



iNTERCHANGE

CROYDON

TECHNICAL SPECIFICATION

SUMMARY SPECIFICATION

DETAILED DESIGN, MATERIALS & FINISHES

Occupancy

Means of escape	1 person/ 6m ²
Cooling/Heating	1 person/8.5m ²
Lifts	1 Person/10m ²
Sanitary provision:	1 person/10m ² (60% Male, 60% Female)

Divisibility

Maximum 3 tenancies per floor.

Planning Module

Module	1.2m
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Floor Loadings

Existing office floors	4+1 kN/m ²
Atrium floor	10 kN/m ²
Existing roof	7.5 kN/m ²
Atrium roof	0.6 kN/m ²

Floor Heights

Existing floor to floor	3750mm (average)
Raised floor zone	150mm overall
Floor to ceiling	2,700mm
Ceiling zone	500-520mm

Structure

Existing office floors	In situ concrete frame with in situ concrete floors on precast concrete soffit
Existing roof	In situ concrete
New atrium floor	In situ concrete
New atrium roof	Steel frame

External Finishes

Existing Elevations

Facing brick generally with granite base course, powder coated thermally broken aluminium windows / curtain walling.

Atrium Elevation

Anodised aluminium thermally broken silicon jointed curtain walling and external brise soleil.

Existing Roof

Insulated asphalt with concrete paviors and shingle.

Atrium Roof

High performance proprietary roofing system with double glazed thermally broken anodized aluminium roof windows.

Office Area Internal Finishes

Walls

Painted plaster finish.

Floors

600x600mm fully accessible encapsulated steel raised access floor system.

Ceilings

600 x 600mm clip in metal ceiling tiles with concealed grid and plasterboard perimeter margins. 600 x 600mm air grilles and linear slot diffusers.

Lighting

LG7 compliant 600 x 600mm recessed fluorescent fittings. Compact fluorescent downlights in plasterboard margin.

Doors

Full height laminate doors with vision panels and stainless steel ironmongery.

Reception Area Internal Finishes

Walls

Painted plasterboard finish. Double glazed thermally broken anodized aluminium frames with a mixture of silicone joints and aluminium caps - PPC frames with PPC cappings.

Floors

Porcelain stone tile and fitted pattern carpet over raised access floor system.

Ceilings

Painted plasterboard soffits and bulkheads with sound absorbing seamless ceiling.

Doors

Insulated double glazed manually operated revolving door with glass walls and anodized lid. Side doors double glazed with concealed frames.

Security

Key fob operated security system.

Toilets Internal Finishes

Walls

Painted plaster finish. Burlington slate feature panel.

Floors

Resin floor.

Ceilings

Painted plaster board.

Lighting

LED Spotlights.

Doors

Full height laminate finish doors with stainless steel ironmongery.

Basins

Bespoke solid surface wash trough. PIR operated chrome steel taps.

Hand Dryers

Stainless steel.

Mirrors

Mirrors to wall over trough with full-height mirrors on end walls.

Cubicles

Full-height proprietary cubicle system with high gloss laminate finish. Fully accessible matching laminate finish IPS panels.

Changing / Shower Areas

Walls

Painted plaster finish. Burlington Slate feature panel.

Floors

Non slip vinyl floor.

Ceilings

Lay-in grid mineral fibre suspended ceiling.

Lighting

Compact fluorescent lights.

Doors

Laminate finish doors with stainless steel ironmongery.

Basins

Bespoke solid surface trough. PIR operated chrome steel taps.

Hand Dryers

Stainless steel.

Mirrors

Mirrors to wall over wash-trough and full-height mirrors on end walls.

Cubicles

Full-height proprietary cubicle system with high gloss laminate finish. Fully accessible laminated IPS panels.

Showers

Ceramic shower tray, with ceramic led walls and polished chrome shower head with recessed controls. Frosted glass shower door.

Entrance Lobbies and Lift Lobbies Internal Finishes

Walls

Painted plasterboard finish.

Floors

Porcelain stone tile.

Ceilings

Painted plasterboard.

Lighting

Compact fluorescent light fittings.

Doors

Full-height laminate finish doors with full height vision panels and stainless steel ironmongery.

Lifts - Internal Finishes

8 ten person lifts serving ground to 9th floors

3 lifts serving the basement car park – one for each core

3 lifts with top-hat section capable for use as a goods lift – one for each core

Walls

Coloured glass cladding to side walls and mirror to rear wall. Full-height stainless steel control panel.

Floors

Porcelain stone tile finish.

Ceilings

Painted steel panel with compact fluorescent light fittings.

Illumination Levels

Offices	350 lux
Reception Area	250 lux (plus feature lighting)
Lobbies	200 lux
Toilets	200 lux
Security Room	400 lux
Car Parks	75 lux
Plant Rooms	200 lux

Mechanical Installations

Office areas to be heated and cooled by reverse cycle VRF system located within the ceiling void.

Incoming Services

Electrical supply	2.4 MVA
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Design Parameters

External Temperatures

Summer	32°C db (Max 37°db)
Winter	-5°C db (Saturated)

Internal Temperatures

Heating and cooling to offices and reception areas

Summer	23°C +/- 2°C
Winter	21°C minimum
Toilets (heating only)	20°C
Staircases	16°C

Security Room

Summer	24°C +/- 2°C
Winter	20°C minimum
Plant rooms	Unheated

Cooling Load Conditions

Typical office	25W/m ² net office space
Office lighting	10W/m ² net office space
Reception lighting	9W/m ² net office space
People	10W/person
Ventilation	12l/s per person

(based on 1 person/10m² net lettable space).

Energy Efficiency Measures

- Automatic lighting control to offices and cores
- Zone by zone heating/cooling control
- Solar shading to the main entrance reception area
- On/off PIR sensors to taps

Facilities

Showers and WCs in basement
60 Cycle racks

Security

CCTV surveillance provided to the following areas:

- External perimeter plus entry and access points to car park
- Points of entry to the individual office buildings
- Reception area around lift lobbies

Access control provided to the following areas:

- Reception entrance
- Car park entrance
- Reception pass gates
- Base of escape staircase
- Lifts enabled for future card control

Car Parking

418 secure car parking spaces.

Technical Pack

A full technical pack is available on request.

REVIEW OF BUILDING SERVICES INSTALLATION

TENANT SPECIFICATION

The following information expands upon Hamilton Architects Tenant Specification reference 12-002 dated 6 July 2012.

1.0 Incoming Services

1.1.1 Electrical

Electrical Supply - 2.4MVA which is sub-divided across the buildings, and car park, as follows :

	Building 1	1000kVA (1250kVA transformer)
	Building 2	750kVA (1000kVA transformer)
	Building 3	650kVA (1000kVA transformer)
Life Safety Generators	Building 1	100kVA
	Building 2	100kVA
	Building 3	100kVA
	Car Park	350kVA
Space for tenant Generators	Building 1	Up to 500kVA at rear car park level
	Building 2	Up to 500kVA at roof level
	Building 3	Up to 500kVA at roof level

1.1.2 Water

Common metered water supply feeding buildings 1, 2 and 3.

1.1.3 Gas

Common metered gas supply feeding buildings 1, 2 and 3 boiler house

1.1.4 Telecoms

Two points of entry to site linked to building 1, 2 and 3 IT risers via high level lower ground floor containment.

Telecom providers known to operate in the immediate vicinity include BT, Cable and Wireless and Virgin

1.1.5 Heating and Cooling

For base build design parameters refer to Hamilton Architects specification summary.

Offices

Heating and cooling will be provided to office areas by way of a reverse cycle 3 pipe VRF system. The system will consist of heating and cooling fan coil units located in the office ceiling voids discharging treated air to the office space via ducted connections to slot diffusers to the perimeter areas and by square diffusers to the central zones. Return air to fan coil units will be through the ceiling plenum via a combination of unused perimeter slot and dedicated return air grilles. Fresh air will be ducted directly to the fan coil unit intakes.

Fan coil units have been installed to an open plan arrangement respecting the existing imperial grid. Fan coil units are installed typically every 30-36m² to the perimeter zones and 70-80m² to the inner zones. Fan coil units provide multi speed control. Fan coil units provide heating and cooling independently.

All fan coil units will be provided with a combination of pumped and gravity drainage.

VRF condenser units are located at roof level. The condenser units are provided on the basis of one dedicated system per building per floor.

VRF controls are arranged to provide building, floor, zone and individual room controls. The initial installation is provided for open plan use but with the flexibility to provide additional control should the tenant so desire. VRF batch and central controllers will be interfaced via an open protocol platform to allow soft connection to the central building management system.

The VRF system control will provide direct control of the tenants office area including local temperature sensors located in the return air path of the individual units giving autonomy and flexibility to cellularise the office space. The sensors will incorporate coiled cable lengths enabling remote location if so desired

1.1.6 BMS And Energy Management

A fully integrated HVAC automatic control system is provided including head end PC and system graphics.

An automatic environmental control system provides full automatic control using Direct Digital Control (DDC) software based microprocessor controls throughout, utilising Native BACnet or Trend products complete with software as required..

The controls systems shall be designed to allow the future integration of a fully integrated BMS control system with facility to monitor all mechanical services installations through a central supervisor with bespoke menu driven graphical interfaces.

The outstations have inherent spare capacity to allow the Integration of future Tenant CAT B systems is so desired.

All metering within the building provides a link to the BMS for remote monitoring and scheduling. Refer also to 2.4.12.

1.1.7 Lighting

Office Areas

600 x 600mm high efficiency, micro-prism luminaires complete with addressable high frequency control gear. Luminaires set flush in ceiling system for open plan areas. Luminaires selected to contribute to achieving compliance with CIBSE LG7 on completion of the Category B works. Office luminaires will be provided with integral emergency lighting to meet the Category A open plan arrangement.

Luminaires provided with addressable controls which are arranged to provide corridor and area switching in a Category A open plan arrangement. Movement and daylight sensors are provided to provide local Category A level occupancy control and maintain luminance. The lighting control systems will provide the ability to control groups of luminaires in office areas by the use of manual switches, movement detection, daylight sensing and time scheduling. When installed, luminaires can be load shed on receipt of relevant signals from standby generators. The lighting control will be expandable to accommodate Category B cellularisation.

Tenant Storage Areas

Where space is provided for tenant storage high efficiency high frequency utility lighting will be provided.

Lighting will be controlled by local manual switches with movement detection override.

1.1.8 Fire Alarms

Common Parts

The fire alarm system for the building will be a Category L2 type with the main fire alarm panel being located within the lower ground floor security room and repeat facilities located in the reception area.

Fire telephones will be provided at all refuge points on the escape staircases and within the car park.

The fire phone exchange panel will be located in the lower ground floor security control room with repeat facilities at the reception desk.

Office Areas

Open plan office floors will be provided with automatic detection to escape routes, areas adjacent to escape routes, normally unoccupied areas or areas of increased risk. Manual break glass units will be provided at all points of exit from the office floors. Fire alarm wiring loops will be provided with 25% spare capacity to allow Category B fitting out.

Tenant Storage Areas

Where space is provided for tenant storage areas will be provided with automatic fire detection.

1.1.9 Security

CCTV

Common Parts

CCTV surveillance will be provided to the following areas :-

- External perimeter
- Points of entry to the car park
- Car park access routes
- Points of entry to the individual office buildings
- Reception area around floor lift lobbies.

CCTV control, monitoring and recording facilities will be located in the lower ground floor security room with repeat facilities to the reception desk.

Office areas

Office area CCTV systems will be provided by the respective tenants.

Tenant Storage Areas

Storage area CCTV systems will be provided by the respective tenants

Access Control

Common Parts

Access control will be provided to the following areas :-

- Reception entrance
- Car park entrances
- Reception pass gates
- Base of escape staircases
- Lifts enabled for future card control

The access control system will be controlled and monitored from the lower ground floor security control room.

Office areas

Office entrance doors will be wireway enabled for the future installation of access control systems by the tenants.

Tenant Storage Areas

Storage area access control will be provided by the respective tenants.

Security Detection and Alarm

Common Parts

Security detection will be provided to all external points of entry.

The security detection system will be controlled and monitored from the lower ground floor security room with repeat facilities at the reception desk.

Panic Alarms will be provided at the reception desk and lower ground floor security control room. – A provisional sum is included for a Panic Alarm system in the Car Park

Induction loop assistance will be provided at the reception desk.

Office Areas

Office area security detection systems will be provided by the respective tenants. **Tenant Storage Areas**

Storage area security detection systems will be provided by the respective tenants.

1.2.0 Telecoms

Common Parts

Telecommunication connections will be provided to the following systems :-

- Passenger lifts
- Fire alarm system
- BMS system
- Security room
- Reception desk
- Statutory authority metering

The lift telephones will also be connected to the lower ground floor security control room.

Office areas

Two points of entry are being provided for telecom services at lower ground floor level. Primary containment routes will be installed from those entry points linking to IT risers located within buildings 1, 2 and 3. IT risers will be provided with 2No. 450mm cable trays for tenants incoming primary IT distribution. Containment will be extended from the vertical cable trays to the tenants raised floors immediately adjacent to the IT riser. All other horizontal containment will be provided by the respective tenants. It is assumed that all tenants private tertiary IT wiring will be contained within the tenants demise.

1.2.1 Green Solutions/Carbon Savings.

There are a number of aspects of the design which contribute towards the green credentials of this building;

1. The use of 3-Pipe VRV/VRF systems utilising heat recovery
2. Invertors on the main ventilation plant to match actual requirements thus optimising system performance
3. Plant selected to achieve lower energy consumption, in line with the EPC target for the BREEAM credits to achieve 'Very Good'
4. Ductwork system designed to achieve lower energy consumption by targeting low specific fan power.
5. Heat recovery systems integrated into air handling plant allowing supply and extract systems to achieve high heat recovery efficiencies
6. Passive solar control utilising bris soliel and solar performing glazing in the new Reception/Atrium.
7. Proximity control, photo cell/daylight responsive control and dimming on lighting systems.
8. LED Lighting in lifts
9. Increased metering to meet BREEAM requirements and the letting strategy.
10. Water Leak Detection and shut off valves in compliance with the BREEAM credit.
11. Low Water Flow Taps on basins

1.2.2 Energy Metering

Common Parts

Statutory Authority Supplies

Electricity, gas and water services are metered at the point of entry. Meters to be complete with digital outputs for centrally monitoring and recording.

Central Plant and Load Centres

Major central plant, motor control centres, main distribution boards and lifts will be locally metered. Meters to be complete with digital outputs for centrally monitoring and recording.

Office Areas

Metered power supplies will be provided to all tenant floors in buildings 1, 2 and 3. Meters will record energy consumption of the followings items :-

- Small power supplies
- Lighting
- Demised toilet and lobby areas
- Fan coil units
- Remote air conditioning condenser units

Meters to be complete with digital outputs for centrally monitoring and recording.

Plant extend facilities will be provided at the BMS head end. Should tenants require extended plant operations this will be provided by request to the building management. Extended plant operation will be recorded and billed against the requesting tenant(s).

All meters will be networked to a central meter monitoring and recording system which will be able to demonstrate load profiles, trends and provide billing to tenants. All meters will be to certificated standards.

Energy performance of the building will be displayed in the reception area.

1.2.3 Additional Tenant Facilities

The following facilities are provided to allow flexibility in the Category B fitting out of the office floors :-

- Drainage and water service stub connections for kitchenettes, shower facilities etc.. 1No location per building per floor.
- Provision to change defined rear elevation windows to louvres for future floor by floor plant installations. 1No location per building per floor.
- Established routes and plant space for tenant server rooms
- Space for tenant standby generation

1.2.4 Vertical Transportation

Vertical transportation of people and goods will be undertaken by 8No. lifts located within the three main cores. The lift installations will be all new and will comply with all relevant British and European standards, Building Regulation and BREEAM requirements. The lift installation will produce a 'good' level of service as defined by CIBSE standards.

Individual building arrangements as follows :-

Building 1

3No. 13 person 1000kg MRL lifts operating at a contract speed of 2.0m/s. Lifts travel from lower ground floor to level 9.

Building 2

3No. 13 person 1000kg MRL lifts operating at a contract speed of 2.0m/s. Lifts travel from lower ground floor to level 9.

Building 3

2No. 13 person 1000kg MRL lifts operating at a contract speed of 2.0m/s. Lifts travel from lower ground floor to level 9.

Goods Movement

1No. lift in each group will be enabled for goods movement. Provision will be made for lift curtains and top hat sections.

1No. lift in each group is designated as a 'firemans' lift.

All lifts will be enabled to accept future access controls.