1.5.3 BUILDING LOGBOOK

Project Number – P21-043 Holloway Head Block C&D

Client - Invesco

Building Logbook | June 2024

winvic

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Contents

1. Updates and Annual Reviews

The log book should be reviewed annually as part of the organisation's quality assurance system and an entry should be made for each review. Where the log book has been updated then the changed pages should be recorded.

Review date	Description of annual logbook review and updates made	Pages updated or added	Facilities manager's Signature	Date
	Document handed over			

2. Purpose and Responsibilities

Purpose of a building logbook

This log book is an easily accessible focal point of current information for all those working in the building. It has four main functions:

- **Summary of the building:** it is a summary of all the key information about the building, including the original design, commissioning and handover details, and information on its management and performance. In being a summary, it does not wholly duplicate or replace the O&M manuals. The log book is necessary for compliance with Building Regulations Part L2.
- **Key reference point:** it is the single document in which key building energy information is logged. It may be regarded as the hub document linking many other relevant documents. The log book should provide key references to the detail held in less accessible O&M manuals, BMS manuals and commissioning records. It should therefore be kept in a readily accessible (designated) position in the main building operations room and should not be removed without the approval of the facilities manager.
- **Source of information/training:** it provides a key source of information for anyone involved in the daily management or operation of the building and to anyone carrying out work on the building and its services. It is relevant to new staff and external contractors/consultants and may play a role in staff training and induction.
- **Dynamic document:** it is a place to log changes to the building and its operation. It is also used to log building energy performance and continual fine-tuning commissioning. It is essential that it is kept up-to-date. Alterations should only be made with the approval of the facilities manager and should be signed and dated by that person.

Further guidance on using building log books is given in Action Energy Good Practice Guide GPG 348: *Building log books — a user's guide*, available from www.actionenergy.org.uk

This building logbook was prepared by:

Winvic Construction Ltd
Brampton House
Moulton Park
Northampton
NN3 6PZ

Dated: July 2022

Facilities manager responsible for logbook: Signed:…….

Contact No:……..

Signed:…… Date:…….

Key responsibilities of facilities manager:

— To ensure that the logbook is correct and up-to-date at building handover and when passing it on to a successor
— To ensure that the logbook is kept up to date on an ongoing basis including any changes to the building fabric, services, operation or management
— To ensure that building maintenance and energy performance are logged
— To ensure that all those working in the building are made aware of the information contained in the logbook
— To ensure that the logbook is always kept in its designated locati

3. Links to Other Key Documents

Document	Location
Emergency Procedures	Section 2.1 of the O & M Manual
Health and Safety	Section 2 of the O & M Manual
Schedule of Hazards Associated with Materials Used	Section 2.4 of the O & M Manual
Record Drawings	Section 7 of the O & M Manual
Equipment Logbooks (e.g., Boiler logbook)	With Equipment
Testing & commissioning certificates & reports	Section 6 of the O & M Manual
Plant & Equipment data	Section 4 of the O & M Manual

4. Main Contacts

Electricity Emergency Contact	HVSS Forest House 2 Riley Road Telford Way Industrial Estate Kettering Northants NN16 8NN Tel: 01604 781107 EMERGENCY 24HR 0800 988 2144
Gas Emergency Contact	N/A
Water Emergency Contact	Severn Trent Centre 2 St John's Street, Coventry CV1 2LZ Tel: Emergencies (24hrs) 0800 783 4444
Lead Designer Contact Name	TNA Group Unit 13 Heritage Park Hayes Way Cannock Staffordshire WS11 7LT Tel: 01543 425 349
Building Services Design Contact Name	TNA Group Unit 13 Heritage Park Hayes Way Cannock Staffordshire WS11 7LT Tel: 01543 425 349
Principle Contractor	Winvic Construction Ltd Brampton House 19 Tenter Road Moulton Park Northampton NN3 6PZ Tel: 01604 678 960
Mechanical Services Installer	TNA Group Unit 13 Heritage Park Hayes Way Cannock Staffordshire WS11 7LT Tel: 01543 425 349
Commissioning Managers Name	Winvic Construction Ltd Brampton House 19 Tenter Road Moulton Park

	Northampton NN3 6PZ Tel: 01604 678 960
Electrical Services Installer	TNA Group Unit 13 Heritage Park Hayes Way Cannock Staffordshire WS11 7LT Tel: 01543 425 349
Planning Supervisor Name	Winvic Construction Ltd Brampton House 19 Tenter Road Moulton Park Northampton NN3 6PZ Tel: 01604 678 960
O&M and Logbook Author Name	Winvic Construction Ltd Brampton House 19 Tenter Road Moulton Park Northampton NN3 6PZ Tel: 01604 678 960
Mechanical & Electrical Consultant	Couch Perry &Wilkes LLP Interface 100 Arleston Way Solihull B90 4LH Tel: 0121 709 6600
Facilities Management Contractor Name	TBA
Maintenance Contractor Name	TBA

5. Commissioning, Handover and Compliance

Commissioning overview

CIBSE Commissioning Code	Followed? (Yes/No)	Certificate included in appendix? (Yes/No)
Code M: Commissioning Management	Yes	No. Section 6 of the O&M Manual
Code A: Air Distribution Systems	Yes	No. Section 6 of the O&M Manual
Code C: Automatic Controls	N/A	No. Section 6 of the O&M Manual
Code L: Lighting	Yes	No. Section 6 of the O&M Manual
Code R: Refrigeration	Yes	No. Section 6 of the O&M Manual
Code W: Water Distribution Systems	Yes	No. Section 6 of the O&M Manual

Commissioning results

Commissioning period **29.01.24 to 18.06.24 (18 Weeks)** **Signed:**	**1. Were the system and its controls installed as shown in the design drawings? (Yes/No)**	**2. Did operation meet the design specifications in all the required modes? (Yes/No)**	**3. Did the system operate efficiently in all modes? (Yes/No)**	**Comments/problems?** Where the answer is NO, indicate any commissioning problems or significant changes that have been made to the designs during (or as a result of) installation/commissioning, or any value engineering exercises, including any significant commissioning failures and remedial work that took place.
Heat Recovery Units	Yes	Yes	Yes	
Extract Fans	Yes	Yes	Yes	
MVHRs	Yes	Yes	Yes	
Fire Dampers	N/A	N/A	N/A	
AC Units	Yes	Yes	Yes	
Cold Water Storage Tank	Yes	Yes	Yes	
Cold Water Booster Set	Yes	Yes	Yes	
Apartment Hot Water Cylinders	Yes	Yes	Yes	
Landlords Sanitaryware & Fittings	Yes	Yes	Yes	
Lighting	Yes	Yes	Yes	
Fire & Smoke Alarms	Yes	Yes	Yes	
Lightning Protection	Yes	Yes	Yes	
Communications	Yes	Yes	Yes	
Low Voltage Power	Yes	Yes	Yes	

Air infiltration

A building air pressure test was not required to be carried out for the building as a whole.

Handover

Handover took place on: 24/06/2024

End of defects liability period: 24/06/2026

The handover procedure was managed by: Ben Fowler

The documents handed over are listed in section 3 – Key Documents

6. Overall Building Design

General description of building

New development consisting of two blocks, one block referenced C which is 13 stories and one block referenced D which is 13 stories, made up of 253 private apartments containing 1-bedroom, 2-bedroom and 3-bedroom variants.

Ground floors comprise of plantrooms, bin stores and apartments within each of the blocks with communal area in block C, with the main reception area being in block D. Block D level 7 has a communal rest space along with external terraces.

Individual electric metering to each apartment to allow each resident to purchase electric from a shipper of their choice with the meters located in each dwelling.

Apartment water meters are located within the Utility Cupboards of each apartment.

Block C has 2no. passenger lifts with one of the lifts designated as a firefighting lift.

Block D has 2no. passenger lift with one of the lifts designated as a firefighting lift.

An underground car parking area is provided off the Blucher street entrance.

The following mechanical services have been installed:

- New incoming water supply to the car park plant room in block C&D.
- Water storage tanks with booster set.
- Individual direct cylinders for apartment hot water.
- Individual MVHR supply & extract air ventilation systems to some apartments.
- Individual MEV extract ventilation systems to some apartments.
- Supply and extract ventilation to the amenity areas of reception, back of house and level 7.
- Heat recovery supply and extract ventilation to the Amenity spaces on UGF and Level 7
- Comfort cooling AC installation to the Car Park comms room - :eve; 7 and UGF amenity spaces
- Smoke ventilation system comprising automatic powered fire dampers and opening vents to stairs and corridors.
- Dry riser installation to each stair core.
- Boosted domestic cold-water service to the apartments and landlord areas.
- Above ground drainage installation to all sanitary ware and drainage points.
- Automatic controls installation.

The following electrical services have been installed:

- Main & Sub Main Distribution
- Lighting & Emergency Lighting
- Small Power
- Fire Alarm
- Disabled Refuge
- CCTV
- Data & Phone
- Containment
- Electrical for Mechanical
- TV
- Access Control

- External Lighting
- Lightning Protection
- EV car charging point.

Client requirements

The services to the building have been designed in accordance with all relevant building regulations and the design criteria detailed below:-

British Standards, Codes of Practice and Building Regulations: -

• CIBSE Guides and Technical memoranda
• 18th Edition IET, BS7671: Requirements for Electrical Installations
• Local and Statutory Authority Requirements
• Supply Authority Regulations
• Building Regulations Approved Document Part 2013 'L2'
• BS EN 12101 smoke and heat control systems
• BS 9999 and BS 5839-1 2017

Mechanical Design Criteria

The following design parameters have been employed when carrying out of all design works.

VENTILATION RATES
Ventilation rates as per the requirements of Part F building regulations.

Area	Minimum Ventilation Rate	Notes
Apartment (Blocks C & D)	Fresh air supply 8l/s/person minimum Intermittent ventilation Extract rates 30l/s Kitchen 15l/s bathroom	Mechanical Heat Recovery Ventilation only. Fresh air ducted to MVHR. Internal doors undercut. Openable windows for Purge ventilation. Domestic Re-circulation extractor hoods provided above hobs.
Circulation Areas	Infiltration Only	
Cleaners Storage Areas	>5 ach/hr	Extract via intermittent mechanical extract system.
Refuse Storage Areas	>5 ach/hr	Extract via continuous mechanical extract system.
Communal Ground Floor WC Areas	>5 ach/hr	Extract via intermittent mechanical extract system. Transfer grilles within doors required for air make up.
Concierge & Office	10l/s/person	Supply & Extract via MVHR

Electrical Design Criteria

The following design parameters have been employed when carrying out of all design works.

Landlords Lighting levels: -
• Reception/ concierge - 250lux general, 300 over desks >150lux cylindrical illuminance with a modelling ratio of 30-60% over the reception desk.
• Office – 400lux average on the office desk
• Stairwells - 100lux Average (on treads)
• Circulation Lobby(s) - 250lux Average at Floor Level
• Switch room, Plant, Generator room, risers, Bin Store - 200lux Average at Floor Level

Emergency Lighting levels: -
• Escape Routes - 1.0 lux minimum
• Anti-Panic "Open" Areas - 0.5 lux minimum
• Manual Call points (Fire Alarm) - 5lux in vertical plane.
• Fire Alarm Panels - 15 lux on the face of the panel, zone diagrams and equipment instructions
• Reception Area - 15lux over desk to enable correct operation of telephone services.
• Distribution Switchgear - 15lux on the face of the distribution boards, switchboards, panel boards.

Special design features

Design assessment

Key interactions

Benefits and limitations of the design

Key ‘dos and don’ts’

Do:

1. Monitor heating, cooling and ventilation to ensure good operation
2. Be aware of all risks
3. Monitor energy usage within the building, this will enable the facilities manager to adjust timed starts/holiday periods etc to avoid excessive energy waste.
4. Follow the manuals regarding regular maintenance
5. Consult the relevant person for advice and instruction if required
6. Employ specialists to service and maintain major plant items and systems including AC systems and controls, this will ensure their continued efficiency and use.
7. Consult with control specialist to request further training and demonstrations, if necessary, this will ensure that the building management system is operating to its best with regards to the specific building.

Don’t:

1. Operate the plant 24 hours/day, seven days a week unless occupancy hours dictate this
2. Overheat the building
3. Leave heat generating equipment/machines left on unnecessarily and have energy saving features enabled as this will prevent your space from overheating and save energy
4. Open windows if cooling system operational.
5. Adjust set points or control logic from that set up without prior consultation with consultants or energy manager.

6. Summary of Areas and Occupancy

Occupancy and activities

The total number of occupants in the building is…… (Based on core hours of use)

Main occupied areas	Weekday hours	Saturday hours	Sunday hours	Total hours/week	Flextime (Yes/No?)	Late working sometimes (Yes/No?)	No. of occupants
231 Apartments							
Ground Floor Communal Area							

Insert a summary of the main activities in each different zone of the building. Insert a summary of the likely occupancy patterns including numbers of people and occupancy periods.

Floor areas

The total floor area is m^2 (based on gross floor area)

	% Of total area by servicing system						Total %	Total area (m^2)
Area type	Untreated	Naturally ventilated	Mechanically ventilated	Heating Only	Heating & Cooling	Heated & Ventilated		
231 Apartments								
Ground Floor Communal Area								
Total (%)								
Total area (m^2)								

Tenancies

Not applicable

Separately managed and special areas

Not applicable

Floor plans

Copies of the mechanical & electrical services drawings are available in the relevant section of the Building O&M manual provided under separate cover.

7. Summary of Main Building Services Plant

The main energy using plant (above 5Kw) installed at the site at handover is the

Main plant items are shown below. The operation & maintenance manuals provide further detail.

Main plant	Location	Input (kW)	Output (kW
Block C & D Booster Set	Car Park Main Tank Room		
Main LV MCCB Panel	Car park LV Room		
Block D Level 7 AC Equipment	Level 7 Roof Terrace		
UGF Amenity AC Equipment	Car Park AC Compound		
Supply and Extract Fans	Roof Level		
Main Comms Room AC	Car Park		
Main Sprinkler and Water Tanks	Car park Tank Room		

SYSTEMS:

Mechanical Services

VENTILATION SYSTEMS

Apartment Ventilation

Each apartment has its own ventilation system provided by a ducted mechanical ventilation heat recovery (MVHR) unit vertically mounted in the utility cupboard or an MEV Extract only unit mounted above the utility cupboard ceiling.

In the MVHR apartments, to provide continuous ventilation, extract air is taken from bathrooms, utility cupboards and kitchens with supply air being distributed to the principal habitable rooms (living rooms, dining rooms and bedrooms). Ducts from the MVHR unit are routed to the local façade for fresh air intake and for the discharge of exhaust air.

Heat is recovered from the extracted air and used to preheat the incoming fresh air, reducing the likelihood of cold draughts.
To allow air movement from the rooms receiving supply air to those from which air is extracted, door undercuts are provided, where an undercut is not appropriate, air is allowed to transfer through dedicated attenuated ducts above the ceiling. Where transfer ducts are provided, an air path into the ceiling void via shadow gaps or similar is used.

A low volume extract point is provided in the kitchen, the cooker hood is a recirculation unit and is not connected to the MVHR system, to reduce the risk of grease infiltrating into the central ventilation system.

The MVHR unit in operates continuously, providing ventilation to meet the minimum Building Regulations standards. The units contain intake and exhaust temperature sensors and a heat exchanger bypass. This allows supply air to bypass the heat exchanger, so it can provide a cooling effect if conditions are suitable. Ventilation to the bathrooms is boosted via light switch control with run-on timer, in addition to this a humidity sensor is provided within the MVHR unit to activate the boost mode on detection of high levels of humidity (adjustable).

Condensate from the MVHR is connected to the nearest soil stack via a tundish and self-sealing dry trap.
Each apartment is provided with its own independent control system, allowing temperature and time schedule control over the heating, ventilation, and hot water generation systems. A simple interface is provided in the utility cupboard to allow the temperature of each room to be set against a corresponding time schedule.

The MEV central extract system will extract the stale air from the kitchen and bathroom to outside. This will run on a constant “background” trickle and will be controlled via the bathroom light switch or the boost switch in the kitchen when the boost is required.

Ground Floor Reception & Amenity Space Ventilation

Mechanical ventilation to the Amenity area’s are provided via supply and extract fans located in the ceiling spaces. These are controlled via 1no controller in each area to switch on the supply & extract at the same time. Before each supply fan there is a heater battery to temper the air coming into the area and works off it’s integrated temperature sensor.

The mechanical plant is controlled via local controllers.

Bin Rooms Ventilation

The bin rooms located in C&D Car park vicinity provided with mechanical extract only ventilation by ducted fans discharging vitiated air to atmosphere via a louvre in the bin room wall. Make up air to the bin rooms is via Motorised damper to the external wall of the bin room which would close upon fire.

AIR CONDITIONING & COMFORT COOLING

The Amenity Area is serviced with the installation of a Mitsubishi variable refrigeration volume air conditioning system with heat recovery.

The air conditioning systems have the flexibility to provide heating and cooling simultaneously to all units, which means that two adjacent spaces can be operated differently at any one time due to the incorporation of solenoid valve kits to the system.

Condensers are sited within the car park and roof terraces at low level and are charged with R410A refrigerant gas which when activated pumps the refrigerant around the systems to a series of solenoid valve kits via refrigerant grade Pipework insulated with class O armaflex on galvanised metal tray. The solenoid valves are energised in the correct sequence to give heating or cooling within the dedicated space.

The indoor evaporator elements of the system are all ceiling cassettes and wall mounted units. This equipment contains the evaporator coil, filter and fan. The fan coil fresh air is supplied to the rear of the fan coil via galvanised sheet metal ductwork.

To affect the free passage of air from the space into the void where the space is not fitted with open baffle ceiling will be via four way open diffusers will be used with sufficient free area to ensure an unrestricted path into the void.

Plastic condense pipework is installed within the ceiling void and connects to all indoor units. The unit drains are either pumped from an integral pump and gravity or from an independent pump sited next to the unit. These condense drains terminate with 32mm Hepworth HepVo dry traps to local soil stacks.

Controls are fitted locally to areas for ease of adjustment when required.

MAIN & DOMESTIC WATER SYSTEMS

Mains pressure potable cold water has been brought into the site from a connection to the water utility main in road.

A utility bulk meter for the building is located within the car park. From the meter, the potable cold water was extended into the ground floor tank room, feeding the two-compartment cold water storage tank in block C&D plant room.

A Separate unmetered MCWS water feed supplies the commercial sprinkler system.

Each compartment of the water tank supplies the adjacent packaged booster set, which provides sufficient flow and pressure at the branch to each floor. The variable speed booster pumps are arranged duty/assist/assist/standby.

Anti-vacuum and air release valves are installed at the top of risers to protect the pipework following a power cut where the booster set pumps suddenly come back on-line.

Pressure Reducing Valves (PRV's) are installed at every floor to maintain optimum water pressure to each apartment to account for the varying pressures due to the building's height. The PRV at each floor is set at 3.5Bar, such that the pressure of the BCWS to each apartment is provided at 3Bar.

A branch from the BCWS feeds the cylinder in each apartment to provided domestic hot water.

Located in the majority of the apartments is a direct electrically heated hot water storage cylinder, 150 litre for 2 beds and 120 litre for 1 beds. Installed in the cylinder is 2no 3kw immersion heaters with a reheat time of 150 minutes.

The immersion heaters are controlled via programmer which has a range of pre programmed off peak time periods which are adjustable to suit all needs.

It has a manual boost button which when pressed heats up the water for durations of 30, 60, and 120 mins when needed out of the programmed time zone..

A CAT 5 booster set has been installed in the plantroom to provide water for the bin store bib taps and roof terraces.

Level sensors in the main cold water storage tank will raise an alarm on the control panel in the case of a low-level reading. Leak detection for the tank is also provided.

FIRE SUPPRESSION SYSTEMS

Apartment Life Safety Sprinklers

In accordance with the fire strategy, each apartment is protected by a life safety sprinkler system. The system is supplied via a separate riser from the cold-water storage tank and booster set located in the lower ground floor tank room.

The riser at each floor has a sprinkler zone valve set for that level, allowing isolation, and monitoring of the system. From the sprinkler zone valve set, the distribution main is routed through the corridor, with a branch into each apartment. Each branch is fitted with a tamper-resistant monitored isolation valve and flow-switch, both located behind an access panel in the corridor ceiling void. Within the apartment, the sprinkler pipework is distributed to every room, supplying fast-response, flush-mounted sprinkler heads.

Pipework downstream of the valve set is in CPVC plastic with solvent-bonded joints.

The sprinkler system isolation valve prior to apartment entry is a full-bore lever operated type and locked open to prevent accidental interruption of the water supply to the sprinkler system in accordance with BS 9251. On each water supply a permanent metal or engraved sign/label is provided indicating the apartment served and notifying the user that isolation of the sprinkler water supply will result in isolation of the sprinkler system.

The sprinkler system branch is fitted with a flow switch alarm valve and pressure gauge. The flow switch is interfaced with the central fire alarm so that on activation of a sprinkler system, the affected apartment can be identified.

The incoming potable water and sprinkler supplies to each apartment are fitted with an isolation valve to enable the supply to be disconnected without requiring access to the apartment.

The sprinkler isolation valve will be locked in an open position to prevent unauthorised isolation within the suspended ceiling above each apartment's entrance door is provided for this purpose.

DRY RISERS

We have installed 2no 100mm dry risers to the building rising up the 2 staircases. Starting from the external inlet cabinet these rise through all floors and terminate on each level with a landing valve complete with a locked outlet cabinet.

ABOVE GROUND DRAINAGE & SANITARYWARE

Apartments

The apartments are provided with a common foul stack riser to each kitchen, combined services cupboard, and bath/shower room for the collection of discharges from the sanitaryware, appliances and mechanical services equipment.

Where possible, all pipework runs in concealed locations with appropriate access for maintenance and repair.

The pipework material is UPVC for the sanitary waste pipes and Polypropylene pipe material for the collection of high temperature discharges (e.g.,cylinder and boiling water tap safety vent discharges).

Foul Water System

A network of new above ground foul water drainage pipework is installed to serve the various areas of the buildings, including kitchens and bathrooms.

MuPVC is used for main discharge vertical stacks and vent pipes and for small bore waste branch pipework.

Foul water drainage from mechanical plant such as condensate/safety discharge from cylinders and heat recovery ventilation units is connected to SVPs via a self-sealing trap.

Rain Water System

A new above ground rain water drainage system is installed to drain all roof and terrace areas of the building. Rainwater is captured from the roof using roof outlets and from roof guttering connected to rain water down pipes.

Rain water down pipes are routed internally and discretely.

SYSTEMS:

Electrical Services

Electrical Services

Main & Sub Main Distribution

We have installed MCCB panel boards [MSB 01] with MCCB incoming devices and all the necessary outgoing devices to suit the building requirements/power demands. The panel board come complete with any necessary blanking modules.

Main LV panel board ESB 01 is a wall mounted panel, located within the ground floor life safety LV switch room, suitable for the supply capacity and complete with the necessary outgoing MCCBs and a minimum of 25% allowance spare capacity. Refer to the LV schematic for full details

Landlord's distribution boards are provided in the risers to serve the communal small power and lighting requirements on each floor. We have utilised a range of single and three phase split metered distribution boards throughout the landlord's areas. Refer to the LV schematic for full details

The primary electrical supply enters block C&D car park LV room with a further essential connection located in the life safety switchroom.

Life safety supplies are routed through the building in such a way that it ensures the primary and secondary supplies to a single life safety system take diverse routes and are within separate 2-hour rated compartments and utilise different risers.

The Auto Change over panels are provided to give a secondary supply to life safety equipment in the event of power failure. They include the firefighting lifts, smoke extract system, and sprinkler system.

Small Power

The apartments are fed via the consumer unit located in the electrical cupboard. The consumer unit is a split load metal enclosure board compliant with the 18th Edition wiring regulations.

Panel Heaters electrical connection is local to the heater whilst each heater has integral controls for programming. Towel rails are located in bathrooms & ensuites these are fed from the fused connection unit located outside the bathroom.

General landlord areas have been provided with recessed single sockets outlets for cleaning purposes to corridors and stair landings.

Apartments have been installed with power supplies for electric panel heaters, towel rails, and shaver sockets. A combination of twin switch socket outlets, fused connection units and cooker control switches are in the kitchen area to supply the cooking appliances, this includes; Fridge, freezer, microwave, oven, hob, extract and boost switches.

Lighting and Emergency Lighting.

Generally, LED circular recessed downlights have been installed in the common corridors with stairwells illuminated via LED circular wall light luminaires.

Lighting to the communal areas is fed via a variety of luminaires specific to the nature of the space. Lighting to residents' communal spaces is generally controlled from PIR operation with switch rooms and plant spaces

controlled via a local manual switch. Lighting to the ground floors is fed from distribution boards located in the LV Switch rooms and storage areas with lighting to the upper floors fed from distribution boards on strategic floors to minimise the length of lighting runs.

The lighting in the apartment lounge, kitchen and bedrooms consist of recessed dimmable LED spotlights. Bathrooms and ensuites are illuminated via IP65 rated recessed LED spotlights (non-dimmable). The utility cupboard contains a single screw up light bulb fixing.

Emergency lighting has been installed throughout the common areas as required to comply with BS5266 with the testing facility being provided via test keys located adjacent to the distribution boards. The emergency luminaires are fitted with a 3- hour integral battery back-up.

The external lighting circuits are fed via photocell/time clock so that the external lights will only operate during pre-programmed hours and if it is dark enough to bring the external lights on.

Fire Detection

A category L5 fire alarm system has been installed within the common areas in compliance with BS5839 and the fire strategy.

The main control panel for blocks D is located in the reception area and Block C panel is located from the access corridor from the podium.

The landlords system interfaces with the smoke extract system, sprinkler system, mechanical items & life safety systems.

Each room within the apartments (excluding the bathrooms and ensuites) has been installed with a standalone domestic smoke detector. The fire alarm system is supplied via the consumer unit in each apartment and run in fire rated cabling.

The disabled refuge panel is located next to the Fire Alarm panel in block D reception with outstations as per the refuge schematic.

CCTV

A number of cameras have strategically been located around the perimeter of the building to maximise external coverage. All door entry points are covered so that ‘identification’ of an individual can be placed, and the majority of the external space gives a good coverage for ‘identification, recognition and observation.

The CCTV monitoring station is positioned …… Final Position to be confirmed by client

Access Control

A door intercom system has been installed to provide two-way communication between the main building entrance and the apartments via wall mounted Audio intercom panels.

The apartments are installed with a 4.2” Comelit Audio handset complete with door release button which are located in each apartment hallway

Vehicle Charging

The Rolec EV dual charge station is located in the car park with a 7kW rated output and is OCPP (Open Charge Point Protocol) compliant to ensure the EV charger will work with any charger management software.

On the pedestal is a Pay-to-Charge facility which will enable the user to pay using their smartphone to charge their vehicle.

Photovoltaic

A PV system has been installed on both Block C&D, Array panels are located on C12, C14 and D14 with the inverters being located on C14 and D14

Lightening Protection

Block C&D have both received a lightening protection system with external extraneous points being protected by the system to protect against lightening strikes.

8. Occupant Information

Your working environment

In order to achieve a good working environment, it is important that you understand how to control the building services in your space.

Heating:

Cooling:

Ventilation:

Simple energy ‘dos and don’ts’

- Avoid blocking electric panel heaters or ventilation grilles with furniture and books as this will result in a lack of heating/ventilation.
- Set thermostats to the required temperature then leave them alone. Do not use them as ON/OFF switches.
- Do not overheat your space as these increases running costs and causes extra emissions of CO_2 into the external atmosphere, contributing to global warming.
- Only switch the lights ON as and when necessary as they result in significant emissions of CO_2 into the external atmosphere, contributing to global warming.
- Shut windows at night for security purposes and to prevent heat loss that could make your space cold when you come in the next day.
- Switch off all manually controlled fans and equipment when not in use; designate a person to ensure this is carried out.
- Ensure that P.C.’s, printers etc. are not left on unnecessarily and have energy saving features enabled as this will prevent your space from overheating and save energy, thereby reducing CO_2 emissions to the external atmosphere.

9. Metering, Monitoring and Targeting Strategy

Metering schedule

Separate meters have been installed at distribution boards and monitor the use of lighting and power separately via dedicated meters.

10. Building Performance Records

(Not more than three pages)

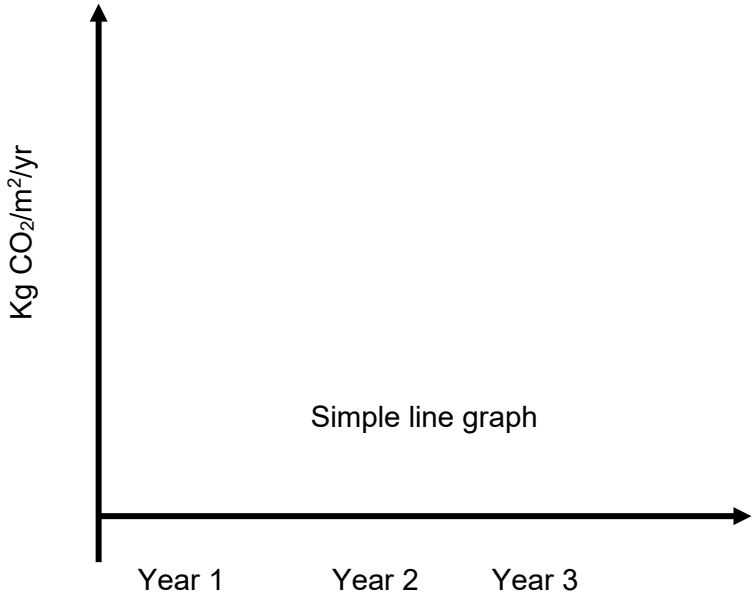
Overall annual energy performance

Summary of overall annual electricity, fossil fuel consumption and CO_2 against simple benchmarks. Examples of these calculations and tables are shown in Good Practice Guide GPG 348: *Building logbooks – a user's guide*. A copy is included on the CD-ROM associated with CIBSE TM31; printed copies are available from (www.energyaction.org.uk).

Building energy performance for period from *[date]* to *[date]* **Based on a treated floor area of *4027* m²**							
Fuel	**Quantity**	**(A)** (kW·h)	**(B)** **CO_2 ratio**	**(C)** (Kg CO_2)	**(D)** **Actual** (Kg CO_2/m^2)	**(E)** **Design estimates** (Kg CO_2/m^2)	**(F)** **Good practice benchmark** (Kg CO_2/m^2)
Electricity							
TOTAL							

Ensure that actual consumption figures do not include estimated bills and ensure they relate to a full exact 12-month period. (If not then record actual and adjust by number of days missing/extra). Use the total gross floor area shown in section 5. Multiply column (A) by column (B) to get (C) then divide by treated total building floor area to get (D) for comparison with benchmarks in columns (E) and (F). One overall performance indicator can be established by totalling column (D). Avoid adding column (A) as the fuels have different costs and CO_2 factors.

Historical Building Performance Graph



CIBSE TM22: *Energy assessment and reporting methodology* provides software to help assess building energy performance using either a simple or a detailed approach. This includes benchmarks for a variety of buildings. A wider range of benchmarks is available in the series of Energy Consumption Guides produced by Action Energy (www.actionenergy.org.uk), e.g. ECG19: *Energy use in offices*, and CIBSE Guide F: *Energy efficiency in buildings*

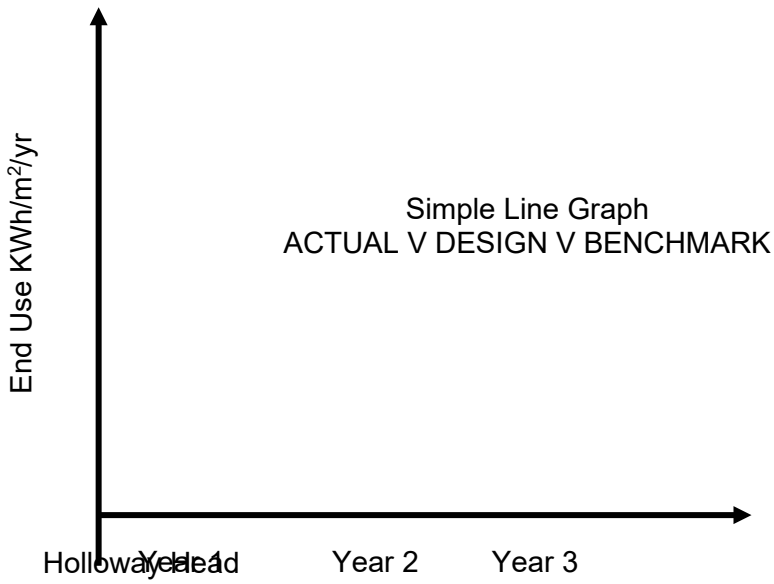
Energy end use comparison

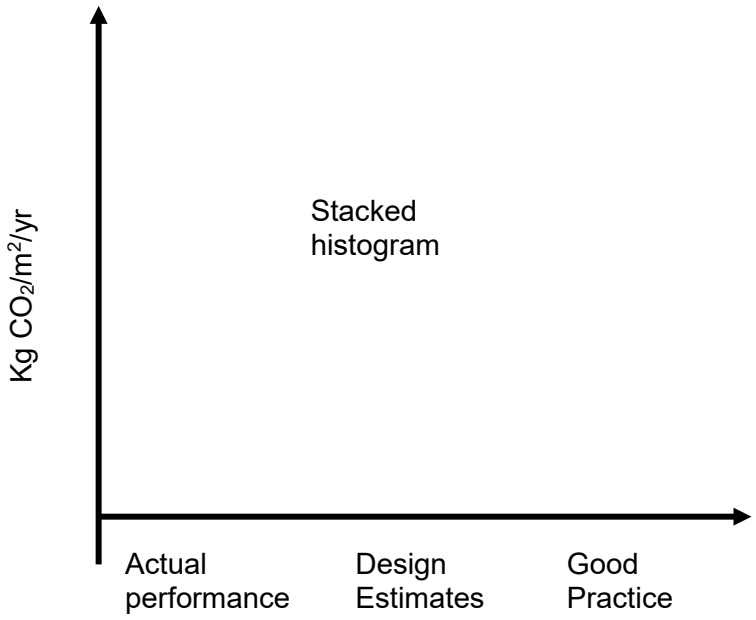
Annual summary of actual metered consumption per square metre and the design team's estimates versus benchmarks broken down by main end-uses. Examples of these calculations and tables are shown in Good Practice Guide GPG 348: *Building logbooks – a user's guide*. A copy is included on the CD-ROM associated with CIBSE TM31; printed copies are available from (www.energyaction.org.uk).

Building energy performance for period from *[date]* to *[date]* **Based on a treated floor area of *38015* m²**					
Fuel type	**Main end use**	**Actual** Metered incoming consumption ((Kw·h)/yr)	**Actual** Sub-metered main end use energy consumption ((Kw·h/m²)/yr)	**Design estimates** Main end use energy consumption (Kw·h/yr	**Good practice benchmark** Main end use energy consumption ((Kw·h/yr)
Electricity	Incoming				
	Lighting				
	Machines				
	General Power				
	Pumps & Fans				
	AC Heat & Cool				

Keep the fuels separate as they have different costs and CO_2 emissions

Historical Graph of End-Use Performance





References

a. *Energy efficiency in offices* Energy Consumption Guide ECG19 (Action Energy) (2000) (www.actionenergy.org.uk)

(2) *Energy Assessment and Reporting Methodology – Office Assessment Method* CIBSE TM22 (London: Chartered Institution of Building Services Engineers) (2003)

(3) *Building logbooks — a user's guide* GPG 348 (Action Energy) (2000) (www.actionenergy.org.uk)

11. System of Maintenance

Emergency maintenance action

Emergency Contact No. 1 **Emergency Contact No. 2**

Maintenance overview

The building is managed by a specialist maintenance contractor and they are responsible in ensuring the correct periodic and preventative maintenance regimes are followed to ensure correct plant and system operation.

Maintenance review

Review period ..... **Signed:**	**1. Are you reasonably satisfied with the maintenance on this system? (Yes/No)**	**2. Is this system capable of working in all the required modes? (Yes/No)**	**3. If not, is this due to poor maintenance? (Yes/No)**	**Comments/problems?** e.g. maintenance not carried out (give reason) Indicate any major changes to the general arrangement for maintenance including any changes in maintenance regimes or contracts
Above Ground Drainage				
Electric Panel Heaters				
Ambient Air Curtain				
Air Conditioning Unit				
External Condenser Unit				
Dampers (VCD's and Fire)				
Air Terminals & Louvres				
Main Office Toilet Extract Fan				
Water Management Procedures				

Rainwater Harvesting System				
Shower Unit				
Break Tank & Booster Set				
Cat 5 Break Tank & Booster Set				
Hot Water Heaters				
Zip Hydrotap				
Energy Monitoring Control System inc Water Leak Detection System				
Gas Installation				
Electrical Installation				
Fire Alarm				
Emergency Lighting				
Disabled Refuge				
Assisted Toilet Alarm				
EV Chargers				
Lightning Protection				
Lift				

Maintenance/plant failures

Facilities manager to insert a summary of any major plant failures and how these relate to the maintenance regimes or contracts. This should describe what happened, when, why and what action was taken to overcome the problem.

12. Major Alterations

Any major alterations made to the building, its services, its operation or management should be logged below, e.g. boiler replacement, BMS upgrade, changes in use, new management regime etc. Each change should be signed and dated by the facilities manager alongside the other page numbers of the logbook that have been updated/added to reflect the alteration.

Description of alteration	Other logbook pages updated or added	Signed	Date

13. Results of In-use Investigations

Defects liability work

Facilities manager to insert a summary of any major remedial work in the period between practical completion (handover) and the end of the defect's liability period

Post occupancy evaluations

Facilities manager to insert a summary of any post occupancy evaluations, e.g. investigations of energy performance and/or occupant satisfaction.

Surveys

Facilities manager to insert a summary of results from any maintenance, condition or energy surveys.

Appendix: Relevant Compliance and Test Certificates

This appendix should act as a focal point to hold copies of all relevant key certificates/test reports etc, including:

Please refer to mechanical and electrical operation and maintenance manuals Section 6 for all relevant commissioning and test results applicable to the main contract.