

MASTERPLAN AREA – Proposed Engineering Facility- CHALDICOTT BARNES – SEMLEY – SP7 9AW

Schedule of Materials & Specification

Revised for BREEAM notes ; and colours at 24-09-2026

All materials to optimise use of recycled contents-

And low Global Warming Potential in blowing agents for insulation

1.0- -EXTERNAL WORKS –

Proposed maximum ridge height- below existing Unit 9 highest ridge height –
ALLOWING FOR SLOPE PERSPECTIVE -With single proposed FFL set at 124.000m AOD
and at 2.68m below existing unit 14 FFL - see 1624-907d Group elevations -

- 1.1- -Car parking bays/ access roads, cycle parking area and lorry turning areas, plus Fire engine access ramped route between concrete retaining walls, all as site layout to be permeable hardstanding, such as permeable tarmac, block pavements for optimum attenuation within p.c / timber sleeper kerbs, with geo-textile fabric reinforcement where built up layers to spec. ;
to BREEAM TRA02 for dedicated car share spaces>5% ; cycle facilities ; new amenity fitness trail- & HEA07 for bench seat ;
- 1.2- Security fencing to be 3m height to List X-
CLA Security Fencing Systems triple point palisade –
Colour ; Matt Green 6005 - to List X standard LPS 1175 SR2-SR3 ;
- matching 7.2m width security gates, inward and outward one-way routes, with Hostile Vehicle Mitigation such as retractable ram bollards, secondary pedestrian gates, all at security Kiosk/s ; loading and un-loading at Storage Block C ;
- 1.3- -Supply and install fuel tank to Blue Book constraints with supply pipes to Testing Block Cells ;
- 1.4- -within security fence, form HGV hardstanding routes to necessary CBR loading, with 17.4m outer radius and Armco to 11.9m inner radius at building corners to suit adequate vehicle tracking ;
- 1.5- -prepare for cut and fill to Engineer's design to Production Block A, Corridor Links, Testing Facility Block B , Storage Block C and R&D block D ; with 2m wide sand/gravelled building surround ;
- 1.6- Retaining walls to be inter-locking blocks, with lateral restraints as designed, flat top copings to suit slopes, radius blocks for adjustable angles, and option for pattern printed facing stone effects, and drainage slots to relieve hydraulic pressure ;
concrete retaining walls to secure cutting in of excavated ground levels, topped with Armco barriers alongside HGV routes and Kee-Klamp guard-rails to pedestrian routes ;
perforated drain-pipes to rear, wrapped in geo-textile fabric with outlets to relieve hydraulic pressure of ground waters ;
- 1.7- -prepare, supply and plant native species landscaping as proposed areas, and hedges, around adjacent dog-training area, car parking and Amenity space ;

- 1.8- -form attenuation pond, with monk-pipe/throttled outfall , and storm water connections ; to specialist design ;
- 1.9- -form Security Kiosk steel box structure EITHER by Curtis Engineering Ltd to be bolted to mesh reinforced concrete slab - to receive insulated **FSC-sourced** 140mm CLS timber stud framework , **FSC-sourced** OSB skin, vapour barrier, and **FSC-sourced** battens to receive Black Eternit fibre-cement cladding, insulated **FSC-sourced** timber flat roofing, **FSC-sourced** ply decking, vapour barrier and composite insulation warm-roof decking to receive Glassfibre finish and Sedum roof trays ;
OR Glasdon pre-fabricated Security Gatehouse to same design ;
-perimeter of flat roof to have gravel sumped surround, with vertical retention trims, and RW outlets ; Extensive' Sedum Green Roof system finish ; Filter Fleece ; HDPE Root Barrier ; Vermiculite drainage layer ; All to BREEAM Certification ;
- 1.10- -form external steps/ accessible ramp at Office Entrance doors, with Kee-Klump handrails to Building Regs ;
- 1.11- -Likewise to Fire Exit doors where ground levels require with Kee-Klump handrails guarding ;
- 1.12- - Security Kiosk - windows to be aluminium sliding double-glazed weather-stripped, and doors for pedestrian access / security checking ;
- 1.13- -Supply and install drainage pumping station ; see para. 8.2 ;
- 1.14- -Excavate and form storm water attenuation pond with filtered throttled outlet to existing ditches to avoid localised potential flooding, such as monk-pipe or similar to receive roof and surplus ground waters [hardstanding areas to be permeable generally for most rainwater, but have gullies connected to s.w drains for surplus storm water] ; excavated volume to be calculated for anticipated storm capacity including forecast climate change up-lift ;
- 1.15- -supply 'amenity area' bench, smoking shelter, and fitness trail equipment to design ;

2.0- FOUNDATIONS - to achieve target U-value 0.15

Ensure no disruption to existing services by checking constraint routes on site before excavations, including CAT scanning for HV/LV ; and ensuring keeping to agreed zones clear of Tree RPAs, as necessary ;

- 2.1- -Strip out and reduce for floor levels for **laying min.225mm. consolidated hardcore, in max. 300mm layers where filling layers ; sand blinding to receive 50mm. Celotex insulation to unheated storage warehouse area** ; and 1200 gauge DPM ; and Eng design of **min. 200mm. C35P reinforced concrete slab with power float finish** containing A 252 reinforcing mesh on chairs to give min. 40mm. clear, with crack inducement joints at 6m c/cs ; to achieve 15 kN/sq.m. loading ;
-retained within blockwork masonry sub-structure walling, comprising –
External skin sub-structure ; 225mm hollow blockwork [concrete-filled around reinforcement starter bars cast into concrete footings] ;
on concrete C20 deep strip foundations ;
Pad foundations to Engineers design and drawings ; to BCO inspection and approval ;

3.0- External WALLS- to achieve target U-value 0.20 to Test block/offices & 0.23 to remainder

- 3.1- Range of cladding colours in 6m wide blocks of **Camouflage, Khaki Green and Olive Green**, articulating on the longer west and east elevations, and south elevations ;
and **Merlin Grey** to north elevations, comprising **Kingspan QuadCore KS1000 RW 80mm**.

thick insulated panels to current Regs, from eaves/verge to finished floor level, fixing to 200mm cladding rails and steel portal Frames as Curtis Eng design ; Acoustic insulation to Testing Block to have 200mm infilled Rockwool, between choice of ---FSC-sourced studwork inner skin OR Z-bars, and plasterboard inner lining, sandwiching weld-mesh fixed for security against intrusion ;

and with Double sided Plastisol `Highline` parapet type insulated gutters to internal rain-water down-pipes, all to Kingspan detail pages 17, 20, 21, 22, 25, 26, 39 – 42 as previously ;

- 3.2- Trim for door openings, to comply with fire escape Regs ; no windows for adequate List X security ;
- 3.3- Form 1 hour fire-resistant insulated proprietary FireMaster system compartment wall skin/s, under / over mezzanine, and unheated warehouse storage ; including fire protecting by intumescent painted steel stanchions supporting First Floor ;
- 3.4- **-internal** acoustic Cell walls of 225mm hollow blockwork [concrete-filled around reinforcement starter bars cast into concrete footings] ;
latter insulated each side with 75mm Rockwool Batts to blockwork with Z-bars and plasterboard ; all to Noise consultant's specifications ;

4.0- STRUCTURAL TIMBER / Steel / Concrete-----

All new timbers to be preservative treated pressure impregnated – **FSC-sourced**

Steelwork to be fire-protected as necessary to Regs ;

- 4.1- – OFFICE Floor – Engineer design of precast concrete decking, to steel floor structure, screeded floor finish ;
- test cell ceiling to be engineer design of 150mm precast concrete decking ;
- 4.2- -Production Block A & Storage Block ; -Testing Block, and Link Corridors ; - Storage Block and R&D block D ;
- Structural steel portal frame to design by Curtis Eng Ltd.- eaves at 7.715m height, 5 degree roof pitch ; inclusive of cladding rails and roofing purlins, with bracing etc ;

5.0- ROOF FINISHES- to achieve target U-value 0.16

- 5.1- Production Block & Storage Block – **Khaki Green** insulated panels to be 115mm thick Kingspan QuadCore KS1000RW insulated roof sheeting to current Regs ; and matching Kingspan PowerPlus Solar PV System matt black panels ; all at 5 degrees ;
and with Double sided Plastisol `Highline` type insulated parapet gutters fitted to rain-water down-pipes ; all to Kingspan detail pages 17, 20, 21, 22, 25, 26, 39 – 42 ;
- 5.2- Security Kiosk finish as para. 1.9 ;

6.0- FINISHES –

-to BREEAM Certification for HEA04 low VOC materials–

indoor paints and coatings ; FSC-sourced wood-based materials/adhesives ; flooring materials ; ceiling, wall, & acoustic/thermal insulation ; interior adhesive/sealants ;

- 6.1- -Supply and fit 60min fire resistant suspended ceilings system or similar, under mezzanine first floor structure ;
- 6.2- -Testing Block & link to production Block- to have bonded 75mm Rockwool to each side of Cell walls, and decking soffits with Z-bar support to double layers of acoustic plasterboard ;

top surface to have triple cross-bonded layers of Rockwool batts infilled to cross-bonded 75x50 timber joists to receive t&g chipboard maintenance decking ;
-Test block offices etc to have plasterboard finish to Rockwool insulated **FSC-sourced** timber studwork or similar, and Rockwool acoustic-insulated **FSC-sourced** timber structure ceiling ;

- 6.4- -Toilets / Store floor finish to client choice ;
All within 0.25 W/sq.mK ;
- 6.5- -Provide and apply intumescent coating such as fire-resistant 1 hour to soffits, and intumescent paint to structure ;
- 6.6- -Rub down preparation for application of 2 coat eggshell to woodwork, including emulsion Decoration to walls ;
- 6.7- -Fit ceramic tiling splashbacks to WBs/ kitchen fittings to client choice, with water-proof grout and bedding ;

7.0- JOINERY ---

- 7.1- - Supply and fit kitchen units, worktop and wall units to clients choice ;
- 7.2- - Provide and fix Fire escape doors ; manufacturer **Metador, Defender Safeguard, with acoustic option at 1.4W/sq.mK**, fitted with Exidor 297 emergency push pad panic latch ;
-entrance double doors to be Smart Wall door system triple-glazed ;
- 7.3- - Supply and fit steel staircase by Curtis Engineering -
comprising 1350 mm. wide straight flights, landings etc. –
Treads to min. 250mm. going ; 2 x 12no. Riser flights at 175mm. each ;
overall 4200mm. floor to floor ;
Pitch at less than 38 degrees;
Handrail to both sides --- Min. height above pitch and landing to be 900 mm. ;
min. clear headroom of 2000 mm. to be provided over pitch ;
Balustrade spacing at max. 100 mm. to obstruct passage of 100 mm. sphere ;
- 7.4- -Supply and fit internal double fire doors ; FD60 doors in one hour partition with Perko closers ;
- 7.5- -**Supply and install insulated acoustic folding shutter doors**, to 0.13 U-value, **matching to previously approved** with fixings and operating gear to wind posts etc. ; **likewise for roller shutter doors** ;

8.0- SERVICES AND DRAINAGE --- new s.w. and FW drains to new pumping station and out-flow to existing recently enhanced FW treatment plant with new capacity ;

- 8.1- -To sinks – ensure 38 mm. diam. uPVC waste with 75 mm deep / resealing traps [max. 3 m. long branch, or 4 m. if 50 mm combined branch] ;
-To wash basin - ensure 32 mm. diam. uPVC waste with 75 mm deep / resealing traps [max. 1.7 m. long branch, or 3 m. if 50 mm combined branch] ;
-To w.c. – 100mm. diameter outlets to slow bends, with access panel to enable rodding ;
all to 100mm. diameter SVP with slow bend to following ;
- 8.2- -Excavate for shallow 225mm. diameter manhole / inspection chambers to be proprietary uPvc laid in accord with makers instructions, to branch connection at adjacent depth and size by others to connect to existing FW system via new pumping station as para. 1.13 ;
- 8.3- -Supply and install Telecom extension to agreed position ;
-Extend existing electric supply with spare capacity for new sub-mains, CSU and RCB ;

8.4- R.w. goods to connect to existing storm water outlets to existing ditches / attenuation pond to be designed for maximum porous surfacing to limit outfall ;

9.0- PLUMBING --- -Sanitary pipework to B.S. 5572

9.1- -HEATING SYSTEMS - **Design, supply and install ceiling mounted outlets to electric air-source heat pump system, by Parsons Refrigeration, to mezzanine office areas ;**
with vertical towel radiators to toilets ; Excluding unheated Storage warehouse ;
Design, supply and install Trianco Aztec electric boiler or similar for kitchenette taps/toilet towel radiators ; and for Security Kiosk ;

9.2- HOT AND COLD WATER INSTALLATION ---

-Design, supply and install h & c w. distribution system, including all necessary components and parts for system ; **instantaneous electric water heaters ;**
-Also supply and fit plain chrome cross-head taps, and overflows ;

9.3- Supply and install plain white sanitaryware to Part M Disabled Access regs ; with all necessary fittings and w.c overflows to Water bye-laws ;

10.0- -ELECTRICAL INSTALLATION AND MECHANICAL VENTILATION

10.1- -To kitchen sink area - **Extract ventilation to give min. 60 litre/sec.**

[216 cu.m./hr.] to be light-switch operated ;

-To Toilet - Extract ventilation to give min. 15 litre/sec. [54 cu.m./hr.] to be light-switch operated ;

both integrated with the MVHR system or locally controlled as the building services design determines;

Design, supply and install mechanical ventilation with heat recovery (MVHR) serving the mezzanine office and welfare areas, and ducted supply and extract ventilation to the production, assembly and storage areas, to the building services engineer's design and to current Regs; ventilation rates and heat recovery efficiencies to be confirmed at technical design; test cell ventilation by dedicated acoustically baffled inlet and outlet air vents to specialist design as para. 10.4;

10.2- - - To be carried out to BS 7671:2018 incorporating Amendment 2:2022 (18th Edition IET Wiring Regulations), or the latest edition current at the time of installation, for an Electrical Installation Certificate by a registered installer, comprising:

-Circuit for mains operated Optical smoke detectors to B.S. 5446 pt 1, and Fixed Rate Heat Detector for Production and Testing areas ; [battery back up] interconnected ; all in accord with Building Req. B1, para. 1.8 - 1.15 for easy access and position ;

-power circuit ;

-lighting [such as designed by Dextra Lighting - 01747- 858110] including battery back-up to stairs exit route ;

Illuminating each stair tread ;

-External lighting to consultant design for dark night compliance ;

-switches & socket outlets :- at between 450 and 1200mm. from finished floor level ;

min. 75% provision of low energy lamps giving luminous efficiency > 40 lumens/ circuit watt ;

and external lighting to be PIR automatically extinguishing with latter low energy lamps, all to List X criteria ;

including emergency escape lighting conforming to BS 5266 pt 1 latest edition, ISO 7010 ; each fire escape door will have a back-up battery maintained LED mains-fitted emergency exit lights, minimum 175mm overall height for up to 35m distance viewing, with standard illuminated signage ;

- 10.3- Roof-top Kingspan QuadCore Power Panel Integrated solar PV to be connected to Battery / inverter systems at plant rooms, including for power exporting when in surplus, and on-site discharge during working hours ; together with EV charging to 20% of parking spaces [22no.] and 4no. bicycle charging points ;
- 10.4- **-Test Cells to contain Inlet and Outlet powered Air Vents, including acoustic baffles to specialist design ;**
- 10.5- Fire alarm and Security systems to be fitted by Partnership Security ;
BAFE approved addressable fire alarm system to L3 standard with central station communication, via grade 3 dual path monitoring, as previously approved for existing adjacent unit 16 Niwaki warehouse unit ; with manual call points at exit doors ;