

IT'S ALL IN THE DETAILS

STAGE 3 DESIGN TECHNICAL SPECIFICATION

Operational carbon emissions: Refurbishment vs Base Build

In refurbishing Embarq, we have saved approximately 140 tonnes of CO2 per annum when compared to the existing building. This represents a yearly carbon emission savings of 65% or the equivalent of:

- 16000+ trains from Bristol to London per year
- 900+ flights from London to Paris per year
- 46+ billion short emails per year!

Sustainability features

- Rapid electric vehicle charging
- Low water use appliances
- Automatic lighting controls with presence detection
- Excellent cycling facilities
- Central mechanical ventilation with heat recovery and air filtration
- Exposed concrete soffits designed to act as a heat sink - reducing cooling or heating loads

Cycling facilities

- 200 cycle spaces
- 200 lockers
- Drying room
- 20 showers
- Designated male and female changing rooms

Car Park

- Secure basement car parking with 50 car spaces (ratio 1:2,000 sq ft)

Ceiling height

- Raised floor to slab height of 3.34m (raised floor to underside of services 2.88m)

Occupancy

The building has been designed to achieve the following standards:

- Means of escape 1 per 6 sq m for open plan office spaces
- Occupational density 1 per 10 sq m
- Sanitary Provision: Male, female and accessible provisions to each floor

Lifts

- 4 x 1000kg 13 person lifts travelling between ground floor and all office levels (2 x also travelling to basement level)
- 1 x 1000kg 13 person good lift

Stair cores

- 5 x stair cores serving the floors

Lighting

The design of the internal lighting is in accordance with best practice guidance in the following documents:

- CIBSE lighting Guides
- BS EN 12462-1 light and the lighting of workplaces
- BCO guide to lighting – Best practise for Lighting Offices
- SLL code for lighting

Lighting levels as follows:

- Entrance 300 lux
- Offices 300 lux
- Showers/changing rooms 150 lux
- Cycle Store 100 lux

Lighting will be new efficient LED's with presence and absence detection, reducing the energy consumption and time spent with lights illuminating un-occupied spaces.

The design of the emergency lighting is in accordance with the best practice guidance contained within BS 5266-1:2011 and CIBSE lighting Guide LG12.

Emergency lighting is provided to maintain specified illuminance levels for a minimum period of 3 hours.

Lightning Protection

An existing lightning protection system is present in the building. This will be retained and adapted so that all new equipment and structure will be bonded to the existing system.

Fire Protection

The basement car park, changing facilities and cycle storage will be provided with sprinkler protection served by a sprinkler main.

Fire Detection

The building is provided with an L2 category fire alarm system. All new fire alarm equipment will comply with BS 5839-1:2017.

Comfort Cooling and Heating

The building has been decarbonised with the removal of the gas boilers and replacement with all electric efficient Variable Refrigerant Flow (VRF) systems for heating and cooling.

The heating and cooling of the office levels are provided by an R32 VRF air conditioning system designed to facilitate a future tenancy split if required. Heating and cooling is provided to the office space via horizontal soffit mounted fan coil units, secondary ductwork and grilles. Each VRF system consists of indoor fan coil units

Comfort Cooling and Heating (cont.)

and grilles, outdoor condenser units, interconnecting pipework and associated wiring and controls.

The heating and cooling of the atrium area is also provided by an R32 VRF air conditioning system

The end of journey facilities are heated by electric powered underfloor heating.

Ventilation

The building is mechanically ventilated using six roof mounted AHU's. The AHU's incorporate an internal heat pump and heat recovery to heat and cool the supply air to a neutral supply temperature. The System is CO2 controlled reducing system energy usage when on floor CO2 is low. Air is supplied on the tenant floors through soffit mounted primary air ductwork.

Ventilation Rates are as follows:

- Offices 14 l/s based on an occupancy of 1 person per 10 sq m
- Toilets and showers 8 l/s per cubicle

Acoustic Criteria

Mechanical plant is selected to achieve NR37 in the office and reception

areas. NR 40 shall be achieved for WCs with lift lobbies and circulation areas achieving NR45.

All plant is located on the roof within an enclosure, thus reducing the noise impact to the surrounding environment.

Windows and curtain walling

New high-performance double-glazed windows throughout alongside retained solar shading to reduce solar gains and improve tenant comfort. These windows will boast a reduced G-value of 0.37 which is a significant improvement over regulation requirements, further reducing heat gains and the energy demand on the buildings cooling system.

Cold Water Provision

Cold water is provided via a packed booster set / break tank arrangement to allow the minimum pressure requirement.

Hot Water Provision

Hot water to the showers and changing facilities and common area WC's is provided by point of source low flow rate electric water heaters. Along side water leak detection and low flow rate appliances, water consumption is greatly reduced.

Access Control and CCTV

New access control system with Smartphone app-based compatibility to allow occupants to use their smartphones instead of fobs.

Design in accordance with BS EN 50133-1 and BS EN 50133-7.

New CCTV system. Design, installation and maintenance shall be completed by a NSI Gold approved company to BS 7958

Finishes: Reception

Floors

Woven flooring.

Wall finish

Timber wall panelling detailed throughout the entrance foyer walls continuing to the atrium space. Existing atrium curtain walling to be refinished.

Ceiling Finishes

Exposed concrete soffits and services to reception area.

Lighting

Exposed concrete soffits complemented by feature and linear track lighting throughout the reception spaces

Fixtures

Large reception area containing bespoke reception desk. The reception will also include a bespoke

coffee point with bespoke joinery creating informal meeting / working areas and soft seating.

Finishes: Internal Office Areas

Floor Finishes

Main workspace areas have raised access floors.

Wall finish

Plasterboard painted white matt finish.

Ceiling finish

Exposed services and existing concrete soffit. Waffle grid ceiling raft to main core and atrium perimeter.

Doors and architraves

Combination of new and refurbished door finishes to coordinate with new building material palette.

Skirting

Coordinated painted skirtings to match wall finishes.

Lighting

Linear lighting coordinated with exposed services.

Finishes: WC/Shower Finishes

Floor finish

Ceramic tiles to new shower and WC areas.

Wall finishes

Combination of ceramic tiling, bespoke joinery and feature painted walls.

Ceiling Finish

Combination of exposed services and plasterboard in white matt emulsion finish.

Sanitary Ware Fittings

- Newly installed shower kits.
- Clear glass shower screen.
- WC with automated flush detail.
- Above wash hand basins have bespoke mirror frames.
- Accessories include wall feature colour hand dryer, straighteners integrated tap and soap dispenser

Lighting

Combination of exposed and recessed light fittings.

Ventilation

The shower, changing and drying room areas are mechanically ventilated.