

**BUILDING SPECIFICATION**

**FOR**

**A HEADQUARTERS OFFICE BUILDING**

**AT**

**BEAUFORT PARK,  
BRACKNELL**

**FOR**

**FENCHURCH ESTATES LTD**

***PREPARED BY:-***

Construction + Property Consultants **MADLIN + MADDISON**

**MADLIN + MADDISON**

***IN CONJUNCTION WITH:-***

**AUGUST 2009**

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MAKING ENVIRONMENTS  
WORK FOR PEOPLE

**Scott White and Hookins**

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### **1.00 DESCRIPTION**

- 1.01 This document describes the construction of a green, low carbon, secure, high quality headquarters office scheme with associated site works.
- 1.02 The building is set in its own secure 8 acre site within 56 acres of privately owned and protected heath and woodland.
- 1.03 Together with an approved double height breakout area, the building in total offers some 50,000 sq ft of Grade A, air conditioned office accommodation, expansion potential exists on the site to increase the floor area to approximately 86,000 sq ft, subject to planning permission, with in excess of 300 car spaces, and able to respond to the specific demands of any occupying company.
- 1.04 Generous car parking provision is made on site, there are a minimum of 180 car spaces available plus the facility for over-spill parking on access roads and "off road" areas.
- 1.05 The building is designed on a 1.5m planning grid to allow for the erection of partitions to provide a wide permutation of cellular and open plan offices, including the facility that the building is capable of sub-division into four independent units.
- 1.06 The office areas have a clear floor to ceiling height of 2700 mm.

### **2.00 IN GENERAL**

- 2.01 All building works have been carried out in compliance with Planning Conditions, Building Regulation and Fire Officer requirements, relevant European Codes, BCO recommendations, Construction Regulation requirements, all Statutory Authority Legislation and all other relevant standards / directives, together with current good building practice.
- 2.02 Building materials used and fittings installed, comply with current British Standard Codes of Practice or are accredited by recognised independent authorities i.e. British Board of Agrément.
- 2.03 All materials have been used strictly in accordance with manufacturers' specifications and written recommendations, and wherever possible are "A" rated in accordance with the Green Guide issued by the Building Research Establishment.
- 2.04 All timber used in the construction is strictly from sustainable worldwide sources.
- 2.05 The building has been designed and constructed to achieve a high "*very good*" BREEAM rating and provides good access for maintenance and for replacement of parts.
- 2.06 Energy Performance: The building and services CO2 emissions achieve an improvement in excess of 52% over the 2006 L2A Building Regulation requirements target emission rate (TER).
- 2.07 The building has achieved an Energy Performance Certificate in the upper band "B" with a score of 29, by the simple addition of selective photovoltaic measures a band "A" rating could be achieved. It is worth noting that the majority of newly built headquarters offices would achieve a score of 60 ( mid band "C" ) whilst a typical building from existing stock might only achieve a score of 138 ( mid band "F" ).

- 2.08 Building construction techniques and detailing have dramatically minimised air leakage, the current Building Regulation Requirement in Part L2 2006, is to be no worse than 10m<sup>3</sup> / hr.m<sup>2</sup>, the pressurisation test carried out on Beaufort Park shows the air permeability to be only 2.63m<sup>3</sup> / hr.m<sup>2</sup>, a significant improvement and one rarely achieved.
- 2.09 The use of air source heat pumps with the efficient VRV heating and cooling systems, now an accepted renewable energy source, allows the building to incorporate in excess of 20% renewable energy technology.
- 2.10 A sophisticated lighting management system incorporating presence / daylight detection and flexible timer controls, reduce unnecessary energy consumption.
- 2.11 Extensive use is made of a sustainable urban drainage system ( SUDS ) throughout the development.
- 2.11 Building Fabric: The building fabric is designed and constructed to meet the following thermal, daylighting and solar standards as an absolute minimum:-

Thermal Transmittance Values:-

Perimeter Wall	0.27 W/m <sup>2</sup> °C
Windows	1.5 W/m <sup>2</sup> °C
Ground Floor	0.2 W/m <sup>2</sup> °C
Roof	0.16 W/m <sup>2</sup> °C

Fenestration:-

Light transmittance	0.66
Solar transmittance(g value)	0.401

- 2.12 It is estimated that the above features of the new building will result in a saving of approximately 70% over the energy costs associated with a similar headquarters build built before 2002.

### **3.00 SUBSTRUCTURE**

#### **3.01 Foundations and Ground Slab**

- 3.01.1 The foundations are to the Structural Engineer's design suiting the ground conditions as indicated in the Site Investigation Report.
- 3.01.2 The ground floor slab is of ground bearing concrete laid on a DPM, on blinding, on well consolidated hardcore and fill. Fill material used in the construction is almost entirely re-used, crushed concrete, salvaged from the existing buildings and hard standings on the site. the existing tarmac paving was also taken up and re-cycled.
- 3.01.3 The ground floor office areas are designed for a superimposed live load of 4kN/m<sup>2</sup> plus 1kN/m<sup>2</sup> partition allowance and the core areas are designed for a superimposed live load of 4kN/m<sup>2</sup>.
- 3.01.4 In the core areas the floor is raised to receive screed and finishes to provide a flush finished level with the raised floor office areas.

**4.00 SUPERSTRUCTURE****4.01 Frame**

4.01.1 The structural frame is formed in steel, fire protected as necessary. The introduction of columns has been kept to an absolute minimum to provide uninterrupted office space wherever possible.

**4.02 Upper Floors**

4.02.1 All upper floors are constructed using in situ concrete and metal deck composite floors.

4.02.4 The first floor office areas are designed for a superimposed live load of 4kN/m<sup>2</sup> plus 1kN/m<sup>2</sup> partition allowance and the core areas shall be designed for a superimposed live load of 4kN/m<sup>2</sup>.

4.02.3 The Plant Room floor is as the other suspended floors, but designed for a superimposed live load of 7.5kN/m<sup>2</sup> and is screeded and tanked to provide a watertight construction. Gullies are also provided where necessary.

4.02.4 Generally in core areas the floor is raised to receive screed and finishes to provide flush finished levels with the raised floor office areas and the Plant Room floor.

**4.03 Roof**

4.03.1 Flat roofs comprise single ply electrometric membranes on insulation and vapour barriers, on corrugated steel decking.

4.03.2 The deep solar protective roof overhang comprises a polyester powder coated aluminium 3mm thick fascia with StoRend Flex system soffit, comprising 12mm Verotec board with 3mm reinforcing coat, reinforcing mesh, and decorative finish to match external walls system. All to provide a monolithic finish with concealed fixings and shadow gap edge joints.

4.03.3 All rainwater downpipes are external and concealed within the external feature column casings, with access panels where appropriate.

**4.04 Staircases**

4.04.1 The main feature staircase is of steel construction with carpet finished treads and anodised metal risers with non-slip anodised aluminium nosing's to each tread. The frameless structural glass balustrade is capped with stainless steel tubular handrails. Strings and landing strings are solid stainless steel with inner mild steel strings faced in stainless steel, the underside of flights and landings have a plasterboard finish. The balustrade to the first floor "bridge" through reception has matching detailing.

4.04.2 The 2 No external helical fire escape staircases have a painted steel construction with galvanised steel pan treads and landings, and a 40mm diameter stainless steel handrail with intermediate metal balustrade rails. The first floor landings accommodate a disabled refuge area to comply with current Build Regulations.

**4.05 External Walls, Windows and Doors**

- 4.05.1 All rendered walls comprise a StoRend Flex Cote rendered masonry block cavity wall construction, including StoLotusan white self cleaning finish applied as a separate coat. The render system comprise a min 10mm levelling coat, StoArmat Classic reinforcing coat, reinforcing mesh and a white decorative finish with a min 1.5mm grain.

South, east and west elevations include full height timber panels comprising boards of a min 30mm thickness, 200mm wide with a square edged profile and expressed open joint, the timber species is Andira with a natural, untreated finish. Andira is a particularly hard timber with a pronounced grain, from a sustainable source, the colour of which mellows to a warm dark brown over time.

Glazing to the north elevation office area comprises Technal MX horizontal "frameless" ribbon windows with a gasket finish only to the external face. All windows are split colour, polyester powder coated aluminium, external colour ref: Ral 7022, internal colour white. Entrance screen glazing comprises Technal MX Trame Horizontale curtain walling with profiled horizontal aerofoil fins and a vertical gasket finish to the external face.

Glazing to south, west and east facing walls comprises Technal MX with extended cappings to full window reveals. Solar screening to reduce solar heat gain is provided to all external west and east elevations (excluding courtyard elevations) comprising vertical 2.7m high x 400m laminated glass fins with an acid etched finish, hung on concealed stainless steel metal frames. South facing glazing only, has an applied solar reflective film finish (excluding reception and wc windows ), complying with BREEAM requirements for building materials Cat A.

Glazing to south facing wc areas is acid etched obscure glass, and glazing to the south facing reception area is light grey anti-sun glass.

- 4.05.2 The screen walls to the Plant Room and roof top external plant area comprise polyester powder coated "frameless" rainproof louvres.
- 4.05.3 Facia panels above first floor windows are polyester powder coated cladding panels by Cadisch Welltec, aluminium panel ref N26. Colour matches window frames and column casings.
- 4.05.4 All windows, curtain walling and doors incorporate thermal break detailing with double glazed units comprising high performance glass, 6mm clear - 16mm argon gap - 6mm K.
- 4.05.5 Look-alike panels where provided are double-glazed with ceramic backing panels and bonded insulation on the inside. Glass is toughened and fire rated to meet requirements of the current Building Regulations, and for thermal shock where necessary. All toughened glass is heat soaked.
- 4.05.6 A manual revolving drum door is provided, by Boon Edam, Crystal Tourniket 2200mm internal diameter, 2400mm high and to suit curtain walling mullion modules. Also two pass doors are installed for disabled access, one of which is provided with automatic opening.
- 4.05.7 The air permeability of the completed building is proven to be 2.63m<sup>3</sup> / hr.m<sup>2</sup>, almost 400% better than the worst allowable performance stated in the Building Regulations Part L 2006.

**4.06 Internal Walls and Partitions**

- 4.06.1 Plasterboard lining have been applied to all internal faces of the external walls.
- 4.06.2 Internal partitions to core areas are generally in plastered blockwork.
- 4.06.3 WC division walls are full height blockwork with full height veneered cubicle doors

**4.07 Internal Doors**

- 4.07.1 Internal doors are full height crown cut Swiss Pear veneered, with matching hardwood doorframes and architraves, high quality stainless steel ironmongery is provided throughout.
- 4.07.2 The doors to office areas have full height Pyran clear glazed vision panels, and the doors are fire rated and smoke sealed as necessary. Beading to all vision panels is tinted maple to match the Swiss Pear veneer.

**5.00 INTERNAL FINISHES****5.01 Wall Finishes**

- 5.01.1 All blockwork has a plaster finish or is lined with plasterboard with plaster skim finish. All columns have a plasterboard casing and plaster skim coat, all with an emulsion paint finish.
- 5.01.2 The walls in the Reception Area are finished with polished plaster, incorporating horizontal textured polished plaster feature bands.
- 5.01.3 HR Johnson 300 x 300mm mat plain ceramic tiles, are provided full height to all toilet and shower room areas.
- 5.01.4 Granite splashbacks, 400mm high above vanity top and full width, are provided to all toilet areas.
- 5.01.5 Fair-faced concrete blockwork is the finish within all service ducts, cupboards, and the plant room areas.

**5.02 Floor Finishes**

- 5.02.1 Semi Regis limestone flooring with a honed finish, finished with a slip resistant sealer, with a matching 120mm skirting is provided to reception and entrance lobby areas.
- 5.02.2 Throughout the office areas a Kingspan accessible raised floor is installed, with 600 x 600 MOB medium density modular panels, fully encapsulated in steel, with a solid timber skirting to match doors.
- 5.02.3 Tessera Alignment 600 x 600mm heavy contract carpet tiles are fitted to the main staircase, staircase landings and office / toilet lobbies, also to a marketing area on the first floor.
- 5.02.4 HR Johnson 300 x 300mm matt stone effect ceramic tiles with matching skirting are provided to toilet areas and shower rooms.
- 5.02.5 A recessed stainless steel matwell frame and barrier mat are provided to all doors into the main reception area.

- 5.02.6 Non-slip ceramic tiles with matching skirtings are provided to all Cleaner's Rooms, and an epoxy dust seal paint is applied to the Plant Room floor.
- 5.02.7 An Altro "non slip" sheet vinyl floor finish is provided to the disabled wc/shower rooms with continuous vinyl skirtings with welded joints.

### **5.03 Ceiling Finishes**

- 5.03.1 Crown cut Swiss Pear, fire rated, veneered ceiling panels are installed above Reception areas.
- 5.03.2 All toilet and shower areas have a plastered ceiling complete with flush access panel provision.
- 5.03.3 Armstrong metal ceiling tiles 500 x 500mm, ref: Orcal clip in 3mm perf 138 RAL9010 with fleece lining are provided to all office areas, with Gyproc MF pasterboard edge margin.

## **6.00 FIXTURES AND FITTINGS**

### **6.01 Sanitary Appliances**

- 6.01.1 All are Ideal Standard white vitreous china fittings, Studio wc range, Marlow basins, with polished chrome "hands free" vola mixer taps ref HVIE electronic with swivel waste to basins.
- 6.01.2 Proprietary Doc 'M' packs are provided to disabled toilet areas, and a ceramic bucket sink to all Cleaner's Rooms.

### **6.02 Sundry Fittings**

- 6.02.1 Black granite honed and sealed vanity tops and aprons are installed with recessed under-slung basins, full width mirrors with concealed fixings are provided above vanity tops. Soap dispensers are provided to all vanity tops matching taps and coat hooks and toilet roll holders are provided to all toilet cubicles.
- 6.02.2 Solid grade white laminate toilet seats are fitted.
- 6.02.3 Kitchenettes are provided to each wing on each floor, comprising a range of wall and base units, stainless steel sink tops, and spaces, plumbing, and power for refrigerators and dishwashers by the occupier.

## **7.00 MECHANICAL AND ELECTRICAL SERVICES INSTALLATIONS**

### **7.01 Infrastructure**

- 7.01.1 New mains electricity, water and gas services adequately sized for the building are connected to the local statutory authorities networks.
- 7.01.2 A power supply of 600Kva is available to the building and a further 100Kva has been reserved for occupiers requirements if necessary.

**7.02 Heating and Cooling & Ventilation**

- 7.02.1 The office and reception areas are heated and comfort cooled by a heat recovery variable refrigerant volume (VRV) system. The system is able to provide heating and cooling simultaneously from adjacent units and utilizes the renewable energy of air source condensing units. The Reception area has a feature high level heating unit above the entrance doors with pipework spanning the full width of the entrance screen within a polished stainless steel circular casing.
- 7.02.2 Heating to the central core is provided from a small, efficient, LTHW gas fired boiler, feeding slim line flat panel radiators, and the fresh air ventilation plant heater batteries.
- 7.02.3 A fresh air mechanical supply and extract ventilation system supplies air to the terminal units and is used for night time cooling with heat reclaim on the extract. Air supply and return is by linear diffusers at the office perimeter, and square diffusers in the central areas, colour coated to match the ceiling grid.
- 7.02.4 Terminal units are concealed within the ceiling void, and ducted to the supply grilles. At the perimeter they each serve an area no greater than 6.0m x 4.5m and in the centre no area greater than 80m<sup>2</sup> in accordance with BCO guidelines. Each terminal unit is controlled from a room sensor located above a return air diffuser, in turn reset from a central programmer unit,  
one per floor per wing.
- 7.02.5 Toilets, showers and cleaner's cupboards are mechanically ventilated, with make up air via a shunt duct system. The extract plant incorporates duplicate fans arranged for automatic changeover. All ductwork is concealed, wc cubicle ventilation is via full width ceiling slots with a plenum above.

**7.03 Rainwater**

- 7.03.1 A mains water top up is provided to the pool to ensure a minimum water level is achieved in times of low rainfall.

**7.04 Hot and Cold Water Services**

- 7.04.1 A highly insulated gas fired central hot water storage cylinder provides domestic hot water.
- 7.04.2 Hot & cold water services pipework serving all appliances utilise thermally insulated copper pipework installed in accordance with the Water Regulations.
- 7.04.3 Capped cold water services are provided at suitable locations within each toilet core to serve possible future occupier's fit-out works.

**7.05 Above Ground Plumbing**

- 7.05.1 The above ground soil, waste, overflow & condensate drainage systems are designed on the ventilated stack principle, to comply with BS EN 12056 Part 2, using solvent welded uPVC/MuPVC pipework systems.
- 7.05.2 The soil & vent stacks terminate to atmosphere at roof level through louvres, and connect to the underground foul water drainage system in accordance with Local Authority requirements.

- 7.05.3 A capped branch connection is provided from each stack at each floor level to serve occupier's fit-out installations.
- 7.05.4 Warning pipes and overflows are all concealed and discharge via stainless steel tun-dishes into flush pipes or to the exterior. WC cistern overflows are integral to the flush mechanisms.

## **7.06 Lighting**

- 7.06.1 Office lighting is provided to comply with current LG7 and Building Regulations Part L2A requirements. Lighting uniformity is in accordance with CIBSE codes and a basic lighting management system is installed to meet Building Regulations Standards.
- 7.06.2 The office lighting installation comprises recessed modular 500mm liner fluorescent luminaires complete with direct / indirect perforated diffusers that can be adjusted to sit flush or below the ceiling soffit.
- 7.06.3 The luminaires incorporate high frequency control gear and self contained non-maintained nickel cadmium standby battery packs, complete with red LED, where emergency luminaires are to be provided.
- 7.06.4 General lighting is controlled by sensors that detect both movement and daylight, these shall operate via a lighting control system in accordance with the Building Regulations and provision is made for adaption for future occupied area control.
- 7.06.5 Accessories in all areas have a stainless steel finish except in plant areas where they are metal clad. All new wiring is LSF single core installed within suitable containment.
- 7.06.6 Feature recessed down-lighting is provided throughout the Reception area.

## **7.07 Emergency Lighting**

- 7.07.1 Emergency lighting is provided to BS 5266 and BS EN1838 and the requirements of the Building Control / Fire Officer within general circulation areas and plant rooms etc, this is to assist in the safe evacuation of personnel in the event of an electrical mains supply failure.
- 7.07.2 The emergency lighting installation comprises self contained luminaires incorporating batteries and inverter units incorporated within the general lighting luminaires.
- 7.07.3 Wall mounted self contained maintained exit signs are installed above all designated final exit doorways, internal and external, to further supplement the safe exit of personnel.

## **7.08 External Lighting**

- 7.08.1 External lighting complies in all respects with the Institution of Lighting Engineers (ILE) Guidance notes for the reduction of obtrusive light, 2005.
- 7.08.2 External lighting is provided by a mixture of bollards and column style luminaires, complete with lanterns with recessed lamps to control light onto the surfaces and minimise light pollution.

## **7.09 Small Power**

- 7.09.1 Sub-main cabling extends from the building's main metering switch panel to serve dedicated MCB distribution boards for the proposed occupier's areas and dedicated small power circuits

to landlord's services. No power or raised floor outlet boxes are provided to the office floor plates to allow for complete flexibility of the occupier's layout.

- 7.09.2 Shaver points and fused spurs for future installation of hand driers by occupier are provided to all toilet areas.
- 7.09.3 Cleaner's power through switched socket outlets are provided to all areas.
- 7.09.4 The cabling systems to each of the above are either LSF single core, enclosed within conduit/trunking, or XLPE/SWA/LSF.
- 7.09.5 Alarms are installed in all disabled toilet / shower rooms with a remote alarm located in the Reception area.
- 7.09.6 Large mechanical plant items are all separately metered.

### **7.10 Fire Alarm**

- 7.10.1 An analogue addressable fire alarm system to BS 5839 2002 Standard L2 is provided throughout the building, consisting of break glass call points, automatic detectors and sounders, beam detectors and links to mechanical services, security services etc, including access control, all of which allows plant to shut down in the event of an activated fire alarm.
- 7.10.2 The fire alarm panels and associated building mimic panels are located at the entrance to the building in the reception area. A site monitoring system is installed to monitor the building and assist in access. Systems are all open protocol, so as to be maintainable by any nominated company.

The fire alarm panel is concealed behind glass with all advertising logos removed, it is purpose designed with a part frosted glass screen cover and polished stainless steel frame.

### **7.11 Telecommunications**

- 7.11.1 As part of the development, two new incoming telecommunications ducts are provided, served from outside the site, to allow future occupiers to provide telecommunications supplies to their respective areas in accordance with their own specific requirements.
- 7.11.2 Redcare connections are provided for the lift and fire alarm installations to a remote monitoring station.

### **7.12 Lightning Protection**

- 7.12.1 An air termination lightning protection installation is provided by way of down conductors and utilisation of the steel frame, with external test and inspection pits around the perimeter of the building, all installed to comply with BS 6651.

### **7.13 Passenger Lifts**

- 7.13.1 Two DDA compliant machineroom-less traction 8 person passenger lifts are installed to serve both floors, fully compliant with BS EN 81. A 12-month maintenance contract is in place.
- 7.13.2 The lift cars have centre opening doors in satin stainless steel, with matching surrounds. Finishes to the cars comprise full height glass wall panels (Chelsea Artisan Diamond Décor 8 White 9010) to three walls and half height mirror and stainless steel handrail to the rear wall,

a limestone floor finish is provided to match the Reception area, and a satin stainless steel ceiling has recessed downlighters.

7.13.3 Protective drapes and fastenings are provided to the lift cars, and all door openings are 900mm minimum clear width and 2100mm high to facilitate the movement of furniture between floors.

## **8.00 EXTERNAL WORKS**

### **8.01 Surface Treatment**

8.01.1 Marshalls Keyblok block paving, providing a sustainable urban drainage system, is provided to the visitors, staff and disabled parking areas, and matching Marshalls Keyblock surfacing is laid to other parking areas.

8.01.2 Internal access roads, car park aisles and refuse bays are also surfaced with Marshalls Keyblock. A 2m footpath along the access road into the site from South Road is provided, with a tarmac finish.

8.01.3 Marshalls Saxon textured paving slabs are laid to the main building entrance, courtyard and adjacent paths.

8.01.5 A comprehensive soft landscaping scheme, including semi-mature trees, specimen plants, amenity shrub planting, hedging, ground cover and infill indigenous planting is provided, blending into the retained areas of rough grass and heathland.

### **8.02 Site Enclosure and Division**

8.02.1 To the boundary with the adjacent heathland, a three bar rustic fence is provide with a five bar gate for vehicular and pedestrian access.

### **8.03 Fittings and Furniture**

8.03.1 A secure, covered cycle store with adjacent changing and locker / storage facility is provided, convenient to the main office building. Showering facilities are provided in four locations within the office building.

8.03.2 A secure, covered refuse enclosure is provided adjacent to the cycle store.

8.03.2 A high level of security is provided by automatic entrance gates across the access drive, continuous with the high perimeter security fence that protects the development site and the adjacent private heathland. A secure pedestrian gate is also provided, across the footpath accessing the site, with a digital lock. Ducts link all these gates to the main building to allow for any additional security measures adopted by the occupier.

## **9.00 DRAINAGE**

### **9.01 Foul Drainage**

9.01.1 The foul drainage system connects to the local main foul sewer, in accordance with the requirements of the Local Authority.

### **9.02 Storm Water Drainage**

9.02.1 The storm-water drainage system connects to a sustainable urban drainage system (SUDS) in accordance with the requirements of the Local Authority.

**10.00 EXTERNAL SERVICES**

10.01 External watering points are provided throughout the development for the maintenance of the soft landscaping scheme.

10.02 Capped electrical supplies and wireways from within the building are provided throughout for the installation of future security controls, CCTV installation, external signage etc by the occupiers.