OPERATING AND MAINTENANCE MANUAL

for the
MECHANICAL SERVICES

Bianca by Mosaic

1 Surf Street, Bilinga QLD 4225

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SCOPE OF MANUAL

This project involves the supply and installation of mechanical services of Bianca Apartments located at 1 Surf Street, Bilinga QLD 4225.

Included within this manual is a comprehensive description of the systems and equipment installed and the functioning of these systems along with details of the periodic maintenance required to ensure continuing reliable service of all plant.

Complete schedules of equipment suppliers and component technical details have been provided as well as manufacturers' literature pertaining to the respective equipment setting out specific recommendations.

The contents of this Manual are intended to provide complete information in a useful form, to assist daily operating personnel in the execution of their duties and to provide accurate reference data for maintenance staff.

REVISION RECORD

REVISION	DESCRIPTION	DATE	NAME
1:1	Draft for Review	10/08/2023	M Styles
1:2	Revision	27/10/2023	M Styles

The warranty on this Project expires on

12 Months From Practical Completion.
8th November 2024

For Break Down Service & Emergency Contact
Please note that warranty service is Business hours 7am to 5pm, Monday to Friday.

Glennair Air Conditioning

Bus. Hours: (07) 5593 8000

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SECTION A: GENERAL DESCRIPTION

SECTION A

GENERAL DESCRIPTION

This section is intended to provide a brief outline of the systems and equipment installed and should be read in conjunction with the enclosed “As Installed” drawings.

1. MECHANICAL SERVICES

Bianca Residential Apartment building consists of Six (6) Storeys compromising, Thirteen (13) Residential apartments and One (1) Basement car park, made up of the following.

- Basement 1.
  - Carpark.
    - Carpark Exhaust Fan & associated duct work & grilles (West side).
    - Carpark Supply air Fan & associated ductwork & grilles (East side).
    - MSB Room wall hung split AC.
    - Recycling Room wall hung split AC.
    - Waste Room wall hung split AC.
    - MSSB-B1 located adjacent to the lift.
    - Condensing Units for basement & Managers office AC.
- Ground Floor:
  - West side has naturally ventilation carparks
  - Carparking.
  - Managers Office AC.
  - Lobby AC.
  - Lift Lobby for access to Two (2) Lifts.
  - Apartment G.01

- Level One to Six
  - Apartments – Beach side – Multi V – VRF system.
  - Apartments – Street Side – Split ducted system.
  - Mechanical ventilation, combination of inline & header box exhaust fans.

- Level Roof.
  - Condensing units are located on the roof.

The air conditioning & mechanical components are summarised as follows.

1.1 B1 - BASEMENT LEVEL - AIR CONDITIONING UNITS.

The Basement Level air conditioning consists of three (3) wall hung splits with the condensing units located on this level on the western wall.
The condensing units for the Lobby and managers office are also located on the western wall.
All of the fan coil units are individually controlled by wired or infrared remote controller located within each space.

Air conditioning units for these areas are listed below.

SYSTEM	TYPE	AREA / LOCATION	MODEL NUMBER
CU-MSB	LG Condensing Unit	Basement West Wall	WS18TWU
FCU-MSB	LG Wall Hung Unit	MSB Room	WS18TWN
CU-REC	LG Condensing Unit	Basement West Wall	WS12TWU
FCU-REC	LG Wall Hung Unit	Recycle Room	WS12TWN
CU-BR	LG Condensing Unit	Basement West Wall	WS18TWU
FCU-BR	LG Wall Hung Unit	Bin Room	WS18TWN

1.2 GROUND LEVEL - AIR CONDITIONING UNITS.

The ground level consists of one (1) manager's office with a wall hung split air conditioning unit, The indoor fan coil units located on the eastern wall with the condensing unit located in the basement on the western wall. One (1) lobby ducted unit, located above the managers office with the condensing unit located in the basement on the western wall.
The air conditioning unit is controlled by either a wired or infrared remote controller.

The beach side apartment consists of one multi V VRF condensing unit located on the roof and seven indoor units for the conditioned spaces.

Air conditioning units for these apartments are listed below.

SYSTEM	TYPE	AREA / LOCATION	MODEL NUMBER
CU-G.M	LG Condensing Unit	Basement West Wall	WS12TWU
AC-G.M	LG Wall Hung Unit	Managers Office	WS12TWN
CU-G.L	LG Condensing Unit	Basement West Wall	UU24R
AC-G.L	LG Ducted Unit	Lobby (Above mgrs. Office)	UU24WR
CU-G.01	LG MULTI V - Cond Unit	Roof	ARUN060SS5
AC-G.01.1	LG Ducted Unit	Master Suite	ARNU15G1A4
AC-G.01.2	LG Ducted Unit	Dining	ARNU24G1A4
AC-G.01.3	LG Ducted Unit	Living	ARNU15GL5G4
AC-G.01.4	LG Bulkhead Unit	Bed 2	ARNU05GL4G4
AC-G.01.5	LG Bulkhead Unit	Bed 1	ARNU05GL4G4
AC-G.01.6	LG Bulkhead Unit	Family	ARNU12GL5G4
AC-G.01.7	LG Bulkhead Unit	Study	ARNU05GL4G4

1.3 LEVEL 1 - AIR CONDITIONING UNITS.

Level one consists of two (2) apartments with the street side (02 Unit) consisting of one split ducted air conditioning unit. The indoor fan coil units located in the ceiling space of the apartment above the walk in robe (WIR) and the refrigerant pipe work running up through dedicated rises to the condensing units which are located on the roof.
The air conditioning units are controlled by a wired remote controller located in each apartment which gives full control of the air conditioning unit.
The surf side (01 Unit) consists of one VRF system consisting of one condensing unit located on the roof and seven indoor units, being one for each room.
These units operate individually via wired remote control, with one unit selected as the master so that all units are either in cooling or heating mode.

Air conditioning units for these apartments are listed below.

SYSTEM	TYPE	AREA / LOCATION	MODEL NUMBER
CU-1.02	LG Condensing Unit	Roof Plant Deck	ARUN040SS5
AC-1.02	LG Ducted Unit	Above WIR	ARNU42GM2A4
CU-1.01	LG MULTI V - Cond Unit	Roof Plant Deck	ARUN060SS5
AC-1.01.1	LG Ducted Unit	Master Suite	ARNU15G1A4
AC-1.01.2	LG Ducted Unit	Dining	ARNU24G1A4
AC-1.01.3	LG Ducted Unit	Living	ARNU15GL5G4
AC-1.01.4	LG Bulkhead Unit	Bed 2	ARNU05GL4G4
AC-1.01.5	LG Bulkhead Unit	Bed 1	ARNU05GL4G4
AC-1.01.6	LG Bulkhead Unit	Family	ARNU12GL5G4
AC-1.01.7	LG Bulkhead Unit	Study	ARNU05GL4G4

1.4 LEVEL 2 - AIR CONDITIONING UNITS.

Level two consists of two (2) apartments with the street side (02 Unit) consisting of one split ducted air conditioning unit. The indoor fan coil units located in the ceiling space of the apartment above the walk in robe (WIR) and the refrigerant pipe work running up through dedicated rises to the condensing units which are located on the roof.
The air conditioning units are controlled by a wired remote controller located in each apartment which gives full control of the air conditioning unit.
The surf side (01 Unit) consists of one VRF system consisting of one condensing unit located on the roof and seven indoor units, being one for each room.
These units operate individually via wired remote control, with one unit selected as the master so that all units are either in cooling or heating mode.

Air conditioning units for these apartments are listed below.

SYSTEM	TYPE	AREA / LOCATION	MODEL NUMBER
CU-2.02	LG Condensing Unit	Roof Plant Deck	ARUN040SS5
AC-2.02	LG Ducted Unit	Above WIR	ARNU42GM2A4
CU-2.01	LG MULTI V - Cond Unit	Roof Plant Deck	ARUN060SS5
AC-2.01.1	LG Ducted Unit	Master Suite	ARNU15G1A4
AC-2.01.2	LG Ducted Unit	Dining	ARNU24G1A4

AC-2.01.3	LG Ducted Unit	Living	ARNU15GL5G4
AC-2.01.4	LG Bulkhead Unit	Bed 2	ARNU05GL4G4
AC-2.01.5	LG Bulkhead Unit	Bed 1	ARNU05GL4G4
AC-2.01.6	LG Bulkhead Unit	Family	ARNU12GL5G4
AC-2.01.7	LG Bulkhead Unit	Study	ARNU05GL4G4

1.5 LEVEL 3 - AIR CONDITIONING UNITS.

Level three consists of two (2) apartments with the street side (02 Unit) consisting of one split ducted air conditioning unit. The indoor fan coil units located in the ceiling space of the apartment above the walk in robe (WIR) and the refrigerant pipe work running up through dedicated rises to the condensing units which are located on the roof.
The air conditioning units are controlled by a wired remote controller located in each apartment which gives full control of the air conditioning unit.
The surf side (01 Unit) consists of one VRF system consisting of one condensing unit located on the roof and seven indoor units, being one for each room.
These units operate individually via wired remote control, with one unit selected as the master so that all units are either in cooling or heating mode.

Air conditioning units for these apartments are listed below.

SYSTEM	TYPE	AREA / LOCATION	MODEL NUMBER
CU-3.02	LG Condensing Unit	Roof Plant Deck	ARUN040SS5
AC-3.02	LG Ducted Unit	Above WIR	ARNU42GM2A4
CU-3.01	LG MULTI V - Cond Unit	Roof Plant Deck	ARUN060SS5
AC-3.01.1	LG Ducted Unit	Master Suite	ARNU15G1A4
AC-3.01.2	LG Ducted Unit	Dining	ARNU24G1A4
AC-3.01.3	LG Ducted Unit	Living	ARNU15GL5G4
AC-3.01.4	LG Bulkhead Unit	Bed 2	ARNU05GL4G4
AC-3.01.5	LG Bulkhead Unit	Bed 1	ARNU05GL4G4
AC-3.01.6	LG Bulkhead Unit	Family	ARNU12GL5G4
AC-3.01.7	LG Bulkhead Unit	Study	ARNU05GL4G4

1.6 LEVEL 4 – AIR CONDITIONING UNITS.

Level four consists of two (2) apartments with the street side (02 Unit) consisting of one split ducted air conditioning unit. The indoor fan coil units located in the ceiling space of the apartment above the walk in robe (WIR) and the refrigerant pipe work running up through dedicated rises to the condensing units which are located on the roof.
The air conditioning units are controlled by a wired remote controller located in each apartment which gives full control of the air conditioning unit.
The surf side (01 Unit) consists of one VRF system consisting of one condensing unit located on the roof and seven indoor units, being one for each room.
These units operate individually via wired remote control, with one unit selected as the master so that all units are either in cooling or heating mode.

Air conditioning units for these apartments are listed below.

SYSTEM	TYPE	AREA / LOCATION	MODEL NUMBER
CU-4.02	LG Condensing Unit	Roof Plant Deck	ARUN040SS5
AC-4.02	LG Ducted Unit	Above WIR	ARNU42GM2A4
CU-4.01	LG MULTI V - Cond Unit	Roof Plant Deck	ARUN060SS5
AC-4.01.1	LG Ducted Unit	Master Suite	ARNU15G1A4
AC-4.01.2	LG Ducted Unit	Dining	ARNU24G1A4
AC-4.01.3	LG Ducted Unit	Living	ARNU15GL5G4
AC-4.01.4	LG Bulkhead Unit	Bed 2	ARNU05GL4G4
AC-4.01.5	LG Bulkhead Unit	Bed 1	ARNU05GL4G4
AC-4.01.6	LG Bulkhead Unit	Family	ARNU12GL5G4
AC-4.01.7	LG Bulkhead Unit	Study	ARNU05GL4G4

1.7 LEVEL 5 – AIR CONDITIONING UNITS.

Level five consists of two (2) apartments with the street side (02 Unit) consisting of one split ducted air conditioning unit. The indoor fan coil units located in the ceiling space of the apartment above the walk in robe (WIR) and the refrigerant pipe work running up through dedicated rises to the condensing units which are located on the roof.
The air conditioning units are controlled by a wired remote controller located in each apartment which gives full control of the air conditioning unit.
The surf side (01 Unit) consists of one VRF system consisting of one condensing unit located on the roof and seven indoor units, being one for each room.
These units operate individually via wired remote control, with one unit selected as the master so that all units are either in cooling or heating mode.

Air conditioning units for these apartments are listed below.

SYSTEM	TYPE	AREA / LOCATION	MODEL NUMBER
CU-5.02	LG Condensing Unit	Roof Plant Deck	ARUN040SS5
AC-5.02	LG Ducted Unit	Above WIR	ARNU42GM2A4
CU-5.01	LG MULTI V - Cond Unit	Roof Plant Deck	ARUN060SS5
AC-5.01.1	LG Ducted Unit	Master Suite	ARNU15G1A4
AC-5.01.2	LG Ducted Unit	Dining	ARNU24G1A4
AC-5.01.3	LG Ducted Unit	Living	ARNU15GL5G4
AC-5.01.4	LG Bulkhead Unit	Bed 2	ARNU05GL4G4
AC-5.01.5	LG Bulkhead Unit	Bed 1	ARNU05GL4G4
AC-5.01.6	LG Bulkhead Unit	Family	ARNU12GL5G4
AC-5.01.7	LG Bulkhead Unit	Study	ARNU05GL4G4

1.8 LEVEL 6 – AIR CONDITIONING UNITS.

Level six consists of two (2) apartments with the street side (02 Unit) consisting of one split ducted air conditioning unit. The indoor fan coil units located in the ceiling space of the apartment above the walk in robe (WIR) and the refrigerant pipe work running up through dedicated rises to the condensing units which are located on the roof.
The air conditioning units are controlled by a wired remote controller located in each apartment which gives full control of the air conditioning unit.
The surf side (01 Unit) consists of one VRF system consisting of one condensing unit located on the roof and seven indoor units, being one for each room.
These units operate individually via wired remote control, with one unit selected as the master so that all units are either in cooling or heating mode.

Air conditioning units for these apartments are listed below.

SYSTEM	TYPE	AREA / LOCATION	MODEL NUMBER
CU-5.02	LG Condensing Unit	Roof Plant Deck	ARUN040SS5
AC-5.02	LG Ducted Unit	Above WIR	ARNU42GM2A4
CU-5.01	LG MULTI V - Cond Unit	Roof Plant Deck	ARUN060SS5
AC-5.01.1	LG Ducted Unit	Master Suite	ARNU15G1A4
AC-5.01.2	LG Ducted Unit	Dining	ARNU24G1A4
AC-5.01.3	LG Ducted Unit	Living	ARNU15GL5G4
AC-5.01.4	LG Bulkhead Unit	Bed 2	ARNU05GL4G4
AC-5.01.5	LG Bulkhead Unit	Bed 1	ARNU05GL4G4
AC-5.01.6	LG Bulkhead Unit	Family	ARNU12GL5G4
AC-5.01.7	LG Bulkhead Unit	Study	ARNU05GL4G4

2. MECHANICAL VENTILATION SYSTEMS.

There are numerous mechanical ventilation systems installed throughout the building. If multiple exhaust fans are running in the apartments, external window or balcony needs to be open to prevent whistling under doors.
These include the following.

1. All apartment main ensuites have inline toilet exhaust fans ducted to a riser and out through the roof cowl.
    a. These fans are complete with run on timer and switched on via the light switch.

2. All apartment laundry's & main bathrooms have header box exhaust fans ducted to external riser on the roof.
    a. These fans are complete with run on timer with laundry interlocked to the dryers & main bathroom activated via the light switch.

3. Managers Office Exhaust Air Fan.

4. Carpark Ventilation System incorporating.
    a. Mechanical Services switch board MSSB-B1.
    b. One exhaust fan & associated ductwork, grilles and VSD.
    c. One supply air fans & associated ductwork, grilles and VSD's.

d. Carbon Monoxide sensors to control fan speeds.

The following gives a brief description of these systems.

2.1 LEVEL 1 TO 6 – MECHANICAL SERVICES.

The mechanical services on Level 1 to 6 apartments, consist of the following.

SYSTEM	TYPE	AREA SERVED	MODEL NUMBER
EF-1	Header Box Exhaust Fan	Bathrooms	CE-B-U-150
EF-2 & 6	Header Box Exhaust Fan	Apartment Laundry	CE-B-U-150
EF-3 & 7	Inline Fantech	Ensuite	RIL150TSW (Lo)
EF-4	Header Box Exhaust Fan	Bathrooms	CE-B-U-150
EF-5	Header Box Exhaust Fan	Bathrooms	CE-B-U-150
EF-6	Header Box Exhaust Fan	Apartment Laundry	CE-B-U-150
EF-7	Inline Fantech	Ensuite	RIL150TSW (Lo)

2.2 GROUND FLOOR EXHAUST – MECHANICAL SERVICES.

SYSTEM	TYPE	AREA SERVED	MODEL NUMBER
EF-8	Wall Mounted Exhaust Fan	Lobby Toilet	EDM-200
EF-9	Inline Fantech	Managers Office	RIL100TSW (Lo)

2.3 BASEMENT CARPARKS 1 – MECHANICAL SERVICES.

The basement carpark exhaust fan is located on the south end of Basement 1 where it is ducted from the riser along the southern wall and around the western wall to grid 3.
The carpark supply air fan is located in the northern end of level Basement 1 with duct work running along the western wall and ducted east.
The MSSB-B1 is located on basement 1 at grid 6.
These fans are VSD controlled via carbon monoxide (CO) sensors and operate automatically.

SYSTEM	TYPE	AREA SERVED	MODEL NUMBER
CPEF-1	Car Park Exhaust Fan	Carpark-Basement 1	AP0564GP6/22
CPSF-1	Car Park Supply Air Fan	Carpark-Basement 1	AP0504AP10/29

SECTION B: OPERATING INSTRUCTION.

SECTION B

OPERATING INSTRUCTIONS

This section is intended to provide a brief description of the operation of the various systems and equipment and should be read in conjunction with the accompanying “as installed” drawings.

3. ELECTRICAL.

3.1 Electrical Schedule - HVAC

The heating, ventilation and air conditioning mechanical equipment for the apartments is powered adjacent from the apartments local DB.
All power is run to an isolator, adjacent to all mechanical equipment and tested by the electrical contractor.

3.2 Electrical Schedule – MSSB-1

The Carpark exhaust system is interfaced with the FIP for use as smoke spill. MSSB-1 is located in the basement. The fans are run through VSD’s and run from 40% to 100% in normal operation and 100% in fire mode.

ELECTRICAL SCHEDULE – MSSB-1							
PHASE	**AMPS**	**ITEM**	**FULL NAME**	**MODEL NUMBER**	**Phase L1**	**Phase L2**	**Phase L3**
3	20	CPEF-1	Carpark Exhaust Fan	AP0564GA6/27	4.30	4.30	4.30
3	10	CPSF-1	Carpark Supply Fan	AP0564GP6/21	3.30	3.30	3.30
1	6		Control		6	-	-

4. SYSTEMS CONTROL.

4.1 Air Conditioning Systems Design Criteria.

The design of the air conditioning system has been based on the following criteria:

Indoor Design Conditions.

Nominal Temperature Varies depending on building / area served.
Relative Humidity Typically, 50% RH ± 10%. Uncontrolled.
40 - 60% RH anticipated by virtue of cooling coil performance.

Control Tolerance Approximately 1.5°C DB at the point of control for heating and cooling.

Summer	23°C DB ± 1.5°C 50% RH Uncontrolled
Winter	21°C DB ± 1.5°C

Outdoor Design Conditions

Summer	29.1°C DB & 24.9°C WB
Winter	9.3°C DB 80% RH

Generally, thermostats will be set at 23.0°C and will have a control tolerance of approximately ± 1.5°C measured at the thermostat during the summer months. For most of the time, the internal temperature at a transmitter will be expected to be 23°C.
During the winter months the thermostats will be set at 21.0°C.
During extreme summer and winter ambient conditions, which are outside the above outside design conditions, the indoor temperature range may vary.

4.2 Air Conditioning Systems.

4.2.1 All A/C Controls

These air conditioning systems are LG standalone ducted and VRF ducted heat pump systems,

These air conditioning units are controlled by a wired wall mounted controller with each apartment or the conditioned space.

These systems have the following features via a wall mount, wired remote controller.

- Backlit screen
- On / Off Control
- Mode
- Temperature set point.
- Fan Speed

4.2.2 Toilet Exhaust Fans

The Toilet exhaust ventilation systems are controlled through the light switches with a run on timer keeping the fan running for 4 to 7 minutes after the light is switched off.

4.2.3 Laundry Exhaust Fans

The Laundry exhaust ventilation systems are controlled through an interlock through to the dryers, the laundry exhaust fan will automatically run when the dryers is turned on.

5. PLANT START UP.

(a) Ensure that all local isolators at the air conditioning units and fans are turned On.

(b) Check that the main circuit breaker in the main electrical switch boards are on.

At this point, with power connected to the DX units, if the power supply is reconnected after an 8-hour interruption then do not start the air conditioning systems but leave the systems idle to allow time (12 hours approximately) for the compressor crankcase heaters to warm up the compressor refrigerant/lubricating oil mixture, to ensure that no condensed refrigerant (liquid) is in the crankcases.
Failure to do this can potentially cause the refrigerant to wash oil out of the compressor and potentially creating a mechanical failure.

6. POINTS OF CAUTION TO BE OBSERVED.

(a) Pressure switch settings, overload relays, time delays, thermal cut outs and pressure gauge settings must not be altered from approved commissioned set points.

(b) Unit settings nominated above must always be in accordance with approved commissioned settings, sub-contractor's recommendations and/or manufacturers/supplier's specifications.

(c) Persons must not enter or reach into fan chambers unless the mains supply is isolated, and all circuit breakers isolated and locked out or fuses removed.

(d) Do not start plant by means of its local isolating switch.

(e) Equipment must not be operated with guards removed.

Electrical switchboards must have electrical supply isolated prior to any adjustments.

SECTION C: MAINTENANCE INSTRUCTIONS

SECTION C

MAINTENANCE INSTRUCTIONS

To ensure continuing satisfactory and economical operation of your plant, the implementation of a comprehensive maintenance programme covering all systems and components is necessary.

A closely adhered to programme which has been carried out from the beginning of the service life of the plant not only provides more dependable service and longer life for the plant but results in less costly major maintenance and improved safety protection.

The following recommended maintenance schedule is presented as a guide and should be periodically updated with minor additions which experience indicates necessary.

Note: All work on refrigeration plant and associated controls should only be performed by a licenced and qualified refrigeration mechanic.

FOR SERVICE, CONTACT
GLENNAIR AIR CONDITIONING
07 5593 8000
Office Hours 7am to 5pm

RECOMMENDED MAINTENANCE – COMMON AREAS

7. Quarterly Maintenance Schedules.

7.1 Fan Coil Units.

a) Check for dust build up on evaporator coil fins.
b) Check for any signs of corrosion. Touch up as required.
c) Check fan and motor bearings for condition and wear. Replace, as necessary.
d) Check for any leaks at connections.
e) Check and ensure condensate drain trays are clear from debris and other foreign material that may cause fouling.
f) Check smooth operation of automatic control dampers.

7.2 Filters.

a) Check the integrity of filter fabric, replace, as necessary.

7.3 Ventilation Systems.

b) Inspect the system generally and perform any service work necessary to ensure the correct operation and performance of the plant.
c) Check fans for excessive noise, excessive motor or bearing temperature.
d) Check flexible joints for air leaks and repair, as necessary.

7.4 Electrical (Mechanical Components).

a) Check for correct operation.
b) Check for abnormal noise or vibration of contactors and relays.
c) Check for odour or other signs of electrical faults.
d) Repair if necessary.
e) Check running currents and overload settings where fitted.
f) Check switchboards and control panels are clean and dry and show no signs of liquid or moisture.

7.5 Controls.

a) Check with building operator / manager, for any abnormal operation and correct, as necessary.
b) Check field processing units.
c) Check for obvious defects and correct as required.

8. Twelve (12) Monthly Schedule.

Typical Monthly scheduled service plus

8.1 Fan Coil Units.

a) Clean off any visible corrosion and paint with anti-corrosive coating.

8.2 Ventilation Systems.

a) Clean off any visible corrosion and paint with anti-corrosive coating.
b) Clean if required.

8.3 Refrigeration plant - Condensors.

a) Annual service as per the manufacturer specifications and recommendations
b) Check vibration isolators.
c) Check pipe supports and brackets.

8.4 Electrical.

a) Clean and adjust contacts of circuit breakers, starter, and auto-controls.
b) Check tightness of wiring connections.
c) Check operation of overloads and circuit protection devices.

9. IMPORTANT NOTES:

a) Qualified and Licenced service Mechanic / Technicians ONLY should only conduct all work on refrigeration systems of air conditioning units.
b) No balancing dampers should be altered.
c) If it is necessary for whatever reason to make adjustment to any dampers, first consulting the commissioning data to see what affect it may have up or down stream of the point that is being altered.

NOTE: The warranty on all workmanship, equipment supplied and installed on this project is for a period of 12 months from practical completion date.

AFTER THIS TWELVE (12) MONTH PERIOD IT IS THE BUILDING MANAGERS RESPONSIBILITY TO ARRANGE FOR SERVICING & MAINTENANCE OF ALL OF THE EQUIPMENT.

SECTION D: EQUIPMENT DATA

EQUIPMENT DATA

EQUIPMENT	DATA	SUPPLIER
EXHAUST & SUPPLY FANS	**MAKE:** Fantech **MODEL:** Various (refer to drawings for schedule)	Fantech Pty Ltd 45 Nestor Drive Meadowbrook, QLD 4131 **Ph:** 07 3299 9888 **Fax:** 07 3299 9800 **E:** sales@fantech.com.au
GRILLES & LOUVRES & FLEX.	**MAKE:** Polyaire **MODEL:** Various (refer to drawings for schedule)	Polyaire Commercial Sales 60 Dulacca Street Acacia Ridge, QLD 4110 **Ph:** 07 3273 8043 **E:** queenslandcommercial@polyaire.com.au
DX AIR CONDITIONING UNITS	**MAKE:** LG Australia **MODEL:** (refer to drawings for models and performance details)	LG Electronics Aust. Pty Ltd 2 Wonderland Drive Eastern Creek, NSW, 2766 **Ph:** 02 8805 4000 **Fax:** 02 8805 4248

SECTION E: MANUFACTURER'S LITERATURE & CERTIFICATES.

SECTION E

MANUFACTURER'S LITERATURE

Manufacturer's Literature on the following equipment is included for reference:

- Fantech Pty Ltd — Fans
- LG Electronics Pty Ltd — DX Ducted Split Systems
- Polyaire Australia — Grilles, Louvres & Flex

Note: For equipment schedules, model numbers, duties etc. refer to 'As Installed' workshop drawings.

CERTIFICATES

- Glennair — Form 12 Certificate

SECTION F: AS INSTALLED DRAWINGS

SECTION F

AS INSTALLED DRAWINGS

The following as installed drawings accompanies this manual.

MECHANICAL DRAWINGS

M101	Mechanical Services - Basement 1 - AC & Ventilation Layout – Sheet 1 of 2
M102	Mechanical Services - Basement 1 - AC & Ventilation Layout – Sheet 2 of 2
M103	Mechanical Services - Ground Floor – AC & Ventilation Layout – Sheet 1 of 2
M104	Mechanical Services – Ground Floor – AC & Ventilation Layout – Sheet 2 of 2
M105	Mechanical Services – Level 1 – AC & Ventilation Layout
M106	Mechanical Services – Level 2 to 5 – AC & Ventilation Layout
M107	Mechanical Services – Level 6 – AC & Ventilation Layout
M108	Mechanical Services – Roof - AC Condensor Layout

ELECTRICAL DRAWINGS

MSSB-1

1062-01	Mechanical Services Electrical - Wiring Diagram – MSSB-1 Basement – Sheet 1 of 3
1062-02	Mechanical Services Electrical - Wiring Diagram – MSSB-1 Basement – Sheet 2 of 3
1062-03	Mechanical Services Electrical – Switch Board Construction – MSSB-1 Basement – Sheet 3 of 3

SECTION G: COMMISSIONING RESULTS.