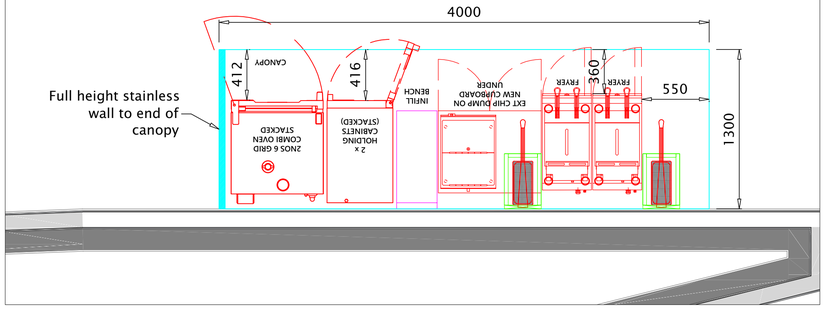

## CANOPY CROSS SECTION
1:25@A1




## CANOPY/SPIGOT DIMENSIONS
1:50@A1




## CANOPY OVERHANGS
1:25@A1




## CANOPY AIRFLOW CALCS

**Leightec Thermal Convection Airflow Calculation**

In Accordance With BESA Specification DW/172-2018

| | | | |
|---|---|---|---|
| **Project** | **MCFC** | **Date** | 05/08/2025 |
| **Drawing** | CONCESSION -5/6 | **Canopy Ref** | ITEM 14 |
| **Model** | Wall - Open One End | **Safety Factor** | 0% |
| | | **Extract Volume** | 0.65 $M^3/S$ |
| | | **Supply Volume** | 0.55 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 0 | Combination Ovens 6 grid. | 752 | 765 | Electric | 0.3 | 0 | 0.172584 |
| 0 | Holding Oven | 538 | 834 | Electric | 0.1 | 0 | 0.0448692 |
| 0 | Chip Scuttle | 450 | 600 | Electric | 0.15 | 0 | 0.0405 |
| 0 | Deep Fat Fryer | 400 | 786 | Electric | 0.45 | 0 | 0.14148 |
| 0 | Deep Fat Fryer | 400 | 786 | Electric | 0.45 | 0 | 0.14148 |

**DRAWING REVISION / AMENDMENT DETAILS**

| | |
|---|---|
| CLIENT: | MCFC |
| PROJECT: | NORTH STAND EXTENSION |
| TITLE: | NS-L01-CLUB LEVEL CONCESSIONS 5 |
| DWG No: | NSE-DWN-NS-01-DP-X-001102 |
| REVISION: | C02 |
| STATUS: | A5 |
| DATE: | 03.11.2025 |
| SCALE: | 1:25 |
| PAPER SIZE: | A1 |
| DRAWN BY: | CDJ |
| CHECKED BY: | C J |
| APPROVED BY: | |

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TEL: 0161 684 7879 DAWNVALE.COM

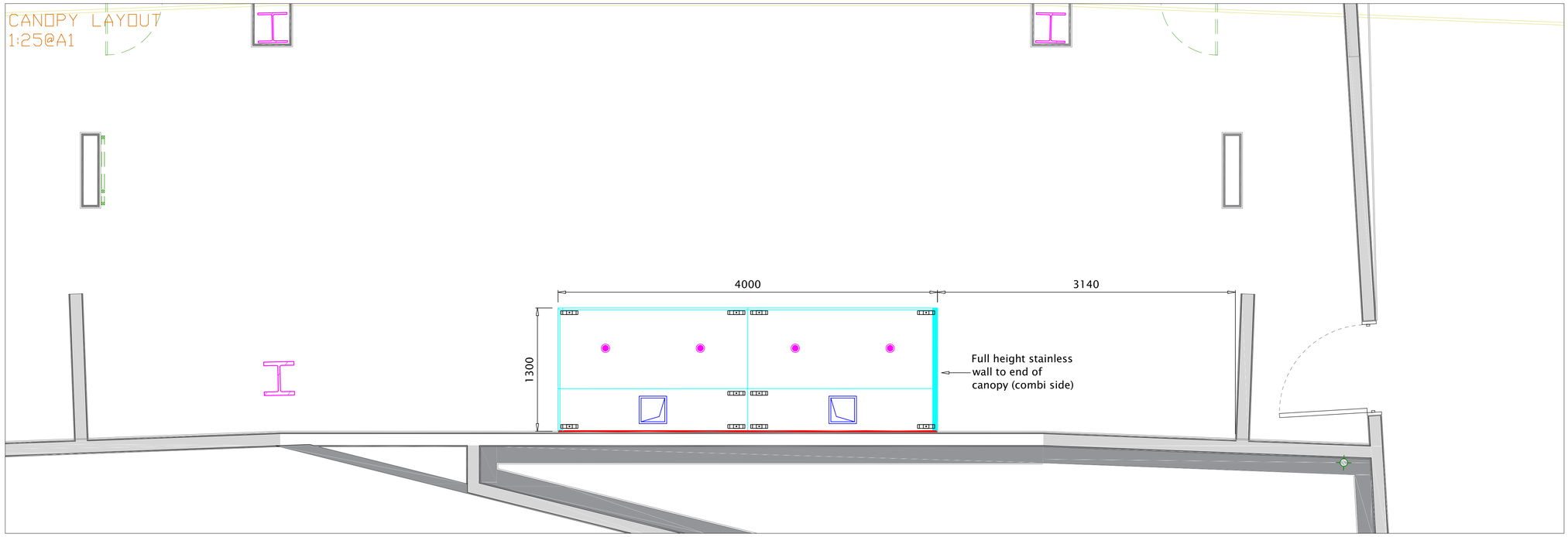


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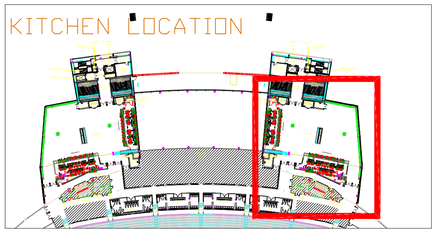

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Status C with Major Comment

## CANOPY LAYOUT
1:25@A1




## KITCHEN LOCATION



### CANOPY INFORMATION

EXTRACT ONLY CANOPY
4000 X 1300 X 500

2100 UNDERSIDE OF CANOPY FROM FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE 0.65 $M^3/S$ AT 100 PA

SPIGOTS ARE 80MM TALL WITH 20MM MEZ CONNECTION

2 EXTRACT SPIGOT(S) @ 250x250

SPIGOTS FIXED IN FACTORY- YES

NUMBER OF BAFFLE FILTERS-80

LIGHTING- 4 OFF LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY AND WILL BE SUPPLIED WITH A 1.5M TAIL

FINAL CONNECTION OF CANOPY LIGHTS TO LIGHTING CIRCUIT TO BE DONE BY ELECTRICAL CONTRACTOR 240V REQUIRED.

CLADDING-TO REAR

INFILLS-FULL HEIGHT STAINLESS WALL TO ONE END OF CANOPY - 400MM TALL TO TOP OF CANOPY

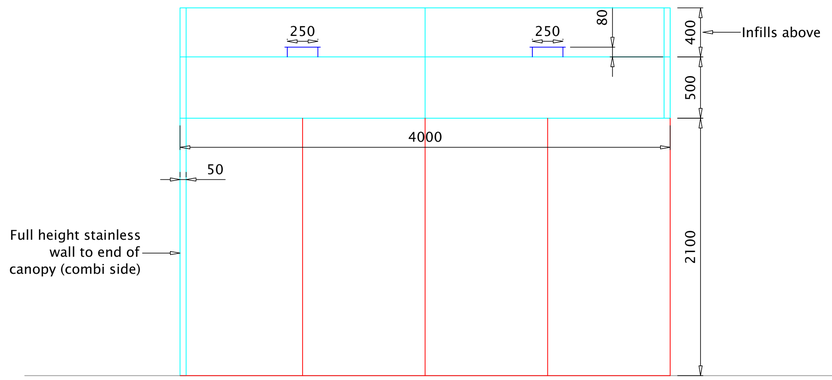
CANOPY APPROVED- YES...../NO.....

COMMENTS.....

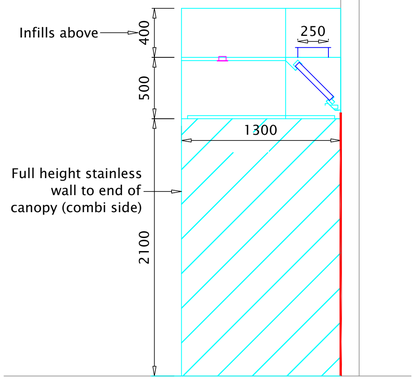
SIGNED.....

DATE.....

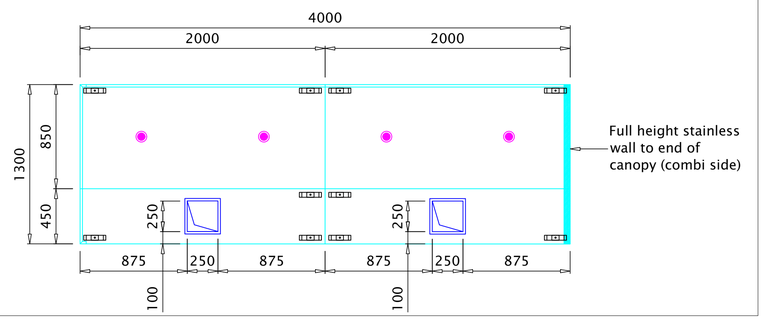
## FRONT ELEVATION
1:25@A1



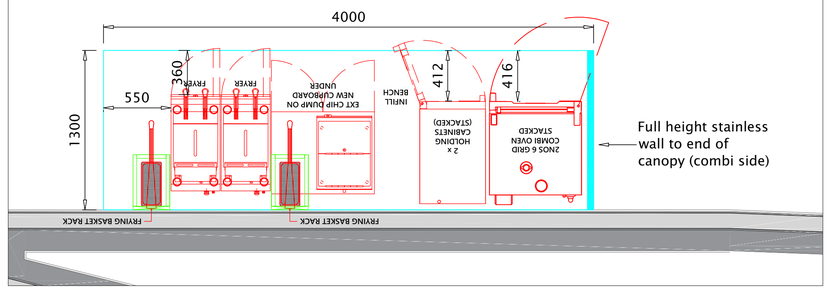

## CANOPY CROSS SECTION
1:25@A1




## CANOPY/SPIGOT DIMENSIONS
1:25@A1




## CANOPY OVERHANGS
1:25@A1




## CANOPY AIRFLOW CALCS

**Leightec Thermal Convection Airflow Calculation**

In Accordance With BESA Specification DW/172-2018

| | | | |
|---|---|---|---|
| **Project** | **MCFC** | **Date** | 05/08/2025 |
| **Drawing** | CONCESSION -5/6 | **Canopy Ref** | ITEM 14 |
| **Model** | Wall - Open One End | **Safety Factor** | 0% |
| | | **Extract Volume** | 0.65 $M^3/S$ |
| | | **Supply Volume** | 0.55 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 0 | Combination Ovens 6 grid. | 752 | 765 | Electric | 0.3 | 0 | 0.172584 |
| 0 | Holding Oven | 538 | 834 | Electric | 0.1 | 0 | 0.0448692 |
| 0 | Chip Scuttle | 450 | 600 | Electric | 0.15 | 0 | 0.0405 |
| 0 | Deep Fat Fryer | 400 | 786 | Electric | 0.45 | 0 | 0.14148 |
| 0 | Deep Fat Fryer | 400 | 786 | Electric | 0.45 | 0 | 0.14148 |

**DRAWING REVISION / AMENDMENT DETAILS**

| | |
|---|---|
| CLIENT: | MCFC |
| PROJECT: | NORTH STAND EXTENSION |
| TITLE: | NS-L01-CLUB LEVEL CONCESSIONS 6 |
| DWG No: | NSE-DWN-NS-01-DP-X-001103 |
| REVISION: | C02 |
| STATUS: | A5 |
| DATE: | 03.11.2025 |
| SCALE: | 1:25 |
| PAPER SIZE: | A1 |
| DRAWN BY: | CDJ |
| CHECKED BY: | C J |
| APPROVED BY: | |


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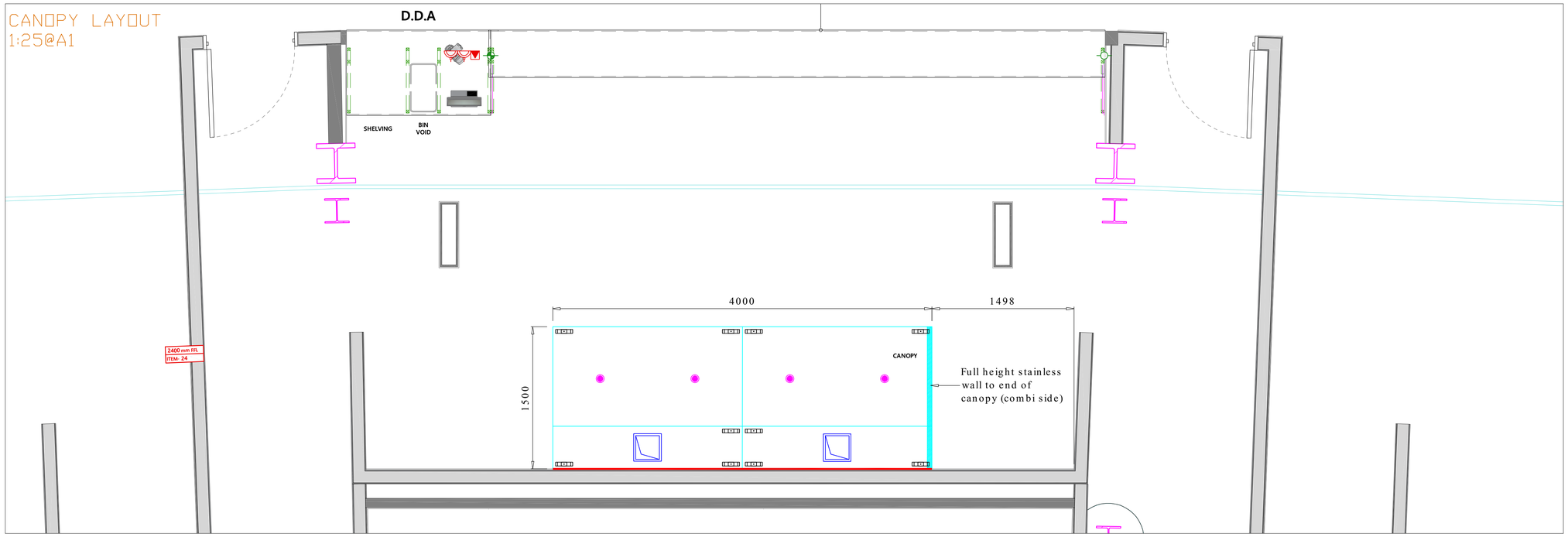
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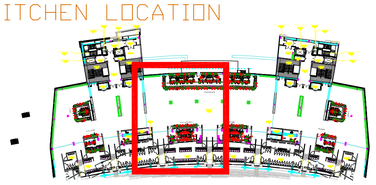
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Status B: Approved with comments

## CANOPY LAYOUT
1:25@A1




## KITCHEN LOCATION



### CANOPY INFORMATION

EXTRACT ONLY CANOPY
4000 X 1500 X 500

2000 UNDERSIDE OF CANOPY FROM FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE 0.73 $M^3/S$ AT 100 PA

SPIGOTS ARE 80MM TALL WITH 20MM MEZ CONNECTION

2 EXTRACT SPIGOT(S) @ 250x250

SPIGOTS FIXED IN FACTORY- YES

NUMBER OF BAFFLE FILTERS-8

LIGHTING- 4 OFF LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY AND WILL BE SUPPLIED WITH A 1.5M TAIL

FINAL CONNECTION OF CANOPY LIGHTS TO LIGHTING CIRCUIT TO BE DONE BY ELECTRICAL CONTRACTOR 240V REQUIRED.

CLADDING-TO REAR

INFILLS-FULL HEIGHT STAINLESS WALL TO ONE END OF CANOPY

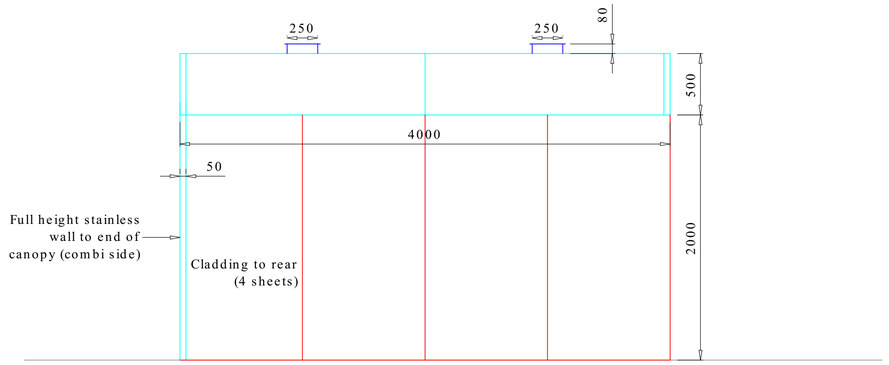
CANOPY APPROVED- YES...../NO.....

COMMENTS.....

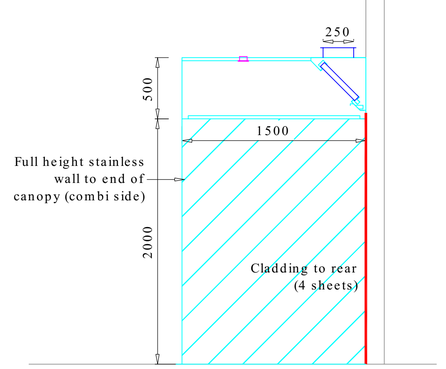
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DATE.....

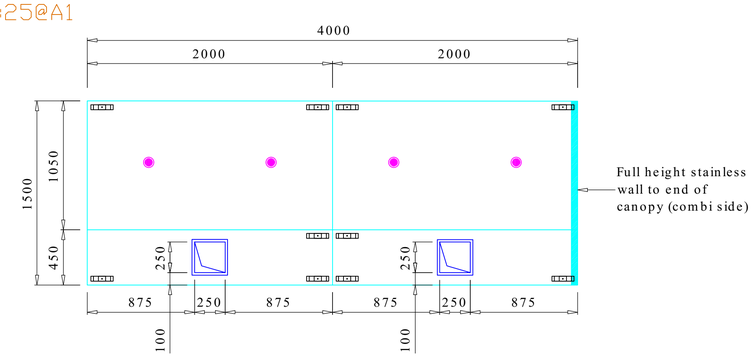
## FRONT ELEVATION
1:25@A1



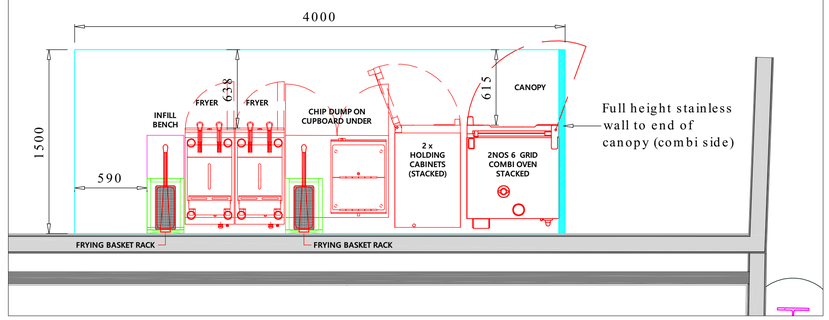

## CANOPY CROSS SECTION
1:25@A1




## CANOPY/SPIGOT DIMENSIONS
1:25@A1




## CANOPY OVERHANGS
1:25@A1




## CANOPY AIRFLOW CALCS

**Leightec Thermal Convection Airflow Calculation**

In Accordance With BESA Specification DW/172-2018

| | | | |
|---|---|---|---|
| **Project** | **North Stand - L02** | **Date** | 12/06/2025 |
| **Drawing** | City Kitchen 1&2 | **Canopy Ref** | Canopy 1&2 |
| **Model** | Wall - Open Both Ends | **Safety Factor** | 0% |
| | | **Extract Volume** | 0.73 $M^3/S$ |
| | | **Supply Volume** | 0.62 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 0 | Holding Oven | 535 | 835 | Electric | 0.1 | 0 | 0.0446725 |
| 0 | Deep Fat Fryer | 400 | 785 | Electric | 0.45 | 0 | 0.1413 |
| 0 | Deep Fat Fryer | 400 | 785 | Electric | 0.45 | 0 | 0.1413 |
| 0 | Chip Scuttle | 454 | 605 | Electric | 0.15 | 0 | 0.0412005 |
| 0 | Holding Oven | 535 | 835 | Electric | 0.1 | 0 | 0.0446725 |
| 0 | Combination Ovens 6 grid. | 752 | 762 | Electric | 0.3 | 0 | 0.1719072 |

**DRAWING REVISION / AMENDMENT DETAILS**

| | |
|---|---|
| CLIENT: | MCFC |
| PROJECT: | NORTH STAND EXTENSION |
| TITLE: | NS-L02-UPPER CONCOURSE<br>CITY KITCHEN 1 |
| DWG No: | NSE-DWN-NS-02-DP-X-001105 |
| REVISION: | P01 |
| STATUS: | S4 — DATE: 05.09.2025 |
| SCALE: | 1:25 — PAPER SIZE: A1 |
| DRAWN BY: | CDJ — CHECKED BY: C J — APPROVED BY: |

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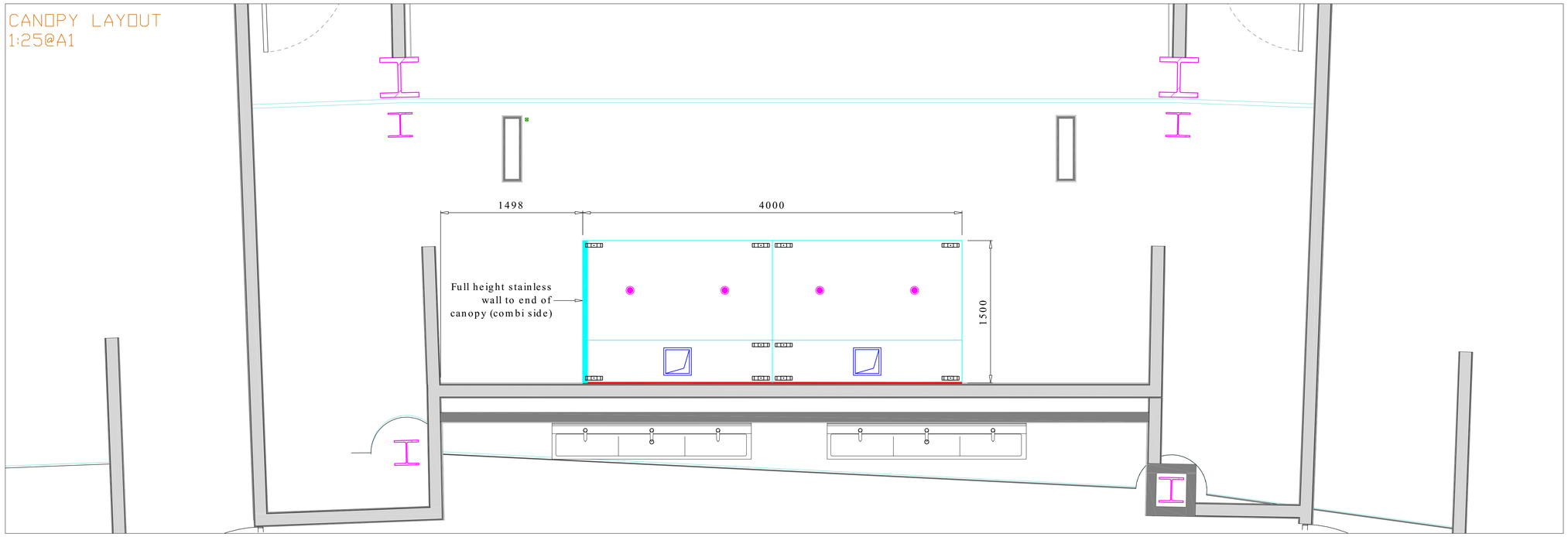
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Status B: Approved with comments

## CANOPY LAYOUT
1:25@A1




## KITCHEN LOCATION



### CANOPY INFORMATION

EXTRACT ONLY CANOPY
4000 X 1550 X 500

2000 UNDERSIDE OF CANOPY FROM FINISHED FLOOR LEVEL.

EXTRACT FLOW RATE 0.73 $M^3/S$ AT 100 PA

SPIGOTS ARE 80MM TALL WITH 20MM MEZ CONNECTION

2 EXTRACT SPIGOT(S) @ 250x250

SPIGOTS FIXED IN FACTORY- YES

NUMBER OF BAFFLE FILTERS-8

LIGHTING- 4 OFF LED SPOT LIGHTS.

EACH LED LIGHT REQUIRES 240V SUPPLY AND WILL BE SUPPLIED WITH A 1.5M TAIL

FINAL CONNECTION OF CANOPY LIGHTS TO LIGHTING CIRCUIT TO BE DONE BY ELECTRICAL CONTRACTOR 240V REQUIRED.

CLADDING-TO REAR

INFILLS-FULL HEIGHT STAINLESS WALL TO ONE END OF CANOPY

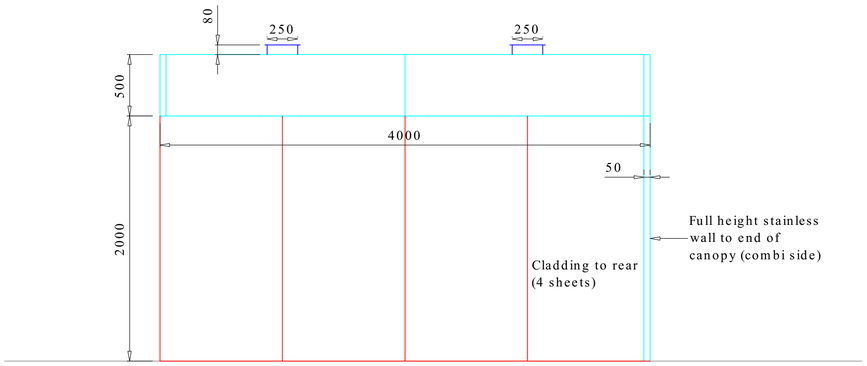
CANOPY APPROVED- YES...../NO.....

COMMENTS.....

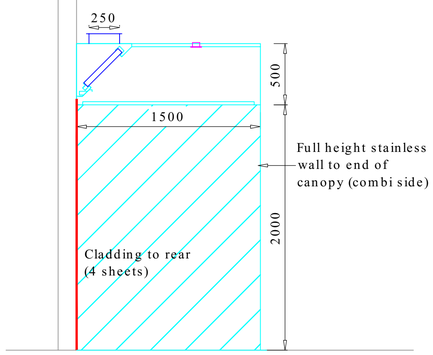
SIGNED.....

DATE.....

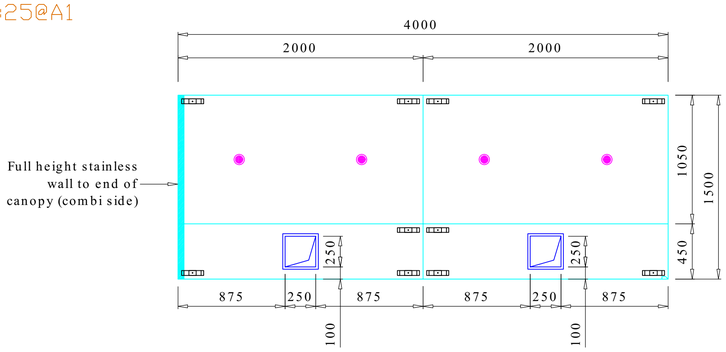
## FRONT ELEVATION
1:25@A1



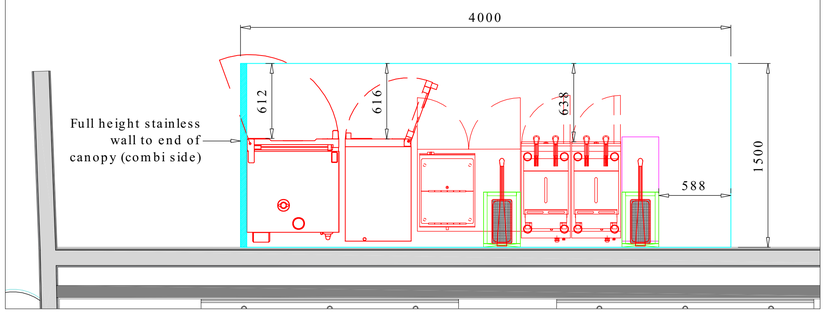

## CANOPY CROSS SECTION
1:25@A1




## CANOPY/SPIGOT DIMENSIONS
1:25@A1




## CANOPY OVERHANGS
1:25@A1




## CANOPY AIRFLOW CALCS

**Leightec Thermal Convection Airflow Calculation**

In Accordance With BESA Specification DW/172-2018

| | | | |
|---|---|---|---|
| **Project** | **North Stand - L02** | **Date** | 12/06/2025 |
| **Drawing** | City Kitchen 1&2 | **Canopy Ref** | Canopy 1&2 |
| **Model** | Wall - Open Both Ends | **Safety Factor** | 0% |
| | | **Extract Volume** | 0.73 $M^3/S$ |
| | | **Supply Volume** | 0.62 $M^3/S$ |

| Item | Description | Width | Depth | Power | Coefficient | Gas kW | Sub total |
|---|---|---|---|---|---|---|---|
| 0 | Holding Oven | 535 | 835 | Electric | 0.1 | 0 | 0.0446725 |
| 0 | Deep Fat Fryer | 400 | 785 | Electric | 0.45 | 0 | 0.1413 |
| 0 | Deep Fat Fryer | 400 | 785 | Electric | 0.45 | 0 | 0.1413 |
| 0 | Chip Scuttle | 454 | 605 | Electric | 0.15 | 0 | 0.0412005 |
| 0 | Holding Oven | 535 | 835 | Electric | 0.1 | 0 | 0.0446725 |
| 0 | Combination Ovens 6 grid. | 752 | 762 | Electric | 0.3 | 0 | 0.1719072 |

**DRAWING REVISION / AMENDMENT DETAILS**

| | |
|---|---|
| CLIENT: | MCFC |
| PROJECT: | NORTH STAND EXTENSION |
| TITLE: | NS-L02-UPPER CONCOURSE<br>CITY KITCHEN 2 |
| DWG No: | NSE-DWN-NS-02-DP-X-001106 |
| REVISION: | P01 |
| STATUS: | S4 — DATE: 05.09.2025 |
| SCALE: | 1:25 — PAPER SIZE: A1 |
| DRAWN BY: | CDJ — CHECKED BY: C J — APPROVED BY: |

DAWNVALE GROUP
RESTAURANT + BAR DESIGN + BUILD


UNITS 1-2 | ALBERT STREET | HOLLINWOOD | OLDHAM | OL8 3QP
TEL: 0161 684 7879 DAWNVALE.COM



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**APPENDIX 4**

- Ecology Unit Schedules

MCFC North Expansion
Hotel Building

# Mechanical Services
# Ecology Units Schedule

Document No:
NSE-SEE-HT-XX-LS-M-008007
RIBA Stage 4iii
Revision:
P04

Status A: Approved

# MCFC North Expansion - Hotel Building

# Mechanical Services Ecology Units Schedule

## Issue and Revision Schedule

| Rev / Issue | Date | Description | Revision Details | Prepared | Checked |
|---|---|---|---|---|---|
| P01 | 09/08/2024 | RIBA Stage 4i | S3 - For Review and Comment | BW | TB |
| P02 | 10/09/2024 | RIBA Stage 4i | S3 - For Review and Comment | BW | TB |
| P03 | 17/10/2024 | Stage 4ii Mechanical Schedules Update | S3 - For Review and Comment | BW | TB |
| P04 | 29/10/2024 | Stage 4iii Full Pack Issue | S3 - For Review and Comment | BW | TB |
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Project: **MCFC North Expansion - Hotel Building**

| | |
|---|---|
| Date: | 29-Oct-24 |
| Revision | P04 |
| Project No.: | 24032 |

# EQUIPMENT SCHEDULE — ECOLOGY UNITS

| Reference | EAHU.00.01 | EAHU.00.02 | EAHU.01.01 | | | |
|---|---|---|---|---|---|---|
| Location | ~~Level 00~~ | ~~Level 00~~ | Level 01 | | | |
| Room Located | ~~F&B 1&2 Market Hall~~ | ~~F&B 1&2 Market Hall~~ | F&B 5 All Day Dining Kitchen | | | |
| System | ~~Level 00 F&B 1 - 2no. Concessions~~ | ~~Level 00 F&B 2 - 2no. Concessions & Asian Cooking~~ | Level 01 F&B 5 Kitchen | | | |
| Air Volume Flow Rate (l/s) | ~~1960 l/s Extract (1470 l/s Make-up (75%)) 1635 l/s Total~~ | ~~3060 l/s Extract 2295 l/s Make-up (75%)~~ | 4630 l/s Extract<br>4400 l/s Make-up (95%) | | | |
| External Static Pressure (Pa) | ~~500 Pa~~ | ~~500 Pa~~ | 460 Pa | | | |
| Electric Pre-Heater (Supply Unit) | ~~Air on @ -5°C Air off @ 5°C~~ | ~~Air on @ -5°C Air off @ 5°C~~ | Air on @ -5°C<br>Air off @ 5°C | | | |
| DX Heating / Cooling Coil (Supply Unit) | ~~Air on @ 5°C / 31°C Air off @ 16°C / 25°C~~ | ~~Air on @ 5°C / 31°C Air off @ 16°C / 25°C~~ | Air on @ 5°C / 31°C<br>Air off @ 16°C / 25°C | | | |
| Panel & Bag Filter | ~~Yes~~ | ~~Yes~~ | Yes | | | |
| HEPA Filter | ~~Yes~~ | ~~Yes~~ | Yes | | | |
| Run Around Coil | ~~Yes - TBC~~ | ~~Yes - TBC~~ | Yes | | | |
| Carbon Filter | ~~Yes~~ | ~~Yes~~ | Yes | | | |
| Fan Drives | ~~Plug Type Direct Drive (Inverter)~~ | ~~Plug Type Direct Drive (Inverter)~~ | Plug Type Direct Drive (Inverter) | | | |
| Supply Unit Size (mm L × mm W × mm H) | ~~5350 x 1330 x 1150mm~~ | ~~5350 x 1330 x 1450mm~~ | 4640 x 1720 x 1800mm | | | |
| Extract Unit Size (mm L × mm W × mm H) | ~~5350 x 1330 x 1150mm~~ | ~~5350 x 1330 x 1450mm~~ | 5280 x 1720 x 1800mm | | | |
| Supply Unit Weight (kg) | | | | | | |
| Extract Unit Weight (kg) | | | | | | |
| **Electrical Details** | | | | | | |
| Electrical Power Input (kW) | ~~2.2kW Make-up 7.5kW Extract 18kW Pre-heat~~ | ~~3kW Make-up 11kW Extract 28kW Pre-heat~~ | 60kW Electric Heater<br>4.5kW Run Around Circuit<br>16kW Main Fans Supply | | | |
| Running Current (Amps) | ~~32A~~ | ~~63A~~ | 114.8A | | | |
| Starting Current (Amps) | ~~--~~ | ~~--~~ | -- | | | |
| Electrical Supply (V / Ø / Hz) | ~~3x 380V / 3Ø / 50Hz~~ | ~~3x 380V / 3Ø / 50Hz~~ | 3x 400V / 3Ø / 50Hz | | | |
| **Supplier Details** | | | | | | |
| Manufacturer | ~~Flakt Woods~~ | ~~Flakt Woods~~ | Flakt Woods | | | |
| Model Reference | ~~TBC~~ | ~~TBC~~ | TBC | | | |
| Controls / Accessories | ~~Variable Speed Inverter~~ | ~~Variable Speed Inverter~~ | Variable Speed Inverter | | | |
| Notes | ~~Supply and Extract Sections are separate units. Makeup also serves pot wash~~ | ~~Supply and Extract Sections are separate units~~ | Supply and Extract Sections are separate units. Greater Makeup Air on this unit due to sealed kitchen area. | | | |

Notes:

1. Maximum specific fan power must NOT exceed the figures as set out in Table 36 of the HM Government Building Regulations Non-Domestic Building Services Design Guide. All fans must be selected with specific fan powers in compliance with this document..
2. Scheduled external static pressures are provisional only and are subject to confirmation by calculation by the contractor from their installation drawings
3. All other components have been calculated based on design selections.
4. All other components have been calculated based on design selections.
5. All equipment to be issued with a full and detailed manual for installation, operating / maintenance and fault finding.
6. All fans with a rated electrical input of 10kW or greater shall have separate electrical metering . Where required and where fans are power fed from motor control centre the electrical metering shall be installed in the MCC. The electrical input for all fans shall be confirmed in the Mechanical Contractor's technical submission.
7. Items that have been struck through are to be excluded in the whitebox areas, to follow as part of the client direct works

# MCFC North Expansion
# North Stand Fit Out

## Mechanical Services
## Ecology Units Schedule

**Document No:**
**NSE-SEE-NS-XX-LS-M-008305**
**RIBA Stage 4iii**
**Revision:**
**P04**

# MCFC North Expansion - North Stand Fitout

## Mechanical Services Ecology Units Schedule

### Issue and Revision Schedule

| Rev / Issue | Date | Description | Revision Details | Prepared | Checked |
|---|---|---|---|---|---|
| P01 | 05/07/2024 | RIBA Stage 4i Full Pack Issue | S3 - For Review and Comment | BW | TB |
| P02 | 30/08/2024 | RIBA Stage 4i Full Pack Issue | S3 - For Review and Comment | BW | TB |
| P03 | 27/09/2024 | Stage 4iii Mechanical Schedules Update | S3 - For Review and Comment | BW | TB |
| P04 | 07/03/2025 | Stage 4iii - IPD 4 Final Stage Issue | S4 - Suitable for Stage Approval | HC | BW |
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Project: **MCFC North Stand Fitout**

Date: **07-Mar-25**
Revision **P04**
Project No.: **24032**

## EQUIPMENT SCHEDULE — ECOLOGY UNITS

| Reference | EAHU.3.01 | EAHU.3M.01 | EAHU.3M.02 | EAHU.3M.03 | EAHU.3M.04 | | |
|---|---|---|---|---|---|---|---|
| Location | Level 03 East | Level 03 West | Level 03M East | Level 03M East | Level 03 East | | |
| Room Located | Plant Level East | Plant Level West | Plant Mezzanine Level East | Plant Mezzanine Level East | Plant Level East | | |
| System | Level 01 Players Lounge East Kitchen | L00 West Support Kitchen | Level 00 East Support Kitchen | Level 05 East Support Kitchen | Level 01 Players Lounge West Kitchen | | |
| Air Volume Flow Rate (l/s) | 610 l/s Extract<br>575 l/s Make-up | 1,690 l/s Extract<br>1,600 l/s Make-up | 1,690 l/s Extract<br>1,600 l/s Make-up | 1,690 l/s Extract<br>1,600 l/s Make-up | 610 l/s Extract<br>575 l/s Make-up | | |
| External Static Pressure (Pa) | 650 Pa | 825 Pa | 650 Pa | 500 Pa | 650 Pa | | |
| Electric Pre-Heater (Supply Unit) | Air on @ -5°C<br>Air off @ 5°C | Air on @ -5°C<br>Air off @ 5°C | Air on @ -5°C<br>Air off @ 5°C | Air on @ -5°C<br>Air off @ 5°C | Air on @ -5°C<br>Air off @ 5°C | | |
| DX Heating / Cooling Coil (Supply Unit) | Air on @ 5°C / 31°C<br>Air off @ 16°C / 25°C | Air on @ 5°C / 31°C<br>Air off @ 16°C / 25°C | Air on @ 5°C / 31°C<br>Air off @ 16°C / 25°C | Air on @ 5°C / 31°C<br>Air off @ 16°C / 25°C | Air on @ 5°C / 31°C<br>Air off @ 16°C / 25°C | | |
| Panel & Bag Filter | Yes | Yes | Yes | Yes | Yes | | |
| HEPA Filter | Yes | Yes | Yes | Yes | Yes | | |
| Run Around Coil | Air on @ 30°C, Air off @ 22°C Extract<br>Air on @ 5°C, Air off @ 12°C Make-up | Air on @ 30°C, Air off @ 22°C Extract<br>Air on @ 5°C, Air off @ 12°C Make-up | Air on @ 30°C, Air off @ 22°C Extract<br>Air on @ 5°C, Air off @ 12°C Make-up | Air on @ 30°C, Air off @ 22°C Extract<br>Air on @ 5°C, Air off @ 12°C Make-up | Air on @ 30°C, Air off @ 22°C Extract<br>Air on @ 5°C, Air off @ 12°C Make-up | | |
| Carbon Filter | Yes | Yes | Yes | Yes | Yes | | |
| Fan Drives | Plug Type Direct Drive (Inverter) | Plug Type Direct Drive (Inverter) | Plug Type Direct Drive (Inverter) | Plug Type Direct Drive (Inverter) | Plug Type Direct Drive (Inverter) | | |
| Unit Size (mm L × mm W × mm H) | 5200 x 760 x 1600mm | 5280 x 1400 x 1920mm | 5280 x 1400 x 1920mm | 5280 x 1400 x 1920mm | 5200 x 760 x 1600mm | | |
| Weight (kg) | 1,411 kg | 1,411 kg | 1,411 kg | 1,411 kg | 1,411 kg | | |
| **Electrical Details** | | | | | | | |
| Electrical Power Input (kW) | 7.50 kW Extract<br>4.00 kW Make-up<br>7 kW Pre-heat | 7.50 kW Extract<br>4.00 kW Make-up<br>20 kW Pre-heat | 7.50 kW Extract<br>4.00 kW Make-up<br>20 kW Pre-heat | 7.50 kW Extract<br>4.00 kW Make-up<br>20 kW Pre-heat | 7.50 kW Extract<br>4.00 kW Make-up<br>7 kW Pre-heat | | |
| Running Current (Amps) | 13.96 A Extract<br>8.30 A Make-up<br>17.5 A Pre-heat | 13.96 A Extract<br>8.30 A Make-up<br>50 A Pre-heat | 13.96 A Extract<br>8.30 A Make-up<br>50 A Pre-heat | 13.96 A Extract<br>8.30 A Make-up<br>50 A Pre-heat | 13.96 A Extract<br>8.30 A Make-up<br>17.5 A Pre-heat | | |
| Starting Current (Amps) | TBC | TBC | TBC | TBC | P04 | | |
| Electrical Supply (V / Ø / Hz) | 380V / 3Ø / 50Hz | 380V / 3Ø / 50Hz | 380V / 3Ø / 50Hz | 380V / 3Ø / 50Hz | 380V / 3Ø / 50Hz | | |
| **Supplier Details** | | | | | | | |
| Manufacturer | Flakt Woods | Flakt Woods | Flakt Woods | Flakt Woods | Flakt Woods | | |
| Model Reference | | | | | | | |
| Controls / Accessories | Variable Speed Inverter | Variable Speed Inverter | Variable Speed Inverter | Variable Speed Inverter | Variable Speed Inverter | | |
| Notes | Double stacked, Supply & Extract Unit | Double stacked, Supply & Extract Unit | Double stacked, Supply & Extract Unit | Double stacked, Supply & Extract Unit | Double stacked, Supply & Extract Unit | | |

Notes:
1. Maximum specific fan power must NOT exceed the figures as set out in Table 36 of the HM Government Building Regulations Non-Domestic Building Services Design Guide. All fans must be selected with specific fan powers in compliance with this document..
2. Scheduled external static pressures are provisional only and are subject to confirmation by calculation by the contractor from their installation drawings
3. All other components have been calculated based on design selections. The Contractor must substitute actual resistances of ALL installed system components when selecting any fans - prior to ordering equipment.
4. All other components have been calculated based on design selections. The Contractor must substitute actual resistances of ALL installed system components when selecting any fans - prior to ordering equipment.
5. All equipment to be issued with a full and detailed manual for installation, operating / maintenance and fault finding.
6. All fans with a rated electrical input of 10kW or greater shall have separate electrical metering (by the electrical contractor). Where required and where fans are power fed from motor control centre the electrical metering shall be installed in the MCC. The electrical input for all fans shall be confirmed in the Mechanical Contractor's technical submission.



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