



Panattoni Park  
**AVONMOUTH**

TENANT

TECH PACK



EPC  
RATING OF  
**'A'**



BREEAM  
RATING OF  
**'Excellent'**



MEETS  
**ESG**  
STANDARDS



**NET ZERO**  
CARBON IN  
CONSTRUCTION



UP TO  
**50kN/m<sup>2</sup>**  
FLOOR LOADING



**15%**  
ROOF  
LIGHTS



**10 tonne**  
RACK LEG  
LOADING



**10%**  
EV CHARGING  
POINTS



**8 MVA**  
POWER SUPPLY  
PARK WIDE



**50m**  
YARD  
DEPTH



**FM1**  
FLOORING



**17.2m**  
CLEAR  
INTERNAL HEIGHT



SOLAR  
**PV**  
INSTALLED



**Cycle**  
PARKING  
SPACES



GATEHOUSE  
AND SECURE  
YARDS



LED  
LIGHTING

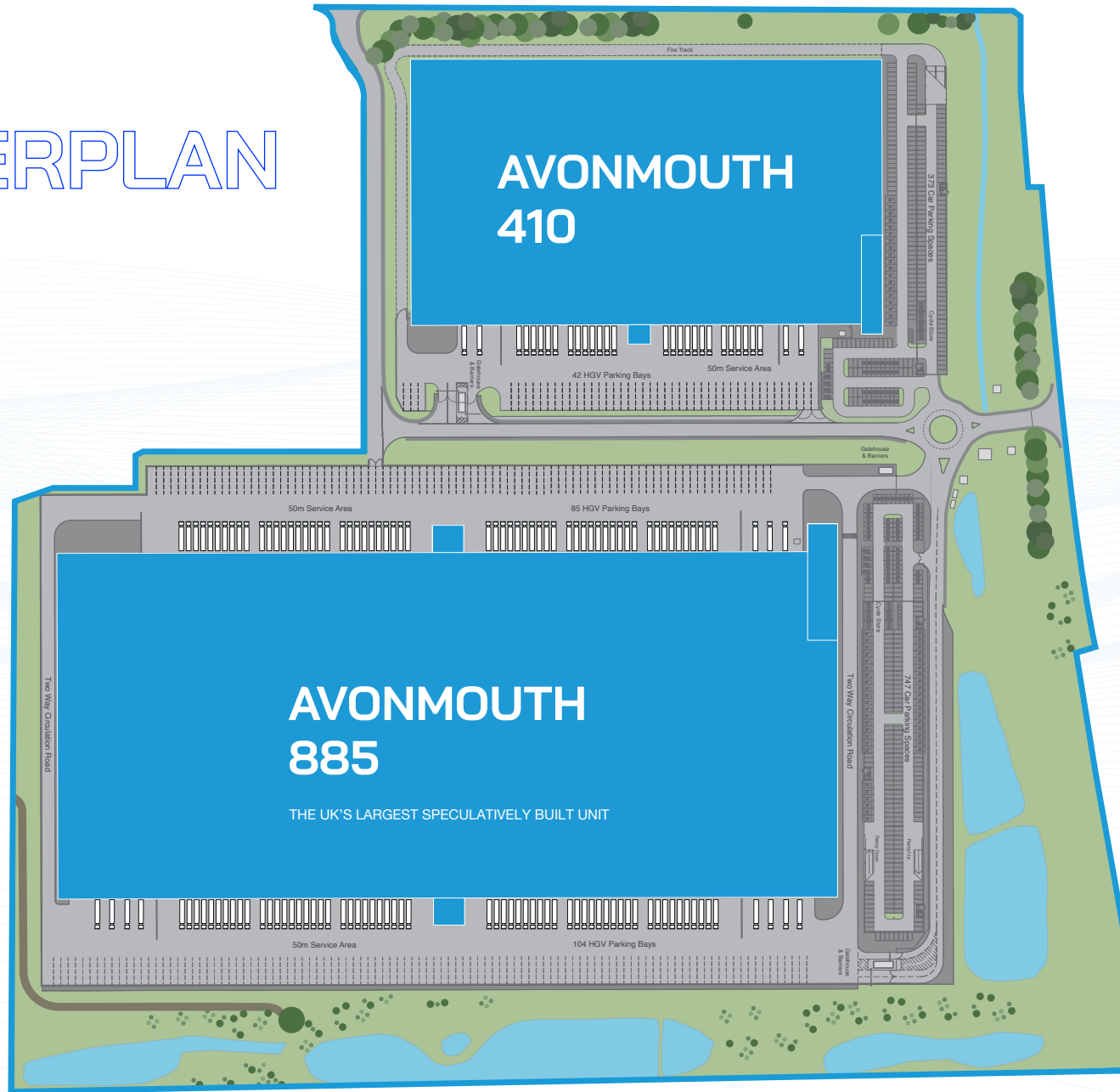
## AVONMOUTH 885

- 189 trailer parking spaces
- 747 car parking spaces
- 11 level access doors
- 120 dock doors

## AVONMOUTH 410

- 42 trailer parking spaces
- 373 car parking spaces
- 4 level access doors
- 26 dock doors

# SITE MASTERPLAN





# MASTERPLAN

## AVONMOUTH 410

**42**  
TRAILER PARKING  
SPACES

**373**  
CAR PARKING  
SPACES

**4**  
LEVEL ACCESS  
DOORS

**26**  
DOCK  
DOORS

**50m**  
YARD  
DEPTH

**Cycle**  
PARKING  
SPACES

**GATEHOUSE  
AND SECURE  
YARD**

**ESG**





# MASTERPLAN

## AVONMOUTH

### 885

  
**189**  
TRAILER PARKING SPACES

  
**747**  
CAR PARKING SPACES

  
**11**  
LEVEL ACCESS DOORS

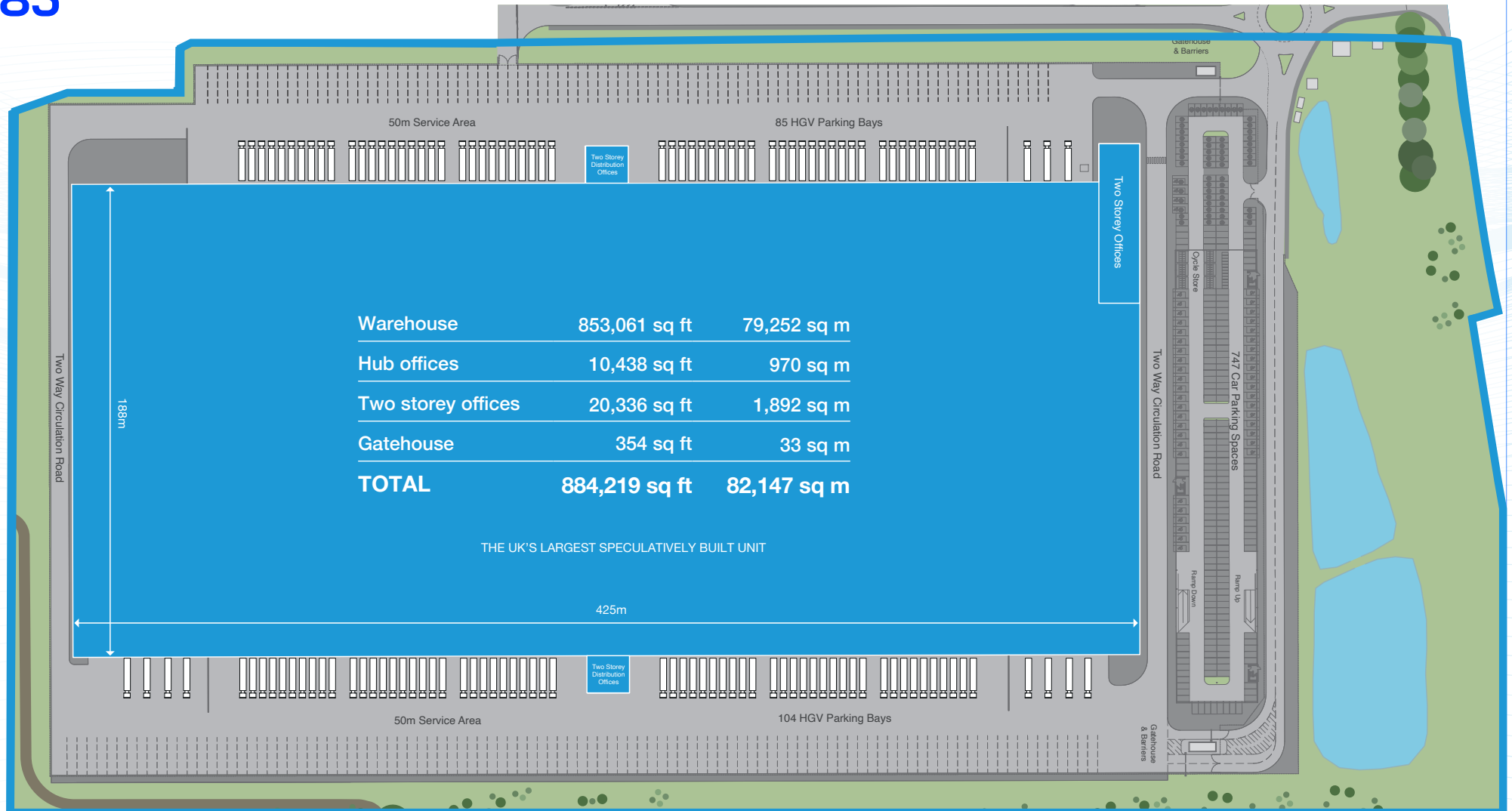
  
**120**  
DOCK DOORS

  
**50m**  
YARD DEPTH

  
**Cycle**  
PARKING SPACES

  
**2**  
GATEHOUSES AND SECURE YARDS

  
**ESG**



Warehouse	853,061 sq ft	79,252 sq m
Hub offices	10,438 sq ft	970 sq m
Two storey offices	20,336 sq ft	1,892 sq m
Gatehouse	354 sq ft	33 sq m
<b>TOTAL</b>	<b>884,219 sq ft</b>	<b>82,147 sq m</b>

THE UK'S LARGEST SPECULATIVELY BUILT UNIT

# LOCATION

**Panattoni Park Avonmouth occupies a prime national distribution location.**

Positioned within 4 miles of the Port of Bristol, Panattoni Park Avonmouth accesses three motorways within 18 minutes. London can be reached in 2.5 hours by HGV.

Also accessible within 3.5 hours are three other major deep water sea ports, plus the two largest cargo airports at Heathrow and East Midlands.

Sources: Lorry Route Planner & drivetimemaps.co.uk

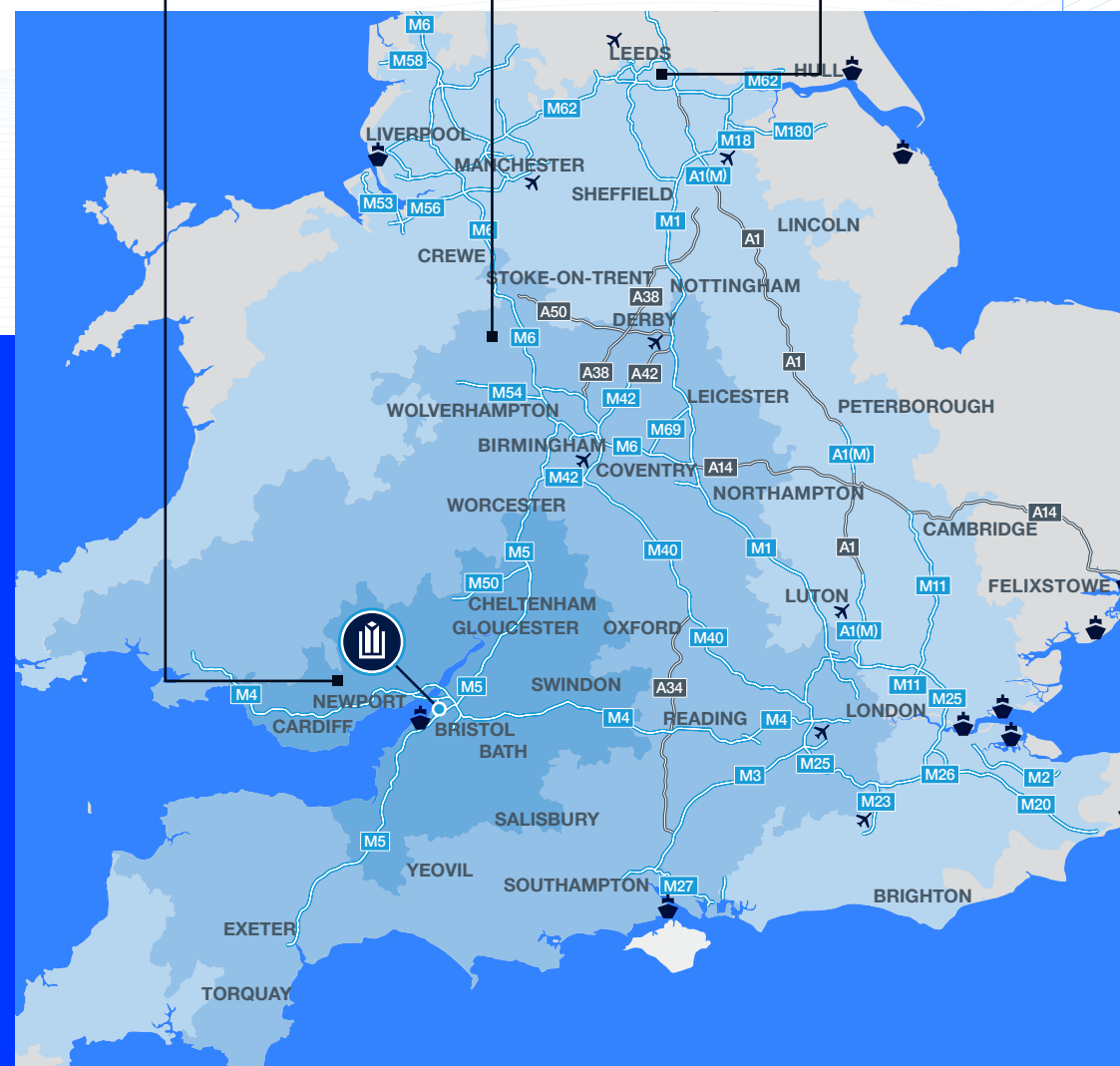
## HGV DRIVE TIMES

	MILES	TIME	AIRPORTS	MILES	TIME
M5 J18	5	8 min	Bristol	19	32 min
M48 J1	11	18 min	Heathrow	110	1hr 52 min
Bristol city centre	13	21 min	East Midlands	129	2hr 33 min
Newport	19	29 min	<b>PORTS</b>		
Bath	29	40 min	Bristol Avonmouth	8	12 min
Cardiff	34	48 min	Bristol Royal Portbury	8	12 min
Gloucester	35	49 min	Southampton	112	1 hr 58 min
Swindon	47	53 min	London Gateway	177	3 hr 4 min
Exeter	79	1 hr 26 min	Liverpool	186	3 hr 20 min
Birmingham	88	1 hr 36 min	<b>RAIL</b>		
London	125	2 hr 28 min	Maritime Avonmouth	3	6 min

**2.2 million PEOPLE**  
WITHIN 45 MINS BY CAR

**21.8 million PEOPLE**  
LIVE WITHIN 180 MINS

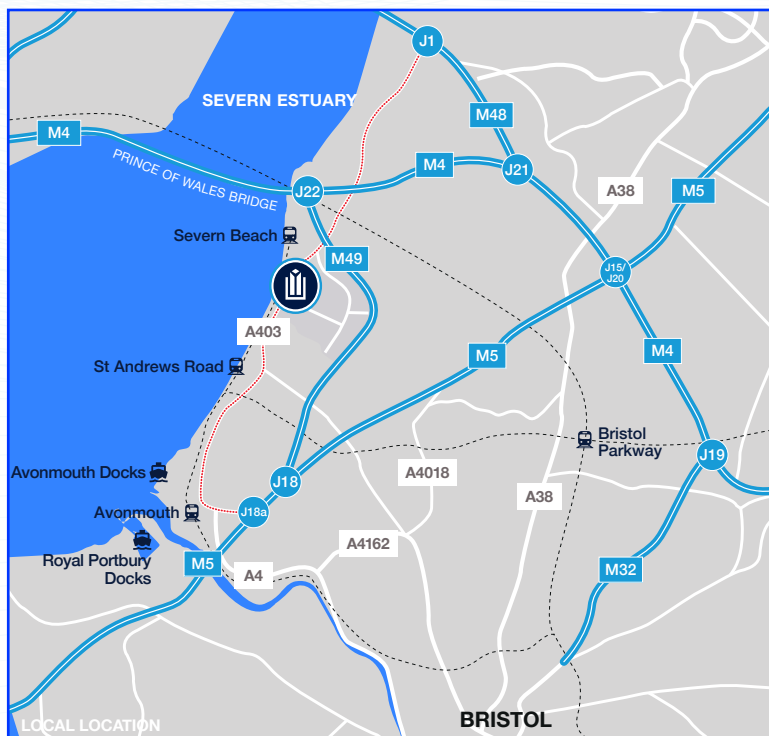
**46.7 million PEOPLE**  
LIVE WITHIN 270 MINS



# CONNECTIVITY

**J18 of the M5 and J1 of the M48 are within short distance of Panattoni Park Avonmouth. Bristol is only a 21 minute drive from the site.**

Located just over 2 hours from London, Panattoni Park Avonmouth is well positioned to directly serve the nation's capital.



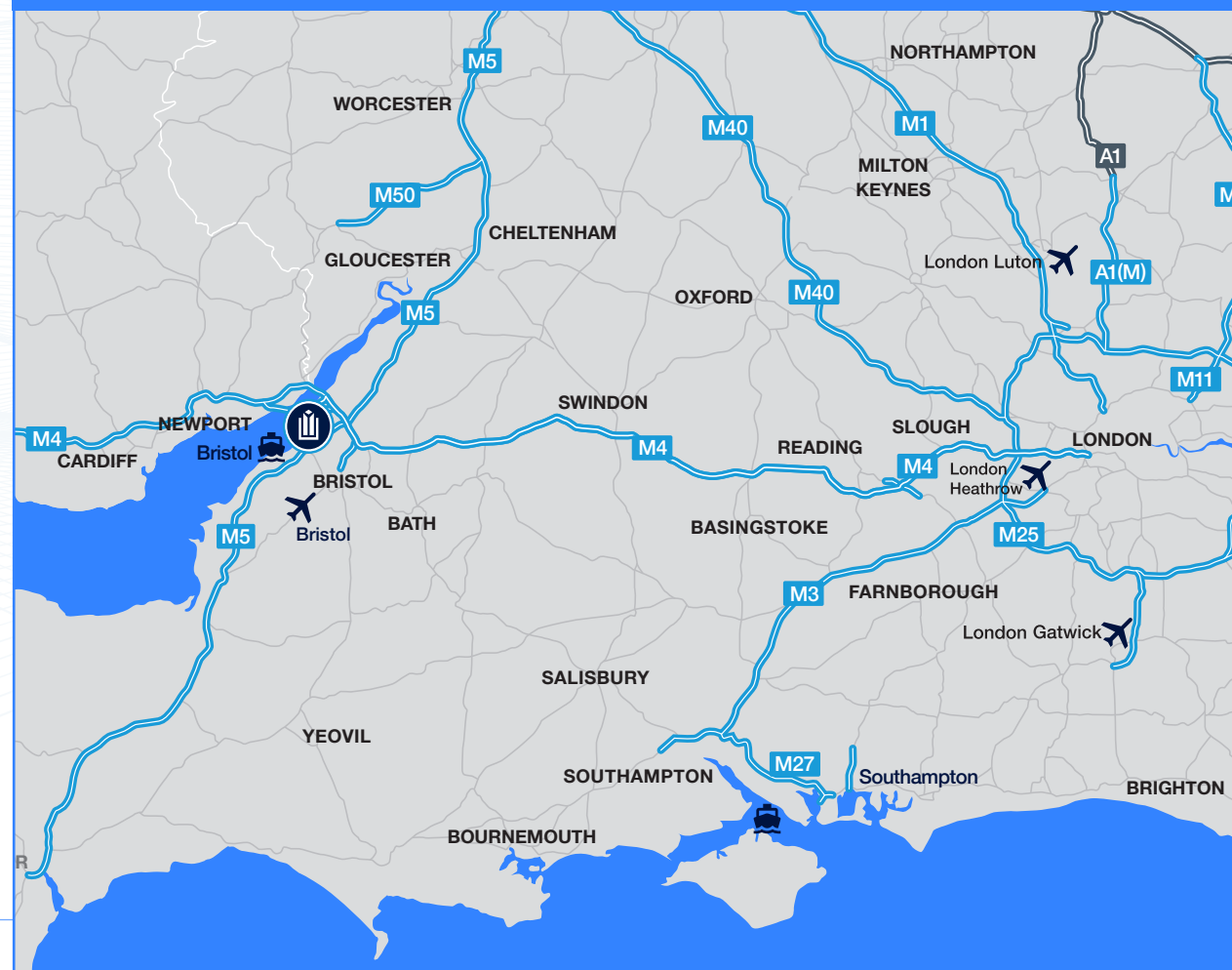
Fast road access to the M5, M4 & M49, plus two Avon crossings



3 railway stations within 4 miles & only 11 miles to Bristol's multiple rail facilities



6 minutes to the Port of Bristol, the most centrally located deep sea port in the UK



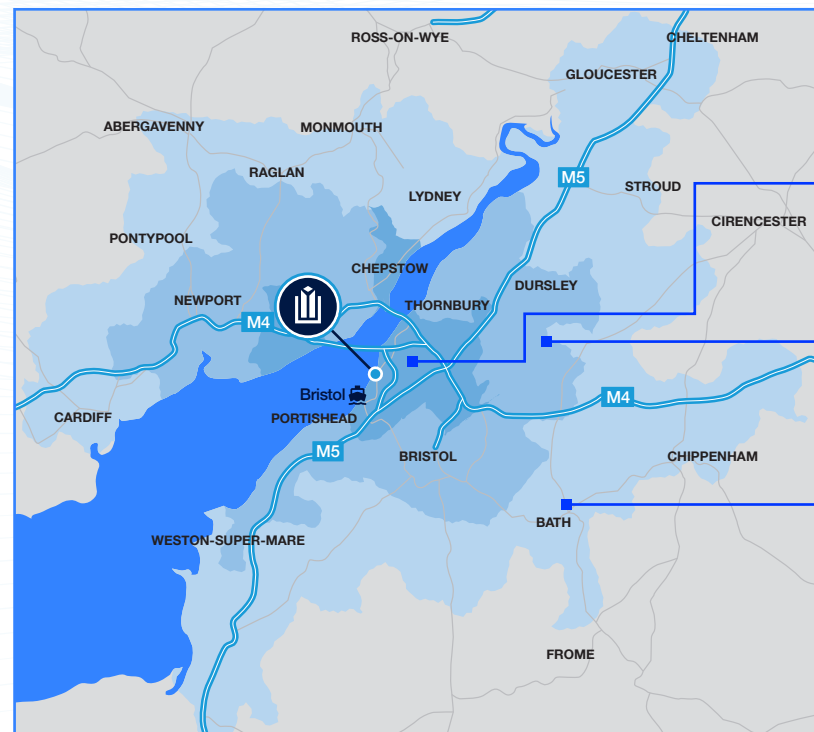


# WORKFORCE

Panattoni Park Avonmouth calls upon a workforce showing strong skills suitable for manufacturing and logistics operations.

Regional wages are competitive when compared to regions with similar reach, and to the UK average.

The removal of the M4 toll on the Prince of Wales Bridge will help to attract a larger labour pool by drawing workers from South Wales.



Sources: [www.drivetimemaps.co.uk](http://www.drivetimemaps.co.uk)

# 2,892,000

ECONOMICALLY ACTIVE PEOPLE  
ACROSS THE SOUTH WEST

81.6% VS. 78.9% UK

## READY TO WORK



19,100 PEOPLE  
WANT A JOB IN BRISTOL



29,400 PEOPLE  
WANT A JOB REGION WIDE\*

\*City of Bristol, South Gloucestershire & North Somerset  
Source: NOMIS September 2021

## SUITABLE SKILLS AND SECTORS



32,000  
MANUFACTURING WORKERS  
8.6% VS. 7.9% UK



30,000  
TRANSPORT & STORAGE WORKERS  
6.1% VS. 5.1% UK

City of Bristol, South Gloucestershire & North Somerset  
Source: NOMIS 2020

# DELIVERY TEAM



**James Watson**  
Head of Development  
Southern England & London



**Fergie Taylor**  
Head of  
Development Delivery



**Ian Anderson**  
Head of  
Project Management



**Peter Carter-Wall**  
Construction  
Director

## DELIVERY PARTNER



Contractor



Project  
Consultants



Architect



Civils  
Engineering



Landscaping

# LETTING AGENTS



**0117 927 6691**  
**020 7493 4933**

**Ed Cole**  
ed.cole@eu.jll.com

**Chris Yates**  
chris.yates@eu.jll.com



colliers.com/uk/industrial

**020 7935 4499**  
**0117 917 2000**

**Tom Watkins**  
tom.watkins@colliers.com

**Tim Harding**  
tim.harding@colliers.com



**020 3328 9080**  
www.dtre.com

**Mark Webster**  
mark.webster@dtre.com

**Jake Huntley**  
jake.huntley@dtre.com

savills.co.uk



Bristol  
**0117 910 2200**  
London  
**020 7499 8644**

**Robert Cleeves**  
rcleeves@savills.com

**Toby Green**  
tgreen@savills.com





# CERTIFICATION OF NZE CONSTRUCTION

## AVONMOUTH 410



Circular Ecology Ltd  
 Company Number: 08573120  
 Registered in England and Wales

[www.circularecology.com](http://www.circularecology.com)  
 Email: [hello@circularecology.com](mailto:hello@circularecology.com)

Panattoni  
 19-21 Old Bond Street  
 London  
 W1S 4PU  
 21 Dec 2023

Dear Panattoni,

**RE: UK Green Building Council Net Zero Carbon Construction Verification for Panattoni Park Unit 1**

**Scope and time period:**

- UKGBC Net Zero Carbon Construction (embodied carbon), up to Practical Completion (PC)

Circular Ecology were commissioned by ISG on behalf of Panattoni, to verify the carbon assessment of Panattoni Park Unit 1, Severn Beach, Bristol BS10 7SD, against the UK Green Building Council's Net Zero Carbon Building Framework.

**Description of the work carried out:** Circular Ecology were provided with exports from the LCA model as well as a summary report. Systematic checks were completed on the data, method, reporting and carbon offsetting. The study was cross checked against the requirements of UKGBC Net Zero Carbon Building Framework definition, including the Renewable Energy Procurement & Carbon Offsetting Guidance for Net Zero Carbon Buildings, and the RICS Whole Life Carbon Method.

Based on the process and procedures conducted, Circular Ecology are satisfied the approach taken by this project is in accordance with the UKGBC Net Zero Carbon Building Framework for construction (embodied carbon).

Once the UKGBC minimum reporting templates are disclosed in public, Panattoni Unit 1 will be considered in adherence with UKGBC Net Zero Carbon Construction.

Yours sincerely,



Dr Craig Jones

Director, Circular Ecology



# ENERGY PERFORMANCE CERTIFICATE

## AVONMOUTH 410

### Energy performance certificate (EPC)

Unit 1 - Panattoni Park  
 Severn Road  
 Hallen, South Gloucestershire  
 Bristol  
 BS10 7SJ

Energy rating

**A**

Valid until: **29 August 2033**

Certificate number: **3388-4387-4477-0668-3140**

Property type **B8 Storage or Distribution**

Total floor area **38,653 square metres**

### Rules on letting this property

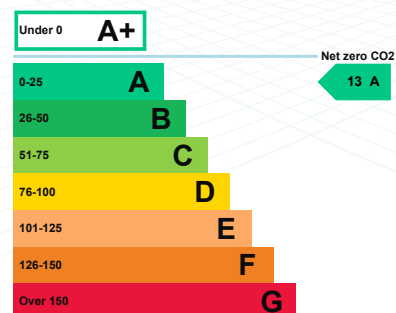
Properties can be let if they have an energy rating from A+ to E.

### Energy rating and score

This property's current energy rating is A.

Properties get a rating from A+ (best) to G (worst) and a score.

The better the rating and score, the lower your property's carbon emissions are likely to be.





## ENERGY PERFORMANCE CERTIFICATE

### AVONMOUTH 410

#### How this property compares to others

Properties similar to this one could have ratings:

If newly built

23 A

If typical of the existing stock

69 C

#### Breakdown of this property's energy performance

Main heating fuel

Grid Supplied Electricity

Building environment

Air Conditioning

Assessment level

5

Building emission rate (kgCO<sub>2</sub>/m<sup>2</sup> per year)

10.7

Primary energy use (kWh/m<sup>2</sup> per year)


66

#### Recommendation report

Guidance on improving the energy performance of this property can be found in the [recommendation report \(/energy-certificate/3856-8131-0325-5217-6867\)](#).

# BREEAM CERTIFICATE


## AVONMOUTH 410



Code for a Sustainable Built Environment  
[www.breeam.com](http://www.breeam.com)


**Interim Certificate: Design Stage**  
The assessment of:


**Unit 1 Panattoni Park**  
Severn Road  
Hallen  
Bristol  
BS10 7SJ

has been carried out according to Technical Manual:  
**BREEAM UK New Construction 2018**  
**Industrial**  
**Shell and core**  
and based on the Assessment Report produced by:  
**Yonder Limited**  
has achieved a score of **71.3%**  
**Excellent** 

Certificate Number: **BREEAM-0098-0995** Issue: **01**

**BRE Global Limited is accredited by UKAS. The assessment process is certified by BRE Global Limited in accordance with the requirements of Scheme Document SD123**

26 May 2023 <small>Date of issue</small>	Panattoni <small>Client for the Assessment</small>
 <small>Signed for BRE Global Ltd., Catherine Butcher</small>	Alex Thompson <small>Licensed Assessor</small>
AJA Architects <small>Architect</small>	TA25 <small>Assessor Number</small>
Panattoni <small>Developer</small>	ISG <small>Principal Contractor</small>
Skerritt Electrical Limited <small>Building Services</small>	Shivani Kothari <small>BREEAM Advisory Professional</small>



SD123 Cert. No. BREEAM-0098-0995



This certificate is issued to the Licensed Assessor Organisation named above based on their application of the assessment process in accordance with Scheme Document SD123.

This certificate is valid on the date of issue on the basis of the data provided by the client and verified by the Assessor Organisation. To check the authenticity of this certificate visit [www.panattonipark.com/bre](http://www.panattonipark.com/bre), scan the QR Tag or contact us: E: [breeam@bre.co.uk](mailto:breeam@bre.co.uk) T: +44 (0)333 321 8811

This certificate remains the property of BRE Global Limited and is issued subject to terms and conditions available at [www.bre.com/bre-conditions](http://www.bre.com/bre-conditions)

The use of the UKAS accreditation mark indicates accreditation in respect of those activities covered by the Accreditation Registration Number 0007 which can be verified by visiting [www.ukas.com](http://www.ukas.com)

BREEAM is a registered trademark of BRE (The Building Research Establishment Ltd. Community Trade Mark E5778551)





BF1226 Rev 2.0

Page 1 of 2

© BRE Global Ltd, 2017

**BREEAM CERTIFICATE**  
**AVONMOUTH 410**



Code for a Sustainable Built Environment  
[www.breem.com](http://www.breem.com)

**Interim Certificate Number: BREEAM-0098-0995**      **Issue: 01**

**Unit 1 Panattoni Park**  
**Severn Road**  
**Hallen**  
**Bristol**  
**BS10 7SJ**

---

Assessed for: Panattoni











---


by: Yonder Limited  
Assessor Company

Alex Thompson      TA25  
Licensed Assessor      Assessor Number


**BREEAM UK New Construction 2018**

**Industrial**  
**Shell and core**  
Overall Score: 71.3%  
Rating: Excellent ★ ★ ★ ★ ☆

Category Scores	0	10	20	30	40	50	60	70	80	90	100
Management	89 										
Health and Wellbeing	70 										
Energy	71 										
Transport	67 										
Water	78 										
Materials	71 										
Waste	80 										
Land Use and Ecology	38 										
Pollution	67 										
Innovation	30 										

  
 Signed for BRE Global Ltd., Catherine Butcher

26 May 2023  
 Date of Issue

  
SD123 Cert. No. BREEAM-0008-0995


This certificate is issued to the Licensed Assessor Organisation named above based on their application of the assessment process in accordance with Scheme Document SD123.



This certificate is valid on the date of issue on the basis of the data provided by the client and verified by the Assessor Organisation. To check the authenticity of this certificate visit [www.breem.com/track](http://www.breem.com/track), scan the QR Tag or contact us: E: [breem@bre.co.uk](mailto:breem@bre.co.uk) T: +44 (0)333 321 8811

This certificate remains the property of BRE Global Limited and is issued subject to terms and conditions available at [www.breem.com/terms](http://www.breem.com/terms)

The use of the UKAS accreditation mark indicates accreditation in respect of those activities covered by the Accreditation Registration Number 0007 which can be verified by visiting [www.ukas.com](http://www.ukas.com)

BREEAM is a registered trademark of BRE (the Building Research Establishment Ltd. Community Trade Mark ES778551)

  
0007

BF1226 Rev 2.0
Page 2 of 2
© BRE Global Ltd, 2017



# CERTIFICATION OF NZE CONSTRUCTION

## AVONMOUTH 885



Circular Ecology Ltd  
 Company Number: 08573120  
 Registered in England and Wales

[www.circularecology.com](http://www.circularecology.com)  
 Email: [hello@circularecology.com](mailto:hello@circularecology.com)

Panattoni  
 19-21 Old Bond Street  
 London  
 W1S 4PU  
 21 Dec 2023

Dear Panattoni,

**RE: UK Green Building Council Net Zero Carbon Construction Verification for Panattoni Park Unit 2**

**Scope and time period:**

- UKGBC Net Zero Carbon Construction (embodied carbon), up to Practical Completion (PC)

Circular Ecology were commissioned by ISG on behalf of Panattoni, to verify the carbon assessment of Panattoni Park Unit 2, Severn Beach, Bristol BS10 7SD, against the UK Green Building Council's Net Zero Carbon Building Framework.

**Description of the work carried out:** Circular Ecology were provided with exports from the LCA model as well as a summary report. Systematic checks were completed on the data, method, reporting and carbon offsetting. The study was cross checked against the requirements of UKGBC Net Zero Carbon Building Framework definition, including the Renewable Energy Procurement & Carbon Offsetting Guidance for Net Zero Carbon Buildings, and the RICS Whole Life Carbon Method.

Based on the process and procedures conducted, Circular Ecology are satisfied the approach taken by this project is in accordance with the UKGBC Net Zero Carbon Building Framework for construction (embodied carbon).

Once the UKGBC minimum reporting templates are disclosed in public, Panattoni Unit 2 will be considered in adherence with UKGBC Net Zero Carbon Construction.

Yours sincerely,



Dr Craig Jones

Director, Circular Ecology

# ENERGY PERFORMANCE CERTIFICATE

## AVONMOUTH 885

### Energy performance certificate (EPC)

Unit 2 - Panattoni Park Severn Road Hallen, South Gloucestershire Bristol BS10 7SJ	Energy rating <h1>A</h1>	Valid until: <b>29 August 2033</b>  Certificate number: <b>9473-0803-6411-8821-0823</b>
--	-----------------------------	---

Property type B8 Storage or Distribution

Total floor area 83,379 square metres

### Rules on letting this property

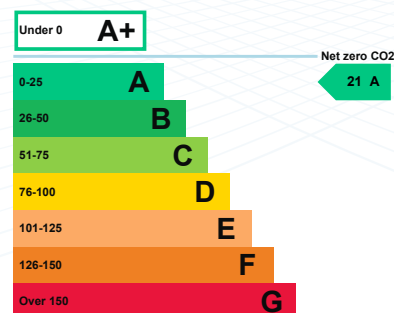
Properties can be let if they have an energy rating from A+ to E.

### Energy rating and score

This property's current energy rating is A.

Properties get a rating from A+ (best) to G (worst) and a score.


The better the rating and score, the lower your property's carbon emissions are likely to be.





# BREEAM CERTIFICATE

## AVONMOUTH 885




Code for a Sustainable Built Environment  
[www.breeam.com](http://www.breeam.com)

**Interim Certificate: Design Stage**  
The assessment of:


**Unit 2 Panattoni Park**  
Severn Road  
Hallen  
Bristol  
BS10 7SJ


has been carried out according to Technical Manual:  
**BREEAM UK New Construction 2018**  
**Industrial**  
**Shell and core**  
and based on the Assessment Report produced by:  
**Yonder Limited**  
has achieved a score of **71.2%**  
**Excellent**



Certificate Number: **BREEAM-0098-1001** Issue: **01**

**BRE Global Limited is accredited by UKAS. The assessment process is certified by BRE Global Limited in accordance with the requirements of Scheme Document SD123**

26 May 2023	Panattoni
Date of issue	Client for the Assessment
	Alex Thompson
Signed for BRE Global Ltd., Catherine Butcher	Licensed Assessor
AJA Architects	TA25
Architect	Assessor Number
Panattoni	ISG
Developer	Principal Contractor
Skerritt Electrical Limited	Shivani Kothari
Building Services	BREEAM Advisory Professional



SD123 Cert. No. BREEAM-0098-1001



This certificate is issued to the Licensed Assessor Organisation named above based on their application of the assessment process in accordance with Scheme Document SD123.

This certificate is valid on the date of issue on the basis of the data provided by the client and verified by the Assessor Organisation. To check the authenticity of this certificate visit [www.panattonipark.com/bre](http://www.panattonipark.com/bre), scan the QR Tag or contact us: E: [breeam@bre.co.uk](mailto:breeam@bre.co.uk) T: +44 (0)333 321 8811

This certificate remains the property of BRE Global Limited and is issued subject to terms and conditions available at [www.bre.com/bre-conditions](http://www.bre.com/bre-conditions)

The use of the UKAS accreditation mark indicates accreditation in respect of those activities covered by the Accreditation Registration Number 0007 which can be verified by visiting [www.ukas.com](http://www.ukas.com)

BREEAM is a registered trademark of BRE (The Building Research Establishment Ltd. Community Trade Mark E5778551)

BF1226 Rev 2.0
Page 1 of 2
© BRE Global Ltd, 2017



**BREEAM CERTIFICATE**  
**AVONMOUTH 885**

**BREEAM<sup>®</sup> UK**

Code for a Sustainable Built Environment  
www.breem.com

**Interim Certificate Number: BREEAM-0098-1001**      **Issue: 01**

**Unit 2 Panattoni Park**  
**Severn Road**  
**Hallen**  
**Bristol**  
**BS10 7SJ**

Assessed for: Panattoni

by: Yonder Limited  
Assessor Company

Alex Thompson  
Licensed Assessor

TA25  
Assessor Number

**BREEAM UK New Construction 2018**

**Industrial**

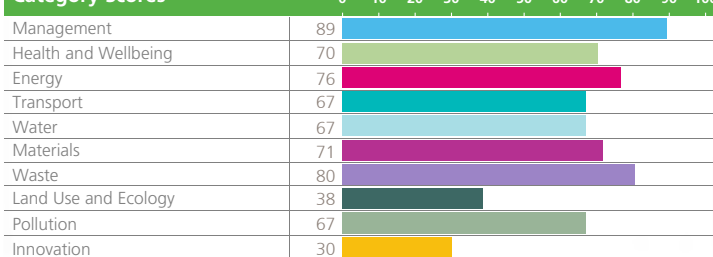
**Shell and core**

Overall Score: 71.2%

Rating: Excellent



**Category Scores**



*Catherine Butcher*  
Signed for BRE Global Ltd., Catherine Butcher

26 May 2023  
Date of Issue



SD123 Cert. No. BREEAM-0098-1001

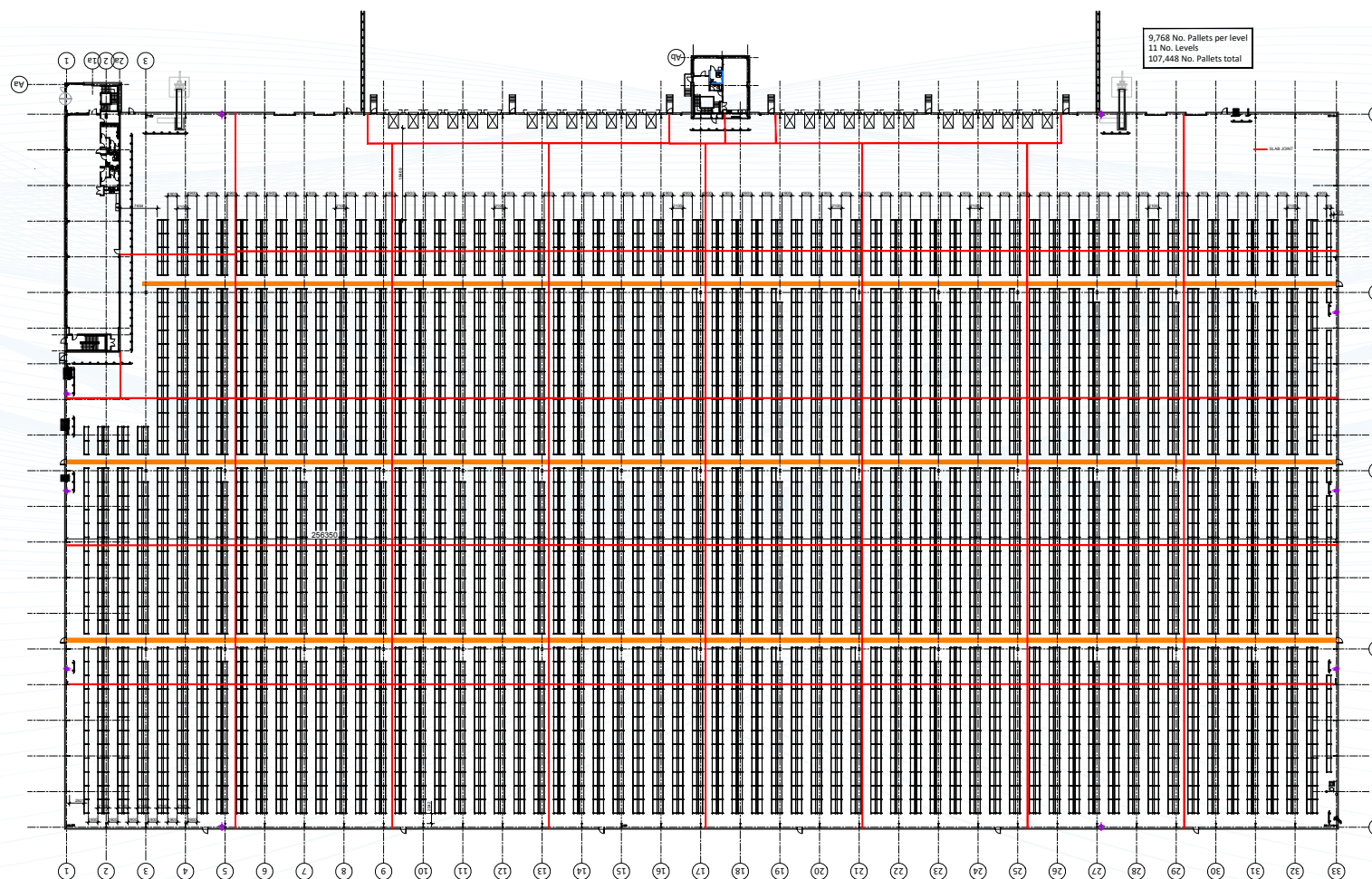
This certificate is issued to the Licensed Assessor Organisation named above based on their application of the assessment process in accordance with Scheme Document SD123.  
This certificate is valid on the date of issue on the basis of the data provided by the client and verified by the Assessor Organisation.  
To check the authenticity of this certificate visit [www.breem.com/track](http://www.breem.com/track), scan the QR Tag or contact us: E: [breem@bre.co.uk](mailto:breem@bre.co.uk) T: +44 (0)333 321 8811  
This certificate remains the property of BRE Global Limited and is issued subject to terms and conditions available at [www.breem.com/terms](http://www.breem.com/terms)  
The use of the UKAS accreditation mark indicates accreditation in respect of those activities covered by the Accreditation Registration Number 0007 which can be verified by visiting [www.ukas.com](http://www.ukas.com)  
BREEAM is a registered trademark of BRE (the Building Research Establishment Ltd. Community Trade Mark ES778551)



**bre**

# RACKING PLAN

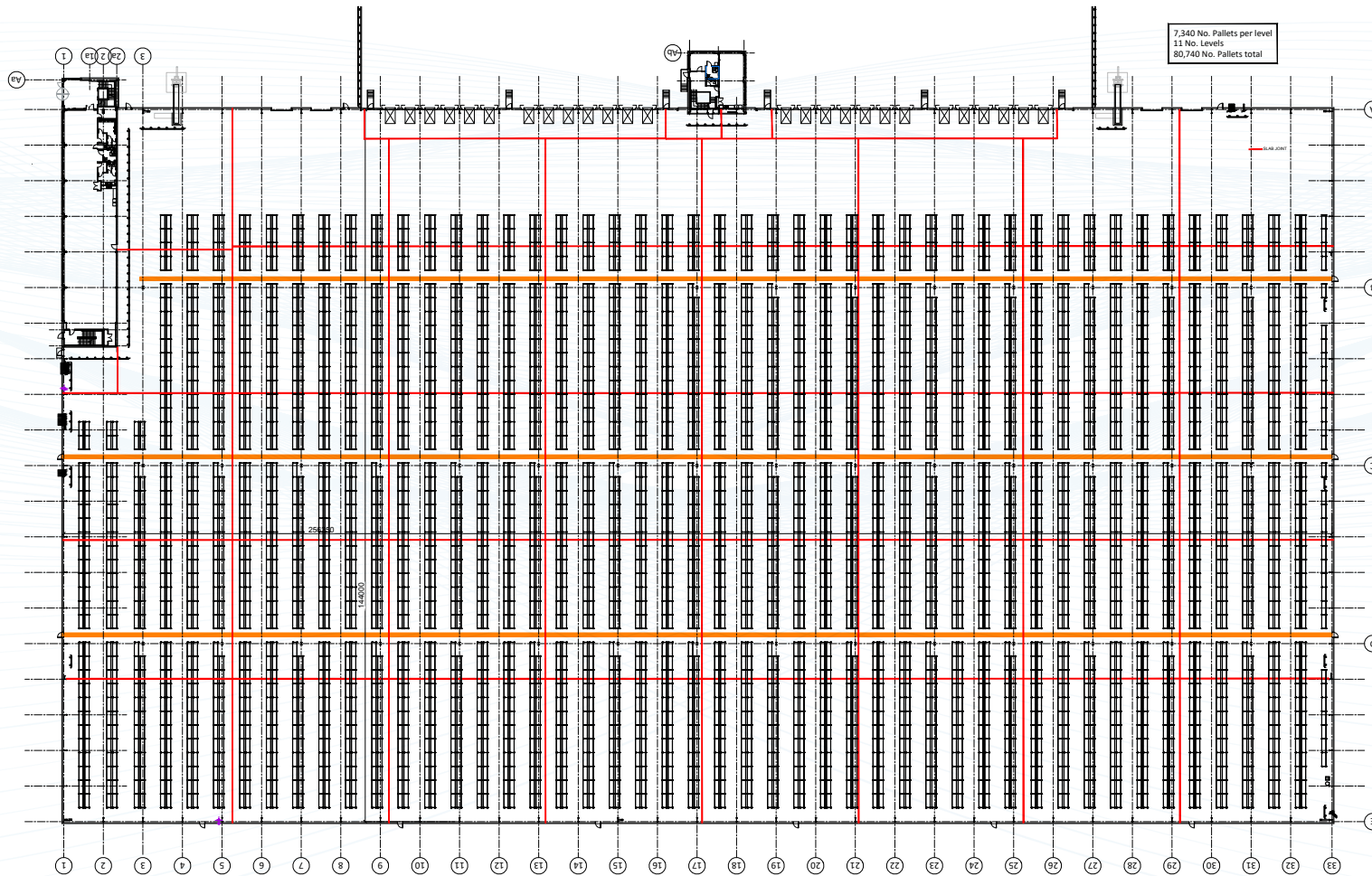
## AVONMOUTH 410 Narrow aisle



  
**107,448**  
NARROW AISLE

# RACKING PLAN

## AVONMOUTH 410 Wide aisle

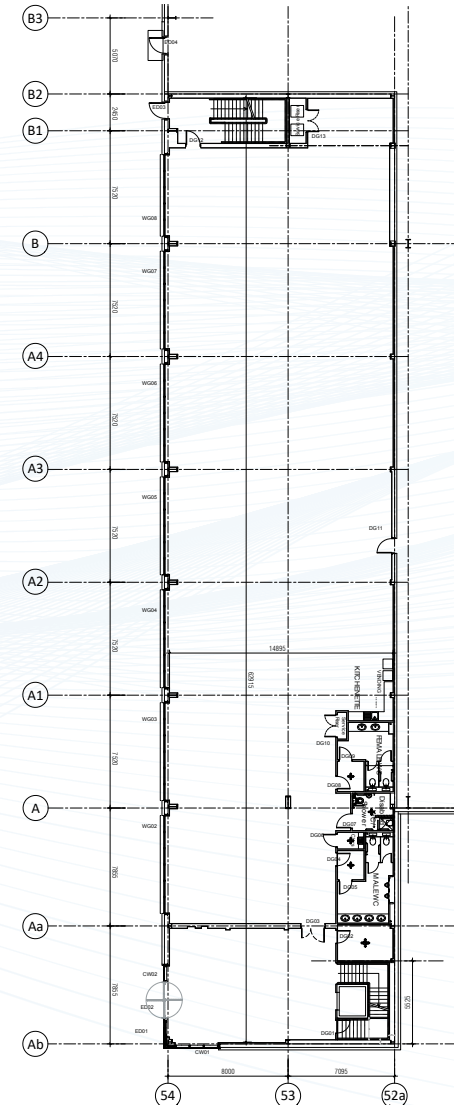
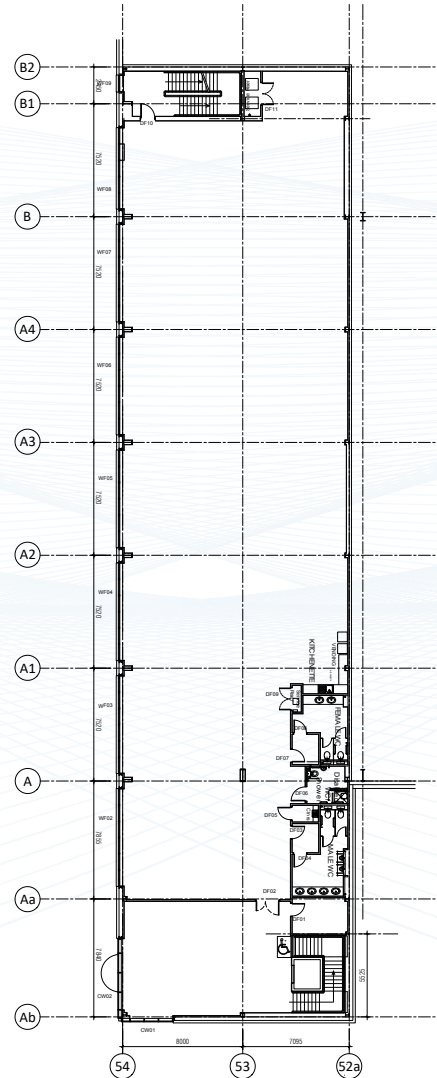
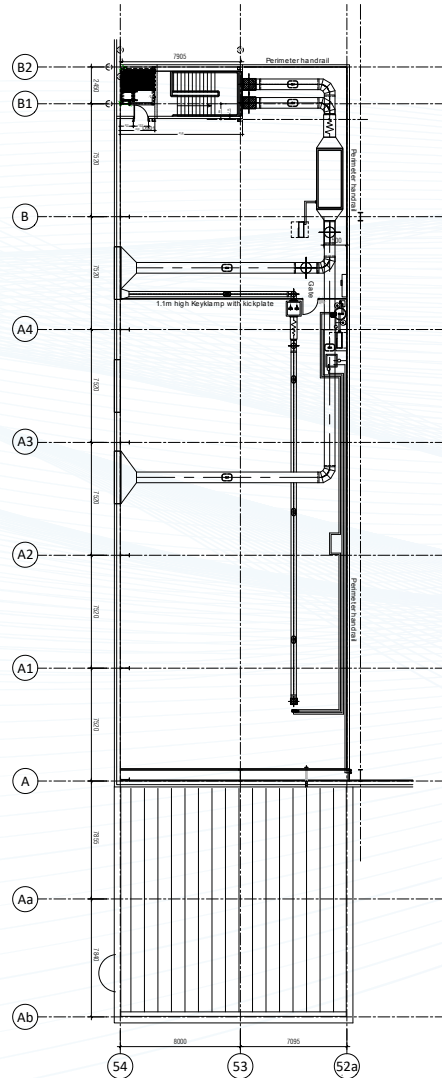


80,740  
WIDE AISLE



# OFFICE LAYOUT PLANS

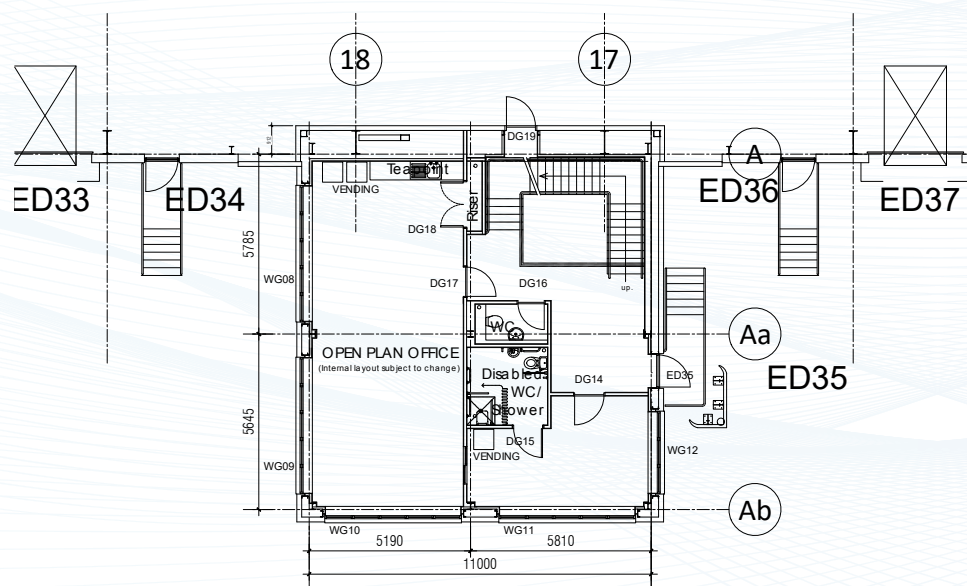
## AVONMOUTH 410 Main office



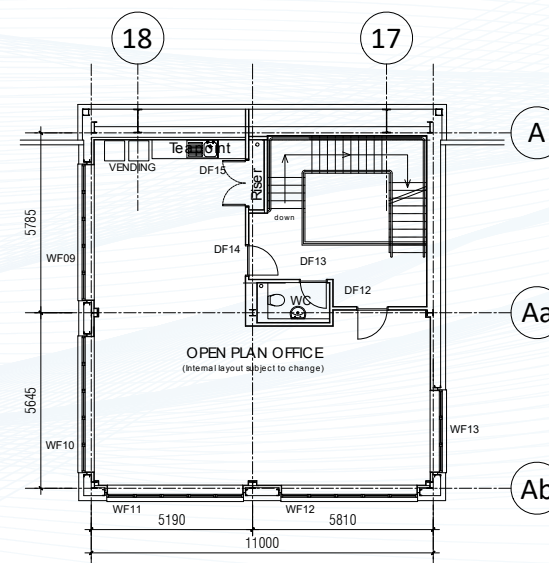


# OFFICE LAYOUT PLANS

## AVONMOUTH 410 Hub office



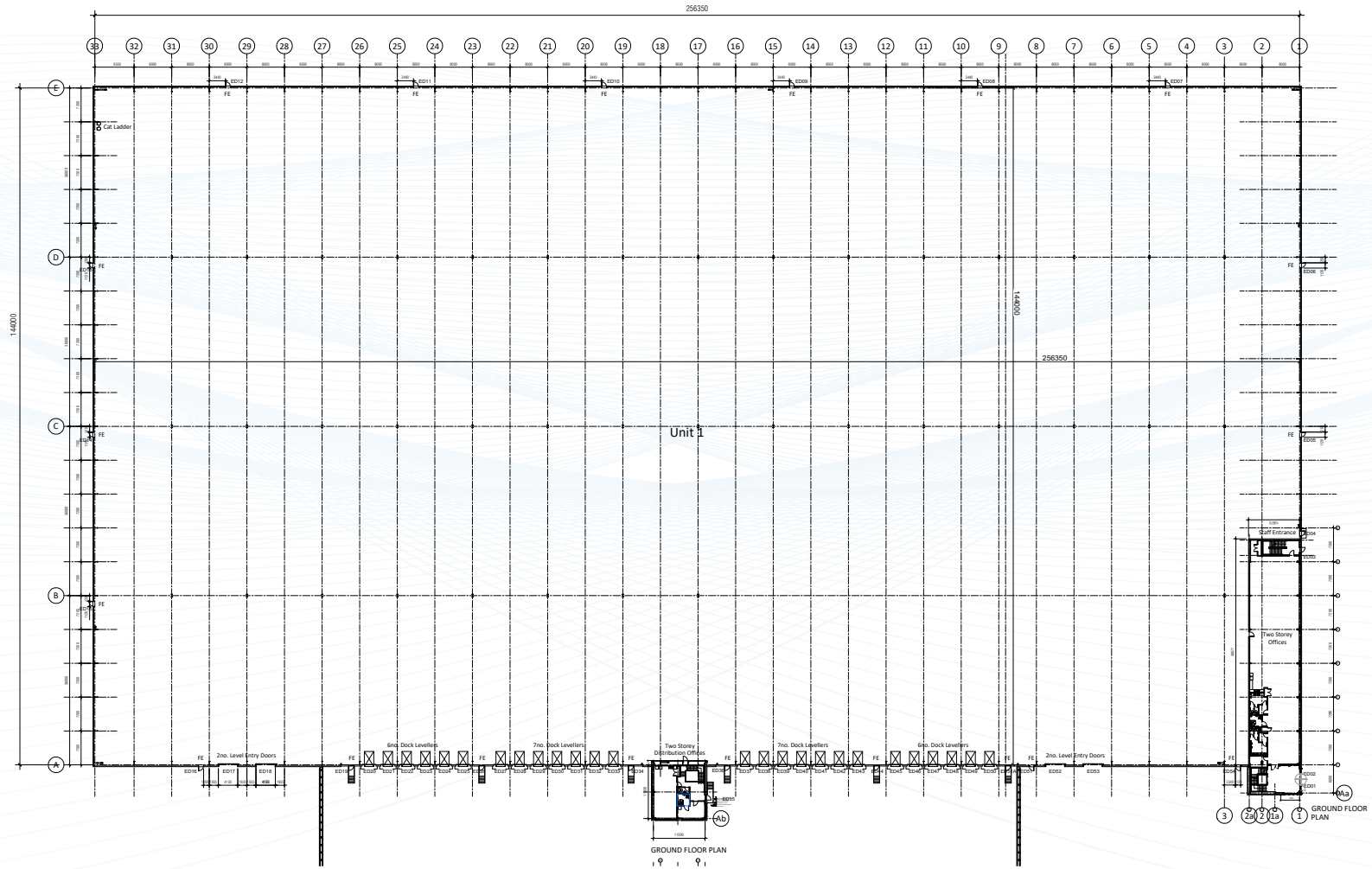
GROUND FLOOR PLAN



FIRST FLOOR PLAN

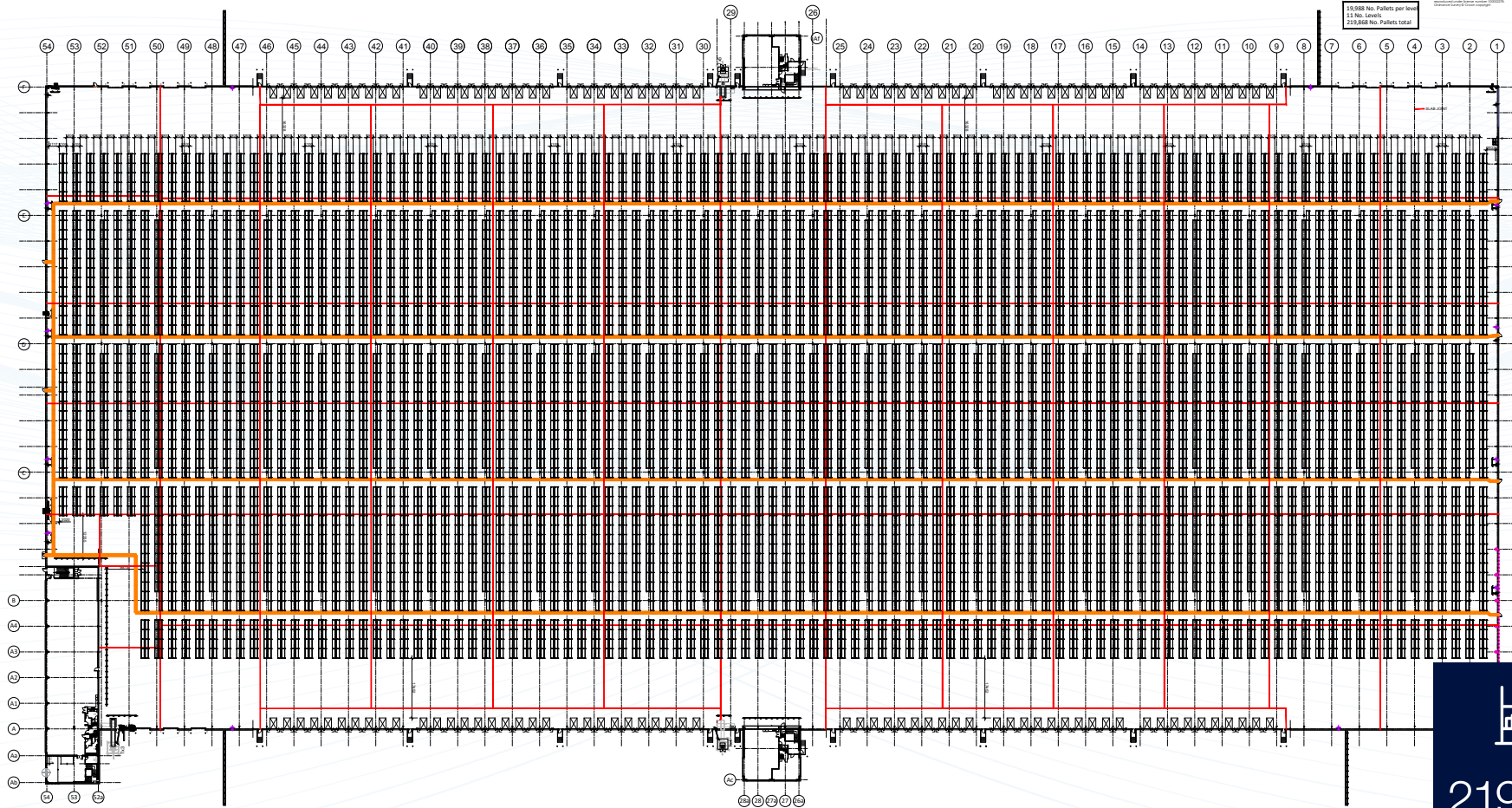
# OFFICE LAYOUT PLANS

## AVONMOUTH 410 Warehouse



# RACKING PLAN

## AVONMOUTH 885 Narrow aisle

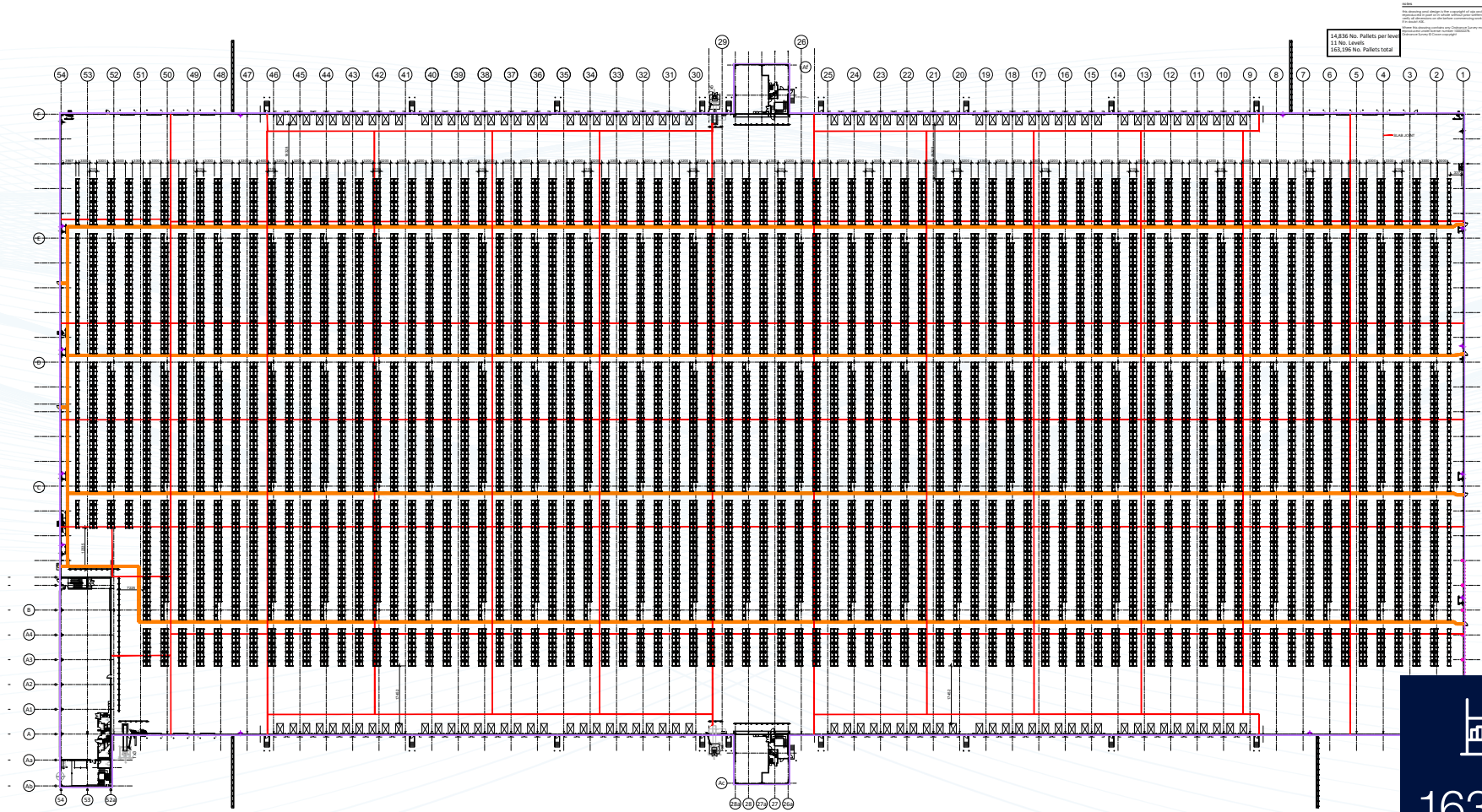



  
**219,868**  
NARROW AISLE



# RACKING PLAN

## AVONMOUTH 885 Wide aisle

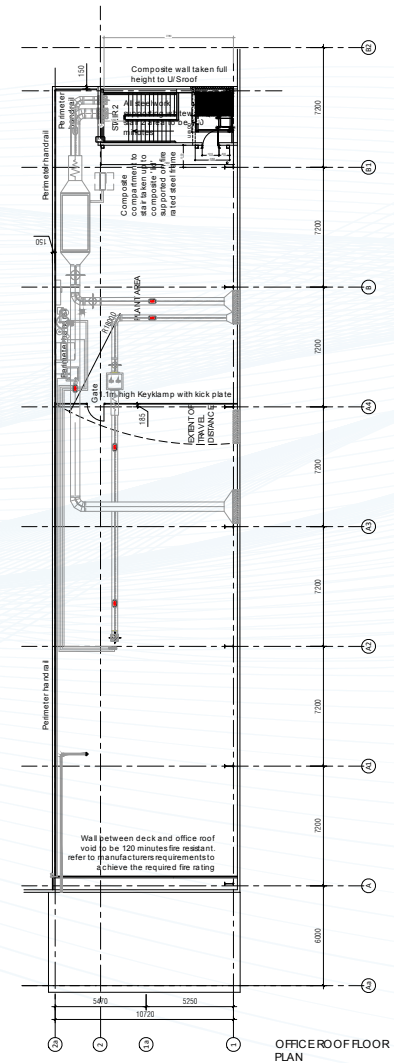
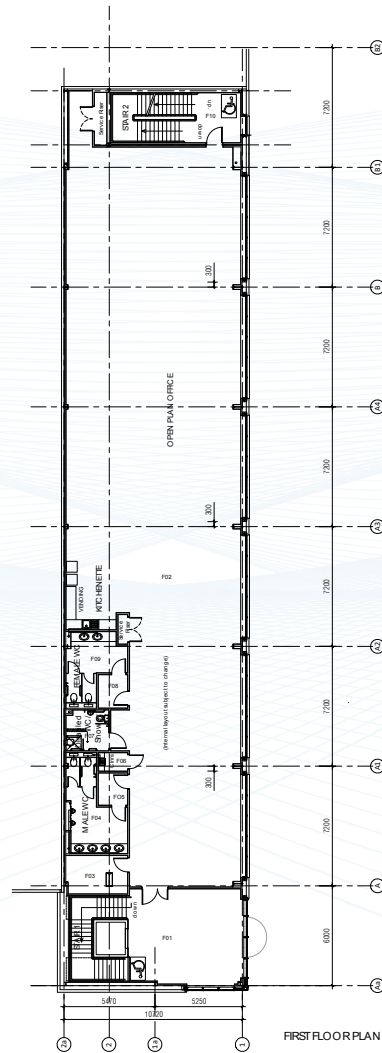
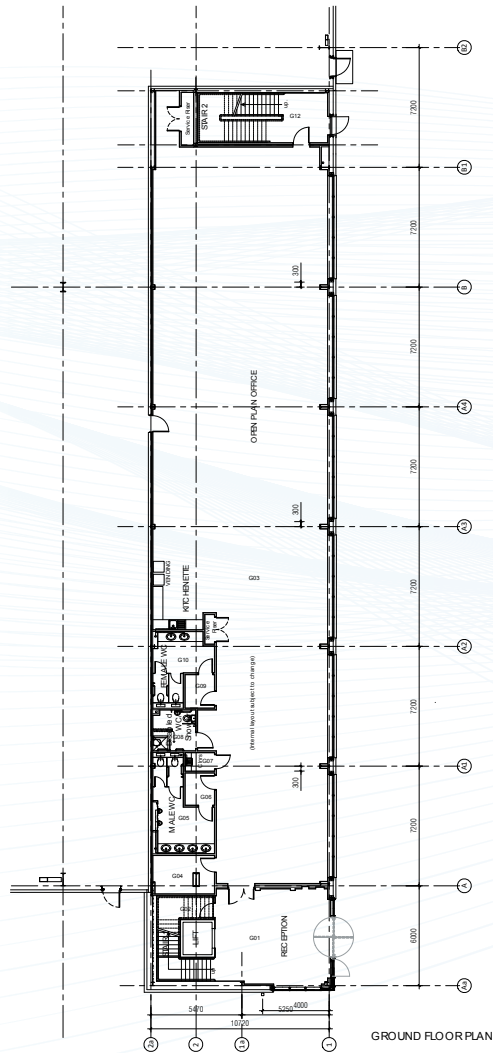


  
**163,196**  
WIDE AISLE



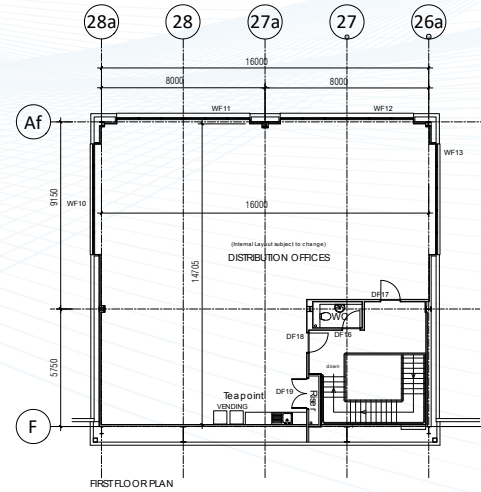
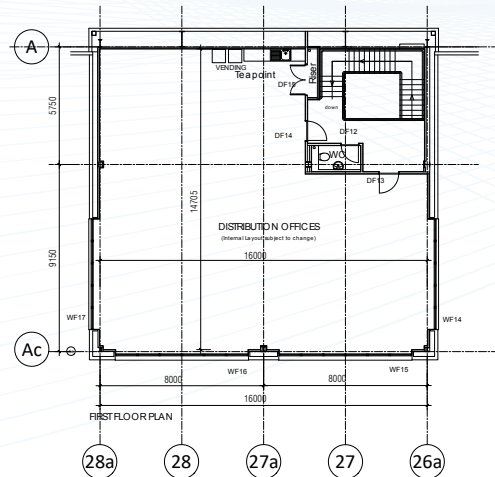
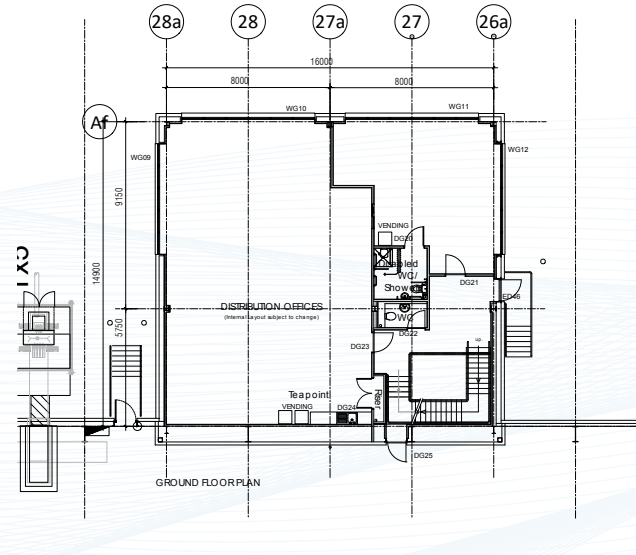
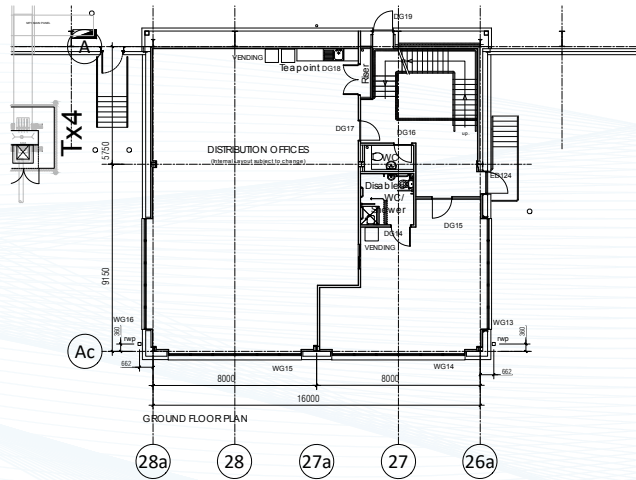
# OFFICE LAYOUT PLANS

## AVONMOUTH 885 Main office



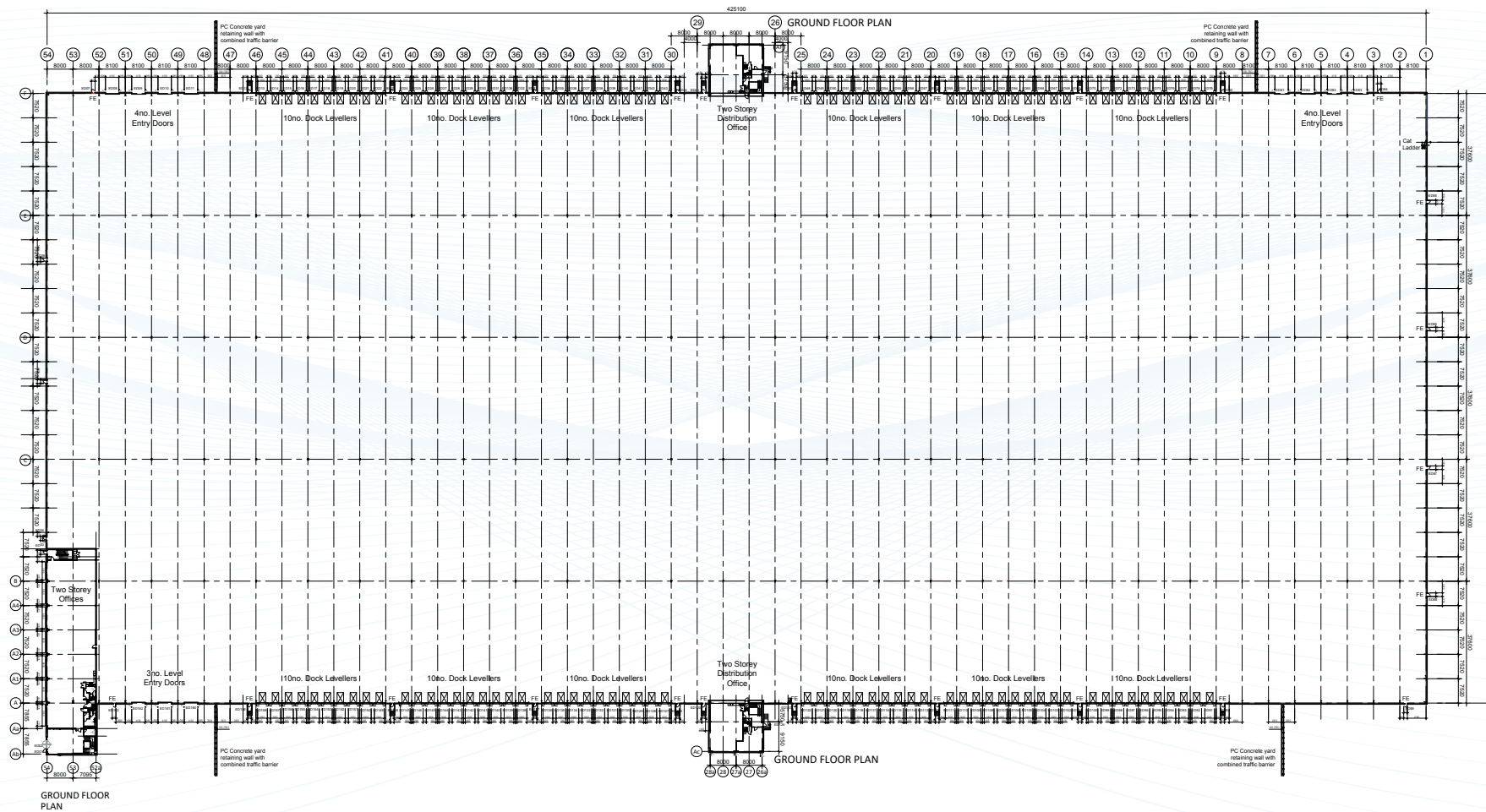
# OFFICE LAYOUT PLANS

## AVONMOUTH 885 Hub office



# OFFICE LAYOUT PLANS

## AVONMOUTH 885 Warehouse





# BASE BUILD SPECIFICATION

## STANDARDS

Designed and constructed in accordance with all relevant standards current at the time of construction, including:

- a. The British Standards and Codes of Practice;
- b. Health and Safety at Work Act;
- c. The Factories Act;
- d. The Clean Air Acts;
- e. Construction (Design and Management) Regulations (CDM) 2015;
- f. Equality Act 2010;
- g. The Building Regulations;
- h. The requirements of the Building Control Officer or Approved Inspector;
- i. 18th Edition of the IET Wiring Regulations with amendments (BS 7671 : 2018);
- j. The Electricity Supply Act;
- k. Water Supply Regulations;
- l. Gas Safety Regulations;
- m. The Building Engineering Services Association Ductwork Standards incl DW144;
- n. CIBSE Guides including Technical Memorandums;

## ENERGY PERFORMANCE

EPC "A"

## BREEAM

BREEAM "Excellent"

## NET ZERO

Net Carbon Zero in Construction in accordance with the UK Green Building Council Framework.

## HEALTH AND SAFETY FILE/OPERATING AND MAINTENANCE MANUALS

Comprehensive, indexed and interactive Operating and Maintenance Manuals are provided, including the Health & Safety Files in accordance with the Construction Design & Management Regulations.

## BUILDING USER GUIDE

The Building User Guide provides occupants of the building with a simple, quick and easy guide to the everyday functions of the building.

## SPARES

A quantity of spares are provided at handover - including carpet tiles, ceramic floor tiles, skirting tiles, wall tiles and suspended ceiling tiles, and LED lamps/fittings.



## SUBSTRUCTURE

### Ground Floor Slab

Reinforced concrete ground slab with power floated finish designed in accordance with Concrete Society TR34 (2013) 4th Edition, for a maximum loading in the warehouse of 50kN/m<sup>2</sup> and 10.00 tonne rack leg loadings (100mmx100mm centre line base plates placed a minimum 300mm apart and a minimum 150 mm away from floor joints).

Trafficked day joints reinforced with 10mm minimum thickness arris protection e.g. Permaban Alpha Joint, Isedio Armour Joint or equal and approved.

Warehouse ground floor slab top surface tolerances comply with FM1 as defined in Concrete Society Technical Report TR34 (2013) 4th Edition, for free movement areas.

Warehouse ground floor slab wearing surface has a minimum abrasion resistance of AR1 in accordance with BS 8204 part 2 tables 3 & 4 or TR34 (2013) 4th Edition.

The office ground floor slab is designed to take an imposed loading of 5kN/m<sup>2</sup> with a surface tolerance and finish appropriate to the specified floor finishes.

### Vented Gas Membrane

Class CS4 gas protection is provided to the warehouse, office, gatehouses and car park stair cores.

### Retaining Walls

Pre-cast retaining walls including dock leveller pits and tailgate slots to the dock areas.

## WAREHOUSE SUPERSTRUCTURE

### Steel Frame

Steel portal frame with a minimum clear height to underside of haunch of 17.2 metres.

Steel frame designed in accordance with BS EN 1993 – 1-1: 2005, BS EN 1993 – 1-5: 2006, BS EN 1993 – 1-8: 2005, BS EN – 1-10: 2005, BS EN 1993 – 5: 2007, BS EN 1993 – 6: 2007 and BS 5950: Part 2: 2001 with dead and superimposed loading to BS EN 1991 – 1-1: 2002, BS EN 1991 – 1-7: 2006, BS EN – 1-3: 2006 wind loading to BS 6399: Part 2: 1997, and all relevant codes of practice in force at the time of construction. Steel sections to BS4: Part 1: 2005 and to BS EN10025: 2004 and BS EN10210: Part 1: 2006 for weldable structural steel. All work in compliance with the current edition of the National Structural Steelwork Specification.

The structural frame is capable of supporting a roof service loading of 0.25kN/m<sup>2</sup> to accommodate service loadings arising from mechanical and electrical installations, plant equipment & fittings, and the roof purlins are capable of supporting 0.37kN/m<sup>2</sup> to allow for installation of roof mounted PV panels over the whole area of the roof in addition to the M&E services; save that PV panels will not be installed within 3.0m either side of valley or eaves gutters as this area will be reserved for siphonic drainage and future sprinkler mains loadings.

All steelwork shot blasted to BS 7079, second quality, before painting with one coat of epoxy 2 pack high build zinc phosphate with a satin finish to a nominal dry film thickness of 75 microns to give 10 years life to first maintenance, finished colour to be RAL7035 light grey.

Cold formed sections manufactured from hot dipped galvanised coil to BS EN10147: 2000 and BS EN10143: 2006.

### Fire Protection

Where necessary intumescent paint treatment as required by the Building Regulations.

## Roofing

Twin-Therm® Chronus® Ready system utilising nominal 0.7mm thick Colorcoat HPS200 Ultra® coated steel external sheets supported by the Confidex® Guarantee of up to 40 years and fixed as per the system requirements. The roof, inclusive of Therma-light rooflights is also included within the CA Group Complete Assurance Guarantee, which provides a meaningful guarantee for all components for a period of 25 years.

The roof cladding system is tested in accordance with LPS 1181 to achieve a minimum grade 'EXT-B' certification, certificate reference LPCB 443a. The internal lining to the main roof is Class 0 rating for surface spread of flame as tested to BS 476 Part 7:1997.

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 13501-1:2018 and to achieve a minimum designed thermal U-value of 0.23W/m<sup>2</sup>K (180mm thick).

CA 17 1000L liner panel minimum 0.4mm thick with Colorcoat High Reflect (30µm) internal finish.

The roof cladding system incorporates the Twin-Therm® Chronus® Ready (patent pending) design to facilitate internal temperatures as low as 0°C in future if the rooflight cavity is subsequently filled with Therma-quilt insulation.

Rainwater is collected via perimeter and valley Cascade Premier membrane lined gutters - 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). The gutter system guarantee is up to 25 years. All internal gutters factory insulated using rigid 50mm thick rock fibre insulation.

Water is taken from the warehouse roof gutters by a siphonic drainage system, and water from office area roofs by a gravity drainage system.

All pipework in the warehouse is installed above the portal haunch level to maintain minimum clear height, and firmly attached to an engineered continuous railing system, all outlet tailpipes are insulated.

Both primary and secondary siphonic systems are provided, with both being connected to the storm drainage system.

Indicative weir outlets are provided to the ends of valley gutters and at 50m intervals on perimeter gutters to provide advance warning of blockage of the siphonic system.

## Rooflights

Triple skinned GRP rooflights to 15% of the floor area, installed as per the system manufacturer's recommendations.

Internal rooflight lining Class 1 and external rooflight Class 3 rating for surface spread of flame as tested to BS476 Part 7:1997.

The installed roof and rooflight systems are minimum Class B Non-Fragile for a period of 25 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)".

## WALL CLADDING

### Twin-Therm Chronus

Twin-Therm® Chronus® Ready wall system utilising Colorcoat HPS200 Ultra® or Colorcoat Prisma® coated steel external sheets supported by the Confidex® Guarantee of up to 40 years and fixed as per the system requirements. The wall systems provide a manufacturer's warranty for the entire installation for a period of 25 years.

CA 17 1000L liner panel with Colorcoat High Reflect (30µm) internal finish.



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 13501-1:2018 and to achieve a minimum designed thermal U-value of 0.35W/m<sup>2</sup>K (120mm thick).

The wall cladding systems are tested in accordance with LPS 1181 to achieve a minimum grade 'EXT-B' certification, certificate reference LPCB 443a. The internal lining to the main roof is Class O rating for surface spread of flame as tested to BS 476 Part 7:1997.

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

The wall cladding system incorporates the Twin-Therm® Chronus (Chill Store) design to facilitate internal temperatures as low as 0°C; this fixing and sealing method is an enhancement over the standard Twin-Therm® cladding design allowing a greater range of internal temperature operation

#### **Twin-Therm Wall Cladding incorporating CA 300 MR Microrib Profile**

CA Group Twin-Therm® Chronus® Ready (Patent Pending) CA 300MR (microrib) Wall system utilising either Colorcoat HPS200 Ultra® or Colorcoat Prisma® coated steel external sheets, 0.7mm thick nominal supported by the Confidex® Guarantee of up to 40 years and fixed as per the system requirements. The wall systems provide a manufacturer's warranty for the entire installation for a period of 25 years.

CA 17 1000L liner panel with internal finish to be Colorcoat High Reflect (30µm) white to the exposed face of the cladding lining panel.

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 13501-1:2018 and to achieve a minimum designed thermal

U-value of 0.35W/m<sup>2</sup>K (120mm thick).

The wall cladding systems are tested in accordance with LPS 1181 to achieve a minimum grade 'EXT-B' certification, certificate reference LPCB 443a. The internal lining to the main roof will be Class O rating for surface spread of flame as tested to BS 476 Part 7:1997

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

The wall cladding system incorporates the Twin-Therm® Chronus (Chill Store) design to facilitate internal temperatures as low as 0°C; this fixing and sealing method is an enhancement over the standard Twin-Therm® cladding design allowing a greater range of internal temperature operation

#### **Reinforced Concrete Dock Surrounds**

Pre-cast concrete walling system to docking areas.

#### **Building Envelope Air-Permeability**

Air-tightness of building envelope designed and tested better than 1.5m<sup>3</sup>/hr/m<sup>2</sup> @ 50Pa.

#### **Level Access Doors**

Hörmann SPU F42, A445 electrically operated insulated, sectional panel, vertical lift doors with spring support beam at low level for ease of maintenance. Size 4000mm wide x 4800mm high (structural size 4120mm wide x 4875mm high) with 3no neutral acrylic double-glazed vision panels in the 3rd door section, and fitted with sliding bolts electrically interlocked and anti-fall devices.

Doors have been tested to European standard EN 12424 class 3 for high wind resistance offering a minimum 700 N/m<sup>2</sup>. Panel joints have been tested to European standard EN 12425 class 3 offering 70PA resistance to water ingress.

For personnel safety the door panels have an integral finger pinch protection on both sides built in at each moving joint. The bottom edge has a safe edge which will stop the door and return 150mm in case of meeting an obstruction. Door tracks and moving components at the jambs are fully encased with side- track covers.

### **Dock Doors**

Hörmann WA300 electrically operated, insulated, sectional panel, vertical lift doors with spring support beam at low level for ease of maintenance. Size 2860 mm wide x 3000 mm high with 2 no neutral acrylic double-glazed vision panels in the 3rd door section. Also fitted with sliding bolts electrically interlocked & anti-fall devices.

Doors have been tested to European standard pr EN 12424 class 3 for high wind resistance offering a minimum 700N/m<sup>2</sup>. Panel joints have been tested to European standard pr EN 12425 class 3 offering 70PA resistance to water ingress.

For personnel safety the door panels have an integral finger pinch protection on both sides built in at each moving joint. The bottom edge has a safe edge which will stop the door and return 150mm in case of meeting an obstruction. Door tracks and moving components at the jambs are fully encased with side- track covers.

### **Dock Levellers**

Dock height 1200mm.

Hörmann HTL-2-FR-20-35 fully hydraulic dock levellers of 6000 kg single axle load capacity 3500mm long x 2000mm wide x 745mm deep with 1000mm telescopic lip, 8/10 mm thick steel platform complete with EPDM rubber draught seal and 'T' type adjustable integral pit frame for suspended type dock levellers. Finish RAL 9017 Black. Tailgate slots to all dock levellers.

Dock Doors and Dock Levellers interlocked and operated from a combined single control panel.

### **Dock Shelters**

Combination of the following -

Hörmann type DSS heavy duty scissor type retractable dock shelter with crash resistant side frames with front side flaps reinforced, 1200mm deep top flap and self-adjusting top frame with rain channel for drainage purposes. Size 3500mm wide x 3500mm high x 600mm projection.

Hörmann DSS-G heavy duty scissor retractable dock shelter 3500mm wide x 4500mm high x 600m projection, with an electrically operated top roller curtain to suit vehicle heights of 3600mm to 5200mm.

### **Dock Spotlights**

Hormann LED lamp on yellow powder-coated swivel bracket mounted to the door guides, complete with movement restrictor to prevent contact with door.

### **Dock Buffers**

Below each door location, two moulded rubber bumpers (450mm x 250mm x 100mm) bolted to concrete dock with 15 mm thick steel front plates to the front of the buffer to give 115mm projection.

### **Dock Traffic Lights**

External long life LED type red and green traffic lights. Maximum projection 55 mm to ensure protection by dock bumpers. Lights positioned to provide clear unobstructed visibility to vehicles on dock.

### **Dock Equipment Service and Maintenance**

Three year parts and labour warranty with 2 service visits per year is provided for all dock door equipment, without any charge to the end user. Service and warranty to commence once the tenant moves into the building.



## Fire Exit Doors

Galvanised mild steel fire exit doors in steel frames, all in factory applied paint finish.

## OFFICES AND HUB OFFICES

### Structure

Structural steel frame designed to BS EN 1993 -1-1: 2005, BE EN 1993 -1-5: 2006, BS EN 1993 -1-8: 2005, BS EN 1993 -1-10: 2005, BS EN 1993 -5: 2007, BS EN 1993 -6: 2007 fire protected to achieve a fire resistance as required under the Building Regulations. All work in compliance with the current edition of the National Structural Steelwork Specification.

Office floor(s) designed for a superimposed loading of 4.0kN/m<sup>2</sup> and an additional loading of 1.0kN/m<sup>2</sup> for partitions. Plant deck located above the internal offices – 7.5kN/m<sup>2</sup> design loading.

### External Walls

Twin-Therm® Chronus® Ready wall system utilising either Colorcoat Prisma® coated steel external sheets supported by the Confidex® Guarantee of up to 40 years and fixed as per the system requirements. The wall system provides a manufacturer's warranty for the entire installation for a period of 25 years. Wall systems are covered by the relevant independent Agrément Certification.

Therma-quilt glass fibre insulation 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 of 0.35W/m<sup>2</sup>K (120mm thick).

The wall cladding systems are tested in accordance with LPS 1181 to achieve a minimum grade 'EXT-B' certification, certificate reference LPCB 443a.

## Curtain Walling/Windows

Senior Architectural Systems SF52 fully thermally broken curtain walling and glazing system to the office elevations utilising recycled aluminium (minimum 35% by volume); comprising polyester powder coated aluminium mullions and transoms complete with factory sealed double glazed units with glazed and insulated spandrel panels, where necessary. Glazing in 6mm Antisun. Top hung outward opening windows with lockable handles.

### External Doors

Manufactured in Senior Architectural Systems powder colour coated aluminium sections with concealed overhead door closers, and glazed to the recommendation of BS 952 and BS CP 6262 in laminated or safety glass to match windows and curtain walling, and lockable by master keyed euro profile cylinder.

Main office entrance doors automatic revolving door system for escape and rescue routes with break-out function, Boon Edam 4 wing automatic revolving door. Additional disabled access door provided, automatically operated to meet all relevant accessibility guidance.

### Internal Walls

Where shown on the drawings, compartment walls (including supporting structure) between the office and warehouse areas provide minimum 2 hours fire resistance.

Compartment walls between the office and warehouse area will be built in Rockwool filled composite panels such as Firemaster Extra minimum 150mm thick. The warehouse elevation is protected for its full width with Armco barrier.

Office area walls and partitions proprietary, high density board and partition system.

## Staircases

Staircases and landings to upper floor offices constructed in precast concrete.

Circular brushed stainless steel balustrades with matching handrails.

American light oak stringers to the edge of the staircases.

## Ceilings

The floor to ceiling height to the office and circulation areas is 2.70m and 2.40m in the toilet areas.

Generally throughout the offices, staircases, landings, circulation and ancillary areas, Armstrong Dune eVo 600mm x 600mm Tegular tiles in lay-in grid system with a stove enamelled finish on wire hangers; with 25/50mm Dulux Black BS00E53 painted shadow edge trim. Within office areas perimeter bulkhead details avoid suspended ceilings stepping in and out of windows and around columns etc.

Toilet areas have Armstrong Dune eVo 600mm x 600mm or similar moisture resistant tiles in lay-in grid system, with Dulux Absolute White vinyl matt emulsion painted moisture-resistant plasterboard ceilings above the WC cubicles and wash basins.

Dulux Absolute White vinyl matt emulsion painted plasterboard/MF flat bulkhead to head of feature wall in Reception area to accommodate feature 'wall wash' lighting to feature wall.

Ceilings have a minimum void of 250mm, complete with necessary cavity barriers, and a minimum depth under beams of 100mm.

The suspended ceiling system is earth bonded in accordance with IEE regulations and the suspended ceiling manufacturers recommendations

## Wall Finishes

All internal walls unless otherwise specified throughout the offices, staircases, landings, circulation, ancillary areas, within cleaners cupboards and service cupboards/risers are plastered/dry lined and fully sealed and then painted with one mist coat and two coats Dulux Trade Diamond Matt emulsion paint BS4800 22B15 'Swansdown'.

### Reception Area:

600mm x 300mm Johnson Tiles IMP05P Charcoal polished ceramic wall tiles.

600mm x 50mm x 9mm ceramic skirting tiles Johnson Tiles Minerals Range MIN05N 'Slate Natural'.

### Toilet Areas:

Main Wall Tiles: 300mm x 200mm Johnson Tiles Polar Range CLAS1A White Satin;

Feature Wall Tiles: 300mm x 200mm Johnson Tiles County Range CNY03A Satin Grey Matt;

Skirting Tiles: 200mm x 100mm Johnson Tiles Kerastar KER558 Clay Speckle Natural.

### Tea Point/Kitchenette:

Ceramic tiled splashback above all worktops taken up to underside of wall cupboards comprising 200mm x 100mm x 6.5mm Johnsons Tiles "Prismatics" PRG1 White with proprietary white gloss or brushed stainless steel trims to all edges.

## Floor Finishes

Generally throughout the Offices a raised access floor medium grade system, Kingspan RG3 medium duty steel encased RAF, to MOB Construction and installation standards to provide a minimum 150mm clear void, and earth bonded in accordance with IEE Regulations and the raised floor manufacturer's recommendations.

Main entrance areas, reception areas, staircases, landings, cleaners cupboards, toilet areas and lobbies, any kitchenettes and tea points/rooms, are power floated concrete or screed finish to receive carpet tile, vinyl or ceramic floor coverings.

Generally throughout the Offices unless specified otherwise Interface Transformation 'Baring' 1628073 carpet tiles.

#### Main entrance and Reception area(s):

600mm x 600mm x 11mm ceramic floor tiles Johnson Tiles Minerals Range MIN03G 'Limestone Grip';

600mm x 600mm x 11mm ceramic floor tiles Johnson Tiles Minerals Range MIN05G 'Slate Grip';

600mm x 50mm x 9mm ceramic skirting tiles Johnson Tiles Minerals Range MIN05N 'Slate Natural'.

#### Office toilets, toilet lobbies, and cleaner's store rooms:

Generally 200mm x 200mm x 8.3mm ceramic floor tiles Johnson Tiles Kerastar KER558 'Clay Speckle' Natural;

Shower floors 200mm x 200mm x 8.3mm Johnson Tiles Kerastar KET558 'Clay Speckle' 'Triface' slip-resistant floor tiles.

Skirtings 200mm x 100mm x 8.3mm Johnson Tiles Kerastar KER558 'Clay Speckle' Natural.

#### Kitchenettes/Tea Points:

200mm x 200mm x 8.3mm ceramic floor tiles Johnson Tiles Kerastar KER558 'Clay Speckle' Natural;

Skirtings 200mm x 100mm x 8.3mm Johnson Tiles Kerastar KER558 'Clay Speckle' Natural.

In the main entrance lobby area to the full width of the entrance doors a matwell and frame consisting of an aluminium frame fixed into the concrete sub floor together with a barrier mat or good quality proprietary mat consisting of aluminium runners and brushes – Forbo Nuway Tuftiguard Classic closed construction double wiper Grey Buffed Rubber or equal and approved.

#### Doors and Joinery

Internal doors throughout the offices solid core flush doors (fire rated where required) with non-tropical American light oak hardwood veneers and concealed lipped. Hardwood frames and architraves to match door veneers. American light oak skirtings and window cill boards to match.

Grade 316 stainless steel ironmongery appropriate to the location of the door.

Locks provided to entry and exit doors, cupboards, risers and other doors determined by the Architect as reasonably required to be lockable. Locks suited in accordance with the following principle:

- Master key to all doors;
- Main Office/Hub Office;
- Submaster key to each floor.

Toilet IPS panels, toilet cubicles, and vanity units manufactured by Venesta Cubicle Systems Limited or similar and approved.

#### Sanitaryware

Armitage Shanks or similar white vitreous china sanitaryware.

Armitage Shanks 'Back to Wall' WC suites or similar with soft-close plastic seat and cover, and dual flush plastic 6/3 litre dual flushing cistern located behind proprietary IPS panel system with overflow indication.



Armitage Shanks china single bowl urinals with concealed traps and cistern within proprietary IPS panel system.

Armitage Shanks washbasins with chrome finished water saving mixer push taps with aerated outlets.

Cleaner's sink with bucket stand.

Pipework within toilet areas concealed with suitable maintenance access; any visible fittings in chrome.

### **Kitchenettes**

Howdens fitted kitchens comprising base units, worktops and wall cupboards, Howden Sensio Natural White LED lighting under wall cupboards, black composite sinks with mixer taps.

### **Passenger Lifts (Main Offices)**

Ten person/800kg capacity hydraulic or electric traction passenger lift to meet the requirements of EN 81-20 : 2014, EN 81-50: 2014 and Part M2 Building Regulations for disabled access.

Lift car plan dimensions of 1350mm x 1400mm constructed of steel and complete with stainless steel car doors, tiled floor to match Reception, decorative laminate or stainless steel walls, stainless steel ceiling and rear mirror. Stainless steel lift entrance doors and surround. Stainless steel push button controls adjacent to lift entrance doors.

Lift provided with autodialler connected to GSM Unit programmed to call the lift manufacturer's emergency helpline via mobile phone network.

### **Fire Precautions**

Building Regulations compliant means of escape, fire resisting doors and partitions, fire exit doors and fittings and associated signs and notices.

### **EXTERNAL WORKS**

#### **Service Yards**

Minimum 190mm thick reinforced concrete with minimum cube strength of 40N/mm<sup>2</sup> at 28 days, laid to maximum falls of 1:30 (except for localised access ramps which shall be no greater than 1:20) and minimum falls of 1:80. Surface of concrete finished using a serrated float or wire brush, to provide grooves parallel to the slope of the pavement, with 100mm trowelled margins.

Parking bays delineated in extruded MMA cold plastic line markings in Traffic Yellow RAL1023.

Bollard protection provided externally to the warehouse level access doors.

#### **External Steps**

External steps to the dock areas constructed in galvanised steel, with a slip resistant finish, handrails and bollard protection.

#### **Armco Barriers and Building Protection**

Armco galvanised steel barrier system to the full width of the front elevation of the hub office(s) and, to corners of the building exposed to HGV traffic unless these corners are protected by Trief kerbing.



### Bin Store

Timber fenced enclosure with access gate including drop bolts and hasp & staple.

### Service Yard Fencing

2.40m high Vmex V3 Paladin V MESH fencing and manually operated lockable gates.

### Gatehouses

Single storey preformed gatehouses supplied by Fibaform products Ltd.

Trief kerbs to the gatehouse islands.

Electrically operated entrance and exit barriers with skirts complete with necessary induction loops for vehicle presence detection to allow for automatic closing of barrier after passage of vehicle but prevent barriers lowering onto vehicle.

Spare ducts provided from the main building to the gatehouse.

### Car Parks

Macadam surfacing to roadways and car park areas.

Car parking spaces delineated by white lining.

Manually operated car park barrier at the car park entrance, with ducts from the building to each barrier for future installation of access control / comms.

### Multi Storey Car Parks

Structural steel and profile metal deck, concrete flooring with a resin or equal approved. Pedestrian access, line marking, vehicle and pedestrian restraint barriers, lighting, drainage and signage.

### Cycle Parking

Cycle racks as indicated on the drawings.

### Landscaping

Designed, supplied and installed by Whiting Landscape Limited including twelve months maintenance.

## EXTERNAL SERVICES

### Electric

An 8 MVA electrical supply enters the site from Ableton Lane to the north of Unit 2 before being routed around the east end of Unit 2 and entering a dual intake Substation which has been adopted by National Grid located at the east end of the Central Estate Road. Also provided in this location are the tenant substations for each unit and landlord substation, all three of which have been adopted by OPN – Optimal Power Networks.

Unit 1 has a 3,000kVA supply.

Unit 2 has a 5,000kVA supply.

### Gas

Incoming gas services are live from the mains connection up to the meter kiosk positions at the front of the site.

Gas pipework is installed and tested from the meter kiosk positions to building entries in the warehouse, behind the main offices.

### Water

Metered domestic water supply from the site boundary/public supply to each building.

100Ø supply from the boundary to the future sprinkler pumphouse position complete with a hydrant and washout valve.

### Drainage

Foul drainage discharges to public sewers via a newly constructed pumping station which is in the process of being adopted by Wessex Water.

Surface water discharges into the attenuation features around the site boundaries which are managed and maintained by the Lower Severn Internal Drainage Board.

### External Ducts

Two ducts from the site boundary to a designated intake point in each building to serve BT Openreach, and two additional ducts for use by other comms/broadband provider. Each set of ducts enter the building and pass below ground, and rise to terminate 150mm AFFL in the store room beneath the main office stair.

Spare vacant ducts from the corners of the buildings to external locations within the soft landscaping to facilitate possible future CCTV installation and/or external signage provision

## MECHANICAL SERVICES

### Design Conditions

#### External

Winter	As per CIBSE Guide A table 2.5 for external temperatures not exceeded for more than 0.4% of year.
Summer	Based on Geographical location. As per CIBSE Guide A table 2.6 for external temperatures not exceeded for more than 0.4% of year.

#### Internal

##### Office and Hub Office:

Winter	210C ± 20C
Summer	230C ± 20C
Toilets	190C ± 20C
Stairs	180C ± 20C
Frost	120C ± 20C

#### Occupancy

Offices	1 person/7.5m <sup>2</sup>
Meeting Rooms	1 person/4.5m <sup>2</sup>

#### Ventilation

Offices	12L/S/person
Toilets	10Ac.Hr extract
Tea Rooms & Kitchenettes	10Ac Hr extract

### Infiltration

Offices	1 Ac/Hr
---------	---------

### Noise Criteria

Offices	40 – 45 dB Laeq 20
Toilets	45 – 50 dB Laeq 20
Plant Room	NR50
External	NR65 at 1m

### Ventilation

Mechanical ventilation system to the Offices. Supplementary ventilation provided by openable windows which allow for an element of purge ventilation.

Supply and extract air handling unit - supply section has a fresh air intake, panel type Pre filter (G4), Bag Filter(F7), heat recovery device (Plate Heat Exchanger), multistage direct expansion heater battery allowing a good level of control using inverter controlled condensing units, supply air fan. The extract section has a panel type Pre Filter (G4) prior to the heat recovery device.

Galvanised ductwork to DW144, attenuators and proprietary ceiling diffusers appropriate to the location and ceiling type within lay in grid ceilings full-tile replacement swirl ceiling diffusers. All supply ductwork (and extract where heat recovery is deployed) thermally insulated to BS 5422 and identified in accordance with BS 1710.

Mechanical supply and extract ventilation system to the male and female toilets and cleaner's rooms comprising grilles, galvanised ductwork, crosstalk attenuators and twin fan extract unit with discharge through roof.



### Main Office & Hub Office Heating and Cooling

Variable refrigerant flow (VRF) / Variable Refrigerant Volume (VRV) systems incorporating heat recovery throughout the main office areas.

Ceiling concealed fan coil unit's c/w plenum boxes. Supply ductwork from the fan coil units thermally insulated to BS 5422: 2009. The ducts connect to swirl diffusers complete with multiblade volume control dampers and plenum boxes. Return air to the fan coil units via similar diffusers to those used for the supply with blacked out boxes so the services within the ceiling void cannot be viewed through the diffuser. Control by means of air temperature sensors located within the occupied space.

Toilets staircases and ancillary areas utilise flat panel electric heaters with adjustable thermostats. In disabled toilets LST (low surface temperature) heaters or ceiling radiant panels are utilised.

### Water Heating

Domestic hot water to the toilets, cleaners sink and kitchens provided by energy efficient air to water source heat pump serving a plumbed Solar Hot Water Cylinder. The cylinder will be matched to a monobloc air source heat pump, for example a Mitsubishi Electric FTC5 controller unit connected to a PUAZ 'Zubodan' type unit. Solar collectors and associated controls provide an additional source of energy for producing hot water, the array matched to the size of the cylinder. The cylinder incorporates an electric immersion heater element for legionella prevention and emergency back-up.

### Rainwater Harvesting/Grey Water

A Grey water (rainwater storage) system is employed to serve the cisterns within the main office. It is distributed using HEP20 pipework or equal and approved. System capacity is based on 24 hours storage with full capacity make up. All greywater pipework is labelled and identified in line with WRAS and local supply company guidelines

### Controls

A bespoke mechanical services control panel complete with a Building Energy Management System (BEMS) has been provided on the plant deck to provide power and/or control of the featured mechanical plant serving the main offices, with ethernet links to separate BEMS control panels located within the Hub Offices 1st Floor Riser Cupboards which provide control of the local Hub Office plant. The system is manufactured by Trend Controls, and mounted within it is also the central control panel for the VRF Air Conditioning System.

The Main Office control panel provides power and/or control of the following items of plant, including automatic shutdown in the event of a fire alarm condition:

- Hot Water Service Cylinder complete with Air Source Heat Pump;
- Hot Water Service Cylinder Immersion Heater;
- Hot Water Service Return Pump;
- Hot Water Service Cylinder De-Stratification Pump;
- Monitoring of the Solar Thermal Hot Water System;
- Office Packaged Air Handling Unit;
- Toilet Extract Fan;
- Monitoring of the Rain Water Harvesting System;
- Fault Monitoring of VRF Air Conditioning via room area temperature sensors located within VRF main office areas;
- Metering.



The Hub Offices control panel provides power and/or control of the following items of plant:

- Toilet Extract Fan;
- Mitsubishi Lossnay MVHR Units;
- Metering of Water and Energy Supplies.

The entire system is based on a Local Area Network (LAN) type system which enables the Hub Office panel to report faults back to the central panel on the Plant Deck, which in turn also reports to a small alarm panel mounted adjacent the fire alarm panel within Reception. The function of this alarm panel in Reception is to instigate an investigation to be made by facilities management to go and investigate recorded faults, from which the course of action for correcting the fault can be determined.

Each MCCP control panel comprises a series of Trend IQ4E Intelligent Controllers mounted within, featuring a Trend IQView8 Touch Screen Control Panel for user interface. In addition, the current Trend LAN BMS system is fully and readily expandable to facilitate the future integration of future installed BMS panels (provided they are manufactured by Trend) by tenants, as well as to be networked into a any future BMS head end PC with graphics should the end users so desire.

The Trend IQView8 touch screen controller provides the following features:

- Viewing of inputs, outputs, alarms and plots
- Adjustment of Set Points
- View metering and logged data
- Facility for inclusion of future graphics pages should future fit outs require them;
- Relay output for external alarm sounders

### Warehouse Pod/Hub Office(s)

Where office space is less than 200m<sup>2</sup> heating by wall mounted electric convector heaters with in-built adjustable thermostats.

### Gatehouses

Services comprising mains cold water to sink, hand basin, WC cistern and local electric hot water heater. Toilet extract fan unit interconnected with the lighting circuit.

Heating to meet design conditions of +220C internal, -50C external and two air changes per hour, via wall mounted electric convectors with inbuilt thermostatic and frost control.

## ELECTRICAL SERVICES

### Electricity Supplies

Electricity supplies drawn from the DNO supply network, metered at HV with a capacity of -

Unit 1 = 3,000kVA

Unit 2 = 5,000kVA

On-site private HV distribution and HV/LV transformers.

### LV Switchboard, Distribution Boards and Cabling

LV switchboards in accordance with BS EN 61439-1: 2009 and BS EN 61439-2: 2009, Form 4 separation Type 3, suitable for the supply capacity and complete with necessary MCCB's together with 4 spare 3 phase 100A ways.

Distribution boards in accordance with BS EN 61439-1: 2009 and BS EN 61439-3: 2009 complete with necessary MCB's/RCBO's together with 25% allowance for spare ways.

Sub main cables from the LV panel board to sub distribution boards and busbar trunking feed points, extended in XLPE/SWA/LSF copper cables to BS 5467 : 2016. All distribution systems continually rated and designed in accordance with BS 7671: 2018 – 18th Edition IET Wiring Regulations.

The lighting and power installation to the offices and ancillary areas will, in general, be carried out in LSF/LSF insulated cable run within ceiling voids and where necessary into galvanised steel cable tray/trunking/conduit to provide a rewirable system that is concealed and flush with plug in roses at termination points for final connection to fittings. All cabling in ceiling void either run on cable containment systems, or as minimum fixed to the building structure with proprietary fire resistant cable clipping systems.

External lighting supplies extended in XLPE/SWA/LSF cables run in ducts as necessary.

To the warehouse area the power installations serving the dock doors and levellers, generally carried out with XLPE/SWA/PVC/LSF cables to distribution boards, high level bus bar to doors and docks with tap-offs to suit.

## LIGHTING INSTALLATIONS

### Offices:

600 mm x 600 mm square LED recessed lay-in modular luminaires with LG7 compliant low brightness diffusers to achieve average illuminance level of 500 lux at 850 mm above floor level.

### Circulation/Corridors:

LED recessed downlights to give an average illuminance level of 100 lux at floor level.

### Stairs:

LED downlights and wall lights to give an average illuminance level of 150lux at floor level.

### Toilets:

LED recessed downlights to give an average illuminance level of 200 lux at floor level, supplementary LED GU10 spotlights provided to the mirrors.

### Reception/Main Entrance:

LED recessed down lights to give an average illuminance of 300lux at floor level.

Supplementary LED GU10 spotlights to bulkhead above feature wall to provide "wall wash" lighting to feature wall.

### Plantrooms/Risers:

LED batten type luminaires with suitable IP rating to give an average illuminance level of 200lux at floor level.

### Emergency Lighting:

LED Self-contained non-maintenance three hour emergency luminaires to all fire exits, corridors, toilets, staircases both internal and external, reception and to the office areas all in accordance with BS 5266-1: 2016.

### External Lighting:

LED lighting to building elevations and on columns to provide a minimum average of 30 lux with 40% uniformity within service yard as per BS EN 13201-2: 2015, Table 2 Class C1. and an average 10 lux to car parks - all controlled by photocells/timeswitch.

Local increase to 50 lux at loading bay area and dock doors.

Walkways exclusively for pedestrians 5 lux average.

### Lighting Control:

Internal lighting generally controlled via PIR's. Daylight override provided to main offices consisting of perimeter window zones with adjustable level sensing to provide dimming to 10%.

Manual controls shall be provided within all plantrooms

All luminaires manufactured and tested in full compliance with BS EN 60598.

## POWER INSTALLATIONS

### Office Areas and Meeting Rooms:

Within the raised floor cavity a bus bar trunking system with 3 metre long flexible connections to three compartment recessed floor outlet boxes, provided at 1 no floor outlet box per 10 m<sup>2</sup> floor area;

Floor boxes incorporate 1 no twin switched socket outlet, 1 no twin blank plate for telecom, 1 no twin blank plate for data;

A minimum of one cleaners socket in each room; in open plan areas cleaners sockets provided so as to allow a vacuum cleaner with 7m lead to reach everywhere in the area.

### Reception:

1 no flush floor box incorporating 1 no twin switched socket outlet, 1 no twin blank plate for telecom, and 1 no twin blank plate for data

1 no wall-mounted twin SO per 10 linear metres wall girth

### Kitchenettes:

At least 2 no twin SO over worktop

2 no single SO below worktop; below counter sockets provided with switched FCU above

### Toilets:

FCU (1 per 4 hand basins – minimum 1no) for future hand dryer(s) in each toilet area

1 no alarm pull cord and sounder to each disabled toilet

### Stairways:

1 no single SO at each floor

### Corridors:

1 no single SO per 10 linear metres wall length

### All Other Office/Ancillary Areas:

1 no twin SO per 10 linear metres wall length (minimum 1 no per room/area)

### Mechanical Services:

All power and control supplies associated with mechanical services.

Local isolation provided to all items of equipment



### BT:

1 no 13 amp SP spur for incoming BT supply.

### Warehouse doors and levellers:

TP & N supplies to doors

TP & N Suppliers to levellers

### External Power:

63A 6 way TP & N board with MCB's/RCBO's to suit supplies to gatehouse comprising small power utilising 3 compartment dado trunking (10 no twin sockets), lighting, heating, hot water heater, fire alarm mimic panel, vehicle barriers.

### Photovoltaic System

Complete G99 approved grid-connected roof-mounted PV system, having a capacity which equates to more than 10% of the base build regulated energy.

The system utilises Tier 1 components (PV modules and inverters) and includes all necessary cable systems, isolators, protective devices and controls, inverters, metering, and all equipment necessary for connection and export to the electricity network, and graphical display unit to display -

- Energy delivered by the PV system (kWh)
- Instantaneous power output (kW)
- CO<sub>2</sub> saving (kg CO<sub>2</sub> / annum)

### Electric Vehicle Charging Points

Sevadis 7.2kW electric vehicle chargers are provided to 10% of the car parking spaces.

Underground ducts are also provided to facilitate the future installation by others of further electric vehicle charging points (EVCPs) within the car park.

### Fire Alarm

Category P1 fire alarm system is provided to the offices of the fully automatic and fully addressable analogue type, all in accordance with the requirements of BS 5839-1 : 2017 and Building Control.

The equipment includes a main fire alarm panel located in the Reception area, automatic detectors throughout the office areas, break glass manual contacts on all escapes, and sounders throughout the offices, all in accordance with the standards. A repeater panel is provided in the gatehouse. Spare zones are provided to permit future additions. The system is wired in red firetuff or equal cable extended in a concealed manner in the main offices. Fire alarm interface units are provided for the lift control panel, automatic front door and mechanical plant

A disabled refuge intercom system is provided between each disabled refuge position and a handset located adjacent to the Reception fire alarm panel.

### Lightning Protection

Lighting protection system with earth inspection pits.

# OCCUPANCY COST

## AVONMOUTH 410

SERVICE CHARGE:

**£19,082 PA** (£0.05 PER SQ FT)

RATES LIABILITY:

**£1,382,400**

## AVONMOUTH 885

SERVICE CHARGE:

**£44,608 PA** (£0.05 PER SQ FT)

RATES LIABILITY:

**£2,858,240**