CANMOOR

haydock 23

HAYDOCK ■ ST HELENS ■ WA11 9TH

TECHNICAL INFORMATION PACK

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OVERVIEW

TARGET BREEAM
EXCELLENT

EV CHARGING
POINTS

LED
LIGHTING

50KN/M2
FLOOR LOADING

8M - 12.5M CLEAR
INTERNAL HEIGHT

DOCK
LEVEL DOORS

GROUND
LEVEL DOORS

TARGET
EPC A

SOLAR
PANELS

CONTENTS

OVERVIEW

Haydock 23 is a prime new logistics and industrial development offering four high-specification units ranging from 20,380 to 155,990 sq ft. Designed to meet the latest sustainability standards, the scheme targets BREEAM Excellent and EPC A ratings, with features including solar panels, EV charging provision, and generous yard depths. Each unit is built to a Grade A specification with modern office space, secure loading areas, and high-performance floor loading capabilities.

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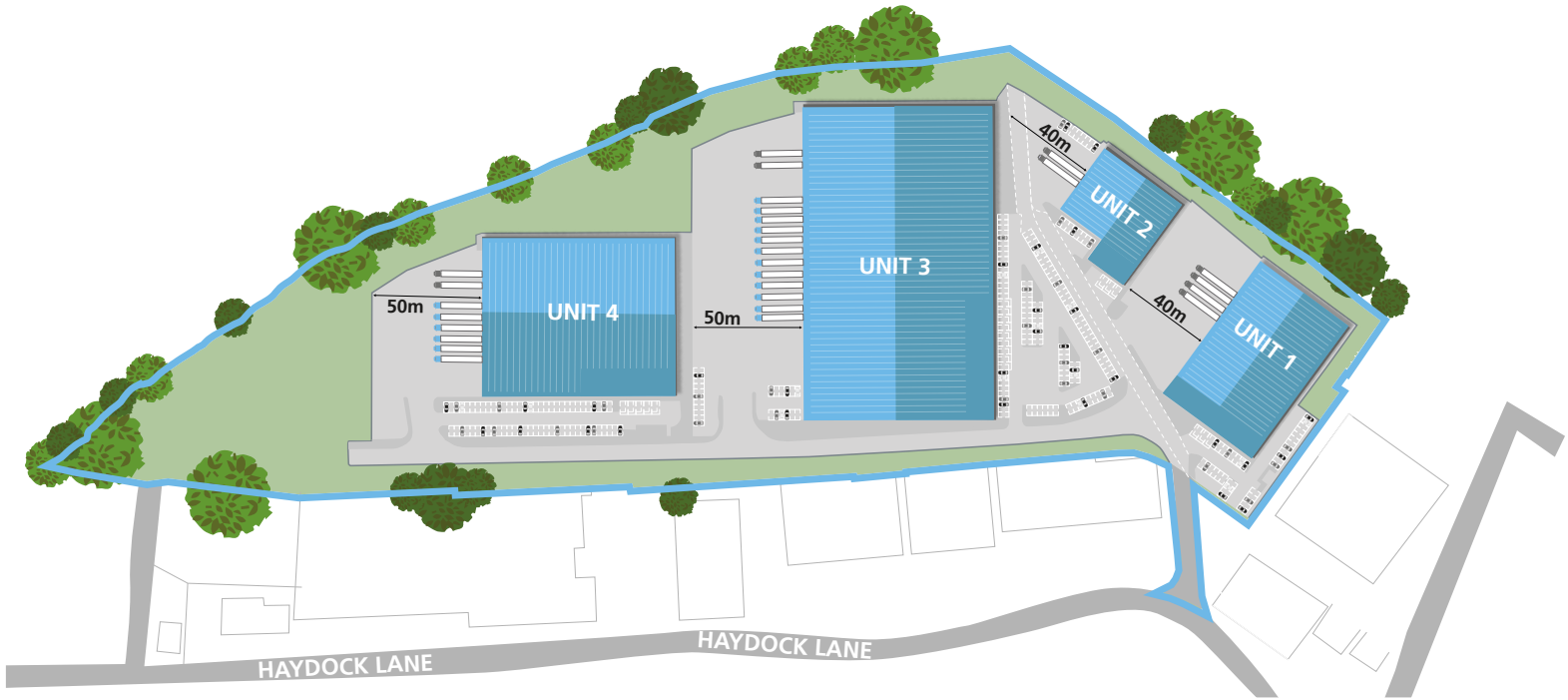
SITEPLAN



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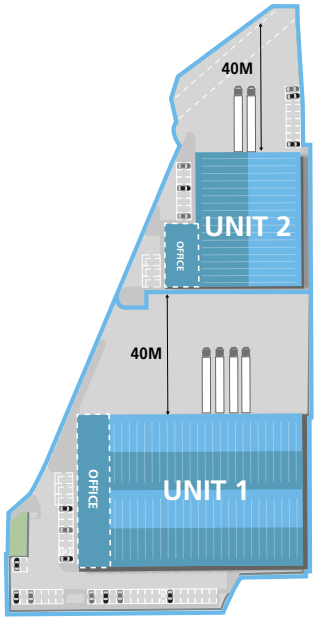
SITEPLAN



ACCOMMODATION (GIA)

UNIT 1	sq ft
Warehouse	38,730
1st Floor Offices	5,165
Total	**43,895**
Car Parking Spaces	43
Clear Internal Height	8M
Level Access Doors	4
EV Charging Spaces	4
Floor Loading	50KN/M2

UNIT 2	sq ft
Warehouse	18,225
1st Floor Offices	2,155
Total	**20,380**
Car Parking Spaces	25
Clear Internal Height	8M
Level Access Doors	2
EV Charging Spaces	3
Floor Loading	50KN/M2

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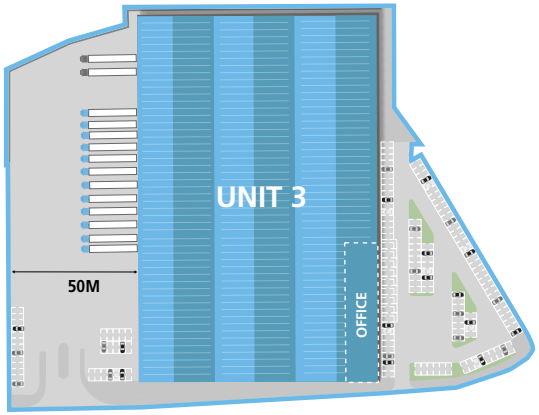
SITEPLAN



ACCOMMODATION (GIA)

UNIT 3	sq ft
Warehouse	142,375
1st + 2nd Floor Offices	13,615
Total	**155,990**
Car Parking Spaces	137
Clear Internal Height	12.5M
Level Access Doors	2
Dock Level Doors	12
EV Charging Spaces	14
Floor Loading	50KN/M2

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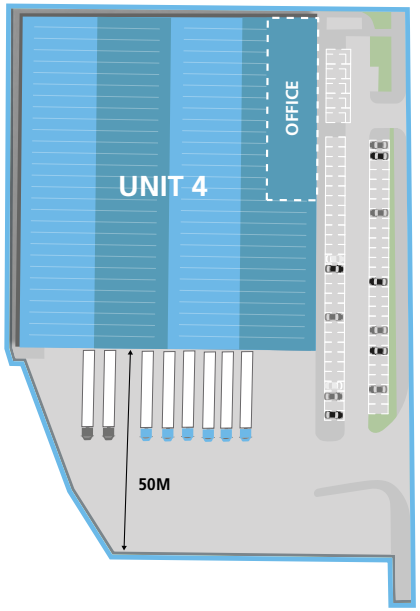
SITEPLAN



ACCOMMODATION (GIA)

UNIT 4	sq ft
Warehouse	61,820
1st Floor Offices	5,330
Total	**67,150**
Car Parking Spaces	70
Clear Internal Height	10M
Level Access Doors	2
Dock Level Doors	6
EV Charging Spaces	7
Floor Loading	50KN/M2

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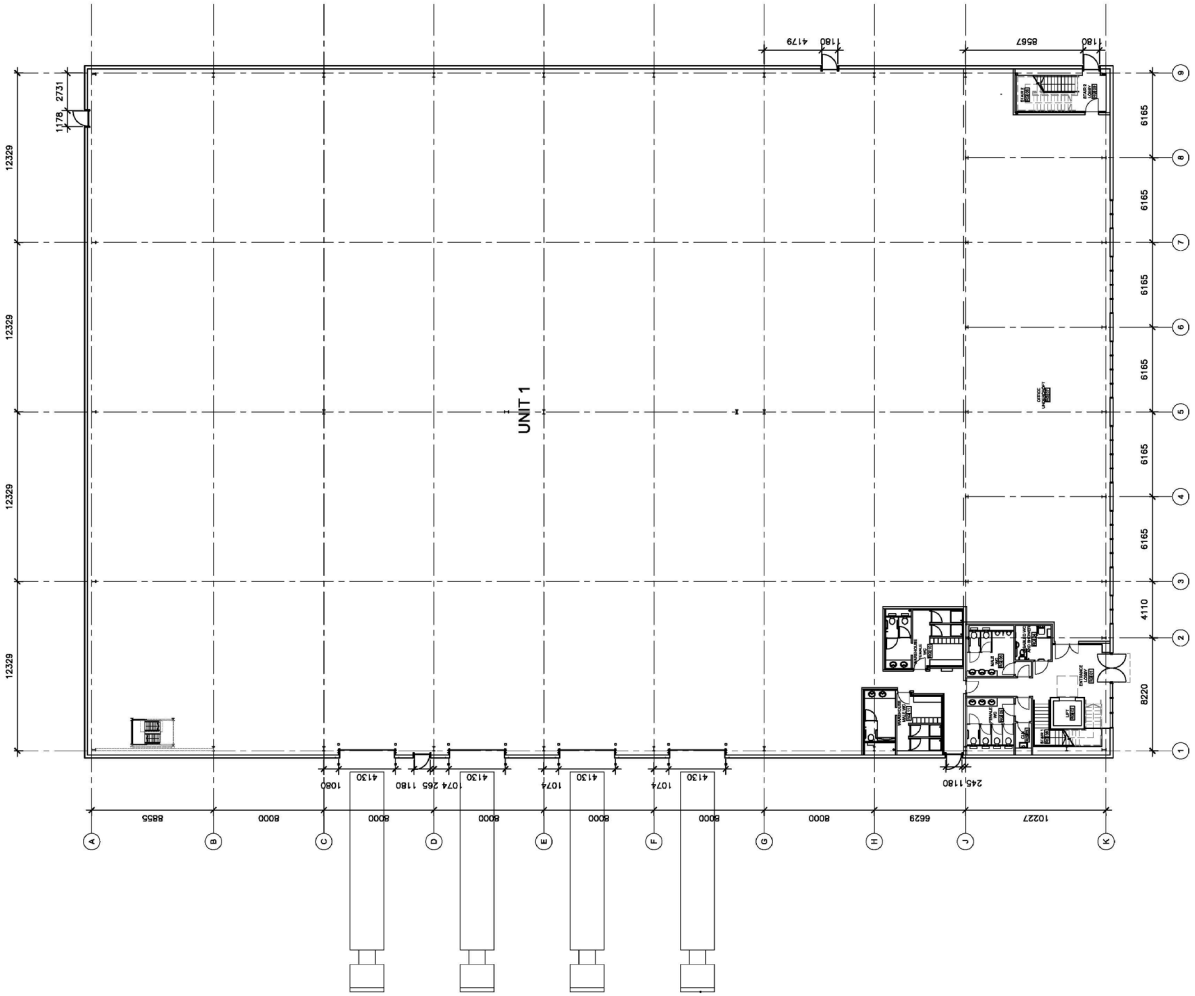
WAREHOUSE PLAN: UNIT 1



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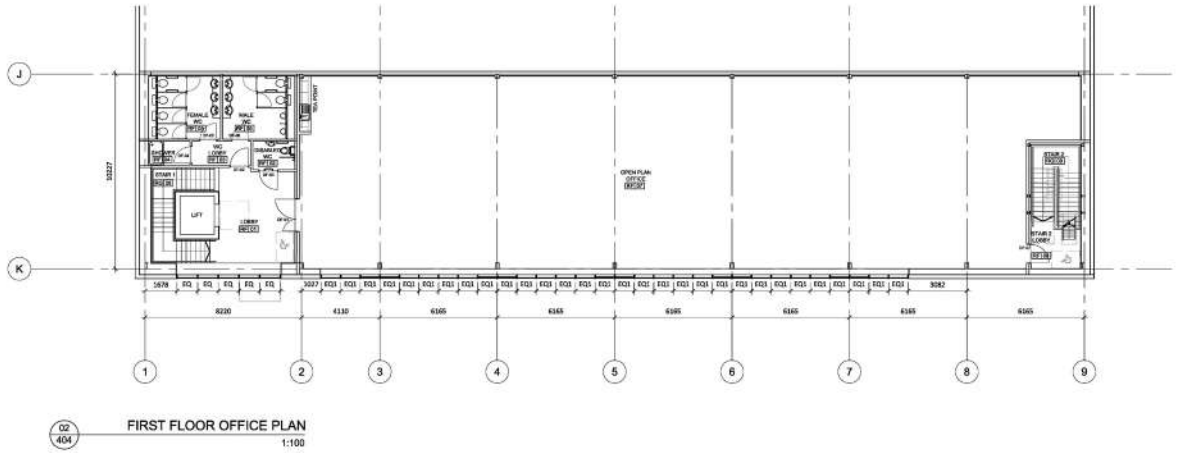
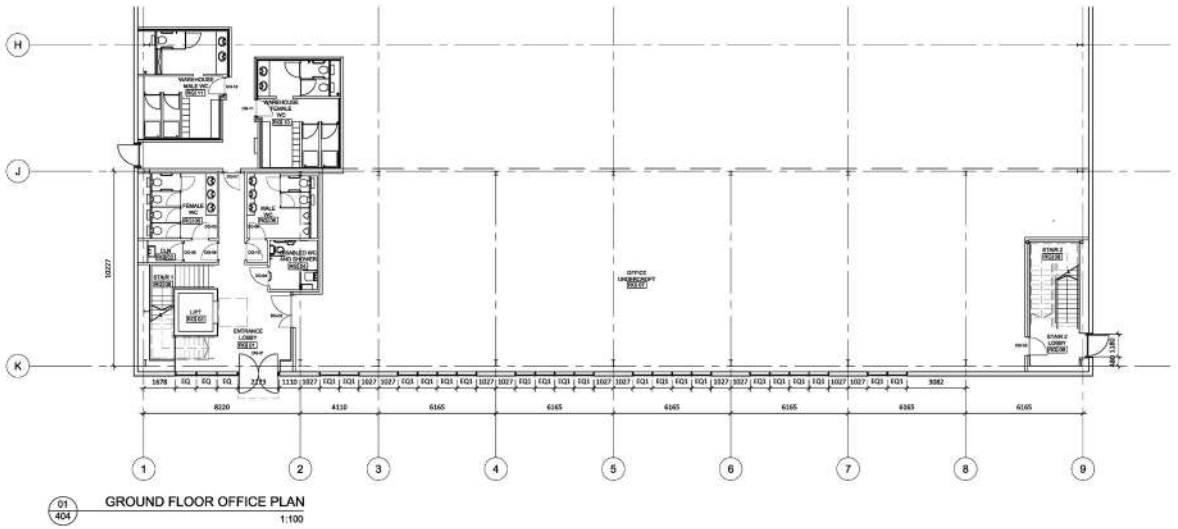
OFFICE FLOOR PLANS: UNIT 1



02/404 FIRST FLOOR OFFICE PLAN
1:100



01/404 GROUND FLOOR OFFICE PLAN
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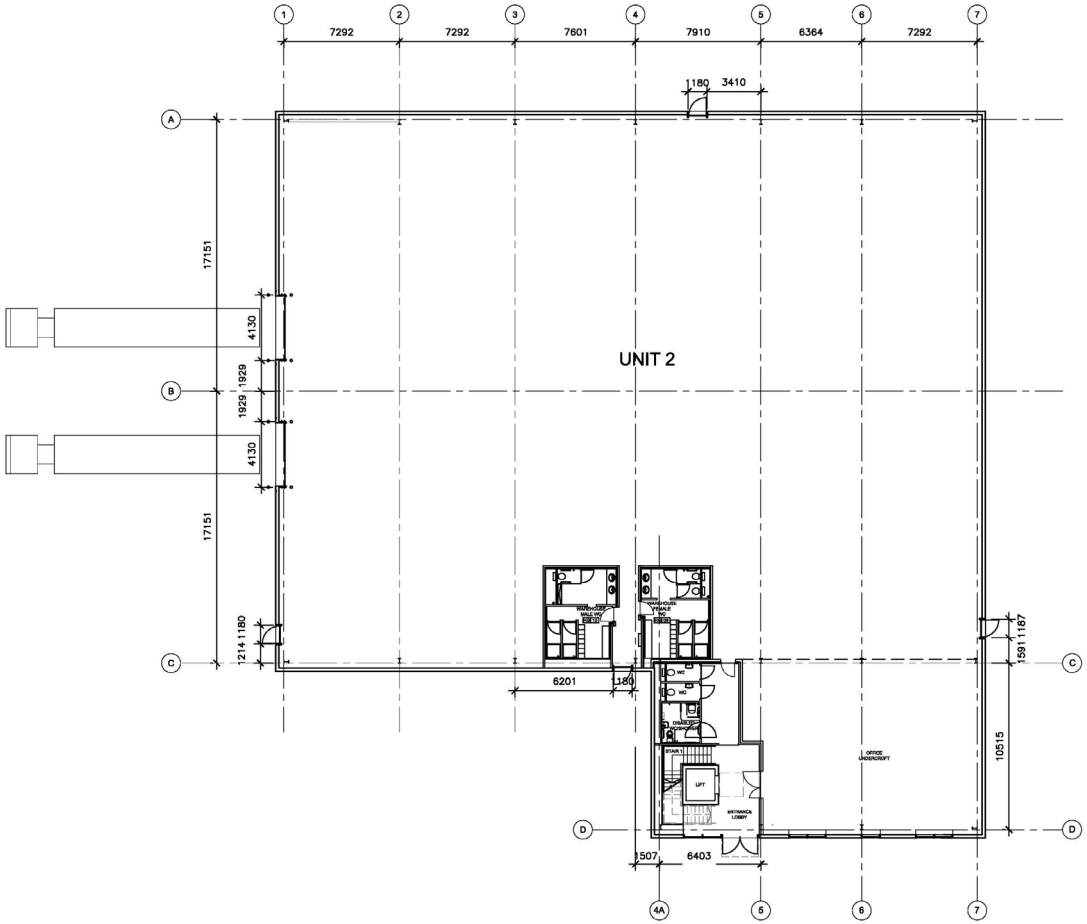
WAREHOUSE PLAN: UNIT 2



01/405 GROUND FLOOR PLAN
1:200

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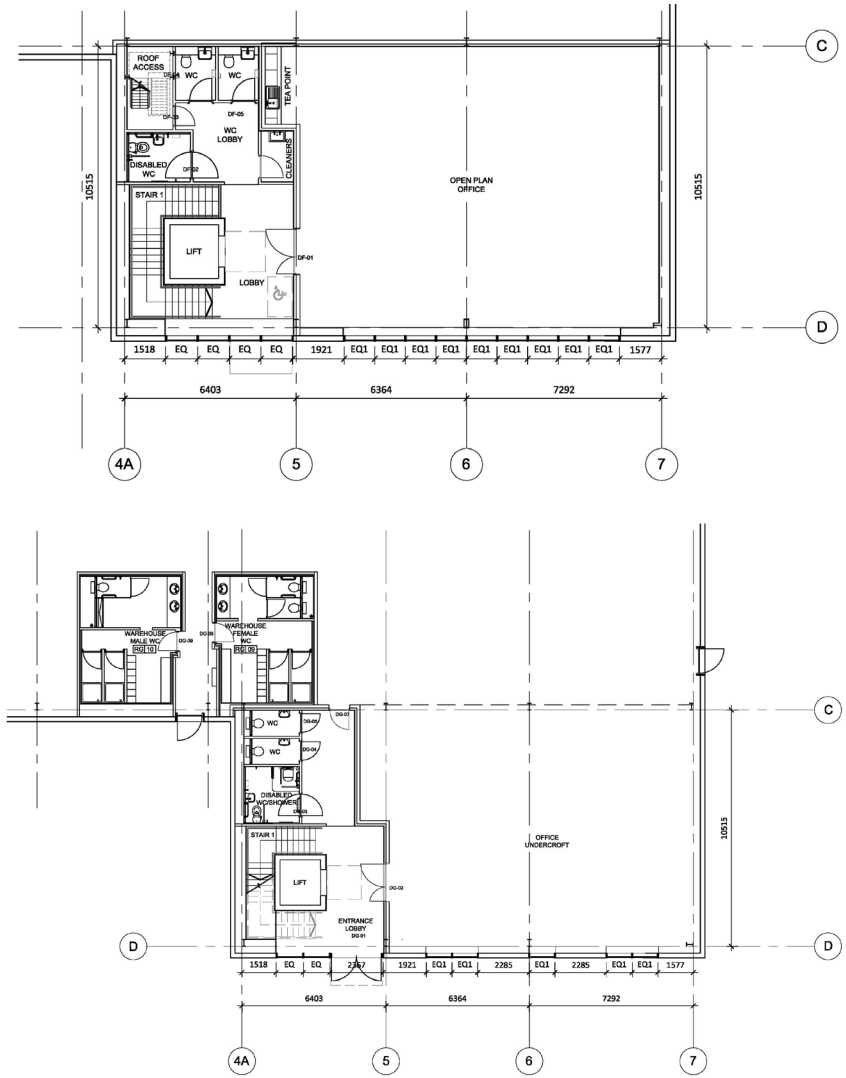

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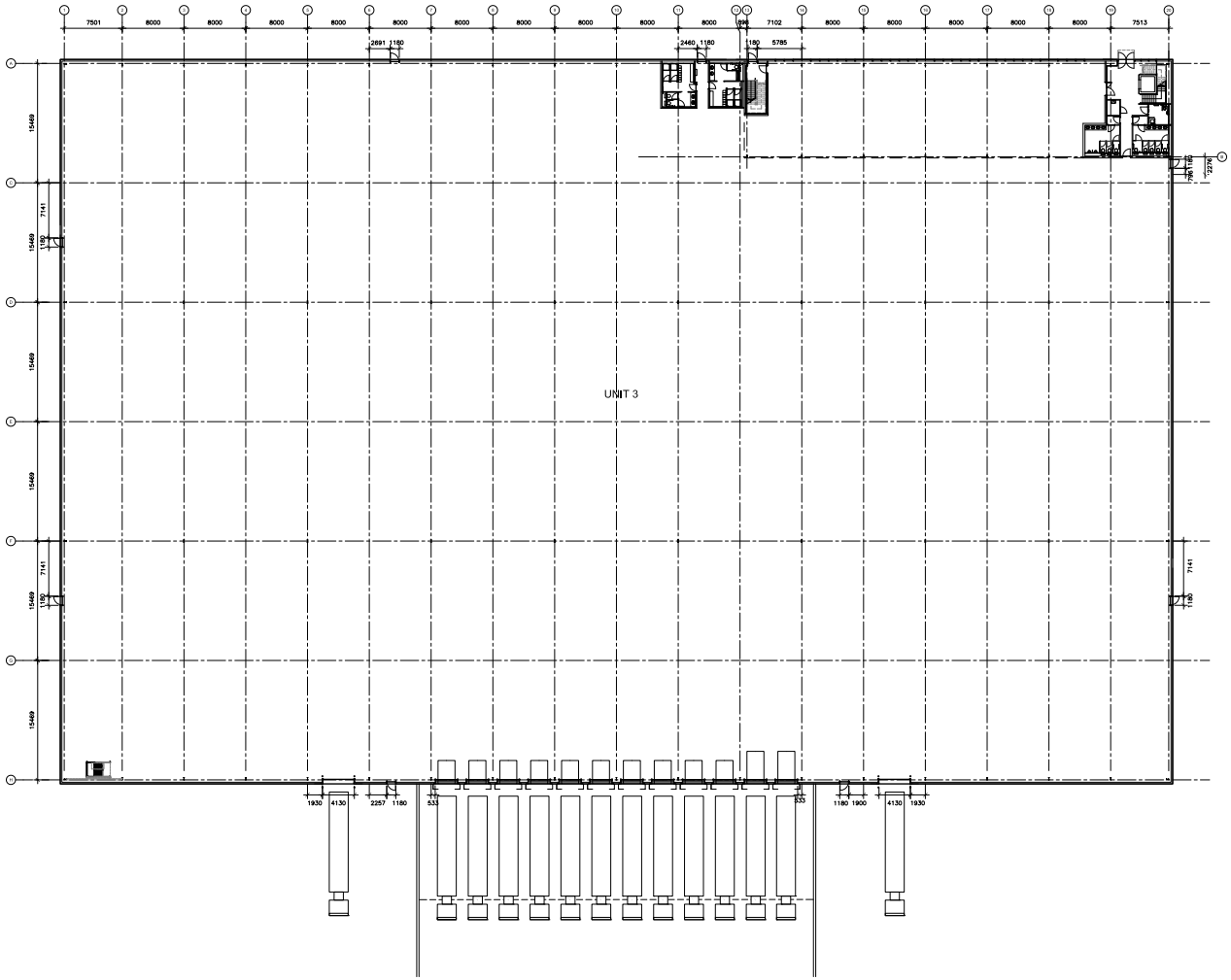

01/407 GROUND FLOOR PLAN
1:250

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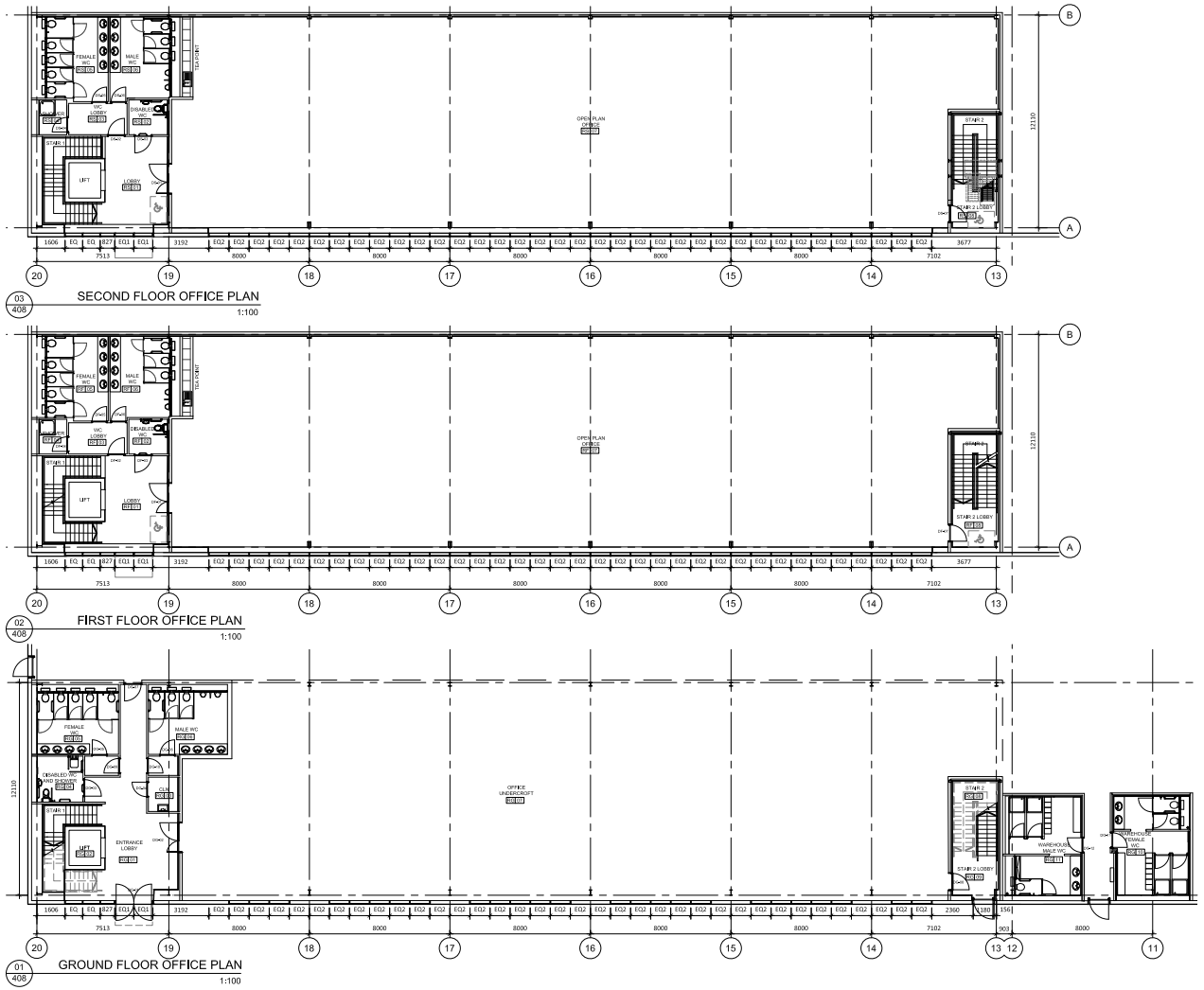

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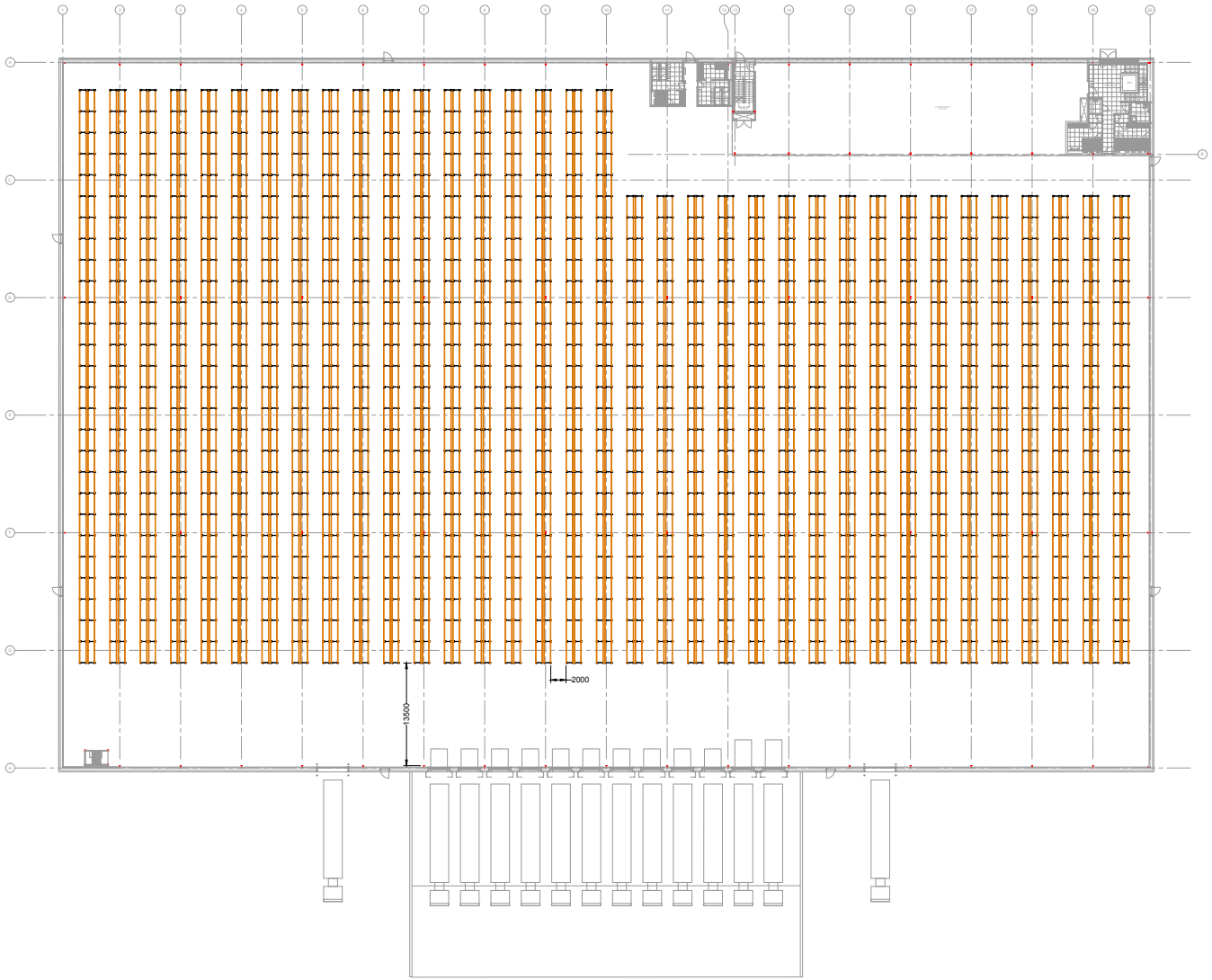
NARROW AISLE RACKING PLANS: UNIT 3



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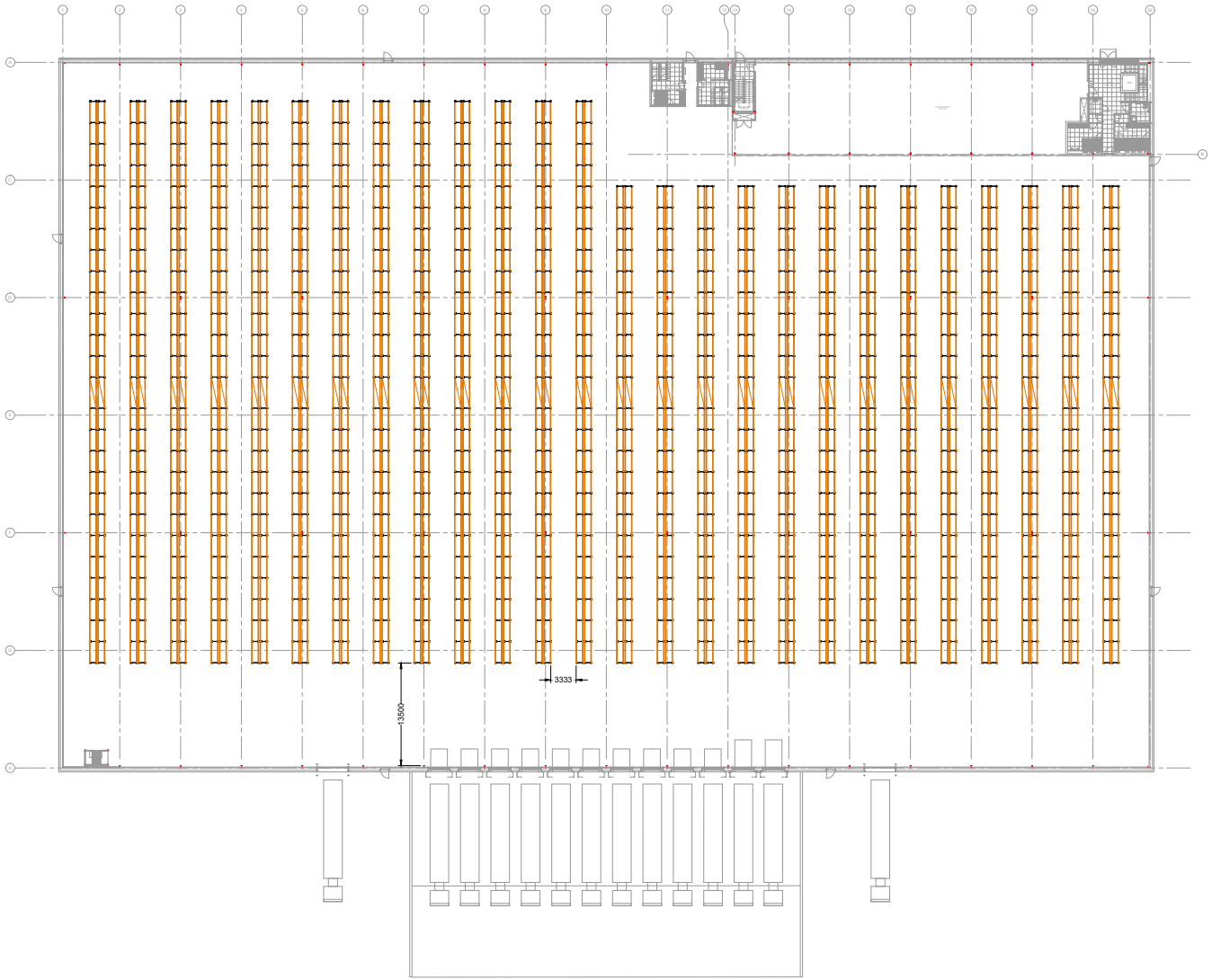

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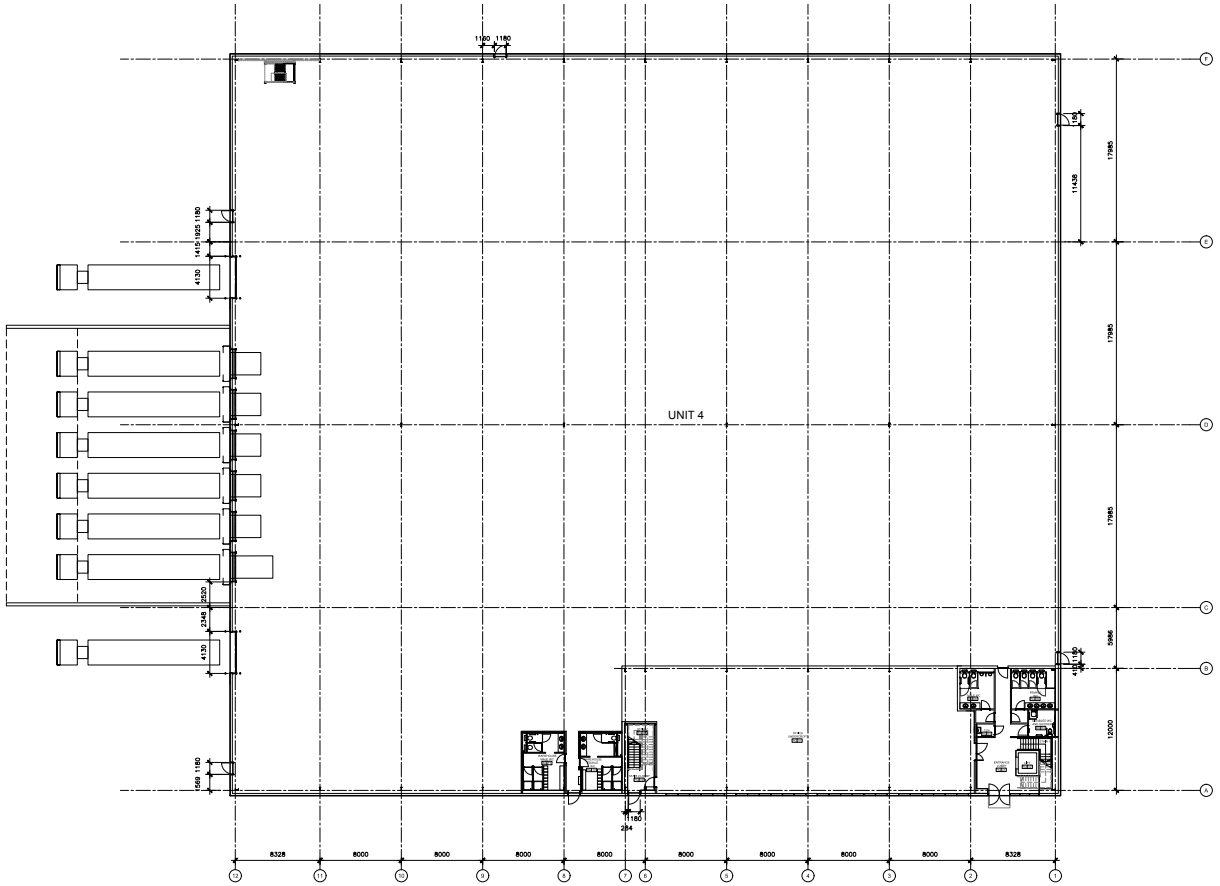
WAREHOUSE PLAN: UNIT 4



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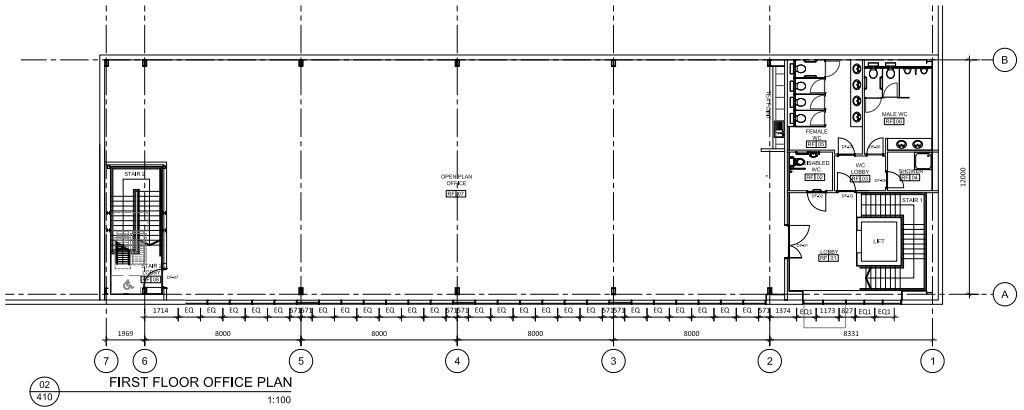

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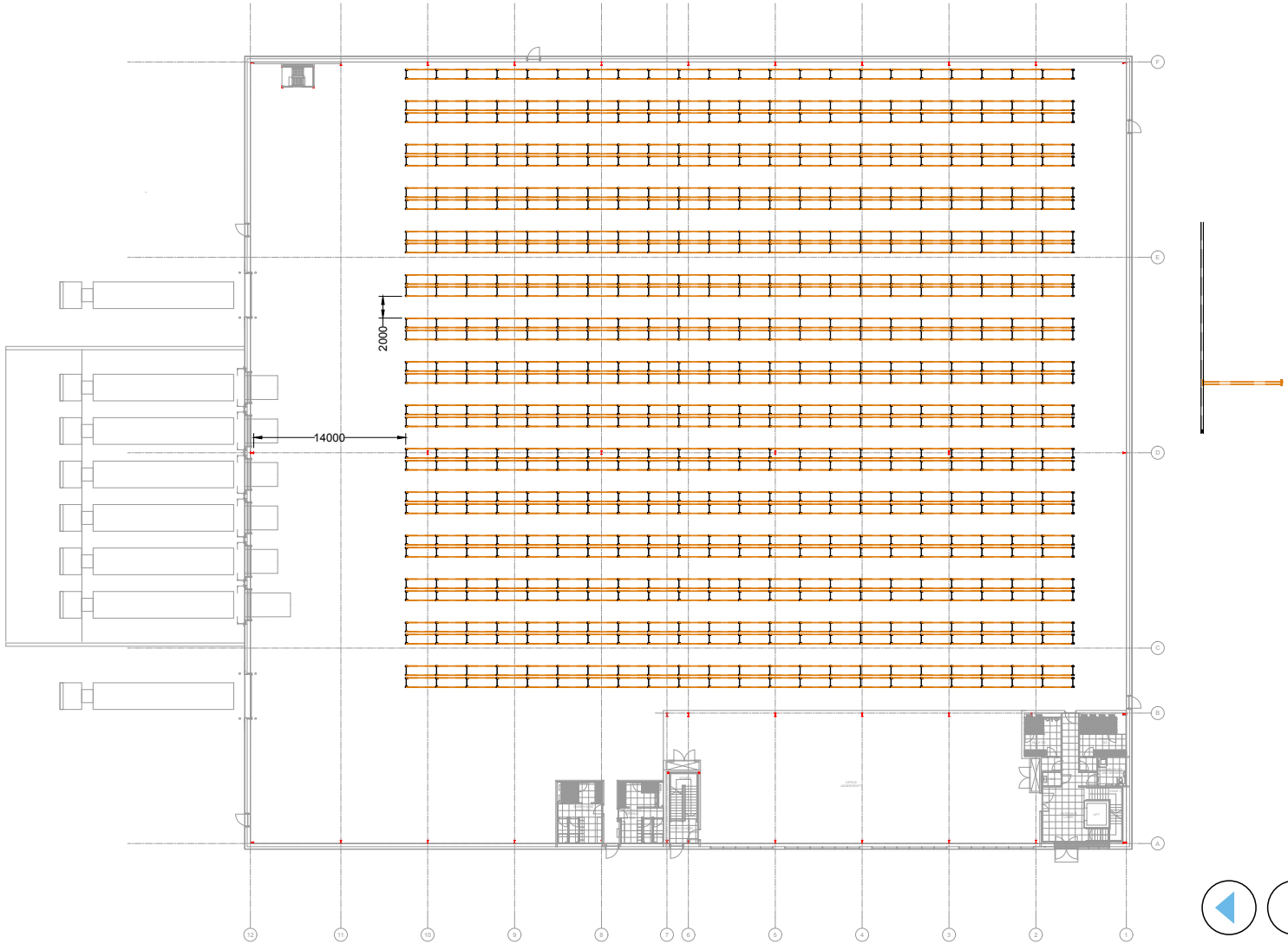

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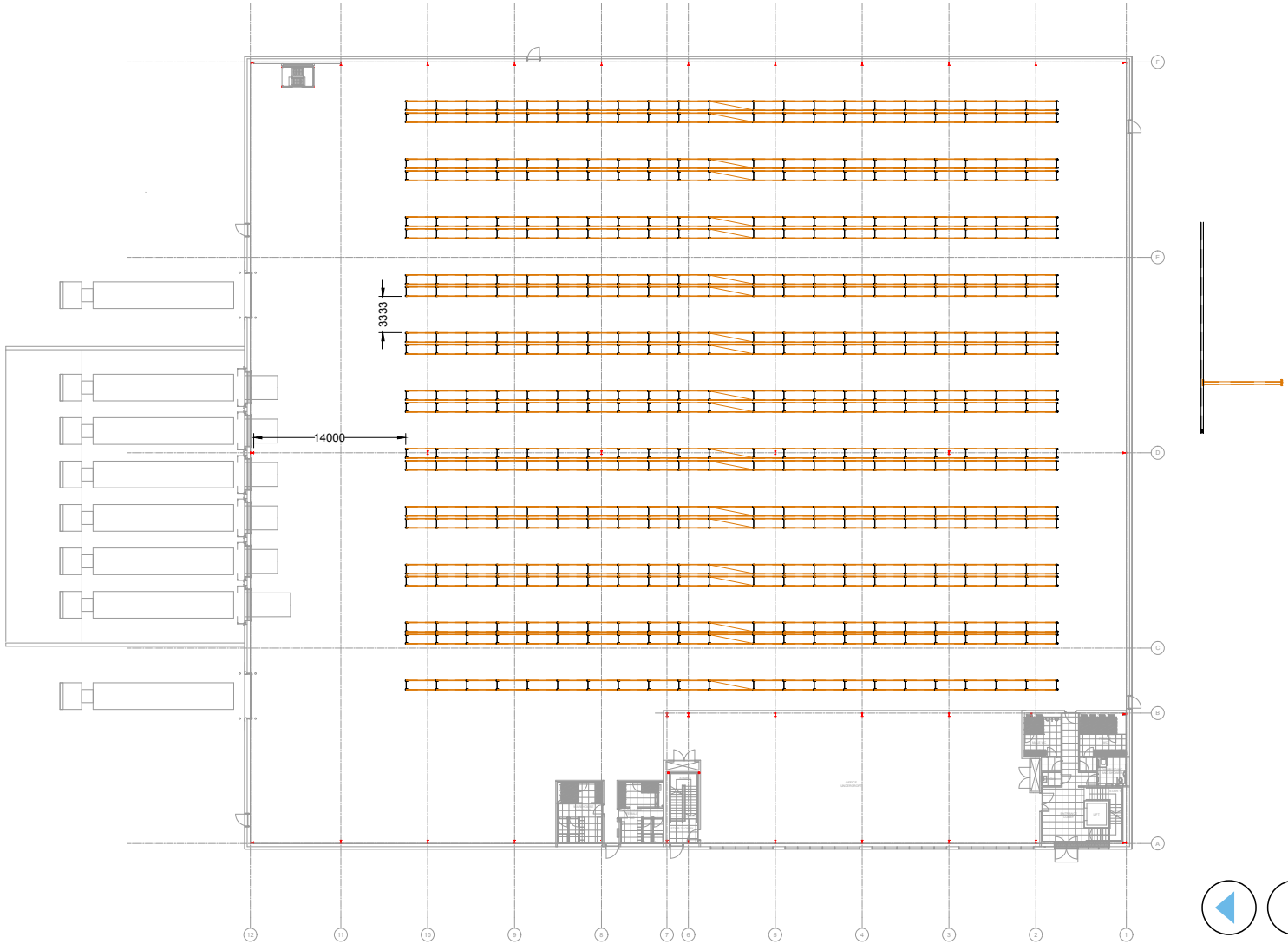

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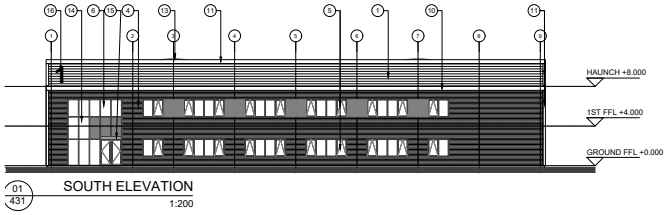

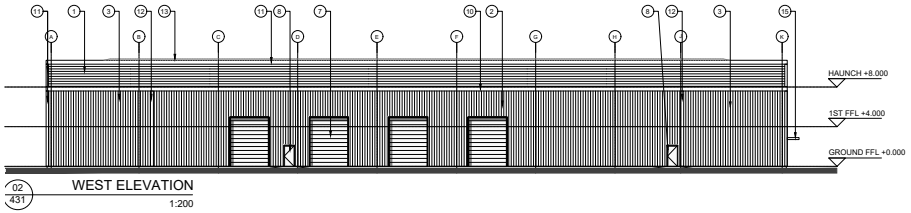

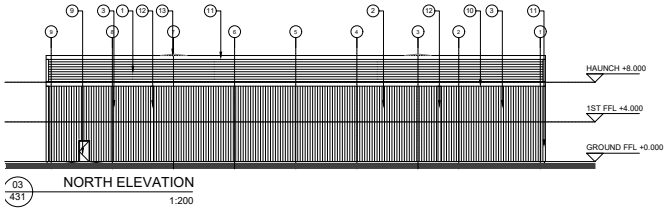

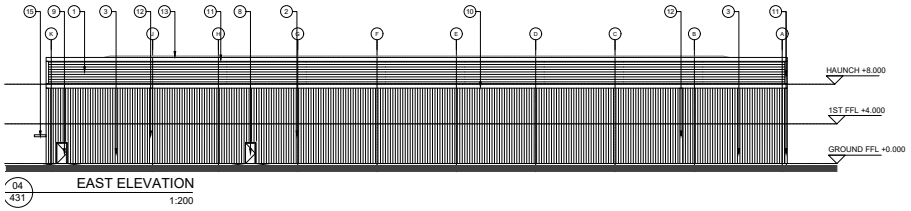

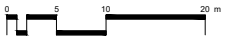

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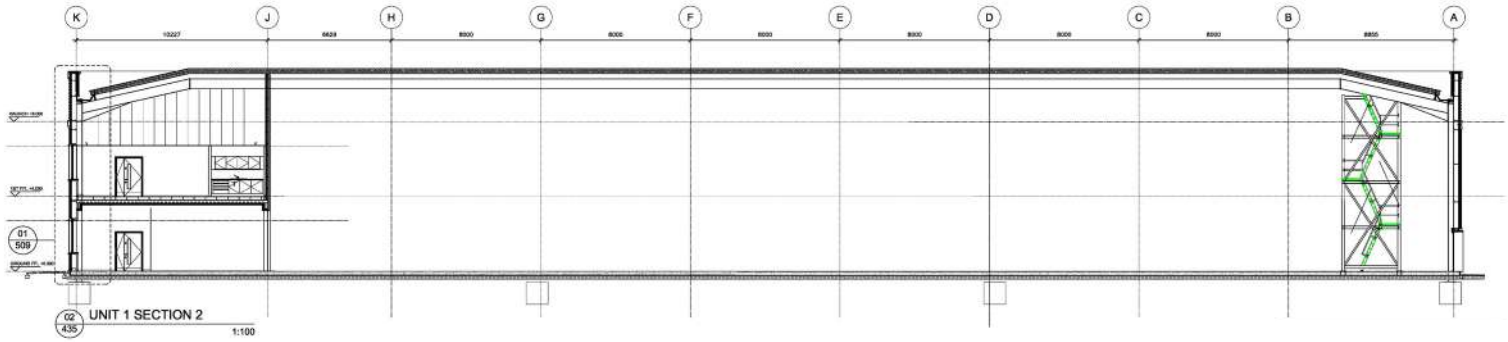

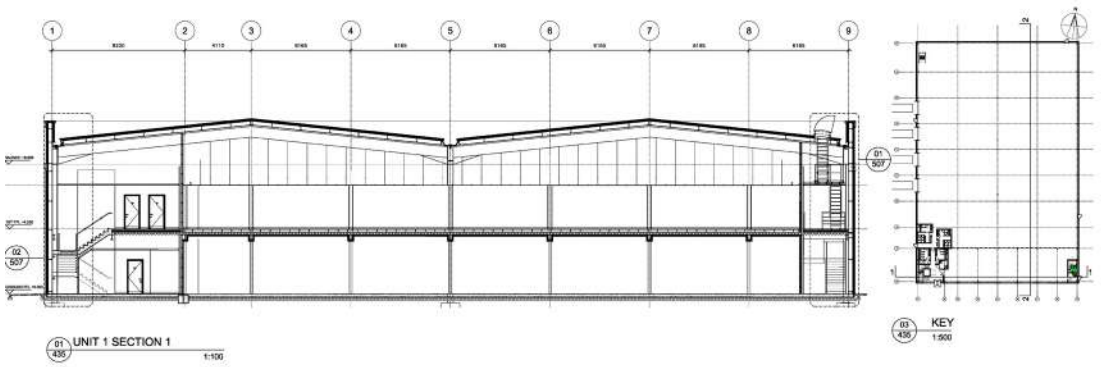

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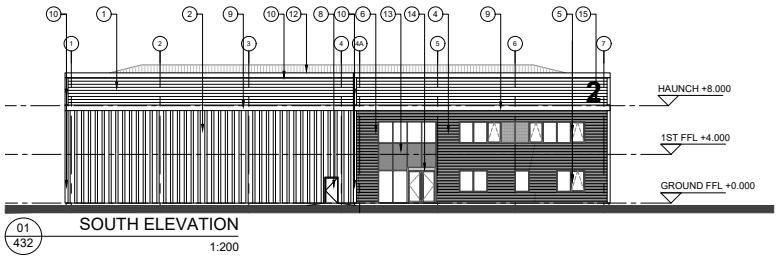

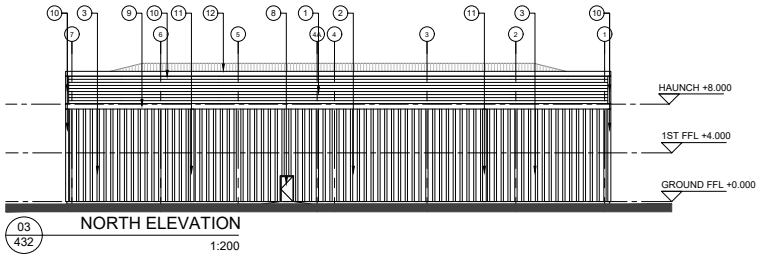

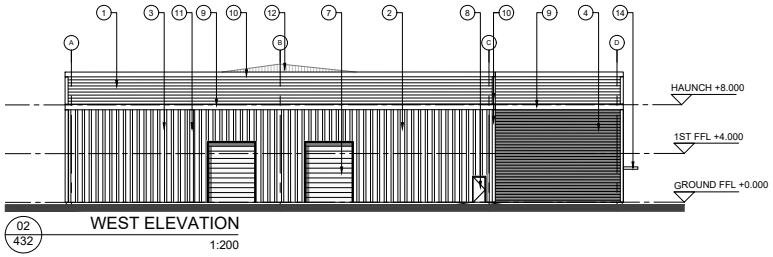

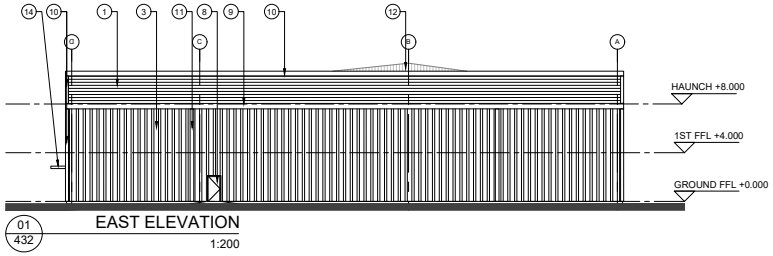

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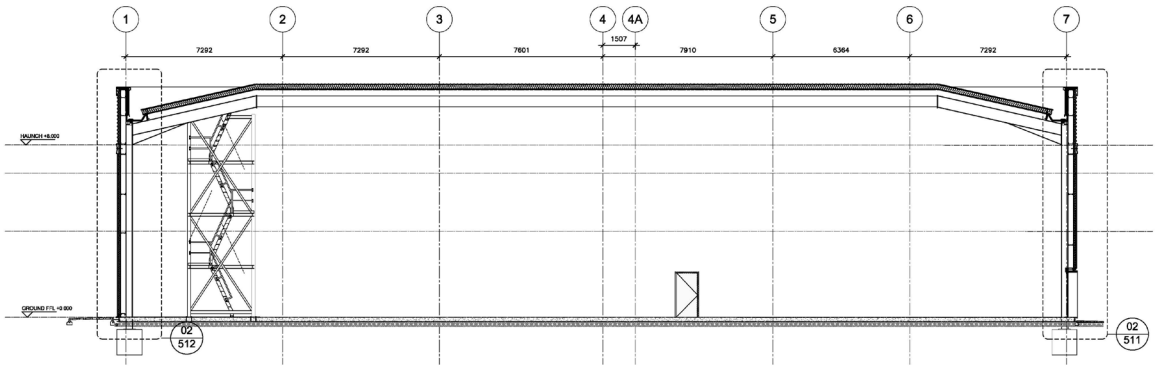

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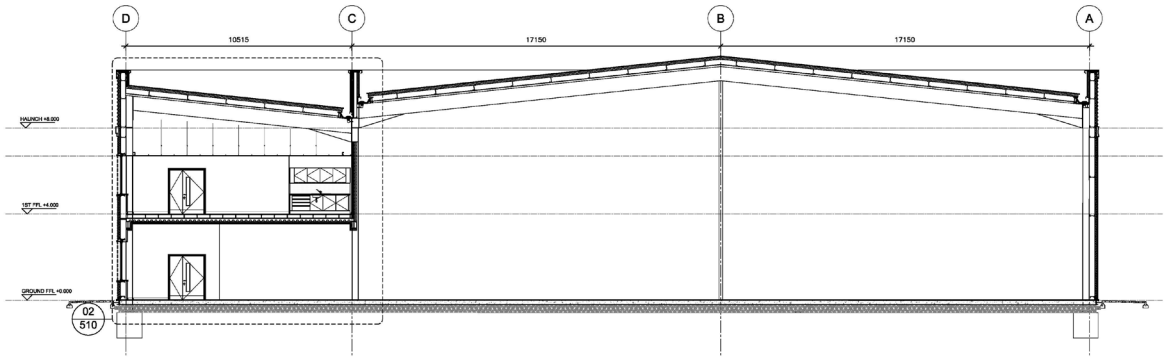

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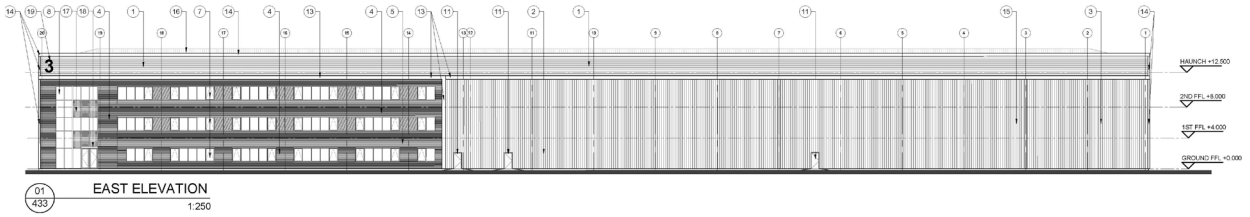
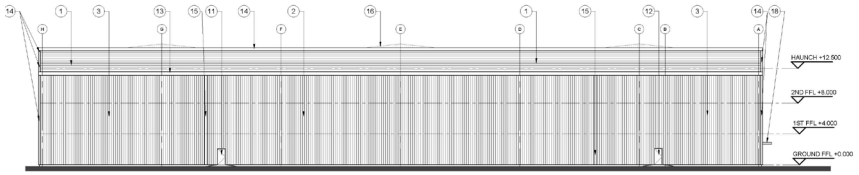
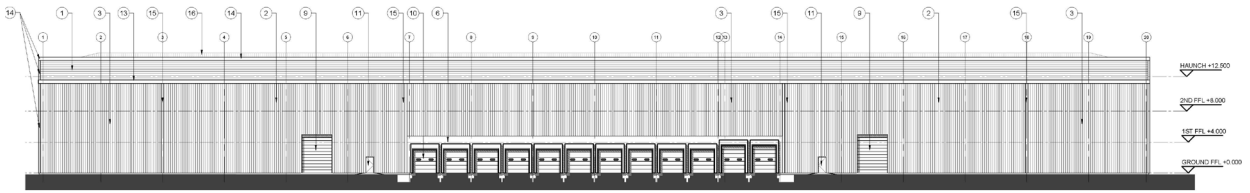


01 433 EAST ELEVATION
1:250



02 433 SOUTH ELEVATION
1:250



03 433 WEST ELEVATION
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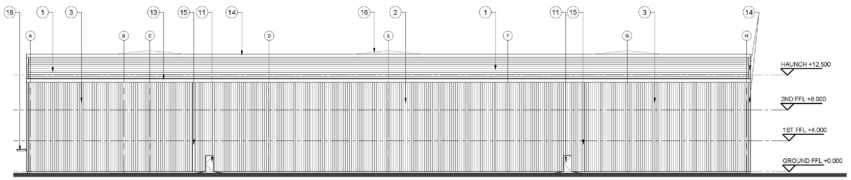

NOTES:

SUBJECT TO STATUTORY CONSENTS

SUBJECT TO SURVEY

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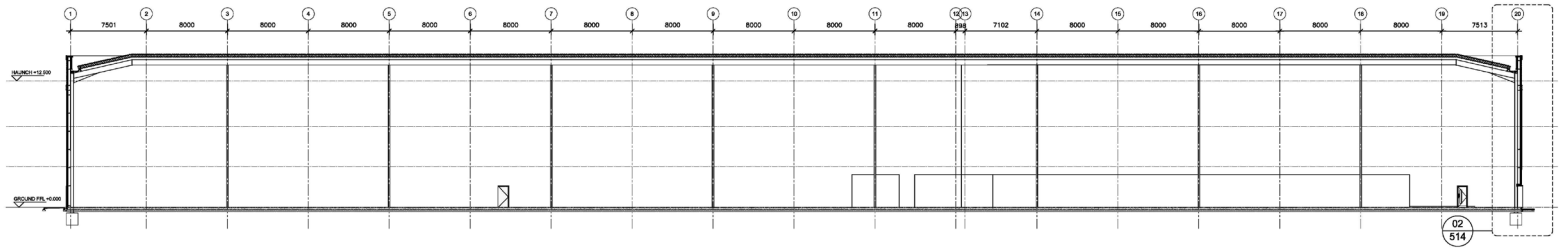

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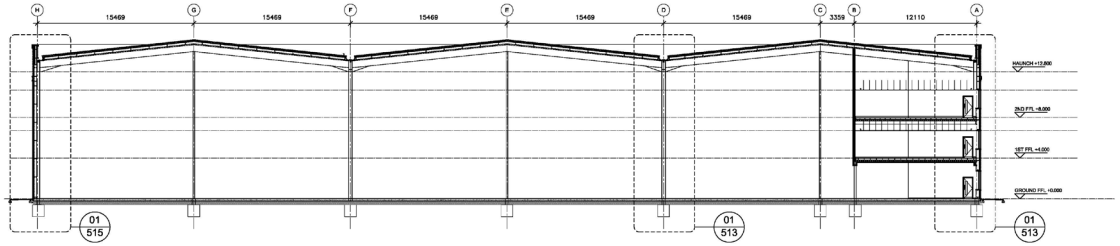

01/437 UNIT 3 SECTION 1
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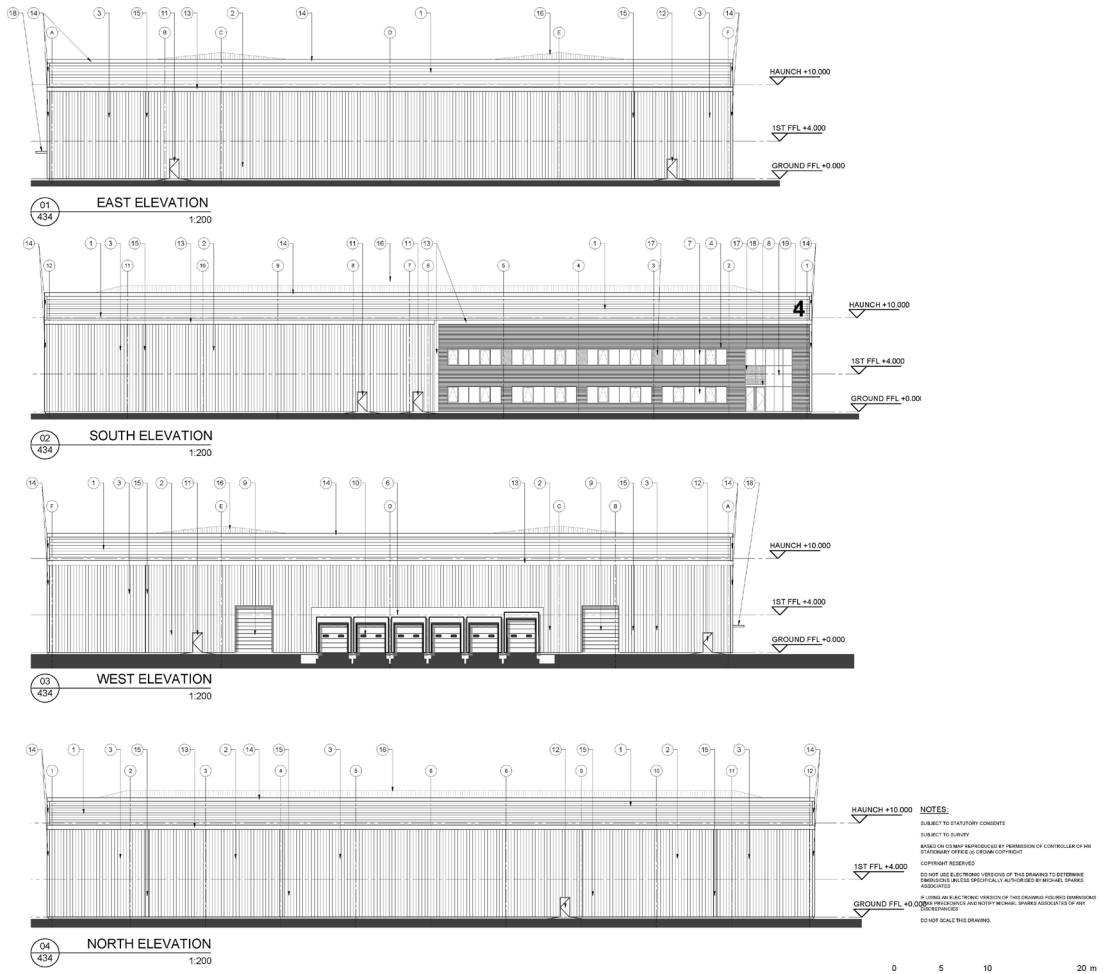

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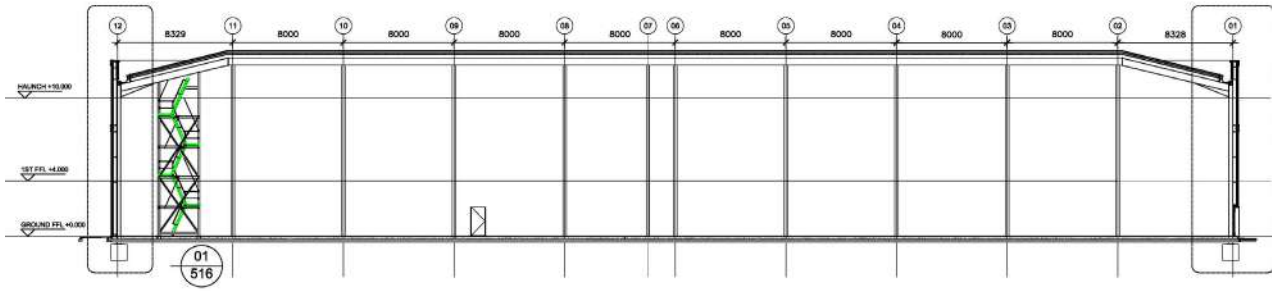

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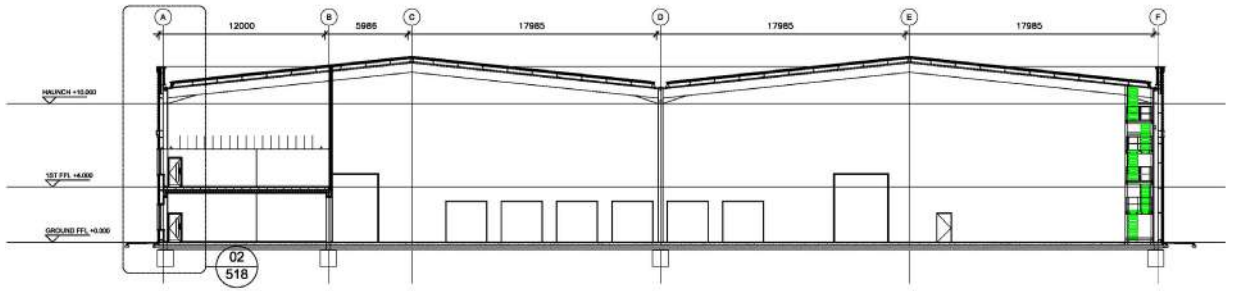

01/438 UNIT 4 SECTION 1
1:200

CONTENTS

SERVICES

ELECTRIC

Unit 1 - 500 kVA
Unit 2 - 250 kVA
Unit 3 - 750 kVA
Unit 4 - 500 kVA

WATER

A separate metered incoming mains water supply shall be provided to each unit

GAS

The incoming gas meter to each unit will be positioned in an external ventilated meter kiosk adjacent to each unit. A new incoming gas supply will be extended and capped off within the warehouse area.

CONTENTS

PROJECT TEAM

LANDLORD
Canmoor

PROJECT MANAGER
Canmoor Projects

CONTRACTOR
A & H Construction

ARCHITECT
Michael Sparks Associates

LETTINGS TEAM
DTRE, CPP and B8

LEGAL TEAM
Forsters

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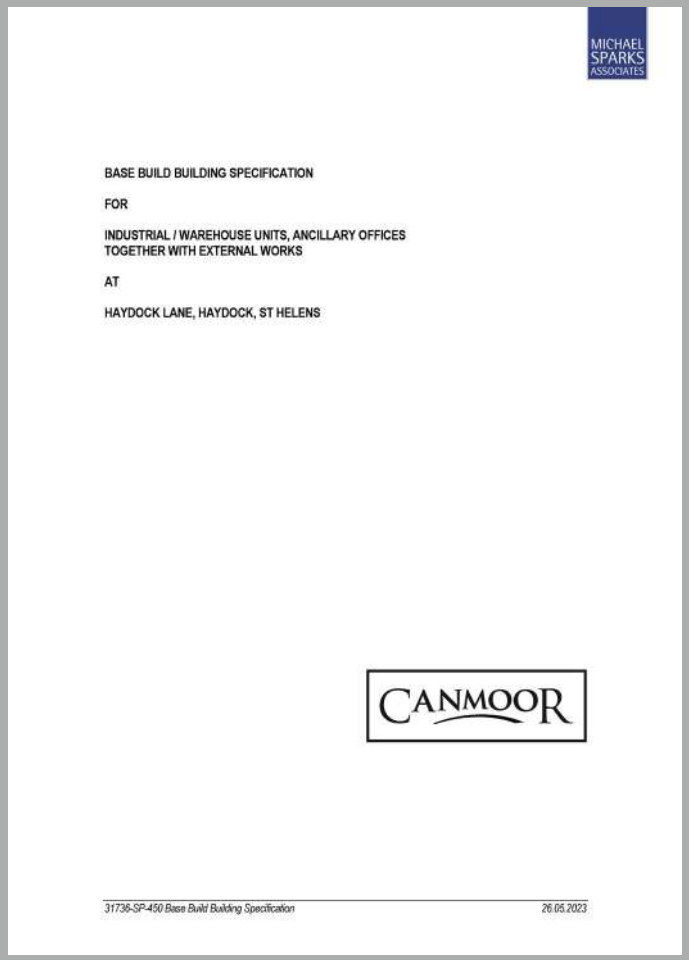
PLANNING CONSENT



MICHAEL SPARKS ASSOCIATES

BASE BUILD BUILDING SPECIFICATION

FOR

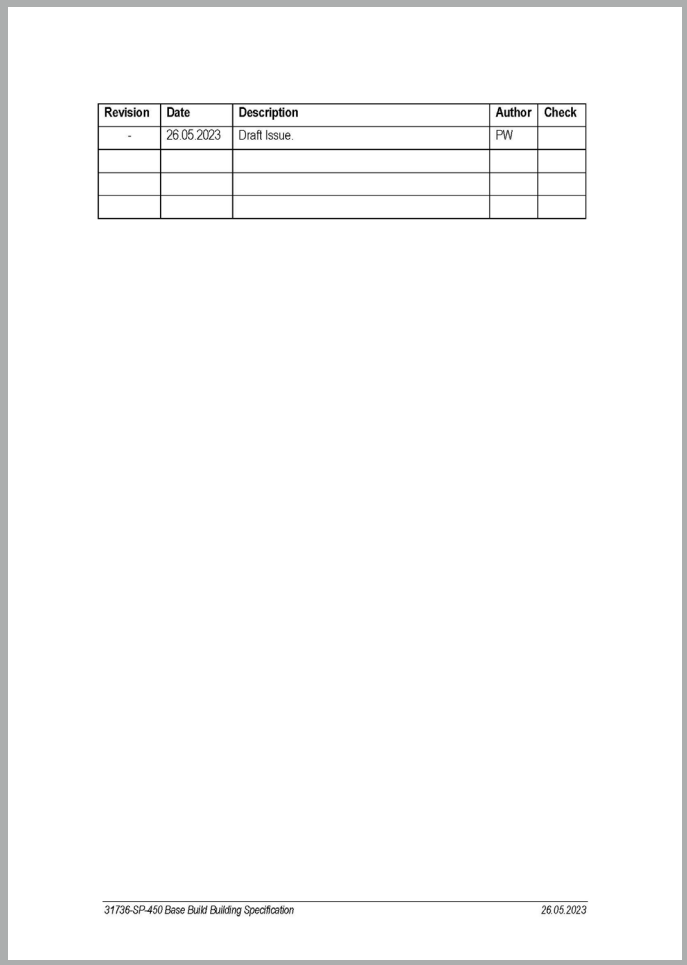
INDUSTRIAL / WAREHOUSE UNITS, ANCILLARY OFFICES
TOGETHER WITH EXTERNAL WORKS

AT

HAYDOCK LANE, HAYDOCK, ST HELENS

CANMOOR

31736-SP-450 Base Build Building Specification 26.05.2023



Revision	Date	Description	Author	Check
-	26.05.2023	Draft Issue.	PW	

31736-SP-450 Base Build Building Specification 26.05.2023

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PLANNING CONSENT

MICHAEL SPARKS ASSOCIATES

1.0 GENERALLY

1.01 The site is located off Haydock Lane, Haydock, St Helens.

1.02 The site area is approximately 7.757 HA / 19.15 Acres. The works, as shown on the MSA current drawings, are for the construction of 4 warehouse/industrial buildings with fully fitted out offices, external service storage yard and car parking. Areas are shown below. All areas are measured in accordance with the RICS Code of Measuring Practice 6th Edition, excluding items to be stated separately. The stipulated planning approval GEA is not to be exceeded. Landscaping and estate roads are also to be provided.

1.03 Schedule of Accommodation (GIA)

AREA SCHEDULE
GIA

	sqm	sqft
Unit 1	3,598	38,730
1st Flr Offices	480	5,165
Sub total	**4,078**	**43,895**

	sqm	sqft
Unit 2	1,693	18,225
1st Flr Offices	200	2,155
Sub total	**1,893**	**20,380**

	sqm	sqft
Unit 3	13,227	142,375
1st/2nd Flr Offices	1,265	13,615
Sub total	**14,492**	**155,990**

	sqm	sqft
Unit 4	5,743	61,820
1st Flr Offices	495	5,330
Sub total	**6,238**	**67,150**

TOTAL	**26,701**	**287,415**

1.04 The unit and offices will have elevations of colour coated profiled and flat metal cladding, and polyester powder coated curtain walling under a metal roof with parapets.

1.05 All works will be carried out in accordance with current British and European Standards, Codes of Practice, Building Regulations, Local and Statutory Authority requirements and in

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accordance with good building practice. Electrical installations will accord with IEE Regulations 17th Edition. The works will be designed to but not limited to: Town and Country Planning Act 1990 and associated Acts. Some British Standards that have been updated to European Standards are still referred to in current legislation and are therefore noted in conjunction with the updated version.

a. The Building Act 1984
b. Town and Country Planning Act 1990 and associated Acts
c. Office Shops and the Railway Premises Act 1963
d. The Health and Safety at Work Act 1974
e. Local Water Authority Requirements and DOE Water Supply (Water Fittings), Regulations 1999
f. The Gas Safety Regulations (where relevant)
g. The Clean Air Act
h. The specific requirements of the Utility Suppliers, Local Authorities and Local Planning Authorities
i. The CIBSE Guidelines
j. The Factories Act 1961
k. The Electricity Supply Act
l. The Construction (Design and Management) Regulations (CONDAM) 2015
m. European Product Directives
n. Equality Act 2010

1.06 The occupier will be responsible for providing a Fire Risk Assessment, provision of extinguishers etc and no account has been taken in respect of any special requirement of Insurers, FOC Rules in connection with the Fire Safety Order 2005.

1.07 All insulation will be Euroclass A1 'Non combustable' with exception of the dock and level access doors.

1.08 All materials will be delivered, stored and fixed in accordance with the manufacturer's recommendations.

1.09 This specification is to be read in conjunction with the latest revisions of MSA drawings.

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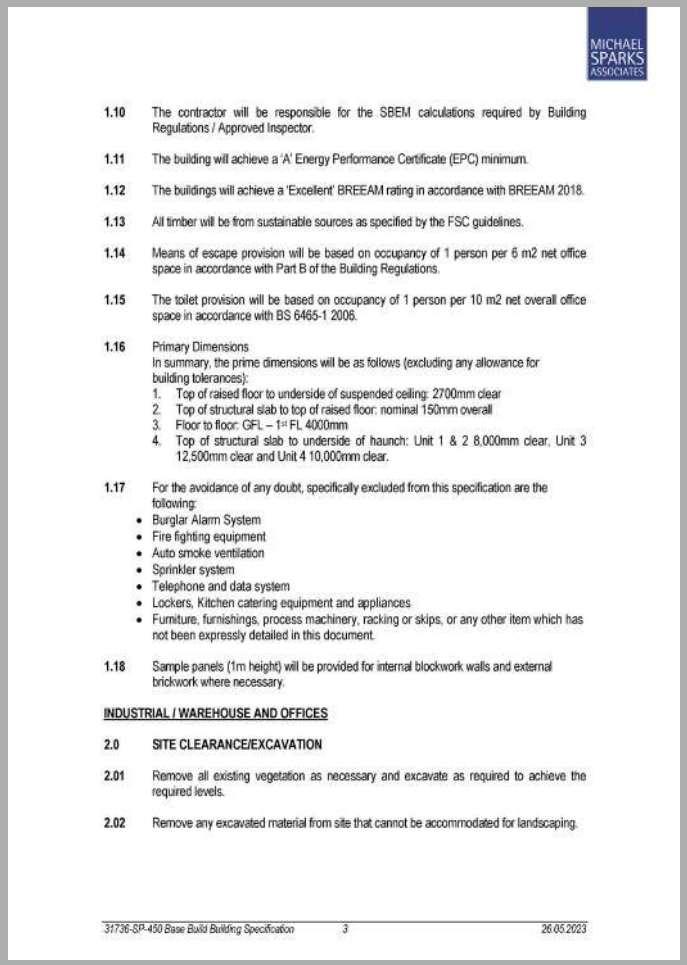
PLANNING CONSENT



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1.10 The contractor will be responsible for the SBEM calculations required by Building Regulations / Approved Inspector.

1.11 The building will achieve a 'A' Energy Performance Certificate (EPC) minimum.

1.12 The buildings will achieve a 'Excellent' BREEAM rating in accordance with BREEAM 2018.

1.13 All timber will be from sustainable sources as specified by the FSC guidelines.

1.14 Means of escape provision will be based on occupancy of 1 person per 6 m2 net office space in accordance with Part B of the Building Regulations.

1.15 The toilet provision will be based on occupancy of 1 person per 10 m2 net overall office space in accordance with BS 6465-1 2006.

1.16 Primary Dimensions
In summary, the prime dimensions will be as follows (excluding any allowance for building tolerances):
1. Top of raised floor to underside of suspended ceiling: 2700mm clear
2. Top of structural slab to top of raised floor: nominal 150mm overall
3. Floor to floor: GFL – 1st FL 4000mm
4. Top of structural slab to underside of haunch: Unit 1 & 2 8,000mm clear, Unit 3 12,500mm clear and Unit 4 10,000mm clear.

1.17 For the avoidance of any doubt, specifically excluded from this specification are the following:
- Burglar Alarm System
- Fire fighting equipment
- Auto smoke ventilation
- Sprinkler system
- Telephone and data system
- Lockers, Kitchen catering equipment and appliances
- Furniture, furnishings, process machinery, racking or skips, or any other item which has not been expressly detailed in this document.

1.18 Sample panels (1m height) will be provided for internal blockwork walls and external brickwork where necessary.

INDUSTRIAL / WAREHOUSE AND OFFICES

2.0 SITE CLEARANCE/EXCAVATION

2.01 Remove all existing vegetation as necessary and excavate as required to achieve the required levels.

2.02 Remove any excavated material from site that cannot be accommodated for landscaping.

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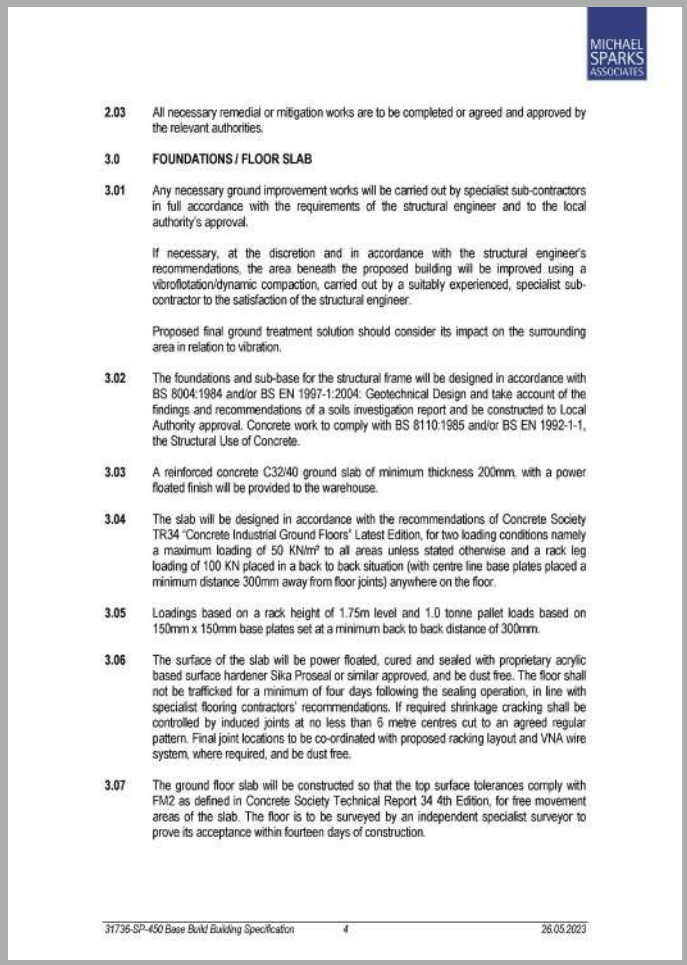

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2.03 All necessary remedial or mitigation works are to be completed or agreed and approved by the relevant authorities.

3.0 FOUNDATIONS / FLOOR SLAB

3.01 Any necessary ground improvement works will be carried out by specialist sub-contractors in full accordance with the requirements of the structural engineer and to the local authority's approval.

If necessary, at the discretion and in accordance with the structural engineer's recommendations, the area beneath the proposed building will be improved using a vibroflotation/dynamic compaction, carried out by a suitably experienced, specialist sub-contractor to the satisfaction of the structural engineer.

Proposed final ground treatment solution should consider its impact on the surrounding area in relation to vibration.

3.02 The foundations and sub-base for the structural frame will be designed in accordance with BS 8004:1984 and/or BS EN 1997-1:2004: Geotechnical Design and take account of the findings and recommendations of a soils investigation report and be constructed to Local Authority approval. Concrete work to comply with BS 8110:1985 and/or BS EN 1992-1-1, the Structural Use of Concrete.

3.03 A reinforced concrete C32/40 ground slab of minimum thickness 200mm, with a power floated finish will be provided to the warehouse.

3.04 The slab will be designed in accordance with the recommendations of Concrete Society TR34 'Concrete Industrial Ground Floors' Latest Edition, for two loading conditions namely a maximum loading of 50 KN/m² to all areas unless stated otherwise and a rack leg loading of 100 KN placed in a back to back situation (with centre line base plates placed a minimum distance 300mm away from floor joints) anywhere on the floor.

3.05 Loadings based on a rack height of 1.75m level and 1.0 tonne pallet loads based on 150mm x 150mm base plates set at a minimum back to back distance of 300mm.

3.06 The surface of the slab will be power floated, cured and sealed with proprietary acrylic based surface hardener Sika Proseal or similar approved, and be dust free. The floor shall not be trafficked for a minimum of four days following the sealing operation, in line with specialist flooring contractors' recommendations. If required shrinkage cracking shall be controlled by induced joints at no less than 6 metre centres cut to an agreed regular pattern. Final joint locations to be co-ordinated with proposed racking layout and VNA wire system, where required, and be dust free.

3.07 The ground floor slab will be constructed so that the top surface tolerances comply with FM2 as defined in Concrete Society Technical Report 34 4th Edition, for free movement areas of the slab. The floor is to be surveyed by an independent specialist surveyor to prove its acceptance within fourteen days of construction.

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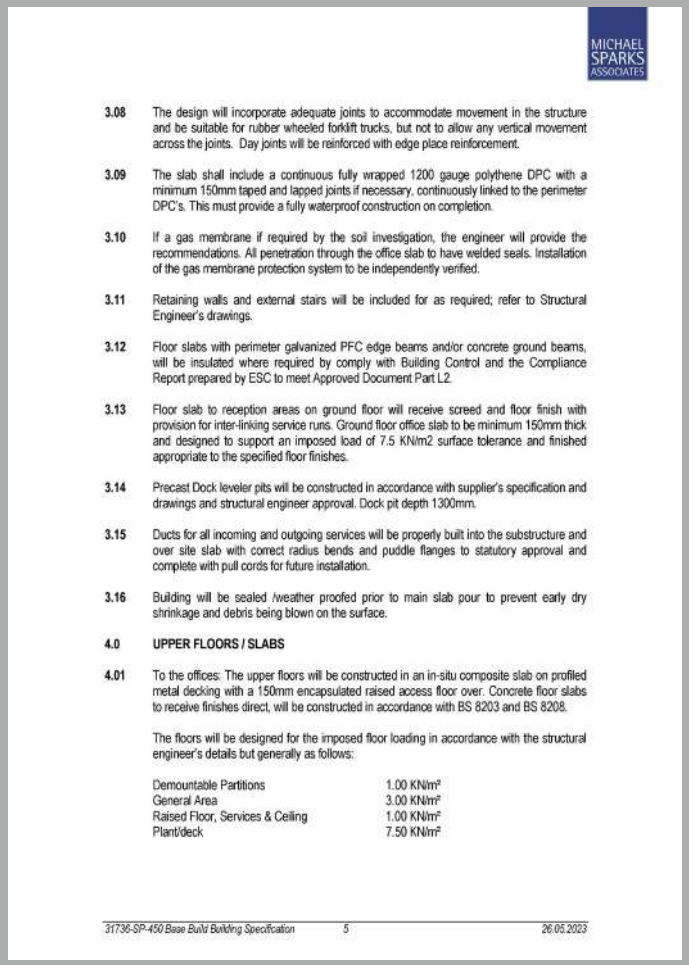

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3.08 The design will incorporate adequate joints to accommodate movement in the structure and be suitable for rubber wheeled forklift trucks, but not to allow any vertical movement across the joints. Day joints will be reinforced with edge place reinforcement.

3.09 The slab shall include a continuous fully wrapped 1200 gauge polythene DPC with a minimum 150mm taped and lapped joints if necessary, continuously linked to the perimeter DPC's. This must provide a fully waterproof construction on completion.

3.10 If a gas membrane if required by the soil investigation, the engineer will provide the recommendations. All penetration through the office slab to have welded seals. Installation of the gas membrane protection system to be independently verified.

3.11 Retaining walls and external stairs will be included for as required; refer to Structural Engineer's drawings.

3.12 Floor slabs with perimeter galvanized PFC edge beams and/or concrete ground beams, will be insulated where required by comply with Building Control and the Compliance Report prepared by ESC to meet Approved Document Part L2.

3.13 Floor slab to reception areas on ground floor will receive screed and floor finish with provision for inter-linking service runs. Ground floor office slab to be minimum 150mm thick and designed to support an imposed load of 7.5 KN/m2 surface tolerance and finished appropriate to the specified floor finishes.

3.14 Precast Dock leveler pits will be constructed in accordance with supplier's specification and drawings and structural engineer approval. Dock pit depth 1300mm.

3.15 Ducts for all incoming and outgoing services will be properly built into the substructure and over site slab with correct radius bends and puddle flanges to statutory approval and complete with pull cords for future installation.

3.16 Building will be sealed /weather proofed prior to main slab pour to prevent early dry shrinkage and debris being blown on the surface.

4.0 UPPER FLOORS / SLABS

4.01 To the offices: The upper floors will be constructed in an in-situ composite slab on profiled metal decking with a 150mm encapsulated raised access floor over. Concrete floor slabs to receive finishes direct, will be constructed in accordance with BS 8203 and BS 8208.

The floors will be designed for the imposed floor loading in accordance with the structural engineer's details but generally as follows:

Demountable Partitions	1.00 KN/m²
General Area	3.00 KN/m²
Raised Floor, Services & Ceiling	1.00 KN/m²
Plant/deck	7.50 KN/m²

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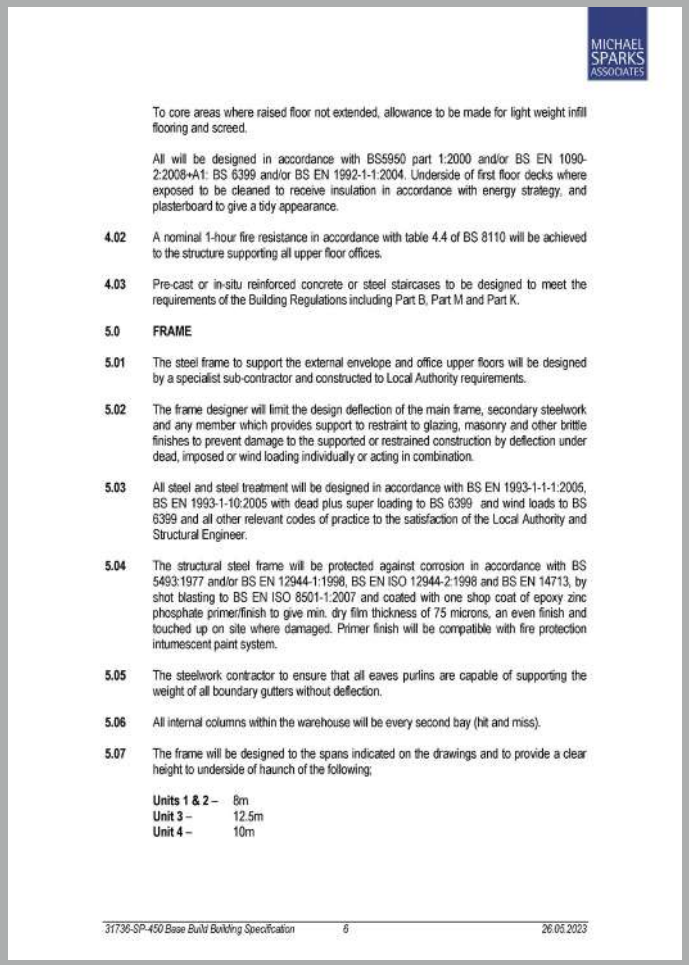

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To core areas where raised floor not extended, allowance to be made for light weight infill flooring and screed.

All will be designed in accordance with BS5950 part 1:2000 and/or BS EN 1090-2:2008+A1: BS 6399 and/or BS EN 1992-1-1:2004. Underside of first floor decks where exposed to be cleaned to receive insulation in accordance with energy strategy, and plasterboard to give a tidy appearance.

4.02 A nominal 1-hour fire resistance in accordance with table 4.4 of BS 8110 will be achieved to the structure supporting all upper floor offices.

4.03 Pre-cast or in-situ reinforced concrete or steel staircases to be designed to meet the requirements of the Building Regulations including Part B, Part M and Part K.

5.0 FRAME

5.01 The steel frame to support the external envelope and office upper floors will be designed by a specialist sub-contractor and constructed to Local Authority requirements.

5.02 The frame designer will limit the design deflection of the main frame, secondary steelwork and any member which provides support to restraint to glazing, masonry and other brittle finishes to prevent damage to the supported or restrained construction by deflection under dead, imposed or wind loading individually or acting in combination.

5.03 All steel and steel treatment will be designed in accordance with BS EN 1993-1-1-1:2005, BS EN 1993-1-10:2005 with dead plus super loading to BS 6399 and wind loads to BS 6399 and all other relevant codes of practice to the satisfaction of the Local Authority and Structural Engineer.

5.04 The structural steel frame will be protected against corrosion in accordance with BS 5493:1977 and/or BS EN 12944-1:1998, BS EN ISO 12944-2:1998 and BS EN 14713, by shot blasting to BS EN ISO 8501-1:2007 and coated with one shop coat of epoxy zinc phosphate primer/finish to give min. dry film thickness of 75 microns, an even finish and touched up on site where damaged. Primer finish will be compatible with fire protection intumescent paint system.

5.05 The steelwork contractor to ensure that all eaves purlins are capable of supporting the weight of all boundary gutters without deflection.

5.06 All internal columns within the warehouse will be every second bay (hit and miss).

5.07 The frame will be designed to the spans indicated on the drawings and to provide a clear height to underside of haunch of the following;

Units 1 & 2 – 8m
Unit 3 – 12.5m
Unit 4 – 10m

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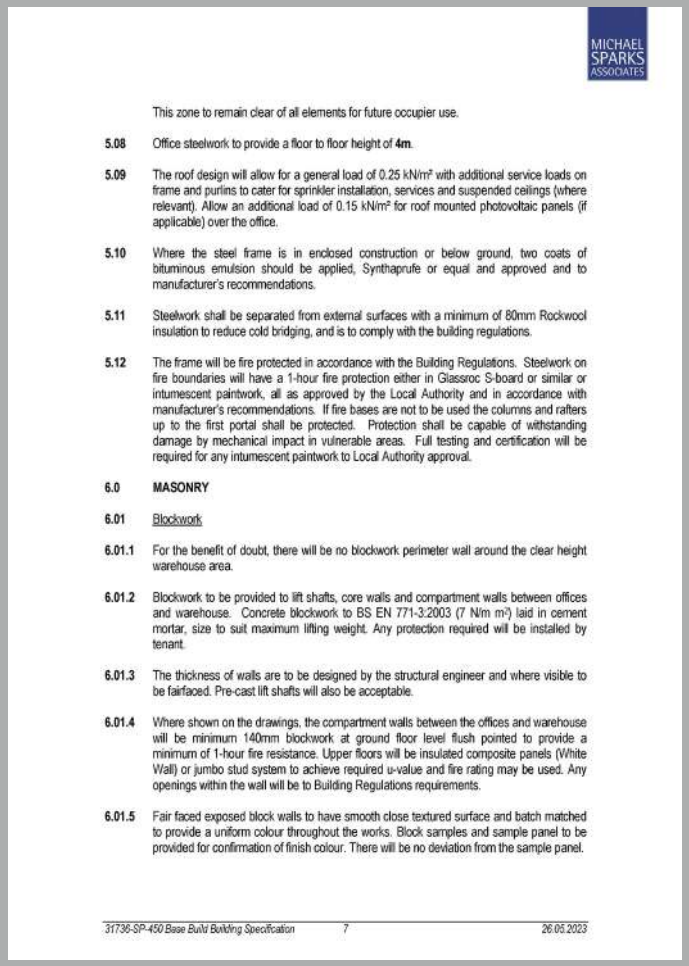

This zone to remain clear of all elements for future occupier use.

5.08 Office steelwork to provide a floor to floor height of **4m**.

5.09 The roof design will allow for a general load of 0.25 kN/m² with additional service loads on frame and purlins to cater for sprinkler installation, services and suspended ceilings (where relevant). Allow an additional load of 0.15 kN/m² for roof mounted photovoltaic panels (if applicable) over the office.

5.10 Where the steel frame is in enclosed construction or below ground, two coats of bituminous emulsion should be applied, Synthaprufe or equal and approved and to manufacturer's recommendations.

5.11 Steelwork shall be separated from external surfaces with a minimum of 80mm Rockwool insulation to reduce cold bridging, and is to comply with the building regulations.

5.12 The frame will be fire protected in accordance with the Building Regulations. Steelwork on fire boundaries will have a 1-hour fire protection either in Glassroc S-board or similar or intumescent paintwork, all as approved by the Local Authority and in accordance with manufacturer's recommendations. If fire bases are not to be used the columns and rafters up to the first portal shall be protected. Protection shall be capable of withstanding damage by mechanical impact in vulnerable areas. Full testing and certification will be required for any intumescent paintwork to Local Authority approval.

6.0 MASONRY

6.01 Blockwork

6.01.1 For the benefit of doubt, there will be no blockwork perimeter wall around the clear height warehouse area.

6.01.2 Blockwork to be provided to lift shafts, core walls and compartment walls between offices and warehouse. Concrete blockwork to BS EN 771-3:2003 (7 N/m m²) laid in cement mortar, size to suit maximum lifting weight. Any protection required will be installed by tenant.

6.01.3 The thickness of walls are to be designed by the structural engineer and where visible to be fairfaced. Pre-cast lift shafts will also be acceptable.

6.01.4 Where shown on the drawings, the compartment walls between the offices and warehouse will be minimum 140mm blockwork at ground floor level flush pointed to provide a minimum of 1-hour fire resistance. Upper floors will be insulated composite panels (White Wall) or jumbo stud system to achieve required u-value and fire rating may be used. Any openings within the wall will be to Building Regulations requirements.

6.01.5 Fair faced exposed block walls to have smooth close textured surface and batch matched to provide a uniform colour throughout the works. Block samples and sample panel to be provided for confirmation of finish colour. There will be no deviation from the sample panel.

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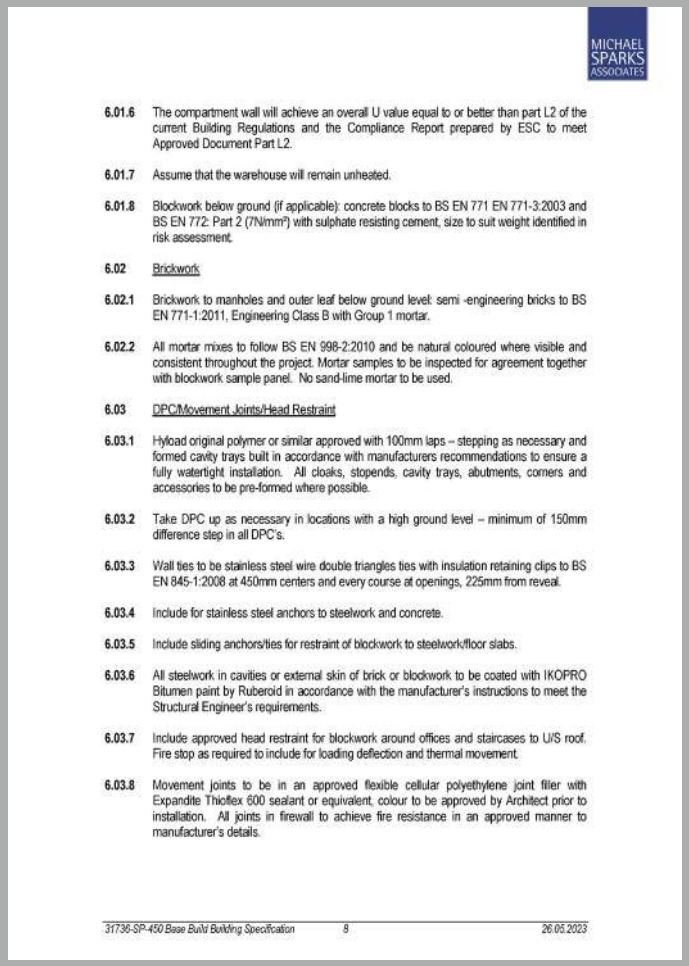

6.01.6 The compartment wall will achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2.

6.01.7 Assume that the warehouse will remain unheated.

6.01.8 Blockwork below ground (if applicable): concrete blocks to BS EN 771 EN 771-3:2003 and BS EN 772: Part 2 (7N/mm²) with sulphate resisting cement, size to suit weight identified in risk assessment.

6.02 Brickwork

6.02.1 Brickwork to manholes and outer leaf below ground level: semi -engineering bricks to BS EN 771-1:2011, Engineering Class B with Group 1 mortar.

6.02.2 All mortar mixes to follow BS EN 998-2:2010 and be natural coloured where visible and consistent throughout the project. Mortar samples to be inspected for agreement together with blockwork sample panel. No sand-lime mortar to be used.

6.03 DPC/Movement Joints/Head Restraint

6.03.1 Hyload original polymer or similar approved with 100mm laps – stepping as necessary and formed cavity trays built in accordance with manufacturers recommendations to ensure a fully watertight installation. All cloaks, stopends, cavity trays, abutments, corners and accessories to be pre-formed where possible.

6.03.2 Take DPC up as necessary in locations with a high ground level – minimum of 150mm difference step in all DPC's.

6.03.3 Wall ties to be stainless steel wire double triangles ties with insulation retaining clips to BS EN 845-1:2008 at 450mm centers and every course at openings, 225mm from reveal.

6.03.4 Include for stainless steel anchors to steelwork and concrete.

6.03.5 Include sliding anchors/ties for restraint of blockwork to steelwork/floor slabs.

6.03.6 All steelwork in cavities or external skin of brick or blockwork to be coated with IKOPRO Bitumen paint by Ruberoid in accordance with the manufacturer's instructions to meet the Structural Engineer's requirements.

6.03.7 Include approved head restraint for blockwork around offices and staircases to U/S roof. Fire stop as required to include for loading deflection and thermal movement.

6.03.8 Movement joints to be in an approved flexible cellular polyethylene joint filler with Expandite Thioflex 600 sealant or equivalent, colour to be approved by Architect prior to installation. All joints in firewall to achieve fire resistance in an approved manner to manufacturer's details.

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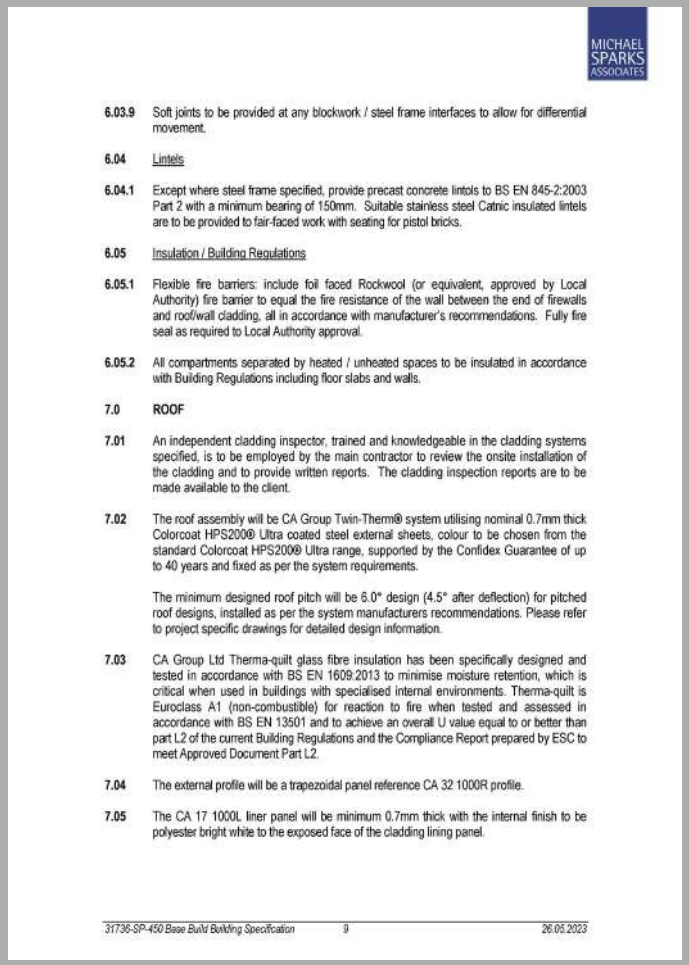

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6.03.9 Soft joints to be provided at any blockwork / steel frame interfaces to allow for differential movement.

6.04 Lintels

6.04.1 Except where steel frame specified, provide precast concrete lintols to BS EN 845-2:2003 Part 2 with a minimum bearing of 150mm. Suitable stainless steel Catnic insulated lintels are to be provided to fair-faced work with seating for pistol bricks.

6.05 Insulation / Building Regulations

6.05.1 Flexible fire barriers: include foil faced Rockwool (or equivalent, approved by Local Authority) fire barrier to equal the fire resistance of the wall between the end of firewalls and roof/wall cladding, all in accordance with manufacturer's recommendations. Fully fire seal as required to Local Authority approval.

6.05.2 All compartments separated by heated / unheated spaces to be insulated in accordance with Building Regulations including floor slabs and walls.

7.0 ROOF

7.01 An independent cladding inspector, trained and knowledgeable in the cladding systems specified, is to be employed by the main contractor to review the onsite installation of the cladding and to provide written reports. The cladding inspection reports are to be made available to the client.

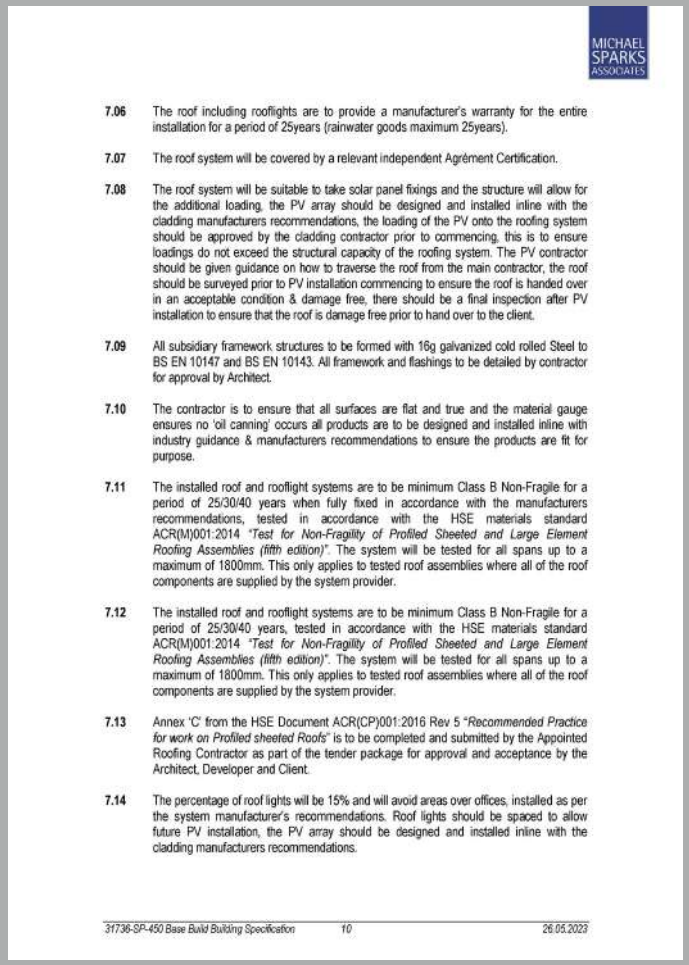
7.02 The roof assembly will be CA Group Twin-Therm® system utilising nominal 0.7mm thick Colorcoat HPS200® Ultra coated steel external sheets, colour to be chosen from the standard Colorcoat HPS200® Ultra range, supported by the Confidex Guarantee of up to 40 years and fixed as per the system requirements.

The minimum designed roof pitch will be 6.0° design (4.5° after deflection) for pitched roof designs, installed as per the system manufacturers recommendations. Please refer to project specific drawings for detailed design information.

7.03 CA Group Ltd Therma-quilt glass fibre insulation has been specifically designed and tested in accordance with BS EN 1609:2013 to minimise moisture retention, which is critical when used in buildings with specialised internal environments. Therma-quilt is Euroclass A1 (non-combustible) for reaction to fire when tested and assessed in accordance with BS EN 13501 and to achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2.

7.04 The external profile will be a trapezoidal panel reference CA 32 1000R profile.

7.05 The CA 17 1000L liner panel will be minimum 0.7mm thick with the internal finish to be polyester bright white to the exposed face of the cladding lining panel.



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7.06 The roof including rooflights are to provide a manufacturer's warranty for the entire installation for a period of 25years (rainwater goods maximum 25years).

7.07 The roof system will be covered by a relevant independent Agrément Certification.

7.08 The roof system will be suitable to take solar panel fixings and the structure will allow for the additional loading, the PV array should be designed and installed inline with the cladding manufacturers recommendations, the loading of the PV onto the roofing system should be approved by the cladding contractor prior to commencing, this is to ensure loadings do not exceed the structural capacity of the roofing system. The PV contractor should be given guidance on how to traverse the roof from the main contractor, the roof should be surveyed prior to PV installation commencing to ensure the roof is handed over in an acceptable condition & damage free, there should be a final inspection after PV installation to ensure that the roof is damage free prior to hand over to the client.

7.09 All subsidiary framework structures to be formed with 16g galvanized cold rolled Steel to BS EN 10147 and BS EN 10143. All framework and flashings to be detailed by contractor for approval by Architect.

7.10 The contractor is to ensure that all surfaces are flat and true and the material gauge ensures no 'oil canning' occurs all products are to be designed and installed inline with industry guidance & manufacturers recommendations to ensure the products are fit for purpose.

7.11 The installed roof and rooflight systems are to be minimum Class B Non-Fragile for a period of 25/30/40 years when fully fixed in accordance with the manufacturers recommendations, tested in accordance with the HSE materials standard ACR(M)001:2014 *"Test for Non-Fragility of Profiled Sheeted and Large Element Roofing Assemblies (fifth edition)"*. The system will be tested for all spans up to a maximum of 1800mm. This only applies to tested roof assemblies where all of the roof components are supplied by the system provider.

7.12 The installed roof and rooflight systems are to be minimum Class B Non-Fragile for a period of 25/30/40 years, tested in accordance with the HSE materials standard ACR(M)001:2014 *"Test for Non-Fragility of Profiled Sheeted and Large Element Roofing Assemblies (fifth edition)"*. The system will be tested for all spans up to a maximum of 1800mm. This only applies to tested roof assemblies where all of the roof components are supplied by the system provider.

7.13 Annex 'C' from the HSE Document ACR(CP)001:2016 Rev 5 *"Recommended Practice for work on Profiled sheeted Roofs"* is to be completed and submitted by the Appointed Roofing Contractor as part of the tender package for approval and acceptance by the Architect, Developer and Client.

7.14 The percentage of roof lights will be 15% and will avoid areas over offices, installed as per the system manufacturer's recommendations. Roof lights should be spaced to allow future PV installation, the PV array should be designed and installed inline with the cladding manufacturers recommendations.

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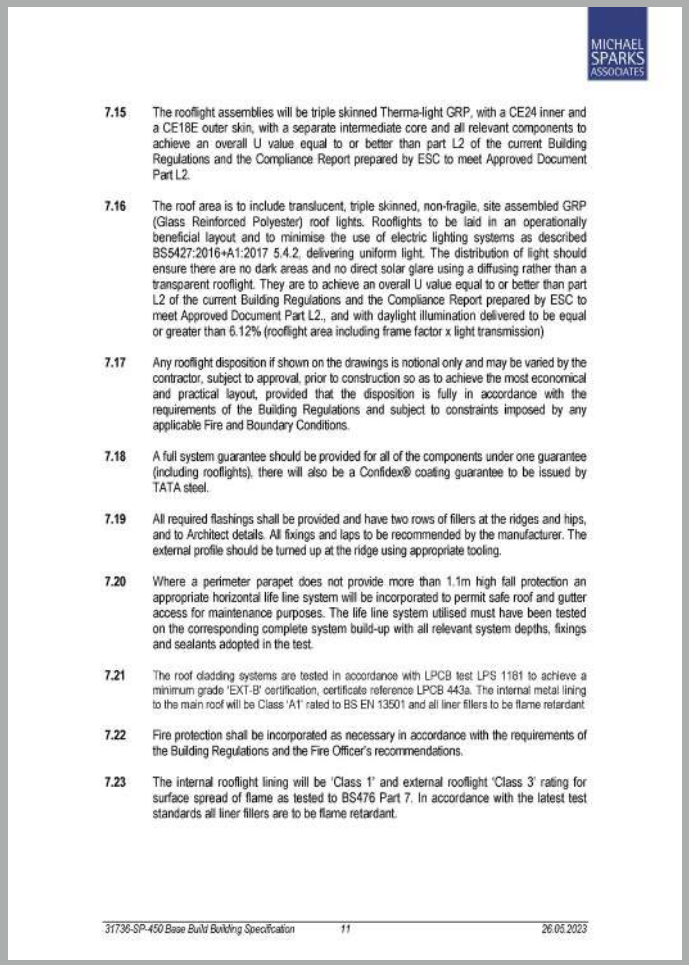

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7.15 The rooflight assemblies will be triple skinned Therma-light GRP, with a CE24 inner and a CE18E outer skin, with a separate intermediate core and all relevant components to achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2.

7.16 The roof area is to include translucent, triple skinned, non-fragile, site assembled GRP (Glass Reinforced Polyester) roof lights. Rooflights to be laid in an operationally beneficial layout and to minimise the use of electric lighting systems as described BS5427:2016+A1:2017 5.4.2. delivering uniform light. The distribution of light should ensure there are no dark areas and no direct solar glare using a diffusing rather than a transparent rooflight. They are to achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2., and with daylight illumination delivered to be equal or greater than 6.12% (rooflight area including frame factor x light transmission)

7.17 Any rooflight disposition if shown on the drawings is notional only and may be varied by the contractor, subject to approval, prior to construction so as to achieve the most economical and practical layout, provided that the disposition is fully in accordance with the requirements of the Building Regulations and subject to constraints imposed by any applicable Fire and Boundary Conditions.

7.18 A full system guarantee should be provided for all of the components under one guarantee (including rooflights), there will also be a Confidex® coating guarantee to be issued by TATA steel.

7.19 All required flashings shall be provided and have two rows of fillers at the ridges and hips, and to Architect details. All fixings and laps to be recommended by the manufacturer. The external profile should be turned up at the ridge using appropriate tooling.

7.20 Where a perimeter parapet does not provide more than 1.1m high fall protection an appropriate horizontal life line system will be incorporated to permit safe roof and gutter access for maintenance purposes. The life line system utilised must have been tested on the corresponding complete system build-up with all relevant system depths, fixings and sealants adopted in the test.

7.21 The roof cladding systems are tested in accordance with LPCB test LPS 1181 to achieve a minimum grade 'EXT-B' certification, certificate reference LPCB 443a. The internal metal lining to the main roof will be Class 'A1' rated to BS EN 13501 and all liner fillers to be flame retardant

7.22 Fire protection shall be incorporated as necessary in accordance with the requirements of the Building Regulations and the Fire Officer's recommendations.

7.23 The internal rooflight lining will be 'Class 1' and external rooflight 'Class 3' rating for surface spread of flame as tested to BS476 Part 7. In accordance with the latest test standards all liner fillers are to be flame retardant.

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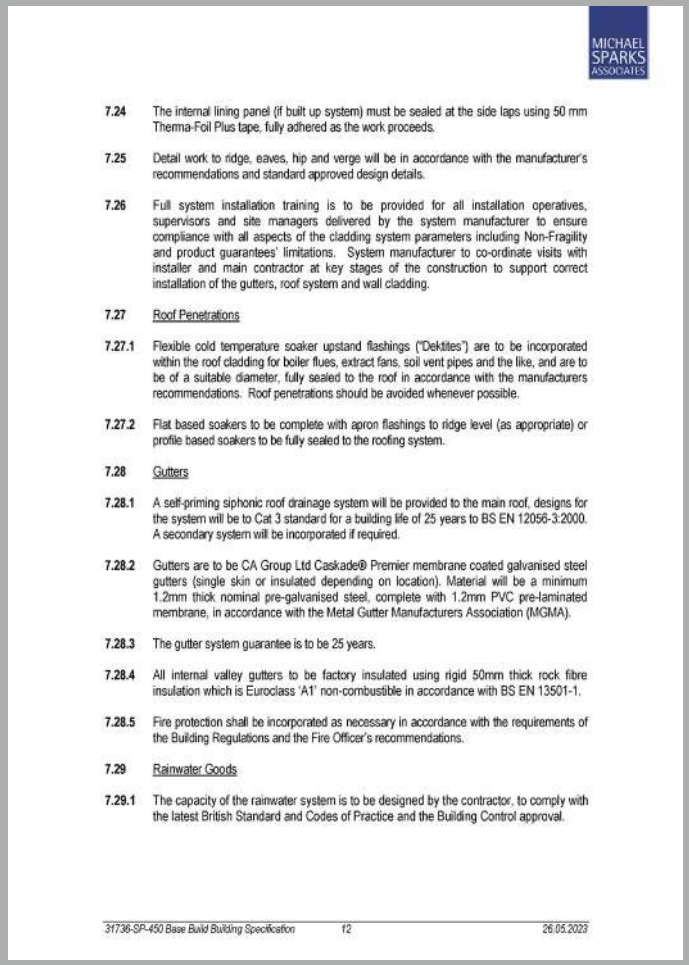

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7.24 The internal lining panel (if built up system) must be sealed at the side laps using 50 mm Therma-Foil Plus tape, fully adhered as the work proceeds.

7.25 Detail work to ridge, eaves, hip and verge will be in accordance with the manufacturer's recommendations and standard approved design details.

7.26 Full system installation training is to be provided for all installation operatives, supervisors and site managers delivered by the system manufacturer to ensure compliance with all aspects of the cladding system parameters including Non-Fragility and product guarantees' limitations. System manufacturer to co-ordinate visits with installer and main contractor at key stages of the construction to support correct installation of the gutters, roof system and wall cladding.

7.27 Roof Penetrations

7.27.1 Flexible cold temperature soaker upstand flashings ("Dektites") are to be incorporated within the roof cladding for boiler flues, extract fans, soil vent pipes and the like, and are to be of a suitable diameter, fully sealed to the roof in accordance with the manufacturers recommendations. Roof penetrations should be avoided whenever possible.

7.27.2 Flat based soakers to be complete with apron flashings to ridge level (as appropriate) or profile based soakers to be fully sealed to the roofing system.

7.28 Gutters

7.28.1 A self-priming siphonic roof drainage system will be provided to the main roof, designs for the system will be to Cat 3 standard for a building life of 25 years to BS EN 12056-3:2000. A secondary system will be incorporated if required.

7.28.2 Gutters are to be CA Group Ltd Caskade® Premier membrane coated galvanised steel gutters (single skin or insulated depending on location). Material will be a minimum 1.2mm thick nominal pre-galvanised steel, complete with 1.2mm PVC pre-laminated membrane, in accordance with the Metal Gutter Manufacturers Association (MGMA).

7.28.3 The gutter system guarantee is to be 25 years.

7.28.4 All internal valley gutters to be factory insulated using rigid 50mm thick rock fibre insulation which is Euroclass 'A1' non-combustible in accordance with BS EN 13501-1.

7.28.5 Fire protection shall be incorporated as necessary in accordance with the requirements of the Building Regulations and the Fire Officer's recommendations.

7.29 Rainwater Goods

7.29.1 The capacity of the rainwater system is to be designed by the contractor, to comply with the latest British Standard and Codes of Practice and the Building Control approval.

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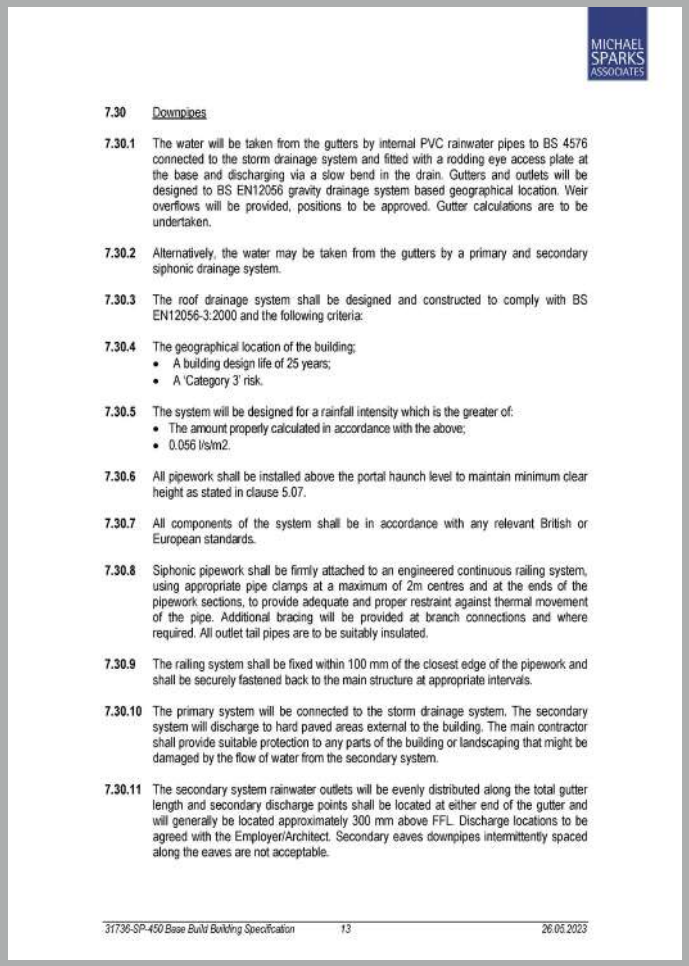

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7.30 Downpipes

7.30.1 The water will be taken from the gutters by internal PVC rainwater pipes to BS 4576 connected to the storm drainage system and fitted with a rodding eye access plate at the base and discharging via a slow bend in the drain. Gutters and outlets will be designed to BS EN12056 gravity drainage system based geographical location. Weir overflows will be provided, positions to be approved. Gutter calculations are to be undertaken.

7.30.2 Alternatively, the water may be taken from the gutters by a primary and secondary siphonic drainage system.

7.30.3 The roof drainage system shall be designed and constructed to comply with BS EN12056-3:2000 and the following criteria:

7.30.4 The geographical location of the building;
- A building design life of 25 years;
- A 'Category 3' risk.

7.30.5 The system will be designed for a rainfall intensity which is the greater of:
- The amount properly calculated in accordance with the above;
- 0.056 l/s/m2.

7.30.6 All pipework shall be installed above the portal haunch level to maintain minimum clear height as stated in clause 5.07.

7.30.7 All components of the system shall be in accordance with any relevant British or European standards.

7.30.8 Siphonic pipework shall be firmly attached to an engineered continuous railing system, using appropriate pipe clamps at a maximum of 2m centres and at the ends of the pipework sections, to provide adequate and proper restraint against thermal movement of the pipe. Additional bracing will be provided at branch connections and where required. All outlet tail pipes are to be suitably insulated.

7.30.9 The railing system shall be fixed within 100 mm of the closest edge of the pipework and shall be securely fastened back to the main structure at appropriate intervals.

7.30.10 The primary system will be connected to the storm drainage system. The secondary system will discharge to hard paved areas external to the building. The main contractor shall provide suitable protection to any parts of the building or landscaping that might be damaged by the flow of water from the secondary system.

7.30.11 The secondary system rainwater outlets will be evenly distributed along the total gutter length and secondary discharge points shall be located at either end of the gutter and will generally be located approximately 300 mm above FFL. Discharge locations to be agreed with the Employer/Architect. Secondary eaves downpipes intermittently spaced along the eaves are not acceptable.

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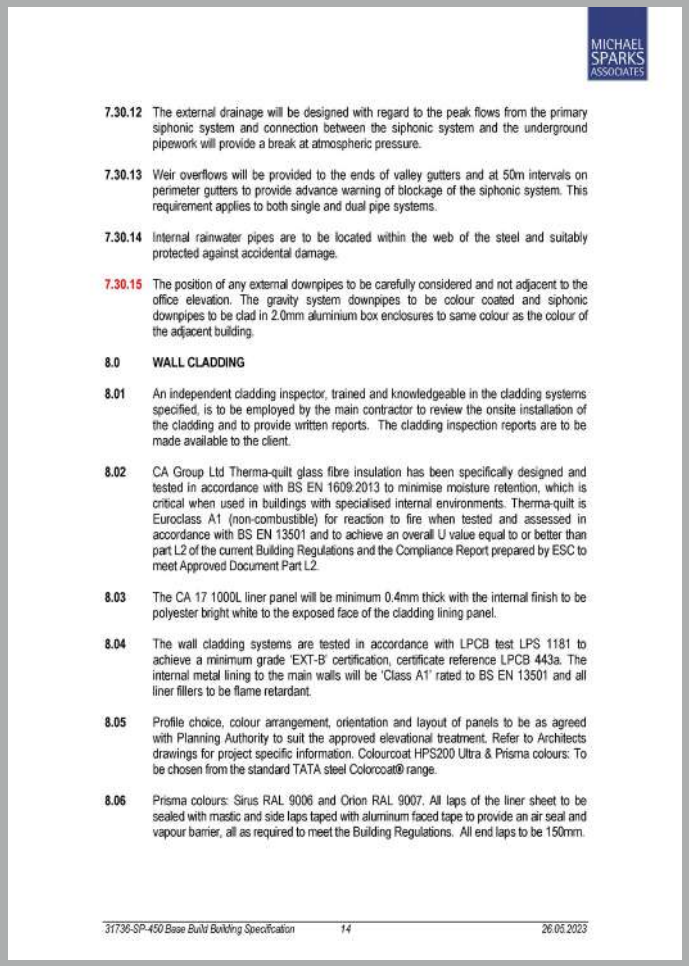

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7.30.12 The external drainage will be designed with regard to the peak flows from the primary siphonic system and connection between the siphonic system and the underground pipework will provide a break at atmospheric pressure.

7.30.13 Weir overflows will be provided to the ends of valley gutters and at 50m intervals on perimeter gutters to provide advance warning of blockage of the siphonic system. This requirement applies to both single and dual pipe systems.

7.30.14 Internal rainwater pipes are to be located within the web of the steel and suitably protected against accidental damage.

7.30.15 The position of any external downpipes to be carefully considered and not adjacent to the office elevation. The gravity system downpipes to be colour coated and siphonic downpipes to be clad in 2.0mm aluminium box enclosures to same colour as the colour of the adjacent building.

8.0 WALL CLADDING

8.01 An independent cladding inspector, trained and knowledgeable in the cladding systems specified, is to be employed by the main contractor to review the onsite installation of the cladding and to provide written reports. The cladding inspection reports are to be made available to the client.

8.02 CA Group Ltd Therma-quilt glass fibre insulation has been specifically designed and tested in accordance with BS EN 1609:2013 to minimise moisture retention, which is critical when used in buildings with specialised internal environments. Therma-quilt is Euroclass A1 (non-combustible) for reaction to fire when tested and assessed in accordance with BS EN 13501 and to achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2.

8.03 The CA 17 1000L liner panel will be minimum 0.4mm thick with the internal finish to be polyester bright white to the exposed face of the cladding lining panel.

8.04 The wall cladding systems are tested in accordance with LPCB test LPS 1181 to achieve a minimum grade 'EXT-B' certification, certificate reference LPCB 443a. The internal metal lining to the main walls will be 'Class A1' rated to BS EN 13501 and all liner fillers to be flame retardant.

8.05 Profile choice, colour arrangement, orientation and layout of panels to be as agreed with Planning Authority to suit the approved elevational treatment. Refer to Architects drawings for project specific information. Colourcoat HPS200 Ultra & Prisma colours: To be chosen from the standard TATA steel Colorcoat® range.

8.06 Prisma colours: Sirus RAL 9006 and Orion RAL 9007. All laps of the liner sheet to be sealed with mastic and side laps taped with aluminum faced tape to provide an air seal and vapour barrier, all as required to meet the Building Regulations. All end laps to be 150mm.

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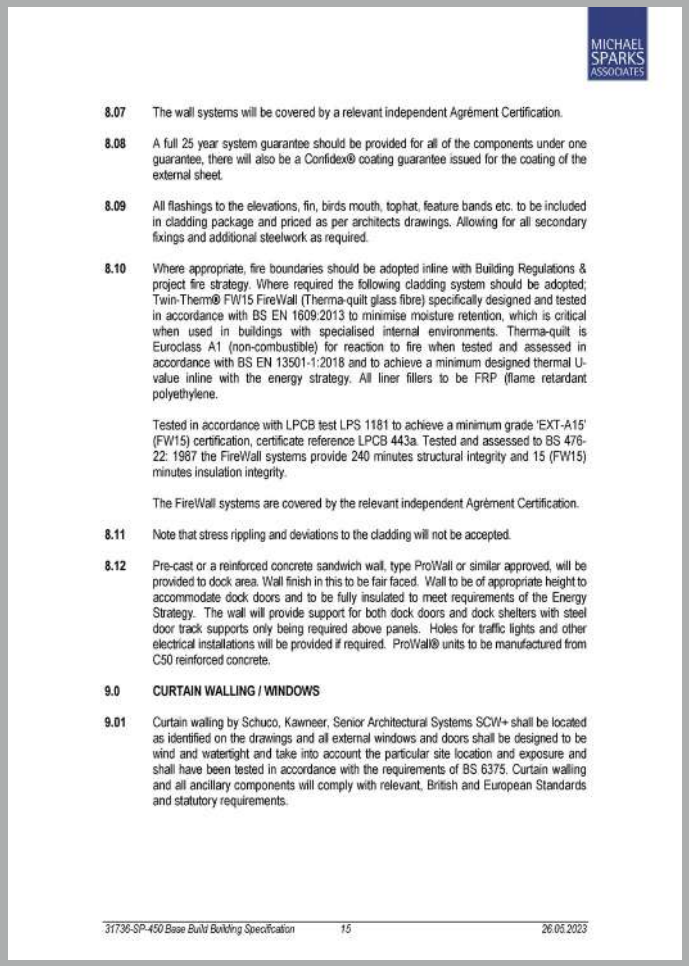


8.07 The wall systems will be covered by a relevant independent Agrément Certification.

8.08 A full 25 year system guarantee should be provided for all of the components under one guarantee, there will also be a Confidex® coating guarantee issued for the coating of the external sheet.

8.09 All flashings to the elevations, fin, birds mouth, tophat, feature bands etc. to be included in cladding package and priced as per architects drawings. Allowing for all secondary fixings and additional steelwork as required.

8.10 Where appropriate, fire boundaries should be adopted inline with Building Regulations & project fire strategy. Where required the following cladding system should be adopted; Twin-Therm® FW15 FireWall (Therma-quilt glass fibre) specifically designed and tested in accordance with BS EN 1609:2013 to minimise moisture retention, which is critical when used in buildings with specialised internal environments. Therma-quilt is Euroclass A1 (non-combustible) for reaction to fire when tested and assessed in accordance with BS EN 13501-1:2018 and to achieve a minimum designed thermal U-value inline with the energy strategy. All liner fillers to be FRP (flame retardant polyethylene.

Tested in accordance with LPCB test LPS 1181 to achieve a minimum grade 'EXT-A15' (FW15) certification, certificate reference LPCB 443a. Tested and assessed to BS 476-22: 1987 the FireWall systems provide 240 minutes structural integrity and 15 (FW15) minutes insulation integrity.

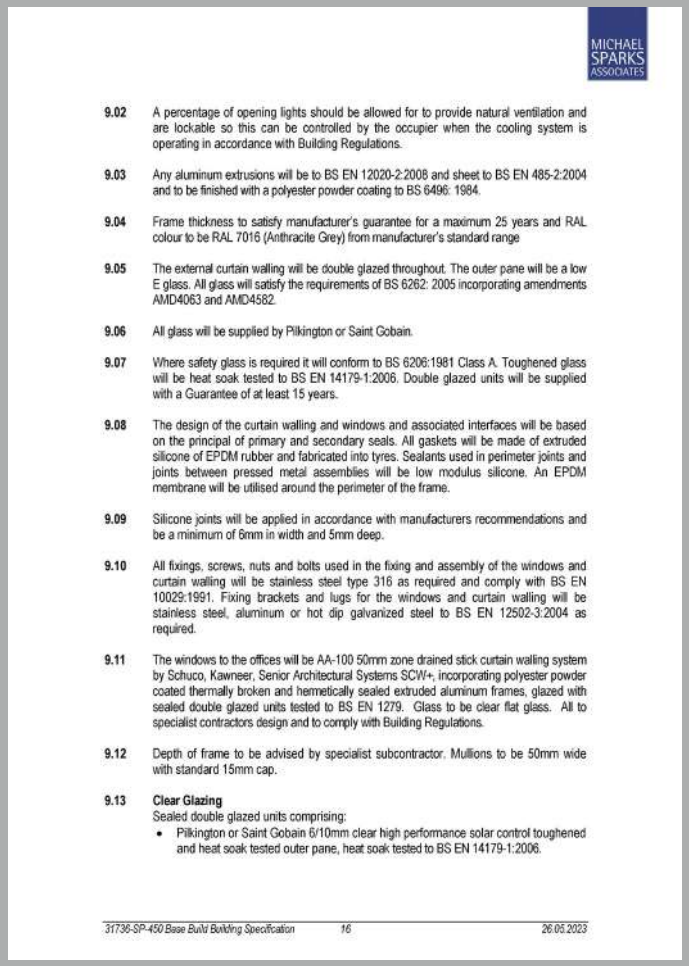
The FireWall systems are covered by the relevant independent Agrément Certification.

8.11 Note that stress rippling and deviations to the cladding will not be accepted.

8.12 Pre-cast or a reinforced concrete sandwich wall, type ProWall or similar approved, will be provided to dock area. Wall finish in this to be fair faced. Wall to be of appropriate height to accommodate dock doors and to be fully insulated to meet requirements of the Energy Strategy. The wall will provide support for both dock doors and dock shelters with steel door track supports only being required above panels. Holes for traffic lights and other electrical installations will be provided if required. ProWall® units to be manufactured from C50 reinforced concrete.

9.0 CURTAIN WALLING / WINDOWS

9.01 Curtain walling by Schuco, Kawneer, Senior Architectural Systems SCW+ shall be located as identified on the drawings and all external windows and doors shall be designed to be wind and watertight and take into account the particular site location and exposure and shall have been tested in accordance with the requirements of BS 6375. Curtain walling and all ancillary components will comply with relevant, British and European Standards and statutory requirements.



9.02 A percentage of opening lights should be allowed for to provide natural ventilation and are lockable so this can be controlled by the occupier when the cooling system is operating in accordance with Building Regulations.

9.03 Any aluminum extrusions will be to BS EN 12020-2:2008 and sheet to BS EN 485-2:2004 and to be finished with a polyester powder coating to BS 6496: 1984.

9.04 Frame thickness to satisfy manufacturer's guarantee for a maximum 25 years and RAL colour to be RAL 7016 (Anthracite Grey) from manufacturer's standard range

9.05 The external curtain walling will be double glazed throughout. The outer pane will be a low E glass. All glass will satisfy the requirements of BS 6262: 2005 incorporating amendments AMD4063 and AMD4582.

9.06 All glass will be supplied by Pilkington or Saint Gobain.

9.07 Where safety glass is required it will conform to BS 6206:1981 Class A. Toughened glass will be heat soak tested to BS EN 14179-1:2006. Double glazed units will be supplied with a Guarantee of at least 15 years.

9.08 The design of the curtain walling and windows and associated interfaces will be based on the principal of primary and secondary seals. All gaskets will be made of extruded silicone of EPDM rubber and fabricated into tyres. Sealants used in perimeter joints and joints between pressed metal assemblies will be low modulus silicone. An EPDM membrane will be utilised around the perimeter of the frame.

9.09 Silicone joints will be applied in accordance with manufacturers recommendations and be a minimum of 6mm in width and 5mm deep.

9.10 All fixings, screws, nuts and bolts used in the fixing and assembly of the windows and curtain walling will be stainless steel type 316 as required and comply with BS EN 10029:1991. Fixing brackets and lugs for the windows and curtain walling will be stainless steel, aluminum or hot dip galvanized steel to BS EN 12502-3:2004 as required.

9.11 The windows to the offices will be AA-100 50mm zone drained stick curtain walling system by Schuco, Kawneer, Senior Architectural Systems SCW+, incorporating polyester powder coated thermally broken and hermetically sealed extruded aluminum frames, glazed with sealed double glazed units tested to BS EN 1279. Glass to be clear flat glass. All to specialist contractors design and to comply with Building Regulations.

9.12 Depth of frame to be advised by specialist subcontractor. Mullions to be 50mm wide with standard 15mm cap.

9.13 Clear Glazing
Sealed double glazed units comprising:
- Pilkington or Saint Gobain 6/10mm clear high performance solar control toughened and heat soak tested outer pane, heat soak tested to BS EN 14179-1:2006.

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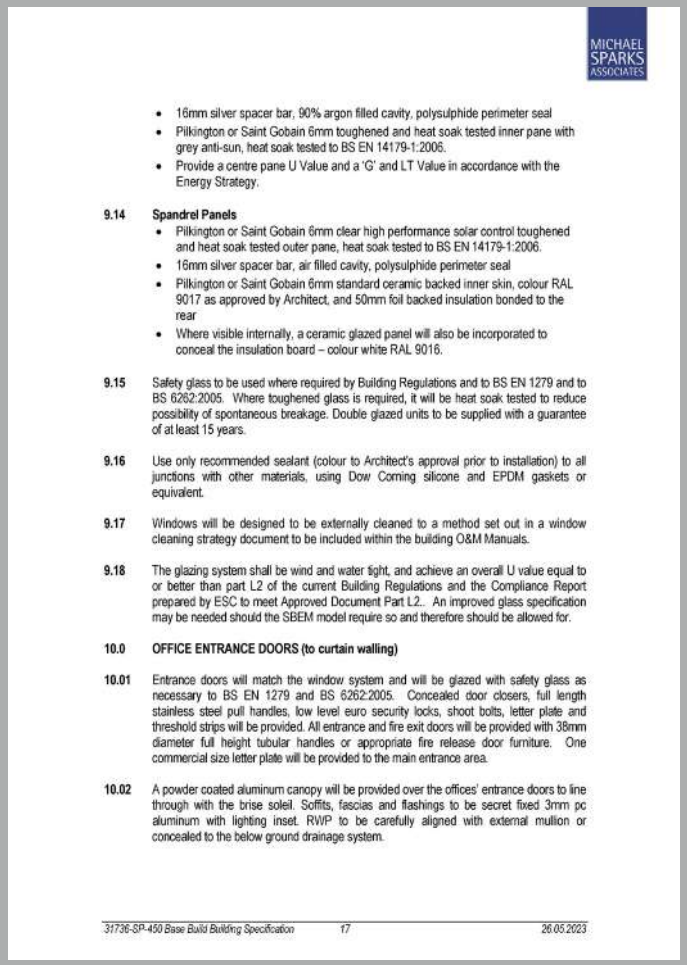


- 16mm silver spacer bar, 90% argon filled cavity, polysulphide perimeter seal
- Pilkington or Saint Gobain 6mm toughened and heat soak tested inner pane with grey anti-sun, heat soak tested to BS EN 14179-1:2006.
- Provide a centre pane U Value and a 'G' and LT Value in accordance with the Energy Strategy.

9.14 Spandrel Panels

- Pilkington or Saint Gobain 6mm clear high performance solar control toughened and heat soak tested outer pane, heat soak tested to BS EN 14179-1:2006.
- 16mm silver spacer bar, air filled cavity, polysulphide perimeter seal
- Pilkington or Saint Gobain 6mm standard ceramic backed inner skin, colour RAL 9017 as approved by Architect, and 50mm foil backed insulation bonded to the rear
- Where visible internally, a ceramic glazed panel will also be incorporated to conceal the insulation board – colour white RAL 9016.

9.15 Safety glass to be used where required by Building Regulations and to BS EN 1279 and to BS 6262:2005. Where toughened glass is required, it will be heat soak tested to reduce possibility of spontaneous breakage. Double glazed units to be supplied with a guarantee of at least 15 years.

9.16 Use only recommended sealant (colour to Architect's approval prior to installation) to all junctions with other materials, using Dow Corning silicone and EPDM gaskets or equivalent.

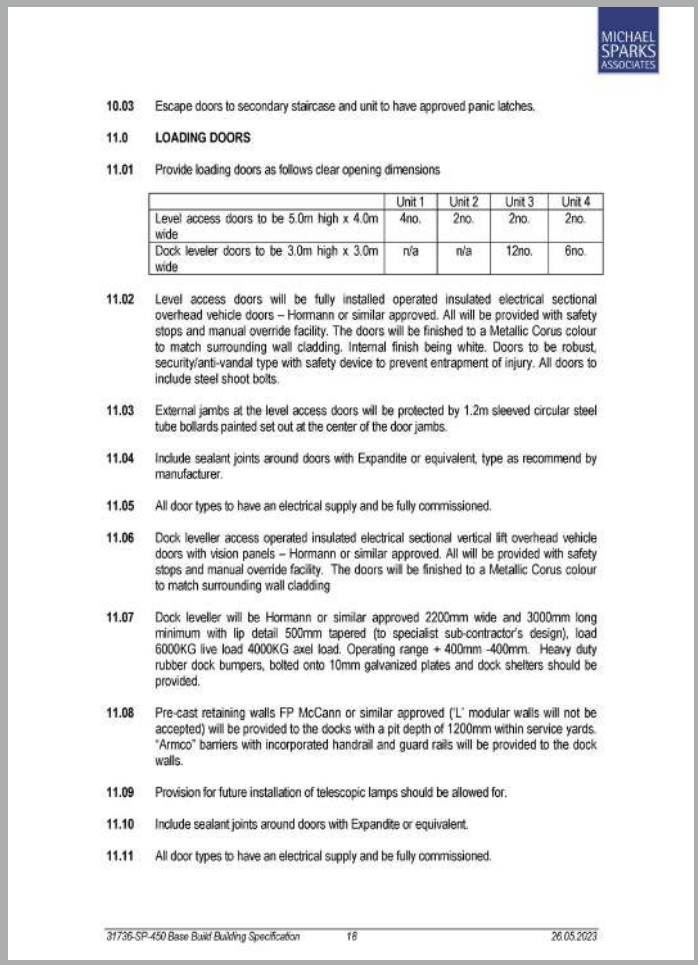
9.17 Windows will be designed to be externally cleaned to a method set out in a window cleaning strategy document to be included within the building O&M Manuals.

9.18 The glazing system shall be wind and water tight, and achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2.. An improved glass specification may be needed should the SBEM model require so and therefore should be allowed for.

10.0 OFFICE ENTRANCE DOORS (to curtain walling)

10.01 Entrance doors will match the window system and will be glazed with safety glass as necessary to BS EN 1279 and BS 6262:2005. Concealed door closers, full length stainless steel pull handles, low level euro security locks, shoot bolts, letter plate and threshold strips will be provided. All entrance and fire exit doors will be provided with 38mm diameter full height tubular handles or appropriate fire release door furniture. One commercial size letter plate will be provided to the main entrance area.

10.02 A powder coated aluminum canopy will be provided over the offices' entrance doors to line through with the brise soleil. Soffits, fascias and flashings to be secret fixed 3mm pc aluminum with lighting inset. RWP to be carefully aligned with external mullion or concealed to the below ground drainage system.



10.03 Escape doors to secondary staircase and unit to have approved panic latches.

11.0 LOADING DOORS

11.01 Provide loading doors as follows clear opening dimensions

	Unit 1	Unit 2	Unit 3	Unit 4
Level access doors to be 5.0m high x 4.0m wide	4no.	2no.	2no.	2no.
Dock leveler doors to be 3.0m high x 3.0m wide	n/a	n/a	12no.	6no.

11.02 Level access doors will be fully installed operated insulated electrical sectional overhead vehicle doors – Hormann or similar approved. All will be provided with safety stops and manual override facility. The doors will be finished to a Metallic Corus colour to match surrounding wall cladding. Internal finish being white. Doors to be robust, security/anti-vandal type with safety device to prevent entrapment of injury. All doors to include steel shoot bolts.

11.03 External jambs at the level access doors will be protected by 1.2m sleeved circular steel tube bollards painted set out at the center of the door jambs.

11.04 Include sealant joints around doors with Expandite or equivalent, type as recommend by manufacturer.

11.05 All door types to have an electrical supply and be fully commissioned.

11.06 Dock leveller access operated insulated electrical sectional vertical lift overhead vehicle doors with vision panels – Hormann or similar approved. All will be provided with safety stops and manual override facility. The doors will be finished to a Metallic Corus colour to match surrounding wall cladding

11.07 Dock leveller will be Hormann or similar approved 2200mm wide and 3000mm long minimum with lip detail 500mm tapered (to specialist sub-contractor's design), load 6000KG live load 4000KG axel load. Operating range + 400mm -400mm. Heavy duty rubber dock bumpers, bolted onto 10mm galvanized plates and dock shelters should be provided.

11.08 Pre-cast retaining walls FP McCann or similar approved ('L' modular walls will not be accepted) will be provided to the docks with a pit depth of 1200mm within service yards. "Armco" barriers with incorporated handrail and guard rails will be provided to the dock walls.

11.09 Provision for future installation of telescopic lamps should be allowed for.

11.10 Include sealant joints around doors with Expandite or equivalent.

11.11 All door types to have an electrical supply and be fully commissioned.

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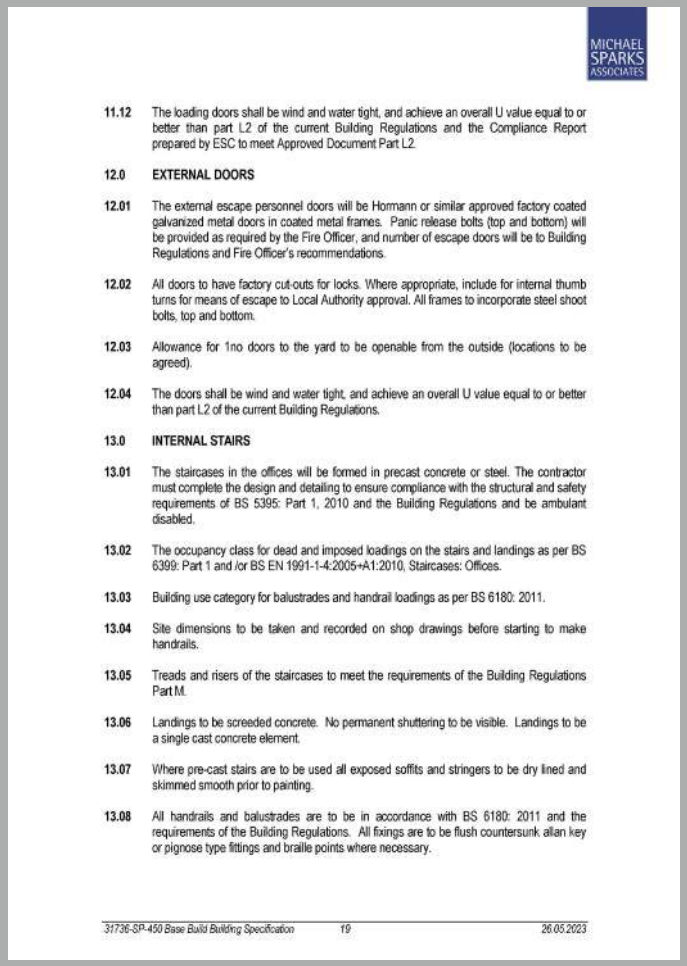

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11.12 The loading doors shall be wind and water tight, and achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2.

12.0 EXTERNAL DOORS

12.01 The external escape personnel doors will be Hormann or similar approved factory coated galvanized metal doors in coated metal frames. Panic release bolts (top and bottom) will be provided as required by the Fire Officer, and number of escape doors will be to Building Regulations and Fire Officer's recommendations.

12.02 All doors to have factory cut-outs for locks. Where appropriate, include for internal thumb turns for means of escape to Local Authority approval. All frames to incorporate steel shoot bolts, top and bottom.

12.03 Allowance for 1no doors to the yard to be openable from the outside (locations to be agreed).

12.04 The doors shall be wind and water tight, and achieve an overall U value equal to or better than part L2 of the current Building Regulations.

13.0 INTERNAL STAIRS

13.01 The staircases in the offices will be formed in precast concrete or steel. The contractor must complete the design and detailing to ensure compliance with the structural and safety requirements of BS 5395: Part 1, 2010 and the Building Regulations and be ambulant disabled.

13.02 The occupancy class for dead and imposed loadings on the stairs and landings as per BS 6399: Part 1 and /or BS EN 1991-1-4:2005+A1:2010, Staircases: Offices.

13.03 Building use category for balustrades and handrail loadings as per BS 6180: 2011.

13.04 Site dimensions to be taken and recorded on shop drawings before starting to make handrails.

13.05 Treads and risers of the staircases to meet the requirements of the Building Regulations Part M.

13.06 Landings to be screeded concrete. No permanent shuttering to be visible. Landings to be a single cast concrete element.

13.07 Where pre-cast stairs are to be used all exposed soffits and stringers to be dry lined and skimmed smooth prior to painting.

13.08 All handrails and balustrades are to be in accordance with BS 6180: 2011 and the requirements of the Building Regulations. All fixings are to be flush countersunk allan key or pignose type fittings and braille points where necessary.

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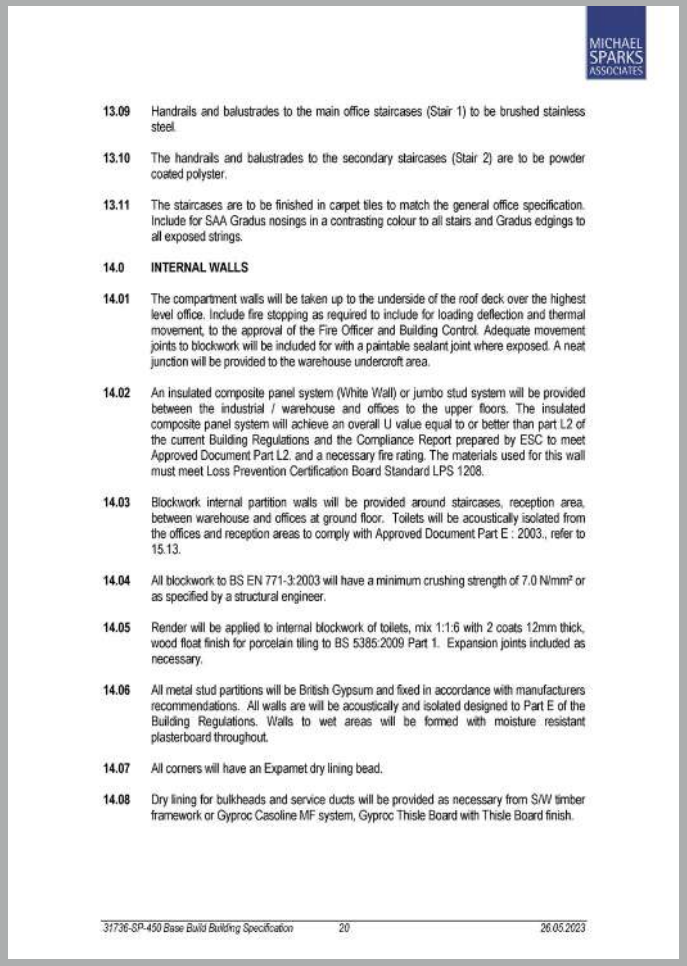

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13.09 Handrails and balustrades to the main office staircases (Stair 1) to be brushed stainless steel.

13.10 The handrails and balustrades to the secondary staircases (Stair 2) are to be powder coated polyster.

13.11 The staircases are to be finished in carpet tiles to match the general office specification. Include for SAA Gradus nosings in a contrasting colour to all stairs and Gradus edgings to all exposed strings.

14.0 INTERNAL WALLS

14.01 The compartment walls will be taken up to the underside of the roof deck over the highest level office. Include fire stopping as required to include for loading deflection and thermal movement, to the approval of the Fire Officer and Building Control. Adequate movement joints to blockwork will be included for with a paintable sealant joint where exposed. A neat junction will be provided to the warehouse undercroft area.

14.02 An insulated composite panel system (White Wall) or jumbo stud system will be provided between the industrial / warehouse and offices to the upper floors. The insulated composite panel system will achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2. and a necessary fire rating. The materials used for this wall must meet Loss Prevention Certification Board Standard LPS 1208.

14.03 Blockwork internal partition walls will be provided around staircases, reception area, between warehouse and offices at ground floor. Toilets will be acoustically isolated from the offices and reception areas to comply with Approved Document Part E : 2003., refer to 15.13.

14.04 All blockwork to BS EN 771-3:2003 will have a minimum crushing strength of 7.0 N/mm² or as specified by a structural engineer.

14.05 Render will be applied to internal blockwork of toilets, mix 1:1:6 with 2 coats 12mm thick, wood float finish for porcelain tiling to BS 5385:2009 Part 1. Expansion joints included as necessary.

14.06 All metal stud partitions will be British Gypsum and fixed in accordance with manufacturers recommendations. All walls are will be acoustically and isolated designed to Part E of the Building Regulations. Walls to wet areas will be formed with moisture resistant plasterboard throughout.

14.07 All corners will have an Expamet dry lining bead.

14.08 Dry lining for bulkheads and service ducts will be provided as necessary from S/W timber framework or Gyproc Casoline MF system, Gyproc Thisle Board with Thisle Board finish.

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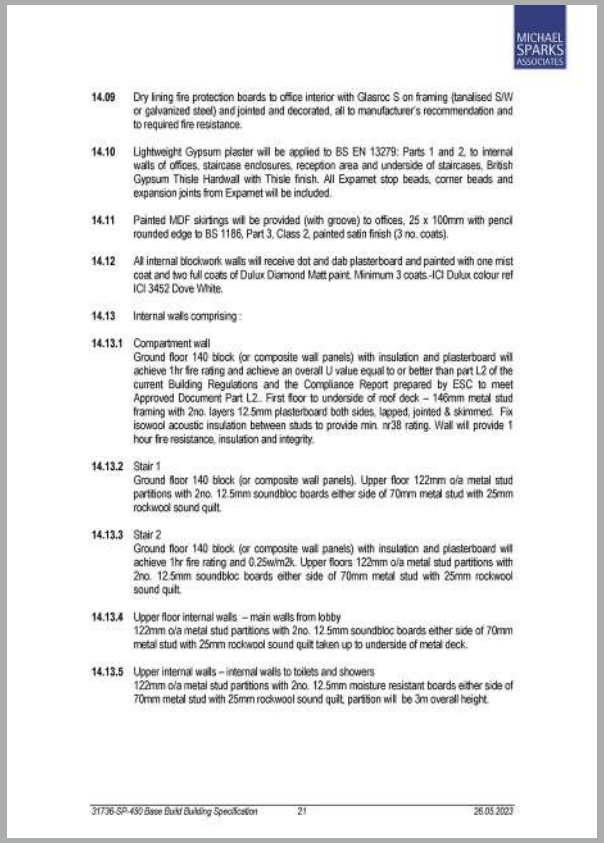


14.09 Dry lining fire protection boards to office interior with Glasroc S on framing (tanalised S/W or galvanized steel) and jointed and decorated, all to manufacturer's recommendation and to required fire resistance.

14.10 Lightweight Gypsum plaster will be applied to BS EN 13279: Parts 1 and 2, to internal walls of offices, staircase enclosures, reception area and underside of staircases, British Gypsum Thistle Hardwall with Thistle finish. All Expamet stop beads, corner beads and expansion joints from Expamet will be included.

14.11 Painted MDF skirtings will be provided (with groove) to offices, 25 x 100mm with pencil rounded edge to BS 1186, Part 3, Class 2, painted satin finish (3 no. coats).

14.12 All internal blockwork walls will receive dot and dab plasterboard and painted with one mist coat and two full coats of Dulux Diamond Matt paint. Minimum 3 coats.-ICI Dulux colour ref ICI 3452 Dove White.

14.13 Internal walls comprising :

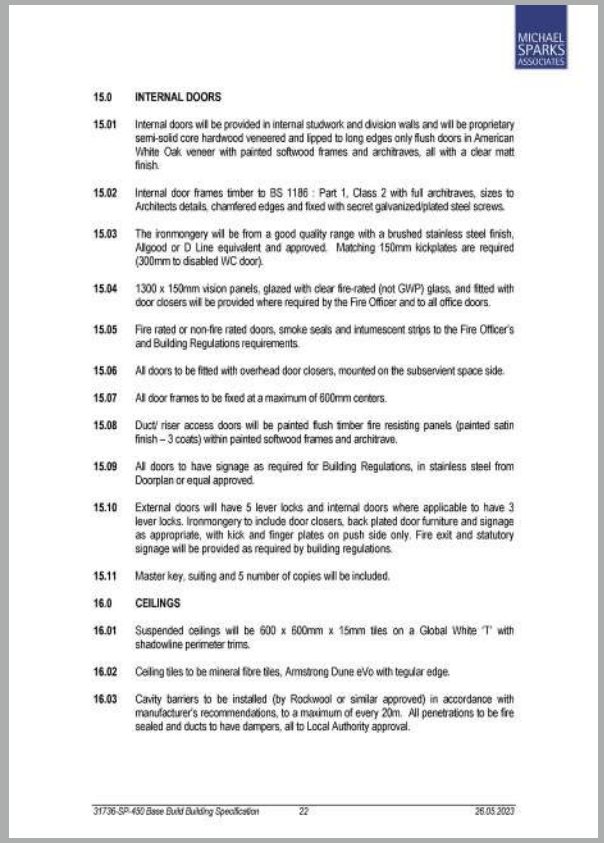
14.13.1 Compartment wall
Ground floor 140 block (or composite wall panels) with insulation and plasterboard will achieve 1hr fire rating and achieve an overall U value equal to or better than part L2 of the current Building Regulations and the Compliance Report prepared by ESC to meet Approved Document Part L2.. First floor to underside of roof deck – 146mm metal stud framing with 2no. layers 12.5mm plasterboard both sides, lapped, jointed & skimmed. Fix isowool acoustic insulation between studs to provide min. rw38 rating. Wall will provide 1 hour fire resistance, insulation and integrity.

14.13.2 Stair 1
Ground floor 140 block (or composite wall panels). Upper floor 122mm o/a metal stud partitions with 2no. 12.5mm soundbloc boards either side of 70mm metal stud with 25mm rockwool sound quilt.

14.13.3 Stair 2
Ground floor 140 block (or composite wall panels) with insulation and plasterboard will achieve 1hr fire rating and 0.25w/m2k. Upper floors 122mm o/a metal stud partitions with 2no. 12.5mm soundbloc boards either side of 70mm metal stud with 25mm rockwool sound quilt.

14.13.4 Upper floor internal walls – main walls from lobby
122mm o/a metal stud partitions with 2no. 12.5mm soundbloc boards either side of 70mm metal stud with 25mm rockwool sound quilt taken up to underside of metal deck.

14.13.5 Upper internal walls – internal walls to toilets and showers
122mm o/a metal stud partitions with 2no. 12.5mm moisture resistant boards either side of 70mm metal stud with 25mm rockwool sound quilt, partition will be 3m overall height.



15.0 INTERNAL DOORS

15.01 Internal doors will be provided in internal studwork and division walls and will be proprietary semi-solid core hardwood veneered and lipped to long edges only flush doors in American White Oak veneer with painted softwood frames and architraves, all with a clear matt finish.

15.02 Internal door frames timber to BS 1186 : Part 1, Class 2 with full architraves, sizes to Architects details, chamfered edges and fixed with secret galvanized/plated steel screws.

15.03 The ironmongery will be from a good quality range with a brushed stainless steel finish, Allgood or D Line equivalent and approved. Matching 150mm kickplates are required (300mm to disabled WC door).

15.04 1300 x 150mm vision panels, glazed with clear fire-rated (not GWP) glass, and fitted with door closers will be provided where required by the Fire Officer and to all office doors.

15.05 Fire rated or non-fire rated doors, smoke seals and intumescent strips to the Fire Officer's and Building Regulations requirements.

15.06 All doors to be fitted with overhead door closers, mounted on the subservient space side.

15.07 All door frames to be fixed at a maximum of 600mm centers.

15.08 Duct/ riser access doors will be painted flush timber fire resisting panels (painted satin finish – 3 coats) within painted softwood frames and architrave.

15.09 All doors to have signage as required for Building Regulations, in stainless steel from Doorplan or equal approved.

15.10 External doors will have 5 lever locks and internal doors where applicable to have 3 lever locks. Ironmongery to include door closers, back plated door furniture and signage as appropriate, with kick and finger plates on push side only. Fire exit and statutory signage will be provided as required by building regulations.

15.11 Master key, suiting and 5 number of copies will be included.

16.0 CEILINGS

16.01 Suspended ceilings will be 600 x 600mm x 15mm tiles on a Global White 'T' with shadowline perimeter trims.

16.02 Ceiling tiles to be mineral fibre tiles, Armstrong Dune eVo with tegular edge.

16.03 Cavity barriers to be installed (by Rockwool or similar approved) in accordance with manufacturer's recommendations, to a maximum of every 20m. All penetrations to be fire sealed and ducts to have dampers, all to Local Authority approval.

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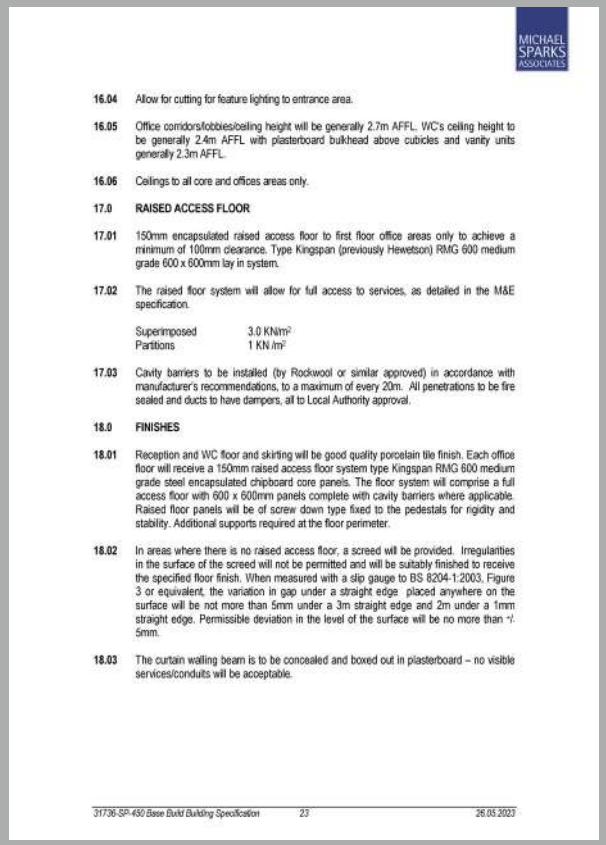

16.04 Allow for cutting for feature lighting to entrance area.

16.05 Office corridors/lobbies/ceiling height will be generally 2.7m AFFL. WC's ceiling height to be generally 2.4m AFFL with plasterboard bulkhead above cubicles and vanity units generally 2.3m AFFL.

16.06 Ceilings to all core and offices areas only.

17.0 RAISED ACCESS FLOOR

17.01 150mm encapsulated raised access floor to first floor office areas only to achieve a minimum of 100mm clearance. Type Kingspan (previously Hewetson) RMG 600 medium grade 600 x 600mm lay in system.

17.02 The raised floor system will allow for full access to services, as detailed in the M&E specification.

Superimposed	3.0 KN/m²
Partitions	1 KN /m²

17.03 Cavity barriers to be installed (by Rockwool or similar approved) in accordance with manufacturer's recommendations, to a maximum of every 20m. All penetrations to be fire sealed and ducts to have dampers, all to Local Authority approval.

18.0 FINISHES

18.01 Reception and WC floor and skirting will be good quality porcelain tile finish. Each office floor will receive a 150mm raised access floor system type Kingspan RMG 600 medium grade steel encapsulated chipboard core panels. The floor system will comprise a full access floor with 600 x 600mm panels complete with cavity barriers where applicable. Raised floor panels will be of screw down type fixed to the pedestals for rigidity and stability. Additional supports required at the floor perimeter.

18.02 In areas where there is no raised access floor, a screed will be provided. Irregularities in the surface of the screed will not be permitted and will be suitably finished to receive the specified floor finish. When measured with a slip gauge to BS 8204-1:2003, Figure 3 or equivalent, the variation in gap under a straight edge placed anywhere on the surface will be not more than 5mm under a 3m straight edge and 2m under a 1mm straight edge. Permissible deviation in the level of the surface will be no more than +/- 5mm.

18.03 The curtain walling beam is to be concealed and boxed out in plasterboard – no visible services/conduits will be acceptable.

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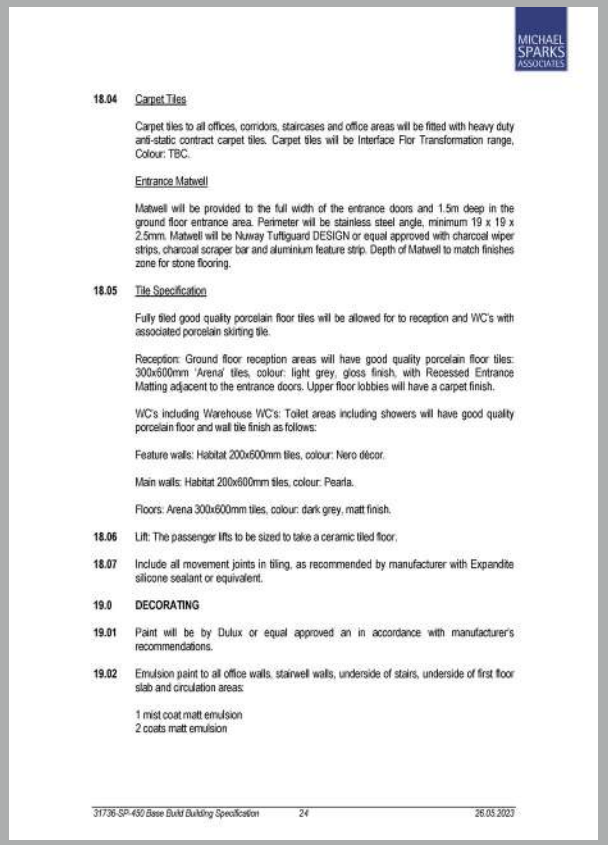

18.04 Carpet Tiles

Carpet tiles to all offices, corridors, staircases and office areas will be fitted with heavy duty anti-static contract carpet tiles. Carpet tiles will be Interface Flor Transformation range, Colour: TBC.

Entrance Matwell

Matwell will be provided to the full width of the entrance doors and 1.5m deep in the ground floor entrance area. Perimeter will be stainless steel angle, minimum 19 x 19 x 2.5mm. Matwell will be Nuway Tuftiguard DESIGN or equal approved with charcoal wiper strips, charcoal scraper bar and aluminium feature strip. Depth of Matwell to match finishes zone for stone flooring.

18.05 Tile Specification

Fully tiled good quality porcelain floor tiles will be allowed for to reception and WC's with associated porcelain skirting tile.

Reception: Ground floor reception areas will have good quality porcelain floor tiles: 300x600mm 'Arena' tiles, colour: light grey, gloss finish, with Recessed Entrance Matting adjacent to the entrance doors. Upper floor lobbies will have a carpet finish.

WC's including Warehouse WC's: Toilet areas including showers will have good quality porcelain floor and wall tile finish as follows:

Feature walls: Habitat 200x600mm tiles, colour: Nero décor.

Main walls: Habitat 200x600mm tiles, colour: Pearla.

Floors: Arena 300x600mm tiles, colour: dark grey, matt finish.

18.06 Lift: The passenger lifts to be sized to take a ceramic tiled floor.

18.07 Include all movement joints in tiling, as recommended by manufacturer with Expandite silicone sealant or equivalent.

19.0 DECORATING

19.01 Paint will be by Dulux or equal approved an in accordance with manufacturer's recommendations.

19.02 Emulsion paint to all office walls, stairwell walls, underside of stairs, underside of first floor slab and circulation areas:

1 mist coat matt emulsion
2 coats matt emulsion

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19.03 Satin oil paint to doors and frames (Dulux Satinwood or equal approved):-

1 coat primer
1 coat undercoat
1 coat satin finish

19.04 Eggshell paint to internal painted joinery:-

1 coat primer
2 coats eggshell oil paint

19.05 Gloss paint to galvanized bollards, internal bollards and handrails externally:

1 coat Dulux mordant solution
1 coat Dulux trade metal primer – zinc phosphate
1 coat Dulux trade undercoat
1 coat Dulux trade gloss

20.0 SIGNAGE

20.01 All internal signage to be by Signbox, Signkit Range or similar.

20.02 Building numerals are to be provided where shown on the elevations. Fixing of the numerals should be done securely without penetrating the cladding.

21.0 SANITARYWARE

21.01 White sanitary ware (Armitage Shanks or equivalent) will be provided as required to provide toilet accommodation together with all associated soil, waste, hot and cold water service installations. Chromium plated taps and fittings will be provided as appropriate. Fittings to comply with Part M of the Building Regulations will be provided to the disabled toilet accommodation. All disabled WC grab rails will be brushed stainless steel. Disabled toilet will be fitted with an emergency alarm.

21.02 Provide silicone sealant to all sanitaryware joints/junctions to BS 5889: Type B with fungicide.

21.03 Include a full height continuous mirror secret fixed above the vanity units.

21.04 Each toilet to have a buffer and toilet roll holder to match door ironmongery.

21.05 The showers shall be level with the surrounding tiles and laid to falls. A sliding door, sliding rose, thermostatic mixer and 3 no. coat hooks shall be provided.

21.06 Belfast sink will be provided to all cleaners cupboards.

21.07 No internal manholes will be permitted.

21.08 IPS panelling by Amwell or Vanesta to cubicles will be timber veneer accessible panels with timber veneer battens behind toilet partitioning and toilet ducts to toilet areas will be full height. The backs of cubicles will be in timber veneer panelling to provide access to ducts. All panels will be fully fitted, lipped and balanced on easy release systems.

21.09 Full height timber veneered faced doors to cubicles will be provided.

21.10 Provide spurs for hand dryers to office toilets (2no per WC).

21.11 Provide shaver points / hair dryer spurs to office toilets (1no per WC).

22.0 WAREHOUSE FACILITIES

22.01 Warehouse WC's, Showers and Locker Rooms will be provided as shown on the floor plans.

22.02 Provision for water, drainage and heating should be allowed for to suit the proposed layout.

22.03 Sanitaryware to match the office WC's should be provided.

22.04 Stainless steel trough urinals (Armitage Shanks or equivalent) to be provided to warehouse toilets.

22.05 Walls to be blockwork insulated and plasterboard lined and a solid lid should be provided over the WC areas.

22.06 Provision for vinyl flooring to be provided to floor areas PolyFlor Polysafe Range or similar approved.

23.0 WATER

23.01 The cold water services will be in copper, insulated as necessary and incorporating appropriate stop valves and drain off points. From the metered incoming mains water supply a connection will be taken to directly feed the office and core amenity accommodation, the cold water system will be entirely mains fed. All in accordance with the requirements of the Local Authority.

23.02 Hot and cold water service pipes will be installed to all appliances as necessary. All sanitary appliances are to be provided with individual valves isolation. All hot water outlets, except cleaner sinks, are to be complete with TMV3 valves. Drinking water will be provided in accordance with the appropriate Regulations. The tea points will incorporate capped connections for a future dishwasher and water cooler.

23.03 The water services installations will be in accordance with the requirements of the Water Regulations and the Local Authority. In general no water services pipework is to be visible, where unavoidable i.e. final connections to sanitary appliances the pipework shall be chromium plated.

23.04 Provisions for a tea point will be provided in office areas where shown on the plans.

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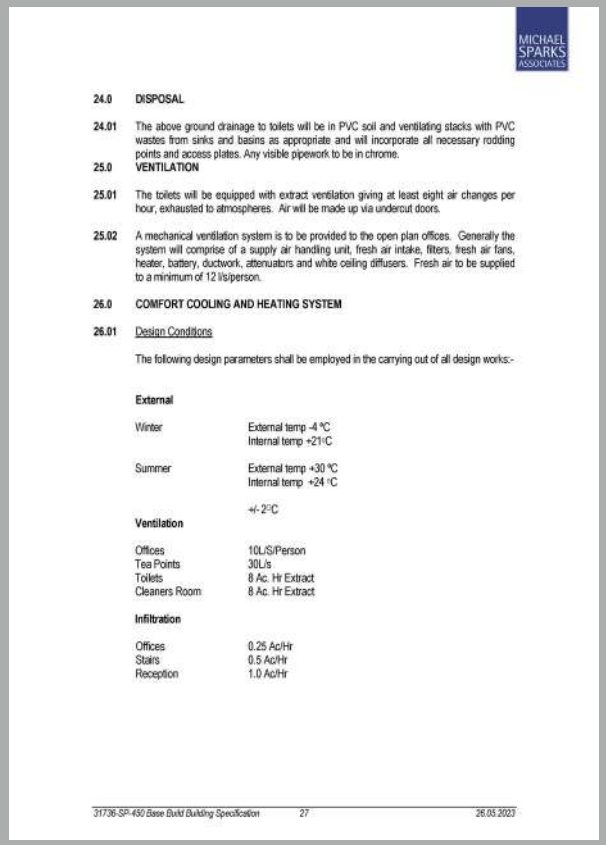

24.0 DISPOSAL

24.01 The above ground drainage to toilets will be in PVC soil and ventilating stacks with PVC wastes from sinks and basins as appropriate and will incorporate all necessary rodding points and access plates. Any visible pipework to be in chrome.

25.0 VENTILATION

25.01 The toilets will be equipped with extract ventilation giving at least eight air changes per hour, exhausted to atmospheres. Air will be made up via undercut doors.

25.02 A mechanical ventilation system is to be provided to the open plan offices. Generally the system will comprise of a supply air handling unit, fresh air intake, filters, fresh air fans, heater, battery, ductwork, attenuators and white ceiling diffusers. Fresh air to be supplied to a minimum of 12 l/s/person.

26.0 COMFORT COOLING AND HEATING SYSTEM

26.01 Design Conditions

The following design parameters shall be employed in the carrying out of all design works:-

External

Winter	External temp -4 ºC Internal temp +21ºC
Summer	External temp +30 ºC Internal temp +24 ºC +/- 2ºC

Ventilation

Offices	10L/S/Person
Tea Points	30L/s
Toilets	8 Ac. Hr Extract
Cleaners Room	8 Ac. Hr Extract

Infiltration

Offices	0.25 Ac/Hr
Stairs	0.5 Ac/Hr
Reception	1.0 Ac/Hr

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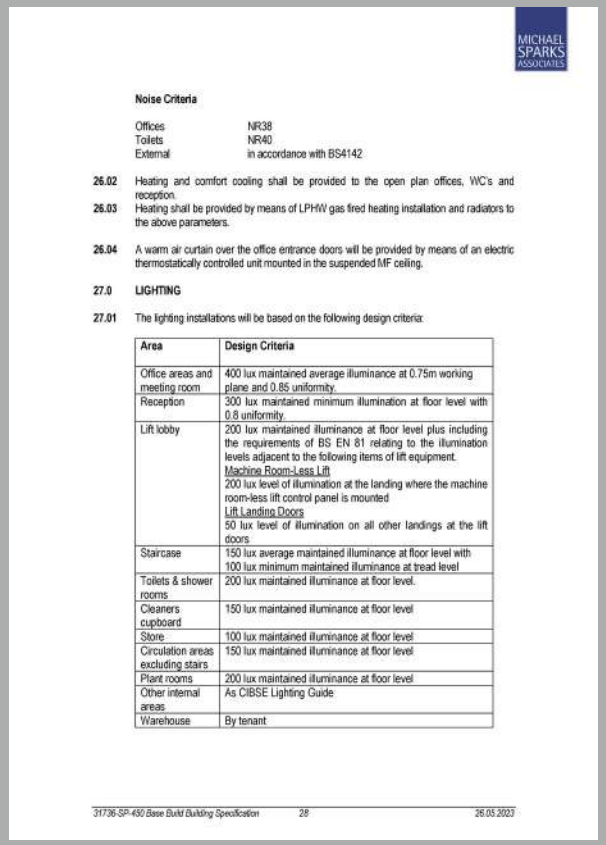

Noise Criteria

Offices	NR38
Toilets	NR40
External	in accordance with BS4142

26.02 Heating and comfort cooling shall be provided to the open plan offices, WC's and reception.

26.03 Heating shall be provided by means of LPHW gas fired heating installation and radiators to the above parameters.

26.04 A warm air curtain over the office entrance doors will be provided by means of an electric thermostatically controlled unit mounted in the suspended MF ceiling.

27.0 LIGHTING

27.01 The lighting installations will be based on the following design criteria:

Area	Design Criteria
Office areas and meeting room	400 lux maintained average illuminance at 0.75m working plane and 0.85 uniformity.
Reception	300 lux maintained minimum illumination at floor level with 0.8 uniformity.
Lift lobby	200 lux maintained illuminance at floor level plus including the requirements of BS EN 81 relating to the illumination levels adjacent to the following items of lift equipment. Machine Room-Less Lift 200 lux level of illumination at the landing where the machine room-less lift control panel is mounted Lift Landing Doors 50 lux level of illumination on all other landings at the lift doors
Staircase	150 lux average maintained illuminance at floor level with 100 lux minimum maintained illuminance at tread level
Toilets & shower rooms	200 lux maintained illuminance at floor level.
Cleaners cupboard	150 lux maintained illuminance at floor level
Store	100 lux maintained illuminance at floor level
Circulation areas excluding stairs	150 lux maintained illuminance at floor level
Plant rooms	200 lux maintained illuminance at floor level
Other internal areas	As CIBSE Lighting Guide
Warehouse	By tenant

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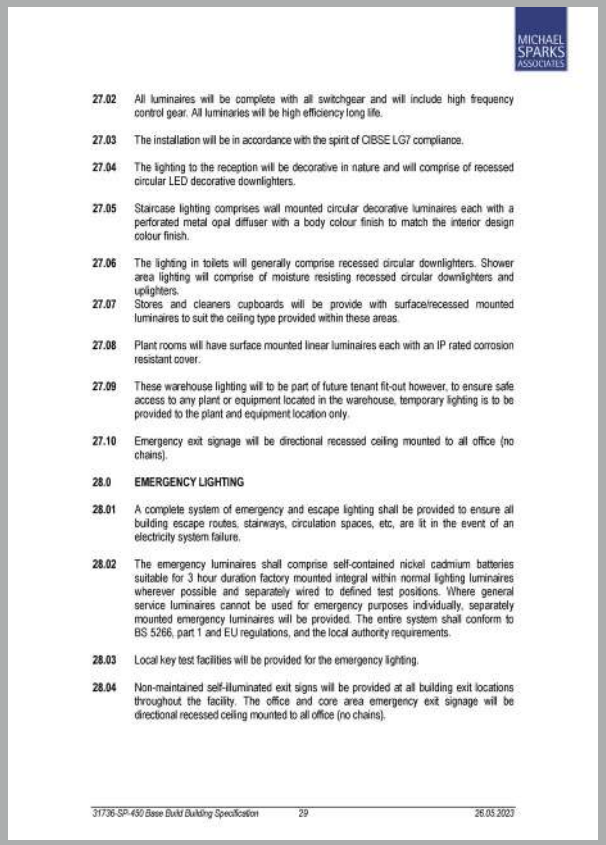

27.02 All luminaires will be complete with all switchgear and will include high frequency control gear. All luminaries will be high efficiency long life.

27.03 The installation will be in accordance with the spirit of CIBSE LG7 compliance.

27.04 The lighting to the reception will be decorative in nature and will comprise of recessed circular LED decorative downlighters.

27.05 Staircase lighting comprises wall mounted circular decorative luminaires each with a perforated metal opal diffuser with a body colour finish to match the interior design colour finish.

27.06 The lighting in toilets will generally comprise recessed circular downlighters. Shower area lighting will comprise of moisture resisting recessed circular downlighters and uplighters.

27.07 Stores and cleaners cupboards will be provide with surface/recessed mounted luminaires to suit the ceiling type provided within these areas.

27.08 Plant rooms will have surface mounted linear luminaires each with an IP rated corrosion resistant cover.

27.09 These warehouse lighting will to be part of future tenant fit-out however, to ensure safe access to any plant or equipment located in the warehouse, temporary lighting is to be provided to the plant and equipment location only.

27.10 Emergency exit signage will be directional recessed ceiling mounted to all office (no chains).

28.0 EMERGENCY LIGHTING

28.01 A complete system of emergency and escape lighting shall be provided to ensure all building escape routes, stairways, circulation spaces, etc, are lit in the event of an electricity system failure.

28.02 The emergency luminaires shall comprise self-contained nickel cadmium batteries suitable for 3 hour duration factory mounted integral within normal lighting luminaires wherever possible and separately wired to defined test positions. Where general service luminaires cannot be used for emergency purposes individually, separately mounted emergency luminaires will be provided. The entire system shall conform to BS 5266, part 1 and EU regulations, and the local authority requirements.

28.03 Local key test facilities will be provided for the emergency lighting.

28.04 Non-maintained self-illuminated exit signs will be provided at all building exit locations throughout the facility. The office and core area emergency exit signage will be directional recessed ceiling mounted to all office (no chains).

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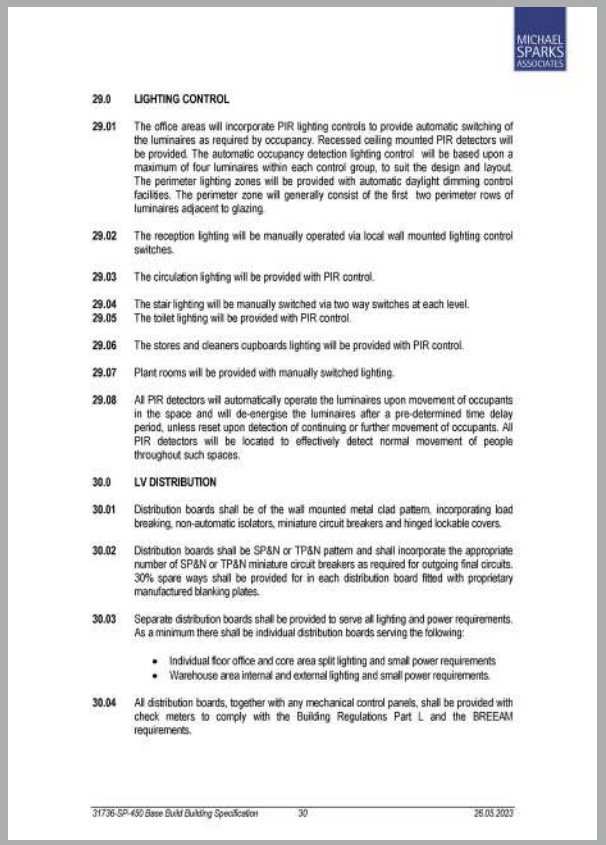

29.0 LIGHTING CONTROL

29.01 The office areas will incorporate PIR lighting controls to provide automatic switching of the luminaires as required by occupancy. Recessed ceiling mounted PIR detectors will be provided. The automatic occupancy detection lighting control will be based upon a maximum of four luminaires within each control group, to suit the design and layout. The perimeter lighting zones will be provided with automatic daylight dimming control facilities. The perimeter zone will generally consist of the first two perimeter rows of luminaires adjacent to glazing.

29.02 The reception lighting will be manually operated via local wall mounted lighting control switches.

29.03 The circulation lighting will be provided with PIR control.

29.04 The stair lighting will be manually switched via two way switches at each level.

29.05 The toilet lighting will be provided with PIR control.

29.06 The stores and cleaners cupboards lighting will be provided with PIR control.

29.07 Plant rooms will be provided with manually switched lighting.

29.08 All PIR detectors will automatically operate the luminaires upon movement of occupants in the space and will de-energise the luminaires after a pre-determined time delay period, unless reset upon detection of continuing or further movement of occupants. All PIR detectors will be located to effectively detect normal movement of people throughout such spaces.

30.0 LV DISTRIBUTION

30.01 Distribution boards shall be of the wall mounted metal clad pattern, incorporating load breaking, non-automatic isolators, miniature circuit breakers and hinged lockable covers.

30.02 Distribution boards shall be SP&N or TP&N pattern and shall incorporate the appropriate number of SP&N or TP&N miniature circuit breakers as required for outgoing final circuits. 30% spare ways shall be provided for in each distribution board fitted with proprietary manufactured blanking plates.

30.03 Separate distribution boards shall be provided to serve all lighting and power requirements. As a minimum there shall be individual distribution boards serving the following:

- Individual floor office and core area split lighting and small power requirements
- Warehouse area internal and external lighting and small power requirements.

30.04 All distribution boards, together with any mechanical control panels, shall be provided with check meters to comply with the Building Regulations Part L and the BREEAM requirements.

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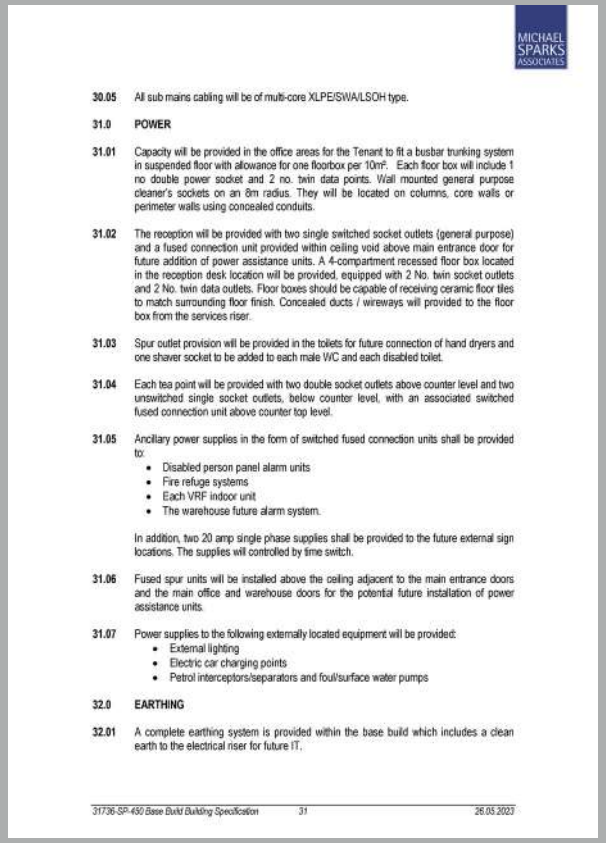


30.05 All sub mains cabling will be of multi-core XLPE/SWA/LSOH type.

31.0 POWER

31.01 Capacity will be provided in the office areas for the Tenant to fit a busbar trunking system in suspended floor with allowance for one floorbox per 10m². Each floor box will include 1 no double power socket and 2 no. twin data points. Wall mounted general purpose cleaner's sockets on an 8m radius. They will be located on columns, core walls or perimeter walls using concealed conduits.

31.02 The reception will be provided with two single switched socket outlets (general purpose) and a fused connection unit provided within ceiling void above main entrance door for future addition of power assistance units. A 4-compartment recessed floor box located in the reception desk location will be provided, equipped with 2 No. twin socket outlets and 2 No. twin data outlets. Floor boxes should be capable of receiving ceramic floor tiles to match surrounding floor finish. Concealed ducts / wireways will provided to the floor box from the services riser.

31.03 Spur outlet provision will be provided in the toilets for future connection of hand dryers and one shaver socket to be added to each male WC and each disabled toilet.

31.04 Each tea point will be provided with two double socket outlets above counter level and two unswitched single socket outlets, below counter level, with an associated switched fused connection unit above counter top level.

31.05 Ancillary power supplies in the form of switched fused connection units shall be provided to:

- Disabled person panel alarm units
- Fire refuge systems
- Each VRF indoor unit
- The warehouse future alarm system.

In addition, two 20 amp single phase supplies shall be provided to the future external sign locations. The supplies will controlled by time switch.

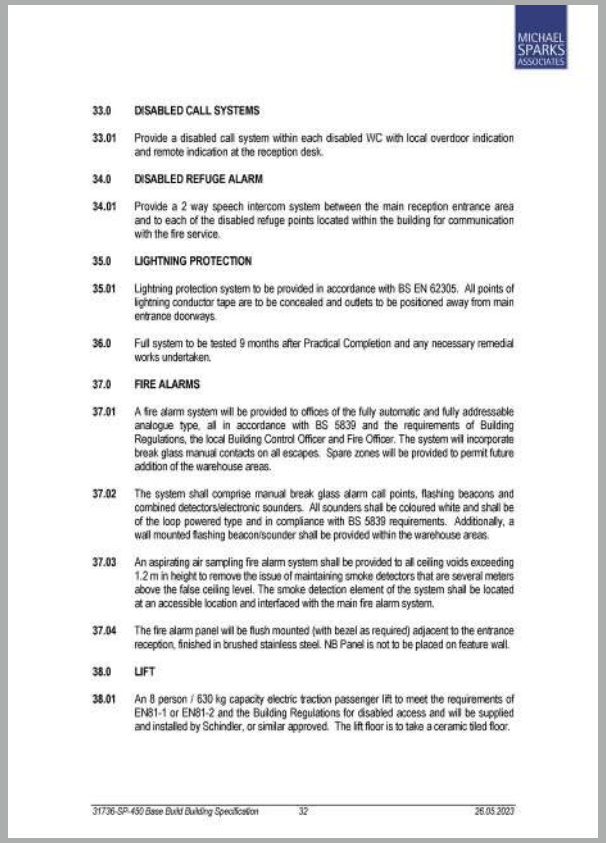
31.06 Fused spur units will be installed above the ceiling adjacent to the main entrance doors and the main office and warehouse doors for the potential future installation of power assistance units.

31.07 Power supplies to the following externally located equipment will be provided:

- External lighting
- Electric car charging points
- Petrol interceptors/separators and foul/surface water pumps

32.0 EARTHING

32.01 A complete earthing system is provided within the base build which includes a clean earth to the electrical riser for future IT.



33.0 DISABLED CALL SYSTEMS

33.01 Provide a disabled call system within each disabled WC with local overdoor indication and remote indication at the reception desk.

34.0 DISABLED REFUGE ALARM

34.01 Provide a 2 way speech intercom system between the main reception entrance area and to each of the disabled refuge points located within the building for communication with the fire service.

35.0 LIGHTNING PROTECTION

35.01 Lightning protection system to be provided in accordance with BS EN 62305. All points of lightning conductor tape are to be concealed and outlets to be positioned away from main entrance doorways.

36.0 Full system to be tested 9 months after Practical Completion and any necessary remedial works undertaken.

37.0 FIRE ALARMS

37.01 A fire alarm system will be provided to offices of the fully automatic and fully addressable analogue type, all in accordance with BS 5839 and the requirements of Building Regulations, the local Building Control Officer and Fire Officer. The system will incorporate break glass manual contacts on all escapes. Spare zones will be provided to permit future addition of the warehouse areas.

37.02 The system shall comprise manual break glass alarm call points, flashing beacons and combined detectors/electronic sounders. All sounders shall be coloured white and shall be of the loop powered type and in compliance with BS 5839 requirements. Additionally, a wall mounted flashing beacon/sounder shall be provided within the warehouse areas.

37.03 An aspirating air sampling fire alarm system shall be provided to all ceiling voids exceeding 1.2 m in height to remove the issue of maintaining smoke detectors that are several meters above the false ceiling level. The smoke detection element of the system shall be located at an accessible location and interfaced with the main fire alarm system.

37.04 The fire alarm panel will be flush mounted (with bezel as required) adjacent to the entrance reception, finished in brushed stainless steel. NB Panel is not to be placed on feature wall.

38.0 LIFT

38.01 An 8 person / 630 kg capacity electric traction passenger lift to meet the requirements of EN81-1 or EN81-2 and the Building Regulations for disabled access and will be supplied and installed by Schindler, or similar approved. The lift floor is to take a ceramic tiled floor.

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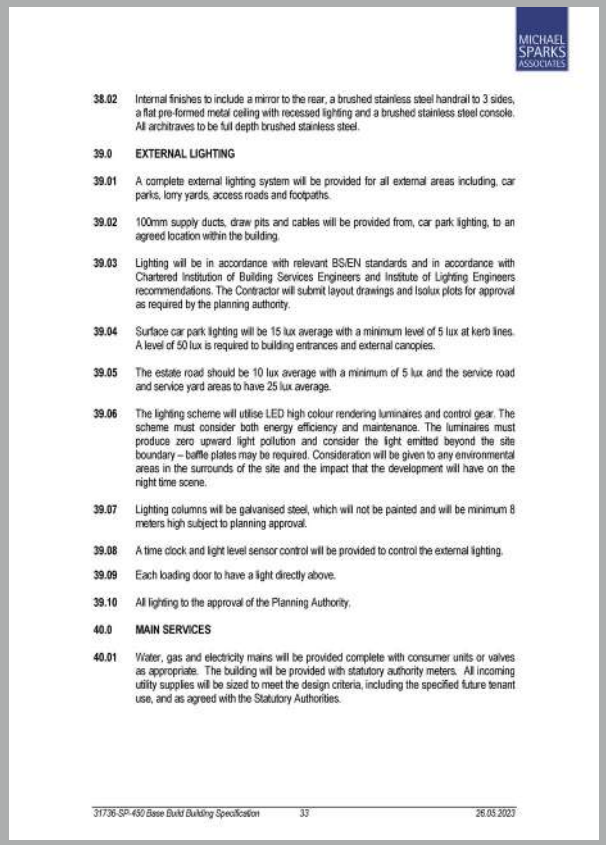

38.02 Internal finishes to include a mirror to the rear, a brushed stainless steel handrail to 3 sides, a flat pre-formed metal ceiling with recessed lighting and a brushed stainless steel console. All architraves to be full depth brushed stainless steel.

39.0 EXTERNAL LIGHTING

39.01 A complete external lighting system will be provided for all external areas including, car parks, lorry yards, access roads and footpaths.

39.02 100mm supply ducts, draw pits and cables will be provided from, car park lighting, to an agreed location within the building.

39.03 Lighting will be in accordance with relevant BS/EN standards and in accordance with Chartered Institution of Building Services Engineers and Institute of Lighting Engineers recommendations. The Contractor will submit layout drawings and Isolux plots for approval as required by the planning authority.

39.04 Surface car park lighting will be 15 lux average with a minimum level of 5 lux at kerb lines. A level of 50 lux is required to building entrances and external canopies.

39.05 The estate road should be 10 lux average with a minimum of 5 lux and the service road and service yard areas to have 25 lux average.

39.06 The lighting scheme will utilise LED high colour rendering luminaires and control gear. The scheme must consider both energy efficiency and maintenance. The luminaires must produce zero upward light pollution and consider the light emitted beyond the site boundary – baffle plates may be required. Consideration will be given to any environmental areas in the surrounds of the site and the impact that the development will have on the night time scene.

39.07 Lighting columns will be galvanised steel, which will not be painted and will be minimum 8 meters high subject to planning approval.

39.08 A time clock and light level sensor control will be provided to control the external lighting.

39.09 Each loading door to have a light directly above.

39.10 All lighting to the approval of the Planning Authority.

40.0 MAIN SERVICES

40.01 Water, gas and electricity mains will be provided complete with consumer units or valves as appropriate. The building will be provided with statutory authority meters. All incoming utility supplies will be sized to meet the design criteria, including the specified future tenant use, and as agreed with the Statutory Authorities.

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40.02 Gas
The incoming gas meter to each unit will be positioned in an external ventilated meter kiosk adjacent to each unit. A new incoming gas supply will be extended and capped off within the warehouse area.

40.03 Water
A separate metered incoming mains water supply shall be provided to each unit. The supply will be sized in accordance with the Supply Authority requirements. The supply authority meter will be located in an external meter pit at the boundary of the unit demise. Local isolation will be provided where the main enters the unit.

40.04 Electricity
A substation will be provided to the development. From the substation a LV supply will be taken to each unit. External metering cabinets will be provided for each unit.

Electrical capacity to be provided;

Unit 1 – 500 KVA
Unit 2 – 250 KVA
Unit 3 – 750 KVA
Unit 4 – 500 KVA

40.05 Telecommunications and Data Ducts
Two 100mm diameter ducts complete with draw pits to be used for BT services will be provided along the estate access road. From this infrastructure a 100mm diameter duct complete with draw pits will be provided to each unit. A separate duct network comprising two 100mm diameter ducts complete with draw pits will be provided along the estate access road to be used for an alternative communications provider. From this infrastructure a 100mm diameter duct complete with draw pits will be provided to each unit.

40.06 CCTV
Ducts, one power and one CCTV cabling complete with draw pits, suitable for future tenant CCTV use will be provided to the corners of each units demise and the perimeter of the building.

40.07 Electric Vehicle (EV) Charging Points
Ducts, one power and one comms cabling complete with draw pits shall be provided for the provision of the EV charging points to be provided and also future duct provisions to extended car parking bays for future provision of additional EV chargers (refer to 42.02 Car Parking for electric charging provisions).

40.08 Photovoltaic (PV) Panel Array (Roof Mounted)

It is proposed that the unit is provided with a Photovoltaic installation as part of a Low & Zero Carbon (LZC) technology 'mix' and this is to be provided by the Contractor.

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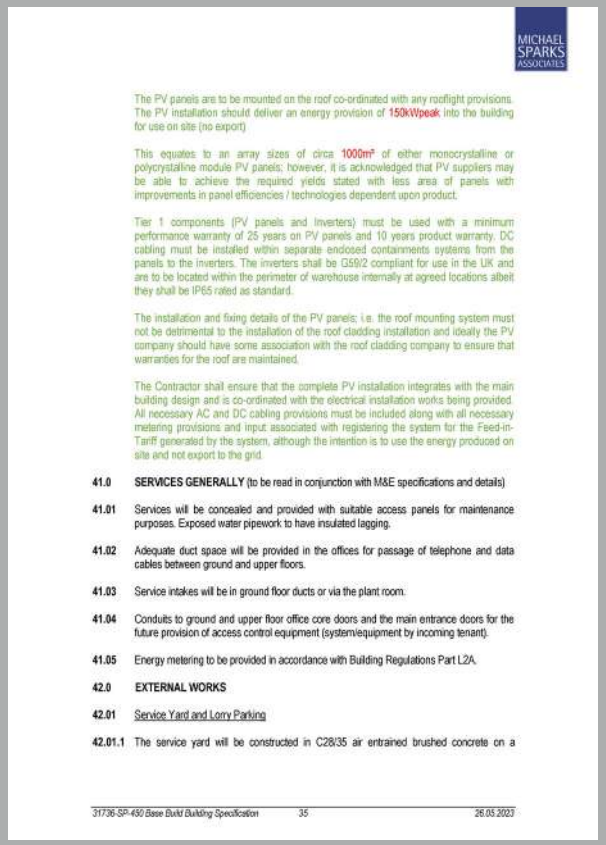

The PV panels are to be mounted on the roof co-ordinated with any rooflight provisions. The PV installation should deliver an energy provision of 150kWpeak into the building for use on site (no export)

This equates to an array sizes of circa 1000m² of either monocrystalline or polycrystalline module PV panels; however, it is acknowledged that PV suppliers may be able to achieve the required yields stated with less area of panels with improvements in panel efficiencies / technologies dependent upon product.

Tier 1 components (PV panels and Inverters) must be used with a minimum performance warranty of 25 years on PV panels and 10 years product warranty. DC cabling must be installed within separate enclosed containments systems from the panels to the inverters. The inverters shall be G59/2 compliant for use in the UK and are to be located within the perimeter of warehouse internally at agreed locations albeit they shall be IP65 rated as standard.

The installation and fixing details of the PV panels; i.e. the roof mounting system must not be detrimental to the installation of the roof cladding installation and ideally the PV company should have some association with the roof cladding company to ensure that warranties for the roof are maintained.

The Contractor shall ensure that the complete PV installation integrates with the main building design and is co-ordinated with the electrical installation works being provided. All necessary AC and DC cabling provisions must be included along with all necessary metering provisions and input associated with registering the system for the Feed-in-Tariff generated by the system, although the intention is to use the energy produced on site and not export to the grid.

41.0 **SERVICES GENERALLY** (to be read in conjunction with M&E specifications and details)

41.01 Services will be concealed and provided with suitable access panels for maintenance purposes. Exposed water pipework to have insulated lagging.

41.02 Adequate duct space will be provided in the offices for passage of telephone and data cables between ground and upper floors.

41.03 Service intakes will be in ground floor ducts or via the plant room.

41.04 Conduits to ground and upper floor office core doors and the main entrance doors for the future provision of access control equipment (system/equipment by incoming tenant).

41.05 Energy metering to be provided in accordance with Building Regulations Part L2A.

42.0 **EXTERNAL WORKS**

42.01 Service Yard and Lorry Parking

42.01.1 The service yard will be constructed in C28/35 air entrained brushed concrete on a

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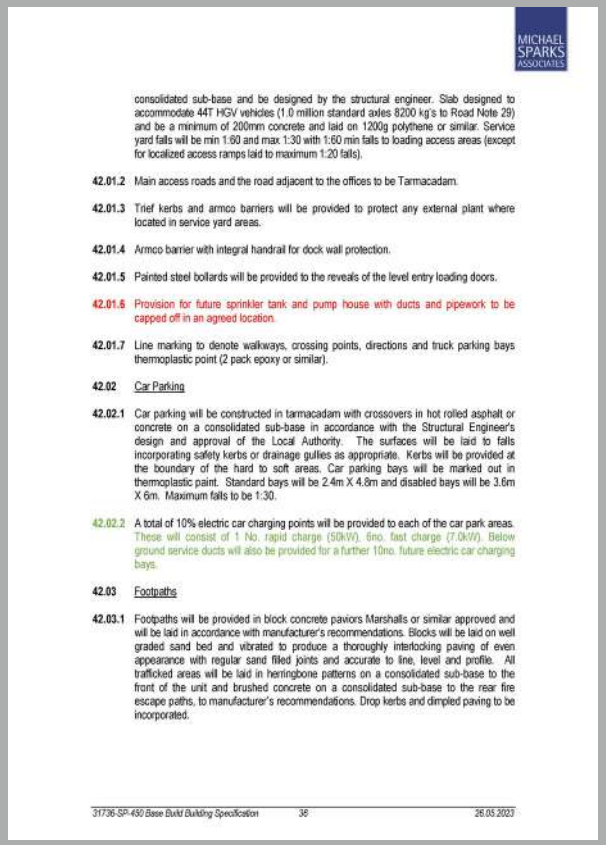

consolidated sub-base and be designed by the structural engineer. Slab designed to accommodate 44T HGV vehicles (1.0 million standard axles 8200 kg's to Road Note 29) and be a minimum of 200mm concrete and laid on 1200g polythene or similar. Service yard falls will be min 1:60 and max 1:30 with 1:60 min falls to loading access areas (except for localized access ramps laid to maximum 1:20 falls).

42.01.2 Main access roads and the road adjacent to the offices to be Tarmacadam.

42.01.3 Trief kerbs and armco barriers will be provided to protect any external plant where located in service yard areas.

42.01.4 Armco barrier with integral handrail for dock wall protection.

42.01.5 Painted steel bollards will be provided to the reveals of the level entry loading doors.

42.01.6 Provision for future sprinkler tank and pump house with ducts and pipework to be capped off in an agreed location.

42.01.7 Line marking to denote walkways, crossing points, directions and truck parking bays thermoplastic point (2 pack epoxy or similar).

42.02 Car Parking

42.02.1 Car parking will be constructed in tarmacadam with crossovers in hot rolled asphalt or concrete on a consolidated sub-base in accordance with the Structural Engineer's design and approval of the Local Authority. The surfaces will be laid to falls incorporating safety kerbs or drainage gullies as appropriate. Kerbs will be provided at the boundary of the hard to soft areas. Car parking bays will be marked out in thermoplastic paint. Standard bays will be 2.4m X 4.8m and disabled bays will be 3.6m X 6m. Maximum falls to be 1:30.

42.02.2 A total of 10% electric car charging points will be provided to each of the car park areas. These will consist of 1 No. rapid charge (50kW), 6no. fast charge (7.0kW). Below ground service ducts will also be provided for a further 10no. future electric car charging bays.

42.03 Footpaths

42.03.1 Footpaths will be provided in block concrete paviors Marshalls or similar approved and will be laid in accordance with manufacturer's recommendations. Blocks will be laid on well graded sand bed and vibrated to produce a thoroughly interlocking paving of even appearance with regular sand filled joints and accurate to line, level and profile. All trafficked areas will be laid in herringbone patterns on a consolidated sub-base to the front of the unit and brushed concrete on a consolidated sub-base to the rear fire escape paths, to manufacturer's recommendations. Drop kerbs and dimpled paving to be incorporated.

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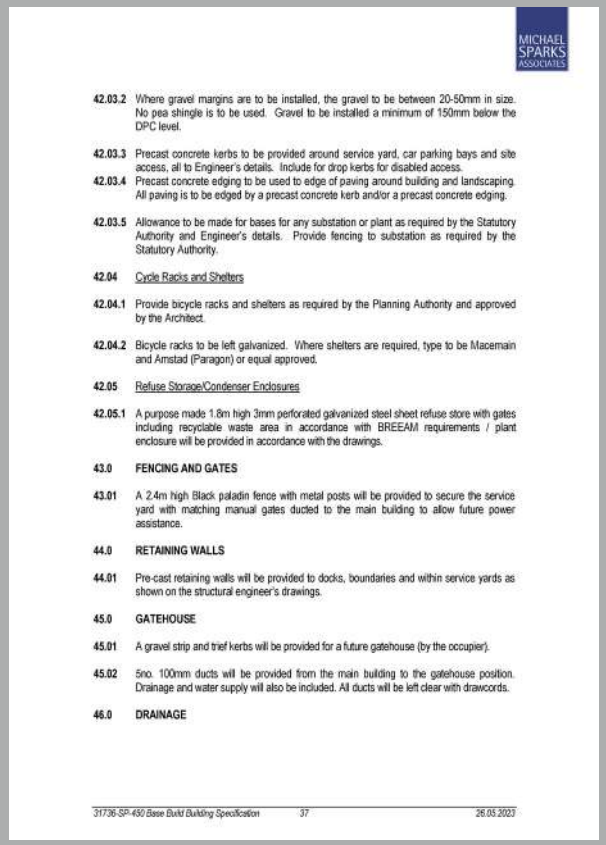

42.03.2 Where gravel margins are to be installed, the gravel to be between 20-50mm in size. No pea shingle is to be used. Gravel to be installed a minimum of 150mm below the DPC level.

42.03.3 Precast concrete kerbs to be provided around service yard, car parking bays and site access, all to Engineer's details. Include for drop kerbs for disabled access.

42.03.4 Precast concrete edging to be used to edge of paving around building and landscaping. All paving is to be edged by a precast concrete kerb and/or a precast concrete edging.

42.03.5 Allowance to be made for bases for any substation or plant as required by the Statutory Authority and Engineer's details. Provide fencing to substation as required by the Statutory Authority.

42.04 Cycle Racks and Shelters

42.04.1 Provide bicycle racks and shelters as required by the Planning Authority and approved by the Architect.

42.04.2 Bicycle racks to be left galvanized. Where shelters are required, type to be Macemain and Amstad (Paragon) or equal approved.

42.05 Refuse Storage/Condenser Enclosures

42.05.1 A purpose made 1.8m high 3mm perforated galvanized steel sheet refuse store with gates including recyclable waste area in accordance with BREEAM requirements / plant enclosure will be provided in accordance with the drawings.

43.0 FENCING AND GATES

43.01 A 2.4m high Black paladin fence with metal posts will be provided to secure the service yard with matching manual gates ducted to the main building to allow future power assistance.

44.0 RETAINING WALLS

44.01 Pre-cast retaining walls will be provided to docks, boundaries and within service yards as shown on the structural engineer's drawings.

45.0 GATEHOUSE

45.01 A gravel strip and trief kerbs will be provided for a future gatehouse (by the occupier).

45.02 5no. 100mm ducts will be provided from the main building to the gatehouse position. Drainage and water supply will also be included. All ducts will be left clear with drawcords.

46.0 DRAINAGE

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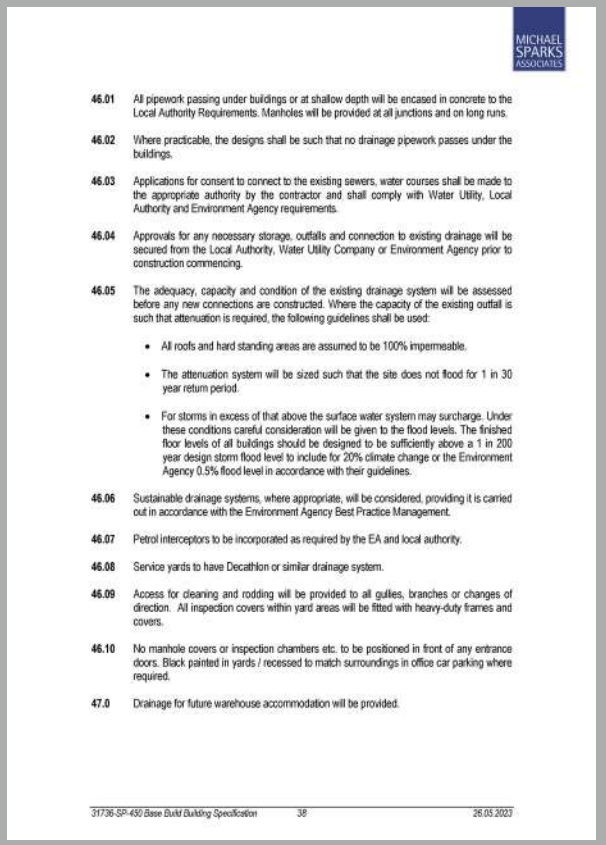

46.01 All pipework passing under buildings or at shallow depth will be encased in concrete to the Local Authority Requirements. Manholes will be provided at all junctions and on long runs.

46.02 Where practicable, the designs shall be such that no drainage pipework passes under the buildings.

46.03 Applications for consent to connect to the existing sewers, water courses shall be made to the appropriate authority by the contractor and shall comply with Water Utility, Local Authority and Environment Agency requirements.

46.04 Approvals for any necessary storage, outfalls and connection to existing drainage will be secured from the Local Authority, Water Utility Company or Environment Agency prior to construction commencing.

46.05 The adequacy, capacity and condition of the existing drainage system will be assessed before any new connections are constructed. Where the capacity of the existing outfall is such that attenuation is required, the following guidelines shall be used:

- All roofs and hard standing areas are assumed to be 100% impermeable.
- The attenuation system will be sized such that the site does not flood for 1 in 30 year return period.
- For storms in excess of that above the surface water system may surcharge. Under these conditions careful consideration will be given to the flood levels. The finished floor levels of all buildings should be designed to be sufficiently above a 1 in 200 year design storm flood level to include for 20% climate change or the Environment Agency 0.5% flood level in accordance with their guidelines.

46.06 Sustainable drainage systems, where appropriate, will be considered, providing it is carried out in accordance with the Environment Agency Best Practice Management.

46.07 Petrol interceptors to be incorporated as required by the EA and local authority.

46.08 Service yards to have Decathlon or similar drainage system.

46.09 Access for cleaning and rodding will be provided to all gullies, branches or changes of direction. All inspection covers within yard areas will be fitted with heavy-duty frames and covers.

46.10 No manhole covers or inspection chambers etc. to be positioned in front of any entrance doors. Black painted in yards / recessed to match surroundings in office car parking where required.

47.0 Drainage for future warehouse accommodation will be provided.

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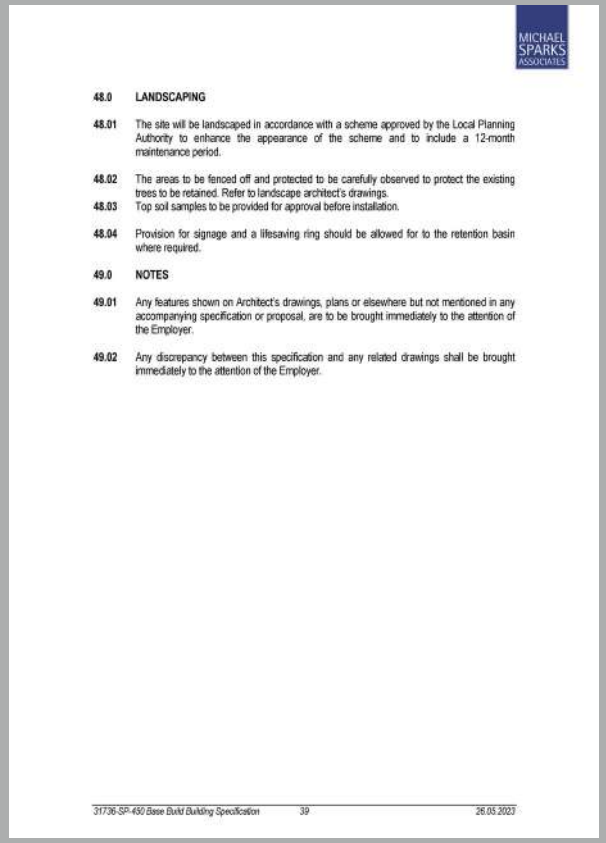

48.0 LANDSCAPING

48.01 The site will be landscaped in accordance with a scheme approved by the Local Planning Authority to enhance the appearance of the scheme and to include a 12-month maintenance period.

48.02 The areas to be fenced off and protected to be carefully observed to protect the existing trees to be retained. Refer to landscape architect's drawings.

48.03 Top soil samples to be provided for approval before installation.

48.04 Provision for signage and a lifesaving ring should be allowed for to the retention basin where required.

49.0 NOTES

49.01 Any features shown on Architect's drawings, plans or elsewhere but not mentioned in any accompanying specification or proposal, are to be brought immediately to the attention of the Employer.

49.02 Any discrepancy between this specification and any related drawings shall be brought immediately to the attention of the Employer.

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