



Scope of Works

At

2nd, 3rd and 4th Floors

Apex House

Cathorpe Road

Edgbaston

Birmingham

For

Big Lottery Fund

Aecom Ltd

6-8 Greencoat Place

London

SW1P 1PL

www.aecom.com

+44 (0) 207 798 5000

Prepared by P. Hammond

Date 31st May 2016

Rev A - 5th July 2016

1.0 INTRODUCTION

This document sets out the outline design scheme and layout proposals for a Cat A and Cat B fit-out of the space for the 2nd, 3rd and 4th floors.

The 2nd floor is to be sub-divided into 2 separate demises. The building services are to be designed and installed so the 2nd floor is operated and metred as 2 separate demises

Brief Project description

The proposals set out in this document and all supporting documents are to provide Big Lottery Fund with new office space.

2.0 GENERAL OUTLINE SCOPE OF WORKS/FINISHES

2.1 Structural

We do not see the need for any structural engineering works under these works.

2.3 Specialist Areas

The following specialist areas will be detailed in due course

- Meeting Room finishes
- Kitchen joinery

2.4 Ceilings

The ceilings are to be replaced with a matching ceiling system as the existing.

2.5 Blinds

The existing blinds are to be retained.

2.6 Flooring and Floor finishes

Floor finishes details to be issued in due course

- General Office areas – carpet tiles
- Kitchenette – suitable sealed flooring
- Comms Room – as existing

2.7 Decoration

Details of decorations to be issued in due course

Engineering Building Services

Index

- 1.0 Base Building Specialist Contractors
 - 2.0 Fit out contractual route for the Building Services
 - 3.0 Design Parameters
 - 4.0 Validation of the Existing Air Conditioning and ventilation systems
 - 5.0 Fit out construction works
 - 6.0 Scope of works for the Building Services
 - 7.0 Electrical Services
 - 8.0 Mechanical Services
 - 9.0 Fire & Life Safety
 - 10.0 Public Health Services
 - 11.0 Ancillary Services
 - 12.0 Commissioning & Handover
-

1.0 Base Building Specialist Contractors

The fit out contractor will be required to use the following base building specialist contractors, as shown in the schedule below.

System	Contractor
Comms room fire suppression systems	Details to be provided t BLF
Fire Alarms	Details to be provided t BLF
BMS	Suitable open protocol Trend compatible system

2.0 Fit Out Contractual Route for the Building Services

The contractual route building services will be a 'design apportionment' for the building services of the main contract.

This report forms the basis of 'Employers Requirements' for the Building Services Installation

The Main Contractor/M&E contractor will be responsible for:

- Design
- Design Intent drawings
- Working and installation drawings
- Technical Standards of Material Workmanship
- Commissioning
- Operating and Maintenance Manuals

Information will be provided by the contractor for approval by the client. He will then carry out the installation.

On completion the building services contractor will be responsible for commissioning building services.

Following handover of the floor to the client the contractor will provide within 20 days record drawings and O&M manuals as specified. Details of which are outlined within the document.

3.0 Design Parameters

The following design parameters are to be used:

Outside Air temperature	Winter	-4°C
	Summer	28°Cdb / 20°Cwb

Internal Air Temperature	Winter	21°C +/- 2 °C
	Sumer	22°C +/- 2 °C

Internal Heat Gains

Occupancy	1 person per 10m2	90 w/m2 (Sensible) 37 w/m2 (Latent)
Lighting		15 w/m2
Equipment		25 w/m2

Occupancy Density

Design occupancy	As shown on the architects drawings
------------------	-------------------------------------

Fresh Air ventilation Rates

The existing fresh air volumes are to be proportioned across the floor.

Specific air volumes will be required as follows:

Meeting room	16 person	Fresh air for 12 at 10 litres/ second
	14 person	Fresh air for 10 at 10 litres/second
	12 person	Fresh air for 9 at 10 litres /second
	8 person	Fresh air for 8 at 10 litres/second
	6 person	Fresh air for 6 at 10 litres/second

Specific Ventilation Systems

Kitchenette extract	10 A/C per hour	Local extract discharge into landlord extract system
Copy/Print	10 A/C per hour	Utilising the landlords base build extract. Or discharge via local extract system and extract fan discharging into the bell mouth of the landlords office extract ductwork
Comms Room		No works proposed to the Comms Room

Lighting Levels

Office Areas	350 lux
Conference/Meeting Rooms	500 lux
Kitchenette	350 lux
Photo Copier Areas	350 lux
Roller Racking	350 lux – on the vertical face of the racking
IT Support	500 lux

4.0 Validation Exercise

The following validation checks are to be carried out by the Mechanical and Electrical Sub-contractors. Their results will be shared with the Landlord.

- Measurement of Chilled water flow rates and pressures
 - Measurement of heating water flow rates and pressures
 - Water quality checks to heating and chilled water systems
 - Measurement of Fresh air supplied to the floor
 - Measurement of Extract air extracted from the floor
 - Measurement of the kitchenette extract
 - Fire Alarm operation
 - Electrical testing of the LV panels
-

5.0 Fit Out Construction Works

During the construction works the contractor will respect that the building is occupied. Noisy works are to be carried out, out of normal working hours.

In addition to this is requested to ensure that Fire and Life Safety procedures are adhered to at all times.

With regard to the fire alarm, it is to remain operational. We will be requiring the following:

Fire Detection & Alarm System

During the day the fire alarm/smoke detection system will be isolated onto the floor. The contractor will be responsible for maintaining a fire watch during his working period. At night/weekends the existing fire alarm will be re-instated.

6.0 Description of Fit out Works

The fit out works for the office floors will include:

- Electrical Small Power
- Lighting
- Emergency Lighting
- Lighting controls
- Air conditioning, including fresh air and extract ventilation
- Air Conditioning Controls
- Fire alarms
- **Security**
- Domestic Water Services
- Public Health

7.0 Electrical Services

Electrical Small Power

The electrical services will include:

Existing Installation

The existing distribution boards are to be reused.

The existing underfloor bus bar system is to be reused

The connections from the existing underfloor bus bar to floor boxes are to be removed and disposed of where they are not required.

Existing cleaner's sockets will be retained,

All existing circuits that are to be retained are to be tested for compliance.

Existing Comms Room Power supply

There are no proposed works to the Comms room

IT Build/Support

IT Build/Support will be provided with dado power/data outlets on two walls of the partition space; wall outlets (6 number on each wall) are to be installed.

General Office Power

Electrical power to the desks will be via grommets.

Meeting rooms and communal areas will be provided with floor boxes, these will contain 2 electrical switched power outlets and 4 data outlets. A wall mounted double socket outlet will be provided at approximately 1700mm above FFL and another double socket outlet at 600mm above FFL to each meeting room for AV use.

Communal breakout areas and ad hoc meeting areas will be provided with floor boxes, these will contain 2 electrical switched power outlets and 2 data outlets

Copy/Print Rooms

Copy/Print will be provided with dado power/data outlets and wall outlets for photo copy equipment.

Kitchenette/Tea point

Specific switched socket outlets will be provided for the appliances (i.e. dishwasher and fridge/freezer and hot water boiler). 2 sets of Double switched socket outlets will be located at work top level for general use, ie microwave.

Lighting and lighting Controls

Existing light fittings are to be removed and disposed of.

The existing lighting circuitry is to be retained and modified as follows:

- Office Areas – Presence detection is to be installed and zoned – approximately 10m x10m with daylight linking.
- Meeting Rooms -

14 person	Scene setting
12 person	Scene Setting
8 person	On/off switching
6 person	on/off switching

Quiet Rooms

Two lighting options are to be considered:

Option 1 – Normal office lighting with diming/scene setting control

Option2 – Normal office ceiling lighting (with on/off switching) and alternate low level 'table lamp' switched from the door, adjacent to the general light switch.

The lighting to the 'Quiet Room', is to be '6k LED Panel 5 (Flicker Free version)' would satisfy his lighting requirements.

Design Note:

This product is used specifically in a special needs college we partner with and has been found to overcome of the problems persons with Asperger's Syndrome normally experience.

Where meeting rooms include moveable partitions the lighting controls are to be linked, via a micro switch on the moveable partition so the lights can be controlled at any of the light switches.

Lighting control modules to be installed and zoned.

Local presence detection will be provided to the following rooms:

- Kitchenette room
- Filling room
- Store

- Copy/print
- Individual offices

All new light fittings are to LED fittings - 'warm white' lamp colour temperature to be 4000K.

All fittings to be high frequency DALI electronic control equipment.

Light fittings will be provided with 'return air path' to assist the air conditioning installation.

New lighting will be installed throughout the floor. Fittings will be selected to suit the requirements of the various areas.

Feature lighting is to be installed in the following areas:

- 4th floor meeting suit – ie 4 number rooms
- Kitchenette – pelmet lighting is to be installed under the high level cupboards

Emergency Lighting

Emergency lighting will be installed to suit the partitioning.

Emergency lighting will utilise 3W non maintained LED, 3 hour standalone units, along with illuminated 'exit' signage. Units to be provided with EMPRO ballasts to provide future monitoring and testing facilities on the fittings.

Emergency lighting will be installed to all cellular rooms to provide achieve the lighting levels required to escape the building. The emergency lighting will be designed in accordance with BS EN 1838 (BS5266, Part 7-1999)

Data Cabling

~~The data cabling works will be carried out by the Big Lottery Funds IT department.~~

New data cabling is to be installed throughout the offices. The scope of works for the data cabling is to be defined by the Big Lottery Funds IT Department.

Audio Visual Installation to Meeting Room

The meeting rooms will be provided with AV equipment.

A specialist contractor will carry out these works. Electrical power and containment systems will be defined by the AV specialist.

Speakers and Microphones within Meeting Room

Ceiling and wall mounted speakers will be installed in the suited meeting rooms, where the walls are moveable. There will also be microphones, these will either be ceiling or table mounted.

A specialist contractor will carry out these works.

Data cabling between computer and other devices/projector

Data/VGA/speaker and microphone cabling will be installed a specialist contractor.

Satellite TV Receiver

A connection will be made to the Satellite/ TV receiver will be made, by the specialist AV contractor – containment will be provided by the electrical contractor.

8.0 Mechanical Services

Water Quality

The heating and chilled water, water quality will be tested, prior to commencement of any of the works. The mechanical sub-contractor shall advise on any works required to ensure that the water quality of the installation is acceptable and will not harm the new installation.

Existing Air Conditioning Systems

The existing fan coil units ~~are installation~~ is to be removed,

The existing heating, chilled water and condensate pipework is to be retained, with local modifications to suit the new fan coil units.

The works to include, but not exclusive:

- ~~• Heating and chilled water pipework on each of the floors, back to the risers~~
- ~~• Condensate pipework~~
- Controls wiring on each of the floor, including outstations that can be connected to the landlord head end.
- Fan coil units
- Secondary distribution ductwork and grilles/diffusers

4 Pipe Air Conditioning Fan Coil Units

A new 4 pipe fan coil air conditioning system will be installed. The system will be connected to the base build chilled water and heating water services. New isolating and balancing valves along with drain cocks, air vents and commissioning sets are to be installed at the risers.

New gravity condensate pipework installation shall be installed. The condensate is to be insulated for the first 1.5m local to the fan coil units.

Each fan coil unit will be provided with the following pipework fittings; controls, flexible connection, isolation/balancing valves and commissioning sets, automatic air vent and drain cock.

The installation will be complete with all commissioning and isolation valves, flushing loops and filtration devices to ensure that the new installation is fully operational.

The approximate numbers of fan coil units per floor are:

2 nd Floor	30 50
3 rd	30 50

The contractor shall size all fan coil units. When selecting fan coil units an additional allowance of 10% is to be added prior to selection of the fan coil units to assist in heating and cooling the space when the units are first switched on in the mornings.

The existing fresh air ductwork is to be retained. The ductwork is to be cleaned. Balancing dampers are to be tested and replaced where required. Fresh air will be ducted to the rear of the fan coil units. New final insulated ductwork connections onto the rear of the fan coil units are to be installed where required.

The ceiling void will be used as a return air plenum. Air will be returned to the landlords services.

Condensate Pipework

New gravity condensate pipework installation (including traps to each fan coil unit) shall be installed and terminated onto the existing condensate pipework in the risers (the connection will be trapped). The condensate is to be insulated for the first 1.5m local to the fan coil units.

Secondary Ductwork from Fan coil Units

New discharge internally insulated plenum secondary ductwork and supply air diffusers (supply air diffusers to include opposed blade balancing dampers and plenum boxes) are to be installed from the outlets of each of the fan coil units. The supply air ductwork and plenums are all to be insulated.

Fresh air supply ductwork will be modified to suit the new fan coil unit locations.

Return Air Grilles

New return air grilles are to be installed in the ceiling; these are to be sized to handle the supply air volume from the fan coil units.

Air can be returned to the ceiling voids via the light fittings, provided these incorporate air return air paths.

Cross Talk Attenuation

Cross talk attenuators will be installed in the fresh air ductwork to the following rooms (these are to be selected to supply air to the fan coil unit without affecting the total supply air to the floor):

- Offices (in particular the quiet office on the 3rd floor – there must be no transfer of noise from adjacent spaces)

- Meeting Room (in particular the HR and Finance meeting rooms on the 4th Floor - there must be no transfer of noise from adjacent spaces)
- Kitchenette

The above rooms will have full height partitioning, including ceiling void partitioning (quilts may be used in the ceiling voids)

Exhaust air from the rooms will also be provided with in line cross talk attenuators; these are to be selected to maintain air flow without affecting the total extract air from the floor.

Additional return air grilles will be installed to cellular rooms to maintain air circulation within the rooms, to avoid adding undue resistance to the return air path back to the air conditioning unit.

Local air conditioning controls

Each cellular area will be provided with a wall mounted local temperature and fan coil unit control. The controllers will be fitted on the partitions at 1.3m above floor level.

The cellular office on the 3rd floor is occupied by an individual with special requirements – we need to provide

Open plan office area – controllers will be mounted on columns or partitioning, to provide general control. These controllers will be mounted 1.3m above floor level

Where applicable in the open plan office air conditioning units will be controlled in groups.

Central Air Conditioning Controller

A central BMS controller will be provided to control the air conditioning. The controllers are all to be 'Trend' compatible and are to be open protocol

The controller will provide the following facilities:

- Time control
- Temperature adjustment of individual fan coil units
- Measurement of fresh and extract air volume
- Measurement of fresh air and extract air temperature to the floor
- Energy monitoring of the chilled water and heating flow rates
- Temperature alarm within the Comms Room
- Alarm notification to include:
 - Open plan office temperature too low
 - Open plan office temperature too high
 - Computer Room temperature alarms
 - Computer Room leak detection
 - Kitchenette leak detection

Central BMS

A central BMS system 'Trend compatible' with open protocol will be installed on the 4th floor.

The system will include a PC, data cabling and software as required to support the new systems on the occupied floors. The BMS system will interface with the fire alarm installation and shut down in the event of a fire.

The BMS is to connect to the landlord system.

Out of hours Air Conditioning operation

Facility will be provided on each floor on entry to the floor local to the lifts to allow staff to operate the air conditioning system for 1 hour periods, should they require.

Computer Room Air Conditioning and Ventilation

There are no works to be carried out to the Computer Room.

~~The IT build room is to be considered as a cellular office.~~

Fire Dampers

The existing fire dampers are to be checked and replaced if required.

Copy/Print Room Extract Ventilation

The copy/print room will house the photo copiers/printing equipment.

The room will be provided with a 4 pipe fan coil unit air conditioning that matches the general office systems, with a supply air connection from the fresh air system.

An extract grille will be installed to remove warm air within the room, a ductwork system, including extract fan will be installed to circulate air back to the landlord's floor extract system. The extract will discharge into the bell mouth of the general office extract ductwork.

The extract system will interface with the fire alarm installation and shut down in the event of a fire.

Kitchenette Ventilation

The room will be provided with a 4 pipe fan coil unit air conditioning system that matches the general office systems, with a supply air connection from the fresh air system.

Extract air will be removed via ceiling extract grilles and new ductwork installed to connect onto the landlord's kitchenette extract system.

9.0 Fire and Life Safety

Fire Alarms

The existing fire alarm installation is to be retained. There will be modification and adaptations made to this by the specialist fire alarm contractor.

The works will be carried out in accordance with BS5839 Category L2. Under this category Individual rooms will **not** be provided with fire detection.

Rate of rise detector will be installed in the kitchenettes. To avoid an event that staff install a toaster in the room and smoke from the toaster activates the fire alarm system.

Additional sounders will be installed across the floor to maintain the noise level of the sounders.

Fire Alarm Interfaces

Fire alarm interfaces will be installed to shut down plant in the event of a fire.

10.0 Public Health Services

Domestic Cold Water Services

The existing on floor distribution is to be removed back to the landlord's riser

New valved hot and cold water services and potable domestic drinking water service will be taken from the landlord's riser to the kitchenette within the ceiling void. Route to be defined.

The water service will serve

- Sink in kitchenette
- Drinking Water boiler (zip taps)
- Supply to a dishwashers

Drainage Services

The existing drainage installation is to be removed back to the risers.

New drainage is to be installed, including traps and vent pipes to suit the kitchenette layouts

Domestic Hot Water Boilers with Chilled Water Facility

Potable hot water boilers will be provided in the kitchenette and tea/coffee point. These will be 'zip' type water heaters that will also have chilled water facility. There will also be a drain connection.

The drain trap connection will be metal and a minimum of 1.5m of drainage pipework will be run in copper.

Leak Detection System

The Kitchenette shall be provided with leak detection systems.

The leak detection system will:

- Provide local zone detection
 - Automatic shut off valves to the Hot and cold water services – in the event of water detection
 - Local alarm – audible and visual
 - Central building alarm - linked back to the ground floor reception/security control room.
-

11.0 Ancillary Services

Security

The existing Landlords access control system will be retained.

~~Manual locks will be installed on the following doors:~~

Existing access control is to be retained to the following rooms:

- Comms Room
- HR Store
- ~~• IT build room~~
- Retain existing patch rooms

CCTV

There is no requirement for CCTV on the floor.

Telecommunication Cabling

There are no telecommunications works under this contract.

12.0 Commissioning and Handover

Commissioning

All the building services are to be fully commissioned.

The landlord and his Building Services Consultant/Service Maintenance Engineer will be invited to attend the commissioning/witnessing of the building services systems.

All commissioning results will be provided to the Landlord.

Record Drawings and Operating & Maintenance Manuals

A complete set of 'As Built' and 'As Fitted' drawings will be provided to the Landlord.

The information will include:

- Health and safety plan
- Record Drawings
- Commissioning results
- Manufacturers information
- Manufacturers maintenance instructions

3 complete sets of information will be issued to the Landlord and the contractor will be requested to provide Auto CAD drawing of all information.

The contractor will be required to allow to provide an electronic copy of the information.

Appendix A

Architectural Information

Drawing number

16.007_02_PGA 2nd floor

16.007_03_PGA 3rd floor

16.007_04_PGA 4th floor