HENSALL

FINAL ISSUE, ALL INFORMATION RECEIVED

OPERATION & MAINTENANCE MANUAL

Elmwood Leisure Centre

Decarbonisation and refurbishment: air source heat pumps, LTHW plant, air handling units, air conditioning and domestic water services Mechanical Services

Essentials O&M manual
The key information. Every document is in the full manual.

Revision	Issue date	Practical completion	Job reference
A	**9th of October 2026**	**2nd of June 2026**	**HEN0203**

Prepared for Hensall Mechanical Services Ltd · Westgate Leisure Services Ltd (for the London Borough of Elmwood; operated by FitLife Active)

Compiled by OnTrack O&M

ESSENTIALS MANUAL

About this Essentials manual

Start here. This is the short version of the O&M manual for the people who run and look after the building (the centre team, the facilities management contractor and the estates team): who to call, what was installed, what to maintain and when, how to isolate it safely, and the certificates and warranties that apply. The 284 supporting documents (manufacturers' literature, certificates in full, schedules and drawings) are in the full manual (9 volumes), each listed at the back with where it is.

Project	Elmwood Leisure Centre, decarbonisation and refurbishment: air source heat pumps, LTHW plant, air handling units, air conditioning and domestic water services
Issue	Rev A, the same issue as the full manual
Read it online	Scan any QR code in this manual, or open the building's link: every page of the full manual, with contents, search and Ask This Building.

What's in this manual

1 Project information and contacts
2 Handover status
3 System descriptions and design information
4 Asset register
5 Planned maintenance
6 Emergency and isolation
7 Testing, commissioning and certificates
9 Warranties
10 Spares and consumables
11 As-built drawings (QR drawing register)
A Source documents
+ Documents in the full manual

1 Project information and contacts

What was installed and what changed during the job, who designed, installed and supplies each system, who to call for service, and the handover documents.

About the project

Scope of works	Gas boilers replaced with 3No. Trane air source heat pumps and thermal stores; new LTHW plant, AHUs, VRF air conditioning and domestic water plant.
Practical completion	2nd of June 2026

What changed during the job

Plant substitutions agreed during the job are recorded against each asset in Section 4 and on the as-built drawings in Section 11.

Project directory

ROLE OR TRADE	COMPANY	CONTACT	EMAIL
ASHP heat pump units and sequencer panel, refrigeration commissioning and F-gas; air handling units (AHU); warranties	**Trane UK Ltd**	Jon Fairbourne	
Pump sets and booster sets (Lowara), pressurisation unit (Mikrofill): mechanical supply and commissioning	**TPS Ltd**		
Hot water heater cylinders and thermal store supplier	**Arbe Integrated Engineering Ltd**		
Pipework installation: heating LTHW, domestic water, plant room pipework, pressure testing, unvented hot water commissioning (G3)	**BKW Mechanical**	Andrew Evershed	
Air conditioning installation (VRF and split), refrigeration pressure testing, commissioning, F-gas	**Frost Air Conditioning**	Matt Lomax	matt@frostac.com
Air conditioning supplier: Toshiba VRF, split and controls	**Polar Solutions Distribution Ltd**	Andy Keenan 07700 900382	
Ductwork installation, access doors and air valves, ductwork leakage testing	**Linden Ductwork**		
BMS and controls: panels, wiring diagrams, description of operation, commissioning	**KVT Controls**		
Commissioning: air and water balancing, flushing and water treatment, water hygiene disinfection and sampling, fire damper testing, ductwork cleaning	**RJ Ashton Group (Ashton LLP)**	Neil Mosley	
Acoustic enclosure to the heat pump compound	**Quinway Acoustics Ltd**		
Air sock fabric ductwork to the pool hall	**KE Fibertec UK Ltd**		

ROLE OR TRADE	COMPANY	CONTACT	EMAIL
Grilles, diffusers and door transfer grilles supplier	**Ventilation Direct Ltd**		
Fire damper supplier	**BSB Engineering Services Ltd**		
Extract fan supplier	**Sovereign Air Movement**		
Electric panel heater supplier (Dimplex, Flexel)	**Rexel UK Ltd**		
Over door heater	**Frico UK**		
Attenuators	**Caice Acoustic Air Movement Ltd**		
Ducted heating coil	**EuroCoils Ltd**		
Water conditioner (Water King)	**Lifescience Products Ltd**		
Hensall's MEP designer: record drawings, design schedules, basis of design	**HDN MEP Ltd**	Dave Bowdler	dave.bowdler@hdnmep.uk
M&E contractor: installation records, training, warranties, project handover documents	**Hensall Mechanical Services Ltd**	David Rushbrook 07700900461	drushbrook@hensall.com

Handover and completion documents

The practical completion, statutory and health and safety documents for the job as a whole, and the section each is filed in.

DOCUMENT	PROVIDED BY	FILED IN	STATUS
Building logbook to Part L, following CIBSE TM31	Hensall Mechanical Services Ltd	Section 1	Received
Return visit records at 3 and 6 months after handover	Hensall Mechanical Services Ltd	Section 1	Received
Above ground drainage pipework pressure test certificates to BS 5572	Hensall Mechanical Services Ltd	Section 7	Received
Collateral warranty in favour of the employer	Hensall Mechanical Services Ltd	Section 9	Received
Scope of works, as installed: what was designed, supplied and installed, written in the past tense	Hensall Mechanical Services Ltd	Section 1	Received
Record of changes during the job: variations, substitutions and value engineering, with what replaced what and why	Hensall Mechanical Services Ltd	Section 1	Received
Statement or certificate of practical completion for these works	Hensall Mechanical Services Ltd	Section 1	Received

DOCUMENT	PROVIDED BY	FILED IN	STATUS
Building control completion certificate (or final certificate) covering these works	Hensall Mechanical Services Ltd	Section 1	Received
Key schedule: every key, fob, code and password handed over, and who received it	Hensall Mechanical Services Ltd	Section 1	Received
Warranty schedule: each warranty, its start date, length, conditions and who to claim from	Hensall Mechanical Services Ltd	Section 9	Received
Spares schedule: spares and consumables handed over at completion, and where they are kept	Hensall Mechanical Services Ltd	Section 10	Received
Training schedule: each session, its date, who trained whom, with the signed attendance sheets	Hensall Mechanical Services Ltd	Section 10a	Received
Builders' work in connection: as-built record of openings, plinths, supports and fire stopping around the services	Hensall Mechanical Services Ltd	Section 11	Received
Basis of design: the design criteria the services were designed to (outside and inside conditions, ventilation rates, occupancy, loads and capacities), final issue	Hensall Mechanical Services Ltd	Section 3	Received
Plant and valve labelling: the label schedule, and the valve charts fixed in each plant room	Hensall Mechanical Services Ltd	Section 3	Received
Commissioning summary: every system commissioned and witnessed, results against design, anything left open, and the seasonal commissioning still to do	TPS Ltd	Section 7	Received
Commissioning notice for building control (Building Regulations regulation 44): fixed building services commissioned and performing as designed	TPS Ltd	Section 7	Received
Competent person scheme compliance certificates (for example BESCA, Gas Safe or NICEIC) for work self certified instead of through building control	Hensall Mechanical Services Ltd	Section 7	Received
Defects and outstanding works at practical completion, the end date of the rectification period, and who to report defects to	Hensall Mechanical Services Ltd	Section 1	Received
Photographic record of concealed services (ceiling, floor and riser voids, and fire stopping) taken before they were closed up	Hensall Mechanical Services Ltd	Section 11	Received
COSHH safety data sheets for substances left in the installation (water treatment chemicals, glycol, refrigerant oil)	Hensall Mechanical Services Ltd	Section 6	Received

DOCUMENT	PROVIDED BY	FILED IN	STATUS
Health and safety file input (CDM 2015): residual hazards, safe access for maintenance and safe removal of the services	Hensall Mechanical Services Ltd	Section 6	Received
Fire safety information for the responsible person (Building Regulations regulation 38): the as-installed fire safety services and how to maintain them	Hensall Mechanical Services Ltd	Section 6	Received
Fire stopping and penetration seals (regulation 38 fire safety information): where the services pass through fire resisting walls and floors, with locations, products used and photographs, including any done by others	Hensall Mechanical Services Ltd	Section 6	Received
Fire and smoke dampers (regulation 38 fire safety information): every damper in the services, including any installed by others, its location, the access panel and how to reach it for testing, or written confirmation that there are none	RJ Ashton Group (Ashton LLP)	Section 6	Received
Fire alarm cause and effect interface (regulation 38 fire safety information): plant that stops, starts or changes mode when the fire alarm operates, or written confirmation that there is none	KVT Controls	Section 6	Received

2 Handover status

All 640 required documents have been received, checked and included, from 13 parties.



COMPLETE
of required documents

REQUIRED
640
documents

RECEIVED
640
checked and filed

OUTSTANDING
0
none open

Progress by party

PARTY	PROGRESS	RECEIVED	OUTSTANDING
Frost Air Conditioning Air conditioning installation (VRF and split), refrigeration pressure testing, commissioning, F-gas		266/266	0
Rexel UK Ltd Electric panel heater supplier (Dimplex, Flexel)		78/78	0
Trane UK Ltd ASHP heat pump units and sequencer panel, refrigeration commissioning and F-gas; air handling units (AHU); warranties		68/68	0
Hensall Mechanical Services Ltd M&E contractor: installation records, training, warranties, project handover documents		103/103	0
TPS Ltd Pump sets and booster sets (Lowara), pressurisation unit (Mikrofill): mechanical supply and commissioning		29/29	0
RJ Ashton Group (Ashton LLP) Commissioning: air and water balancing, flushing and water treatment, water hygiene disinfection and sampling, fire damper testing, ductwork cleaning		26/26	0
Ventilation Direct Ltd Grilles, diffusers and door transfer grilles supplier		23/23	0
Arbe Integrated Engineering Ltd Hot water heater cylinders and thermal store supplier		9/9	0

PARTY	PROGRESS	RECEIVED	OUTSTANDING
BKW Mechanical Pipework installation: heating LTHW, domestic water, plant room pipework, pressure testing, unvented hot water commissioning (G3)		4/4	**0**
KVT Controls BMS and controls: panels, wiring diagrams, description of operation, commissioning		4/4	**0**
Linden Ductwork Ductwork installation, access doors and air valves, ductwork leakage testing		3/3	**0**
BSB Engineering Services Ltd Fire damper supplier		18/18	0
Caice Acoustic Air Movement Ltd Attenuators		9/9	0

3 System descriptions and design information

How each system works and how to operate it day to day, and the design information behind it.

Design information and schedules

The designer's final schedules (equipment, air terminal, valve, pump, fan and similar), points lists and controls strategy, updated to what was installed. Each is inserted at the end of this section.

SYSTEM	DOCUMENT	PROVIDED BY	STATUS
Controls	BMS points list, as commissioned	KVT Controls	Received
Controls	controls strategy description, final	KVT Controls	Received
Controls	BMS software licences, user log-ins and a backup of the programme, handed to the client	KVT Controls	Received
Domestic water	design schedules, final issue updated to what was installed (plant, pump, valve and sanitaryware schedules)	Hensall Mechanical Services Ltd	Received
Heating	design schedules, final issue updated to what was installed (plant, pump, valve and heat emitter schedules)	Hensall Mechanical Services Ltd	Received
Air conditioning	design schedules, final issue updated to what was installed (plant, pump, valve and heat emitter schedules)	Hensall Mechanical Services Ltd	Received
Ventilation	design schedules, final issue updated to what was installed (air handling unit, fan, air terminal and damper schedules)	Hensall Mechanical Services Ltd	Received
Project	Basis of design: the design criteria the services were designed to (outside and inside conditions, ventilation rates, occupancy, loads and capacities), final issue	Hensall Mechanical Services Ltd	Received
Project	Plant and valve labelling: the label schedule, and the valve charts fixed in each plant room	Hensall Mechanical Services Ltd	Received

3.1 Domestic water

Drafted by AI from the source documents. **Reviewed by the engineer at sign off.**

Mains cold water is boosted around the building by BS B.01, a Lowara three pump booster set in the basement plant. A separate TPS category 5 booster set, BS B.02, feeds the pool plant and wash down points.

Hot water is stored in two Arbe 1000 litre stainless steel cylinders, HWH B.01 and HWH B.02, in the basement plant. Each is heated through its LTHW coil from the heat pumps, with immersion heaters to raise the stored water to a higher temperature. The DHWS (domestic hot water service) return pump, P B.05, circulates hot water round the building.

Cylinder capacity (each)	1000 Litres S1 p2

Cylinder LTHW coil duty	37.3 kW S1 p2
Cylinder immersion heaters	2 off 15 kW Heavy Duty Immersion Heaters, 400v 3ph S1 p2
Cold water booster duty	5.83 l/s at 45.9 m S3 p2

3.2 Heating

Drafted by AI from the source documents. **Reviewed by the engineer at sign off.**

Heating comes from three Trane air source heat pumps in the external plant compound on the ground floor: ASHP 0.01 and ASHP 0.02 (Trane CXAF 150 HE XLN, 382.85 kW each) and ASHP 0.03 (Trane CXAX 35 SE LN, 71.81 kW). They heat LTHW (low temperature hot water) to the header in the B2 basement plant room, with a 6000 litre thermal store, TS.0.01, as the buffer. A Trane sequencer panel decides which heat pumps run, and the BMS (building management system) sees each unit through it.

Twin head Lowara pumps in the B2 plant room carry the heat to where it's used: P B.01 is the ASHP primary pump, P B.02 serves the AHU (air handling unit) heating coils, P B.03 serves the pool water plant and P B.04 serves the hot water cylinders. The pressurisation unit, PU 0.01, keeps the sealed heating system topped up and at pressure.

Rooms with no air handling unit or air conditioning are heated by electric panel heaters, EPH 0.01 to EPH 2.16.

Heat pump hot water set point	45 °C S40 p11
Heat pump refrigerant	R454B S40 p5
Heat pump design flow (each large unit)	13.19 L/s S60 p1
ASHP primary pump design flow	27.310 l/s S10 p3
Thermal store design pressure	4.0 BarG / 110°C S1 p5

Operating procedures

As written in the manufacturers' literature, with the page they come from. Only competent people should operate or reset plant.

PROCEDURE	PLANT	STEPS, AS WRITTEN
Start-up	ASHP 0.01	Hand, When in the 'Hand' position, the TMS is enabled permanently regardless of the onsite BMS command status. Auto, When in the 'Auto' position, the TMS will operate dependent on the hardwired enable signal from the onsite BMS system. S117 p9
Shut-down	ASHP 0.01	Once disabled the TMS system shall continue to run for a period of up to 10 minutes to allow the heat pumps to unload. Off, When in the 'Off' position, the Heating plant manager will be disabled permanently regardless of the onsite BMS command status. S117 p10
Normal operation	ASHP 0.01	The low temperature hot water setpoint shall be communicated to the TMS from the on-site BMS using the BACnet over IP protocol when operating in fully automatic mode. If the setpoint needs to be adjusted during a communications failure or locally from the TMS this can be done using the touch screen display. S117 p14
Alarm or fault reset	ASHP 0.01	If a heat pump has a manual reset fault present, then the fault must first be rectified and reset at the respective heat pump's controller before the sequencer alarm can be reset. For automatic reset alarms: The system will automatically reset the alarm when the point returns to heathy state. S117 p13
Normal operation	ASHP 0.01	A heat pump can be made unavailable from the panel mounted touch screen display for maintenance purposes. Once the heat pump has been overridden into maintenance, the heat pump will remain in this mode until the override is released. S117 p13
Emergency	ASHP 0.01	In the event of a complete failure of the Trane TMS, each ASHP can be put into local operation mode in three steps. 1: Select Settings on TD7 home screen. 2: Select Unit Settings. 3: Change Setpoint Source from BAS/EXT/FP to Front Panel S117 p17
Seasonal changeover	ASHP 0.01	Frost protection mode will be initiated when ambient conditions are such that a freeze up is possible: Heat pump (1) enters frost protection mode; 3 port valves open; Heat pump (2) starts duty on board pump; Pump will run at constant speed until there is no risk of freeze up, at this point the unit will disable its pump. S117 p16

3.3 Air conditioning

Drafted by AI from the source documents. **Reviewed by the engineer at sign off.**

Cooling and heating to the studios, gym, offices and front of house comes from Toshiba VRF (variable refrigerant flow) and split systems. The outdoor condensers, CU 2.01 to CU 2.10, sit on the first and second floor roofs, and each serves its own group of indoor units, which are ceiling cassettes or high wall units (AC 0.01 to AC 2.07). The systems use R410a refrigerant.

Spin Studio system total refrigerant charge	15.24KG S108 p8
CU 2.01 cooling capacity	Cooling Capacity kW 56.0 S116 p19

3.4 Ventilation

Drafted by AI from the source documents. **Reviewed by the engineer at sign off.**

Nine Trane AT4-F air handling units supply fresh, filtered and heated air and extract stale air. AHU R.01 serves the main pool, AHU R.02 the wet change, AHU R.03 the front of house, AHU R.04 the dance studio, AHU R.05 the soft play, AHU R.06 the spin studio, AHU R.07 the sports hall, AHU R.08 the fitness suite and AHU R.09 the squash courts. Each recovers heat from the extract air before it's discharged and has an LTHW heating coil fed from the heat pumps.

In the pool hall, air from AHU R.01 is delivered through two fabric air socks, AS 0.01 and AS 0.02. Elsewhere air is supplied and extracted through ceiling diffusers and grilles, with attenuators on the ductwork to keep noise down. Small extract fans, EF B.01 to EF B.04, serve the basement shower, toilet and chemical stores. Fire dampers close automatically where ductwork passes through fire rated walls.

Pool AHU R.01 supply design air volume	7.669 m³/s at 400 Pa static pressure `S140 p3`
Pool AHU R.01 measured supply at handover	8.368 m³/s `S140 p3`
Pool AHU R.01 measured extract at handover	7.365 m³/s `S139 p3`
Pool AHU R.01 supply filter, final stage	ePM1-60 % / F7 `S84 p4`
Fire damper fusible link rating	72°C `S121 p13`

Operating procedures

As written in the manufacturers' literature, with the page they come from. Only competent people should operate or reset plant.

PROCEDURE	PLANT	STEPS, AS WRITTEN
Normal operation	`AHU R.02`	The AT4F unit must only be operated with completely closed inspection doors/inspection covers. No unauthorised persons are permitted to have access to the AT4F unit during operation. `S37 p15`
Alarm or fault reset	`FD 0.01`	Note the damper blade position. Remove access doors/flexible duct as appropriate. Unscrew the Fusible Link quickly. Check visually that the damper blade closes fully. Reset the damper blade to its previously set position. Do not over-tighten the Fusible Link. Use light finger pressure only. Do not force handle when Fusible Link assembly is set. `S101 p5`

Operating procedures

As written in the manufacturers' literature, with the page they come from. Only competent people should operate or reset plant.

PROCEDURE	PLANT	STEPS, AS WRITTEN
Start-up		Before turning on the power, confirm that the resistance between the terminal block of the power supply and the earth is more than 1 MΩ using a 500-V megohmmeter. Check that all of the outdoor unit valves are opened fully. To protect the compressor at activation time, turn on the power for 12 hours or more before doing a test operation. S9 p24
Normal operation		This test mode function will automatically stop after 60 minutes, to prevent continuous forced operation, and do normal operation (operation according to set temperature). Be sure to do a stop / end operation when your work is finished. S9 p24
Normal operation		No operation instructions are required for the end users. S23 p1
Emergency		Simultaneous Eye Wash and Shower: Water flows simply by pulling on the triangular handle. The flow will continue even when the handle is released. The flow will stop when the handle is returned to its original position. S72 p1
Emergency		Eye Wash only: Water flow is operated by the foot pedal or the hand control. The eye wash will continue to flow when the pedal or hand control is released. The water flow will stop when the hand control is pulled towards the user or the foot pedal is raised. S72 p1
Emergency		The Trane control system monitors the low-pressure alarm status of the pressurisation unit via a hardwired signal. In the event of an alarm, the heating system will be shut down in its entirety inclusive of all heat pumps and water pumps. S117 p17
Emergency		Fire Alarm: In the event of an alarm the heating system will remain operational. S117 p17

3.1

Controls: controls strategy description, final

The following 24 pages are the document exactly as received and checked. It is bookmarked in the PDF.

Reference	HEN0203-BMS-OT2
Asset	Controls
Provided by	KVT Controls
Source file	KVT BMS description of operations V0.1.pdf
Pages	24

4 Asset register

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

REF	DESCRIPTION	LOCATION	MAKE	MODEL	SERIAL
Domestic water					
HWH B.01	Hot water heater / cylinder, 1000 litre stainless steel, LTHW coil 37.30 kW with immersion heaters (Hot Water Generation)	Basement Plant	Arbe	HevaCal ALXA1000-6B-EX50-CU200/390-V S1 p2	AR15-00043
HWH B.02	Hot water heater / cylinder, 1000 litre stainless steel, LTHW coil 37.30 kW with immersion heaters (Hot Water Generation)	Basement Plant	Arbe	HevaCal ALXA1000-6B-EX50-CU200/390-V S1 p2	AR56-47723
BS B.01	Booster set, Boosted Cold Water, 3 pumps Duty / Duty / Standby	Basement Plant	Lowara S3 p1	SMB30/10HME04S22/T4/UK S3 p1	1003100593 S102 p2
BS B.02	Booster set, Pool Plant and Wash Down, 2 pumps Duty / Standby	Basement Plant	TPS	SP2V-VARiFLO-TAS-1000L-CAT5	S-487645 S58 p1
P B.05	DHWS secondary return pump, single head (DHWS Secondary)	B2 Basement Plantroom	Lowara S66 p1	Ecocirc XL Plus N32-100 S66 p1	20250115 S66 p1
Heating					
ASHP 0.01	Air source heat pump, LTHW 2 Pipe System, 382.85 kW heating @ -4°C	External Plant Ground Floor	Trane S20 p1	CXAF150HEXLN S40 p5	ELJ01864 S20 p2
ASHP 0.02	Air source heat pump, LTHW 2 Pipe System, 382.85 kW heating @ -4°C	External Plant Ground Floor	Trane S20 p1	CXAF150HEXLN S38 p5	ELJ01863 S20 p1
ASHP 0.03	Air source heat pump, LTHW 2 Pipe System, 71.81 kW heating @ -4°C	External Plant Ground Floor	Trane S20 p2	CXAX 35 SE LN S61 p1	ELJ01853 S20 p2
EPH 0.01	Electric panel heater, 1.50 kW	Circulation	Dimplex S87 p1	LST150	23374469
EPH 0.02	Electric panel heater, 1.00 kW	Soft Play WC	Dimplex S87 p1	LST100	23095053
EPH 0.03	Electric panel heater, 1.00 kW	Soft Play WC	Dimplex	LST100	87950676
EPH 0.04	Electric panel heater, 1.50 kW	Soft Play Circulation	Dimplex	LST150	40128088
EPH 0.05	Electric panel heater, 1.00 kW	Circulation 3	Dimplex	LST100	06134668

REF	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	SERIAL
EPH 0.06	Electric panel heater, 0.75 kW	WC 2	Flexel S75 p1	ECOSUN 3C-600	SN8632431
EPH 0.07	Electric panel heater, 0.75 kW	WC 3	Flexel	ECOSUN 3C-600	SN0577694
EPH 0.08	Electric panel heater, 0.30 kW	WC 1	Flexel	ECOSUN 3C-600	SN2437872
EPH 0.09	Electric panel heater, 0.30 kW	Acc WC 1	Flexel	ECOSUN 3C-600	SN2975403
EPH 0.10	Electric panel heater, 1.50 kW	Circulation BOH	Dimplex	LST150	SN1458298
EPH 0.11	Electric panel heater, 1.50 kW	Circulation BOH	Dimplex	LST150	SN1089313
EPH 0.12	Electric panel heater, 1.50 kW	Stair	Dimplex	LST150	SN2871586
EPH 0.13	Electric panel heater, 1.00 kW	Circulation BOH	Dimplex	LST100	SN3742314
EPH 1.01	Electric panel heater, 1.50 kW	Circulation 3	Dimplex	LST150	SN7922723
EPH 1.02	Electric panel heater, 1.50 kW	Circulation 3	Dimplex	LST150	SN1943542
EPH 1.03	Electric panel heater, 1.50 kW	Circulation 3	Dimplex	LST150	SN1328907
EPH 1.04	Electric panel heater, 1.50 kW	Circulation 2	Dimplex	LST150	SN0936816
EPH 1.05	Electric panel heater, 1.50 kW	Circulation 2	Dimplex	LST150	SN5289703
EPH 1.06	Electric panel heater, 1.50 kW	Circulation 2	Dimplex	LST150	SN3280143
EPH 1.07	Electric panel heater, 1.50 kW	Circulation 2	Dimplex	LST150	SN4309157
EPH 1.08	Electric panel heater, 1.50 kW	Circulation 1	Dimplex	LST150	SN9178119
EPH 1.09	Electric panel heater, 1.50 kW	Circulation 1	Dimplex	LST150	SN1599977
EPH 1.10	Electric panel heater, 1.50 kW	Stair	Dimplex	LST150	SN2756115
EPH 2.01	Electric panel heater, 1.50 kW	Corridor	Dimplex	LST150	SN1468867
EPH 2.02	Electric panel heater, 1.50 kW	Corridor	Dimplex	LST150	SN0455581
EPH 2.03	Electric panel heater, 1.50 kW	Corridor	Dimplex	LST150	SN6061223
EPH 2.04	Electric panel heater, 1.50 kW	Corridor	Dimplex	LST150	SN6471667
EPH 2.05	Electric panel heater, 1.50 kW	Corridor	Dimplex	LST150	SN8024545
EPH 2.06	Electric panel heater, 1.50 kW	Corridor	Dimplex	LST150	SN0510848
EPH 2.07	Electric panel heater, 1.50 kW	Corridor	Dimplex	LST150	SN3435710
EPH 2.08	Electric panel heater, 1.50 kW	Stair	Dimplex	LST150	SN8877832
EPH 2.09	Electric panel heater, 1.00 kW	Kitchen	Dimplex	LST100	SN3713737
EPH 2.10	Electric panel heater, 1.50 kW	Office 4	Dimplex	LST150	SN8035308
EPH 2.11	Electric panel heater, 1.50 kW	Office 3	Dimplex	LST150	SN8989727
EPH 2.12	Electric panel heater, 1.50 kW	Office 2	Dimplex	LST150	SN3618246
EPH 2.13	Electric panel heater, 1.50 kW	Meeting Room	Dimplex	LST150	SN1132185
EPH 2.14	Electric panel heater, 1.50 kW	Office 1	Dimplex	LST150	SN7705883
EPH 2.15	Electric panel heater, 1.50 kW	Office 1	Dimplex	LST150	SN3252449
EPH 2.16	Electric panel heater, 1.50 kW	Circulation	Dimplex	LST150	SN1291263

REF	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	SERIAL
TS.0.01	Thermal store, 6000 litre carbon steel, Low Temperature Hot Water Heating (ASHP)	B2 Basement Plantroom	Arbe Integrated Engineering S1 p1	AFTA-SEC3-6000-4B-UN-V S1 p5	AC33369-2 S57 p1
P B.01	LTHW pump, twin head (ASHP Primary)	B2 Basement Plantroom	Lowara S39 p1	LNTSH125-160/40/P45VCC 4/4	703935120 S39 p1
P B.02	LTHW pump, twin head (AHU CT Pump)	B2 Basement Plantroom	Lowara S36 p1	LNTEX 100-280/110/204CC 4	130630450 S13 p3
P B.03	LTHW pump, twin head (LTHW to Pool Water Plant)	B2 Basement Plantroom	Lowara S14 p3	LNTEE50-125/22/EP04CS 4	20240606 S88 p1
P B.04	LTHW pump, twin head (LTHW to DHWS Primary)	B2 Basement Plantroom	Lowara S89 p1	ecocirc XLplus D 40-150 F	20240701 S89 p1
PU 0.01	Pressurisation unit, LTHW system (45/38)	B2 Basement Plantroom	Mikrofill S4 p12	Mikrofill 3 S4 p6	MK3-0057988 S99 p1
Air conditioning					
AC 0.01	Air conditioning indoor unit, 4 Way Cassette (system 2.06A)	00.05 Innerva studio	Toshiba	MMU, UP0481HP-E S116 p12	SN7137667
AC 0.02	Air conditioning indoor unit, 4 Way Cassette (system 2.06A)	00.05 Innerva studio	Toshiba	MMU-UP0481HP-E	SN6537797
AC 0.03	Air conditioning indoor unit, 4 Way Cassette (system 2.06A)	00.29 Café Seating and Circulation 01	Toshiba	MMU-UP0481HP-E	SN5395033
AC 0.04	Air conditioning indoor unit, 4 Way Cassette (system 2.06A)	00.29 Café Seating and Circulation 01	Toshiba	MMU-UP0481HP-E	SN2318324
AC 0.05	Air conditioning indoor unit, 4 Way Cassette (system 2.06A)	00.29 Café Seating and Circulation 01	Toshiba	MMU-UP0481HP-E	SN1624131
AC 0.06	Air conditioning indoor unit, 4 Way Cassette (system 2.06A)	00.29 Café Seating and Circulation 01	Toshiba	MMU-UP0481HP-E	SN3586903
AC 0.07	Air conditioning indoor unit, 4 Way Cassette (system 2.06B)	01.16 Circulation	Toshiba	MMU, UP0561HP-E S116 p13	SN9082213
AC 0.08	Air conditioning indoor unit, 4 Way Cassette (system 2.06B)	00.33 Circulation	Toshiba	MMU-UP0561HP-E	SN0624237
AC 0.09	Air conditioning indoor unit, 4 Way Cassette (system 2.06B)	00.28 Reception	Toshiba	MMU, UP0121HP-E S116 p9	SN7963394

REF	DESCRIPTION	LOCATION	MAKE	MODEL	SERIAL
AC 0.10	Air conditioning indoor unit, 4 Way Cassette (system 2.06B)	00.01 Servery	Toshiba	MMU-UP0121HP-E	78A29237
AC 0.11	Air conditioning indoor unit, 4 Way Cassette (system 2.06B)	00.27 Office	Toshiba	MMU, UP0071MH-E S116 p6	75D91100
AC 0.12	Air conditioning indoor unit, 4 Way Cassette (system 2.06B)	00.40 Flexible Community Room	Toshiba	MMU-UP0561HP-E	96D63882
AC 0.13	Air conditioning indoor unit, 4 Way Cassette (system 2.06B)	00.40 Flexible Community Room	Toshiba	MMU-UP0561HP-E	67B28735
AC 0.14	Air conditioning indoor unit, 4 Way Cassette (system 2.06B)	00.42 Party Room	Toshiba	MMU-UP0181HP-E S108 p2	52500457 S108 p2
AC 0.15	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK, UP0361HP-E S116 p3	40E14687
AC 0.16	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	87F30203
AC 0.17	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	06B35961
AC 0.18	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	09C84866
AC 0.19	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	92D79671
AC 0.20	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	86C98993
AC 0.21	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	52D50889
AC 0.22	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	03E76940
AC 0.23	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	66E10434
AC 0.25	Air conditioning indoor unit, High Wall (system 2.06A)	00.24 First Aid	Toshiba	MMK-UP0151HP-E S108 p9	52400140 S108 p9
AC 0.26	Air conditioning indoor unit, High Wall (system 2.06B)	Kitchen	Toshiba	MMK-UP0361HP-E	42500001 S108 p2
AC 0.27	Air conditioning indoor unit, High Wall (system 2.05)	00.02 Play / Party Zone with Seatimng	Toshiba	MMK-UP0361HP-E	63A96692
AC 1.01	Air conditioning indoor unit, High Wall (system 2.09)	Squash Court	Toshiba	MMK-UP0361HP-E	94D16375
AC 1.02	Air conditioning indoor unit, High Wall (system 2.09)	Squash Court	Toshiba	MMK-UP0361HP-E	17A60903
AC 1.03	Air conditioning indoor unit, High Wall (system 2.09)	Squash Court	Toshiba	MMK-UP0361HP-E	59A28545
AC 1.04	Air conditioning indoor unit, High Wall (system 2.09)	Squash Court	Toshiba	MMK-UP0361HP-E	31B84062

REF	DESCRIPTION	LOCATION	MANUFACTURER	MODEL	SERIAL
AC 1.05	Air conditioning indoor unit, High Wall (system 2.09)	Squash Court	Toshiba	MMK-UP0361HP-E	96E29406
AC 1.06	Air conditioning indoor unit, High Wall (system 2.09)	Squash Court	Toshiba	MMK-UP0361HP-E	16E83259
AC 1.07	Air conditioning indoor unit, High Wall (system 2.08)	01.01 Studio	Toshiba	MMK-UP0361HP-E	97D53934
AC 1.08	Air conditioning indoor unit, High Wall (system 2.08)	01.01 Studio	Toshiba	MMK-UP0361HP-E	58E32614
AC 1.09	Air conditioning indoor unit, High Wall (system 2.08)	01.01 Studio	Toshiba	MMK-UP0361HP-E	35F93905
AC 1.10	Air conditioning indoor unit, High Wall (system 2.08)	01.01 Studio	Toshiba	MMK-UP0361HP-E	63E65565
AC 1.11	Air conditioning indoor unit, High Wall (system 2.08)	01.01 Studio	Toshiba	MMK-UP0361HP-E	98C82983
AC 1.12	Air conditioning indoor unit, High Wall (system 2.08)	01.01 Studio	Toshiba	MMK-UP0361HP-E	71D22152
AC 1.13	Air conditioning indoor unit, 4 Way Cassette (system 2.06A)	Office	Toshiba	MMU-UP0091HP-E	42600008 S108 p9
AC 1.14	Air conditioning indoor unit, 4 Way Cassette (system 2.04A)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	33B52277
AC 1.16	Air conditioning indoor unit, 4 Way Cassette (system 2.04A)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	68E28778
AC 1.18	Air conditioning indoor unit, 4 Way Cassette (system 2.04A)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	48D19007
AC 1.19	Air conditioning indoor unit, 4 Way Cassette (system 2.04A)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	47D55187
AC 1.20	Air conditioning indoor unit, 4 Way Cassette (system 2.07)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	10E93005
AC 1.21	Air conditioning indoor unit, 4 Way Cassette (system 2.07)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	49D41066
AC 1.22	Air conditioning indoor unit, 4 Way Cassette (system 2.07)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	20E72160
AC 1.23	Air conditioning indoor unit, 4 Way Cassette (system 2.07)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	77E99575
AC 1.24	Air conditioning indoor unit, 4 Way Cassette (system 2.07)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	20E39322
AC 1.25	Air conditioning indoor unit, 4 Way Cassette (system 2.07)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	23D78146
AC 1.26	Air conditioning indoor unit, 4 Way Cassette (system 2.07)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	30E08786
AC 1.27	Air conditioning indoor unit, 4 Way Cassette (system 2.07)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	66A83502

REF	DESCRIPTION	LOCATION	MAKE	MODEL	SERIAL
AC 1.28	Air conditioning indoor unit, 4 Way Cassette (system 2.04B)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	SN2793924
AC 1.29	Air conditioning indoor unit, 4 Way Cassette (system 2.04B)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	SN3549704
AC 1.30	Air conditioning indoor unit, 4 Way Cassette (system 2.04B)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	SN9433288
AC 1.31	Air conditioning indoor unit, 4 Way Cassette (system 2.04B)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	SN6102402
AC 1.32	Air conditioning indoor unit, 4 Way Cassette (system 2.04B)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	SN7003809
AC 1.33	Air conditioning indoor unit, 4 Way Cassette (system 2.04B)	01.06 Fitness Suite	Toshiba	MMU-UP0561HP-E	SN1335604
AC 1.34	Air conditioning indoor unit, 4 Way Cassette (system 2.02)	01.05 Consult 1	Toshiba S116 p14	RAV-HM561UTP-E S108 p10	52300130 S108 p10
AC 1.35	Air conditioning indoor unit, 4 Way Cassette (system 2.03)	01.04 Consult 2	Toshiba	RAV-HM561UTP-E S108 p10	52300140 S108 p10
AC 1.36	Air conditioning indoor unit, 4 Way Cassette (system 2.06A)	Manager's Office	Toshiba	MMU-UP0241HP-E S108 p9	43000277 S108 p9
AC 1.37	Air conditioning indoor unit, High Wall (system 2.10)	Gym Office	Toshiba S116 p4	RAV-HM561UTP-E	52700509 S108 p11
AC 2.01	Air conditioning indoor unit, 4 Way Cassette (system 2.09)	Squash Viewing Area	Toshiba	MMU-UP0361HP-E	SN3382765
AC 2.02	Air conditioning indoor unit, 4 Way Cassette (system 2.09)	Squash Viewing Area	Toshiba	MMU-UP0361HP-E	SN7960087
AC 2.03	Air conditioning indoor unit, 4 Way Cassette (system 2.09)	Staff Room	Toshiba	MMU-UP0361HP-E	SN5554990
AC 2.04	Air conditioning indoor unit, 4 Way Cassette (system 2.01)	02.01 Spin Studio	Toshiba	MMU-UP0481HP-E	SN1986871
AC 2.05	Air conditioning indoor unit, 4 Way Cassette (system 2.01)	02.01 Spin Studio	Toshiba	MMU-UP0481HP-E	SN3979050
AC 2.06	Air conditioning indoor unit, 4 Way Cassette (system 2.01)	02.01 Spin Studio	Toshiba	MMU-UP0481HP-E	SN1235324
AC 2.07	Air conditioning indoor unit, 4 Way Cassette (system 2.01)	02.01 Spin Studio	Toshiba	MMU-UP0481HP-E	SN6847892

REF	DESCRIPTION	LOCATION	MAKE	MODEL	SERIAL
CU 2.01	Condenser, external condensing unit, 2 Pipe Heat Pump VRF, serves AC 2.04, AC 2.05, AC 2.06, AC 2.07	1st floor roof	Toshiba S65 p33	MMY-MUP2010HT8P-E	43200013 S65 p33
CU 2.02	Condenser, external condensing unit, Split System Max 50m Run, serves AC1.34	1st floor roof	Toshiba	RAV-GP561ATW-E S108 p10	01274128 S108 p10
CU 2.03	Condenser, external condensing unit, Split System Max 50m Run, serves AC 1.35	1st floor roof	Toshiba	RAV-GP561ATW-E S108 p10	01131124 S108 p10
CU 2.04A	Condenser, external condensing unit, 2 Pipe Heat Pump VRF, serves AC 1.14, AC 1.16, AC 1.18, AC 1.19	1st floor roof	Toshiba S65 p29	MMY-MUP2401HT8P-E S108 p7	52600005 S108 p7
CU 2.04B	Condenser, external condensing unit, 2 Pipe Heat Pump VRF, serves AC 1.28, AC 1.29, AC 1.30, AC 1.31, AC 1.32, AC 1.33	1st floor roof	Toshiba S65 p28	MMY-AP3611FT8P-E	52200017 / 43200002 S108 p6
CU 2.05	Condenser, external condensing unit, 2 Pipe Heat Pump VRF, serves AC 0.15, AC 0.16, AC 0.17, AC 0.18, AC 0.19, AC 0.20, AC 0.21, AC 0.22, AC 0.23, AC 0.27	1st floor roof	Toshiba S65 p16	MMY-MUP3811HT8P-E	52400003 / 52600002 S108 p1
CU 2.06A	Condenser, external condensing unit, 3 Pipe Heat Recovery VRF, serves AC 0.01, AC 0.02, AC 0.03, AC 0.04, AC 0.05, AC 0.06, AC 0.25, AC 1.13, AC 1.36	1st floor roof	Toshiba S116 p25	MMY-AP3416FT8P	43000001 / 431000002 S108 p9
CU 2.06B	Condenser, external condensing unit, 3 Pipe Heat Recovery VRF, serves AC 0.07, AC 0.08, AC 0.09, AC 0.10, AC 0.11, AC 0.12, AC 0.13, AC 0.14, AC 0.26	1st floor roof	Toshiba S116 p16	MMY-AP2816FT9P	43100013 / 43100017 S108 p2
CU 2.07	Condenser, external condensing unit, 2 Pipe Heat Pump VRF, serves AC 1.20, AC 1.21, AC 1.22, AC 1.23, AC1.24, AC1.25, AC 1.26, AC 1.27	2nd floor roof	Toshiba S65 p25	MMY-AP4211HT8P-E	43200009 / 52400008 S108 p5
CU 2.08	Condenser, external condensing unit, 2 Pipe Heat Pump VRF, serves AC 1.07, AC 1.08, AC 1.09, AC 1.10, AC 1.11, AC 1.12	2nd floor roof	Toshiba S65 p21	MMY-MUP2201HT8P-E S65 p21	33100020 S65 p21
CU 2.09	Condenser, external condensing unit, 3 Pipe Heat Recovery VRF, serves AC 1.01, AC 1.02, AC 1.03, AC 1.04, AC 1.05, AC 1.06, AC 2.01, AC 2.02, AC 2.03	2nd floor roof	Toshiba S114 p2	MMY-AP3016FT8P	43000002 / 431000003 S108 p4
CU 2.10	Condenser, external condensing unit, Split System Max 50m Run, serves AC1.37	1st floor roof	Toshiba	RAV-GP561ATW-E S108 p11	01272124 S108 p11
Ventilation					
AHU R.02	Air handling unit serving Wet Change, supply and extract with counterflow plate heat exchanger heat recovery and LTHW heating coil	Roof Plantroom, Internal	Trane	AT4-F 20x12/20x12, Interior S84 p15	ELJ01860
AHU R.03	Air handling unit serving Front of House and Ancillary Areas, supply and extract with thermal wheel heat recovery and LTHW heating coil	Roof, External	Trane S143 p3	AT4-F 24x12/24x12, Weatherproof S84 p31	ELJ03442

REF	DESCRIPTION	LOCATION	MAKE	MODEL	SERIAL
AHU R.04	Air handling unit serving Dance Studio, supply and extract with thermal wheel heat recovery and LTHW heating coil	Roof, External	Trane S1 31 p3	AT4-F 16x8/16x8, Weatherproof S84 p47	ELJ01528
AHU R.05	Air handling unit serving Soft Play, supply and extract with thermal wheel heat recovery and LTHW heating coil	Roof, External	Trane S1 33 p3	AT4-F 16x12/16x12, Weatherproof S84 p66	ELJ02770
AHU R.06	Air handling unit serving Spin Studio, supply and extract with thermal wheel heat recovery and LTHW heating coil	Roof, External	Trane S1 47 p3	AT4-F 12x8/12x8, Weatherproof S84 p84	ELJ09550
AHU R.07	Air handling unit serving Sports Hall, supply and extract with thermal wheel heat recovery and LTHW heating coil	Roof Plantroom, Internal	Trane S1 41 p3	AT4-F 32x16/32x16, Interior	ELJ02903
AHU R.08	Air handling unit serving Fitness Suite, supply and extract with thermal wheel heat recovery and LTHW heating coil	Roof Plantroom, Internal	Trane S1 35 p3	AT4-F 24x12/24x12, Interior	ELJ09894

REF	DESCRIPTION	LOCATION	MAKE	MODEL	SERIAL
AHU R.09	Air handling unit serving Squash Courts and Viewing, supply and extract with thermal wheel heat recovery and LTHW heating coil	Roof, External	Trane S137 p3	AT4-F 16x12 /16x12, Weatherproof	SN2360874
AHU R.01	Air handling unit serving Main Pool, supply and extract with counterflow plate heat exchanger heat recovery and LTHW heating coil	Plantroom Roof, Internal	Trane S139 p3	AT4-F 49x20 /49x20, Interior S84 p1	SN6229865
SG-TYPE A	Supply diffuser, swirl diffuser	00.09 Party Room; 00.08 Community Room; 00.24 Office; 00.21 Reception; 00.01 Café Seating; 00.42 First Aid; 00.13 Innerva Studio; 00.25 Kitchen; 00.22 Servery; 00.27 Vanity; 00.31 Changing Places; 00.28 Changing Village; 00.30 ACC Change; 00.32 Group Change; 00.33 Group Change; 00.34 Group Change; 01.07 Membership Office; 01.01 Lower Fitness Suite; 01.02 Upper Fitness Suite; 01.04 Consultation Room 01; 01.05 Consultation Room 02; 02.01 Squash Viewing Area; 02.07 Staff Room; 02.02 Spin Studio	Waterloo	SDVSA .../9010-Matt 20%	SN7601560
SG-TYPE B	Supply diffuser, 4 way diffuser	00.14 Female Dry Change; 00.17 Male Dry Change	Waterloo	DF-MD/41/.../9010-Matt 20%/OBSS	SN8498491
SG-TYPE C	Supply diffuser, linear bar	01.03 Admin / Timing Office	Waterloo	Aircell S…/9010-Matt 20%	SN1632071
SG-TYPE D	Supply diffuser, linear bar grille	01.09 Squash Court 01; 01.10 Squash Court 02; 01.11 Squash Court 03	Waterloo	ALG(2)/.../PPM9010	SN7371880

REF	ITEM	LOCATION	MAKE	MODEL	SERIAL
EG-TYPE A	Extract grille (PER)	00.09 Party Room; 00.08 Community Room; 00.07 WC 02 (Play Zone); 00.06 WC 01 (Play Zone); 00.24 Office; 00.47 Circulation; 00.28 Changing Village; 00.13 Innerva Studio; 00.18 Male WC; 00.33 Group Change; 00.34 Group Change; 00.32 Group Change; 00.31 Changing Places; ACC. Changing; 00.12 Buggy Store; 01.07 Membership Office; 01.01 Lower Fitness Suite; 02.07 Staff Room; 02.02 Spin Studio	Waterlo o	PER/... /PPM901 0	SN7772913
EG-TYPE B	Extract grille (AIRCELL G)	00.25 Kitchen; 00.39 Post Swim Showers	Waterlo o	AIRCELL G/.../P PM9010	SN2391096
EG-TYPE C	Extract grille, linear bar grille	01.02 Upper Fitness Suite; 01.09 Squash Court 01; 01.10 Squash Court 02; 01.11 Squash Court 03	Waterlo o	ALG(2)/ .../PPM 9010	SN8866050
EV-TYPE D	Extract grille, extract air valve	00.38 Acc WC; 00.23 WC; 00.24 WC; 00.19 Male Showers; 00.18 Male WC; 00.15 Female WC; 00.54 Female Showers; 00.38 Female WC; 00.36 Acc WC; 00.37 Male WC; 00.35 Acc WC; 00.29 Cleaner; 01.05 Acc WC; 01.03 Acc WC; 01.04 WC	Waterlo o	VB…	SN5342413
AS 0.01	Air sock, fabric supply duct 900ø x 55596 mm long, 5 pieces	Main Pool Hall	Prihoda	KE-DireJet System Ø900, ZeroWeave S78 p4	SN0933345
AS 0.02	Air sock, fabric supply duct 900ø x 54665 mm long, 3 pieces	Main Pool Hall	Prihoda	KE-DireJet System Ø900, ZeroWeave S78 p4	SN5414749
ATT-TYPE A	Attenuator, rectangular (LG01H/3C/L/S)	2nd Floor Roof Level, External; Roof Level, External	Caice S63 p1	LG01H/3C/L/S S63 p7	SN9351379
ATT-TYPE B	Attenuator, rectangular (LG01V/3C/L/S)	2nd Floor Roof Level, External; Roof Level, External	Caice S63 p1	LG01V/3C/L/S S63 p7	SN3673668

REF	DESCRIPTION	LOCATION	MAKE	MODEL	SERIAL
ATT-TYPE C	Attenuator, rectangular (SG01H/3C/L/S)	2nd Floor Roof Level, External; Roof Level, External; Roof Plantroom, Internal	Caice S63 p1	SG01H/3C/L/S S63 p9	SN5555633
ATT-TYPE D	Attenuator, rectangular (SG01V/3C/L/S)	2nd Floor Roof Level, External; Roof Level, External; Roof Plantroom, Internal	Caice S63 p1	SG01V/3C/L/S S63 p9	P6021470
ATT-TYPE E	Attenuator, modular (MG02H/3C/L/S)	Roof Plantroom, Internal	Caice S63 p1	MG02H/3C/L/S S63 p11	P3024971
ATT-TYPE F	Attenuator, rectangular (SG01H/2C/L/S)	Roof Plantroom, Internal	Caice S63 p1	SG01H/2C/L/S S63 p10	P0469721
ATT-TYPE G	Attenuator, rectangular (SG01V/3C/L/SM/B1)	Roof Plantroom, Internal	Caice S63 p1	SG01V/3C/L/SM/B1 S63 p10	SN9570340
ATT-TYPE H	Attenuator, rectangular (SG01H/3C/L/SM/B1)	Roof Plantroom, Internal	Caice S63 p1	SG01H/3C/L/SM/B1 S63 p10	P0801133
ATT-TYPE I	Attenuator, rectangular (LG01H/3C/L/SM/B1)	Roof Plantroom, Internal	Caice S63 p1	LG01H/3C/L/SM/B1 S63 p8	P5045977
EF B.01	Extract fan, wall (Shower)	Shower	Vent Axia	VASF100TC	SN1092693
EF B.02	Extract fan, wall (Toilet)	Toilet	Vent Axia	VASF100TC	SN9172530
EF B.03	Extract fan, in-line (Chemical Store)	Chemical Store	Nuaire	ILMEC-125	SN5348475
EF B.04	Extract fan, in-line (Hypo Store)	Hypo Store	Nuaire	ILMEC-125	SN5264081
FD 0.01	Fire damper, 600x200 duct, resetable thermal link	Kitchen	BSB S101 p8	FD	BSB958970
FD 0.02	Fire damper, 125 dia duct, resetable thermal link	Kitchen	BSB	FD	BSB206259
FD 0.03	Fire damper, 900x350 duct, resetable thermal link	Wet Change Corridor	BSB S101 p8	FD	BSB902438
FD 0.04	Fire damper, 900x350 duct, resetable thermal link	Wet Change Corridor	BSB S101 p8	FD	BSB306073
FD 0.05	Fire damper, 700x200 duct, resetable thermal link	Buggy Store	BSB S101 p8	FD	BSB124690
FD 0.06	Fire damper, 500x250 duct, resetable thermal link	Buggy Store	BSB S101 p8	FD	BSB344789

REF	DESCRIPTION	LOCATION	MAKE	MODEL	SERIAL
FD 0.07	Fire damper, 500 dia duct, resetable thermal link	Wet Change	BSB	FD	SN8998589
FD 0.08	Fire damper, 500 dia duct, resetable thermal link	Wet Change	BSB	FD	SN0855855
FD 1.01	Fire damper, 125 dia duct, resetable thermal link	WC 01	BSB	FD	SN2716507
FD 1.02	Fire damper, 125 dia duct, resetable thermal link	Acc WC	BSB	FD	SN9128523
FD 1.03	Fire damper, 125 dia duct, resetable thermal link	WC 02	BSB	FD	SN6516821
FD 1.04	Fire damper, 125 dia duct, resetable thermal link	Membership Office	BSB	FD	SN3708403
FD 1.05	Fire damper, 125 dia duct, resetable thermal link	Membership Office	BSB	FD	SN7881461
FD 1.06	Fire damper, 125 dia duct, resetable thermal link	Corridor 01	BSB	FD	SN5262538
FD 1.07	Fire damper, 125 dia duct, resetable thermal link	Corridor 01	BSB	FD	SN2163118
FD 1.08	Fire damper, 150 dia duct, resetable thermal link	Riser	BSB	FD	SN3477347
FD 1.09	Fire damper, 150 dia duct, resetable thermal link	Riser	BSB	FD	SN2148336
FD 1.10	Fire damper, 400x100 duct, resetable thermal link	Corridor 01	BSB S101 p8	FD	SN1873164
DTG-TYPE A	Door transfer grille, non vision	Kitchen; Female WC; Male WC	Gilberts	NVT-600	SN7371457

Life, replacement and maintenance planning

Expected life is indicative, from CIBSE Guide M and the manufacturers' literature. "Confirmed" means a document received states the installed model. The SFG20 column gives the schedule each asset is maintained to.

REF	DISCIPLINE	EXPECTED LIFE	INSTALLED MODEL	SFG20 SCHEDULE
HWH B.01	Public health	20 years	Confirmed	Water heaters, indirect
HWH B.02	Public health	20 years	Confirmed	Water heaters, indirect
BS B.01	Public health	15 years	Confirmed	Booster sets, cold water
BS B.02	Public health	15 years	Confirmed	Booster sets, cold water
P B.05	Mechanical	15 years	Confirmed	Pumps, circulating
ASHP 0.01	Mechanical	15 years	Confirmed	Heat pumps, air source
ASHP 0.02	Mechanical	15 years	Confirmed	Heat pumps, air source

REF	DISCIPLINE	EXPECTED LIFE	INSTALLED MODEL	SFG20 SCHEDULE
ASHP 0.03	Mechanical	15 years	Confirmed	Heat pumps, air source
EPH 0.01	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.02	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.03	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.04	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.05	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.06	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.07	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.08	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.09	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.10	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.11	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.12	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 0.13	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.01	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.02	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.03	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.04	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.05	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.06	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.07	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.08	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.09	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 1.10	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.01	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.02	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.03	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.04	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.05	Mechanical	15 years	Confirmed	Heaters, electric panel

REF	DISCIPLINE	EXPECTED LIFE	INSTALLED MODEL	SFG20 SCHEDULE
EPH 2.06	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.07	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.08	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.09	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.10	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.11	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.12	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.13	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.14	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.15	Mechanical	15 years	Confirmed	Heaters, electric panel
EPH 2.16	Mechanical	15 years	Confirmed	Heaters, electric panel
TS.0.01	Mechanical	20 years	Confirmed	Thermal stores
P B.01	Mechanical	15 years	Confirmed	Pumps, circulating
P B.02	Mechanical	15 years	Confirmed	Pumps, circulating
P B.03	Mechanical	15 years	Confirmed	Pumps, circulating
P B.04	Mechanical	15 years	Confirmed	Pumps, circulating
PU 0.01	Public health	15 years	Confirmed	Pressurisation units
AC 0.01	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.02	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.03	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.04	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.05	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.06	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.07	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.08	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.09	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.10	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.11	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.12	Mechanical	15 years	Confirmed	Air conditioning, split

REF	DISCIPLINE	EXPECTED LIFE	INSTALLED MODEL	SFG20 SCHEDULE
AC 0.13	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.14	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.15	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.16	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.17	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.18	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.19	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.20	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.21	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.22	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.23	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.25	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.26	Mechanical	15 years	Confirmed	Air conditioning, split
AC 0.27	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.01	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.02	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.03	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.04	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.05	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.06	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.07	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.08	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.09	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.10	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.11	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.12	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.13	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.14	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.16	Mechanical	15 years	Confirmed	Air conditioning, split

REF	DISCIPLINE	EXPECTED LIFE	INSTALLED MODEL	SFG20 SCHEDULE
AC 1.18	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.19	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.20	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.21	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.22	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.23	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.24	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.25	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.26	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.27	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.28	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.29	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.30	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.31	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.32	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.33	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.34	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.35	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.36	Mechanical	15 years	Confirmed	Air conditioning, split
AC 1.37	Mechanical	15 years	Confirmed	Air conditioning, split
AC 2.01	Mechanical	15 years	Confirmed	Air conditioning, split
AC 2.02	Mechanical	15 years	Confirmed	Air conditioning, split
AC 2.03	Mechanical	15 years	Confirmed	Air conditioning, split
AC 2.04	Mechanical	15 years	Confirmed	Air conditioning, split
AC 2.05	Mechanical	15 years	Confirmed	Air conditioning, split
AC 2.06	Mechanical	15 years	Confirmed	Air conditioning, split
AC 2.07	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.01	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.02	Mechanical	15 years	Confirmed	Air conditioning, split

REF	DISCIPLINE	EXPECTED LIFE	INSTALLED MODEL	SFG20 SCHEDULE
CU 2.03	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.04A	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.04B	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.05	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.06A	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.06B	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.07	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.08	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.09	Mechanical	15 years	Confirmed	Air conditioning, split
CU 2.10	Mechanical	15 years	Confirmed	Air conditioning, split
AHU R.02	Mechanical	20 years	Confirmed	Air handling units
AHU R.03	Mechanical	20 years	Confirmed	Air handling units
AHU R.04	Mechanical	20 years	Confirmed	Air handling units
AHU R.05	Mechanical	20 years	Confirmed	Air handling units
AHU R.06	Mechanical	20 years	Confirmed	Air handling units
AHU R.07	Mechanical	20 years	Confirmed	Air handling units
AHU R.08	Mechanical	20 years	Confirmed	Air handling units
AHU R.09	Mechanical	20 years	Confirmed	Air handling units
AHU R.01	Mechanical	20 years	Confirmed	Air handling units
SG-TYPE A	Mechanical	20 years	Confirmed	Grilles and diffusers
SG-TYPE B	Mechanical	20 years	Confirmed	Grilles and diffusers
SG-TYPE C	Mechanical	20 years	Confirmed	Grilles and diffusers
SG-TYPE D	Mechanical	20 years	Confirmed	Grilles and diffusers
EG-TYPE A	Mechanical	20 years	Confirmed	Grilles and diffusers
EG-TYPE B	Mechanical	20 years	Confirmed	Grilles and diffusers
EG-TYPE C	Mechanical	20 years	Confirmed	Grilles and diffusers
EV-TYPE D	Mechanical	20 years	Confirmed	Grilles and diffusers
AS 0.01	Mechanical	15 years	Confirmed	Fabric ductwork
AS 0.02	Mechanical	15 years	Confirmed	Fabric ductwork

REF	DISCIPLINE	EXPECTED LIFE	INSTALLED MODEL	SFG20 SCHEDULE
ATT-TYPE A	Mechanical	25 years	Confirmed	Attenuators
ATT-TYPE B	Mechanical	25 years	Confirmed	Attenuators
ATT-TYPE C	Mechanical	25 years	Confirmed	Attenuators
ATT-TYPE D	Mechanical	25 years	Confirmed	Attenuators
ATT-TYPE E	Mechanical	25 years	Confirmed	Attenuators
ATT-TYPE F	Mechanical	25 years	Confirmed	Attenuators
ATT-TYPE G	Mechanical	25 years	Confirmed	Attenuators
ATT-TYPE H	Mechanical	25 years	Confirmed	Attenuators
ATT-TYPE I	Mechanical	25 years	Confirmed	Attenuators
EF B.01	Mechanical	15 years	Confirmed	Fans, extract
EF B.02	Mechanical	15 years	Confirmed	Fans, extract
EF B.03	Mechanical	15 years	Confirmed	Fans, extract
EF B.04	Mechanical	15 years	Confirmed	Fans, extract
FD 0.01	Mechanical	20 years	Confirmed	Fire dampers
FD 0.02	Mechanical	20 years	Confirmed	Fire dampers
FD 0.03	Mechanical	20 years	Confirmed	Fire dampers
FD 0.04	Mechanical	20 years	Confirmed	Fire dampers
FD 0.05	Mechanical	20 years	Confirmed	Fire dampers
FD 0.06	Mechanical	20 years	Confirmed	Fire dampers
FD 0.07	Mechanical	20 years	Confirmed	Fire dampers
FD 0.08	Mechanical	20 years	Confirmed	Fire dampers
FD 1.01	Mechanical	20 years	Confirmed	Fire dampers
FD 1.02	Mechanical	20 years	Confirmed	Fire dampers
FD 1.03	Mechanical	20 years	Confirmed	Fire dampers
FD 1.04	Mechanical	20 years	Confirmed	Fire dampers
FD 1.05	Mechanical	20 years	Confirmed	Fire dampers
FD 1.06	Mechanical	20 years	Confirmed	Fire dampers
FD 1.07	Mechanical	20 years	Confirmed	Fire dampers
FD 1.08	Mechanical	20 years	Confirmed	Fire dampers

REF	DISCIPLINE	EXPECTED LIFE	INSTALLED MODEL	SFG20 SCHEDULE
FD 1.09	Mechanical	20 years	Confirmed	Fire dampers
FD 1.10	Mechanical	20 years	Confirmed	Fire dampers
DTG-TYPE A	Mechanical	20 years	Confirmed	Grilles and diffusers

Key settings recorded at commissioning

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
	Heat pump sequencer common setpoint (HMI graphic)	45.0 °C	Common SETPOINT	S7 p4
	Tracer SC+ IP address	192.168.1.10 / 192.168.2.10		S7 p6
	Tracer SC+ serial number	E25F11324		S7 p6
	Sequencer control mode at completion	automatic control		S7 p5
P B.01	Inverter setting	45.0 Hz		S10 p3
P B.01	Main commissioning valve (Peglar 955, 150 mm) setting	f/o		S10 p4
P B.02	Inverter setting	50.0 Hz		S13 p3
P B.02	Main commissioning valve (Peglar 955, 150 mm) setting	f/o		S13 p4
AHU R.01	PIC valve AHU 1 (Siemens 80 mm) set point	3.5		S13 p5
AHU R.02	PIC valve AHU 2 (Siemens 50 mm) set point	3.4		S13 p5
AHU R.03	PIC valve AHU 3 (Siemens 32 mm) set point	2.9		S13 p5
AHU R.04	PIC valve AHU 4 (Siemens 20 mm) set point	2.3		S13 p5
AHU R.05	PIC valve AHU 5 (Siemens 25 mm) set point	1.4		S13 p5
AHU R.06	PIC valve AHU 6 (Siemens 20 mm) set point	0.7		S13 p5
AHU R.07	PIC valve AHU 7 (Siemens 65 mm) set point	3.4		S13 p5
AHU R.08	PIC valve AHU 8 (Siemens 32 mm) set point	2.4		S13 p5
AHU R.09	PIC valve AHU 9 (Siemens 32 mm) set point	1.9		S13 p5

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
P B.03	Inverter setting	45.0 Hz		S14 p3
P B.03	Main commissioning valve (Peglar 955, 80 mm) setting	f/o		S14 p4
ASHP 0.01	Internal pump speed (ASHP 1 and 2)	30.00 Hz		S15 p2
ASHP 0.02	Internal pump speed	30.00 Hz		S15 p2
ASHP 0.03	Internal pump speed	28 Hz		S15 p2
P B.05	Secondary return pump speed	speed 3		S16 p2
	Design return loop temperature (all outlets)	55 °C		S16 p3
	Return temperature balancing	automatic temperature balancing valves, valve setting auto		S16 p2
	Tap temperatures	set using the mixing valve fitted within the tap		S16 p2
ASHP 0.01	Measured flow rate through each machine (110% of design), LTHW pumps fixed at 30 Hz	13.2 Litres per second		S20 p1
ASHP 0.02	Measured flow rate through each machine (110% of design), LTHW pumps fixed at 30 Hz	13.2 Litres per second		S20 p1
ASHP 0.01	Three way bypass valve minimum position (adjusted from 50%)	60 %	Elmwood_WSHP_1_Valve_Control	S20 p1
ASHP 0.02	Three way bypass valve minimum position (adjusted from 50%)	60 %	Elmwood_WSHP_1_Valve_Control	S20 p1
ASHP 0.01	Valve control temperature deadband	15 'C	Elmwood_WSHP_1_Valve_Control	S20 p1
ASHP 0.02	Valve control temperature deadband	15 'C	Elmwood_WSHP_1_Valve_Control	S20 p1
ASHP 0.01	IFM flow sensor flow trip point	30 %	TMS_Llid_Flow_Conversion	S20 p1
ASHP 0.02	IFM flow sensor flow trip point	30 %	TMS_Llid_Flow_Conversion	S20 p1
ASHP 0.01	Trane sequencer mode left on	Hand mode		S20 p1

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
ASHP 0.02	Trane sequencer mode left on	Hand mode		S20 p1
ASHP 0.03	Front Panel Hot Water Setpoint	45 °C	Front Panel Hot Water Setpoint	S21 p12
ASHP 0.03	BAS Hot Water Setpoint	45 °C	BAS Hot Water Setpoint	S21 p12
ASHP 0.03	Setpoint Source	Front Panel	Setpoint Source	S21 p12
ASHP 0.03	Low Evaporator Water Temp Cutout	3 °C	Low Evaporator Water Temp Cutout	S21 p12
ASHP 0.03	Heating Low Ambient Lockout	-18 °C	Heating Low Ambient Lockout	S21 p15
ASHP 0.03	High Evaporator Water Temp Cutout	55 °C	High Evaporator Water Temp Cutout	S21 p15
ASHP 0.03	HP switch, 1st stage	41 Bar		S21 p7
ASHP 0.03	LP Pressure Switch (CH532-CH530)	-3.3 C		S21 p7
ASHP 0.03	Compressor thermic setting	17 (A) 22 (A) 17 (A) 22 (A) A		S21 p7
ASHP 0.03	Pump thermic setting	10 (A) 10 (A) A		S21 p7
ASHP 0.03	Heating entering / leaving temperature at commissioning, circuit 1	37.1 / 42.3 °C		S21 p9
ASHP 0.03	Chiller Service Interval Setpoint	6000 Hr	Chiller Service Interval Setpoint	S21 p17
ASHP 0.03	Unit started on (start up by Louis Bowtell)	29/04/2026		S21 p5
P B.02	Control mode	Constant Pressure		S36 p1
P B.02	Set point	2.0 Bar		S36 p1
ASHP 0.02	Front Panel Hot Water Setpoint	45 °C	Front Panel Hot Water Setpoint	S38 p11
ASHP 0.02	BAS Hot Water Setpoint	45 °C	BAS Hot Water Setpoint	S38 p11
ASHP 0.02	Front Panel Heating Differential to Stop	3.5 °C	Front Panel Heating Differential to Stop	S38 p18

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
ASHP 0.02	Evaporator Water Pump Speed	60 %	Evaporator Water Pump Speed	S38 p16
ASHP 0.02	HP switch, 1st stage	41 Bar		S38 p7
ASHP 0.02	LP switch trip point	-3.3 C		S38 p7
ASHP 0.02	Trim RLA setting	65 A		S38 p7
ASHP 0.02	Power supply protection breaker setting	400 Amp		S38 p6
ASHP 0.02	Water side pressure drop, design / actual	8.7 / 10 kPa		S38 p6
ASHP 0.02	Refrigerant unit charge check	C1- 10.4 C2-10.5 bar		S38 p6
ASHP 0.02	Chiller Service Interval Setpoint	6000 Hr	Chiller Service Interval Setpoint	S38 p17
ASHP 0.02	Water Pump Service Interval Setpoint	20000 Hr	Water Pump Service Interval Setpoint	S38 p18
ASHP 0.02	Unit started on (start up by Louis Bowtell)	28/04/2026		S38 p5
ASHP 0.02	Unit log setpoint (Log 1 / Log 2)	45.0 / 45.0 °C		S38 p8
P B.01	Control mode	Constant Pressure		S39 p1
P B.01	Set point	0.65 Bar		S39 p1
ASHP 0.01	Front Panel Hot Water Setpoint	45 °C	Front Panel Hot Water Setpoint	S40 p11
ASHP 0.01	BAS Hot Water Setpoint	45 °C	BAS Hot Water Setpoint	S40 p11
ASHP 0.01	Front Panel Heating Differential to Stop	3.5 °C	Front Panel Heating Differential to Stop	S40 p18
ASHP 0.01	Evaporator Water Pump Speed	60 %	Evaporator Water Pump Speed	S40 p16
ASHP 0.01	HP switch, 1st stage	41 Bar		S40 p7
ASHP 0.01	LP switch trip point	-3.3 C		S40 p7
ASHP 0.01	Trim RLA setting	65 A		S40 p7

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
ASHP 0.01	Power supply protection breaker setting	400 Amp		S40 p6
ASHP 0.01	Water side pressure drop, design / actual	8.7 / 10 kPa		S40 p6
ASHP 0.01	Refrigerant unit charge check	C1-10.7 C2-11.2 at ambient 13.8 °C bar		S40 p6
ASHP 0.01	Chiller Service Interval Setpoint	6000 Hr	Chiller Service Interval Setpoint	S40 p17
ASHP 0.01	Water Pump Service Interval Setpoint	20000 Hr	Water Pump Service Interval Setpoint	S40 p18
ASHP 0.01	Unit started on (start up by Louis Bowtell)	28/04/2026		S40 p5
	System tested	POOL PLANTROOM PIPEWORK		S51 p1
	Test method	PRESSURE TEST		S51 p1
	Test medium	AIR		S51 p1
	Test pressure	1 BAR		S51 p1
	Test duration	1 HR		S51 p1
	Result	NO PRESSURE DROP DETECTED DURING THE TEST PERIOD		S51 p1
	Test carried out by	VINCENT SWINNEY		S51 p1
TS.0.01	Hydraulic test pressure (shell)	6.0 BarG		S57 p1
TS.0.01	Test period	1 hour		S57 p1
TS.0.01	Test result	successfully passed the hydraulic test procedure		S57 p1
BS B.02	Set point	3.0 Bar		S58 p1
BS B.02	Vessel pre-charge as found	1.0 bar		S58 p1
BS B.02	Vessel air charge replenished to	2.5 bar		S58 p1

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
BS B.02	Pumps 1 and 2 operating mode	Auto		S58 p1
	Chlorine dosage rate (hot and cold domestic services)	50 ppm		S64 p1
	Contact time	1 hour		S64 p1
	Minimum level after contact time	not dropped below 30 ppm		S64 p1
	Flushed residual on completion	less than 0.3 ppm		S64 p1
P B.05	Control mode	Constant Pressure		S66 p1
P B.05	Set point	0.85 Bar		S66 p1
	Waste producer premises	ELMWOOD LEISURE CENTRE, MARKET GATE RD, ELMWOOD EL6 4QT		S70 p2
	Process giving rise to waste	Refrigerant Plant Service		S70 p2
	Waste description	Recovered Refrigerant, EWC 140601		S70 p2
	Refrigerant recovered, cylinder 1N280330	R410A, 12.85 kg		S70 p2
	Refrigerant recovered, cylinder 1N281030	R410A, 12.4 kg		S70 p2
	Refrigerant recovered, cylinder 1N348631	R410A, 12.4 kg		S70 p3
	Carrier and consignor	Z. MANN on behalf of CLIMACOOL		S70 p2
	Consignee	KOOLTECH LTD, B46 1JH, received 22/01/2025 14:05		S70 p2
	Waste management operation	R03, R13, D09, D14, D15		S70 p2
	Cylinders returned to Kooltech	3 x EMPTY LARGE REFRIGERANT CYLINDER		S70 p1
	System tested	Pipework from the Plantroom serving the Ground Floor (Scheme: 1st Fix Domestic Services)		S74 p1
	Test method	Pressure Test		S74 p1

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
	Test medium	Compressed Air		S74 p1
	Test pressure	1 Bar		S74 p1
	Test duration	1 Hr		S74 p1
	Result	No pressure drop detected with the time limit		S74 p1
	Test carried out by	Vincent Swinney		S74 p1
	Witnessed by	Terry Lewin		S74 p1
	Primary circuit	Sealed		S79 p1
	Maximum primary flow temperature	40 °C		S79 p1
	Incoming static cold water pressure	4.4 bar		S79 p1
	Scale reducer type	WATER KING WK4		S79 p1
	Hot water thermostat set temperature	60 °C		S79 p1
	Maximum hot water flow rate at set thermostat temperature	6 l/min		S79 p1
	Type of control system	Other		S79 p1
	Hot water temperature at nearest outlet	60 °C		S79 p1
	Pressure reducing valve location	BEHIND CYLINDER		S79 p1
	Pressure reducing valve setting	3 bar		S79 p1
	Primary circuit	Sealed		S80 p1
	Maximum primary flow temperature	40 °C		S80 p1
	Incoming static cold water pressure	4.4 bar		S80 p1

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
	Scale reducer type	WATER KING WK4		S80 p1
	Hot water thermostat set temperature	60 °C		S80 p1
	Maximum hot water flow rate at set thermostat temperature	6 l/min		S80 p1
	Type of control system	Other		S80 p1
	Hot water temperature at nearest outlet	59 °C		S80 p1
	Pressure reducing valve location	BEHIND THE CYLINDER		S80 p1
	Pressure reducing valve setting	3 bar		S80 p1
	Pressure test, heating pipework from Pool plantroom to Ground Floor, compressed air	14Bar for 1Hr		S81 p1
PB.03	Control mode	Constant Pressure		S88 p1
PB.03	Set point	1.6 Bar		S88 p1
PB.04	Control mode	Constant Pressure		S89 p1
PB.04	Set point	0.85 Bar		S89 p1
	System tested (scheme)	MCWS/TCWS		S91 p1
	System tested (mark-up)	MCWS (serving storage tank) and TCWS (returning from storage tank), lower basement		S91 p4
	Test method	PRESSURE TEST		S91 p1
	Test medium	AIR		S91 p1
	Test pressure	1 BAR		S91 p1

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
	Test duration	1 HR		S91 p1
	Result	NO PRESSURE DROP DURING THIS TIME		S91 p1
	Test carried out by	Seb Healey		S91 p1
	Witnessed by	T Lewis		S91 p1
	Gauge photo start	10 Oct 2025 07:35:27 BST		S91 p2
	Gauge photo end	10 Oct 2025 08:35:22 BST		S91 p3
BS B.01	Set point	4.5 Bar		S92 p1
BS B.01	Vessel pre-charge as found	1.0 bar		S92 p1
BS B.01	Vessel air charge replenished to	3.5 bar		S92 p1
BS B.01	Pumps 1 to 3 operating mode	Auto		S92 p1
	System tested	HEATING PIPEWORK 1ST FIX AHU 3 AND 6		S95 p1
	Test method	PRESSURE TEST		S95 p1
	Test medium	AIR		S95 p1
	Test pressure	1 BAR		S95 p1
	Test duration	1 HR		S95 p1
	Result	NO PRESSURE DROP DETECTED DURING TEST PERIOD		S95 p1
	Test carried out by	DAVID SEBING		S95 p1
	Witnessed by	Terry Lewin		S95 p1
	Gauge photo start	6 Nov 2025 08:57:52 GMT		S95 p2
	Gauge photo end	6 Nov 2025 11:22:55 GMT		S95 p3
	System tested	HEATING PIPEWORK ROOF NO1 AHU 4, 5, 9		S96 p1
	Test method	PRESSURE TEST		S96 p1
	Test medium	AIR		S96 p1
	Test pressure	1 BAR		S96 p1
	Test duration	1 HR		S96 p1
	Result	NO PRESSURE DROP DETECTED DURING TEST PERIOD		S96 p1

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
	Test carried out by	DAVID SEBING		S96 p1
	Witnessed by	Terry Lewin		S96 p1
	Gauge photo	3 Nov 2025 13:37:22 GMT		S96 p3
	Gauge photo	3 Nov 2025 14:54:41 GMT		S96 p2
	System tested	LTHW SYSTEM		S97 p1
	Test method	PRESSURE TEST		S97 p1
	Test medium	AIR		S97 p1
	Test pressure	1 BAR		S97 p1
	Test duration	2 HRS		S97 p1
	Result	NO PRESSURE DROP DETECTED DURING TEST PERIOD		S97 p1
	Test carried out by	VINCENT SWINNEY		S97 p1
	Witnessed by	Terry Lewin		S97 p1
	System tested	Dry/Wet Change Domestics (Scheme: 1st Fix Domestic Pipework)		S98 p1
	Test method	Pressure Test		S98 p1
	Test medium	Compressed Air		S98 p1
	Test pressure	1.2 Bar		S98 p1
	Test duration	1 HR		S98 p1
	Result	No pressure drop detected within the hour		S98 p1
	Test carried out by	VINCENT SWINNEY		S98 p1
	Gauge photo start	THURSDAY 15TH MAY 13:00 PM		S98 p2
	Gauge photo end	THURSDAY 15TH MAY 14:00 PM		S98 p3
PU 0.01	Cold fill	1.5 bar		S99 p1
PU 0.01	Low pressure	0.8 bar		S99 p1
PU 0.01	High pressure	3.0 bar		S99 p1

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
PU 0.01	Vessel pre-charge as found	1.5 bar		S99 p1
PU 0.01	Vessel air charge replenished to	1.5 bar		S99 p1
BS B.01	Set point	4.5 Bar		S102 p2
BS B.01	Vessels charge	3x 24 litre @ 4.0 Bar		S102 p2
BS B.02	Set point	3.0 Bar		S102 p2
BS B.02	Vessel charge	1x 24 litre @ 2.5 bar		S102 p2
PU 0.01	Cold fill	1.5 Bar		S102 p2
PU 0.01	High pressure	3.0 Bar		S102 p2
PU 0.01	Low pressure	0.8 Bar		S102 p2
PU 0.01	Vessel charge	1x 300 litre @ 1.5 Bar		S102 p2
PU 0.01	Cold fill (narrative)	3.0 bar		S102 p1
P B.01	Set point	Constant Pressure 0.65 Bar		S102 p1
P B.02	Set point	Constant Pressure 2.0 Bar		S102 p1
P B.03	Set point	Constant Pressure 1.6 bar		S102 p1
P B.04	Set point	Constant Pressure 0.85 bar		S102 p1
P B.05	Set point	Constant Pressure 0.85 bar		S102 p2
CU 2.05	Holding refrigerant gas charge	15KG		S108 p1
CU 2.05	Additional refrigerant gas charge	20.7KG		S108 p1
CU 2.05	Total system refrigerant gas charge	35.7KG		S108 p1
CU 2.05	System pressure test	12 BAR		S108 p1
CU 2.05	System evacuation	0.5 Hg		S108 p1
CU 2.05	Discharge pressures	230 / 235		S108 p1
CU 2.05	Suction pressures	58 / 60		S108 p1
CU 2.05	Ambient air temperature at condenser	21 °C		S108 p1
CU 2.05	Maximum pipe length	100 M		S108 p1
CU 2.06B	Holding refrigerant gas charge	22KG		S108 p2
CU 2.06B	Additional refrigerant gas charge	38.2KG		S108 p2
CU 2.06B	Total system refrigerant gas charge	60.2KG		S108 p2
CU 2.06B	System pressure test	12 BAR		S108 p2

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
CU 2.06B	System evacuation	0.5 Hg		S108 p2
CU 2.06B	Discharge pressures	230 / 235		S108 p2
CU 2.06B	Suction pressures	58 / 60		S108 p2
CU 2.06B	Ambient air temperature at condenser	21 °C		S108 p2
CU 2.06B	Maximum pipe length	100 M		S108 p2
CU 2.08	Holding refrigerant gas charge	9KG		S108 p3
CU 2.08	Additional refrigerant gas charge	10.2KG		S108 p3
CU 2.08	Total system refrigerant gas charge	19.2KG		S108 p3
CU 2.08	System pressure test	12 BAR		S108 p3
CU 2.08	System evacuation	0.5 Hg		S108 p3
CU 2.08	Discharge pressures	230 / 235		S108 p3
CU 2.08	Suction pressures	58 / 60		S108 p3
CU 2.08	Ambient air temperature at condenser	21 °C		S108 p3
CU 2.08	Maximum pipe length	100 M		S108 p3
CU 2.09	Holding refrigerant gas charge	22KG		S108 p4
CU 2.09	Additional refrigerant gas charge	18.1KG		S108 p4
CU 2.09	Total system refrigerant gas charge	40.1KG		S108 p4
CU 2.09	System pressure test	12 BAR		S108 p4
CU 2.09	System evacuation	0.5 Hg		S108 p4
CU 2.09	Discharge pressures	230 / 235		S108 p4
CU 2.09	Suction pressures	58 / 60		S108 p4
CU 2.09	Ambient air temperature at condenser	21 °C		S108 p4
CU 2.09	Maximum pipe length	100 M		S108 p4
CU 2.07	Holding refrigerant gas charge	9KG		S108 p5
CU 2.07	Additional refrigerant gas charge	6KG		S108 p5
CU 2.07	Total system refrigerant gas charge	19.2KG		S108 p5
CU 2.07	System pressure test	12 BAR		S108 p5
CU 2.07	System evacuation	0.5 Hg		S108 p5
CU 2.07	Discharge pressures	230 / 235		S108 p5

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
CU 2.07	Suction pressures	58 / 60		S108 p5
CU 2.07	Ambient air temperature at condenser	21 °C		S108 p5
CU 2.07	Maximum pipe length	100 M		S108 p5
CU 2.04B	Holding refrigerant gas charge	18KG		S108 p6
CU 2.04B	Additional refrigerant gas charge	15.4KG		S108 p6
CU 2.04B	Total system refrigerant gas charge	33.4KG		S108 p6
CU 2.04B	System pressure test	12 BAR		S108 p6
CU 2.04B	System evacuation	0.5 Hg		S108 p6
CU 2.04B	Discharge pressures	230 / 235		S108 p6
CU 2.04B	Suction pressures	58 / 60		S108 p6
CU 2.04B	Ambient air temperature at condenser	21 °C		S108 p6
CU 2.04B	Maximum pipe length	100 M		S108 p6
CU 2.04A	Holding refrigerant gas charge	9KG		S108 p7
CU 2.04A	Additional refrigerant gas charge	11.8KG		S108 p7
CU 2.04A	Total system refrigerant gas charge	20.8KG		S108 p7
CU 2.04A	System pressure test	12 BAR		S108 p7
CU 2.04A	System evacuation	0.5 Hg		S108 p7
CU 2.04A	Discharge pressures	230 / 235		S108 p7
CU 2.04A	Suction pressures	58 / 60		S108 p7
CU 2.04A	Ambient air temperature at condenser	21 °C		S108 p7
CU 2.04A	Maximum pipe length	100 M		S108 p7
CU 2.01	Holding refrigerant gas charge	9KG		S108 p8
CU 2.01	Additional refrigerant gas charge	6.24G		S108 p8
CU 2.01	Total system refrigerant gas charge	15.24KG		S108 p8
CU 2.01	System pressure test	12 BAR		S108 p8
CU 2.01	System evacuation	0.5 Hg		S108 p8
CU 2.01	Discharge pressures	230 / 235		S108 p8
CU 2.01	Suction pressures	58 / 60		S108 p8
CU 2.01	Ambient air temperature at condenser	21 °C		S108 p8

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
CU 2.01	Maximum pipe length	100 M		S108 p8
CU 2.06A	Holding refrigerant gas charge	22KG		S108 p9
CU 2.06A	Additional refrigerant gas charge	26.5KG		S108 p9
CU 2.06A	Total system refrigerant gas charge	48.5KG		S108 p9
CU 2.06A	System pressure test	12 BAR		S108 p9
CU 2.06A	System evacuation	0.5 Hg		S108 p9
CU 2.06A	Discharge pressures	230 / 235		S108 p9
CU 2.06A	Suction pressures	58 / 60		S108 p9
CU 2.06A	Ambient air temperature at condenser	21 °C		S108 p9
CU 2.06A	Maximum pipe length	100 M		S108 p9
CU 2.02	System pressure test	38BAR FOR 24 HOURS		S108 p10
CU 2.02	System evacuation	2 TORR		S108 p10
CU 2.02	Refrigerant holding charge	1.35 KG		S108 p10
CU 2.02	Additional refrigerant charge	N/A KG		S108 p10
CU 2.02	Maximum pipe length	30 M		S108 p10
CU 2.02	Voltage at unit	238 V		S108 p10
CU 2.03	System pressure test	38BAR FOR 24 HOURS		S108 p10
CU 2.03	System evacuation	2 TORR		S108 p10
CU 2.03	Refrigerant holding charge	1.35 KG		S108 p10
CU 2.03	Additional refrigerant charge	N/A KG		S108 p10
CU 2.03	Maximum pipe length	30 M		S108 p10
CU 2.03	Voltage at unit	238 V		S108 p10
CU 2.10	System pressure test	38BAR FOR 24 HOURS		S108 p11
CU 2.10	System evacuation	2 TORR		S108 p11
CU 2.10	Refrigerant holding charge	1.35 KG		S108 p11
CU 2.10	Additional refrigerant charge	N/A KG		S108 p11
CU 2.10	Maximum pipe length	30 M		S108 p11
CU 2.10	Voltage at unit	238 V		S108 p11
CU 2.04B	Holding refrigerant gas charge	18KG		S109 p1

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
CU 2.04 B	Additional refrigerant gas charge	13.2KG		S109 p1
CU 2.04 B	Total system refrigerant gas charge	31.2KG		S109 p1
CU 2.04 B	System pressure test	12 BAR		S109 p1
CU 2.04 B	System evacuation	0.5 Hg		S109 p1
CU 2.04 B	Discharge pressure	355		S109 p1
CU 2.04 B	Suction pressure	125		S109 p1
CU 2.04 B	Ambient air temperature at condenser	29 °C		S109 p1
CU 2.04 B	Maximum pipe length	100 M		S109 p1
CU 2.09	Refrigerant pipework pressure test, SQUASH COURTS / VIEWING AREA / STAFF ROOM, nitrogen (OFN)	35 BAR for 15 HRS		S114 p1
CU 2.05	Refrigerant pipework pressure test, SOFTPLAY / PLAYZONE, nitrogen (OFN)	35 BAR for 16HRS		S114 p4
	Certificate 1 system tested	POOL PLANTROOM PIPEWORK		S115 p1
	Certificate 1 test	AIR at 1 BAR for 1 HR		S115 p1
	Certificate 1 result	NO PRESSURE DROP DETECTED DURING THE TEST PERIOD		S115 p1
	Certificate 1 date and signatures	11-12-2025, tested VINCENT SWINNEY, witnessed (name not clearly legible)		S115 p1
	Certificate 2 system tested	LTHW SYSTEM		S115 p4
	Certificate 2 test	AIR at 1 BAR for 2 HRS		S115 p4

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
	Certificate 2 result	NO PRESSURE DROP DETECTED DURING TEST PERIOD		S115 p4
	Certificate 2 date and signatures	03-02-2026, tested VINCENT SWINNEY, witnessed Terry Lewin		S115 p4
	Refrigerant pipework pressure test, LOWER FITNESS SUIT SYSTEM 2, nitrogen (OFN)	35 BAR for 15HRS		S119 p2
	Refrigerant pipework pressure test, RECEPTION / BOH SYSTEM, nitrogen (OFN)	35 BAR for 15 HRS		S119 p4
AHU R.04	Extract fan inverter setting	44.0 %		S131 p3
AHU R.04	Extract tested volume at AHU	0.999 m^3/s		S131 p3
AHU R.04	Extract % of design stated on plant test sheet	102 %		S131 p3
AHU R.04	Extract measured static pressure at AHU	47 Pa		S131 p3
AHU R.04	Extract duct traverse TP 1 Roof tested volume (104% of design)	0.463 m^3/s		S131 p4
AHU R.04	Extract duct traverse TP 2 Roof tested volume (99% of design)	0.442 m^3/s		S131 p5
AHU R.04	Supply fan inverter setting	44.0 %		S132 p3
AHU R.04	Supply tested volume at AHU	0.924 m^3/s		S132 p3
AHU R.04	Supply % of design stated on plant test sheet	108 %		S132 p3
AHU R.04	Supply measured static pressure at AHU	45 Pa		S132 p3
AHU R.04	Supply duct traverse TP 1 Roof tested volume (107% of design)	0.475 m^3/s		S132 p4
AHU R.04	Supply duct traverse TP 2 Roof tested volume (108% of design)	0.482 m^3/s		S132 p5
AHU R.05	Extract fan inverter setting	80.0 %		S133 p3
AHU R.05	Extract tested volume at AHU	1.789 m^3/s		S133 p3
AHU R.05	Extract % of design stated on plant test sheet	108 %		S133 p3

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.05	Extract measured static pressure at AHU	233 Pa		S133 p3
AHU R.05	Extract duct traverse TP 1 Roof tested volume (108% of design)	1.789 m³/s		S133 p4
AHU R.05	Supply fan inverter setting	80.0 %		S134 p3
AHU R.05	Supply tested volume at AHU	1.942 m³/s		S134 p3
AHU R.05	Supply % of design stated on plant test sheet	105 %		S134 p3
AHU R.05	Supply measured static pressure at AHU	245 Pa		S134 p3
AHU R.05	Supply duct traverse TP 1 Roof tested volume (105% of design)	0.942 m³/s		S134 p4
AHU R.05	Supply duct traverse TP 2 Roof tested volume (101% of design)	0.906 m³/s		S134 p5
AHU R.08	Extract fan inverter setting	80.0 %		S135 p3
AHU R.08	Extract tested volume at AHU	2.304 m³/s		S135 p3
AHU R.08	Extract % of design stated on plant test sheet	100 %		S135 p3
AHU R.08	Extract measured static pressure at AHU	136 Pa		S135 p3
AHU R.08	Extract duct traverse TP 1 Roof tested volume (100% of design)	2.304 m³/s		S135 p4
AHU R.08	Extract terminal eg oe 01 (lower) tested factored volume, 108% of design	1.185 m³/s		S135 p5
AHU R.08	Extract terminal eg oe 02 (lower) tested factored volume, 103% of design	1.133 m³/s		S135 p5
AHU R.08	Extract terminal eg 1.03 (upper) tested factored volume, 104% of design	0.440 m³/s		S135 p5
AHU R.08	Extract terminal eg 1.04 (upper) tested factored volume, 101% of design	0.430 m³/s		S135 p5
AHU R.08	Supply fan inverter setting	80.0 %		S136 p3
AHU R.08	Supply tested volume at AHU	2.563 m³/s		S136 p3

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.08	Supply % of design stated on plant test sheet	107 %		S136 p3
AHU R.08	Supply measured static pressure at AHU	225 Pa		S136 p3
AHU R.08	Supply duct traverse TP 1 roof plantroom tested volume (107% of design)	2.563 m^3/s		S136 p4
AHU R.08	Supply terminal sg 1.20 (upper gym) tested factored volume, 103% of design	151 l/s		S136 p5
AHU R.08	Supply terminal sg 1.21 (upper gym) tested factored volume, 106% of design	156 l/s		S136 p5
AHU R.08	Supply terminal sg 1.22 (upper gym) tested factored volume, 107% of design	158 l/s		S136 p5
AHU R.08	Supply terminal sg 1.23 (upper gym) tested factored volume, 107% of design	157 l/s		S136 p5
AHU R.08	Supply terminal sg 1.24 (upper gym) tested factored volume, 109% of design	160 l/s		S136 p5
AHU R.08	Supply terminal sg 1.25 (consult 1) tested factored volume, 770% of design	154 l/s		S136 p5
AHU R.08	Supply terminal sg 1.26 (consult 2) tested factored volume, 760% of design	152 l/s		S136 p5
AHU R.08	Supply terminal sg 1.04 (lower gym) tested factored volume, 101% of design	149 l/s		S136 p5
AHU R.08	Supply terminal sg 1.05 (lower gym) tested factored volume, 100% of design	147 l/s		S136 p5
AHU R.08	Supply terminal sg 1.06 (lower gym) tested factored volume, 103% of design	152 l/s		S136 p5
AHU R.08	Supply terminal sg 1.11 (lower gym) tested factored volume, 103% of design	152 l/s		S136 p5
AHU R.08	Supply terminal sg 1.12 (lower gym) tested factored volume, 104% of design	153 l/s		S136 p5
AHU R.08	Supply terminal sg 1.07 (lower gym) tested factored volume, 105% of design	154 l/s		S136 p5
AHU R.08	Supply terminal sg 1.08 (lower gym) tested factored volume, 110% of design	161 l/s		S136 p5
AHU R.08	Supply terminal sg 1.09 (lower gym) tested factored volume, 103% of design	152 l/s		S136 p5
AHU R.08	Supply terminal sg 1.10 (lower gym) tested factored volume, 101% of design	148 l/s		S136 p5

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.08	Supply terminal sg 1.18 (lower gym) tested factored volume, 107% of design	158 l/s		S136 p5
AHU R.08	Supply terminal sg 1.19 (lower gym) tested factored volume, 105% of design	155 l/s		S136 p5
AHU R.09	Extract fan inverter setting	70.0 %		S137 p3
AHU R.09	Extract tested volume at AHU	1.696 m^3/s		S137 p3
AHU R.09	Extract % of design stated on plant test sheet	103 %		S137 p3
AHU R.09	Extract measured static pressure at AHU	144 Pa		S137 p3
AHU R.09	Extract duct traverse TP 1 Roof tested volume (102% of design)	1.695 m^3/s		S137 p4
AHU R.09	Extract terminal eg viewing (viewing) tested factored volume, 102% of design	0.061 m^3/s		S137 p5
AHU R.09	Extract terminal eg 2.04 (staff) tested factored volume, 100% of design	0.050 m^3/s		S137 p5
AHU R.09	Extract deduced squash court air volume	1.543 m3/s		S137 p2
AHU R.09	Supply fan inverter setting	70.0 %		S138 p3
AHU R.09	Supply tested volume at AHU	1.654 m^3/s		S138 p3
AHU R.09	Supply % of design stated on plant test sheet	104 %		S138 p3
AHU R.09	Supply measured static pressure at AHU	321 Pa		S138 p3
AHU R.09	Supply duct traverse TP 1 Roof tested volume (100% of design)	1.654 m^3/s		S138 p4
AHU R.09	Supply terminal sg 2.04 (viewing) tested factored volume, 110% of design	66 l/s		S138 p5
AHU R.09	Supply terminal sg 2.07 (staff) tested factored volume, 104% of design	52 l/s		S138 p5
AHU R.09	Supply deduced squash court air volume	1.536 m3/s		S138 p2
AHU R.01	Extract fan inverter setting	100.0 %		S139 p3

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.01	Extract tested volume at AHU	7.365 m³/s		S139 p3
AHU R.01	Extract % of design stated on plant test sheet	93% %		S139 p3
AHU R.01	Extract measured static pressure at AHU	420 Pa		S139 p3
AHU R.01	Extract duct traverse TP 1 plantdeck tested volume (93% of design)	7.365 m³/s		S139 p4
AHU R.01	Supply fan inverter setting	70.0 %		S140 p3
AHU R.01	Supply tested volume at AHU	8.368 m³/s		S140 p3
AHU R.01	Supply % of design stated on plant test sheet	109% %		S140 p3
AHU R.01	Supply measured static pressure at AHU	415 Pa		S140 p3
AHU R.01	Supply duct traverse TP 1 plantdeck tested volume (109% of design)	8.386 m³/s		S140 p4
AHU R.07	Extract fan inverter setting	70.0 %		S141 p3
AHU R.07	Extract tested volume at AHU	3.745 m³/s		S141 p3
AHU R.07	Extract % of design stated on plant test sheet	104% %		S141 p3
AHU R.07	Extract measured static pressure at AHU	109 Pa		S141 p3
AHU R.07	Extract duct traverse TP 1 plantroom tested volume (104% of design)	3.796 m³/s		S141 p4
AHU R.07	Supply fan inverter setting	80.0 %		S142 p3
AHU R.07	Supply tested volume at AHU	3.692 m³/s		S142 p3
AHU R.07	Supply % of design stated on plant test sheet	102% %		S142 p3
AHU R.07	Supply measured static pressure at AHU	63 Pa		S142 p3
AHU R.07	Supply duct traverse TP 1 plantroom tested volume (101% of design)	3.692 m³/s		S142 p4
AHU R.03	Extract fan inverter setting	100.0 %		S143 p3

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.03	Extract tested volume at AHU	2.950 m³/s		S143 p3
AHU R.03	Extract % of design stated on plant test sheet	104 %		S143 p3
AHU R.03	Extract measured static pressure at AHU	468 Pa		S143 p3
AHU R.03	Extract terminal eg 09 (office) tested factored volume, 106% of design	31.72 l/s		S143 p6
AHU R.03	Extract terminal eg 0 11 (kitchen) tested factored volume, 100% of design	204.96 l/s		S143 p6
AHU R.03	Extract terminal eg 0 10 (kitchen) tested factored volume, 101% of design	207.4 l/s		S143 p6
AHU R.03	Extract terminal eg 0 07 (wc) tested factored volume, 100% of design	65.88 l/s		S143 p6
AHU R.03	Extract terminal eg 0 08 (wc) tested factored volume, 106% of design	71.98 l/s		S143 p6
AHU R.03	Extract terminal OE 01 (male dry) tested factored volume, 103% of design	0.134 m³/s		S143 p7
AHU R.03	Extract terminal OE 2 (male dry shower) tested factored volume, 103% of design	0.134 m³/s		S143 p7
AHU R.03	Extract terminal OE 2 (female dry) tested factored volume, 102% of design	0.265 m³/s		S143 p7
AHU R.03	Extract terminal EV 08 (male wc) tested factored volume, 102% of design	0.015 m³/s		S143 p7
AHU R.03	Extract terminal EV 09 (male wc) tested factored volume, 107% of design	0.016 m³/s		S143 p7
AHU R.03	Extract terminal EV 10 (female wc) tested factored volume, 102% of design	0.031 m³/s		S143 p7
AHU R.03	Extract terminal EV 11 (female wc) tested factored volume, 102% of design	0.031 m³/s		S143 p7
AHU R.03	Extract terminal EV 12 (female wc) tested factored volume, 104% of design	0.031 m³/s		S143 p7
AHU R.03	Extract terminal EV 0 01 (wc 02) tested factored volume, 104% of design	0.024 m³/s		S143 p7
AHU R.03	Extract terminal EV 0 02 (wc 03) tested factored volume, 104% of design	0.024 m³/s		S143 p7
AHU R.03	Extract terminal OE 03 (community & party) tested factored volume, 108% of design	0.699 m³/s		S143 p7

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.03	Extract terminal EV 0 03 (wc) tested factored volume, 104% of design	0.022 m³/s		S143 p7
AHU R.03	Extract terminal EV 0 04 (wc) tested factored volume, 101% of design	0.028 m³/s		S143 p7
AHU R.03	Extract terminal OE 03 (seating) tested factored volume, 105% of design	0.314 m³/s		S143 p7
AHU R.03	Extract terminal OE 04 (inerva) tested factored volume, 109% of design	0.164 m³/s		S143 p7
AHU R.03	Extract terminal OE 05 (inerva) tested factored volume, 104% of design	0.156 m³/s		S143 p7
AHU R.03	Extract terminal EV 1 01 (access wc) tested factored volume, 101% of design	0.050 m³/s		S143 p7
AHU R.03	Extract terminal EV 1 02 (wc) tested factored volume, 101% of design	0.030 m³/s		S143 p7
AHU R.03	Extract terminal EV 1 03 (wc) tested factored volume, 103% of design	0.031 m³/s		S143 p7
AHU R.03	Extract terminal OE 06 (admin training) tested factored volume, 103% of design	0.051 m³/s		S143 p7
AHU R.03	Supply fan inverter setting	80.0 %		S144 p3
AHU R.03	Supply tested volume at AHU	2.797 m³/s		S144 p3
AHU R.03	Supply % of design stated on plant test sheet	110% %		S144 p3
AHU R.03	Supply measured static pressure at AHU	416 Pa		S144 p3
AHU R.03	Supply terminal sg 0 19 (male dry change) tested factored volume, 100% of design	190 l/s		S144 p5
AHU R.03	Supply terminal sg 0 20 (male dry change) tested factored volume, 103% of design	195 l/s		S144 p5
AHU R.03	Supply terminal sg 0 21 (female dry chage) tested factored volume, 109% of design	208 l/s		S144 p5
AHU R.03	Supply terminal sg 0 22 (female dry chage) tested factored volume, 109% of design	208 l/s		S144 p5
AHU R.03	Supply terminal sg 0 07 (office) tested factored volume, 110% of design	33 l/s		S144 p5
AHU R.03	Supply terminal sg 0 08 (reception) tested factored volume, 110% of design	33 l/s		S144 p5

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.03	Supply terminal sg 0 09 (café seating) tested factored volume, 165% of design	330 l/s		S144 p5
AHU R.03	Supply terminal sg 0 11 (café seating) tested factored volume, 109% of design	174 l/s		S144 p5
AHU R.03	Supply terminal sg 0 12 (café seating) tested factored volume, 109% of design	174 l/s		S144 p5
AHU R.03	Supply terminal sg 0 18 (servery) tested factored volume, 104% of design	200 l/s		S144 p5
AHU R.03	Supply terminal sg 0 16 (kitchen) tested factored volume, 106% of design	35 l/s		S144 p5
AHU R.03	Supply terminal sg 0 03 (community) tested factored volume, 109% of design	88 l/s		S144 p5
AHU R.03	Supply terminal sg 0 04 (community) tested factored volume, 104% of design	84 l/s		S144 p5
AHU R.03	Supply terminal sg 0 05 (community) tested factored volume, 106% of design	86 l/s		S144 p5
AHU R.03	Supply terminal sg 0 06 (community) tested factored volume, 109% of design	88 l/s		S144 p5
AHU R.03	Supply terminal sg 0 01 (party) tested factored volume, 106% of design	90 l/s		S144 p5
AHU R.03	Supply terminal sg 0 02 (party) tested factored volume, 105% of design	89 l/s		S144 p5
AHU R.03	Supply terminal sg 0 010 (first aid) tested factored volume, 107% of design	32 l/s		S144 p5
AHU R.03	Supply terminal sg 0 013 (inerva) tested factored volume, 107% of design	142 l/s		S144 p5
AHU R.03	Supply terminal sg 0 014 (inerva) tested factored volume, 106% of design	141 l/s		S144 p5
AHU R.03	Supply terminal sg 0 015 (inerva) tested factored volume, 105% of design	140 l/s		S144 p5
AHU R.03	Supply terminal sg 1 01 (admin/training) tested factored volume, 17% of design	5 l/s		S144 p5
AHU R.03	Supply terminal sg 1 02 (corridor) tested factored volume, 107% of design	32 l/s		S144 p5
AHU R.02	Extract fan inverter setting	80.0 %		S145 p3
AHU R.02	Extract tested volume at AHU	1.640 m^3/s		S145 p3

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.02	Extract % of design stated on plant test sheet	106% %		S145 p3
AHU R.02	Extract measured static pressure at AHU	153 Pa		S145 p3
AHU R.02	Extract duct traverse TP 1 main volume plantroom tested volume (106% of design)	1.640 m^3/s		S145 p4
AHU R.02	Extract terminal EG 0 30 tested factored volume, 105% of design	0.038 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 29 tested factored volume, 105% of design	0.038 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 28 tested factored volume, 105% of design	0.038 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 32 tested factored volume, 108% of design	0.027 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 36 tested factored volume, 108% of design	0.027 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 33 tested factored volume, 107% of design	0.051 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 34 tested factored volume, 105% of design	0.050 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 35 tested factored volume, 105% of design	0.050 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 37 tested factored volume, 108% of design	0.022 m^3/s		S145 p6
AHU R.02	Extract terminal EG 0 31 tested factored volume, 105% of design	0.038 m^3/s		S145 p6
AHU R.02	Extract terminal eg 0 18 (post swim showers) tested factored volume, 108% of design	165 l/s		S145 p7
AHU R.02	Extract terminal eg 0 25 (post swim showers) tested factored volume, 107% of design	164 l/s		S145 p7
AHU R.02	Extract terminal eg 0 24 (post swim showers) tested factored volume, 108% of design	165 l/s		S145 p7
AHU R.02	Extract terminal eg 0 26 (acc change) tested factored volume, 106% of design	54 l/s		S145 p7
AHU R.02	Extract terminal eg 0 21 (group change) tested factored volume, 103% of design	164 l/s		S145 p7
AHU R.02	Extract terminal eg 0 20 (group change 1) tested factored volume, 106% of design	169 l/s		S145 p7

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.02	Extract terminal eg 0 22 (group change 2) tested factored volume, 106% of design	169 l/s		S145 p7
AHU R.02	Extract terminal eg 0 23 (group change 3) tested factored volume, 100% of design	118 l/s		S145 p7
AHU R.02	Extract terminal eg 0 24 (corridor) tested factored volume, 106% of design	90 l/s		S145 p7
AHU R.02	Supply fan inverter setting	80.0 %		S146 p3
AHU R.02	Supply tested volume at AHU	2.223 m^3/s		S146 p3
AHU R.02	Supply % of design stated on plant test sheet	100% %		S146 p3
AHU R.02	Supply measured static pressure at AHU	125 Pa		S146 p3
AHU R.02	Supply duct traverse TP 1 Primary Air Plantroom tested volume (100% of design)	2.223 m^3/s		S146 p4
AHU R.02	Supply terminal sg 0 24 (changing places) tested factored volume, 100% of design	117.52 l/s		S146 p6
AHU R.02	Supply terminal sg 0 34 (group change) tested factored volume, 101% of design	161.2 l/s		S146 p6
AHU R.02	Supply terminal sg 0 35 (change) tested factored volume, 100% of design	160.16 l/s		S146 p6
AHU R.02	Supply terminal sg 0 36 (group change) tested factored volume, 100% of design	160.16 l/s		S146 p6
AHU R.02	Supply terminal sg 0 26 (change village) tested factored volume, 101% of design	198.64 l/s		S146 p6
AHU R.02	Supply terminal sg 0 25 (change village) tested factored volume, 100% of design	196.56 l/s		S146 p6
AHU R.02	Supply terminal sg 0 27 (change village) tested factored volume, 100% of design	197.6 l/s		S146 p6
AHU R.02	Supply terminal sg 0 30 (change village) tested factored volume, 100% of design	196.56 l/s		S146 p6
AHU R.02	Supply terminal sg 0 31 (change village) tested factored volume, 100% of design	196.56 l/s		S146 p6
AHU R.02	Supply terminal sg 0 33 (change village) tested factored volume, 100% of design	196.56 l/s		S146 p6
AHU R.02	Supply terminal sg 0 29 (access change) tested factored volume, 102% of design	52 l/s		S146 p6

ASSET	PARAMETER	SETTING	BMS POINT	SOURCE
AHU R.02	Supply terminal sg 0 28 (vanity) tested factored volume, 100% of design	197.6 l/s		S146 p6
AHU R.02	Supply terminal sg 0 32 (vanity) tested factored volume, 100% of design	196.56 l/s		S146 p6
AHU R.06	Extract fan inverter setting	90.0 %		S147 p3
AHU R.06	Extract tested volume at AHU	0.811 m³/s		S147 p3
AHU R.06	Extract % of design stated on plant test sheet	102 %		S147 p3
AHU R.06	Extract terminal eg 2 05/06 (spin studio) tested factored volume, 100% of design	401 l/s		S147 p4
AHU R.06	Extract terminal eg 2 07/08 (spin studio) tested factored volume, 103% of design	410 l/s		S147 p4
AHU R.06	Supply fan inverter setting	80.0 %		S148 p3
AHU R.06	Supply tested volume at AHU	0.855 m³/s		S148 p3
AHU R.06	Supply % of design stated on plant test sheet	108 %		S148 p3
AHU R.06	Supply measured static pressure at AHU	101 Pa		S148 p3
AHU R.06	Supply terminal sg 2 06 (spin studio) tested factored volume, 103% of design	205 l/s		S148 p4
AHU R.06	Supply terminal sg 2 07 (spin studio) tested factored volume, 105% of design	210 l/s		S148 p4
AHU R.06	Supply terminal sg 2 08 (spin studio) tested factored volume, 110% of design	220 l/s		S148 p4
AHU R.06	Supply terminal sg 2 09 (spin studio) tested factored volume, 110% of design	220 l/s		S148 p4

5 Planned maintenance

What needs doing and when. Tasks and frequencies come from the manufacturers' literature and the regulations noted. Annual tasks fall in the anniversary month of practical completion.

TASK	FREQUENCY	J	F	M	A	M	J	J	A	S	O	N	D
General													
Acoustic door set: clean all surfaces with a mild detergent and non-abrasive cloth, then rinse with clean water; pay particular attention to perforated metal faces Manufacturer S23 p1	Annually (a) non-coastal areas; Quarterly (b) coastal areas and areas susceptible to high levels of pollution			●			●			●			●
Acoustic door set: visual inspection for defects to the galvanised surface; rub down, clean and paint damage with two generous coats of zinc rich paint Manufacturer S23 p1	Annually (a) non-coastal areas; Quarterly (b) coastal areas and areas susceptible to high levels of pollution			●			●			●			●
Acoustic door set: if powder coated, visual inspection of the painted surface; repair with zinc rich paint and a topcoat to match the existing colour Manufacturer S23 p1	Annually (a) non-coastal areas; Quarterly (b) coastal areas and areas susceptible to high levels of pollution			●			●			●			●
Acoustic panels: clean all surfaces with a mild detergent and non-abrasive cloth, rinse with clean water Manufacturer S23 p2	Annually (a) non-coastal areas; Quarterly (b) coastal areas and areas susceptible to high levels of pollution			●			●			●			●
Acoustic panels and louvres: visual inspection for defects to galvanised and powder coated surfaces; repair with zinc rich paint (and topcoat if powder coated) Manufacturer S23 p2	Annually (a) non-coastal areas; Quarterly (b) coastal areas and areas susceptible to high levels of pollution			●			●			●			●
Acoustic louvres: visual inspection to check for any blockages to the airways, remove as required Manufacturer S23 p2	Annually (a); Annually (b)						●						
Attenuators: visual inspection to check for any blockages to the airways, remove as required Manufacturer S23 p2	Annually (a); Annually (b)						●						
Attenuators: clean surfaces, inspect galvanised and painted surfaces and repair with zinc rich paint and topcoat Manufacturer S23 p2	Annually (a) non-coastal areas; Quarterly (b) coastal areas and areas susceptible to high levels of pollution			●			●			●			●
Ironmongery and hardware: clean and lubricate moving parts with 3-in-1 oil or similar Manufacturer S23 p2	Annually (a) non-coastal areas; Quarterly (b) coastal areas and areas susceptible to high levels of pollution			●			●			●			●

TASK	FREQUENCY	J	F	M	A	M	J	J	A	S	O	N	D
Ironmongery and hardware: check all screws, bolts and other fixings are tight, adjust as necessary Manufacturer S23 p2	Quarterly (a); Quarterly (b)			●			●			●			●
Ironmongery and hardware: check for damage or fatigue and replace if necessary Manufacturer S23 p2	Annually (a); Annually (b)						●						
Seals and gaskets: remove dust and debris and clean using mild detergent and non-abrasive cloth, rinse with clean water Manufacturer S23 p2	Annually (a) non-coastal areas; Quarterly (b) coastal areas and areas susceptible to high levels of pollution			●			●			●			●
Seals and gaskets: check for damage or fatigue and replace if necessary Manufacturer S23 p3	Annually (a); Annually (b)						●						
Fixings: check that all fixings are tight and secure, adjust as necessary Manufacturer S23 p3	Annually (a); Annually (b)						●						
Actuators are maintenance-free Manufacturer S24 p7													
The actuators require no maintenance Manufacturer S25 p10													
The V..P46.. PICV valves are maintenance-free without cartridge; valve plug, stem, presetting, diaphragm may not be disassembled Manufacturer S29 p12													
Stem sealing gland cannot be exchanged; if leakage occurs replace the whole valve Manufacturer S29 p12													
The actuators are maintenance-free Manufacturer S30 p7													
The actuators are maintenance-free Manufacturer S31 p17													
SKC6..: trigger stroke calibration after maintenance Manufacturer S31 p18													
Valves VVG44.. and VXG44.. are maintenance free Manufacturer S32 p12													
Stem sealing gland cannot be exchanged; replace the entire valve in the event of leakage Manufacturer S32 p12													
All VPF.. PICVs are maintenance-free; VPF44../VPF54.. allow easy exchange of the differential pressure controller (DPR) Manufacturer S33 p20													

TASK	FREQUENCY	J	F	M	A	M	J	J	A	S	O	N	D
Stem sealing gland cannot be exchanged; in case of leakage replace the whole valve Manufacturer S33 p20													
All VPF.. PICVs are maintenance-free; VPF44../VPF54.. allow easy exchange of the differential pressure controller (DPR) Manufacturer S34 p19													
Stem sealing gland cannot be exchanged; in case of leakage replace the whole valve Manufacturer S34 p19													
The valves are maintenance-free Manufacturer S35 p10													
The actuators are maintenance-free Manufacturer S104 p22													
Back-up battery replacement Manufacturer S120 p1	every 5 years												
Valves are equipped with maintenance-free, continuously lubricated stem sealing glands; see page 13 for replacement stem sealing glands Manufacturer S127 p9													
If valve is inoperative, replace it; do not attempt to repair the valve Manufacturer S128 p4													
Keep an active Software Maintenance Agreement (SMA) for the Niagara licence to run the latest Niagara version; initial SMA 18 months, extended agreements 3 years and 5 years Manufacturer S130 p2	initial SMA is for 18 months												
Domestic water													
HWH B.01: Unvented hot water: annual service, expansion vessel and safety valve checks (Building Regulations Part G3 and the manufacturer) Statutory guidance	Every year						●						
HWH B.02: Unvented hot water: annual service, expansion vessel and safety valve checks (Building Regulations Part G3 and the manufacturer) Statutory guidance	Every year						●						
Water hygiene monitoring: hot and cold water temperature checks at sentinel outlets (ACoP L8, HSG274) Statutory guidance	Monthly	●	●	●	●	●	●	●	●	●	●	●	●
Legionella risk assessment review (ACoP L8; at least every 2 years, sooner after changes) Statutory guidance	Every 2 years						●						
Flush little-used outlets at least weekly, and clean and descale shower heads and hoses at least every 3 months (HSG274 Part 2) Statutory guidance	Weekly	●	●	●	●	●	●	●	●	●	●	●	●

5

TASK	FREQUENCY	J	F	M	A	M	J	J	A	S	O	N	D
Pressure systems: check the PSSR written scheme of examination and book any examination it says is due (Pressure Systems Safety Regulations 2000; the scheme sets the interval) Statutory guidance	Every year						●						
Heating													
ASHP 0.03: "Extended Start" Inspection by a Trane Technician Manufacturer `S21 p10`	between 500p and 1000 hours of operation												
ASHP 0.03: Next leak control (F-gas) Trane F-gas unit booklet `S21 p2`	within 27/05/2027												
ASHP 0.02: "Extended Start" Inspection by a Trane Technician Manufacturer `S38 p9`	between 500p and 1000 hours of operation												
ASHP 0.02: Next leak control (F-gas) Trane F-gas unit booklet `S38 p2`	within 14/05/2027												
ASHP 0.01: "Extended Start" Inspection by a Trane Technician Manufacturer `S40 p9`	between 500p and 1000 hours of operation												
ASHP 0.01: Next leak control (F-gas) Trane F-gas unit booklet `S40 p2`	within 14/05/2027												
Pressure systems: check the PSSR written scheme of examination and book any examination it says is due (Pressure Systems Safety Regulations 2000; the scheme sets the interval) Statutory guidance	Every year						●						
Air conditioning													
CU 2.01: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.02: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.03: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.04A: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.04B: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						

TASK	FREQ.	J	F	M	A	M	J	J	A	S	O	N	D
CU 2.05: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.06A: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.06B: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.07: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.08: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.09: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
CU 2.10: F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more) Statutory guidance	Every year						●						
Air conditioning inspection (TM44) by an accredited assessor, where the total cooling output is over 12 kW: within 5 years of first use, then at least every 5 years Statutory guidance	Every 5 years						●						
Ventilation													
AHU R.02: Hygiene inspection by trained qualified staff in accordance with VDI 6022 Sheet 4 (AC systems without humidification) Manufacturer S37 p125	every 3 years												
AHU R.02: Outdoor air intakes and exhaust air outlets: check for soiling, damage and corrosion; clean completely and repair Manufacturer S37 p125	12 monthly						●						
AHU R.02: Unit housing: inspect for soiling, damage and corrosion on the air side; clean and repair Manufacturer S37 p125	12 monthly						●						
AHU R.02: Unit housing: check for water formation (condensate, leaks); clean and identify the cause Manufacturer S37 p125	6 monthly						●						●
AHU R.02: Unit housing: check function of drains; clean, if necessary Manufacturer S37 p125	12 monthly						●						
AHU R.02: Unit housing: check flexible connections for leaks Manufacturer S37 p125	12 monthly						●						

TASK	FREQ.	J	F	M	A	M	J	J	A	S	O	N	D
AHU R.02: Unit housing: doors and locks for ease of movement and leaktightness; repair Manufacturer S37 p125	12 monthly						●						
AHU R.02: Air filter: check for impermissible soiling, damage (leaks) and odours Manufacturer S37 p125	3 monthly			●			●			●			●
AHU R.02: Air filter: check differential pressure; if the maximum differential pressure is exceeded replace the filter stage Manufacturer S37 p125	1 monthly	●	●	●	●	●	●	●	●	●	●	●	●
AHU R.02: Air filter: latest filter change, 1st filter stage Manufacturer S37 p125	12 monthly						●						
AHU R.02: Air filter: latest filter change, 2nd filter stage Manufacturer S37 p125	24 monthly	●	●	●	●	●	●	●	●	●	●	●	●
AHU R.02: Air filter: check the hygiene condition Manufacturer S37 p125	12 monthly						●						
AHU R.02: Heat exchangers, general: check for soiling, damage and corrosion; clean and repair Manufacturer S37 p128	3 monthly			●			●			●			●
AHU R.02: Heat exchangers, general: check wet cooler, condensate drip tray and droplet eliminator; repair Manufacturer S37 p128	3 monthly			●			●			●			●
AHU R.02: Heat exchangers, general: check function of siphon; repair Manufacturer S37 p128	3 monthly			●			●			●			●
AHU R.02: Heat exchangers, general: check the hygiene condition Manufacturer S37 p128	12 monthly						●						
AHU R.02: Air heater: inspect on the air side for soiling, damage and corrosion; repair Manufacturer S37 p128	3 monthly			●			●			●			●
AHU R.02: Air heater: clean to preserve function (air-side) Manufacturer S37 p128	12 monthly						●						
AHU R.02: Air heater: check function of flow and return flow Manufacturer S37 p128	12 monthly						●						
AHU R.02: Air heater: venting Manufacturer S37 p128	12 monthly						●						
AS 0.01, AS 0.02: Washing not needed in order to maintain functionality; only for hygienic and aesthetic reasons Manufacturer S78 p13	not stated												

TASK	FREQUENCY	J	F	M	A	M	J	J	A	S	O	N	D
FD 0.01, FD 0.02, FD 0.03, FD 0.04, FD 0.05, FD 0.06, FD 0.07, FD 0.08, FD 1.01, FD 1.02, FD 1.03, FD 1.04, FD 1.05, FD 1.06, FD 1.07, FD 1.08, FD 1.09, FD 1.10: Inspect and test damper in accordance with BS 9999 Annex W.1; more frequently where corrosive or dirty conditions prevail; review maintenance log at each inspection Manufacturer S101 p5	annually (BSB recommend a maximum of 1 year between inspections)						●						
FD 0.01, FD 0.02, FD 0.03, FD 0.04, FD 0.05, FD 0.06, FD 0.07, FD 0.08, FD 1.01, FD 1.02, FD 1.03, FD 1.04, FD 1.05, FD 1.06, FD 1.07, FD 1.08, FD 1.09, FD 1.10: Check damper is clean and free of dust and debris; clean using lightly oiled rag (DEB duck oil recommended) Manufacturer S101 p5	at each inspection												
FD 0.01, FD 0.02, FD 0.03, FD 0.04, FD 0.05, FD 0.06, FD 0.07, FD 0.08, FD 1.01, FD 1.02, FD 1.03, FD 1.04, FD 1.05, FD 1.06, FD 1.07, FD 1.08, FD 1.09, FD 1.10: If corrosion observed on blade axle, apply 2 drops of oil on each axis bearing and operate a few times Manufacturer S101 p5	at each inspection, as needed												
FD 0.01, FD 0.02, FD 0.03, FD 0.04, FD 0.05, FD 0.06, FD 0.07, FD 0.08, FD 1.01, FD 1.02, FD 1.03, FD 1.04, FD 1.05, FD 1.06, FD 1.07, FD 1.08, FD 1.09, FD 1.10: Drop test: unscrew the Fusible Link quickly and check the blade closes fully; reset blade to previous position; complete maintenance log Manufacturer S101 p5	at each inspection												
FD 0.01, FD 0.02, FD 0.03, FD 0.04, FD 0.05, FD 0.06, FD 0.07, FD 0.08, FD 1.01, FD 1.02, FD 1.03, FD 1.04, FD 1.05, FD 1.06, FD 1.07, FD 1.08, FD 1.09, FD 1.10: Fire dampers tested by a competent person at intervals not exceeding 12 months; spring operated dampers and those in dust laden atmospheres more frequently Testing contractor's note citing BS 9999:2017 S113 p4	not exceeding 12 months						●						
FD 0.01, FD 0.02, FD 0.03, FD 0.04, FD 0.05, FD 0.06, FD 0.07, FD 0.08, FD 1.01, FD 1.02, FD 1.03, FD 1.04, FD 1.05, FD 1.06, FD 1.07, FD 1.08, FD 1.09, FD 1.10: Planned inspection including full operational checks, correct interface with and function of any control systems, cleaning and light lubrication; repeat more regularly if exposed to inclement or dusty conditions or fresh air intakes Manufacturer S121 p13	as a guide, a maximum of six months intervals						●						●

Legal duties at a glance

Inspections the law or a named standard expects of the building owner or responsible person, for the plant in this building. They are in the grid above too. Keep the records: insurers, building control and enforcing authorities ask for them.

INSPECTION OR TEST	APPLIES TO	HOW OFTEN
Unvented hot water: annual service, expansion vessel and safety valve checks (Building Regulations Part G3 and the manufacturer)	HWH B.01, HWH B.02	Every year
Water hygiene monitoring: hot and cold water temperature checks at sentinel outlets (ACoP L8, HSG274)	Domestic water	Monthly
Legionella risk assessment review (ACoP L8; at least every 2 years, sooner after changes)	Domestic water	Every 2 years
Flush little-used outlets at least weekly, and clean and descale shower heads and hoses at least every 3 months (HSG274 Part 2)	Domestic water	Weekly

INSPECTION OR TEST	APPLIES TO	HOW OFTEN
Pressure systems: check the PSSR written scheme of examination and book any examination it says is due (Pressure Systems Safety Regulations 2000; the scheme sets the interval)	`Domestic water, Heating`	Every year
F-gas leak check by a certified engineer (F-gas Regulation; 12 months assumed, 6 months if the charge is 50 t CO2e or more)	`CU 2.01, CU 2.02, CU 2.03, CU 2.04A, CU 2.04B, CU 2.05, CU 2.06A, CU 2.06B, CU 2.07, CU 2.08, CU 2.09, CU 2.10`	Every year
Air conditioning inspection (TM44) by an accredited assessor, where the total cooling output is over 12 kW: within 5 years of first use, then at least every 5 years	`Air conditioning`	Every 5 years

Tasks marked "Statutory guidance" are inspections set by law or by the standard named, added where the documents received do not give them. Frequencies must be confirmed against the latest manufacturers' literature and the building's risk assessments. Warranty cover often depends on servicing (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. Only competent, authorised people should isolate plant, following site lock off and permit procedures.

SYSTEM	PLANT	ISOLATION POINT	NOTES
		Pump, power supply and shut-off valves S24 p6	When servicing the actuator: switch off the pump and disconnect power supply, close the shut-off valves in the piping network, allow the piping to cool off. Actuator brackets can reach 100 °C.
		Operating voltage S25 p11	Operating voltage must be switched off during any maintenance. Switch off operating voltage; if necessary disconnect electrical connections from the terminals.
		Pump, power supply and shut-off valves S29 p12	Switch off the pump and disconnect power supply; close the shut-off valves in the piping network; fully reduce pressure and allow the pipes to cool down completely.
		Pump, operating voltage and main shutoff valve S30 p5	When servicing the actuator: switch off both pump and operating voltage; close the main shutoff valve in the piping; allow the piping to cool off.
		Pump, operating voltage and main shutoff valve S31 p17	When servicing the actuator: switch off both pump and operating voltage; close the main shutoff valve in the piping; release pressure in the pipes and allow them to cool off completely.
		Pump, operating voltage and shutoff valves S32 p11	When servicing a valve/actuator: switch off both pump and operating voltage; close shutoff valves; release pressure in the pipes and allow them to cool down completely; disconnect electrical connections as needed.
		Pump, power supply and shut-off valves S33 p20	Switch off the pump and disconnect power supply; close the shut-off valves in the piping network; fully reduce pressure and allow the pipes to cool down completely; remove electrical connections only if necessary.
		Pump, power supply and shut-off valves S34 p19	Switch off the pump and disconnect power supply; close the shut-off valves in the piping network; fully reduce pressure and allow the pipes to cool down completely; remove electrical connections only if necessary.
		Pump, power supply and shutoff valves S35 p10	When servicing valves or actuators: deactivate the pump and turn off the power supply; close the shutoff valves; fully reduce the pressure in the piping system and allow pipes to completely cool down; if necessary disconnect the electrical wires.

SYSTEM	PLANT	ISOLATION POINT	NOTES
		Pump, power supply and shutoff valves S127 p9	When servicing valves or actuators: deactivate the pump and turn off the power supply; close the shutoff valves; fully reduce the pressure in the piping system and allow pipes to completely cool down; if necessary disconnect the electrical wires.
Domestic water	HWH B.01	Fused spur on the cylinder; cold feed isolating valve in the plant room	
Domestic water	HWH B.02	Fused spur on the cylinder; cold feed isolating valve in the plant room	
Domestic water	BS B.01	Isolator on the booster set panel; inlet and outlet isolating valves	
Domestic water	BS B.02	Isolator on the booster set panel; inlet and outlet isolating valves	
Domestic water	P B.05	Pump isolator at the plant panel; isolating valves either side of the pump	
Heating	ASHP 0.01	Rotary isolator at the unit; LTHW flow and return valves at the unit	
Heating	ASHP 0.02	Rotary isolator at the unit; LTHW flow and return valves at the unit	
Heating	ASHP 0.03	Rotary isolator at the unit; LTHW flow and return valves at the unit	
Heating	P B.01	Pump isolator at the plant panel; isolating valves either side of the pump	
Heating	P B.02	Pump isolator at the plant panel; isolating valves either side of the pump	
Heating	P B.03	Pump isolator at the plant panel; isolating valves either side of the pump	
Heating	P B.04	Pump isolator at the plant panel; isolating valves either side of the pump	
Heating	PU 0.01	Fused spur by the unit; isolating valve on the system connection	
Air conditioning	CU 2.01	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.02	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.03	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.04A	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.04B	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.05	Rotary isolator next to the unit; refrigerant service valves on the unit	

SYSTEM	PLANT	ISOLATION POINT	NOTES
Air conditioning	CU 2.06A	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.06B	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.07	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.08	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.09	Rotary isolator next to the unit; refrigerant service valves on the unit	
Air conditioning	CU 2.10	Rotary isolator next to the unit; refrigerant service valves on the unit	
Ventilation	AHU R.02	Mains power supply, all poles; media supply (water, gas, etc.) S37 p121	Disconnect from the mains on all poles and secure against restart; close the media supply; wait at least 3 minutes until the fan impellers are stationary before opening the inspection doors
Ventilation	AHU R.03	Rotary isolator at the AHU control panel; LTHW coil isolating valves	
Ventilation	AHU R.04	Rotary isolator at the AHU control panel; LTHW coil isolating valves	
Ventilation	AHU R.05	Rotary isolator at the AHU control panel; LTHW coil isolating valves	
Ventilation	AHU R.06	Rotary isolator at the AHU control panel; LTHW coil isolating valves	
Ventilation	AHU R.07	Rotary isolator at the AHU control panel; LTHW coil isolating valves	
Ventilation	AHU R.08	Rotary isolator at the AHU control panel; LTHW coil isolating valves	
Ventilation	AHU R.09	Rotary isolator at the AHU control panel; LTHW coil isolating valves	
Ventilation	AHU R.01	Rotary isolator at the AHU control panel; LTHW coil isolating valves	
Ventilation	EF B.01	Local rotary isolator next to the fan	
Ventilation	EF B.02	Local rotary isolator next to the fan	
Ventilation	EF B.03	Local rotary isolator next to the fan	
Ventilation	EF B.04	Local rotary isolator next to the fan	

If something goes wrong

General first actions. They don't replace the building's own emergency and fire procedures, or the site's permit to work and lock off rules.

Refrigerant leak	Keep people out of the room or plant area and ventilate it: refrigerant can displace the air in small rooms. Isolate the unit at the point listed above and call an engineer holding an F-gas certificate.
Water leak or flood	Isolate the affected supply at the nearest valve listed above. If water is near electrical equipment, keep clear unless it is safe to isolate the power. Call the service company in Section 1.
Fire alarm goes off	Follow the building's fire procedure. Plant linked to the fire alarm may stop or change mode as set out in the cause and effect records in this section. Don't reset the fire alarm or the plant until the responsible person says it is safe.
Plant alarm or fault	Note the alarm or fault code, check the BMS or the unit's display, and follow the reset steps in Section 3 or the manufacturer's literature. If it comes back, call the service company in Section 1.

Health, safety and fire information

Residual hazards, substances left in the installation, fire safety information and fire system records. Each is inserted at the end of this section.

DOCUMENT	ASSET	PROVIDED BY	STATUS
COSHH safety data sheets for substances left in the installation (water treatment chemicals, glycol, refrigerant oil)		Hensall Mechanical Services Ltd	Received
Health and safety file input (CDM 2015): residual hazards, safe access for maintenance and safe removal of the services		Hensall Mechanical Services Ltd	Received
Fire safety information for the responsible person (Building Regulations regulation 38): the as-installed fire safety services and how to maintain them		Hensall Mechanical Services Ltd	Received
Fire stopping and penetration seals (regulation 38 fire safety information): where the services pass through fire resisting walls and floors, with locations, products used and photographs, including any done by others		Hensall Mechanical Services Ltd	Received
Fire and smoke dampers (regulation 38 fire safety information): every damper in the services, including any installed by others, its location, the access panel and how to reach it for testing, or written confirmation that there are none		RJ Ashton Group (Ashton LLP)	Received
Fire alarm cause and effect interface (regulation 38 fire safety information): plant that stops, starts or changes mode when the fire alarm operates, or written confirmation that there is none		KVT Controls	Received

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
HWH B.01 commissioning certificate (unvented, G3)	HWH B.01	Arbe Integrated Engineering Ltd	Received
HWH B.01 temperature and safety valve check record	HWH B.01	Arbe Integrated Engineering Ltd	Received
HWH B.02 commissioning certificate (unvented, G3)	HWH B.02	Arbe Integrated Engineering Ltd	Received
HWH B.02 temperature and safety valve check record	HWH B.02	Arbe Integrated Engineering Ltd	Received
BS B.01 commissioning sheet	BS B.01	TPS Ltd	Received
BS B.02 commissioning sheet	BS B.02	TPS Ltd	Received
ASHP 0.01 commissioning records	ASHP 0.01	Trane UK Ltd	Received
ASHP 0.01 F-gas record and refrigerant log	ASHP 0.01	Trane UK Ltd	Received
ASHP 0.02 commissioning records	ASHP 0.02	Trane UK Ltd	Received
ASHP 0.02 F-gas record and refrigerant log	ASHP 0.02	Trane UK Ltd	Received
ASHP 0.03 commissioning records	ASHP 0.03	Trane UK Ltd	Received
ASHP 0.03 F-gas record and refrigerant log	ASHP 0.03	Trane UK Ltd	Received
P B.01 commissioning certificate	P B.01	TPS Ltd	Received
P B.02 commissioning certificate	P B.02	TPS Ltd	Received
P B.03 commissioning certificate	P B.03	TPS Ltd	Received
P B.04 commissioning certificate	P B.04	TPS Ltd	Received
P B.05 commissioning certificate	P B.05	TPS Ltd	Received
PU 0.01 commissioning sheet	PU 0.01	TPS Ltd	Received
AC 0.01 commissioning records	AC 0.01	Frost Air Conditioning	Received
AC 0.02 commissioning records	AC 0.02	Frost Air Conditioning	Received
AC 0.03 commissioning records	AC 0.03	Frost Air Conditioning	Received
AC 0.04 commissioning records	AC 0.04	Frost Air Conditioning	Received
AC 0.05 commissioning records	AC 0.05	Frost Air Conditioning	Received

DOCUMENT	ASSET	PROVIDED BY	STATUS
AC 0.06 commissioning records	AC 0.06	Frost Air Conditioning	Received
AC 0.07 commissioning records	AC 0.07	Frost Air Conditioning	Received
AC 0.08 commissioning records	AC 0.08	Frost Air Conditioning	Received
AC 0.09 commissioning records	AC 0.09	Frost Air Conditioning	Received
AC 0.10 commissioning records	AC 0.10	Frost Air Conditioning	Received
AC 0.11 commissioning records	AC 0.11	Frost Air Conditioning	Received
AC 0.12 commissioning records	AC 0.12	Frost Air Conditioning	Received
AC 0.13 commissioning records	AC 0.13	Frost Air Conditioning	Received
AC 0.14 commissioning records	AC 0.14	Frost Air Conditioning	Received
AC 0.15 commissioning records	AC 0.15	Frost Air Conditioning	Received
AC 0.16 commissioning records	AC 0.16	Frost Air Conditioning	Received
AC 0.17 commissioning records	AC 0.17	Frost Air Conditioning	Received
AC 0.18 commissioning records	AC 0.18	Frost Air Conditioning	Received
AC 0.19 commissioning records	AC 0.19	Frost Air Conditioning	Received
AC 0.20 commissioning records	AC 0.20	Frost Air Conditioning	Received
AC 0.21 commissioning records	AC 0.21	Frost Air Conditioning	Received
AC 0.22 commissioning records	AC 0.22	Frost Air Conditioning	Received
AC 0.23 commissioning records	AC 0.23	Frost Air Conditioning	Received
AC 0.25 commissioning records	AC 0.25	Frost Air Conditioning	Received
AC 0.26 commissioning records	AC 0.26	Frost Air Conditioning	Received
AC 0.27 commissioning records	AC 0.27	Frost Air Conditioning	Received
AC 1.01 commissioning records	AC 1.01	Frost Air Conditioning	Received
AC 1.02 commissioning records	AC 1.02	Frost Air Conditioning	Received
AC 1.03 commissioning records	AC 1.03	Frost Air Conditioning	Received
AC 1.04 commissioning records	AC 1.04	Frost Air Conditioning	Received
AC 1.05 commissioning records	AC 1.05	Frost Air Conditioning	Received
AC 1.06 commissioning records	AC 1.06	Frost Air Conditioning	Received
AC 1.07 commissioning records	AC 1.07	Frost Air Conditioning	Received
AC 1.08 commissioning records	AC 1.08	Frost Air Conditioning	Received

DOCUMENT	ASSET	PROVIDED BY	STATUS
AC 1.09 commissioning records	AC 1.09	Frost Air Conditioning	Received
AC 1.10 commissioning records	AC 1.10	Frost Air Conditioning	Received
AC 1.11 commissioning records	AC 1.11	Frost Air Conditioning	Received
AC 1.12 commissioning records	AC 1.12	Frost Air Conditioning	Received
AC 1.13 commissioning records	AC 1.13	Frost Air Conditioning	Received
AC 1.14 commissioning records	AC 1.14	Frost Air Conditioning	Received
AC 1.16 commissioning records	AC 1.16	Frost Air Conditioning	Received
AC 1.18 commissioning records	AC 1.18	Frost Air Conditioning	Received
AC 1.19 commissioning records	AC 1.19	Frost Air Conditioning	Received
AC 1.20 commissioning records	AC 1.20	Frost Air Conditioning	Received
AC 1.21 commissioning records	AC 1.21	Frost Air Conditioning	Received
AC 1.22 commissioning records	AC 1.22	Frost Air Conditioning	Received
AC 1.23 commissioning records	AC 1.23	Frost Air Conditioning	Received
AC 1.24 commissioning records	AC 1.24	Frost Air Conditioning	Received
AC 1.25 commissioning records	AC 1.25	Frost Air Conditioning	Received
AC 1.26 commissioning records	AC 1.26	Frost Air Conditioning	Received
AC 1.27 commissioning records	AC 1.27	Frost Air Conditioning	Received
AC 1.28 commissioning records	AC 1.28	Frost Air Conditioning	Received
AC 1.29 commissioning records	AC 1.29	Frost Air Conditioning	Received
AC 1.30 commissioning records	AC 1.30	Frost Air Conditioning	Received
AC 1.31 commissioning records	AC 1.31	Frost Air Conditioning	Received
AC 1.32 commissioning records	AC 1.32	Frost Air Conditioning	Received
AC 1.33 commissioning records	AC 1.33	Frost Air Conditioning	Received
AC 1.34 commissioning records	AC 1.34	Frost Air Conditioning	Received
AC 1.35 commissioning records	AC 1.35	Frost Air Conditioning	Received
AC 1.36 commissioning records	AC 1.36	Frost Air Conditioning	Received
AC 1.37 commissioning records	AC 1.37	Frost Air Conditioning	Received
AC 2.01 commissioning records	AC 2.01	Frost Air Conditioning	Received
AC 2.02 commissioning records	AC 2.02	Frost Air Conditioning	Received

DOCUMENT	ASSET	PROVIDED BY	STATUS
AC 2.03 commissioning records	AC 2.03	Frost Air Conditioning	Received
AC 2.04 commissioning records	AC 2.04	Frost Air Conditioning	Received
AC 2.05 commissioning records	AC 2.05	Frost Air Conditioning	Received
AC 2.06 commissioning records	AC 2.06	Frost Air Conditioning	Received
AC 2.07 commissioning records	AC 2.07	Frost Air Conditioning	Received
CU 2.01 commissioning records	CU 2.01	Frost Air Conditioning	Received
CU 2.01 F-gas record and refrigerant log	CU 2.01	Frost Air Conditioning	Received
CU 2.01 refrigerant pipework pressure test certificate	CU 2.01	Frost Air Conditioning	Received
CU 2.02 commissioning records	CU 2.02	Frost Air Conditioning	Received
CU 2.02 F-gas record and refrigerant log	CU 2.02	Frost Air Conditioning	Received
CU 2.02 refrigerant pipework pressure test certificate	CU 2.02	Frost Air Conditioning	Received
CU 2.03 commissioning records	CU 2.03	Frost Air Conditioning	Received
CU 2.03 F-gas record and refrigerant log	CU 2.03	Frost Air Conditioning	Received
CU 2.03 refrigerant pipework pressure test certificate	CU 2.03	Frost Air Conditioning	Received
CU 2.04A commissioning records	CU 2.04A	Frost Air Conditioning	Received
CU 2.04A F-gas record and refrigerant log	CU 2.04A	Frost Air Conditioning	Received
CU 2.04A refrigerant pipework pressure test certificate	CU 2.04A	Frost Air Conditioning	Received
CU 2.04B commissioning records	CU 2.04B	Frost Air Conditioning	Received
CU 2.04B F-gas record and refrigerant log	CU 2.04B	Frost Air Conditioning	Received
CU 2.04B refrigerant pipework pressure test certificate	CU 2.04B	Frost Air Conditioning	Received
CU 2.05 commissioning records	CU 2.05	Frost Air Conditioning	Received
CU 2.05 F-gas record and refrigerant log	CU 2.05	Frost Air Conditioning	Received
CU 2.05 refrigerant pipework pressure test certificate	CU 2.05	Frost Air Conditioning	Received
CU 2.06A commissioning records	CU 2.06A	Frost Air Conditioning	Received
CU 2.06A F-gas record and refrigerant log	CU 2.06A	Frost Air Conditioning	Received
CU 2.06A refrigerant pipework pressure test certificate	CU 2.06A	Frost Air Conditioning	Received
CU 2.06B commissioning records	CU 2.06B	Frost Air Conditioning	Received
CU 2.06B F-gas record and refrigerant log	CU 2.06B	Frost Air Conditioning	Received
CU 2.06B refrigerant pipework pressure test certificate	CU 2.06B	Frost Air Conditioning	Received

DOCUMENT	ASSET	PROVIDED BY	STATUS
CU 2.07 commissioning records	CU 2.07	Frost Air Conditioning	Received
CU 2.07 F-gas record and refrigerant log	CU 2.07	Frost Air Conditioning	Received
CU 2.07 refrigerant pipework pressure test certificate	CU 2.07	Frost Air Conditioning	Received
CU 2.08 commissioning records	CU 2.08	Frost Air Conditioning	Received
CU 2.08 F-gas record and refrigerant log	CU 2.08	Frost Air Conditioning	Received
CU 2.08 refrigerant pipework pressure test certificate	CU 2.08	Frost Air Conditioning	Received
CU 2.09 commissioning records	CU 2.09	Frost Air Conditioning	Received
CU 2.09 F-gas record and refrigerant log	CU 2.09	Frost Air Conditioning	Received
CU 2.09 refrigerant pipework pressure test certificate	CU 2.09	Frost Air Conditioning	Received
CU 2.10 commissioning records	CU 2.10	Frost Air Conditioning	Received
CU 2.10 F-gas record and refrigerant log	CU 2.10	Frost Air Conditioning	Received
CU 2.10 refrigerant pipework pressure test certificate	CU 2.10	Frost Air Conditioning	Received
AHU R.02 commissioning certificate	AHU R.02	Trane UK Ltd	Received
AHU R.03 commissioning certificate	AHU R.03	Trane UK Ltd	Received
AHU R.04 commissioning certificate	AHU R.04	Trane UK Ltd	Received
AHU R.05 commissioning certificate	AHU R.05	Trane UK Ltd	Received
AHU R.06 commissioning certificate	AHU R.06	Trane UK Ltd	Received
AHU R.07 commissioning certificate	AHU R.07	Trane UK Ltd	Received
AHU R.08 commissioning certificate	AHU R.08	Trane UK Ltd	Received
AHU R.09 commissioning certificate	AHU R.09	Trane UK Ltd	Received
AHU R.01 commissioning certificate	AHU R.01	Trane UK Ltd	Received
EF B.01 commissioning certificate	EF B.01	Ventilation Direct Ltd	Received
EF B.02 commissioning certificate	EF B.02	Ventilation Direct Ltd	Received
EF B.03 commissioning certificate	EF B.03	Ventilation Direct Ltd	Received
EF B.04 commissioning certificate	EF B.04	Ventilation Direct Ltd	Received
FD 0.01 drop test certificate	FD 0.01	RJ Ashton Group (Ashton LLP)	Received
FD 0.02 drop test certificate	FD 0.02	RJ Ashton Group (Ashton LLP)	Received

DOCUMENT	ASSET	PROVIDED BY	STATUS
FD 0.03 drop test certificate	FD 0.03	RJ Ashton Group (Ashton LLP)	Received
FD 0.04 drop test certificate	FD 0.04	RJ Ashton Group (Ashton LLP)	Received
FD 0.05 drop test certificate	FD 0.05	RJ Ashton Group (Ashton LLP)	Received
FD 0.06 drop test certificate	FD 0.06	RJ Ashton Group (Ashton LLP)	Received
FD 0.07 drop test certificate	FD 0.07	RJ Ashton Group (Ashton LLP)	Received
FD 0.08 drop test certificate	FD 0.08	RJ Ashton Group (Ashton LLP)	Received
FD 1.01 drop test certificate	FD 1.01	RJ Ashton Group (Ashton LLP)	Received
FD 1.02 drop test certificate	FD 1.02	RJ Ashton Group (Ashton LLP)	Received
FD 1.03 drop test certificate	FD 1.03	RJ Ashton Group (Ashton LLP)	Received
FD 1.04 drop test certificate	FD 1.04	RJ Ashton Group (Ashton LLP)	Received
FD 1.05 drop test certificate	FD 1.05	RJ Ashton Group (Ashton LLP)	Received
FD 1.06 drop test certificate	FD 1.06	RJ Ashton Group (Ashton LLP)	Received
FD 1.07 drop test certificate	FD 1.07	RJ Ashton Group (Ashton LLP)	Received
FD 1.08 drop test certificate	FD 1.08	RJ Ashton Group (Ashton LLP)	Received
FD 1.09 drop test certificate	FD 1.09	RJ Ashton Group (Ashton LLP)	Received
FD 1.10 drop test certificate	FD 1.10	RJ Ashton Group (Ashton LLP)	Received
Domestic water: water system disinfection certificate (BS EN 806 and BS 8558)	Domestic water	RJ Ashton Group (Ashton LLP)	Received
Domestic water: post-disinfection microbiological results	Domestic water	RJ Ashton Group (Ashton LLP)	Received
Domestic water: legionella risk assessment before occupation and written scheme of control (ACoP L8, HSG274)	Domestic water	RJ Ashton Group (Ashton LLP)	Received

DOCUMENT	ASSET	PROVIDED BY	STATUS
Domestic water: flushing record and sentinel outlet temperatures at handover (hot 50 °C or above, cold below 20 °C)	Domestic water	RJ Ashton Group (Ashton LLP)	Received
Domestic water: water Supply (Water Fittings) Regulations 1999: the approved contractor's certificate, or the water supplier's consent for the installation	Domestic water	RJ Ashton Group (Ashton LLP)	Received
Ventilation: air flow balancing report, supply and extract, design and measured flows (also the Part F commissioning record)	Ventilation	Linden Ductwork	Received
Ventilation: ductwork air leakage test (DW/143)	Ventilation	Linden Ductwork	Received
Ventilation: ductwork internal cleanliness verification at handover (BESA TR19 Air), or confirmation it was installed to the clean protocol specified	Ventilation	Linden Ductwork	Received
Domestic water: pre-commission cleaning, flushing and water treatment certificate (BSRIA BG 29), with laboratory water analysis	Domestic water	RJ Ashton Group (Ashton LLP)	Received
Domestic water: PSSR written scheme of examination (Pressure Systems Safety Regulations 2000), or written confirmation that none is needed	Domestic water	BKW Mechanical	Received
Heating: pre-commission cleaning, flushing and water treatment certificate (BSRIA BG 29), with laboratory water analysis	Heating	RJ Ashton Group (Ashton LLP)	Received
Heating: PSSR written scheme of examination (Pressure Systems Safety Regulations 2000), or written confirmation that none is needed	Heating	BKW Mechanical	Received
Air conditioning: PSSR written scheme of examination (Pressure Systems Safety Regulations 2000) for refrigeration over 25 kW, or written confirmation that none is needed	Air conditioning	Frost Air Conditioning	Received
Above ground drainage pipework pressure test certificates to BS 5572	Project	Hensall Mechanical Services Ltd	Received
Commissioning summary: every system commissioned and witnessed, results against design, anything left open, and the seasonal commissioning still to do	Project	TPS Ltd	Received
Commissioning notice for building control (Building Regulations regulation 44): fixed building services commissioned and performing as designed	Project	TPS Ltd	Received
Competent person scheme compliance certificates (for example BESCA, Gas Safe or NICEIC) for work self certified instead of through building control	Project	Hensall Mechanical Services Ltd	Received

Seasonal commissioning

Checks at each season's conditions after occupation. Each record is inserted here as it arrives.

Left open at commissioning

None. Every item raised during commissioning was closed out and re-tested before handover.

PLANT	OPEN ITEM, AS WRITTEN
	Communication and addressing issues identified across the systems; rectified by correcting line address settings S65 p2
	Systems not tested in heating mode due to high outdoor ambient temperature S65 p2
CU 2.04B	Lower Fitness system appears to have a refrigerant related fault; possible overcharge or contamination S65 p2
CU 2.04B	No records available to confirm the quantity of refrigerant previously added S65 p2
CU 2.04B	Lower Fitness System B not operating correctly: unusually high standing pressure and elevated running pressures S65 p2
CU 2.04B	Recover refrigerant into a cylinder and carry out a standing pressure test on the recovered refrigerant S65 p2
	Correct refrigerant charge to be recalculated and verified for every system on site S65 p2
	Installer to return to site to recalculate the refrigerant charge for each system and label every system with its correct charge (F-Gas) S65 p3
CU 2.05	Party Zone system had previously experienced a high pressure fault S65 p2
CU 2.07	Upper Fitness system: previous high pressure faults noted S65 p2
CU 2.08	Dance Studio fault history: all faults are addressing issues S65 p13
	The tundish and discharge pipework have been connected and terminated to Part G of the Building Regulations: Yes box not ticked S79 p1
	Customer's Signature (To confirm satisfactory demonstration and receipt of manufacturer's literature): blank S79 p1
	Building Regulations Notification Number (if applicable): blank S79 p1
	The tundish and discharge pipework have been connected and terminated to Part G of the Building Regulations: Yes box not ticked S80 p1
	Customer's Signature (To confirm satisfactory demonstration and receipt of manufacturer's literature): blank S80 p1
	Building Regulations Notification Number (if applicable): blank S80 p1
P B.04	On arrival I found the pump installed incorrectly. Site to re-orientate the pump as per manufacturer instructions. S89 p1
P B.04	On arrival I found the pump installed incorrectly in the wrong orientation. Recommend site reinstall the pump as per manufacturer literature. S102 p1
P B.04	Left all units available to use with the only recommendation to re-orientate the LTHW to DHWS pump as per manufacturer instructions. S102 p2
P B.04	Found all okay, left isolated as requested. S102 p1
P B.05	Found all okay, left isolated as requested. S102 p2
	Gym Extract Ductwork (17 Mar 2026): remedial work required Yes but Remedial Details left blank S112 p24

PLANT	OPEN ITEM, AS WRITTEN
	Remedial Works Summary table left empty despite one section requiring remedial work S112 p5
	Damper FD/05 (Main Gym, x250) tested but not in the asset register S113 p14
	Damper Fdd/06 (Main Gym, x200) tested but not in the asset register S113 p16
	Damper FD/07 (Main Gym, 250x250) tested but not in the asset register S113 p18
	Damper FD/08 (Main Gym, 250x250) tested but not in the asset register S113 p20
	Damper FD/09 (Main Gym, x150) tested but not in the asset register S113 p22
	Damper FD/10 (Main Gym, 250 xx250) tested but not in the asset register S113 p24
	Damper FD/12 (Plantroom, 300x350) tested but not in the asset register S113 p28
	Damper FD/13 (Plantroom, 600x600) tested but not in the asset register S113 p30
	Damper FD/14 (Plantroom, 600x600) tested but not in the asset register S113 p32
	Damper FD/15 (Plantroom, 300x350) tested but not in the asset register S113 p34
	Damper FD/16 (Plantroom, 600x600) tested but not in the asset register S113 p36
	Damper FD/17 (Plantroom, 600x600) tested but not in the asset register S113 p38
	Damper FD/19 (Plantroom, 550x400) tested but not in the asset register S113 p40
	Damper FD/19 (Plantroom, 800x400) tested but not in the asset register S113 p42
	Damper FD/20 (Plantroom, 650x350) tested but not in the asset register S113 p44
	Damper FD/21 (Plantroom, 650x450) tested but not in the asset register S113 p46
	Damper FD/22 (Dance Studio Store Room, x250) tested but not in the asset register S113 p48
	Damper FD/26 (D/Doors Leading Into Changing Rooms, 400x400) tested but not in the asset register S113 p56
	FD/10 Main Gym not tested: No Access. Solid ceiling, ceiling hatch required, Estates to address S113 p24
	FD/02 (Buggle Store) recorded as not fire stopped S113 p7
FD 0.01	Ff/03 (Inside Kitchen) recorded as not fire stopped S113 p9
	FD/04 (Changing Rooms) recorded as not fire stopped S113 p11
	FD/04 (Changing Rooms) not drop tested but reported as Pass S113 p11
	FD/05 (Main Gym) recorded as not fire stopped S113 p14
	Fdd/06 (Main Gym) recorded as not fire stopped S113 p16
	FD/09 (Main Gym) recorded as not fire stopped S113 p22
	FD/07 (Main Gym, intumescent) visual inspection only S113 p18
	FD/08 (Main Gym, intumescent) visual inspection only S113 p20

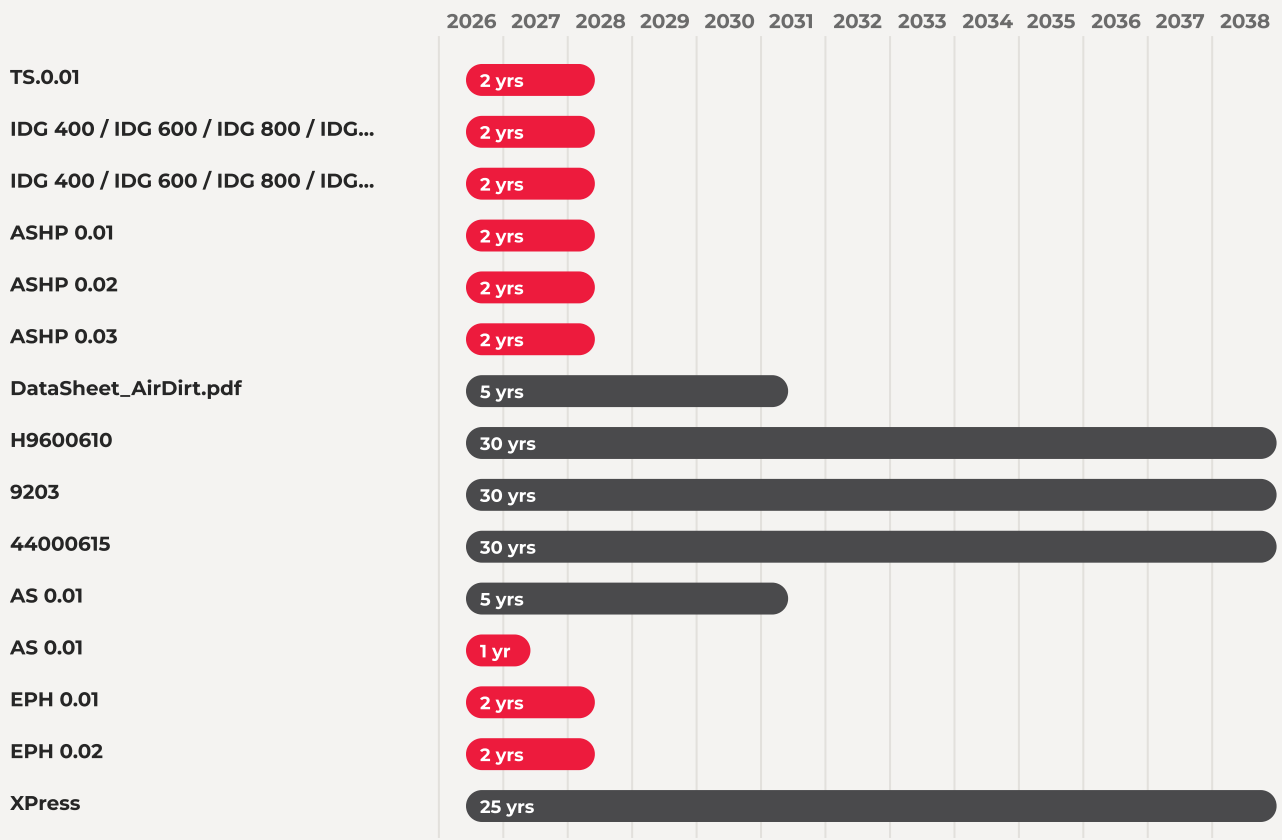
PLANT	OPEN ITEM, AS WRITTEN
	FD/13 (Plantroom) remedial: Yes400x400 on each side S113 p31
	FD/14 (Plantroom) remedial: Yes400x400 on side S113 p33
	FD/16 (Plantroom) remedial: Panel needs fitting on other side of duct S113 p37
	FD/17 (Plantroom) remedial: Door needs fitting on other side S113 p39
	Damper ref FD/19 is used for two different dampers (550x400 supply and 800x400 extract) and FD/18 does not appear S113 p42
FD 1.01	Register damper FD 1.01 (WC 01) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.02	Register damper FD 1.02 (Acc WC) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.03	Register damper FD 1.03 (WC 02) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.04	Register damper FD 1.04 (Membership Office) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.05	Register damper FD 1.05 (Membership Office) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.06	Register damper FD 1.06 (Corridor 01) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.07	Register damper FD 1.07 (Corridor 01) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.08	Register damper FD 1.08 (Riser) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.09	Register damper FD 1.09 (Riser) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
FD 1.10	Register damper FD 1.10 (Corridor 01) has no test record in this report (report uses its own FD/01 to FD/26 labels and no location matches) S113 p4
AHU R.04	Due to access restrictions we were requested just to obtain a main volume on this system, the grilles are at high level (grilles not measured or balanced) S131 p2
AHU R.04	Tested Volume 0.924 m^3/s against Design Volume 0.990 m^3/s (about 93% of design), although the sheet states 108% S132 p3
AHU R.04	No supply grille readings recorded; grilles are located at high level in the dance area S132 p2
AHU R.05	Diffusers are at very high level above the soft play equipment; only a traverse into the open area was obtained (terminals not measured) S133 p2
AHU R.05	Diffusers are at very high level above the soft play equipment; only traverses into the open area were obtained (diffusers not measured) S134 p2
AHU R.08	Tested Volume 2.304 m^3/s below Design Volume 2.392 m^3/s (about 96%), although the sheet states 100% S135 p3

PLANT	OPEN ITEM, AS WRITTEN
AHU R.08	Terminal sg 1.25 (consult 1) above design tolerance: 770% of design S136 p5
AHU R.08	Terminal sg 1.26 (consult 2) above design tolerance: 760% of design S136 p5
AHU R.08	sg 1.16 and sg 1.17 shown on the system schematic but no test results recorded S136 p6
AHU R.09	Due to access restrictions and configuration of ductwork we were unable to measure the flow rates into the squash courts S137 p2
AHU R.09	There was no way of regulating thw squash court diffusers S137 p2
AHU R.09	Tested Volume 1.654 m³/s below Design Volume 1.661 m³/s, although the sheet states 104% S138 p3
AHU R.09	Due to access restrictions and configuration of ductwork we were unable to measure the flow rates into the squash courts S138 p2
AHU R.09	There is no way to regulate squash court diffusers S138 p2
AHU R.01	Pool extract tested volume 7.365 m³/s is 93% of the 7.898 m³/s design with the fan at 100% (design not achieved) S139 p3
AHU R.03	Due to ductwork configuration we were unable to acheive a total pitot traverse on this system S143 p2
AHU R.03	Terminal sg 0 09 (café seating) above design tolerance: 165% of design S144 p5
AHU R.03	Terminal sg 1 01 (admin/training) below design: 17% of design S144 p5
AHU R.03	Due to ductwork configuration we were unable to acheive a total pitot traverse on this system S144 p2
AHU R.02	Tested Volume 2.223 m³/s marginally below Design Volume 2.225 m³/s (stated as 100%) S146 p3
AHU R.06	Due to access restrictions we were unable to perform a pitot traverse on this system S147 p2
AHU R.06	Fan suction, fan discharge and static pressure not recorded S147 p3
AHU R.06	Due to access restrictions we were unable to perform a pitot traverse on this system S148 p2

Inserted documents. 65 of this section's documents are in Volumes 6, 7, 8 and 9. The contents pages list each one with its volume and page.

9 Warranties

Warranties run from practical completion on 2nd of June 2026 unless stated otherwise.



ASSET	YEARS	COVER
TS.0.01	2	Shell: 2 Years, All Other Equipment: 1 Year S1 p5
IDG 400 / IDG 600 / IDG 800 / IDG 1200 / IDG 1600	2	UPS S5 p2
IDG 400 / IDG 600 / IDG 800 / IDG 1200 / IDG 1600	2	UPS S8 p2
ASHP 0.01	2	Full Parts and Labour, 24 Months from delivery; completion of warranty period 18/09/2027; Trane 1st year maintenance included; maintenance is carried out to ensure the validity of the warranty, by a reputable company of the same standard as Trane S22 p1
ASHP 0.02	2	Full Parts and Labour, 24 Months from delivery; completion of warranty period 18/09/2027; Trane 1st year maintenance included; maintenance is carried out to ensure the validity of the warranty, by a reputable company of the same standard as Trane S22 p1

ASSET	YEARS	COVER
ASHP 0.03	2	Full Parts and Labour, 24 Months from delivery; completion of warranty period 18/09/2027; Trane 1st year maintenance included; maintenance is carried out to ensure the validity of the warranty, by a reputable company of the same standard as Trane S22 p1
SAV31.. / SAV61.. / SAV61../MO / SAV81..	2	Application-specific technical data, Guaranteed only in combination with the Siemens products listed in Device combinations; third-party products invalidate any Siemens guarantee. S24 p8
SSD131.09U / SSD131.29U / SSD161S.05DU / SSD161S.25DU	2	Technical data on specific applications, Siemens rejects any and all warranties in the event that third-party products are used; technical data valid only with Siemens products listed under Equipment combinations. S25 p11
VPP46.. / VPP46..Q / VPI46.. / VPI46..Q	2	Application-related technical data, Application-related technical data are guaranteed only when the valves are used with the Siemens actuators listed under Equipment combinations; with actuators of other manufacture any warranty by Siemens becomes void. S29 p12
SAY31P03 / SAY61P03 / SAY61P03/MO / SAY81P03	2	Technical data on specific applications, Siemens rejects any and all warranties in the event that third-party products are used; technical data valid only with Siemens products listed under Equipment combinations. S30 p7
SKC32.. / SKC82.. / SKC6..	2	Technical data on specific applications, Siemens rejects any and all warranties in the event that third-party products are used; technical data valid only with Siemens products listed under Equipment combinations. S31 p18
VVG44.. / VXG44..	2	Technical data on specific applications, Siemens rejects any and all warranties in the event that third-party products are used; technical data valid only with Siemens products listed under Equipment combinations. S32 p13
VPF43.. / VPF44.. / VPF53.. / VPF54..	2	Technical data on specific applications, Siemens rejects any and all warranties in the event that third-party products are used; technical data valid only with Siemens products listed under Equipment combinations. S33 p20
VPF43.. / VPF44.. / VPF53.. / VPF54..	2	Technical data on specific applications, Siemens rejects any and all warranties in the event that third-party products are used; technical data valid only with Siemens products listed under Equipment combinations. S34 p19
VVF43.. / VVF43..K / VXF43..	2	Application-related technical data, Application-related technical data are guaranteed only when the valves are used with the Siemens actuators listed under Equipment combinations; with actuators of other manufacture any warranty by Siemens becomes void. S35 p10
DataSheet_AirDirt.pdf	5	5 Year Warranty S68 p2
H9600610	30	SECURITHERM thermostatic basin mixer S71 p1

ASSET	YEARS	COVER
9203	30	Eye wash and safety shower combination S72 p1
44000615	30	TEMPOMATIC 4 electronic tap S73 p1
AS 0.01	5	ZeroWeave materials, zips/bulbs, DireJet nozzles and accessories, suspension material, Systems in aggressive environments such as swimming pool facilities covered by the standard 5 year warranty; void if incorrectly installed, repaired or modified, or not maintained to KE washing and maintenance instructions S78 p15
AS 0.01	1	Design and technical function (pulsations, pressure loss and air velocity in the occupied zone), only if stated in the order confirmation, KE may measure the system before accepting a claim S78 p15
EPH 0.01	2	Heater S87 p1
EPH 0.02	2	Heater S87 p1
SAS31.. / SAS61.. / SAS81.. / SAT..	2	Engineering data in chapter 2.5 Equipment combinations, Only guaranteed in connection with the Siemens valves listed; with valves of other manufacture Siemens will assume no responsibility. S104 p13
XPress	25	XPress Copper, Copper Gas, Stainless and Stainless Gas fittings with approved tube; XPress Carbon fittings 10 Years, To qualify for guarantees, all products must be installed in accordance with our instructions on specified applications. S118 p11
FD 0.01	2	Installations involving corrosive and/or aggressive hostile environmental conditions (e.g. swimming pools) may invalidate the warranty and should be referred to BSB Sales Office S121 p8
VVF42.. / VVF42..K / VXF42..	2	Application-related technical data, Application-related technical data are guaranteed only when the valves are used with the Siemens actuators listed under Equipment combinations; with actuators of other manufacture any warranty by Siemens becomes void. S127 p10
HWH B.01	2	Parts and labour, from practical completion
HWH B.02	2	Parts and labour, from practical completion
BS B.01	2	Parts and labour, from practical completion
BS B.02	2	Parts and labour, from practical completion
EPH 0.03	2	Parts and labour, from practical completion
EPH 0.04	2	Parts and labour, from practical completion
EPH 0.05	2	Parts and labour, from practical completion
EPH 0.06	2	Parts and labour, from practical completion
EPH 0.07	2	Parts and labour, from practical completion
EPH 0.08	2	Parts and labour, from practical completion
EPH 0.09	2	Parts and labour, from practical completion

ASSET	YEARS	COVER
EPH 0.10	2	Parts and labour, from practical completion
EPH 0.11	2	Parts and labour, from practical completion
EPH 0.12	2	Parts and labour, from practical completion
EPH 0.13	2	Parts and labour, from practical completion
EPH 1.01	2	Parts and labour, from practical completion
EPH 1.02	2	Parts and labour, from practical completion
EPH 1.03	2	Parts and labour, from practical completion
EPH 1.04	2	Parts and labour, from practical completion
EPH 1.05	2	Parts and labour, from practical completion
EPH 1.06	2	Parts and labour, from practical completion
EPH 1.07	2	Parts and labour, from practical completion
EPH 1.08	2	Parts and labour, from practical completion
EPH 1.09	2	Parts and labour, from practical completion
EPH 1.10	2	Parts and labour, from practical completion
EPH 2.01	2	Parts and labour, from practical completion
EPH 2.02	2	Parts and labour, from practical completion
EPH 2.03	2	Parts and labour, from practical completion
EPH 2.04	2	Parts and labour, from practical completion
EPH 2.05	2	Parts and labour, from practical completion
EPH 2.06	2	Parts and labour, from practical completion
EPH 2.07	2	Parts and labour, from practical completion
EPH 2.08	2	Parts and labour, from practical completion
EPH 2.09	2	Parts and labour, from practical completion
EPH 2.10	2	Parts and labour, from practical completion
EPH 2.11	2	Parts and labour, from practical completion
EPH 2.12	2	Parts and labour, from practical completion
EPH 2.13	2	Parts and labour, from practical completion
EPH 2.14	2	Parts and labour, from practical completion
EPH 2.15	2	Parts and labour, from practical completion

ASSET	YEARS	COVER
EPH 2.16	2	Parts and labour, from practical completion
P B.01	2	Parts and labour, from practical completion
P B.02	2	Parts and labour, from practical completion
P B.03	2	Parts and labour, from practical completion
P B.04	2	Parts and labour, from practical completion
P B.05	2	Parts and labour, from practical completion
PU 0.01	2	Parts and labour, from practical completion
AC 0.01	2	Parts and labour, from practical completion
AC 0.02	2	Parts and labour, from practical completion
AC 0.03	2	Parts and labour, from practical completion
AC 0.04	2	Parts and labour, from practical completion
AC 0.05	2	Parts and labour, from practical completion
AC 0.06	2	Parts and labour, from practical completion
AC 0.07	2	Parts and labour, from practical completion
AC 0.08	2	Parts and labour, from practical completion
AC 0.09	2	Parts and labour, from practical completion
AC 0.10	2	Parts and labour, from practical completion
AC 0.11	2	Parts and labour, from practical completion
AC 0.12	2	Parts and labour, from practical completion
AC 0.13	2	Parts and labour, from practical completion
AC 0.14	2	Parts and labour, from practical completion
AC 0.15	2	Parts and labour, from practical completion
AC 0.16	2	Parts and labour, from practical completion
AC 0.17	2	Parts and labour, from practical completion
AC 0.18	2	Parts and labour, from practical completion
AC 0.19	2	Parts and labour, from practical completion
AC 0.20	2	Parts and labour, from practical completion
AC 0.21	2	Parts and labour, from practical completion
AC 0.22	2	Parts and labour, from practical completion

ASSET	YEARS	COVER
AC 0.23	2	Parts and labour, from practical completion
AC 0.25	2	Parts and labour, from practical completion
AC 0.26	2	Parts and labour, from practical completion
AC 0.27	2	Parts and labour, from practical completion
AC 1.01	2	Parts and labour, from practical completion
AC 1.02	2	Parts and labour, from practical completion
AC 1.03	2	Parts and labour, from practical completion
AC 1.04	2	Parts and labour, from practical completion
AC 1.05	2	Parts and labour, from practical completion
AC 1.06	2	Parts and labour, from practical completion
AC 1.07	2	Parts and labour, from practical completion
AC 1.08	2	Parts and labour, from practical completion
AC 1.09	2	Parts and labour, from practical completion
AC 1.10	2	Parts and labour, from practical completion
AC 1.11	2	Parts and labour, from practical completion
AC 1.12	2	Parts and labour, from practical completion
AC 1.13	2	Parts and labour, from practical completion
AC 1.14	2	Parts and labour, from practical completion
AC 1.16	2	Parts and labour, from practical completion
AC 1.18	2	Parts and labour, from practical completion
AC 1.19	2	Parts and labour, from practical completion
AC 1.20	2	Parts and labour, from practical completion
AC 1.21	2	Parts and labour, from practical completion
AC 1.22	2	Parts and labour, from practical completion
AC 1.23	2	Parts and labour, from practical completion
AC 1.24	2	Parts and labour, from practical completion
AC 1.25	2	Parts and labour, from practical completion
AC 1.26	2	Parts and labour, from practical completion
AC 1.27	2	Parts and labour, from practical completion

ASSET	YEARS	COVER
AC 1.28	2	Parts and labour, from practical completion
AC 1.29	2	Parts and labour, from practical completion
AC 1.30	2	Parts and labour, from practical completion
AC 1.31	2	Parts and labour, from practical completion
AC 1.32	2	Parts and labour, from practical completion
AC 1.33	2	Parts and labour, from practical completion
AC 1.34	2	Parts and labour, from practical completion
AC 1.35	2	Parts and labour, from practical completion
AC 1.36	2	Parts and labour, from practical completion
AC 1.37	2	Parts and labour, from practical completion
AC 2.01	2	Parts and labour, from practical completion
AC 2.02	2	Parts and labour, from practical completion
AC 2.03	2	Parts and labour, from practical completion
AC 2.04	2	Parts and labour, from practical completion
AC 2.05	2	Parts and labour, from practical completion
AC 2.06	2	Parts and labour, from practical completion
AC 2.07	2	Parts and labour, from practical completion
CU 2.01	2	Parts and labour, from practical completion
CU 2.02	2	Parts and labour, from practical completion
CU 2.03	2	Parts and labour, from practical completion
CU 2.04A	2	Parts and labour, from practical completion
CU 2.04B	2	Parts and labour, from practical completion
CU 2.05	2	Parts and labour, from practical completion
CU 2.06A	2	Parts and labour, from practical completion
CU 2.06B	2	Parts and labour, from practical completion
CU 2.07	2	Parts and labour, from practical completion
CU 2.08	2	Parts and labour, from practical completion
CU 2.09	2	Parts and labour, from practical completion
CU 2.10	2	Parts and labour, from practical completion

ASSET	YEARS	COVER
AHU R.02	2	Parts and labour, from practical completion
AHU R.03	2	Parts and labour, from practical completion
AHU R.04	2	Parts and labour, from practical completion
AHU R.05	2	Parts and labour, from practical completion
AHU R.06	2	Parts and labour, from practical completion
AHU R.07	2	Parts and labour, from practical completion
AHU R.08	2	Parts and labour, from practical completion
AHU R.09	2	Parts and labour, from practical completion
AHU R.01	2	Parts and labour, from practical completion
EF B.01	2	Parts and labour, from practical completion
EF B.02	2	Parts and labour, from practical completion
EF B.03	2	Parts and labour, from practical completion
EF B.04	2	Parts and labour, from practical completion

9.1

ASHP 0.01 warranty certificate

The following page is the document exactly as received and checked. It is bookmarked in the PDF.

Reference	HEN0203-ASHP001-WC
Asset	ASHP 0.01
Provided by	Trane UK Ltd
Source file	Trane heat pump warranty commencement, ASHP 0.01 to 0.03.pdf
Pages	1

10 Spares and consumables

Recommended spares and consumables to hold on site.

ASSET	ITEM	QUANTITY	REPLACEMENT
	Spare parts from Quinway Acoustics Limited S23 p3		
	Stem sealing gland (stock number by series and DN, see table) S35 p15		
	Integrated 123 6V Lithium batteries S73 p1		
AHU R.01	Supply filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p2	12	
AHU R.01	Supply filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p2	6	
AHU R.01	Supply filter stage 2 bag filter element 592x592, class ePM1-60 % / F7 S84 p4	12	
AHU R.01	Supply filter stage 2 bag filter element 287x592, class ePM1-60 % / F7 S84 p4	6	
AHU R.01	Exhaust filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p7	12	
AHU R.01	Exhaust filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p7	6	
AHU R.02	Supply filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p15	2	
AHU R.02	Supply filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p15	3	
AHU R.02	Supply filter stage 1 bag filter element 287x287, class ePM10-55 % / M5 S84 p16	1	
AHU R.02	Supply filter stage 2 bag filter element 592x592, class ePM1-60 % / F7 S84 p16	2	
AHU R.02	Supply filter stage 2 bag filter element 287x592, class ePM1-60 % / F7 S84 p16	3	
AHU R.02	Supply filter stage 2 bag filter element 287x287, class ePM1-60 % / F7 S84 p16	1	
AHU R.02	Exhaust filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p21	2	
AHU R.02	Exhaust filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p21	3	
AHU R.02	Exhaust filter stage 1 bag filter element 287x287, class ePM10-55 % / M5 S84 p21	1	

ASSET	ITEM	QUANTITY	REPLACEMENT
AHU R.03	Supply filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p32	3	
AHU R.03	Supply filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p32	3	
AHU R.03	Supply filter stage 2 bag filter element 592x592, class ePM1-60 % / F7 S84 p32	3	
AHU R.03	Supply filter stage 2 bag filter element 287x592, class ePM1-60 % / F7 S84 p32	3	
AHU R.03	Exhaust filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p36	3	
AHU R.03	Exhaust filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p36	3	
AHU R.04	Supply filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p48	2	
AHU R.04	Supply filter stage 2 bag filter element 592x592, class ePM1-60 % / F7 S84 p48	2	
AHU R.04	Exhaust filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p55	2	
AHU R.05	Supply filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p67	2	
AHU R.05	Supply filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p67	2	
AHU R.05	Supply filter stage 2 bag filter element 592x592, class ePM1-60 % / F7 S84 p67	2	
AHU R.05	Supply filter stage 2 bag filter element 287x592, class ePM1-60 % / F7 S84 p67	2	
AHU R.05	Exhaust filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p70	2	
AHU R.05	Exhaust filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p70	2	
AHU R.06	Supply filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p85	1	
AHU R.06	Supply filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p85	1	
AHU R.06	Supply filter stage 2 bag filter element 592x592, class ePM1-60 % / F7 S84 p85	1	
AHU R.06	Supply filter stage 2 bag filter element 287x592, class ePM1-60 % / F7 S84 p85	1	

ASSET	ITEM	QUANTITY	REPLACEMENT
AHU R.06	Exhaust filter stage 1 bag filter element 592x592, class ePM10-55 % / M5 S84 p88	1	
AHU R.06	Exhaust filter stage 1 bag filter element 287x592, class ePM10-55 % / M5 S84 p88	1	
EPH 0.01	1 x CR2032 Lithium Manganese Dioxide 3V coin cell battery (user replaceable, backs up real time clock) S87 p1	1	Battery life > 5 years
EPH 0.02	1 x CR2032 Lithium Manganese Dioxide 3V coin cell battery (user replaceable, backs up real time clock) S87 p1	1	Battery life > 5 years
FD 0.01	Fusible Link, Part No: 201448 (replace if overall length less than 28mm; normally 29.5mm) S101 p6		when missing or activated
	Housing cover with screws and light conductor as an assembly, stock number 8000069479 S104 p11		
	Stem sealing gland, stock number 4 284 8806 0 (DN 15...80, Series A) S127 p13		

11 As-built drawings

Record drawings of the installation as built.

DRAWING NUMBER	TITLE	REV	QR CODE
Doc 11.1	Trane heat pump sequencer panel drawings, as manufactured ontrackoandm.co.uk/d/3exN0MkaVAI1U773Xw_tbA	As built	
Doc 11.2	Quinway acoustic enclosure drawing 99307D 001 ontrackoandm.co.uk/d/PqCjnzCjiNyWHpWOSpbmbw	ZA	
Doc 11.3	Quinway acoustic enclosure drawing 99307D 002 ontrackoandm.co.uk/d/rMyBK33sO2x4zvPAZ1i22w	ZA	
Doc 11.4	Trane heat pump wiring architecture ontrackoandm.co.uk/d/u-u4nFmbW2eNxv69e9UlhA	A	
HEN0203-HEN-00-00-DR-M-5201	Ground Floor Above Ground Drainage Layout Sheet 1 of 4 ontrackoandm.co.uk/d/qGcVXbhmeh0GF5Af0rhxLA	AF01	
HEN0203-HEN-00-00-DR-M-5202	Ground Floor Above Ground Drainage Layout Sheet 2 of 4 ontrackoandm.co.uk/d/mct_F6Lut4WYVzhSk40umw	AF01	
HEN0203-HEN-00-00-DR-M-5203	Ground Floor Above Ground Drainage Layout Sheet 3 of 4 ontrackoandm.co.uk/d/g8VUAKc92mGRm-aLnijoAg	AF01	
HEN0203-HEN-00-00-DR-M-5204	Ground Floor Above Ground Drainage Layout Sheet 4 of 4 ontrackoandm.co.uk/d/30BgiHbLZbB5iBIiVIPq_A	AF01	

DRAWING NUMBER	TITLE	REV	QR CODE
HEN0203-HEN-00-00-DR-M-5301	Ground Floor Domestic Water Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/bv24y6ZH38HhMp7eVhiRzw	AF01	
HEN0203-HEN-00-00-DR-M-5302	Ground Floor Domestic Water Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/LUNo_wMUPUD7P6xI-H7zEg	AF01	
HEN0203-HEN-00-00-DR-M-5303	Ground Floor Domestic Water Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/QutWbAEETqE50JbqVIYvFw	AF01	
HEN0203-HEN-00-00-DR-M-5304	Ground Floor Domestic Water Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/ZuS5-SiUF642tUF_QidylQ	AF01	
HEN0203-HEN-00-00-DR-M-5601	Ground Floor Heating and Cooling Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/PoxRJAiH6D_qZ5ibPi_Vdg	AF01	
HEN0203-HEN-00-00-DR-M-5602	Ground Floor Heating and Cooling Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/WglqEYKF_c44zZdtbZQyPg	AF01	
HEN0203-HEN-00-00-DR-M-5603	Ground Floor Heating and Cooling Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/5ZtlttsOQgo2CQjMIDTuQw	AF01	
HEN0203-HEN-00-00-DR-M-5604	Ground Floor Heating and Cooling Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/ieMOyTFP9ZVrTnDXtAyXsw	AF01	
HEN0203-HEN-00-00-DR-M-5701	Ground Floor Ventilation Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/ZVGZF-lCYht06bTUIi9d5g	AF01	
HEN0203-HEN-00-00-DR-M-5702	Ground Floor Ventilation Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/S_U2QTfRrLmycWKrGtJ1AA	AF01	

DRAWING NUMBER	TITLE	REV	QR CODE
HEN0203-HEN-00-00-DR-M-5703	Ground Floor Ventilation Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/P36pbK3DQnLuGGqUhKF0Eg	AF01	
HEN0203-HEN-00-00-DR-M-5704	Ground Floor Ventilation Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/J8v_H62DyMb-QrQPLNUl6g	AF01	
HEN0203-HEN-00-00-DR-N-9001	Site Plan, External Services ontrackoandm.co.uk/d/RetpR5efIN49Svp61XKxcQ	AF01	
HEN0203-HEN-00-01-DR-M-5201	First Floor Above Ground Drainage Layout Sheet 1 of 4 ontrackoandm.co.uk/d/9jjOGHQZRsnpZnLvXnOt2w	AF01	
HEN0203-HEN-00-01-DR-M-5202	First Floor Above Ground Drainage Layout Sheet 2 of 4 ontrackoandm.co.uk/d/fdw2UIja1NGUSPUV-SRXTA	AF01	
HEN0203-HEN-00-01-DR-M-5203	First Floor Above Ground Drainage Layout Sheet 3 of 4 ontrackoandm.co.uk/d/yhf0wbQ-ssOu_Tn0eTShgg	AF01	
HEN0203-HEN-00-01-DR-M-5204	First Floor Above Ground Drainage Layout Sheet 4 of 4 ontrackoandm.co.uk/d/x3C8NcuAZcBDk5aJEv-h5w	AF01	
HEN0203-HEN-00-01-DR-M-5301	First Floor Domestic Water Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/iDIVHSr1OdnxT-CGKEb3Jw	AF01	
HEN0203-HEN-00-01-DR-M-5302	First Floor Domestic Water Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/A3jt-lX9JdDs4yuIA4e1zg	AF01	
HEN0203-HEN-00-01-DR-M-5303	First Floor Domestic Water Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/Vj3GxCMzqOBGo-1BvtQt_A	AF01	

DRAWING NUMBER	TITLE	REV	QR CODE
HEN0203-HEN-00-01-DR-M-5304	First Floor Domestic Water Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/yvn4-8pj8_EcV53nf8p_jg	AF01	
HEN0203-HEN-00-01-DR-M-5601	First Floor Heating and Cooling Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/RdMp4445SnpieO4vh8_0rg	AF01	
HEN0203-HEN-00-01-DR-M-5602	First Floor Heating and Cooling Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/ebK2ROfvW0ZRkqn2UlJIRQ	AF01	
HEN0203-HEN-00-01-DR-M-5603	First Floor Heating and Cooling Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/CIXxlSHAGetxPaCPxZ2QLQ	AF01	
HEN0203-HEN-00-01-DR-M-5604	First Floor Heating and Cooling Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/ePZ1x0kgZglmlcBusuFfQw	AF01	
HEN0203-HEN-00-01-DR-M-5701	First Floor Ventilation Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/8Xc-n075hO0cPbAO5wN3kA	AF01	
HEN0203-HEN-00-01-DR-M-5702	First Floor Ventilation Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/WejBfljW0BjGdNn2mj8o3A	AF01	
HEN0203-HEN-00-01-DR-M-5703	First Floor Ventilation Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/EIvxtH0vbRPemYZtyB2ppw	AF01	
HEN0203-HEN-00-01-DR-M-5704	First Floor Ventilation Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/bdFIRUssUQMEvwcwa9XxFg	AF01	
HEN0203-HEN-00-02-DR-M-5201	Second Floor Above Ground Drainage Layout Sheet 1 of 4 ontrackoandm.co.uk/d/fmqrgwC9Ci8p__T6apLGGQ	AF01	

DRAWING NUMBER	TITLE	REV	QR CODE
HEN0203-HEN-00-02-DR-M-5202	Second Floor Above Ground Drainage Layout Sheet 2 of 4 ontrackoandm.co.uk/d/GyRG8QQKN3u1d_d4aMcqtw	AF01	
HEN0203-HEN-00-02-DR-M-5203	Second Floor Above Ground Drainage Layout Sheet 3 of 4 ontrackoandm.co.uk/d/D3lT3PKmcEWhjGtIKvsEpg	AF01	
HEN0203-HEN-00-02-DR-M-5204	Second Floor Above Ground Drainage Layout Sheet 4 of 4 ontrackoandm.co.uk/d/2y8F0naf8_nIK02QNC91qA	AF01	
HEN0203-HEN-00-02-DR-M-5301	Second Floor Domestic Water Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/8OOhgr72w9IDq6LfF4ONIw	AF01	
HEN0203-HEN-00-02-DR-M-5302	Second Floor Domestic Water Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/9Trl6mCp7V7OW1vbEBS5Og	AF01	
HEN0203-HEN-00-02-DR-M-5303	Second Floor Domestic Water Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/Q3SmgXX9vI9-J76qlYuOxA	AF01	
HEN0203-HEN-00-02-DR-M-5304	Second Floor Domestic Water Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/CHufVQcbHnZag87unhsQtQ	AF01	
HEN0203-HEN-00-02-DR-M-5601	Second Floor Heating and Cooling Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/KgQYbZ2zYXtp6Q3T2PqqNg	AF01	
HEN0203-HEN-00-02-DR-M-5602	Second Floor Heating and Cooling Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/bx9QrFXxnpnsMQ0bpesZqg	AF01	
HEN0203-HEN-00-02-DR-M-5603	Second Floor Heating and Cooling Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/9_Pp-Rpaivj4aoJmjPSNBA	AF01	

DRAWING NUMBER	TITLE	REV	QR CODE
HEN0203-HEN-00-02-DR-M-5604	Second Floor Heating and Cooling Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/DTvjgzTw8_4ftgkA2Gg9pg	**AF01**	
HEN0203-HEN-00-02-DR-M-5701	Second Floor Ventilation Services Layout Sheet 1 of 4 ontrackoandm.co.uk/d/JrOJFgB8fRg2u5ysL6SKcw	**AF01**	
HEN0203-HEN-00-02-DR-M-5702	Second Floor Ventilation Services Layout Sheet 2 of 4 ontrackoandm.co.uk/d/YMmOg4TLUp_UnDmpo18iQw	**AF01**	
HEN0203-HEN-00-02-DR-M-5703	Second Floor Ventilation Services Layout Sheet 3 of 4 ontrackoandm.co.uk/d/hn-g17CYZ0-vWXmPTqPJEg	**AF01**	
HEN0203-HEN-00-02-DR-M-5704	Second Floor Ventilation Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/u7hAmdTaDGyvEMY15aSLpw	**AF01**	
HEN0203-HEN-00-B1-DR-M-5901	Upper Basement Combined Services Layout Sheet 1 of 1 ontrackoandm.co.uk/d/JKne6P1lLQHoDUDkWiMGCg	**AF01**	
HEN0203-HEN-00-B2-DR-M-5201	Mechanical Services Lower Basement Above Ground Drainage Layout Sheet 1 of 2 ontrackoandm.co.uk/d/MLeefUljlMc5Ddplj_ei4A	**AF01**	
HEN0203-HEN-00-B2-DR-M-5202	Mechanical Services Lower Basement Above Ground Drainage Layout Sheet 2 of 2 ontrackoandm.co.uk/d/r-b4v0cSINJPRlsCIQ_PNQ	**AF01**	
HEN0203-HEN-00-B2-DR-M-5901	Lower Basement Combined Servies Layout Sheet 1 of 2 ontrackoandm.co.uk/d/Gfzb_PksZG_9ziiZUfjBJQ	**AF01**	
HEN0203-HEN-00-B2-DR-M-5902	Lower Basement Combined Servies Layout Sheet 2 of 2 ontrackoandm.co.uk/d/UdbskkJ_b7uRlpFdpXzkKg	**AF01**	

DRAWING NUMBER	TITLE	REV	QR CODE
HEN0203-HEN-00-R1-DR-M-5201	Roof Level Combined Services Layout Sheet 1 ontrackoandm.co.uk/d/rlrPSVwXba6_lT38X1uDpQ	**AF01**	
HEN0203-HEN-00-R1-DR-M-5202	Roof Level Combined Services Layout Sheet 2 ontrackoandm.co.uk/d/8Itrf_FbUcdRl_jjXsDYbg	**AF01**	
HEN0203-HEN-00-R1-DR-M-5203	Roof Level Combined Services Layout Sheet 3 ontrackoandm.co.uk/d/Y_Hunla05Udn2CRAgc-eRA	**AF01**	
HEN0203-HEN-00-R1-DR-M-5601	Roof Level Heating and Cooling Services Layout Sheet 1 of 3 ontrackoandm.co.uk/d/EB20os9JTVfX5Oqj2xEYgg	**AF01**	
HEN0203-HEN-00-R1-DR-M-5602	Roof Level Heating and Cooling Services Layout Sheet 2 of 3 ontrackoandm.co.uk/d/_cl8d1T553oKeIh4vYXOdw	**AF01**	
HEN0203-HEN-00-R1-DR-M-5603	Roof Level Heating and Cooling Services Layout Sheet 3 of 3 ontrackoandm.co.uk/d/EKPpVW66GzLPRx9zpRCzJQ	**AF01**	
HEN0203-HEN-00-R1-DR-M-5701	Roof Level Ventilation Services Layout Sheet 1 of 3 ontrackoandm.co.uk/d/FZRGhW5qIUAbnd5gyQ9kGA	**AF01**	
HEN0203-HEN-00-R1-DR-M-5702	Roof Level Ventilation Services Layout Sheet 2 of 3 ontrackoandm.co.uk/d/4TyEyIKVyHjCuKU7Z2jF6A	**AF01**	
HEN0203-HEN-00-R1-DR-M-5703	Roof Level Ventilation Services Layout Sheet 3 of 3 ontrackoandm.co.uk/d/li7CrX8D8jEbwMpnXVkGTg	**AF01**	
HEN0203-HEN-00-R1-DR-M-5704	Roof Level Ventilation Services Layout Sheet 4 of 4 ontrackoandm.co.uk/d/v3unLFyCEkJ1DOX7Rt5XBQ	**AF01**	

DRAWING NUMBER	TITLE	REV	QR CODE
HEN0203-HEN-00-R1-DR-N-0001	Roof Level Coordinated Roof Layout Sheet 1 ontrackoandm.co.uk/d/ShXbhqMaRJ5lBD9P1G44Vw	AF01	
HEN0203-HEN-00-R1-DR-N-0002	Roof Level Coordinated Roof Layout Sheet 2 ontrackoandm.co.uk/d/jL3gxB-0BFxYzHB1hbe1Cw	AF01	
HEN0203-HEN-00-R1-DR-N-0003	Roof Level Coordinated Roof Layout Sheet 3 ontrackoandm.co.uk/d/5WulbBxw-B8oB9pjsO-FAQ	AF01	
HEN0203-HEN-00-R1-DR-N-0004	Roof Level Coordinated Roof Layout Sheet 4 ontrackoandm.co.uk/d/RMBF5eA1K6mUUBh5wjcEww	AF01	
HEN0203-HEN-00-ZZ-DR-M-5301	Domestic Services Schematic Sheet 1 ontrackoandm.co.uk/d/OwbohFZjiY98UAcsOHEWGg	AF01	
HEN0203-HEN-00-ZZ-DR-M-5302	Domestic Services Schematic Sheet 2 ontrackoandm.co.uk/d/_eDaZn30BSoe17moq7zYJA	AF01	
HEN0203-HEN-00-ZZ-DR-M-5303	Domestic Services Schematic Sheet 3 ontrackoandm.co.uk/d/XpplQ44dxGFL9bHXd03Iaw	AF01	
HEN0203-HEN-00-ZZ-DR-M-5701	Ventilation Schematic Sheet 1 ontrackoandm.co.uk/d/oTUddB9nWWGsNtJiUJXRdw	AF01	
HEN0203-HEN-00-ZZ-DR-M-5702	Ventilation Schematic Sheet 2 ontrackoandm.co.uk/d/9xqim6iKQEQzs4zEkZUvBw	AF01	
HEN0203-HEN-00-ZZ-DR-M-5703	Ventilation Schematic Sheet 3 ontrackoandm.co.uk/d/FEArTTVeswpj6S-jqyPS1g	AF01	

DRAWING NUMBER	TITLE	REV	QR CODE
HEN0203-HEN-00-ZZ-DR-M-5704	Ventilation Schematic Sheet 4 ontrackoandm.co.uk/d/Zm1FwwrwVXCSnTsDH8D88g	AF01	
HEN0203-HEN-00-ZZ-DR-M-5705	Ventilation Schematic Sheet 5 ontrackoandm.co.uk/d/2Juh28AyFgHMj5tJ2pTSvA	AF01	
HEN0203-HEN-00-ZZ-DR-M-5991	Primary Plant Room Schematic ontrackoandm.co.uk/d/KkGT8n9KVSBMMGdqYTc5MQ	AF01	
Doc 11.82	BMS panel wiring diagram AHU2 ontrackoandm.co.uk/d/DB4-VizAPSSuJuOipCAO2g	2FA	
Doc 11.83	BMS panel wiring diagram AHU3 ontrackoandm.co.uk/d/JHulqC5-cYYgS6FxTPsEjA	2FA	
Doc 11.84	BMS panel wiring diagram AHU4 ontrackoandm.co.uk/d/MRKKrA8lJhiiUkuOQxfOSQ	2FA	
Doc 11.85	BMS panel wiring diagram AHU5 ontrackoandm.co.uk/d/7g8iKwvytpLU5Xx-3dIfXQ	2FA	
Doc 11.86	BMS panel wiring diagram AHU6 ontrackoandm.co.uk/d/BAEPCKGZBTDzunAdXO610Q	2FA	
Doc 11.87	BMS panel wiring diagram AHU7 ontrackoandm.co.uk/d/SpkYXvcg_UWlxEx0YXeB-A	2FA	
Doc 11.88	BMS panel wiring diagram AHU8 ontrackoandm.co.uk/d/kjUWALc4sdVNJiveKEapJg	2FA	

DRAWING NUMBER	TITLE	REV	QR CODE
Doc 11.89	BMS panel wiring diagram AHU9 ontrackoandm.co.uk/d/9nfU287obdp1QX7aaMoxNA	**2FA**	
Doc 11.90	BMS panel wiring diagram MCP1 ontrackoandm.co.uk/d/MMybII_Zl_PwPsXGjxCTXQ	**2FA**	

Each code opens the latest revision of that drawing, with its revision history, from ontrackoandm.co.uk. If a code won't scan, type the web address printed next to it. The drawings are also in Volumes 5 and 6 of the digital manual.

A Source documents

The source documents behind this manual. A tag such as S3 p12 in the text means source 3, page 12, so every fact can be traced back to the document it came from.

SOURCE	DOCUMENT	SECTION
S1	Arbe hot water heater and thermal store data sheet.pdf	08 Manufacturers literature
S2	04. 104432- Data Sheet (1).pdf	08 Manufacturers literature
S3	Lowara SMB30 booster set data sheet, BS B.01.pdf	08 Manufacturers literature
S4	Mikrofill 3 pressurisation unit brochure, PU 0.01.pdf	08 Manufacturers literature
S5	0900766b8152832a.pdf	08 Manufacturers literature
S6	0900766b815c5547.pdf	08 Manufacturers literature
S7	Trane Tracer SC+ heat pump sequencer commissioning report.pdf	07 Certificates
S8	1641824737-8-riello2.pdf	08 Manufacturers literature
S9	Toshiba RBC-A wired remote controller installation manual.pdf	08 Manufacturers literature
S10	Ashton water balancing record, thermal store circuit.pdf	07 Certificates
S11	Post-disinfection microbiological results, 7th of May 2026.pdf	07 Certificates
S12	Post-disinfection Legionella results, 7th of May 2026.pdf	07 Certificates
S13	Ashton water balancing record, constant temperature circuit.pdf	07 Certificates
S14	Ashton water balancing record, plate heat exchanger circuit.pdf	07 Certificates
S15	Ashton water balancing record, ASHP 0.01 to 0.03.pdf	07 Certificates
S16	Ashton DHWS balancing and outlet temperature record.pdf	07 Certificates
S17	Closed system microbiological results, 24th of April 2026.pdf	07 Certificates
S18	41x21 Data Sheet.pdf	08 Manufacturers literature
S19	41x41 Data Sheet.pdf	08 Manufacturers literature
S20	Trane commissioning visit report 12th of May 2026, ASHP 0.01 and 0.02.pdf	07 Certificates
S21	Trane start-up and F-gas report, ASHP 0.03. KVT Controls	07 Certificates
S22	Trane heat pump warranty commencement, ASHP 0.01 to 0.03.pdf KVT Controls	09 Warranties
S23	Quinway acoustic enclosure O&M manual.pdf	08 Manufacturers literature
S24	A6V10447175_Electromotoric actuators for SAV.. 2-port and 3-po_en.pdf	08 Manufacturers literature
S25	A6V12681520.pdf	08 Manufacturers literature

SOURCE	DOCUMENT	SECTION
S26	A700000008276030.pdf	08 Manufacturers literature
S27	A700000008884225.pdf	08 Manufacturers literature
S28	A700000009816153.pdf	08 Manufacturers literature
S29	A700000010950066.pdf	08 Manufacturers literature
S30	A700000010950682.pdf	08 Manufacturers literature
S31	A700000010950710.pdf	08 Manufacturers literature
S32	A700000011254668.pdf	08 Manufacturers literature
S33	A700000011256398.pdf	08 Manufacturers literature
S34	A700000014269758.pdf	08 Manufacturers literature
S35	A700000014382073.pdf	08 Manufacturers literature
S36	TPS commissioning sheet, P B.02 AHU constant temperature pumps.pdf	07 Certificates
S37	Trane (AL-KO) AT4F air handling unit operation and maintenance manual.pdf	08 Manufacturers literature
S38	Trane start-up and F-gas report, ASHP 0.02.pdf	07 Certificates
S39	TPS commissioning sheet, P B.01 ASHP primary pumps.pdf	07 Certificates
S40	Trane start-up and F-gas report, ASHP 0.01.pdf	07 Certificates
S41	Armacell Class O Tech Data.pdf	08 Manufacturers literature
S42	Armitage Shanks Accessible WC.pdf	08 Manufacturers literature
S43	Armitage Shanks Ambulant WC.pdf	08 Manufacturers literature
S44	Armitage Shanks Contour 21 BTW WC.pdf	08 Manufacturers literature
S45	Armitage Shanks Contour 21 Basin Tap.pdf	08 Manufacturers literature

SOURCE	DOCUMENT	SECTION
S46	Armitage Shanks Contour 21 Under Counter Basins in WC.pdf	08 Manufacturers literature
S47	Armitage Shanks Contour 21 Unisex Doc M Shower Pack.pdf	08 Manufacturers literature
S48	Armitage Shanks Portman Basin Config - Not inc Tap.pdf	08 Manufacturers literature
S49	Armitage Shanks Sensor flow 21 Urinal Flush Sensor.pdf	08 Manufacturers literature
S50	Aspen Mini Aqua (003).pdf	08 Manufacturers literature
S51	Pool plant room heating pressure test, sheet 2.pdf	07 Certificates
S52	Bray Butterfly Valves.pdf	08 Manufacturers literature
S53	Brymec Rubber Lined Pipe Clamps TDS.pdf	08 Manufacturers literature
S54	Brymec Steel Channel TDS.pdf	08 Manufacturers literature
S55	Brymec Threaded Rod TDS.pdf	08 Manufacturers literature
S56	Brymec Unlined Pipe Clamps TDS.pdf	08 Manufacturers literature
S57	Arbe thermal store factory hydraulic test, TS.0.01.pdf	07 Certificates
S58	TPS commissioning sheet, BS B.02 category 5 booster set.pdf	07 Certificates
S59	COM1T - DZR Brass Commissioning Valve - FxF BSP TDS.pdf	08 Manufacturers literature
S60	Trane CXAF 150 HE XLN heat pump product report, ASHP 0.01 and 0.02.pdf	08 Manufacturers literature
S61	Trane CXAX 035 SE LN heat pump product report, ASHP 0.03.pdf	08 Manufacturers literature
S62	Cable worls Standard SY Data Sheet.pdf	08 Manufacturers literature
S63	Caice attenuator technical submittal.pdf	08 Manufacturers literature
S64	Ashton chlorination (disinfection) certificate.pdf	07 Certificates
S65	Polar Solutions Distribution site report, 28th of July 2026.pdf	07 Certificates
S66	TPS commissioning sheet, P B.05 DHWS return pump.pdf	07 Certificates

SOURCE	DOCUMENT	SECTION
S67	Data Sheet Brymec 040687 - Split Band Clip 300-303mm - code B4093302.pdf	08 Manufacturers literature
S68	DataSheet_AirDirt.pdf	08 Manufacturers literature
S69	DataSheet_CORE_Stainless_Steel.pdf	08 Manufacturers literature
S70	Refrigerant recovery hazardous waste consignment note (strip out).pdf	10b Disposal and decommissioning
S71	Delibie Basin Tap - Securitherm.pdf	08 Manufacturers literature
S72	Delibie Eye Wash Station.pdf	08 Manufacturers literature
S73	Delibie Tempomatic Sensor Basin Tap.pdf	08 Manufacturers literature
S74	Domestic water pressure test, plant room to ground floor.pdf	07 Certificates
S75	Flexel Ecosun panel heater data sheet.pdf	08 Manufacturers literature
S76	FLOPLAST PVC-U DATA SHEET.pdf	08 Manufacturers literature
S77	FOX.PSU-3 060_24.pdf	08 Manufacturers literature
S78	KE Fibertec air sock submission, AS 0.01 and 0.02.pdf	08 Manufacturers literature
S79	Unvented hot water commissioning checklist, cylinder AC33369-1A.pdf	07 Certificates
S80	Unvented hot water commissioning checklist, cylinder AC33369-1B.pdf	07 Certificates
S81	LTHW pressure test, pool plant room to ground floor.pdf	07 Certificates
S82	Horne Shower Column T105A.pdf	08 Manufacturers literature
S83	Horne Shower Column T108T42L.pdf	08 Manufacturers literature
S84	Trane AHU technical data, AHU R.01 to R.09.pdf	08 Manufacturers literature
S85	Kooltherm Pipe Sections Technical Data Sheet.pdf	08 Manufacturers literature
S86	LBV1 DZR Brass Lever Ball Valve FxF TDS.pdf	08 Manufacturers literature
S87	Dimplex LST panel heater data sheet.pdf	08 Manufacturers literature
S88	TPS commissioning sheet, P B.03 LTHW to pool plant pumps.pdf	07 Certificates
S89	TPS commissioning sheet, P B.04 LTHW to DHWS primary pumps.pdf	07 Certificates
S90	Lawtons Data Sheet.pdf	08 Manufacturers literature
S91	Mains and tank cold water pressure test.pdf	07 Certificates
S92	TPS commissioning sheet, BS B.01 boosted cold water set.pdf	07 Certificates
S93	Frico over door heater data sheet.pdf	08 Manufacturers literature

SOURCE	DOCUMENT	SECTION
S94	Phenolic Block Pipe Supports TDS.pdf	08 Manufacturers literature
S95	LTHW pressure test, AHU R.03 and R.06 pipework.pdf	07 Certificates
S96	LTHW pressure test, AHU R.04, R.05 and R.09 pipework.pdf	07 Certificates
S97	LTHW heating system pressure test certificate.pdf	07 Certificates
S98	BKW domestic water pressure test certificates, dry and wet change.pdf	07 Certificates
S99	TPS commissioning sheet, PU 0.01 pressurisation unit.pdf	07 Certificates
S100	Proclad150 Technical Data Sheet.pdf	08 Manufacturers literature
S101	BSB rectangular resettable fire damper instructions.pdf	08 Manufacturers literature
S102	TPS commissioning visit report C0578, 27th of April 2026.pdf	07 Certificates
S103	Rockwool Ductslab & Ductwrap Data Sheet.pdf	08 Manufacturers literature
S104	SAS61.03.pdf	08 Manufacturers literature
S105	STR1 Brass Y Pattern Strainer FxF TDS.pdf	08 Manufacturers literature
S106	Sauermann pump.pdf	08 Manufacturers literature
S107	TRENCH_PRE_GALV_CABLE_TRAY_LENGTHS_V5.1_1.pdf	08 Manufacturers literature
S108	Frost air conditioning commissioning sheets, all systems.pdf	07 Certificates
S109	Frost amended commissioning sheet, Lower Fitness B, August 2026.pdf	07 Certificates
S110	Threaded Rod (1).pdf	08 Manufacturers literature
S111	Universal-All-Surface-Paint-Aerosol-gb.pdf	08 Manufacturers literature
S112	Ashton ventilation ductwork cleaning report, 17th of March 2026.pdf	07 Certificates
S113	Ashton fire damper testing report, 18th of March 2026.pdf	07 Certificates
S114	Refrigerant pipework pressure tests, sheet 1 of 2.pdf	07 Certificates
S115	LTHW final pressure test pack.pdf	07 Certificates
S116	Toshiba air conditioning data sheets.pdf	08 Manufacturers literature
S117	Trane heat pump sequencer description of operation Rev B.pdf	08 Manufacturers literature
S118	Elmwood Peglar Press Fit.pdf	08 Manufacturers literature
S119	Refrigerant pipework pressure tests, sheet 2 of 2.pdf	07 Certificates
S120	Water King Specsheet_WK4-07.24.pdf	08 Manufacturers literature
S121	BSB FD series fire damper brochure.pdf	08 Manufacturers literature
S122	iSMA-D-PA15C-B1_Datasheet_DBL620en_V1.6.pdf	08 Manufacturers literature

SOURCE	DOCUMENT	SECTION
S123	lindabtscombinedsafetydatasheet.pdf	08 Manufacturers literature
S124	metering_station.pdf	08 Manufacturers literature
S125	pegler_proflow_commissioning_valve_fodrv_2_x_flange (1).pdf	08 Manufacturers literature
S126	pegler_proflow_static_balancing_valve.pdf	08 Manufacturers literature
S127	siemens_VXF.pdf	08 Manufacturers literature
S128	siemens_VXG.pdf	08 Manufacturers literature
S129	terrain_above_ground_jan19_0.pdf	08 Manufacturers literature
S130	tri-jace9000-datasheet-2025-0009.pdf	08 Manufacturers literature
S131	Ashton air flow record AHU R.04 dance studio extract.pdf	07 Certificates
S132	Ashton air flow record AHU R.04 dance studio supply.pdf	07 Certificates
S133	Ashton air flow record AHU R.05 soft play extract.pdf	07 Certificates
S134	Ashton air flow record AHU R.05 soft play supply.pdf	07 Certificates
S135	Ashton air flow record AHU R.08 upper & lower gym extract.pdf	07 Certificates
S136	Ashton air flow record AHU R.08 upper & lower gym supply.pdf	07 Certificates
S137	Ashton air flow record AHU R.09 squash courts extract.pdf	07 Certificates
S138	Ashton air flow record AHU R.09 squash courts supply.pdf	07 Certificates
S139	Ashton air flow record AHU R.01 pool extract.pdf	07 Certificates
S140	Ashton air flow record AHU R.01 pool supply.pdf	07 Certificates
S141	Ashton air flow record AHU R.07 sports hall extract.pdf	07 Certificates
S142	Ashton air flow record AHU R.07 sports hall supply.pdf	07 Certificates
S143	Ashton air flow record AHU R.03 general extract.pdf	07 Certificates
S144	Ashton air flow record AHU R.03 general supply.pdf	07 Certificates
S145	Ashton air flow record AHU R.02 wet change extract.pdf	07 Certificates
S146	Ashton air flow record AHU R.02 wet change supply.pdf	07 Certificates
S147	Ashton air flow record AHU R.06 spin studio extract.pdf	07 Certificates
S148	Ashton air flow record AHU R.06 spin studio supply.pdf	07 Certificates

ESSENTIALS MANUAL

Documents in the full manual

Every supporting document and where it is in the full manual. All of them can also be read online in the manual viewer, and the as-built drawings open from the QR codes in section 11.

	DOCUMENT	WHERE IN THE FULL MANUAL
3 System descriptions and design information		
1	Controls: controls strategy description, final	Volume 1, page 30
2	Domestic water: design schedules, final issue updated to what was installed (plant, pump, valve and sanitaryware schedules)	Volume 1, page 55
3	HEN0203-HEN-00-XX-SCH-M-5302 Schedule of Water Booster Sets	Volume 1, page 57
4	Heating: design schedules, final issue updated to what was installed (plant, pump, valve and heat emitter schedules)	Volume 1, page 59
5	HEN0203-HEN-00-XX-SCH-M-5602 Schedule of Electric Panel Heaters	Volume 1, page 61
6	HEN0203-HEN-00-XX-SCH-M-5603 Schedule of Thermal Stores	Volume 1, page 64
7	HEN0203-HEN-00-XX-SCH-M-5604 Schedule of Pumps	Volume 1, page 66
8	HEN0203-HEN-00-XX-SCH-M-5605 Schedule of Pressurisation Units and Expansion Vessels	Volume 1, page 68
9	Air conditioning: design schedules, final issue updated to what was installed (plant, pump, valve and heat emitter schedules)	Volume 1, page 70
10	HEN0203-HEN-00-XX-SCH-M-5607 Schedule of External Condensers	Volume 1, page 74
11	Ventilation: design schedules, final issue updated to what was installed (air handling unit, fan, air terminal and damper schedules)	Volume 1, page 77
12	HEN0203-HEN-00-XX-SCH-M-5702 Schedule of Air Handling Units (Pool)	Volume 1, page 80
13	HEN0203-HEN-00-XX-SCH-M-5704 Schedule of Supply Diffusers	Volume 1, page 82
14	HEN0203-HEN-00-XX-SCH-M-5705 Schedule of Extract Grilles	Volume 1, page 85
15	HEN0203-HEN-00-XX-SCH-M-5706 Schedule of Air Socks	Volume 1, page 90
16	HEN0203-HEN-00-XX-SCH-M-5707 Schedule of Attenuators	Volume 1, page 92
17	HEN0203-HEN-00-XX-SCH-M-5708 Schedule of Extract Fans	Volume 1, page 95
18	HEN0203-HEN-00-XX-SCH-M-5709 Schedule of Fire and Smoke Dampers	Volume 1, page 97
19	HEN0203-HEN-00-XX-SCH-M-5710 Schedule of Door Transfer Grilles	Volume 1, page 100
7 Testing, commissioning and certificates		
20	Trane Tracer SC+ heat pump sequencer commissioning report	Volume 6, page 267
21	Ashton water balancing record, thermal store circuit	Volume 6, page 278
22	Domestic water: post-disinfection microbiological results	Volume 6, page 283
23	Post-disinfection Legionella results, 7th of May 2026	Volume 6, page 286
24	Ashton water balancing record, constant temperature circuit	Volume 6, page 289
25	Ashton water balancing record, plate heat exchanger circuit	Volume 6, page 295
26	Ashton water balancing record, ASHP 0.01 to 0.03	Volume 6, page 300
27	Domestic water: flushing record and sentinel outlet temperatures at handover (hot 50 °C or above, cold below 20 °C)	Volume 6, page 304
28	Heating: pre-commission cleaning, flushing and water treatment certificate (BSRIA BG 29), with laboratory water analysis	Volume 6, page 309

ESSENTIALS MANUAL

	DOCUMENT	WHERE IN THE FULL MANUAL
29	Trane commissioning visit report 12th of May 2026, ASHP 0.01 and 0.02	Volume 6, page 311
30	ASHP 0.03 commissioning records	Volume 6, page 314
31	P B.02 commissioning certificate	Volume 6, page 353
32	ASHP 0.02 commissioning records	Volume 7, page 5
33	P B.01 commissioning certificate	Volume 7, page 31
34	ASHP 0.01 commissioning records	Volume 7, page 33
35	Pool plant room heating pressure test, sheet 1	Volume 7, page 59
36	Pool plant room heating pressure test, sheet 2	Volume 7, page 60
37	Pool plant room heating pressure test, sheet 3	Volume 7, page 62
38	Arbe thermal store factory hydraulic test, TS.0.01	Volume 7, page 63
39	BS B.02 commissioning sheet	Volume 7, page 65
40	Domestic water: water system disinfection certificate (BS EN 806 and BS 8558)	Volume 7, page 68
41	Polar Solutions Distribution site report, 28th of July 2026	Volume 7, page 70
42	P B.05 commissioning certificate	Volume 7, page 81
43	Domestic water pressure test mark-up, basement and ground floor	Volume 7, page 83
44	Domestic water pressure test, plant room to ground floor	Volume 7, page 84
45	HWH B.01 commissioning certificate (unvented, G3)	Volume 7, page 86
46	HWH B.02 commissioning certificate (unvented, G3)	Volume 7, page 88
47	LTHW pressure test, pool plant room to ground floor	Volume 7, page 90
48	LTHW pressure test mark-up, basement and ground floor	Volume 7, page 92
49	P B.03 commissioning certificate	Volume 7, page 93
50	P B.04 commissioning certificate	Volume 7, page 95
51	Mains and tank cold water pressure test	Volume 7, page 97
52	BS B.01 commissioning sheet	Volume 7, page 99
53	LTHW pressure test, AHU R.03 and R.06 pipework	Volume 7, page 102
54	LTHW pressure test, AHU R.04, R.05 and R.09 pipework	Volume 7, page 104
55	LTHW heating system pressure test certificate	Volume 7, page 106
56	BKW domestic water pressure test certificates, dry and wet change	Volume 7, page 109
57	PU 0.01 commissioning sheet	Volume 7, page 111
58	TPS commissioning visit report C0578, 27th of April 2026	Volume 7, page 114
59	CU 2.01 commissioning records	Volume 7, page 121
60	CU 2.04B commissioning records	Volume 7, page 133
61	Ventilation: ductwork internal cleanliness verification at handover (BESA TR19 Air), or confirmation it was installed to the clean protocol specified	Volume 8, page 5
62	FD 0.01 drop test certificate	Volume 8, page 30
63	CU 2.09 refrigerant pipework pressure test certificate	Volume 8, page 89
64	LTHW final pressure test pack	Volume 8, page 111

ESSENTIALS MANUAL

	DOCUMENT	WHERE IN THE FULL MANUAL
65	CU 2.07 refrigerant pipework pressure test certificate	Volume 9, page 6
66	Ashton air flow record AHU R.04 dance studio extract	Volume 9, page 15
67	AHU R.04 commissioning certificate	Volume 9, page 22
68	Ashton air flow record AHU R.05 soft play extract	Volume 9, page 29
69	AHU R.05 commissioning certificate	Volume 9, page 34
70	Ashton air flow record AHU R.08 upper & lower gym extract	Volume 9, page 40
71	AHU R.08 commissioning certificate	Volume 9, page 47
72	Ashton air flow record AHU R.09 squash courts extract	Volume 9, page 54
73	AHU R.09 commissioning certificate	Volume 9, page 61
74	Ashton air flow record AHU R.01 pool extract	Volume 9, page 68
75	AHU R.01 commissioning certificate	Volume 9, page 73
76	Ashton air flow record AHU R.07 sports hall extract	Volume 9, page 78
77	AHU R.07 commissioning certificate	Volume 9, page 83
78	Ashton air flow record AHU R.03 general extract	Volume 9, page 88
79	AHU R.03 commissioning certificate	Volume 9, page 96
80	Ashton air flow record AHU R.02 wet change extract	Volume 9, page 102
81	AHU R.02 commissioning certificate	Volume 9, page 111
82	Ashton air flow record AHU R.06 spin studio extract	Volume 9, page 119
83	AHU R.06 commissioning certificate	Volume 9, page 125
84	KVT BMS commissioning checklist, 14th of May 2026	Volume 9, page 131
8 Manufacturers' literature		
85	HWH B.01 installation and servicing instructions	Volume 2, page 6
86	03-Safe.book	Volume 2, page 14
87	04. 104432- Data Sheet (1)	Volume 2, page 16
88	BS B.01 operation and maintenance manual	Volume 2, page 18
89	PU 0.01 operation and maintenance manual	Volume 2, page 22
90	0900766b8152832a	Volume 2, page 35
91	0900766b815c5547	Volume 2, page 38
92	14-Access-doors.book	Volume 2, page 41
93	140-FOX.TX	Volume 2, page 43
94	1641824737-8-riello2	Volume 2, page 46
95	41x21 Data Sheet	Volume 2, page 49
96	41x41 Data Sheet	Volume 2, page 51
97	Quinway acoustic enclosure O&M manual	Volume 2, page 53
98	A6V10447175_Electromotoric actuators for SAV.. 2-port and 3-po_en	Volume 2, page 57
99	A6V12681520	Volume 2, page 78
100	A700000008276030	Volume 2, page 99

ESSENTIALS MANUAL

	DOCUMENT	WHERE IN THE FULL MANUAL
101	A700000008884225	Volume 2, page 104
102	A700000009816153	Volume 2, page 109
103	A700000010950066	Volume 2, page 115
104	A700000010950682	Volume 2, page 135
105	A700000010950710	Volume 2, page 152
106	A700000011254668	Volume 2, page 184
107	A700000011256398	Volume 2, page 201
108	A700000014269758	Volume 2, page 230
109	A700000014382073	Volume 2, page 257
110	AHU R.01 operation and maintenance manual	Volume 2, page 274
111	Armacell Class O Tech Data	Volume 2, page 407
112	Armitage Shanks Accessible WC	Volume 2, page 433
113	Armitage Shanks Ambulant WC	Volume 2, page 435
114	Armitage Shanks Cleaners Sink	Volume 2, page 437
115	Armitage Shanks Contour 21 BTW WC	Volume 2, page 439
116	Armitage Shanks Contour 21 Basin Tap	Volume 2, page 442
117	Armitage Shanks Contour 21 Under Counter Basins in WC	Volume 2, page 444
118	Armitage Shanks Contour 21 Unisex Doc M Shower Pack	Volume 2, page 446
119	Armitage Shanks Contour 21 Urinal Config	Volume 2, page 448
120	Armitage Shanks Portman Basin Config - Not inc Tap	Volume 2, page 451
121	Armitage Shanks Sensor flow 21 Urinal Flush Sensor	Volume 2, page 454
122	Aspen Mini Aqua (003)	Volume 2, page 456
123	Bray Butterfly Valves	Volume 2, page 458
124	Brymec Rubber Lined Pipe Clamps TDS	Volume 2, page 461
125	Brymec Steel Channel TDS	Volume 3, page 7
126	Brymec Threaded Rod TDS	Volume 3, page 10
127	Brymec Unlined Pipe Clamps TDS	Volume 3, page 12
128	COM1T - DZR Brass Commissioning Valve - FxF BSP TDS	Volume 3, page 14
129	Trane CXAF 150 HE XLN heat pump product report, ASHP 0.01 and 0.02	Volume 3, page 16
130	Trane CXAX 035 SE LN heat pump product report, ASHP 0.03	Volume 3, page 19
131	Cable worls Standard SY Data Sheet	Volume 3, page 22
132	ATT-TYPE A product datasheet	Volume 3, page 26
133	Chapter AirValves.book	Volume 3, page 38
134	Curved Access doors	Volume 3, page 40
135	Data Sheet Brymec 040687 - Split Band Clip 300-303mm - code B4093302	Volume 3, page 43
136	DataSheet_AirDirt	Volume 3, page 45
137	DataSheet_CORE_Stainless_Steel	Volume 3, page 49

ESSENTIALS MANUAL

	DOCUMENT	WHERE IN THE FULL MANUAL
138	Delibie Basin Tap - Securitherm	Volume 3, page 53
139	Delibie Eye Wash Station	Volume 3, page 56
140	Delibie Tempomatic Sensor Basin Tap	Volume 3, page 59
141	EF B.01 operation and maintenance manual	Volume 3, page 61
142	EF B.03 operation and maintenance manual	Volume 3, page 71
143	FLD.fm	Volume 3, page 84
144	EPH 0.06 installation and user instructions	Volume 3, page 86
145	FLOPLAST PVC-U DATA SHEET	Volume 3, page 89
146	FOX.PSU-3 060_24	Volume 3, page 96
147	FOX.TX 0100-1	Volume 3, page 98
148	AS 0.01 product datasheet	Volume 3, page 100
149	Horne Shower Column T105A	Volume 3, page 116
150	Horne Shower Column T108T42L	Volume 3, page 119
151	AHU R.01 datasheet and technical submittal	Volume 3, page 122
152	Kooltherm Pipe Sections Technical Data Sheet	Volume 3, page 217
153	LBV1 DZR Brass Lever Ball Valve FxF TDS	Volume 3, page 226
154	EPH 0.01 installation and user instructions	Volume 3, page 228
155	Lawtons Data Sheet	Volume 3, page 230
156	NPU.fm	Volume 3, page 232
157	DTG-TYPE A product datasheet	Volume 3, page 234
158	Frico over door heater data sheet	Volume 3, page 243
159	Phenolic Block Pipe Supports TDS	Volume 3, page 246
160	Proclad150 Technical Data Sheet	Volume 3, page 248
161	FD 0.01 product datasheet and installation instructions	Volume 3, page 250
162	Rockwool Ductslab & Ductwrap Data Sheet	Volume 3, page 259
163	SAS61.03	Volume 3, page 268
164	SR.fm	Volume 3, page 319
165	STR1 Brass Y Pattern Strainer FxF TDS	Volume 3, page 321
166	Sauermann pump	Volume 4, page 6
167	TRENCH_PRE_GALV_CABLE_TRAY_LENGTHS_V5.1_1	Volume 4, page 9
168	Threaded Rod (1)	Volume 4, page 15
169	UVH30.fm	Volume 4, page 18
170	Universal-All-Surface-Paint-Aerosol-gb	Volume 4, page 21
171	SG-TYPE B product datasheet	Volume 4, page 41
172	EG-TYPE A product datasheet	Volume 4, page 62
173	SG-TYPE D product datasheet	Volume 4, page 73
174	SG-TYPE A product datasheet	Volume 4, page 90

ESSENTIALS MANUAL

	DOCUMENT	WHERE IN THE FULL MANUAL
175	CU 2.01 operation and maintenance manual	Volume 4, page 99
176	Trane heat pump sequencer description of operation Rev B	Volume 4, page 126
177	Elmwood Peglar Press Fit	Volume 4, page 144
178	Water King Specsheet_WK4-07.24	Volume 4, page 293
179	FD 0.02 product datasheet and installation instructions	Volume 4, page 295
180	iSMA-B-AAC20_DBL625en_V1.10	Volume 4, page 312
181	iSMA-B-MINI_Datasheet	Volume 4, page 318
182	iSMA-B-MIX_Datasheet	Volume 4, page 322
183	iSMA-D-PA15C-B1_Datasheet_DBL620en_V1.6	Volume 4, page 325
184	lindabtscombinedsafetydatasheet	Volume 4, page 329
185	metering_station	Volume 4, page 402
186	pegler_proflow_commissioning_valve_fodrv_2_x_flange (1)	Volume 4, page 406
187	pegler_proflow_static_balancing_valve	Volume 4, page 410
188	siemens_VXF	Volume 5, page 6
189	siemens_VXG	Volume 5, page 21
190	terrain_above_ground_jan19_0	Volume 5, page 27
191	tri-jace9000-datasheet-2025-0009	Volume 5, page 79
9 Warranties		
192	ASHP 0.01 warranty certificate	Volume 1, page 187
10a Training records		
193	Air conditioning: client training before handover, with signed attendance records	Volume 1, page 193
10b Disposal and decommissioning		
194	Refrigerant recovery hazardous waste consignment note (strip out)	Volume 1, page 201
11 As-built drawings		
195	Trane heat pump sequencer panel drawings, as manufactured	Volume 5, page 86
196	Quinway acoustic enclosure drawing 99307D 001 rev ZA	Volume 5, page 93
197	Quinway acoustic enclosure drawing 99307D 002 rev ZA	Volume 5, page 95
198	Trane heat pump wiring architecture Rev A	Volume 5, page 97
199	HEN0203-HEN-00-00-DR-M-5201 rev AF01 Ground Floor Above Ground Drainage Layout Sheet 1 of 4	Volume 5, page 100
200	HEN0203-HEN-00-00-DR-M-5202 rev AF01 Ground Floor Above Ground Drainage Layout Sheet 2 of 4	Volume 5, page 102
201	HEN0203-HEN-00-00-DR-M-5203 rev AF01 Ground Floor Above Ground Drainage Layout Sheet 3 of 4	Volume 5, page 104
202	HEN0203-HEN-00-00-DR-M-5204 rev AF01 Ground Floor Above Ground Drainage Layout Sheet 4 of 4	Volume 5, page 106
203	HEN0203-HEN-00-00-DR-M-5301 rev AF01 Ground Floor Domestic Water Services Layout Sheet 1 of 4	Volume 5, page 108

ESSENTIALS MANUAL

	DOCUMENT	WHERE IN THE FULL MANUAL
204	HEN0203-HEN-00-00-DR-M-5302 rev AF01 Ground Floor Domestic Water Services Layout Sheet 2 of 4	Volume 5, page 110
205	HEN0203-HEN-00-00-DR-M-5303 rev AF01 Ground Floor Domestic Water Services Layout Sheet 3 of 4	Volume 5, page 112
206	HEN0203-HEN-00-00-DR-M-5304 rev AF01 Ground Floor Domestic Water Services Layout Sheet 4 of 4	Volume 5, page 114
207	HEN0203-HEN-00-00-DR-M-5601 rev AF01 Ground Floor Heating and Cooling Services Layout Sheet 1 of 4	Volume 5, page 116
208	HEN0203-HEN-00-00-DR-M-5602 rev AF01 Ground Floor Heating and Cooling Services Layout Sheet 2 of 4	Volume 5, page 118
209	HEN0203-HEN-00-00-DR-M-5603 rev AF01 Ground Floor Heating and Cooling Services Layout Sheet 3 of 4	Volume 5, page 120
210	HEN0203-HEN-00-00-DR-M-5604 rev AF01 Ground Floor Heating and Cooling Services Layout Sheet 4 of 4	Volume 5, page 122
211	HEN0203-HEN-00-00-DR-M-5701 rev AF01 Ground Floor Ventilation Services Layout Sheet 1 of 4	Volume 5, page 124
212	HEN0203-HEN-00-00-DR-M-5702 rev AF01 Ground Floor Ventilation Services Layout Sheet 2 of 4	Volume 5, page 126
213	HEN0203-HEN-00-00-DR-M-5703 rev AF01 Ground Floor Ventilation Services Layout Sheet 3 of 4	Volume 5, page 128
214	HEN0203-HEN-00-00-DR-M-5704 rev AF01 Ground Floor Ventilation Services Layout Sheet 4 of 4	Volume 5, page 130
215	HEN0203-HEN-00-00-DR-N-9001 rev AF01 Site Plan, External Services	Volume 5, page 132
216	HEN0203-HEN-00-01-DR-M-5201 rev AF01 First Floor Above Ground Drainage Layout Sheet 1 of 4	Volume 5, page 134
217	HEN0203-HEN-00-01-DR-M-5202 rev AF01 First Floor Above Ground Drainage Layout Sheet 2 of 4	Volume 6, page 10
218	HEN0203-HEN-00-01-DR-M-5203 rev AF01 First Floor Above Ground Drainage Layout Sheet 3 of 4	Volume 6, page 12
219	HEN0203-HEN-00-01-DR-M-5204 rev AF01 First Floor Above Ground Drainage Layout Sheet 4 of 4	Volume 6, page 14
220	HEN0203-HEN-00-01-DR-M-5301 rev AF01 First Floor Domestic Water Services Layout Sheet 1 of 4	Volume 6, page 16
221	HEN0203-HEN-00-01-DR-M-5302 rev AF01 First Floor Domestic Water Services Layout Sheet 2 of 4	Volume 6, page 18
222	HEN0203-HEN-00-01-DR-M-5303 rev AF01 First Floor Domestic Water Services Layout Sheet 3 of 4	Volume 6, page 20
223	HEN0203-HEN-00-01-DR-M-5304 rev AF01 First Floor Domestic Water Services Layout Sheet 4 of 4	Volume 6, page 22
224	HEN0203-HEN-00-01-DR-M-5601 rev AF01 First Floor Heating and Cooling Services Layout Sheet 1 of 4	Volume 6, page 24
225	HEN0203-HEN-00-01-DR-M-5602 rev AF01 First Floor Heating and Cooling Services Layout Sheet 2 of 4	Volume 6, page 26
226	HEN0203-HEN-00-01-DR-M-5603 rev AF01 First Floor Heating and Cooling Services Layout Sheet 3 of 4	Volume 6, page 28

ESSENTIALS MANUAL

	DOCUMENT	WHERE IN THE FULL MANUAL
227	HEN0203-HEN-00-01-DR-M-5604 rev AF01 First Floor Heating and Cooling Services Layout Sheet 4 of 4	Volume 6, page 30
228	HEN0203-HEN-00-01-DR-M-5701 rev AF01 First Floor Ventilation Services Layout Sheet 1 of 4	Volume 6, page 32
229	HEN0203-HEN-00-01-DR-M-5702 rev AF01 First Floor Ventilation Services Layout Sheet 2 of 4	Volume 6, page 34
230	HEN0203-HEN-00-01-DR-M-5703 rev AF01 First Floor Ventilation Services Layout Sheet 3 of 4	Volume 6, page 36
231	HEN0203-HEN-00-01-DR-M-5704 rev AF01 First Floor Ventilation Services Layout Sheet 4 of 4	Volume 6, page 38
232	HEN0203-HEN-00-02-DR-M-5201 rev AF01 Second Floor Above Ground Drainage Layout Sheet 1 of 4	Volume 6, page 40
233	HEN0203-HEN-00-02-DR-M-5202 rev AF01 Second Floor Above Ground Drainage Layout Sheet 2 of 4	Volume 6, page 42
234	HEN0203-HEN-00-02-DR-M-5203 rev AF01 Second Floor Above Ground Drainage Layout Sheet 3 of 4	Volume 6, page 44
235	HEN0203-HEN-00-02-DR-M-5204 rev AF01 Second Floor Above Ground Drainage Layout Sheet 4 of 4	Volume 6, page 46
236	HEN0203-HEN-00-02-DR-M-5301 rev AF01 Second Floor Domestic Water Services Layout Sheet 1 of 4	Volume 6, page 48
237	HEN0203-HEN-00-02-DR-M-5302 rev AF01 Second Floor Domestic Water Services Layout Sheet 2 of 4	Volume 6, page 50
238	HEN0203-HEN-00-02-DR-M-5303 rev AF01 Second Floor Domestic Water Services Layout Sheet 3 of 4	Volume 6, page 52
239	HEN0203-HEN-00-02-DR-M-5304 rev AF01 Second Floor Domestic Water Services Layout Sheet 4 of 4	Volume 6, page 54
240	HEN0203-HEN-00-02-DR-M-5601 rev AF01 Second Floor Heating and Cooling Services Layout Sheet 1 of 4	Volume 6, page 56
241	HEN0203-HEN-00-02-DR-M-5602 rev AF01 Second Floor Heating and Cooling Services Layout Sheet 2 of 4	Volume 6, page 58
242	HEN0203-HEN-00-02-DR-M-5603 rev AF01 Second Floor Heating and Cooling Services Layout Sheet 3 of 4	Volume 6, page 60
243	HEN0203-HEN-00-02-DR-M-5604 rev AF01 Second Floor Heating and Cooling Services Layout Sheet 4 of 4	Volume 6, page 62
244	HEN0203-HEN-00-02-DR-M-5701 rev AF01 Second Floor Ventilation Services Layout Sheet 1 of 4	Volume 6, page 64
245	HEN0203-HEN-00-02-DR-M-5702 rev AF01 Second Floor Ventilation Services Layout Sheet 2 of 4	Volume 6, page 66
246	HEN0203-HEN-00-02-DR-M-5703 rev AF01 Second Floor Ventilation Services Layout Sheet 3 of 4	Volume 6, page 68
247	HEN0203-HEN-00-02-DR-M-5704 rev AF01 Second Floor Ventilation Services Layout Sheet 4 of 4	Volume 6, page 70
248	HEN0203-HEN-00-B1-DR-M-5901 rev AF01 Upper Basement Combined Services Layout Sheet 1 of 1	Volume 6, page 72
249	HEN0203-HEN-00-B2-DR-M-5201 rev AF01 Mechanical Services Lower Basement Above Ground Drainage Layout Sheet 1 of 2	Volume 6, page 74
250	HEN0203-HEN-00-B2-DR-M-5202 rev AF01 Mechanical Services Lower Basement Above Ground Drainage Layout Sheet 2 of 2	Volume 6, page 76

ESSENTIALS MANUAL

	DOCUMENT	WHERE IN THE FULL MANUAL
251	HEN0203-HEN-00-B2-DR-M-5901 rev AF01 Lower Basement Combined Servies Layout Sheet 1 of 2	Volume 6, page 78
252	HEN0203-HEN-00-B2-DR-M-5902 rev AF01 Lower Basement Combined Servies Layout Sheet 2 of 2	Volume 6, page 80
253	HEN0203-HEN-00-R1-DR-M-5201 rev AF01 Roof Level Combined Services Layout Sheet 1	Volume 6, page 82
254	HEN0203-HEN-00-R1-DR-M-5202 rev AF01 Roof Level Combined Services Layout Sheet 2	Volume 6, page 84
255	HEN0203-HEN-00-R1-DR-M-5203 rev AF01 Roof Level Combined Services Layout Sheet 3	Volume 6, page 86
256	HEN0203-HEN-00-R1-DR-M-5601 rev AF01 Roof Level Heating and Cooling Services Layout Sheet 1 of 3	Volume 6, page 88
257	HEN0203-HEN-00-R1-DR-M-5602 rev AF01 Roof Level Heating and Cooling Services Layout Sheet 2 of 3	Volume 6, page 90
258	HEN0203-HEN-00-R1-DR-M-5603 rev AF01 Roof Level Heating and Cooling Services Layout Sheet 3 of 3	Volume 6, page 92
259	HEN0203-HEN-00-R1-DR-M-5701 rev AF01 Roof Level Ventilation Services Layout Sheet 1 of 3	Volume 6, page 94
260	HEN0203-HEN-00-R1-DR-M-5702 rev AF01 Roof Level Ventilation Services Layout Sheet 2 of 3	Volume 6, page 96
261	HEN0203-HEN-00-R1-DR-M-5703 rev AF01 Roof Level Ventilation Services Layout Sheet 3 of 3	Volume 6, page 98
262	HEN0203-HEN-00-R1-DR-M-5704 rev AF01 Roof Level Ventilation Services Layout Sheet 4 of 4	Volume 6, page 100
263	HEN0203-HEN-00-R1-DR-N-0001 rev AF01 Roof Level Coordinated Roof Layout Sheet 1	Volume 6, page 102
264	HEN0203-HEN-00-R1-DR-N-0002 rev AF01 Roof Level Coordinated Roof Layout Sheet 2	Volume 6, page 104
265	HEN0203-HEN-00-R1-DR-N-0003 rev AF01 Roof Level Coordinated Roof Layout Sheet 3	Volume 6, page 106
266	HEN0203-HEN-00-R1-DR-N-0004 rev AF01 Roof Level Coordinated Roof Layout Sheet 4	Volume 6, page 108
267	HEN0203-HEN-00-ZZ-DR-M-5301 rev AF01 Domestic Services Schematic Sheet 1	Volume 6, page 110
268	HEN0203-HEN-00-ZZ-DR-M-5302 rev AF01 Domestic Services Schematic Sheet 2	Volume 6, page 112
269	HEN0203-HEN-00-ZZ-DR-M-5303 rev AF01 Domestic Services Schematic Sheet 3	Volume 6, page 114
270	HEN0203-HEN-00-ZZ-DR-M-5701 rev AF01 Ventilation Schematic Sheet 1	Volume 6, page 116
271	HEN0203-HEN-00-ZZ-DR-M-5702 rev AF01 Ventilation Schematic Sheet 2	Volume 6, page 118
272	HEN0203-HEN-00-ZZ-DR-M-5703 rev AF01 Ventilation Schematic Sheet 3	Volume 6, page 120
273	HEN0203-HEN-00-ZZ-DR-M-5704 rev AF01 Ventilation Schematic Sheet 4	Volume 6, page 122
274	HEN0203-HEN-00-ZZ-DR-M-5705 rev AF01 Ventilation Schematic Sheet 5	Volume 6, page 124
275	HEN0203-HEN-00-ZZ-DR-M-5991 rev AF01 Primary Plant Room Schematic	Volume 6, page 126
276	BMS panel wiring diagram AHU2 rev 2FA	Volume 6, page 128
277	BMS panel wiring diagram AHU3 rev 2FA	Volume 6, page 140
278	BMS panel wiring diagram AHU4 rev 2FA	Volume 6, page 152
279	BMS panel wiring diagram AHU5 rev 2FA	Volume 6, page 164
280	BMS panel wiring diagram AHU6 rev 2FA	Volume 6, page 176
281	BMS panel wiring diagram AHU7 rev 2FA	Volume 6, page 188
282	BMS panel wiring diagram AHU8 rev 2FA	Volume 6, page 200
283	BMS panel wiring diagram AHU9 rev 2FA	Volume 6, page 212
284	BMS panel wiring diagram MCP1 rev 2FA	Volume 6, page 224