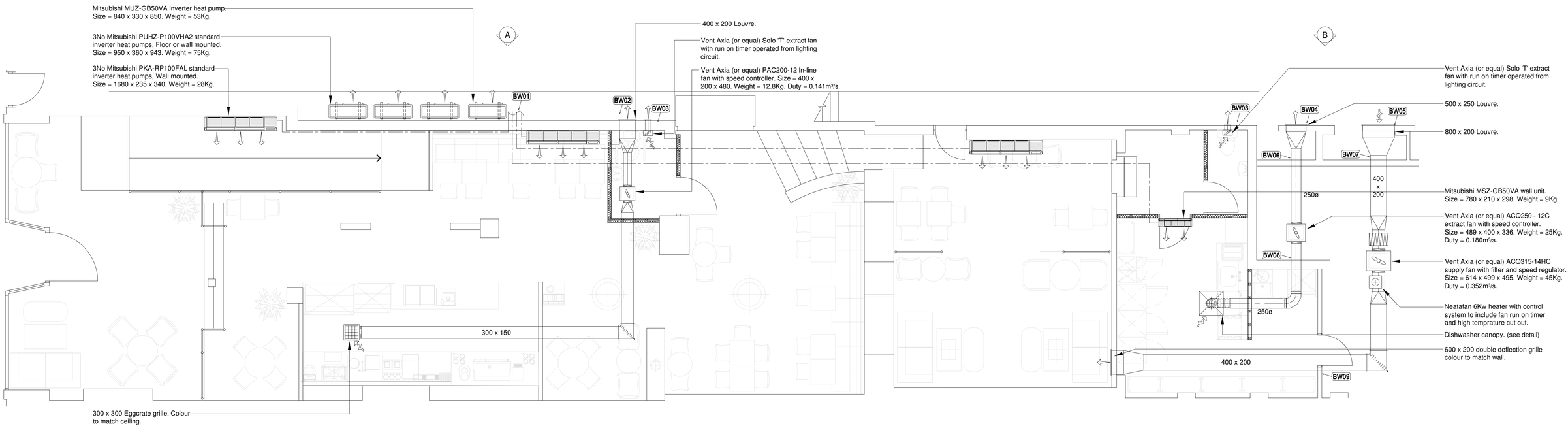
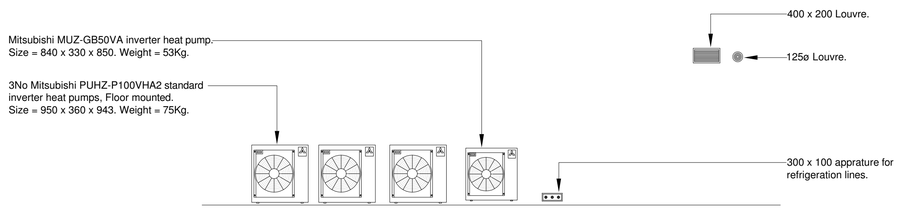
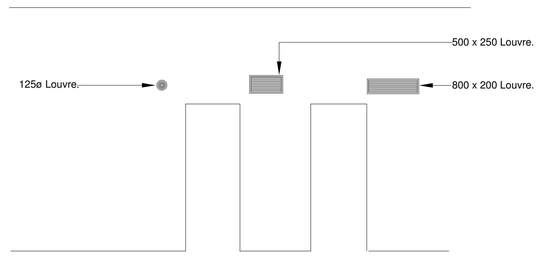


1 Ground Floor



2 Section 'A'



3 Section 'B'

4 Notes

1. All wiring to be carried out by the mechanical contractor to give a turn key installation other than main electrical supplies to control panel and outdoor A/C plant which shall be carried out by electrical contractor
2. All wiring to be in accordance with the current edition of the IEE Regulations
3. All plant to be locally isolated. Indoor cassette units to be supplied from outdoor unit isolator
4. All fire dampers to be 2 hour fusible link type unless otherwise detailed. Dampers to be of Actionair manufacture complete with installation frame where within brickwork or concrete wall or floor, and with installation frame 'Series SP' where within stud partitioning. Dampers to be installed to manufacturer's detail
5. Condensate waste from indoor units to be pumped using reservoir condensate pumps as Hartell PAB-2X with failsafe facility
6. The failsafe facility on the condensate pumps shall instigate individual plant shutdown
7. Cassette units to be group controlled with delayed start between units in group
8. All steelwork and plant bases etc. by mechanical contractor
9. All fans and ducted plant to have flexible final connections
10. Refrigeration pipework to be insulated to manufacturer's requirements using Armstrong Amaflex Class 0 internally and Class 1 externally. Complete with glued and tape sealed joints. External insulation shall be further protected using 'Armafinish FR' paint, minimum 2 coats, applied to manufacturer's requirements
11. Mechanical contractor to allow for return visit for the filter change following handover and prior to store opening
12. Refrigeration pipework to be run on heavy duty slotted cable tray installed by mechanical contractor
13. Condensate to be pumped to connection point via Hepworth Hepvo self sealing trap by mechanical contractor
14. Ductwork insulation to be to 'Class 0' rating
15. Electric air heater control shall ensure the following:
a. Leaving air temperature does not exceed 40°C
b. Heater is not activated when there is no air flow
c. The fan runs on after heater has been switched off to dissipate residual heat
16. All air conditioning and ventilation plant to shut down upon activation of fire alarm
17. Mechanical contractor to allow for craneage of plant onto roof level
18. The commissioning of the building services installation shall be carried out in strict accordance with the CIBSE Commissioning Codes and the BSRIA Commissioning Codes. Certificates will shall be included within the building log book. A self-contained building log book shall be produced, this will contain the following information:
A schedule of the floor areas of each of the building zones catagorised by environmental servicing type (eg. Air conditioned, naturally ventilated); the purpose of the individual building service systems; the location of the relevant plant and equipment; the installed capacities (input power and output power rating) of the services plant; simple descriptions of the operational and control strategies of the energy consuming services in the building; and
operating and maintenance instructions that include provisions enabeling the specified performance to be sustained during operation.
The log book and certificates are to be made available for inspection by the Building Control Officer prior to completion of the works on site.

Costa Coffee - Demarcation of Mechanical and Electrical Services Wiring and Testing of Installations

All electrical installations provided as part of the construction and fit out of a new, or re-model of an existing Costa Coffee store are to be fully tested in accordance with the requirements of BS 7671 and all of it's current updates and amendments by a suitably qualified electrical engineer whose employer is a member of the National Inspection Council for Electrical Installation Contracting (NICEIC).

Each NICEIC Approved Contractor must:-
Carry out electrical installation work to the regulatory industry standards.
Employ competent electricians who are properly supervised.
Use materials of good quality that conform to the relevant British Standards.
Undergo regular inspection by NICEIC Inspecting Engineers and
comply with the NICEIC Complaints Procedure and Guarantee of Standards Scheme.

All wiring installed into new installations must comply with the new fixed wiring colours issued in amendment number 2 to BS7671. Upon completion of the project and before handover to the client the entire installation must be fully tested and results recorded for the whole installation on prescribed forms.

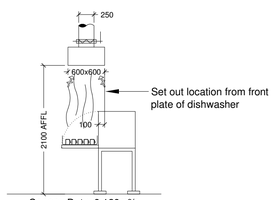
The Mechanical services installations generally comprise comfort heating and cooling plant, fresh air ventilation and extract plant. The electrical contractor must allow within his quotation for provision of power supplies terminating in suitably sized weatherproof isolators adjacent to each of the outdoor A/C units. The contractor shall use steel wire armoured cables. A similar supply will be required terminating in a suitably sized contactor for the mechanical distribution board.

The electrical contractor will provide maintained supplies from the main distribution board to isolators at the sales area outdoor units, the mechanical contractor will wire from the isolators to the outdoor units, (weatherproof isolators by the electrical contractor).
The electrical contractor will also provide a contactor controlled supply to a small distribution board which will be supplied and installed by the mechanical contractor.
The contactor will be controlled by the keyswitch (or last man out switch) provided by the electrical contractor and will have 2 auxilliary contacts (1 normally open and 1 normally closed), to switch the air conditioning unit control circuit and to switch a supply fan run on timer (when the system is closed down).
Where it is necessary to have a fire alarm shut down this will break the keyswitch circuit and drop out the contactor.
The electrical contractor shall carry out all of the above wiring.
The mechanical contractor will carry out all of the wiring from their non maintained distribution board, and the auxilliary contacts of the contactor to all fans and mechanical equipment fed from that board, including the supply to the M series back of house AC unit where applicable. The mechanical contractor shall carry out all interconnection wiring of the AC units including maintained supplies to condensate pumps and group control of the sales area AC units and be responsible for the complete operation of the HVAC system.

NOTE: All extract canopies to have welded seams only. Riveted installation not permitted

NB: All customer area ceiling grilles to match ceiling colour

All cabling to be carried out in low smoke and fume emission insulated cables



Canopy Duty: 0.180m³/s
Canopy to be manufactured in stainless steel

5 Dishwasher Canopy

Equipment	Current (A)	Phase	Noise (dBA)
3No air conditioning units	12.78 each	1	54
1No air conditioning unit	7.58	1	53
Servery fan	0.65	1	42
Dishwasher fan	1.31	1	52
Supply air fan	2.29	1	53
2 x Toilet fans	0.15 each	1	42
-	-	-	-

7 Electrical Requirements

REF	SIZE (APPROX)	LOCATION
1	300 x 100	External Wall
2	400 x 200	External Wall
3	125ø	External Wall
4	500 x 250	External Wall
5	800 x 200	External Wall
6	275ø	Internal Wall
7	425 x 225	Internal Wall
8	275ø	Internal Wall
9	425 x 225	Internal Wall
10		

6 Builder's Work Schedule

CDM RISK ASSESSMENTS

ACTIVITY, PROCESS, MATERIAL	HAZARD	INITIAL RISK RATING	ACTIONS TAKEN BY DESIGNER TO REDUCE RISK RATING	FINAL RISK RATING
Installation of air conditioning plant and associated pipes, electrical and control wiring	These works will be at high level over 2 metres high in places	3	The provision of safe access equipment, hard hats, eye protection and safety harnesses	1
Charging air conditioners with refrigerant	Leakage of refrigerant	1	Competent refrigeration engineer required to charge the air conditioners refrigeration circuits	1
Lifting of air conditioners, condensing units, ductwork, pipework, fans, mechanical control panel and other mechanical plant Crane lifting of plant	The lifting of plant and associated equipment	3	Use the correct manual lifting techniques. Use lifting gear where necessary	2
The installation of outside mechanical plant, equipment, ductwork, pipework and associated fixtures and fittings	Lifting of heavy plant onto the roof. Risk to workers involved and to the general public	3	Use competent crane lifting specialist	2
	These works will be at heights of over 2m	3	The provision of guard rails with warning signs. A safety man when there is one man working	2
The installation of air conditioning condensing units, associated pipework and cables and fixtures and fittings	Risk of tripping on low level pipes and cables	3	The provision of guard rails with warning signs. A safety man when there is one man working	1
Water treatment works, system flushing and testing	Chemical spillage and splashing on to operators	3	Protective clothing, eye protection, chemical data sheets	1
Installation works carried out during trading hours	Risk of injury to staff and general public	3	Protective hoarding to be erected around work area	1

RISK RATING KEY

LIKELIHOOD \ SEVERITY	L	M	H
H	2	3	3
M	1	2	3
L	1	1	2

SEVERITY
H = Fatality/major injury causing long term disability
M = Injury or illness causing short term disability
L = Other injury or illness

LIKELIHOOD
H = Certain or near certain
M = reasonably likely
L = Very seldom or never

RISK RATING
3 = High risk; action required
2 = Medium risk; action required unless good reason
1 = Low risk; no action required

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Rev.	Description	Date	Checked
B	Refrigeration lines alltered	04/09/2009	DC
A	Elevations added	18/08/2009	DC

NOTE: THE CONTENTS OF THIS DRAWING IS INTENDED TO DEMONSTRATE THE CONCEPT OR INTENT OF THE DESIGN AND SHOULD IN NO WAY BE SCALED OR USED AS A CO-ORDINATED CONSTRUCTION DRAWING

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Client: Costa Coffee
Project: Hinckley, UK
Title: Ground Floor Mechanical Services Layout
Drawn by: AW | Design By: DC | Checked by: DC
Date: - | A1 Scale: 1:50
Filename: cccrpca00
Drawing Number: 090663 - M01 | Revision: B

M01 - MECHANICAL SERVICES