

OPERATION & MAINTENANCE MANUAL

Harbour Point

Levels 2 to 4 Office Fit-Out
Mechanical Services

Revision

C01

Issue date

2 Oct 2026

Practical completion

30 Sep 2026

Job number

NW-2291

DOCUMENT CONTROL

About this manual

Project	Harbour Point, Levels 2 to 4 Office Fit-Out
Address	Harbour Point, Levels 2 to 4, Sample Quay, Leeds
Volume	Mechanical Services
End client	Harbour Point Estates (sample)
Main contractor	Keystone Build (sample)
M&E contractor	Northwind M&E Ltd
Floor area and occupancy	1,400m ² NIA over 3 floors, 180 people (design)
Status	92% complete, 11 items outstanding

Revision history

REV	DATE	DESCRIPTION	BY	CHECKED
P01	11 Sep 2026	Draft for comment	SF	TB
P02	23 Sep 2026	Client comments incorporated	SF	TB
C01	2 Oct 2026	Final issue at practical completion	SF	TB

Information not yet received is listed with the party responsible in Appendix A. It will be inserted and this manual re-issued as the information arrives.

This sample uses a fictional project. All companies, products, model and serial numbers are invented and shown only to demonstrate the OnTrack O&M format. Maintenance frequencies shown are examples and must be confirmed against the manufacturers' literature.

START HERE

How to use this manual

Looking for something?

Every section and document is bookmarked. Use the bookmarks panel or the contents page, then click through.

Something broken?

Go to Section 6 for isolation points and emergency contacts, then Section 1 for the right service company.

Planning maintenance?

Section 5 sets out every task by month. Section 9 shows which warranties depend on it.

SCAN TO
ASK THIS
BUILDING

Ask this manual a question

Maintenance engineers can ask questions in plain English, on their phone, on site. Every answer points to the page, certificate or drawing it came from.

Example questions

Q Where do I isolate the cold water booster set?

Use the isolator on the BS-01 control panel in the ground floor plant room. The incoming main stopcock is beside it.

Source: Section 6, Emergency and isolation. Drawing HPT-NWD-XX-ZZ-DR-M-5702.

Q When are the AHU filters next due?

Filters are changed every 6 months (March and September), or sooner if the BMS shows a high pressure drop alarm.

Source: Section 5, Planned maintenance. Kelvair KX-2000HR manual, page 41.

Q Is the VRF still under warranty?

Yes. CU-01 and CU-02 carry 5 years on parts and compressor from 30 Sep 2026, provided they are serviced annually.

Source: Section 9, Warranties.

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1 Project information and contacts

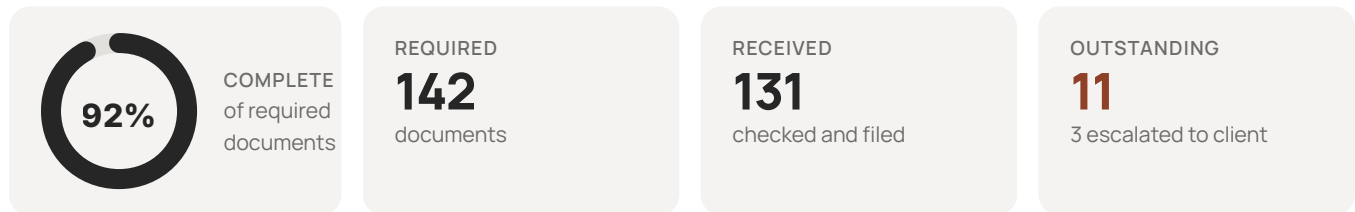
Who designed, installed and supplies each system, and who to call for service.

ROLE	COMPANY	CONTACT	EMAIL
End client	Harbour Point Estates	Facilities team	fm@example.com
Main contractor	Keystone Build	Project manager	pm@example.com
M&E contractor	Northwind M&E Ltd	Contracts manager	cm@example.com
AHU supplier	Kelvair Ltd	Service desk	service@example.com
VRF installer	Fluxon Climate	Service manager	service@example.com
BMS / controls	Controlix Controls	Commissioning engineer	controls@example.com
Fire dampers	Safeflow Dampers	Site supervisor	site@example.com
Water hygiene	ProFlush Water Hygiene	Technical manager	hygiene@example.com
Booster set	Aquaboost Pumps	Service desk	service@example.com
Water heaters	Therma-Point	Technical support	support@example.com
Ductwork	Linear Ductwork	Contracts manager	ops@example.com

Contact details are placeholders in this sample.

2 Handover status

131 of 142 required documents have been received, checked and included. The remaining 11 are listed in Appendix A with the party responsible.



Progress by party

PARTY	PROGRESS	RECEIVED	OUTSTANDING
Fluxon Climate VRF installer		31/34	3
Controlix Controls BMS / controls		18/21	3
Northwind M&E Ltd As-built drawings		17/18	1
Kelvair Ltd AHU supplier		16/16	0
Linear Ductwork Ductwork		16/16	0
Safeflow Dampers Fire dampers		11/14	3
Aquaboost Pumps Booster set		9/9	0
Therma-Point Water heaters		8/8	0
ProFlush Water Hygiene Water hygiene		5/6	1

Oldest outstanding items

REF	ITEM	PARTY	CHASES	STATUS
0I-01	Fire damper drop test certificate FD-04	Safeflow Dampers	4	Escalated
0I-02	Fire damper drop test certificate FD-05	Safeflow Dampers	4	Escalated
0I-03	Fire damper drop test certificate FD-06	Safeflow Dampers	4	Escalated
0I-04	BMS points list, as commissioned	Controlix Controls	3	Chasing

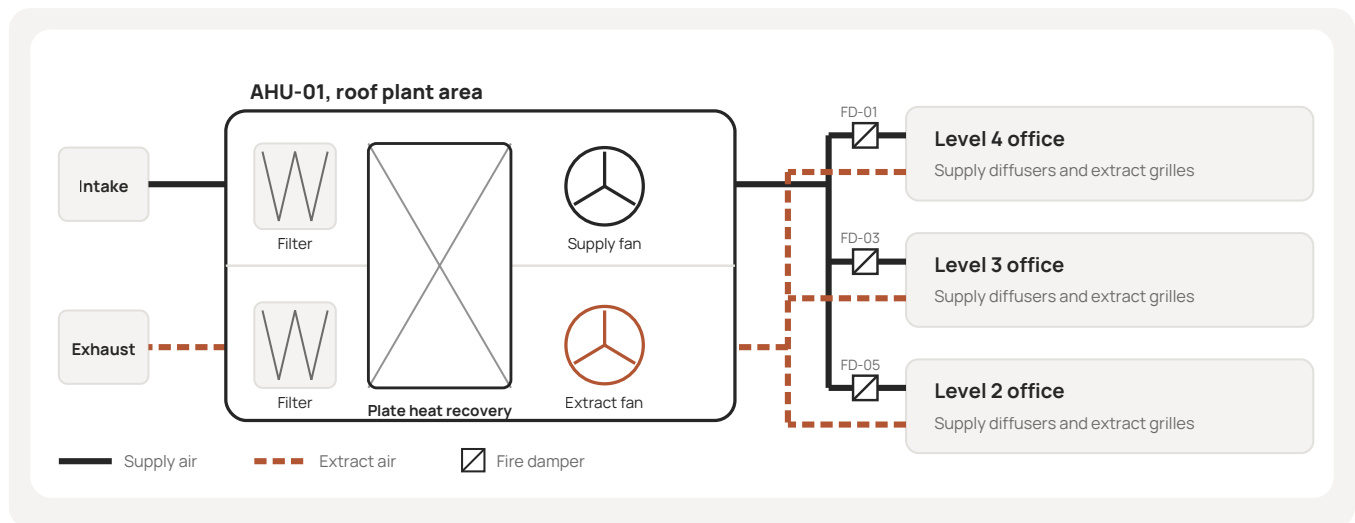
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System descriptions

How each system works and how to operate it day to day. Design data is taken from the design stage information.

3.1 Ventilation

A single roof-mounted air handling unit, AHU-01, supplies tempered fresh air to Levels 2 to 4 and extracts the same volume from the office areas. A plate heat exchanger recovers heat from the extract air before it is discharged, so no heating coil is needed for the fresh air in normal conditions. Fire dampers are fitted where ductwork passes through fire-rated floors in the riser.



Design fresh air rate	1,800L/s (10L/s per person × 180 people)
Operating hours	07:00 to 19:00 weekdays, via BMS time schedule
Control	BMS OS-01 with local control panel CP-AHU. Frost protection by heat exchanger bypass.

3.2 Heating and cooling

Heating and cooling to the offices is provided by a heat recovery VRF (variable refrigerant flow) system. Two outdoor units, CU-01 and CU-02 (56kW cooling each), serve 24No. ceiling cassettes, eight per floor. Each zone has a wall controller and the whole system is scheduled from the central controller VRF-CC-01.

Refrigerant	R32, factory and site charge recorded in the refrigerant log (Section 7)
Zone set points	21°C heating, 24°C cooling, user adjustable ±2°C
F-gas duties	Leak checks at the frequency set by the F-gas regulations for each unit's charge (CO ₂ e). Only F-gas certified engineers may work on the refrigerant circuit.

3.3 Domestic water

Mains cold water is boosted by a twin-pump booster set, BS-01, in the ground floor plant room. Hot water is generated locally by four 15L unvented point-of-use heaters at the tea points. TMV3 thermostatic mixing valves limit hot water to basins in the accessible WCs.

Hot water storage temperature	60°C minimum (Legionella control)
TMV3 outlet temperature	41°C maximum at accessible WC basins
Water hygiene	Managed under the building's Legionella risk assessment (HSE ACoP L8 and HSG274)

3.4 Controls

The BMS outstation OS-01 runs the AHU time schedule, monitors filter pressure drop, fire damper status and booster set faults, and sends alarms to the facilities team. The VRF runs on its own controls, scheduled from VRF-CC-01.

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Asset register

Every maintainable item, where it is and what it is. The same register is issued as a spreadsheet for the client's maintenance system.

REF	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	SERIAL
Ventilation					
AHU-01	Air handling unit with plate heat recovery	Roof plant area	Kelvair	KX-2000HR	KV26-11842
FD-01 to FD-06	Fire dampers, 6No.	Riser penetrations L2 to L4	Safeflow	SF-90 EFL	Various
Heating and cooling					
CU-01	VRF outdoor unit, 56kW cooling	Roof plant area	Fluxon	FX-VR560	FX-5601773
CU-02	VRF outdoor unit, 56kW cooling	Roof plant area	Fluxon	FX-VR560	FX-5601781
FCU-201 to 208	Ceiling cassettes, 8No.	Level 2 office	Fluxon	FX-C36	Various
FCU-301 to 308	Ceiling cassettes, 8No.	Level 3 office	Fluxon	FX-C36	Various
FCU-401 to 408	Ceiling cassettes, 8No.	Level 4 office	Fluxon	FX-C36	Various
VRF-CC-01	VRF central controller	L2 comms room	Fluxon	FX-CC10	FX-CC10-0921
Domestic water					
BS-01	Cold water booster set, twin pump	Ground floor plant room	Aquaboost	AB-2T 1.2	AQ-77412
WH-01 to WH-04	Unvented point-of-use water heaters, 15L	Tea points L2 to L4	Therma-Point	TP-15U	Various
TMV-01 to TMV-06	TMV3 thermostatic mixing valves, 6No.	Accessible WCs	Therma-Point	TP-TMV3	Various
Controls					
OS-01	BMS outstation and control panel	Roof plant area	Controlix	CX-OS 48	CX-48-3302
CP-AHU	AHU control panel	Roof plant area	Controlix	CX-P AHU	CX-P-1107

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Planned maintenance

What needs doing and when. Frequencies follow the manufacturers' recommendations and the regulations noted. If the client uses SFG20, the schedule can be aligned to their subscription.

TASK	BASIS	J	F	M	A	M	J	J	A	S	O	N	D
Ventilation													
AHU-01 filter inspection	Manufacturer	●	●	●	●	●	●	●	●	●	●	●	●
AHU-01 filter change (or on high pressure drop)	Manufacturer			●						●			
AHU-01 service: fans, drives, drain, heat exchanger	Manufacturer			●						●			
Fire damper drop test, FD-01 to FD-06	BS 9999						●						
Heating and cooling													
Ceiling cassette filter clean	Manufacturer	●			●			●				●	
VRF outdoor unit service and coil clean	Manufacturer				●							●	
F-gas leak check, CU-01 and CU-02	F-gas regs											●	
Domestic water													
Booster set inspection	Manufacturer	●			●			●				●	
Booster set service and vessel check	Manufacturer							●					
Sentinel outlet temperature checks	L8 / HSG274	●	●	●	●	●	●	●	●	●	●	●	●
TMV3 temperature check and service	Risk assessment					●							●
Water heater service and safety valve check	Manufacturer					●							
Controls													
BMS health check and sensor calibration	Manufacturer								●				

Example frequencies for this sample. Warranty cover on the VRF depends on the annual service being carried out (Section 9).

6 Emergency and isolation

Where to isolate each system safely, and what happens when you do.

In an emergency make the area safe, isolate using the points below, then call the service company in Section 1. For a water leak, isolate the incoming main first.

SYSTEM	PLANT	ISOLATION POINT	NOTES
Ventilation	AHU-01	Local isolator on AHU-01 and MCC way 3, roof plant area	BMS alarm clears once reset. Filters can be changed with AHU off only.
Heating and cooling	CU-01, CU-02	Rotary isolators beside each unit, roof plant area	Allow 5 minutes before restart. Do not isolate refrigerant valves unless F-gas certified.
Domestic water	Incoming main	Stopcock in ground floor plant room, beside BS-01	Booster set stops on low suction pressure automatically.
Domestic water	BS-01	Isolator on BS-01 control panel	Duty/standby changeover is automatic on pump fault.
Domestic water	WH-01 to WH-04	Fused spurs above each tea point unit	Allow the heater to cool before draining.
Controls	OS-01	Supply isolator inside BMS panel door	Plant falls back to its local controls or fails safe.

7 Testing, commissioning and certificates

Certificates come only from the company that did the work. They are inserted here exactly as received, and bookmarked.

DOCUMENT	ASSET	PROVIDED BY	STATUS
AHU-01 commissioning certificate	AHU-01	Kelvair Ltd	Received
Air flow balancing report, supply and extract	Ductwork	Linear Ductwork	Received
Ductwork air leakage test (DW/143)	Ductwork	Linear Ductwork	Received
Fire damper drop test certificates FD-01 to FD-03	FD-01 to 03	Safeflow Dampers	Received
Fire damper drop test certificates FD-04 to FD-06	FD-04 to 06	Safeflow Dampers	Outstanding
VRF commissioning records	CU-01, CU-02	Fluxon Climate	Received
Refrigerant pipework pressure test certificate	VRF	Fluxon Climate	Outstanding
Booster set commissioning sheet	BS-01	Aquaboost Pumps	Received
Water system disinfection certificate	Domestic water	ProFlush Water Hygiene	Received
Post-disinfection microbiological results	Domestic water	ProFlush Water Hygiene	Outstanding
TMV3 commissioning records	TMV-01 to 06	Northwind M&E Ltd	Received
BMS commissioning witness sheet	OS-01	Controlix Controls	Outstanding

7.1 AHU-01 commissioning certificate



Installer's certificate inserted here

In a live manual this page is the original signed PDF from Kelvair Ltd, received 12 Sep 2026, checked against AHU-01 and filed with its source recorded.

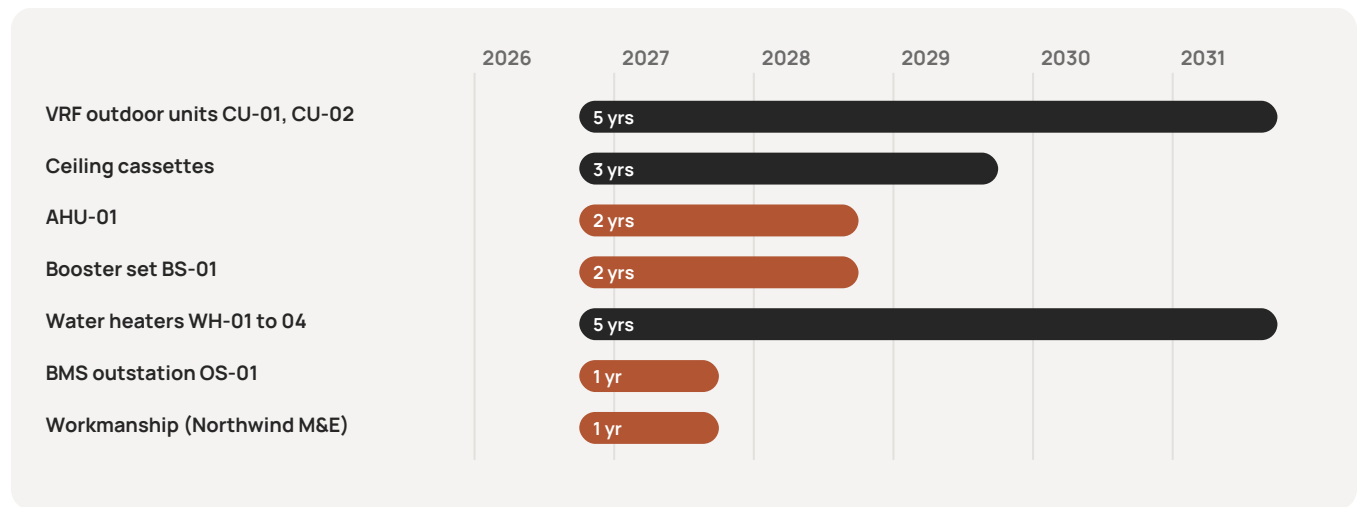
8 Manufacturers' literature

Product manuals for each asset, matched to the exact model installed.

ASSET	DOCUMENT	SOURCE	PAGES
AHU-01	Kelvair KX-2000HR installation, operation and maintenance manual	Manufacturer	64
FD-01 to 06	Safeflow SF-90 EFL product data and maintenance guide	Manufacturer	12
CU-01, CU-02	Fluxon FX-VR560 service manual	Manufacturer	118
FCU cassettes	Fluxon FX-C36 installation and user guide	Manufacturer	40
VRF-CC-01	Fluxon FX-CC10 central controller user guide	Manufacturer	52
BS-01	Aquaboost AB-2T operation and maintenance instructions	Manufacturer	28
WH-01 to 04	Therma-Point TP-15U installation and servicing	Manufacturer	24
TMV-01 to 06	Therma-Point TP-TMV3 commissioning and maintenance	Manufacturer	16
OS-01	Controlix CX-OS 48 technical guide	Installer	36

9 Warranties

All warranties run from practical completion on 30 Sep 2026.



ASSET	YEARS	COVER
VRF outdoor units CU-01, CU-02	5	Parts and compressor, subject to annual service
Ceiling cassettes	3	Parts
AHU-01	2	Parts and labour
Booster set BS-01	2	Parts and labour
Water heaters WH-01 to 04	5	Cylinder; 2 years on components
BMS outstation OS-01	1	Defects liability period
Workmanship (Northwind M&E)	1	Defects liability period

10 Spares and consumables

Recommended spares to hold on site.

ASSET	ITEM	QUANTITY HANDED OVER	REPLACEMENT
AHU-01	Supply filter set, ISO ePM1 60%	2 sets	6-monthly
AHU-01	Extract filter set, ISO Coarse 65%	2 sets	6-monthly
FCU cassettes	Washable return air filters	4No.	As required
BS-01	Mechanical seal kit	1No.	As required
TMV-01 to 06	TMV3 cartridge and strainer kit	2No.	As required
WH-01 to 04	Temperature and pressure relief valve	1No.	As required

11

As-built drawings

Record drawings of the installation as built.

DRAWING NUMBER	TITLE	REV	STATUS
HPT-NWD-XX-ZZ-DR-M-5001	Mechanical services legend and notes	C01	Received
HPT-NWD-02-ZZ-DR-M-5102	Level 2 ventilation layout	C02	Received
HPT-NWD-03-ZZ-DR-M-5103	Level 3 ventilation layout	C02	Received
HPT-NWD-04-ZZ-DR-M-5104	Level 4 ventilation layout	C02	Received
HPT-NWD-XX-ZZ-DR-M-5201	VRF refrigerant pipework layouts L2 to L4	C02	Received
HPT-NWD-XX-ZZ-DR-M-5401	Domestic water services layouts	C01	Received
HPT-NWD-XX-ZZ-DR-M-5701	Ventilation schematic	C01	Received
HPT-NWD-XX-ZZ-DR-M-5702	Domestic water schematic	C01	Received
HPT-NWD-XX-ZZ-DR-M-5703	VRF schematic	C02	Outstanding

A Outstanding information schedule

Information requested but not received by the date of issue. We continue to chase each item and will re-issue this manual as it arrives.

REF	ITEM	PARTY RESPONSIBLE	FIRST REQUESTED	CHASES	LAST CHASED	STATUS
0I-01	Fire damper drop test certificate FD-04	Safeflow Dampers	4 Aug	4	24 Sep	Escalated
0I-02	Fire damper drop test certificate FD-05	Safeflow Dampers	4 Aug	4	24 Sep	Escalated
0I-03	Fire damper drop test certificate FD-06	Safeflow Dampers	4 Aug	4	24 Sep	Escalated
0I-04	BMS points list, as commissioned	Controlix Controls	4 Aug	3	26 Sep	Chasing
0I-05	Controls strategy description, final	Controlix Controls	4 Aug	3	26 Sep	Chasing
0I-06	BMS commissioning witness sheet	Controlix Controls	18 Aug	2	26 Sep	Chasing
0I-07	Refrigerant log book CU-01 and CU-02	Fluxon Climate	4 Aug	3	25 Sep	Chasing
0I-08	F-gas labels photographic record	Fluxon Climate	18 Aug	2	25 Sep	Chasing
0I-09	Refrigerant pipework pressure test certificate	Fluxon Climate	4 Aug	3	25 Sep	Chasing
0I-10	Post-disinfection microbiological results	ProFlush Water Hygiene	15 Sep	1	29 Sep	Promised 6 Oct
0I-11	As-built drawing HPT-NWD-XX-ZZ-DR-M-5703 Rev C02	Northwind M&E Ltd	15 Sep	1	29 Sep	Promised 3 Oct

Escalated items have been raised with Northwind M&E for action under the relevant subcontract.