

SPECIFICATION

This specification describes the shell and core, Category A fit out and engineering services for Mitre Building.

1.0 KEY CRITERIA

1.1 Office floor to ceiling height

From finished floor level (150mm raised floor level) to the underside of the ceiling tile is 2.85m.

1.2 Floor to floor heights

Ground Floor – 6.270m
All other floors – 3.955m

1.3 Structural grid

The building is based on a 15m x 6m typical structural grid.

1.4 Planning grid

The building has a 1.5m planning grid.

2.0 BUILDING FABRIC

2.1 Superstructure

The superstructure of the building is steel frame with three concrete stability cores located along the northern elevation of the floor plate.

2.2 External façades

External façades have a unitised cladding system, the frames of which are finished with polyester powder coated aluminium panels and caps, with a blue/grey colour glass. There are no opening façade sections except for smoke vents that can be opened by hand.

3.0 FINISHES

3.1 Entrance lobby, reception and ground floor lift lobby

The floors are finished in porcelain tiles. The walls and ceilings are finished with painted plasterboard and incorporate feature lighting. A reception desk is installed.

3.2 Passenger lift car

Schindler stainless steel.

3.3 Toilets in central core

Toilet floors are finished in porcelain tiles with 100mm porcelain tile skirting and painted plasterboard above.

3.4 Shower and changing area finishes

Walls and floors are finished in porcelain tiles with 100mm porcelain tile skirting and painted plasterboard above.

3.5 Toilets and shower rooms

Each floor is served by seven WC's and one disabled WC. Five showers are provided at mezzanine level and there is an additional disabled shower at ground level. There are 58 lockers.

4.0 SERVICES

4.1 Mechanical and public health services

4.1.1 Office air conditioning

The offices are provided with heating and comfort cooling utilising an active chilled/heating beam installation for perimeter office zones and cooling only active chilled beams to internal office zones.

4.1.2 Reception – heating and comfort cooling

The reception area is provided with heating and comfort cooling utilising under floor heating and cooling systems via the ground source cooling system and associated heat pump unit.

4.1.3 Chilled water installation

The air conditioning system is served by high efficiency roof mounted air cooled chillers, supplemented by a ground source cooling system.

4.1.4 Low pressure hot water (LPHW) installation

The heating is served by a high efficiency boiler plant located in a roof level boiler house. All associated pumping equipment is in the boiler house.

4.1.5 Primary ventilation

Fresh air is supplied to the office space from air handling units located at roof level.

4.1.6 Office smoke extraction

Smoke extraction is provided by:
— Natural smoke vent openings in the façade.
— The fire-fighting core is provided with an automatic natural smoke vent at the head of the stair.

4.1.7 Toilet and shower change area ventilation

The office toilets on each floor level are mechanically ventilated by dedicated extraction systems.

4.1.8 Automatic control system

A networked Direct Digital Control (DDC) system consisting of networked intelligent DDC controllers located in plant control panels control and monitor central plant and equipment.

4.1.9 Cold water services

A metered incoming water main (rated adequately to supply the building's water consumption) is provided.

4.1.10 Domestic hot water services

The domestic hot water generation is by means of a ground source heat pump system combined with a direct gas fired water heater.

4.1.11 Soil and waste system

The soil and waste system serves all sanitary fittings, mechanical equipment, floor drains and any future tenant tea stations and vending points.

5.0 ELECTRICAL SERVICES

5.1 Design criteria

This section sets out the principal design parameters applicable to electrical services installation.

5.1.2 Power

In addition to the solar and transmission loads, the supply air quantities, equipment and refrigeration duty is designed for the following internal loads:

Lighting	12W/m ²
Tenants small power	25W/m ² + 10W/m ² Spare in risers
Toilets and cleaner rooms	200 lux
Stairways	100 lux at tread
Lobbies	200 lux
Reception areas	300 lux and feature lighting
Car park	150 lux

5.2 SERVICES DESCRIPTION

5.2.1 Intake and LV distribution

The building is served by a Distribution Network Operator's 11kV switch room for the incoming electricity supply, which is metered.

5.2.2 Standby generator

The base building generator is a lifesafety only unit supporting the smoke ventilation, sprinkler pumps, fire alarms and fire fighting lifts. Space at roof level and in risers is allocated for tenants' standby generator or uninterrupted power supply (UPS) systems.

5.2.3 Small power installation

A distribution board is provided in each riser cupboard for tenants to provide small power to desks etc.

5.2.4 Internal Lighting Installation

The lighting design uses the principals set out in LG3 and LG7 based on the use of Class 1 PC monitor screens with positive polarity software.

Tenants may need to carry out their own assessment of each workspace to establish the need for any supplementary lighting if full compliance with LG3 and LG7 is required.

5.2.5 Emergency lighting installation

Emergency lighting is incorporated into the standard luminaires using suitable emergency units with 3-hour battery backup to drive a single lamp. Local test key switches are provided for all emergency lighting circuits.

5.2.6 Fire alarm installation

A multi-loop addressable voice fire alarm system is provided to give coverage of each potential tenant/demise together with the common landlord areas with a fire alarm panel installed in the ground floor entrance/reception area.

5.2.7 Wire ways for telecommunication

Sealed cable entry ducts are provided to the building. A cable tray is provided from the duct location to the communications riser positions and up the risers to serve each floor of the building.

5.2.8 Security/access

A CCTV system is installed to monitor the ground floor entrances, parking area and loading bay. Card-reader access control to car park and service area door is provided. Conduit way containment for installation of tenant office floor demise door security systems is provided.

6.0 LIFTS

6.1 Passenger lifts

5 x 13 person electric traction, machine room-less passenger lifts to serve ground to eleventh floors inclusive, are provided. These give an interval time of less than 30 seconds with a 5 minute up-peak handling capacity of greater than or equal to 15%, as specified in CIBSE Guide D. The lifts have a rated speed of 1.6m/s. The entrances have 1100mm clear opening width and a 2-panel centre opening configuration.

6.2 Goods lift

A 2,000kg capacity goods lift is provided to serve ground to eleventh floors inclusive.

6.3 Fire lift

One of the five passenger lifts also functions as a fire lift.

7.0 ENERGY STRATEGY

The building meets the highest benchmarks for energy performance and offers a new model for best practice. The energy strategy delivers a reduction in the building's carbon emissions:

- By a high level of passive energy control resulting in reduced heating, cooling and lighting demands.
- Through the incorporation of energy efficient plant driven by intelligent building controls allowing energy savings by providing high levels of energy conservation and recovery.
- By using ground-source energy systems to further reduce building energy requirements

The buildings' environmentally sustainable characteristics include:

- Use of low carbon ground-source cooling, heating and domestic hot water.
- High efficiency, intelligent lighting controls.
- Energy-efficient active chilled/heating beams.
- High efficiency condensing gas boilers.
- Certified as BREEAM Excellent (2006)
- Flexibility for future connection to a district-wide low or zero carbon energy system such as Combined Heat and Power (CHP).
- Water conservation measures including rainwater harvesting for flushing toilets.
- A building management unit that enables comprehensive reporting and management of energy and water use.