CANMOOR

urban8

KINGS NORTON ■ BIRMINGHAM ■ B38 8SR ■ /// SPARKS.BARED.BRASS

UNIT 1
TECHNICAL INFORMATION PACK

CONTENTS

- PROPERTY OVERVIEW
- SITE PLAN
- FLOOR PLAN
- RACKING PLANS
- ELEVATIONS
- DEMISE PLAN
- ESG
- SERVICES
- PROJECT TEAM
- PLANNING CONSENT
- SPECIFICATION

OVERVIEW

Urban8 is a new high tech urban logistics and manufacturing hub, strategically situated in the heart of Birmingham. It features eight cutting-edge units, each equipped with the latest ESG amenities as standard.

UNIT 1

EPC
A

12 FITTED EV
CHARGING SPACES

10%
ROOF LIGHTS

12.5M
CLEAR HEIGHT

COMFORT
COOLING

£17,196/YEAR POTENTIAL
SOLAR SAVINGS

45M SECURE
YARD AREA

50 KN/M2
FLOOR LOADING

7 DOCK
LEVEL DOORS

2 LEVEL ACCESS
LOADING DOORS

900 KVA
POWER SUPPLY

24 HOUR
ACCESS

SMART LED
LIGHTING

113 PRIVATE CAR
PARKING SPACES

12 PRIVATE HGV
PARKING SPACES

FULL WARRANTY
PACKAGE AVAILABILITY

CYCLE
STORAGE

FITTED
FLOOR OFFICES

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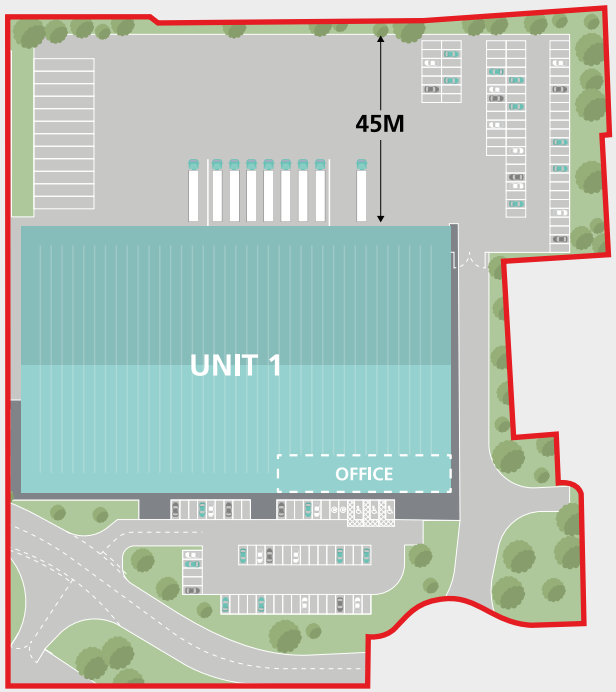
SITE PLAN

70,255



UNIT 1	SQ FT
GF / Warehouse	65,337
First Floor office	4,918
Total	**70,255**

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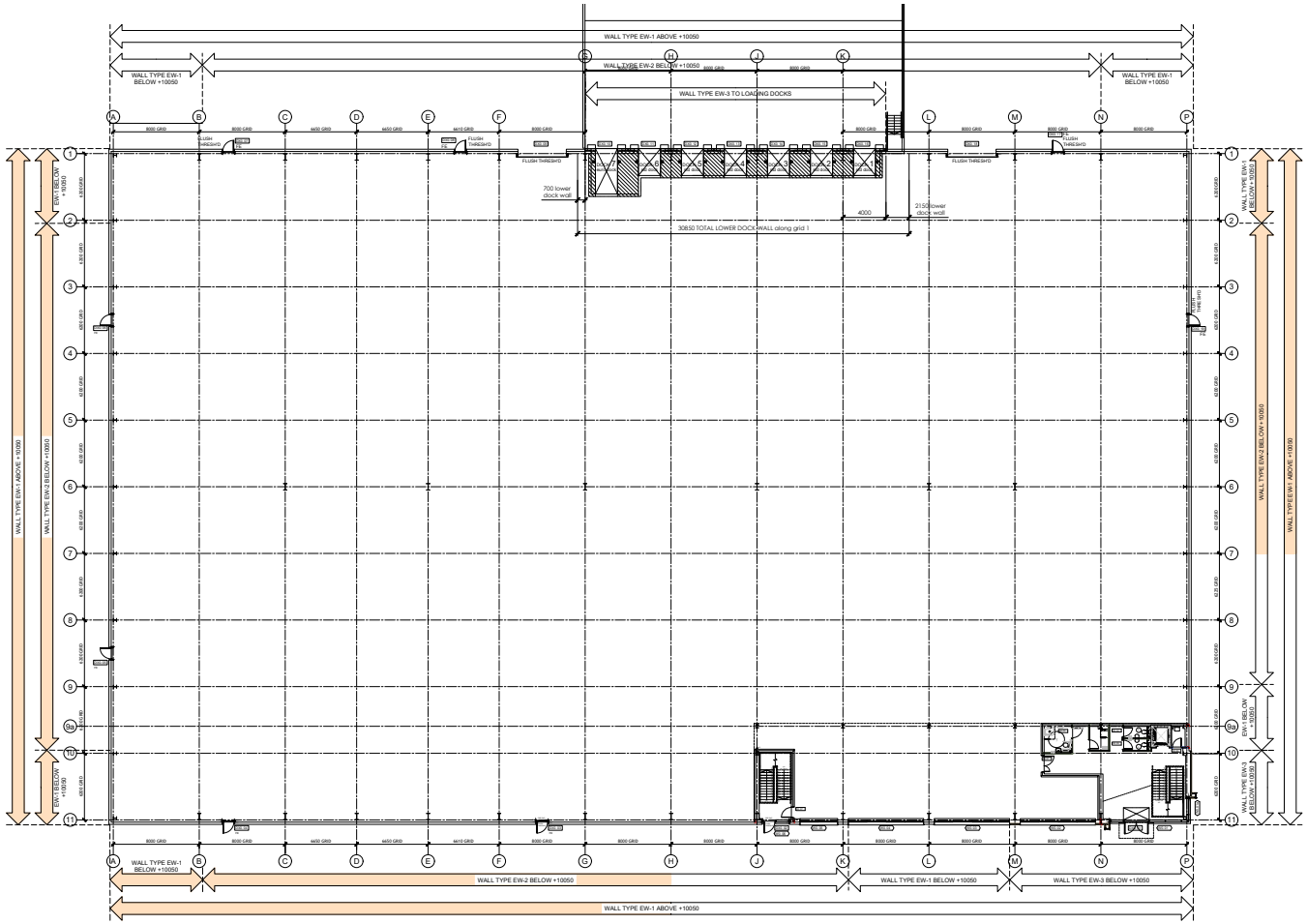
FLOOR PLAN



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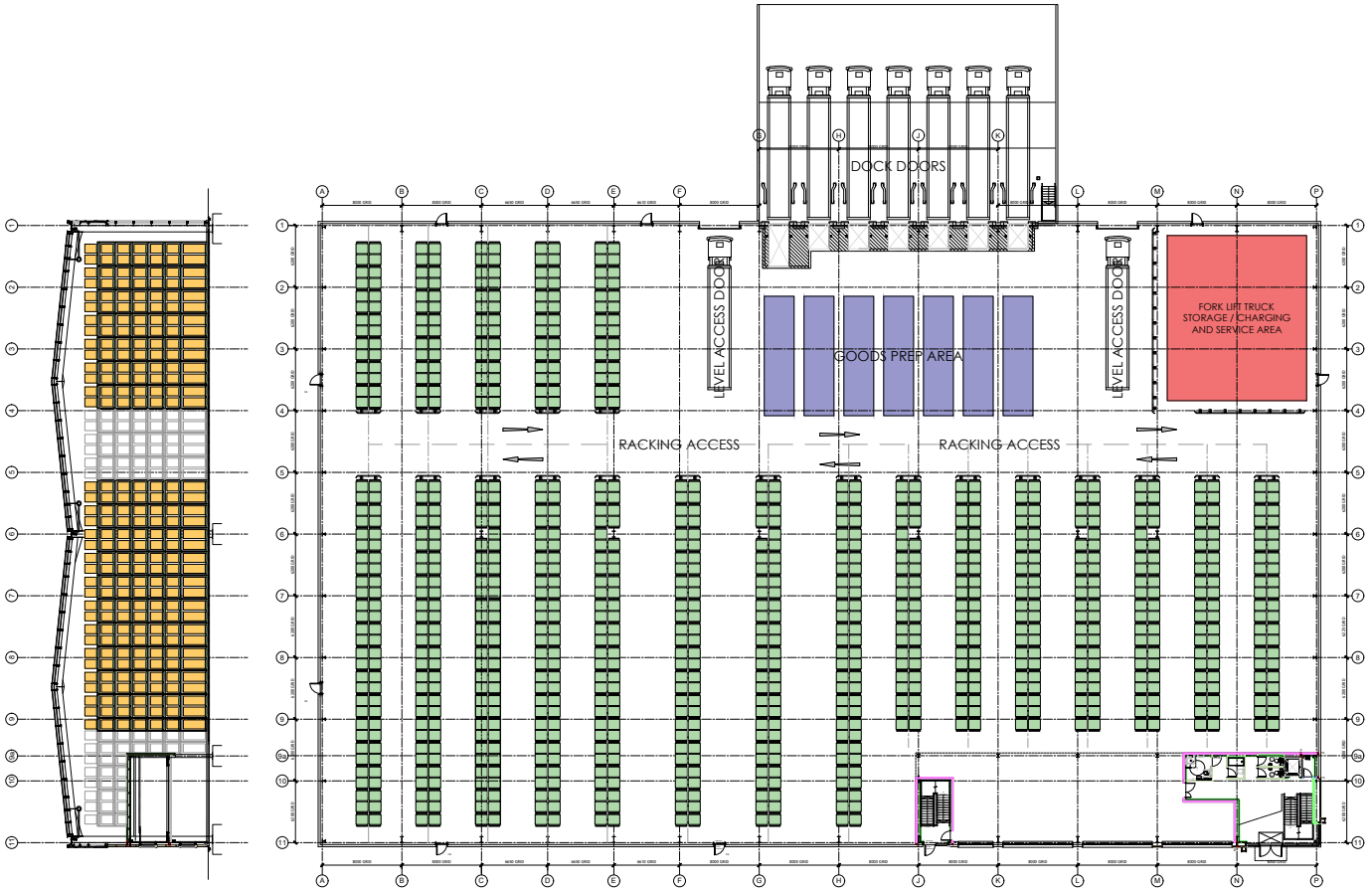
RACKING PLAN: STANDARD RACKING FITOUT



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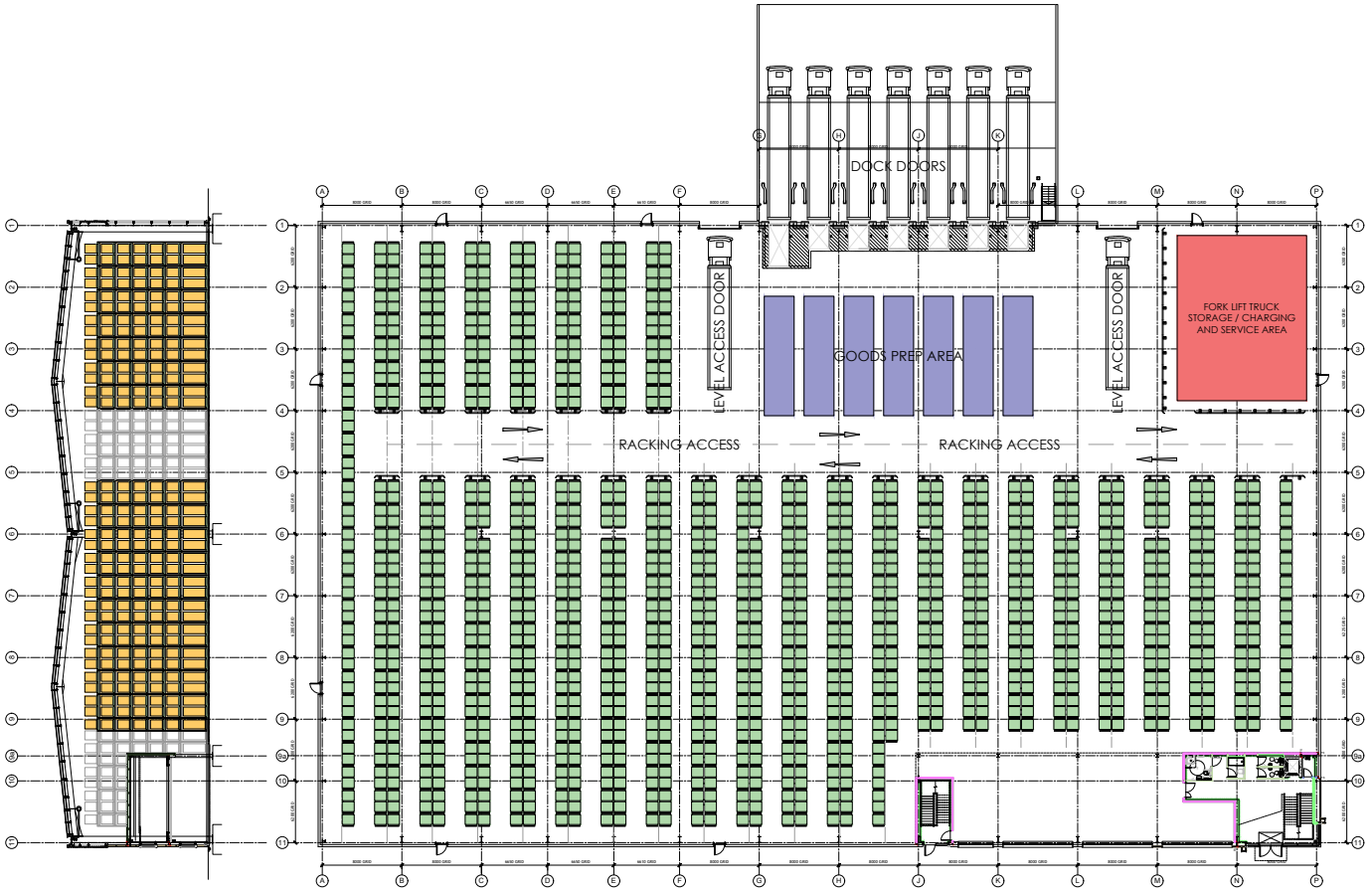
RACKING PLAN: NARROW RACKING FITOUT



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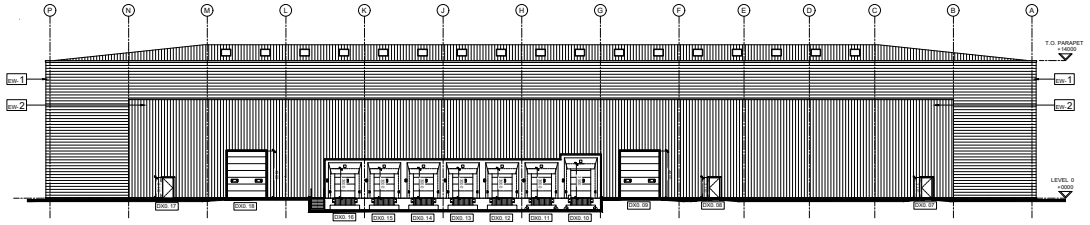
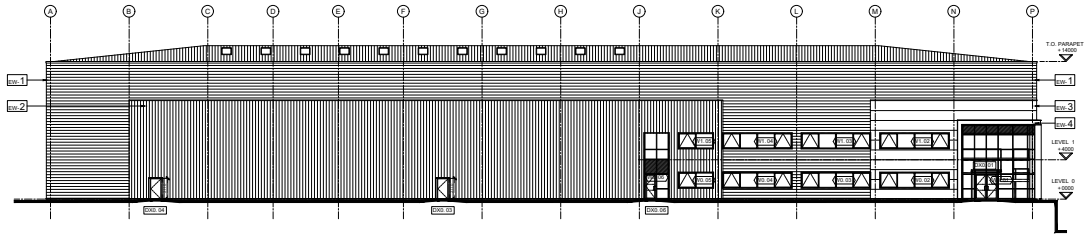
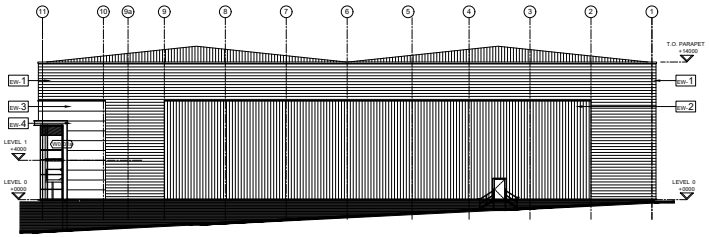
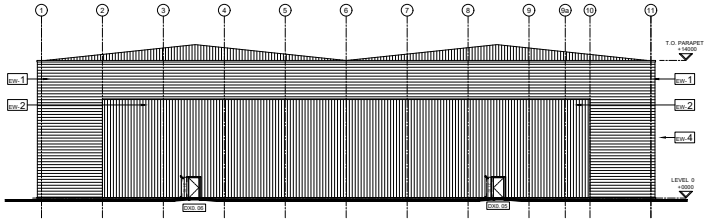
ELEVATIONS









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ESG

BREEAM OUTSTANDING

ROOF MOUNTED SOLAR PV'S

EV CHARGING PARKING SPACES

WHOLE LIFE CARBON

EPC A RATINGS

SUSTAINABLE TRAVEL OPTIONS ADJACENT TO KING'S NORTON STATION AND LOCAL BUS LINKS

REGENERATION OF FORMER BROWNFIELD SITE

HIGH QUALITY LANDSCAPED ENVIRONMENT

ON SITE GENERATION OF >37% OF ENERGY REQUIREMENTS THROUGH LOW CARBON MEASURES

U VALUES EXCEEDING BUILDING CONTROL STANDARDS

OFFICE LED LIGHTING

AIR TIGHTNESS OF 1.5M3/HR

ASHP GENERATION FOR HEATING AND COOLING

RETENTION OF HIGH VALUE TREES ON SITE

SUDS DRAINAGE STRATEGY

PV SAVINGS

Unit 1 – £17,196/year

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SERVICES

ELECTRIC

900kVA

GAS

520kWh

WATER

32mm supply to each unit.

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PROJECT TEAM

LANDLORD / DEVELOPER
Tristan / Canmoor

PROJECT MANAGER
Canmoor

CONTRACTORS
GMI Construction Group

ARCHITECTS

LETTINGS TEAM
Newmark & DTRE & Harris Lamb

LEGAL TEAMS

MANAGING AGENTS

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PLANNING CONSENT

Birmingham City Council

Planning and Development
PO Box 28, Birmingham B1 1TU

DECISION DOCUMENT

APPLICATION NUMBER: 2020/08911/PA

TOWN AND COUNTRY PLANNING ACT 1990

BIRMINGHAM CITY COUNCIL GRANT PLANNING PERMISSION SUBJECT TO CONDITIONS FOR THE FOLLOWING DEVELOPMENT IN ACCORDANCE WITH THE PLANS AND APPLICATION AS NUMBERED ABOVE:

Demolition of all existing buildings and construction of eight commercial buildings for research and development of products or processes (Use Class E(g)(ii)), industrial processes (Use Class E(g)(iii)), general industrial uses (Use Class B2) and storage and distribution (Use Class B8) all with ancillary office space at 5% of the total, along with provision of parking, access and circulation areas within the site and all other associated works, including necessary works within the highway

at

NSG Group Site, Eckersall Road, Kings Norton, Birmingham, B38 8SS

Conditions that affect this development or use

1 Implement within 3 years (Full)
The development hereby permitted shall be begun before the expiration of 3 years from the date of this permission.
Reason: In order to comply with Section 91 of the Town and Country Planning Act 1990 (as amended) and the National Planning Policy Framework.

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2 Requires the scheme to be in accordance with the listed approved plans
The development hereby approved shall be implemented in accordance with the details submitted with the application and shown on the following drawings:

17-110-PL-01 SITE LOCATION PLAN
17-110-PL-02 SITE PLAN - AS EXISTING (TOPO BASED)
17-110-PL-03G SITE PLAN - AS PROPOSED
17-110-PL-04B UNIT 1 - PROPOSED PLANS
17-110-PL-05C UNIT 1 - PROPOSED ELEVATIONS AND SECTION
17-110-PL-06A UNIT 2 - PROPOSED PLANS
17-110-PL-07A UNIT 2 - PROPOSED ELEVATIONS AND SECTION
17-110-PL-08A UNIT 3 - PROPOSED PLANS
17-110-PL-09A UNIT 3 - PROPOSED ELEVATIONS AND SECTION
17-110-PL-10B UNIT 4 - PROPOSED PLANS
17-110-PL-11B UNIT 4 - PROPOSED ELEVATIONS AND SECTION
17-110-PL-12A UNIT 5 - PROPOSED PLANS
17-110-PL-13B UNIT 5 - PROPOSED ELEVATIONS AND SECTION
17-110-PL-14B UNIT 6 - PROPOSED PLANS
17-110-PL-15B UNIT 6 - PROPOSED ELEVATIONS AND SECTION
17-110-PL-16B UNIT 7 - PROPOSED PLANS
17-110-PL-17B UNIT 7 - PROPOSED ELEVATIONS AND SECTION
17-110-PL-18A UNIT 8 - PROPOSED PLANS
17-110-PL-19A UNIT 8 - PROPOSED ELEVATIONS AND SECTION
17-110-PL-20A UNIT 1 - PROPOSED ROOF PLAN
17-110-PL-21 UNIT 2 - PROPOSED ROOF PLAN
17-110-PL-22 UNIT 3 - PROPOSED ROOF PLAN
17-110-PL-23 UNIT 4 - PROPOSED ROOF PLAN
17-110-PL-24 UNIT 5 - PROPOSED ROOF PLAN
17-110-PL-25A UNIT 6 - PROPOSED ROOF PLAN
17-110-PL-26A UNIT 7 - PROPOSED ROOF PLAN
17-110-PL-27 UNIT 8 - PROPOSED ROOF PLAN
17-110-PL-28 TYPICAL CYCLE SHELTER DETAILS
17-110-PL-29A INDICATIVE SITE EDGE SECTIONS
17-110-PL-30B INDICATIVE SITE CROSS SECTIONS
17-110-PL-31A INDICATIVE SITE PARAMETERS PLAN
17-110-PL-34A FENCE TYPE PLAN
17-110-PL-35 PALADIN FENCE DETAILS
17-110-PL-36 ACOUSTIC FENCE DETAILS (3.5M HIGH)
17-110-PL-37 ACOUSTIC FENCE DETAILS (3.0M HIGH)
17-110-PL-38 CONDENSER COMPOUND ENCLOSURE DETAILS
17-110-PL-39 STREET SCENE & ADDITIONAL SECTIONS
CWA-18-128-510 P7 External Levels
CWA-18-128-511 P3 External Sections
CWA-18-128-515 Rev P7 Proposed Cut and Fill Volumes January 2020
CWA-18-128-520 P4 External Works
CWA-18-128-525 Rev P2 External Details OCTOBER 2020
CWA-18-128-526 Rev P2 External Details OCTOBER 2020
CWA-18-128-530 P5 Proposed Drainage
CWA-18-128-531 P1 Exceedance Flows
CWA-18-128-532 P1 Proposed SuDS O&M
CWA-18-128-533 Rev P1 Drainage Schedules OCTOBER 2020
CWA-18-128-534 Rev P1 Drainage Schedules OCTOBER 2020
CWA-18-128-535 Rev P1 Drainage Details OCTOBER 2020
CWA-18-128-536 Rev P1 Drainage Details OCTOBER 2020
CWA-18-128-700 P7b Vehicle Swept Path Analysis

('the approved plans').

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PLANNING CONSENT

3 Requires the prior submission of a demolition and construction method statement/management plan
No development shall take place, including any works of demolition, until a Demolition and Construction Method Statement has been submitted to, and approved in writing by the Local Planning Authority and Network Rail. The approved statement shall be adhered to throughout the demolition and construction periods. The method statement shall provide for details of the following:
* the parking of vehicles of site operatives and visitors;
* location of loading and unloading of plant and materials;
* hours of demolition/construction/delivery;
* storage of plant and materials used in constructing the development;
* noise control devices;
* delivery routeing;
* the erection and maintenance of security hoarding including decorative displays and facilities for public viewing, where appropriate;
* wheel washing facilities;
*measures to control the emission of dust and dirt during construction; and
* a scheme for the recycling/disposing of waste resulting from demolition and construction works.
The development shall be implemented in accordance with the approved details.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing in order to safeguard the railway and its boundaries from demolition machinery and dust and to safeguard the amenities of occupiers of premises/dwellings in the vicinity in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

4 Requires the prior submission of an additional bat survey on a phased basis
No development, including any works of demolition, shall take place until a further bat survey for each phase of development has been carried out and a report of findings submitted to and approved in writing by the Local Planning Authority. This is only applicable should demolition of the buildings with bat roost potential (numbers 3, 6, 8, 10 and 11 in the Preliminary Ecological Appraisal) not be demolished within 12 months of the date of the original activity survey.

The report will include, where the presence of bats or bat roost is established, appropriate measures to safeguard the protected species. Such measures shall be carried out in accordance with a programme to be incorporated in the report and agreed in writing by the Local Planning Authority.

Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing in order to secure the satisfactory development of the application site in accordance with Policy TP8 of the Birmingham Development Plan 2017, the National Planning Policy Framework and the Nature Conservation Strategy for Birmingham SPG.

5 Requires the prior submission of a method statement for the removal of invasive weeds
No development, including any works of demolition, shall take place until a detailed method statement for the removal or long-term management/eradication of Himalayan balsam and Japanese knotweed on the site has been submitted to and approved in writing by the Local Planning Authority. The method statement shall include proposed measures to prevent the spread of these species during any operations such as mowing, strimming or soil movement. It shall also contain measures to ensure that any soils brought to the site are free of the seeds/root/stem of any invasive plant covered under the Wildlife and Countryside Act 1981. Development shall proceed in accordance with the approved method statement.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing in order to secure the satisfactory development of the application site in accordance with Policy TP8 of the Birmingham Development Plan 2017, the National Planning Policy Framework and the Nature Conservation Strategy for Birmingham SPG as Himalayan balsam and Japanese knotweed are invasive plants, the spread of which is prohibited under the Wildlife and Countryside Act 1981.

6 Requires the prior submission of a construction ecological mitigation plan on a phased basis
No development, including any works of demolition, shall take place until an Ecological Mitigation Plan for Construction for each phase of development has been submitted to, and approved in writing by, the Local Planning Authority. The plan shall include:
- An appropriate scale plan showing "Wildlife Protection Zones" where construction activities are restricted and where protective measures will be installed or implemented.
- Details of protective measures (both physical measures and sensitive working practices) to avoid impacts during construction.
- A timetable to show phasing of construction activities to avoid periods of the year when sensitive wildlife could be harmed.
The development shall be implemented in accordance with the approveetails.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing in the interests of nature conservation in accordance with Policy TP8 of the Birmingham Development Plan 2017, the National Planning Policy Framework and the Nature Conservation Strategy for Birmingham SPG.

7 Requires the prior submission of contamination remediation scheme on a phased basis

No development, excluding demolition to ground level, shall take place until the following components of a remediation scheme to deal with the risks associated with contamination of each phase for the intended use have been submitted to and approved, in writing, by the Local Planning Authority:
1) A preliminary risk assessment, which has identified:
o all previous uses
o potential contaminants associated with those uses
o a conceptual model of the site indicating sources, pathways and receptors
o potentially unacceptable risks arising from contamination at the site.
2) A site investigation scheme, based on (1) to provide information for a detailed risk assessment of the risk to all receptors that may be affected, including those off site.
3) An options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken, timetable of works and site management procedures.
4) A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in (3) are complete and identifying any requirements for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.
Any changes to these components require the written consent of the Local Planning Authority. The scheme shall be implemented as approved and must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 (and subsequent legislation) in relation to the intended use of the land after remediation.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing in order to secure the satisfactory development of the application site in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

8 Requires the prior submission of a phasing plan
No development shall take place (excluding demolition) until a phasing plan for the construction and implementation of the development hereby approved has been submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be implemented in accordance with the approved phasing plan.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing in order to secure the satisfactory development of the application site in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

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PLANNING CONSENT

9 Requires the prior submission of a sustainable drainage scheme in a phased manner
Prior to commencement of vertical build a surface water drainage scheme, broadly in accordance with Plan CWA18-128-530 P4 drainage strategy and based on sustainable drainage principles, and an assessment of the hydrological and hydro geological context of the development for each phase of development, shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented in accordance with the approved details before the development is completed and thereafter maintained.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing to prevent the increased risk of flooding, to improve and protect water quality, improve habitat and amenity, and ensure future maintenance of these in accordance with Policy TP6 of the Birmingham Development Plan 2017, Sustainable Management of Urban Rivers and Floodplains SPD and the National Planning Policy Framework.

10 Requires the prior submission of a drainage scheme
No development (excluding demolition) shall take place until a scheme for drainage of the site has been submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented in accordance with the approved details and thereafter maintained.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing in order to secure the satisfactory development of the application site to prevent or to avoid exacerbating any flooding issues, to minimise the risk of pollution and to protect the adjacent railway from the risk of flooding, soil slippage and pollution in accordance with Policies PG3 and TP6 of the Birmingham Development Plan 2017, Sustainable Management of Urban Rivers and Floodplains SPD and the National Planning Policy Framework.

11 Requires the prior submission level details on a phased manner
No development (excluding demolition) shall take place until details of finished site and ground floor levels in relation to the existing site levels, adjoining land and buildings for each phase of development have been submitted to and approved in writing by the Local Planning Authority and Network Rail. The details shall include the proposed grading and mounding of land areas, cross sections through the site and relationship with the adjoining landform and buildings. The development shall be implemented in accordance with the approved details.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing in order to secure the satisfactory development of the application site and to protect the adjacent railway and its boundary, in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

12 Requires prior submission of a Construction Employment Plan
No development (excluding demolition) shall take place until a construction employment plan has been submitted to, and approved in writing by the Local Planning Authority. The approved statement shall be adhered to throughout the construction period. The construction employment statement shall provide for details of the following:

A minimum total of 60 Person Weeks of employment per £1million spend on the construction of the site will be provided for New Entrants whose main residence is in the Local Impact Area identified from Birmingham City Council's Employment Team or an alternative source agreed by the Council provided always that each New Entrant is suitably qualified for the relevant role.

Prior to the occupation of each phase of the development a Local Employment Strategy for that phase shall be submitted to and approved in writing by the Local Planning Authority. The strategy will detail how the developer and relevant future occupiers will work alongside Birmingham City Council's Employment Access Team to identify opportunities for employing local people where appropriate to the end user, which will include identifying targets for the recruitment and training of local people inclusive of new entrants.

The opportunity can be as an 'apprentice', 'graduate', 'new entrant (job start)', or 'work placement'. The following can be counted as a New Entrant:

o A person that is leaving, or in an educational establishment (e.g. school, college or university) or a training provider; or
o An unemployed adult seeking employment that includes on-site training and assessment and/or offsite training.

The development shall be implemented in accordance with the approved details.

Reason: In order to secure the satisfactory development of the application site in accordance with Policy TP26 Local Employment of the Birmingham Development Plan 2031 and the National Planning Policy Framework.

13 Requires the prior submission of details of bird/bat boxes
No development (excluding demolition) shall take place until details of the number, design, location and post-development monitoring arrangements of (bird nesting boxes/bat boxes/bricks/tubes) to be provided as part of the development, has been submitted to and approved in writing by the Local Planning Authority. The bird/bat boxes shall be installed in accordance with the approved details and thereafter maintained.
Reason: This is required as a pre-commencement condition in accordance with the SI 2018 566 The Town and Country Planning (Pre-Commencement Conditions) Regulations 2018 as the information is required prior to development commencing to enhance the nature conservation interest of the site in accordance with Policy TP8 of the Birmingham Development Plan 2017, the National Planning Policy Framework and the Nature Conservation Strategy for Birmingham SPG.

14 Requires the submission prior to occupation of the properties of a Sustainable Drainage Assessment and Sustainable Drainage Operation and Maintenance Plan
No building or use hereby permitted shall be occupied or the use commenced until the sustainable drainage for the development has been completed in accordance with the approved Sustainable Drainage Assessment. The approved drainage system shall be operated and maintained thereafter in accordance with the approved agreement with the adopting party and the approved Sustainable Drainage Operation and Maintenance Plan.
Reason: To ensure there is no increase in risk of flooding, improve and protect water quality, improve habitat and amenity, ensure that sustainable drainage principles are upheld in the design and implementation of the strategy and ensure the future operation and maintenance of the drainage system will be in accordance with the National Planning Policy Framework (including ministerial statement 18th December 2014), Policy TP6 of the Birmingham Development Plan 2017, Sustainable Drainage - Birmingham City Council Guide to Design, Adoption and Maintenance and Sustainable Management of Urban Rivers and Floodplains SPD.

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15	Requires the submission of a contaminated land verification report Prior to occupation of any part of the development within each phase, a verification report demonstrating completion of the works set out in the approved remediation strategy for that phase of the development and the effectiveness of the remediation shall be submitted to and approved, in writing, by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. It shall also include a long-term monitoring and maintenance plan for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification plan, and for the reporting of this to the Local Planning Authority. Reason: In order to secure the satisfactory development of the application site in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework
16	Requires the submission of an amended car park layout relocating cycle storage closer to unit entrances No building shall be occupied within each phase of the development until an amended car park layout for that phase of development has been submitted to and approved in writing by the Local Planning Authority showing the cycle storage relocated to be closer to the pedestrian entrances to each unit. The development shall be implemented in accordance with the approved details. No part of any building hereby permitted shall be occupied or used until the cycle storage has been provided in accordance with the approved plans. The cycle storage shall thereafter be maintained. Reason: In order to secure the satisfactory development of the application site in the interests of highway safety in accordance with Policies PG3 and TP44 of the Birmingham Development Plan 2017, the Car Parking Guidelines SPD and the National Planning Policy Framework.
17	Requires the submission of details of pavement boundary No building shall be occupied within its phase of the development until details of dwarf walls or similar features to be erected at the back of pavement for that phase of the development have been submitted to and approved in writing by the Local Planning Authority. The approved scheme shall be implemented before that phase of the development hereby permitted is occupied and thereafter retained. Reason: To ensure that vehicles only access the site through the designated entrance in the interests of highway and pedestrian safety in accordance with Policies PG3 and TP44 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.
18	Requires the prior installation of means of access No building shall be occupied until means of vehicular, pedestrian and cyclists' access have been constructed in accordance with the approved plans. Reason: In order to secure the satisfactory development of the application site in the interests of highway safety in accordance with Policies PG3 and TP44 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.
19	Prevents occupation until the service road has been constructed No building shall be occupied until that part of the service road which provides access to it has been constructed in accordance with the approved plans. Reason: In the interests of highway safety in accordance with Policies PG3 and TP44 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.
20	Requires the delivery and service area prior to occupation No building shall be occupied until the delivery and service area for that building has been completed in accordance with the approved details. All such areas shall be kept free of obstructions, including the storage, display and depositing of materials, packaging or other items so that the service area is fully available for the parking, turning and unloading of delivery and service vehicles throughout the life of the development. Reason: In order to secure the satisfactory development of the application site in the interests of highway safety in accordance with Policies PG3 and TP44 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

21	Requires the submission of cycle storage details in a phased manner No building shall be occupied within its phase of the development until details of the provision for the secure and covered storage for cycles and motorcycles within that phase of development have been submitted to and approved in writing by the Local Planning Authority. Provision shall thereafter be implemented and maintained in accordance with the approved details. Reason: In order to secure the satisfactory development of the application site in the interests of sustainable travel options, in accordance with Policies PG3, TP40 and TP44 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.
22	Requires the submission of a car park management plan for disabled spaces No building shall be occupied until a scheme for the management of the parking spaces for people with disabilities, to ensure that such spaces are only occupied by authorised persons, has been submitted to and approved in writing by the Local Planning Authority. The development shall be implemented in accordance with the approved plan and thereafter maintained. Reason: In order to secure the satisfactory provision of facilities and access for people with mobility and sensory disabilities in accordance with Policy PG3 of the Birmingham Development Plan 2017, Places for All SPD and the National Planning Policy Framework.
23	Requires the applicants to sign-up to the Birmingham Connected Business Travel Network No building shall be occupied until the new occupiers of the premises within that phase of the development have signed-up to Birmingham Connected Business Travel Network. As part of this, occupiers are required to register with the "STARSfor" portal that Birmingham City Council is a member of - www.starsfor.org, to use this to complete a travel plan, and commit to working towards Bronze level accreditation. This should include the development of proposals for decreasing reliance on the private car and for continuing staff use of alternative means of transport. Such proposals shall be submitted in writing for approval by the Local Planning Authority and thereafter implemented. The development shall be operated in strict accordance with the approved travel plan. Reason: In order to achieve a more sustainable development in accordance with Policies PG3 and TP38 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.
24	Requires the prior submission of unexpected contamination details if found on a phased basis In the event that contamination is found at any time when carrying out the approved development that was not previously identified, it must be reported in writing immediately to the Local Planning Authority. An investigation and risk assessment must be undertaken and, where remediation is necessary, a remediation scheme must be prepared for that phase of development, submitted to and approved in writing by the Local Planning Authority. Following completion of measures identified in the approved remediation scheme, a verification report must be prepared, submitted to and approved in writing by the Local Planning Authority. Reason: To ensure that risks from land contamination to the future users of the land and neighbouring land are minimised, together with those to controlled waters, property and ecological systems, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.
25	MISC15 - Architectural Details Required: Prior to commencement of construction of the building to which they relate, the following architectural details shall be submitted to and approved in writing by the Local Planning Authority : * Windows: Overall design and materials, headers, sills, glazing bar and frame dimensions and arrangement, materials, reveal depth. * External doors: Overall design and materials, reveal depths, canopy * Building facades & roof: Materials, decorative features, eaves treatment, details of any attached vents, flues and utility equipment. * Rainwater goods: Design, materials, location. The development shall be implemented in accordance with the details approved and thereafter maintained. Reason: In order to secure the satisfactory development of the application site in accordance with policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

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26 Non-standard - secure Low/Zero Carbon Energy Generation - solar photovoltaics and air source heat pumps
Prior to their installation, a scheme for the provision of solar photovoltaics and air source heat pumps within the development as detailed in Chapter 6.0 Conclusion of the MBA Consultating Engineers Energy Strategy dated 16th October 2020 Issue P1 shall be submitted to and approved in writing by the Local Planning Authority. The development shall be implemented in accordance with the approved details and thereafter maintained.
Reason: To ensure compliance with Policy TP4 Low and Zero Carbon Energy Generation of the Birmingham Development Plan 2017 and in accordance with the National Planning Policy Guidance.

27 Requires the submission of a lighting scheme in a phased manner
The development hereby approved shall not be occupied until a detailed lighting scheme for each phase of development has been submitted to and approved in writing by the Local Planning Authority. The detailed lighting scheme shall include site annotated plans showing lighting positions for the external spaces, facades, building elevations and structures they illuminate, site plans showing horizontal and vertical overspill to include light trespass and source intensity, affecting surrounding residential premises and details of the lighting fittings including: colour, watts and periods of illumination. All lighting works shall be implemented in accordance with the approved details and shall be completed prior to the occupation of any part of the development and thereafter maintained.
Reason: To ensure a high quality of external environment, to complement the development proposals, and to protect and reinforce local character in accordance with Policy PG3 of the Birmingham Development Plan 2017, saved Paragraph 3.14 of the Birmingham UDP 2005, Places for All SPG, Lighting Places SPD and the National Planning Policy Framework.

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28 Requires the prior submission of hard and/or soft landscape details

Details of hard and/or soft landscape works shall be submitted to and approved in writing by the Local Planning Authority prior to occupation and these works shall be carried out as approved.

These details shall include:

1) A scaled plan 1:100 showing all existing vegetation and landscape features to be retained and where used, locations of individually planted trees, areas of woodland, shrubs, hedges, bulbs, and areas of grass. Within ornamental planting areas, plans should be sufficiently detailed to show the locations on different single species groups in relation to one another, and the locations of any individual specimen shrubs. Other information shall include planting schedules, noting species, plant sizes and proposed numbers/densities and details of the proposed planting implementation programme.

2) Location, type and materials to be used for hard landscaping including specifications, where applicable for:
a) permeable paving
b) tree pit design - indicating root available soil volumes and matched to species demands at mature size.
c) underground modular systems
d) Sustainable urban drainage integration
e) use within tree Root Protection Areas (RPAs)

3) Specifications for operations associated with plant establishment and maintenance that are compliant with best practise.
4) Types and dimensions of all boundary treatments
5) proposed finished levels or contours,
6) minor artefacts and structures,
7) proposed and existing functional services above and below ground.

All hard and/or soft landscape works shall be implemented in accordance with the approved details. The works shall be implemented prior to the occupation of any part of the development or in accordance with a programme agreed with the Local Planning Authority and thereafter maintained.

Any trees or shrubs which, within a period of two years from the completion of the development, die, are removed or become seriously diseased or damaged, shall be replaced in the next planting season with others of similar size and species.

Reason: In order to secure the satisfactory development of the application site, ensure a high quality of external environment and reinforce local landscape character in accordance with Policies PG3, TP3 and TP7 of the Birmingham Development Plan 2017 and saved Paragraph 3.14 of the Birmingham UDP 2005.

29 Requires the submission of hard surfacing materials
Prior to their use, details of the specific materials to be used for hard and paved surfacing shall be submitted to and approved in writing by the Local Planning Authority . The development shall be implemented in accordance with the approved details and thereafter maintained.
Reason: In order to secure the satisfactory development of the application site in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

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30 Requires the submission of boundary treatment details in a phased manner
Prior to its installation, details of the proposed boundary treatment of the site for each phase of development shall be submitted to and approved in writing by the Local Planning Authority. These details shall include plans showing the locations of existing, retained and proposed new boundary treatments and scaled drawings indicating the positions, height, design, materials, type and colour of proposed new boundary treatments. The approved scheme shall be implemented before occupation of the buildings hereby permitted and shall be retained thereafter.
Reason: In order to secure the satisfactory development of the application site in accordance with Policies PG3 and TP7 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

31 Requires tree pruning protection
All tree work shall be carried out in accordance with British Standard BS3998 'Recommendations for Tree Work' (2010 and any subsequent edition).
Reason: In order to secure the satisfactory development of the application site in accordance with Policies PG3 and TP7 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

32 Arboricultural Method Statement and Tree Protection Plan - Implementation
The development shall be undertaken and maintained in accordance with the submitted Arboricultural Method Statement dated January 2021 ref. 10516_AMS.001 and the accompanying Tree Protection Plan in Appendix 1.

Reason: In order to secure the satisfactory development of the application site in accordance with Policies PG3 and TP7 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

33 Requires implementation of the submitted landscape management plan
The Aspect Landscape Planning 'Landscape Management Plan' October 2020 7134 LMP.001A shall be implemented on completion of each phase of the development and the development shall thereafter be maintained in accordance with that document unless otherwise agreed in writing by the Local Planning Authority.
Reason: To protect the landscape character and amenity of the development site over the long term in accordance with Policies PG3 and TP7 of the Birmingham Development Plan 2017, saved Paragraph 3.14 of the Birmingham UDP 2005 and the National Planning Policy Framework.

34 Requires the provision of a vehicle charging point
No fewer than 10% of non-dedicated parking spaces shall be provided with electric vehicle charging points. The charging points shall be available for use prior to first occupation of the development hereby approved.
Reason: In order to secure the satisfactory development of the application site in accordance with Policy TP5 of the Birmingham Development Plan and the National Planning Policy Framework

35 Limits the noise levels for Plant and Machinery
The rating levels for cumulative noise from all plant and machinery shall not exceed 5dB below the existing LA90 background levels levels as defined within the M-EC report 25652-04-NAQ-01 and 10dB below the existing Laeq at any noise sensitive premises as assessed in accordance with British Standard 4142 (2014) or any subsequent guidance or legislation amending, revoking and/or re-enacting BS4142 with or without modification.

Reason: In order to secure the satisfactory development of the application site and safeguard the amenities of occupiers of premises/dwellings in the vicinity in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

36 Prevents the use from changing within the use class
Notwithstanding the provisions of the Town and Country Planning (General Permitted Development) Order 2015 (or any Order revoking or re-enacting that Order with or without modification), the development shall be used for operations falling within the B2, B8 and E(g)ii and E(g)iii use classes and for no other purpose including any other purpose in Class E of the Schedule to the Town and Country Planning (Use Classes) Order 1987, (or in any provision equivalent to that Class in any statutory instrument amending, revoking and/or re-enacting that Order with or without modification.
Reason: In order to define the permission in accordance with Policy PG3 of the Birmingham Development Plan 2017 and the National Planning Policy Framework.

37 Requires implementation in accordance with submitted building recording survey
The development shall be implemented in accordance with the Written Scheme of Investigation for Level 2 Building Recording prepared by CSA Environmental dated January 2021 ref. CSA/4837/02 submitted in support of the application unless otherwise agreed in writing with the Local Planning Authority.
Reason: To ensure that features which will be destroyed, removed or altered in the case of the works for which consent has been given are properly recorded in advance of destruction, removal or alteration in accordance with Policies PG3 and TP12 of the Birmingham Development Plan 2017, the National Planning Policy Framework and Regeneration through Conservation SPG.e Birmingham UDP 2005 and the National Planning Policy Framework.

Date: Thursday 18th February 2021

Ian J. MacLeod

Ian MacLeod, Director – Inclusive Growth (Acting)

P.O. BOX 28, Birmingham B1 1TU

Please note
This is not a building regulation approval

INFORMATIVE NOTE(S) (if any)

In arriving at this decision, Birmingham City Council has endeavoured to work with the applicant in a positive and proactive manner to secure an appropriate outcome as required in the National Planning Policy Framework, paragraph 38.

Water supplies for fire fighting should be in accordance with the "National Guidance Document on the Provision for Fire Fighting" published by Local Government Association and WaterUK

Please ensure that you visit the following link before commencing any development: http://www.water.org.uk/home/policy/publications/archive/industry-guidance/national-guidance-document/national-guidance-document-on-water-for-ffg-final.pdf

For further information please contact the West Midlands Fire Service Water Office at water.officer@wmfs.net

If you want to appeal this decision and to use the inquiry procedure, you now need to tell us, and the Planning Inspectorate, at least 10 working days in advance of appeal submission by emailing inquiryappeals@planninginspectorate.gov.uk and planning.appeals@birmingham.gov.uk of your intention. More information on this and a template to attach to your email can be found at https://www.gov.uk/government/publications/notification-of-intention-to-submit-an-appeal

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SPECIFICATION

st francis group

DEVELOPER BASE BUILD - SPECIFICATION

For

Plots: 1 - 8

At Site: Eckersall Road, Kings Norton, Birmingham

Rev 14 dated 08.08.23

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1 PREAMBLE

This Developer base build Specification has prepared for the warehouse/industrial area being constructed for **Chamberlain Properties S.À.R.L c/o Tristan Capital Partners at Eckersall Road** to a shell-only specification and the office area fully fitted out to an open plan standard in line with the industry standard of CAT A.

The principles of Best Practice will be applied to the Mechanical and Electrical Services wherever possible throughout the design process, to provide the future Occupier with a facility that balances performance with operational cost. Best Practice utilises known technology and modern design and process management techniques to produce systems that operate within sensible parameters, without excessive margins that result in over-design and poor performance.

In addition, an Independent Licensed BREEAM Assessor will be appointed to advise and manage the various credits that are available during the Development Phase for the site to enable the building(s) to be granted an "Excellent" BREEAM rating following completion of the Building Contract.

The Energy Performance Certificate (EPC) target CO^2 Index Rating for the building shall be A-25 or better.

The building envelope is to be tested to validate a maximum air leakage of $1.5m^3/hr/m^2$ at 50 Pa positive air pressure or as required to achieve Building Control Approval if lower.

Where a specific manufacturer / product is described this is by way of example and we reserve the right to substitute with what is considered by us to be and Equal or Approved basis.

This specification should be read in conjunction with the with the information approved under Planning consent ref 2020/08911/PA.

1.1 Exclusions

- Fire-fighting equipment, sprinkler installations, smoke ventilation, hose reels and hand-held extinguishers, and any other fire-fighting equipment as a requirement of the Local Authority Building Regulations and/or Byelaws, The Fire Officer or the specific requirements of the tenant or purchaser's insurer. Active and loose fire-fighting equipment required by the occupier or their / or purchaser's insurers. Base build to comply with all fire regulations required for handover.
- Mechanical, electrical, and heating installations within the warehouse / production area (with the exception of electrical supplies to dock levellers, dock doors, level access doors and external building lighting or fire escape signage/lighting required by building control.
- Intruder Alarm, CCTV, Telephone & data systems apart from CCTV and comms (incl. BT) ducting and BT lift line if not providing GSM connectivity.
- Kitchen equipment or catering equipment. (Kitchenettes as indicated on drawings to be provided)
- External signage, other than directional signage required by the Highway Authority or Building Control/Fire Officer.
- Shipping contracts for the permanent utility supplies. (The contractor is to provide all metering)
- Furniture and fittings, warehouse racking, lockers, shelving, Reception desk, blinds and fittings, vehicle wash equipment, fuel station facility, forklift battery charging facility, skips, hand dryers in WC's.
- Cellular offices, sliding folding partitions and the like
- Any other item not expressly detailed in the document.

2 GENERAL

2.1 Overview

The design shall be in accordance with current Regulations and standards, which shall be approved by the Local Authority or other delegated body for the purposes of the Town and Country Planning Acts, Building Regulations and all other relevant Regulations, including the requirements of the Local Fire Prevention Officer and regional fire Acts of Parliament. The materials, workmanship and construction shall be in accordance with all British Standards and Code of Practice and executed to manufacturers recommendations, but not limited to:

- Construction (Design and Management) Regulations (CDM) 2015 and, when complete, the design shall take into account the relevant requirements of the Workplace (Health, Safety and Welfare) Regulations 1992.
- Environmental Protection Act 1990
- Construction (Health, Safety & Welfare) Regulation 2007
- All applicable European Standards,
- Health and Safety at Work Act 1974
- Electricity Equipment Safety Regulations 2016.
- Water Supply Regulations
- IET Regulations
- B&ES (HVCA) Specifications
- British Standard Codes of Practice
- CIBSE Guides, Codes, Commissioning Procedures and Technical Memoranda
- BRE digests and technical publications
- European product directives
- Water Resources Act 1991
- Environment Agency
- (The Disability Discrimination Act 2005) – Occupier item
- LPC Design Guide for the Fire Protection of Buildings
- (Sustainable and Secure Building Act 2004) – Energy
- The Gas Safety Regulation
- Clean Air Acts
- Building Regulations
- Specific requirements of the Utility Local Authorities
- Local Planning Authority
- The Factories Act

The design should achieve the client's requirement for an EPC rating of 'A' with relevant SBEM calculations.

The design should give consideration to the Client's requirement to achieve a BREEAM rating of 'Excellent'. The MBA BREEAM Pre-Assessment (which demonstrates the feasible BREEAM score for the proposed development is in excess of 70%) is included within the Appendices of the tender issue.

The Contractor shall include all associated fees for BREEAM Accreditation including BREEAM assessor fees during the contract.

Whole Life Carbon Assessment
The Contractor will provide a whole life carbon assessment for the construction phase and the embodied carbon impacts from the product and construction stages should be measured and issued at Practical Completion.

Measurement Survey

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The Contractor shall, procure the appointment of an experienced measurement surveyor (the "Measurement Specialist") to carry out all measurements of the Development and the appointment shall provide that:-

a) the Owner & Employer can rely on its report;
b) the Measurement Specialist will carry out the measurements and report the measurements to the Owner and the Development Manager as expeditiously as possible;
c) as soon as practicable after the frame of the Development has been erected, the Contractor shall instruct the Measurement Specialist to carry out an initial measurement and assessment of the expected floor area and the Contractor shall give the Measurement Specialist access for that purpose

It is the responsibility of the incoming occupier to satisfy the specific requirements of the local Fire Service for their internal layout and obtain the necessary licence / consent.

Note all U values stated within the document are a minimum and are subject to thermal modelling being undertaken

		Unit 1	Unit 2	Unit 3	Unit 4
Warehouse	GIFA	66,500 ft²	57,000 ft²	52,250 ft²	39,900 ft²
First Floor Office	GIFA	3,500 ft²	3,000 ft²	2750 ft²	2,100 ft²
TOTAL	**GIFA**	**70,000 ft²**	**60,000 ft²**	**55,000 ft²**	**42,000 ft²**
Clear Height to Haunch		12.5m	10m	10m	10m
Roof Pitch		6°	6°	6°	6°
Roof lights		10%	10%	10%	10%
FM 2 Level Floor		50 kN/m²	50 kN/m²	50 kN/m²	50 kN/m²
Yard Depth (secured)		45m	45m	45m	38m
Docks Levellers		7 No.	6 No.	6 No.	3 No.
Level Access Doors		2 No.	2 No.	2 No.	2 No.
Total Staff / Visitor Car Parking		113 No.	101 No.	90 No.	64 No.
Incl Disabled Parking		3 No.	2 No.	2 No.	2 No.
Incl Active Electrical Charging Points		2 No.	2 No.	2 No.	2 No.
Passive Electrical Charging Points		6 No.double	5 No.double	5 No.double	4 No.double
Gas loading		520kW	446kW	409kW	312kW
Electrical loading		900kVA	800kVA	500kVA	400kVA
Water		Min 0.6l/s Target 1.0l/s	Min 0.6l/s Target 1.0l/s	Min 0.6l/s Target 1.0l/s	Min 0.6l/s Target 1.0l/s
All Buildings:					
		• *Offices Fitted to CAT A Standard* • *Office will be ventilated to CAT A standard* • *Offices will have Raised Access Floors*		• *Ceramic tiles to ground floor reception* • *Double height atrium to reception with Feature lighting* • *BREEAM "excellent" rating* • *EPC "A" Rated*	

		Unit 5	Unit 6	Unit 7	Unit 8
Warehouse	GIFA	24,700 ft²	50,350 ft²	50,350 ft²	38,000 ft²
First Floor Office	GIFA	1,300 ft²	2650 ft²	2650 ft²	2,000 ft²

TOTAL	GIFA	26,000 ft²	53,000 ft²	53,000 ft²	40,000 ft²
Clear Height to Haunch		8m	10m	10m	10m
Roof Pitch		6°	6°	6°	6°
Roof lights		10%	10%	10%	10%
FM 2 Level Floor		50 kN/m²	50 kN/m²	50 kN/m²	50 kN/m²
Yard Depth (secured)		38m	38m	35m	35/45m
Docks Levellers		1 No.	5 No.	5 No.	4 No.
Level Access Doors		2 No.	2 No.	2 No.	2 No.
Staff / Visitor Car Parking		47 No.	83 No.	84 No.	69 No.
Disabled Parking		1 No.	2 No.	2 No.	2 No.
Active Electrical Charging Points		2 No.	2 No.	2 No.	2 No.
Passive Electrical Charging Points		2 No.double	4 No.double	4 No.double	3 No.double
Gas loading		193kW	394kW	394kW	297kW
Electrical loading		500kVA	700kVA	500kVA	400kVA
Water		Min 0.6l/s Target 1.0l/s	Min 0.6l/s Target 1.0l/s	Min 0.6l/s Target 1.0l/s	Min 0.6l/s Target 1.0l/s
All Buildings:					
		• *Offices Fitted to CAT A Standard* • *Office will be ventilated to CAT A standard* • *Offices will have Raised Access Floors*		• *Ceramic tiles to ground floor reception* • *Double height atrium to reception with Feature lighting (except unit 6).* • *BREEAM "excellent" rating* • *EPC "A" Rated*	

An electricity point of connection application will be made for 4.7 mva to serve the development units as described in the table above ~~The first circa 2.0MVA of which will be distributed on day 1 as above, the remainder to be distributed as occupier demands dictate via developer installed ductwork infrastructure. A second application will also be made for a 5mva supply for consideration.~~

3. INDUSTRIAL / WAREHOUSE ELEMENTS

3.1 Earthworks and Substructures

The Main Contractor is to undertake his own earthworks testing and investigations to verify any assumptions and the foundations shall be designed in accordance with the results and recommendations of these.

The foundations and sub-base for the structural frame will be designed by the Contractor's Engineer in accordance with BS 8004:1986 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 8110:1997 and/or BS EN 1992 – 1-1, the Structural Use of Concrete.

Refer to the Civil/Structural Engineer's drawings for detailed information relating to the requirements for vibro piling and ground improvement. Any ground improvement or vibro piling works are subject to specialist contractor's design.

Sub-base material shall be a minimum granular type II material to Clause 8.04 of 'Specification for Road and Bridge Works' and to the approval of the Structural Engineer. Recycled aggregates to be utilised where practical, however testing of recycled aggregates shall be undertaken by an independent monitoring company to ensure compliance with GAC requirements.

All necessary hardcore and filling shall be carried out from the subsoil contours to the formation levels of the building in materials approved by the Structural Engineer.

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The concrete foundations and ground floor slabs shall be designed and constructed in mass concrete or reinforced concrete in accordance with the relevant Codes of Practice and shall incorporate suitable gas precaution measures agreed with the Building Control Officer. Concrete stanchions bases, retaining walls and strip footings shall be in 35N/mm2 28-day strength OPC concrete or such other concrete as specified by the Structural Engineer, including all necessary reinforcement and supply and fixing of holding down bolts, as required.

The concrete shall provide the necessary protection against sulphate attack in accordance with BRE digest 363.

3.2 Ground Floor Slab

A reinforced concrete ground slab will be provided to all units with a power floated finish will be provided to all ground floor areas within the building.

Prior to pouring the ground floor slab, the building envelope should be watertight and loading doors fixed. If this is not achievable then temporary sheeting should be provided by the Main Contractor to seal and openings and provide protection to the slab from wind and rain.

The concrete is to be in accordance with BS EN206 and have a minimum compressive cube strength of 40N/mm2 at 28 days. The concrete will have a minimum cement content of 325kg/m3 of a maximum cement content of 450kg/m3 with a maximum water cement ratio of 0.50. The concrete will be designed to have a maximum slump of 75 mm due to water; the use of super-plasticisers will be permitted to obtain the workability required by the Sub-Contractor for placing the concrete.

Lignite is not permitted for use as an aggregate.

Prior to construction of the slab, the proposed concrete mix is to be tested to show that its coefficient of drying shrinkage is less than 0.045%. Tests are to be in accordance with BS EN 1367 pt4.

The slab will be designed in accordance with the recommendations of the current Concrete Society TR34 fourth edition 2016, for a maximum UDL (Uniformly Distributed Load) loading of 50kN/m2 (including the area under the first floor offices) with a minimum thickness of 175mm (this is after tolerances so ALL areas of the floor slab must be a minimum of 175mm thick). The floor slab will be constructed to accommodate the following rack loadings 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 as follows:-

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3.2.1 A standard specification rack leg loading is assumed as followings and based upon 100 x 100 base plates set to a minimum back-to-back distance of 300mm and a minimum distance of 150mm away from floor joints anywhere on the floor:

3.2.1.1 A five tonne Rack Leg load based upon up to 10m to haunch.

3.2.1.2 A seven tonne Rack Leg load based upon 12.5m to haunch.

3.2.2 Where joints are provided in the construction of the floor, they will be kept to a minimum where possible and should be:

3.2.2.1 detailed in accordance with the TR34 standards and designed so that no vertical movement occurs across the joint.

3.2.2.2 Day joints will be tied or reinforced with approved type edge plate reinforcement (Permaban Alpha joint or equal approved).

All joints are to be sealed prior to practical completion with sealing compounds having a minimum shore hardness of 40. These joints are to be inspected at three monthly intervals by the Contractor during the defects liability period and checked for arris damage. Any significant arris damage must be repaired with an epoxy mortar placed in accordance with the manufacturer's recommendations. At the end of the defects liability period, the trafficked joints in the aisles or free movement areas of the floor slab are to be resealed. The sealant shall be a minimum shore hardness of 80 for sawn joints and of a suitable shore hardness for the design width of movement joints.

3.2.2.3 The Main Contractor will coordinate joint locations with the tenant's racking layout. A design freeze date for this layout will be provided is 6 weeks prior to the slab pour, and where a layout cannot be obtained a generic layout will be agreed with the Employers Agent

3.2.2.4 Joints shall be arranged having regard to planned saw-cut locations, so that no joint rail ends within 600mm of a saw cut.

3.2.3 The ground floor slab will be constructed to a FM2 standard and a floor flatness survey shall be carried out within 14 days of construction and provided to the Structural Engineer

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3.2.4 Perimeter ground beam to the warehouse floor slab will be a pre-cast ground beam or other equal approved. If a galvanised edge beam is proposed these shall have drainage holes.

3.2.5 The ground floor slab-wearing surface shall:

3.2.5.1 have a minimum abrasion resistance of AR1 in accordance with table 2 of BS 8204 Part II.

3.2.5.2 One abrasion test is to be carried out for each 2000m2 of slab or part thereof, in accordance with BS 8204 to confirm that appropriate abrasion resistance has been achieved.

3.2.6 Upon completion of the final power floating operation, the floor slab will be:

3.2.6.1 sprayed with an acrylic based, curing, sealing, and hardening membrane, with a curing efficiency of 90%.

3.2.6.2 The floor shall not be trafficked for a minimum of four days following the sealing operation.

3.2.7 The ground slab will be constructed on a minimum 1200-gauge P.I.F.A. polythene damp-proof membrane laid on a layer of hardcore with a minimum thickness as stipulated by the Structural Engineer. DPM joints to be taped if required by the Structural Engineer or Building Control.

The hardcore is to be laid to the specific minimum thickness in layers and compacted using a 10 tonne dead weight roller with a minimum of 4 passes in each direction perpendicular to each other. Where necessary, the hardcore layer can be blinded with a fine material to close the surface, sand must not be used. The surface tolerance of the hardcore will be +5 mm and –25 mm.

3.2.8 All efforts should be made in the construction and detailing of the floor to reduce the possibility of random cracking. If cracks do occur, they are to be pressure grouted with a low viscosity epoxy mortar if they are wider than 0.8 mm.

3.3 Structural Frame

The structural steel frame will be a multi span portal frame having a clear height to the underside of haunch as noted below and alternate valley columns will be omitted designed in accordance with BS 5950 Part1:2000 'Design of Steel Structures' with dead and imposed loading to BS 6399 Part1:1996, snow loading to BS 6399 Part3:1988, wind loading to BS 6399 Part2:1997 and all relevant Codes of Practice in force at the time of construction and generally to the satisfaction of the Building Regulations Authority. Steel sections to BS4: Part 1: 1993 and to BS.EN10025: 2004 and BS.EN10210: Part 1: 2006 for weldable structural steel. All work will be carried out in compliance with the current edition of the National Structural Steelwork Specification and SCI's Best Practice for the Specification and Installation of Metal Cladding and Secondary Steelwork.

The internal columns to the warehouse shall be provided on a 'hit and miss' basis and shall be free from any diagonal wind bracing. Unless shown otherwise on the drawings, no internal columns will be allowed within the open plan office areas to the office block.

The steel frame and cladding design and deflections must be considered jointly.
The frame is to be designed to accept all dead, live and wind loads in accordance with all

relevant codes of practice and in compliance with the Building Regulations. The frame and purlins will be capable of supporting a service loading arising from mechanical electrical and sprinkler installation plant, equipment, and fittings 0f 0.25kN/m2 and an additional allowance of 0.15kN/m2 for future photovoltaic roof mounted array totalling 0.4kN/m² over the whole area of the roof. Loadings from the potential use of syphonic drainage along any valleys should also be allowed for. The office first and second floor will be designed for a superimposed loading of 2.5kN/m² and an additional loading of 1.0kN/m² for partitions, the plant deck will be designed for a superimposed loading of 7.5kN/m².

All columns will be designed with pinned bases or, for valley line columns, base fixity may be adopted provided that foundations are designed to accommodate the resulting base moments, except where required for Fire Collapse by Building Regulations, where the bolts and baseplates will be partially fixed in accordance with the "Steel Construction Institute" guidance SC1-P313. The steelwork will be designed and constructed to allow the building envelope to achieve compliance to Part L2A of the Building Regulations. If applicable, a substantial steelwork member is to be provided in hipped roof areas to directly support the roof sheets. All purlins and rails will be fixed in accordance with manufacturer's recommendations and will have a minimum thickness of 1.45mm to assist a positive cladding fixing. All sheeting rails within 2.0m of FFL to be installed 'toes down' to prevent build-up of debris.
Where corner posts to glazed corners are to be used, they are to be either steel hollow sections and painted to match the curtain wall framing or clad and kept away form the back box section by minimum 200mm.

The steel frame shall be designed to meet the following standards: -

- All frame bolts are to be zinc plated or galvanised finish.
- The roof and wind loads shall comply with BS 6399 Part2:1997 including allowance for drifting snow on the valley of the structure and against parapets if provided.
- All doors shall be fully framed in steelwork, including all frame extensions necessary to support sectional door fittings and canopies.
- Sag rods and tension wires shall be free from distortion, properly adjusted.
- The structure must be capable of carrying signage and door frames in the positions shown on the drawings.
- Fire protection where required will be provided.
- Structural stays/restraints to columns within office areas shall not be designed in a way that affects internal office areas or requires oversized boxing reducing office floor area

3.3.1 The structural frame will be a steel portal frame design with a minimum clear height to underside of haunch (at intersection of haunch and stanchion) of;

Unit 1 – 12.5m

Units 2,3,4,6,7&8 – 10m

Unit 5 – 8m.

3.3.2 All steelwork will be shot blasted to BS EN ISO 8503:Part 2, before painting with one coat of epoxy 2 pack high building 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 light grey as a minimum. Cold formed sections will be manufactured from hot dipped galvanised coil to BS EN 10346:2009 and BS.EN10143: 2006.

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3.3.3 Steelwork where encased in masonry or below ground, it will receive two coats of bituminous paint or glassflake. Where remedial works are required to webs, flanges, beams, columns or other steelwork that is visible in the complete building the whole area of the affected steelwork will be coated to provide a uniform appearance.

3.3.4 Galvanised surfaces of purlins and sheeting rails will be left un-coated to BS EN 0143 (2006) or better.

3.3.5 An Intumescent paint system in a colour to match the general steelwork primer (where visible) or proprietary fire lining board will be applied in accordance with Building Control requirements, to achieve any fire resistance required including boundary conditions. Testing is to be carried out and results issued to confirm paint thicknesses comply. Overspray is to be avoided to the underside of the 1st floor slab. Where fire protection of the steel frame is necessary it must be resistant to impact damage up to 2m above finished floor level. The paint will be coloured to achieve the nearest match to the remainder of the steelwork

3.3.6 The frame designer will limit the design deflection of the main frame, secondary steelwork and any member which provides support or restraint to glazing, masonry 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.

3.3.7

The secondary steelwork will be aligned to ensure compatibility with the roof covering and wall cladding and the minimum roof pitch of 4.0 degrees (2.5° after deflection) is achieved. The steelwork subcontractor will carry out a full dimensional survey of the secondary steelwork to the walls and roof before commencement of the wall cladding and roof covering and is to confirm the required tolerances have been achieved. The tolerances will require to be accepted and signed off by the cladding/roofing sub-contractor before commencing the cladding/roofing works on site.

3.3.8 Bracing is to be circular hollow section and is to be located free from all open areas, internal stanchions, and door/window openings.

3.3.9 Any dirt, mud and the like is to be cleaned off the steelwork surfaces prior to erection.

3.4 Roof Construction

3.4.1 Roof Panel type

3.4.1.1 The roof system will be a non-combustible Trapezoidal built-up system (CA Building Products or Euroclad or equal and approved)

3.4.1.2 Alternatively, at the discretion of the Developer and only with the approval of the Buyer, a Kingspan KS1000 RW Quadcore Trapezoidal through-fix profiled insulated roof panel incorporating the Kingspan XL Forté external coating in a standard colour and 75mm Class A End Lap may be considered as an alternative.

3.4.1.3 The roof and will benefit from a take back scheme at end of life to enable reuse or recycling (or equal and approved).

3.4.1.4 Core thickness 100mm to suit with a U-Value 0.21/m^2K

3.4.1.5 The external and internal faces of the panel to be Class 0 in accordance with the Building Regulations when tested to BS 476: Part 6: 2009 and Part

7: 1997. The panel is rated FAA when tested to BS 476: Part 3: 2004, or BROOF(t4) in accordance with EN 13501-5.

3.4.1.6 The roof system is to be non-fragile in accordance with HSE Materials Standard ACR[M]001:2000 'Test for Fragility of Roofing Assemblies'.

3.4.1.7 The roof system is to be certified to Loss Prevention Certification Board (LPS) 1181-Part 1 Issue 1.2.

3.4.1.8 Any minor scratches or scuff marks to the coating of the roof sheets shall be made good with approved touch up paint, applied in accordance with the Manufacturers recommendations on completion of the roof.

3.4.1.9 The roof system is to be tested for fire resistance in accordance with BS476: Pt 22 and provide a minimum 30 Minutes Integrity & 15 Minutes Insulation. Supporting Structure to be designed for the same resistance period.

3.4.1.10 All swarf shall be washed away from the roof before corrosion staining occurs.

3.4.1.11 Detail work to ridge, eaves, hip and verge will be in accordance with the manufacturer's recommendations and the Architect's design details to ensure continuity of the insulation.

3.4.1.12 The roof system is to be covered by BBA Agreement Certificate 07/4428.

3.4.1.13 The roof cladding systems are to be tested in accordance with LPS1181 to achieve a minimum grade 'EXT-B' certification, certificate reference LPCB 443a.

3.4.1.14 The roof external profile is to be a trapezoidal panel, with 0.70mm thick nominal galvanised steel coated with Colorcoat HPS200 Ultra® from Tata Steel (colour from the standard range) with a Confidex® Guarantee of 40 years.

3.4.1.15 The roof cladding will be a non-Fragile system assembly, fixed in accordance with the manufacturers recommendations. The system to incorporate 0.4mm thick minimal steel thickness liner panel with bright white finish, minimum 200mm non-combustible Therma quilt and all related manufacturers Components, to achieve as a minimum a designed thermal 'U' value of 0.18W/m^2K.

3.4.1.16 Stainless steel fixings will be used externally to provide a guarantee on the installed system of 25 years.

3.4.1.17 The minimum designed roof pitch will be 4.0 (2.5° after deflection).

3.4.1.18 The internal lining to the main roof will be Class 'O' rating for surface spread of flame, as tested to BS 476: Part 7.

3.4.1.19 The internal lining panel must be sealed at the side laps using 50mm T-Foil Plus tape and end laps using T-strip 6x5. The installer is to ensure that the tape is installed accordingly as the work proceeds.

3.4.1.20 Cranked Ridge Liners should be utilised where appropriate to ensure continuity of internal surface, improving air tightness and eliminating the risk of water ingress.

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

3.4.1.22 Rooflights will be triple skinned GRP to achieve a U-value of 1.30 W/m²K. Rooflights will be provided to approximately 10% of the floor area, installed as per the manufacturer's instructions and are to be Non-Fragile for a period of 25 years.

3.4.1.23 The distribution of rooflights over the warehouse/production area will be as even as possible, subject to constraints imposed by any applicable Fire and Boundary Conditions. Any rooflight location shown on the drawings is notional only and may be varied by the Roofing Contractor, subject to approval, prior to construction to achieve the most economical and practical layout, provided that the locations are fully in accordance with the requirements of the Building Regulations.

3.4.1.24 Guidance contained in the Advisory Committee for Roof Safety Good Practice Guide Ref ACR(CP)001:2014 Rev 4 is to be followed, adopted and the evidence is to be submitted to the Principal Designer, Principal Contractor, Health & Safety Advisor and Employers Agent prior to work commencing.

3.4.1.25 10% of the warehouse floor area will be attributed to rooflights in an even distribution using Factory assembled translucent rooflights fixed to steel roof purlins in accordance with the manufacturer's instructions, subject to any constraints imposed by any applicable fire and Boundary conditions. The layout should be arranged to ensure that natural daylight reaches the corners of the warehouse. Minimum U Value 1.30 W/m²K and a solar gain co-efficient of less than 0.50

3.4.1.26 Subject to design and Principal Designer's advice consideration will be made for a Mansafe System to facilitate safe roof access and maintenance to all roof areas including harnesses and lanyards. Access from ground level to the roof areas is envisaged by means of a "cherry-picker" mobile platform or similar.

3.4.1.27 There will no roof access points within the building, unless required by Building Regulations or Designer's Risk Assessments.

3.4.2 Rainwater Goods

3.4.2.1

Valley and perimeter gutters are to be a galvanised steel gutter system (single skin or insulated depending on location). Boundary and valley gutter 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). The gutter system guarantee is up to 25 years. All internal 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.

3.4.2.2 The water will be taken from the gutters by a syphonic drainage system with flows split 50% primary and 50% secondary systems. Discharge locations for secondary systems to be agreed with Client/Architect but it is envisaged that the secondary systems discharge into the dock areas externally.

3.4.2.3 The drainage system shall be designed and constructed to comply with BS EN 12056-3:2000, BS 8490:2007 and the following design criteria.

- The geographical location of the building.
- Design life of 25 years.
- Category '3' risk protection.

3.4.2.4 All pipework to be installed above the portal haunch level to maintain minimum clear height and internal rainwater pipes are to be located within the web of the steel and suitably protected to prevent against accidental damage. Internal pipework shall be insulated to prevent condensation

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

3.4.2.6 Syphonic pipework shall be firmly attached to an engineered continuous railing system, using appropriate pipe clamps it shall be securely fastened back to the main structure at a maximum of 2m centres, to provide adequate and proper restraint against thermal movement. Additional bracing will be provided within 100mm of the closest edge of the pipework, end branch connections and where required.

3.4.2.7 Indicative weir outlets will be provided to the ends of valley gutters and at 50m intervals on perimeter gutters to provide advance warning of blockage of the syphonic system.

3.5 External Walls

3.5.1 The wall cladding will be a non-combustible "built-up" profiled cladding, with a minimum 25-year guarantee. Where detailed on the architects drawing:

3.5.2 Office area only will be a non-combustible built-up system with a MicroRib type profile to correspond with the Architects drawings. Alternatively at the discretion of the Developer and only with the approval of the Buyer, a Kingspan Quadcore Architectural Wall Panel laid horizontally with a MicroRib profile and either a XL Forté or Spectrum External Coating System in a standard colour and an Option A Top Hat Vertical Joint.

3.5.1 Core thickness to suit a U-Value of 0.21W/m²K

3.5.2 Warehouse area only will be a "Built-up" non-combustible system.

3.5.3 There will be NO internal dado blockwork walls to warehouse external walls.

3.5.4 The wall system is to be certified to Loss Prevention Certification Board (LPS) 1181-Part 1 Issue 1.2.

3.5.5 Where required to provide fire protection, under the Building Regulations, to an external wall, then a suitably rated insulated panel or built-up system will be incorporated. The wall system is to be tested for fire resistance in accordance with BS476: Pt 22 or EN13501-2 and provide the required Integrity and Insulation performance. Supporting Structure to be designed for the same resistance period.

Prohibited Materials

Neither the contractor nor his design team shall specify for use or permit to be used any of the following prohibited materials in relation to the development or any part or parts of it:

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Any materials or substances generally known to be or suspected of being deleterious at the Base Date for the Contract or use, including, but without limitation substances which have been referred to by the Building Research Establishment as being hazardous to health and safety or to the durability of the Development in the particular circumstances in which they are used and substances which are not in accordance with current British and/or European Standard Specifications and Codes of Practice or with the publication entitled "Good Practice in the Selection of Construction Materials" published by the British Council for Offices.

The contractor is to note that PIR products are classified as Prohibited Materials and are not to be used in the works. The contractor is to note that in addition to the exclusion of this material within composite panels the exclusion includes PIR backing to glazed look alike panels, pipework insulation and insulation used for floor slabs.

3.5.6 The external and internal faces of the wall to be Class 0 in accordance with the Building Regulations when tested to BS 476: Part 6: 2009 and Part 7: 1997

3.5.7 Where the elevations are required by Building Control to provide fire protection an appropriate design response will be made.

3.5.8 All flashings and facias are to be galvanised steel with coatings matching the adjacent cladding panels unless detailed otherwise on the Architects drawings.

3.6 Dock Walls and Doors

3.6.1 Dock leveller pits and retaining walls will be proprietary prefabricated off-site units and shall be fair faced finished including dock leveller pits and tailgate slots (all to the Structural Engineer's details and manufacturers design and recommendations). Precast fair faced insulated wall panels, erected over loading docks to provide fixing for dock shelters with openings cast in for loading doors. All dock leveller biscuits are to be designed to a minimum floor loading at least equal to the main warehouse floor loading.

3.6.2 External retaining walls to the sides of the dock access can be either of fair faced in-situ or precast concrete all to the Structural Engineer's details up to main yard level with galvanised steel balustrade and vehicle barriers each side.

3.6.3 Each dock access door location will be fitted a Hörmann (or equal and approved) fully hydraulic dock leveller of 6000kg single axle load capacity; platform 2500mm x 2000mm with TWIN hydraulic rams and 500mm hinged curved swing lip complete with "T" type adjustable integral pit frame for suspended type dock levellers or equal approved. Operating range of dock leveller to be +300mm/-300mm from FFL. Finish as per Architects drawing to a standard RAL finish.

3.6.4 Each dock access door location will be fitted a Hörmann (or equal and approved) heavy-duty pivot type retractable dock shelter with crash resistant side frames with front flaps specially reinforced, self-adjusting top frame with rain channel for drainage purposes or equal approved.

3.6.5 Each dock leveller will be fitted with an 18watt L.E.D. angle poise loading light and interlock safety device to prevent door from operation when dock is in the raised position. Installation to be complete with internal control.

3.6.6 Each dock access door location will be fitted a Hörmann (or equal and approved) heavy duty pivot type retractable dock shelter with crash resistant side frames with front flaps specially reinforced, self-adjusting top frame with rain channel for drainage purposes.

3.6.7 Below each door location, two heavy duty moulded rubber bumpers (450mm x 200mm x 100mm) will be bolted to the dock wall. Final position to be agreed.

3.6.8 External 24v Dc 100mm dia. red and green LED traffic light system with directional on reversing driver's side compliant to BS 873 standard with mimic/repeater lights internally.

3.6.9 Doors and dock levellers to be CE Marked to meet European Directives. All dock/door locations to be numbered internally and externally.

3.6.10 Tailgate slots will be provided to all dock levellers.

3.6.11 Each dock access location will be provided with 1 pair of low-profile galvanised steel tubular wheel guides 2000mm long x 170mm diameter, splayed on plan, will be provided the height of the guides to be such that they do not interfere with lorry skirts. Wheel guides will be painted with black and yellow strips.

3.6.12 Dock Doors will be proprietary units and shall be:

3.6.12.1 Hörmann HLS 2FR 20-25 or equal and approved, insulated, sectional panel, vertical lift and will be electrically operated (with manual override facility), Standard 2.86m wide x 3m height Insulated, sectional panel, vertical lift doors with spring support beam by door supplier at low level for ease of maintenance and 25mm thermal movement provision on door tracks.

3.6.12.2 Neutral acrylic double-glazed vision panels including sliding bolts electrically interlocked and anti-fall devices.

3.6.12.3 The surface finish to the external face of the doors will be from the standard range of polyester colours. Colours will be as per the Architect's elevation drawings.

3.7 External Steps

3.7.1 Where applicable external steps to the dock level area will be constructed in galvanised steel or pre-cast concrete, with a slip resistant finish. Handrails and balustrading will be provided in circular hollow section hot dipped galvanised mild steel. Steel staircases shall be provided with drilled drainage holes to prevent standing water.

3.7.2 Refuge areas are to be provided in accordance with any Building Regulation requirements.

3.8 External Doors

Warehouse fire escape and personnel doors and frames will be:

3.8.1 Powder coated steel and will be complete with integral hinges, hinge bolts and high security panic bars, locking top and bottom and swing restraint stays. Doors will be securely bolted to the structure and sealed to the adjacent structure with two-part polysulphide sealant to prevent the ingress of water and to comply with Building Regulations.

3.9 External level access doors:

3.9.1 Will be Hörmann SPU 67 Thermo, or equal and approved and will be electrically operated, with manual override, insulated, anti-fall devices, sectional panel, vertical lift doors with spring support beam by door supplier at low level for ease of maintenance and 25mm thermal movement provision on door tracks.

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3.9.2 Standard door opening 4.0m wide x 4.80m high with neutral acrylic double-glazed vision panels.

3.9.3 Control panel and electronically interlocking bolt to secure the door internally with anti-fall devices

3.9.4 Tubular steel sleeve mounted (for ease of removal if damaged) bollards shall be provided at each level access door both internally (2nr) and externally (2nr)

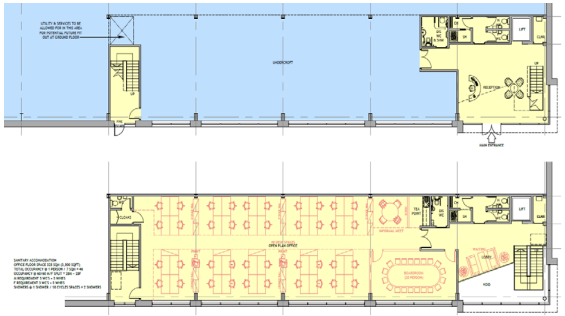
3.10 Offices

3.10.1 The office to first floor areas will be fitted out to an open plan standard, but with consideration to facilitating future Boardroom and meeting room requirements.

3.10.2 The structural steel frame will generally be in accordance with Section 3.03.

3.10.3 The area designated as office space to the ground floor slab (not the undercroft area which is to be as section 3.2) will be reinforced concrete with a power floated finish and a minimum of 150mm thick and insulated to the requirements of Building Control. It shall be designed to take a superimposed loading of10kn.m2.

3.10.4 Typical Layout



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3.10.5 Upper floors will be precast concrete planks or composite decking with a reinforced insitu-concrete topping spanning onto a loadbearing steel frame.

3.10.5.1 Precast units will be grouted in position.

3.10.5.2 Structural design shall be in accordance with the recommendations of BS 8110 & BS 6399.

3.10.5.3 The suspended floors will be designed to support a superimposed loading of 2.5 kN/m2 plus 1 kN/m2 for lightweight partitioning, together with the self-weight of finishes indicated in this Specification.

3.10.6 Staircases shall be of steel or reinforced concrete construction designed for a superimposed loading of 5kN/m2. If the main staircase is of steel construction, it shall have screeded tray treads for drum deadening and be complete with nosing's and the like.

3.10.7 The roof of the offices will be constructed using Z purlins or similar lightweight support structure to achieve a 60-minute compartment.

3.10.8 The compartment walls to the warehouse will be "White Wall' (heavy-duty composite panels with rockwool core to provide 2hr fire protection) or similar approved from first floor to underside of office roof soffit.

3.10.9 Windows and External Doors

3.10.9.1 Windows and curtain walling are to be aluminium polyester powder coated, colour to be as detailed on Architect's drawings. For security purposes the external pane shall be toughened, and the internal pane laminated, with one of these panes compliant to BS EN 356 P1A attack resistance standard.

3.10.9.2 The system shall be Kawneer, Schucco, Technical or equivalent approved and comply with BS 6262.

3.10.9.3 Any external pedestrian doors must comply with the requirements of with PAS24, Loss Prevention Standard 1175 Security Rating 2 (LPS1175 SR2) as a minimum. Doors shall comply with part L2 of the current Building Regulations and shall have been tested in accordance with the requirements of BS 6375. Windows are to be openable for ventilation with safety locking devices to prevent excessive opening and must comply with PAS 24 Specification. The windows are to be top hung and are to be evenly and uniformly distributed. (NOTE: curtain walling doors are deemed not compliant for PAS24 and security rating so these are excluded from this requirement).

3.10.9.4 Door-stops shall be provided to both sides of all external doors.

3.10.9.5 The number of opening lights must meet the requirements of the Building Regulations relative to daylight and ventilation and in accordance with the Architect's drawings.

3.10.9.6 All sections to be thermally broken and no glazing transom shall be designed within a vision zone at 1200mm to 1700mm AFFL

3.10.9.7 All windows and curtain walling will be glazed with factory sealed solar tinted double-glazed units and insulated spandrel panels as detailed on the Architects elevations all in accordance with the requirements of Building

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Control, and installed using a secure glazing retention system of either security glazing tape, a dedicated security sealant or gasket, or a secure mechanical fixing system that passes the glazing retention test with PAS 24:2012 or by an indicative test on the retention system to LPS 1175: Issue 7, SR1 or STS 202: Issue 3, BR1.

3.10.9.8 On emergency exit doors any panic bar exit facility must meet either BSEN179 or BSEN1125.

3.10.9.9 3 sets of all keys to external doors to be provided.

3.10.9.10 A letter plate is to be provided in or adjacent to the main entrance.

3.10.10 Internal Walls

3.10.10.1 Proprietary high-density plasterboard partitioning system to offices at first floor.

3.10.10.2 Internal walls within staircase cores and toilet areas will be plasterboard stud partitioning system such as Lafarge Megadeko or similar. All walls are to meet Building Control approval with regards to fire and smoke.

3.10.10.3 Dividing walls to the warehouse, office and cores will be "White Wall' (heavy-duty composite panels) from ground floor to underside of office roof soffit with IWL system (internally) and will need to achieve a u-value of 0.35 W/m²K.

3.10.10.4 The area designated as office space to the ground floor slab floor will have no plasterboard lining to the external wall. An MDF boxing frame to the window surround.

3.10.10.5 Ground floor

3.10.10.5.1 The floor finish to the entrance area will include a Gradus framed matwell with a Gradus high-quality mat barrier to door opening.

3.10.10.5.2 Matwell will incorporate heavy-duty brushes and aluminium runners. Colours will be chosen from the supplier's standard range.

3.10.10.5.3 The internal reception and corridor area will have a non-slip ceramic tiled floor and 100mm high matching tile skirting finish throughout. Manufacturer, Solus Ceramics (or equal and approved), Nebulous, Natural, Pennine 600 x 1200mm, Full Bond.

3.10.10.5.4 Toilets and Accessible WC will be finished with a non-slip ceramic tiled floor finish and 100mm high matching tile skirting finish throughout. Manufacturer, Solus Ceramics (or equal and approved), Nebulous, Grip, Pennine 600 x 600mm, Full Bond.

3.10.10.5.5 Accessible WC and Shower will be finished with a non-slip ceramic tiled floor finish for barefoot traffic and 100mm high matching tile skirting finish throughout. Manufacturer, Solus Ceramics (or equal and approved), Landscape, Norwood, Grip 300 x 600mm, Full Bond.

3.10.10.6 Stairs

3.10.10.6.1 Treads and risers will be finished with carpet, hardwood oak skirtings and "Gradus" nosing's or equal approved.

3.10.10.6.2 Balustrading will be of circular brushed stainless-steel hollow sections with matching handrails, with glazed infills.

3.10.10.6.3 Skirtings and stringers within the staircase area will be FSC managed hardwood, to match those elsewhere within the offices.

3.10.10.7 First Floor

3.10.10.7.1 Raised access floor to offices will be a medium-duty 600 x600 panel gravity-lay and fully removable raised access floor (such as Kingspan RG3 or similar approved) to give a 150mm floor void for services.

3.10.10.7.2 Stair/toilet core/utility/catering areas will be slab / screed to receive the noted floor finish.

3.10.10.7.3 Toilets will be finished with a non-slip ceramic tiled floor finish throughout with tile skirtings. Refer to spec above.

3.10.10.7.4 Raised access floors pans will be finished with commercial quality loop pile carpet tiles with hardwood skirtings from FSC managed sources.

3.10.10.7.5 Corridor floors will be finished with commercial quality loop pile carpet tiles with hardwood skirtings FSC managed sources.

3.10.10.7.6 Acoustic and fire barriers to be installed within the raised access floor as required.

3.10.10.8 Wall Finishes

3.10.10.8.1 All internal walls unless specified otherwise throughout the office, ancillary, reception and circulation areas shall be plastered/dry lined and fully sealed and then painted with one mist coat and two coats of white organic emulsion paint finish throughout, unless noted otherwise.

3.10.10.8.2 All walls to the office toilets shall be plastered/dry lined and fully sealed and then painted with one mist coat and two coats of white organic emulsion paint finish throughout, unless noted otherwise. A coloured acrylic feature panel will be

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provided to the entire wash hand basin wall as per the architect's drawings.

3.10.10.8.3 Kitchenette and cleaner's cupboard (where provided) will have ceramic tiled splashbacks 500mm high.

3.10.10.9 Ceiling Finishes

3.10.10.9.1 Suspended ceilings will be Armstrong "Microlook Dune" 600 x 600mm tegular tiles in a lay-in grid system with a stove enamelled finish on wire hangers.

3.10.10.9.2 A 25/50mm shadow edge trim shall be included to all office/circulation areas painted in with the wall finish. The suspended ceiling system will be earth bonded in accordance with IEE Regulations and the suspended ceiling manufacturer's recommendations.

3.10.10.9.3 The floor to ceiling height in office areas will be 2.70m and 2.40m in toilet areas. A consistent level floor shall be provided throughout the office and ancillary areas.

3.10.10.9.4 All ceilings shall have a minimum void of 250mm complete with all necessary cavity barriers.

3.10.10.9.5 In shower, wet areas and areas susceptible to high moisture levels, moisture resistant tiles and stainless-steel grid are to be used.

3.10.10.10 Internal Doors and Joinery

3.10.10.10.1 All timber doors, architrave, skirtings, window boards will be from be from FSC managed hardwood sustainable sources

3.10.10.10.2 Timber veneer laminate faced doors by Leaderflush (or similar approved), solid core flush door leafs with hardwood concealed lippings to 4 no. edges. Veneer: medium oak, vertical grain.

3.10.10.10.3 Wrot hardwood door linings, stops and architraves, cill boards and skirtings to match doors finished with 3 no. coats polyurethane clear varnish.

3.10.10.10.4 Where required by the Fire Officer, doors will have an appropriate fire rating and be fitted with intumescent strips, smoke seals, door closers and clear glazed vision panels to comply with the requirements of the current Building Regulations.

3.10.10.10.5 Ironmongery: Eisenware D Line (or similar approved), brushed stainless steel finish, U-shape lever handle, straight pull handle (as applicable).

3.10.10.10.6 IPS panel system to WC cubicles, vanity units to wash basins and urinals to be in TLS Shock system 100% waterproof, antibacterial and made of phenolic resin with black powder coated fittings. Including duct panels with lockable duct panel

sets. Toilet rolls holders, coat hooks and door buffers to be included.

3.10.10.10.7 600 x 450 mirrors with concealed fixings will be provided to the walls above the wash hand basins in all toilet areas, mirrors to be flush with tiling.

3.10.10.10.8 Kitchen units where detailed on the drawings will be from an approved manufacturer to the layout shown on the drawings (Howdens or similar approved). All white goods to be provided by the tenant / occupier as part of their own fit out.

3.10.10.11 Sanitary Ware

3.10.10.11.1 Sanitary appliances and plumbing will consist of Armitage Shanks or similar white vitreous china sanitary ware Armitage Shanks 'Back to Wall' WC's suites or equivalent quality, subject to the Employer's right of rejection shall be provided with plastic seat and cover and dual flush plastic cistern located behind plastic laminated covered boxing and shall be complete with overflow indication, cisterns shall be low volume dual flushing (not to exceed 3litres per flush).

3.10.10.11.2 Armitage Shanks china single bowl urinals or equivalent quality, subject to the Employer's right of rejection shall be provided with hidden cisterns and supplies, note this is to include cistermisers.

3.10.10.11.3 Wash basins to toilets shall be 585 mm x 420 mm Armitage Shanks part projecting basins or equivalent quality, subject to the Employer's right of rejection with push taps with aerated outlets. These shall be fitted into plastic laminate covered block board vanity units. Captive basin wastes to be utilised.

3.10.10.11.4 Disabled toilets will include a complete disabled suite pack in -accordance with Building Regulation requirements. 1 No combined Disabled shower/WC unit to be provided, complete with wheelchair accessible alarm.

3.10.10.11.5 Provision for cleaner's storage area at ground floor level. To include alder fireclay sink bucket stand, shall be provided with hot and cold water services with 1/2" cross head bib taps.

3.10.10.11.6 Accessories to toilet areas will include toilet roll holders and mirrors above all wash hand basins.

3.10.10.11.7 Pipework is to be concealed wherever possible with suitable access for maintenance. Exposed pipework to be in chrome.

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3.10.10.12 Spares

As a minimum, one box of carpet tiles, ceramic wall and floor tiles, and one box of ceiling tiles shall be provided per unit.

3.11 Mechanical Services

3.11.1 Installation to the satisfaction of the Employer. Contractor to provide fully detailed design information including provision of all calculations and working construction drawings for comment.

3.11.2 Services are to be sized to suit a fully fitted out Cat A office fit out to the ground floor.

3.11.3 The mechanical services shall be designed and installed fully in accordance with all relevant and current CIBSE guidance documentation, current British Standards and Codes of Practice, current Building Regulations, the Non- domestic Building Services Compliance Guide and Building Control Officer's requirements, Clean Air Act, Gas Safety Regulations, Local Water Board requirements and Health and Safety at Work Act.

3.11.4 BREEAM requirements applicable to the M&E services.

3.11.5 The Mechanical Sub-Contractor shall obtain the latest BREEAM report from the Main Contractor and shall incorporate all necessary measures into their design to achieve the appropriate BREEAM points required to achieve the relevant BREEAM rating.

3.11.6 It should be noted that due to the design development process, not all BREEAM requirements may be noted within this Specification. The BREEAM report shall be read in conjunction with the Specification.

3.11.7 The Mechanical Sub-Contractor shall be responsible for supplying all necessary documentation to support the claim for BREEAM points as requested by the Assessor.

See BREEAM section for further details.

Design Conditions

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

External

Winter (minus) 5°C minimum External summer 28°C(db)/60%rh (where cooling is being provided)

Internal

Office 21°C ± 2°C control band
Toilets 18°C minimum
Stairs 18°C minimum
Frost 12°C

Occupancy

Office 1 person/10m2

Ventilation

Offices 10L/S/person
Toilets To Building Regulations Part F Kitchenette/ tea point area To Building Regulations Part F

Noise Criteria

Offices NR38
Toilets NR40
Plant Room NR50

3.11.9 Heating, Cooling and Ventilation Systems

3.11.9.1 Heating and cooling to the offices shall be provided by VRV/VRF systems manufactured and supplied by Mitsubishi Electric or Daikin

3.11.9.2 Indoor units shall be of the above ceiling ducted unit type, the ratio of indoor to outdoor units will provide 100% diversity in the design.

3.11.9.3 Control of each indoor unit shall be by means of return air temperature sensors located within the occupied space or in the return air grilles.

3.11.9.4 Fresh air shall be provided by heat recovery fresh air units supplied by Mitsubishi Electric or Daikin (to match whichever supplier provides the VRF/VRV system). These are to be located in the ceiling voids above the offices, drawing air in and exhausting air out through the façade and delivering treated air into the back of the indoor units. Heat recovery units shall include appropriately sized sound attenuation to meet the acoustic requirements listed under Section 3.11.

3.11.9.5 Gravity condensate drains shall be installed for each indoor unit.

3.11.9.6 The necessary condensing units shall be located in a secure and gated external compound, refrigeration pipework, power and control cables shall be routed between the condensing units and the indoor units, as necessary. All external refrigeration pipework shall be insulated with Class O grade insulation, which shall be painted with an anti-UV paint (such as Armafinish99) and provided with physical protection from galvanised cable tray inverted over the main pipe support tray to prevent attack from vermin.

3.11.9.7 Electrical power is to be provided by the electrical Sub-Contractor to isolators adjacent to each condensing unit.

3.11.9.8 All intake, supply and return ductwork from the Fan Coil or Heat Recovery units shall be thermally insulated and incorporate a vapour barrier. These ducts shall connect to Swirl Type Supply Diffusers complete with Volume Control dampers and plenum boxes for optimal air entrainment/ mixing.

3.11.9.9 Return air is to return to the Fan Coil unit via either Air Handling Light fittings or similar diffusers to those used for the supply system.

3.11.9.10 Pipework installation shall be carried out by Business Partners/D1 Installer and extended warranties provided by the installer/manufacturer.

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3.11.9.11 Design includes allowance of 0.25 kN/ms for office ceiling and services including comfort cooling installations where fitted by the tenant

3.11.9.12 Within non office / non airconditioned areas which require heating (such as corridors, stairs, utility areas and WC's) provide and fit thermostatically controlled wall mounted electric panel heaters. The selected panel heater shall be LOT20 compliant. Accessible areas shall have heating in accordance with Building Regulations Doc M requirements.

3.11.9.13 Install all necessary volume control dampers within the ventilation ductwork to allow all ventilation systems to be fully commissioned and balanced. Where ductwork penetrates a designated fire compartment, install all necessary fire dampers/ combined smoke and fire dampers in accordance with the building regulations and to the satisfaction of building control.

3.11.9.14 Provide and install all necessary extract grilles, supply diffusers and fresh air intake and exhaust louvres. Connections onto exhaust and fresh air louvres shall be achieved via suitable taper pieces to ensure the full active area of the louvre is utilised. All colours to co-ordinate with external finishes.

3.11.9.15 Provide and install all thermal insulation equipment to all supply air connections and any associated heat recovery return air sections.

3.11.9.16 Supply and install all necessary ventilation access doors, in accordance with BESA publications DW144 and TR19, for effective internal inspection and cleaning of all ventilation systems.

3.11.9.17 Provide and install all ductwork installations including all secondary steelwork support.

3.11.9.18 Ventilation rates shall be based upon one person per 10m² of floor space requiring a rate of 10l/s/person. All fresh air takes shall be sited away from sources of smell and pollution. Intake and extracts for ventilation shall also take into account BREEAM particularly for spacing of intakes from sources of pollution (HEA 02)

3.11.9.19 Supply and fit suitably sized weather louvres for the intake and extract connections to the heat recovery systems including the fitting of these onto the external elevation of the building. All colours to co-ordinate with external finishes. Any louvres shall be provided with insect grills to prevent flies entering the building through the ductwork.

3.11.9.20 WC Ventilation Systems

3.11.9.20.1 The toilets will be ventilated by a mechanical extract system, providing 6 air changes per hour or to Building Regs, (whichever is most onerous), drawing vitiated air through ceiling mounted grilles and exhausting it to atmosphere and keeping the toilets at a slight negative pressure with respect to the adjacent areas.

3.11.10 Domestic Water Services

3.11.10.1 Mains cold water will be distributed through a direct water system around the building to serve the sanitary appliances and the kitchen/tea point area

3.11.10.2 Hot water will be generated by suitably sized local electric under counter water heaters, fed directly off the mains supply. The plumbing system

including hot and cold feeds to all sanitaryware shall be provided using copper service pipe to BS EN 12449:2012 with capillary fittings and all the appropriate bends, elbows tee connections, drains, cocks and stop valves. Where possible all major runs of pipe work shall be concealed, with access through suspended ceilings, raised floors etc. No flexible hoses are to be used for any form of connection.

3.11.10.3 The installation shall comply fully with the requirements and recommendations of the Chartered Institute of Building Services Engineers (CIBSE) and the Water Supply (Water Fittings) Regulations 1999.

3.11.10.4 The hot water systems shall be design, supplied and installed to comply with HSE ACOP L8 and CIBSE technical memorandum TM13 with regards legionella pneumophilia.

3.11.10.5 All pipe work in floor and roof spaces and ducts and any tanks and cisterns shall be fully insulated to class '0' standards relating to the spread of flame, so as to avoid frost damage. Pipe ductwork shall incorporate adequate access panels. Insulation and boxing in shall be provided to all soil and vent pipes and stacks etc. in or passing through the building.

3.11.10.6 Pipe runs shall be clearly marked. Stop taps and maintenance valves shall be clearly labelled indicating the service effected.

3.11.10.7 All water surfaces shall be disinfected in accordance with BS 6700 and HSG (70) immediately prior to hand over. All outlets will be directly mains fed with all control devices, including back siphonage, as required to comply with water regulations.

3.11.10.8 A sanitary supply shut off system shall be installed to serve all W.C.'s and urinals within the building. The system shall consist of a solenoid installed in the cold-water supply serving the sanitary fittings and shall be operated via a PIR installed within the ceiling adjacent to the entry doors into the toilet facilities. The system shall be as manufactured by Aqualeak Detection or equal and approved and shall be fully compliant to obtain the BREEAM Credit Wat 03 requirements.

3.11.10.9 Flow rates from appliances shall be limited as follows;

Showers – 3.5l/minute

kitchen sink taps – 5l/minute

wash hand basin taps – 3 l/minute

WC/Urinal cisterns – 3l/minute

3.11.10.10 No water storage is anticipated. However, the Contractor shall be responsible for undertaking detailed pressure drop calculations to ascertain if water boosting will be required in consideration of the utility company minimum pressure guaranteed at site the boundary/ controlling stop valve

3.11.10.11 Distribution pipework will be extended to serve all draw off points in the toilets, all pipework within voids will be thermally insulated to BS 5422.

3.11.10.12 The complete system shall be sterilised and tested as required by BS EN806-2:2005.

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3.11.10.13 All hot and cold outlet points shall be complete with local means of isolation via ball-o-fix isolation valves, chromium plated where exposed to view.

3.11.10.14 Hot water temperatures to all disabled wash hand basins shall be restricted to 43oC via TMV3 scheme approved thermostatic mixing valves (TMVs). All exposed pipework to be chromium plated.

3.11.10.15 One external watering points will be provided, comprising a WRC approved outlet complete with hose union tap served from a Fluid Category 5 packaged break tank and booster pump system or as approved by the local water authority (LWA). The supply shall be taken from the metered MCWS and shall be compliant with the relevant water byelaws.

3.11.11 Testing and Commissioning

All services will be tested and commissioned in accordance with CIBSE technical memoranda, guides and commissioning codes.

Services shall be left fully operational.

Prior to Practical Completion a draft copy of the Operational Maintenance Manual to be issued for comment as detailed in Section 1 of this document.

Following Practical Completion, complete operating and maintenance manuals including the Health and Safety File will be provided incorporating “as installed” drawings, test and commissioning certificates, manufacturer’s literature and emergency telephone numbers.

3.11.12 Health and Safety Files / Operating and Maintenance Manuals

The Health and Safety Files / Operating and Maintenance Manuals are to be in the format as detailed within the Employers Requirements.

A draft copy is to be made available prior to Practical Completion as detailed in Section 1 of this document. Electronic versions of the file are also to be provided to follow the same format as the hard copies following Practical Completion. Hard copy to be provided for each unit along with 1 electronic CD copy. A link containing all H&S / O&M’s are to be issued to the Employer’s Agent at PC.

The Contractor shall nominate a suitable person to monitor the commissioning on behalf of the Client in accordance with BSRIA and CIBSE Regulations.

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3.11.13 Above Ground Foul Drainage

3.11.13.1 Above ground foul drainage will be installed to serve all sanitary appliances and spare connections will be left at each floor level for the Occupier to connect future kitchenette/vending points.

3.11.13.2 All drainage will be by gravity and vented to atmosphere where appropriate.

3.11.13.3 All urinals shall be fitted with an electronic flushing control system.

3.11.14 Building Management System

3.11.14.1 The electrical panel heaters where provided will act under the dictates of their own dedicated controllers to be LOT2 20 compliant

3.11.14.2 The controller will provide time signals for optimum start/stop and operate a form of weather compensation system for the distribution and control of the heating system.

3.11.14.3 The toilet extract systems will act under the dictates of their own dedicated controllers.

3.11.14.4 The VRV/F and Ventilation system shall be fully controlled from a proprietary VRV/F control system, supplied by the system manufacturer. Each defined zone (each floor) shall be provided with the ability to be controlled as a separate time zone, with independent temperature and time controls in each zone. Each indoor VRF/V unit will have its own wall mounted controller for local independent control of each unit. The control system shall provide central supervisory control and full fault analysis of the VRF systems.

3.11.14.5 The VRV/F control system shall be fully interfaced with the fresh air ventilation systems to provide transparency of operation through the user interface.

3.11.14.6 Metering is to be provided on every main distribution board and sub-section of distribution board and any circuit supplying equipment with a load of 1kW or more. The metering is to be networked on an M-BUS system, with data collection, analysis and targeting provided through the user interface for complete energy management.

3.11.14.7 The Domestic hot water (DHW) generator/s will act under the dictates of their own dedicated controller.

3.12 Electrical Services

3.12.1 L V Panel and Distribution

3.12.1.1 A LV distribution system will be provided from the main switch panel. The panel will be of modular form and comprise MCCB’s providing the necessary protection for the sub-main system. The LV panel and distribution board(s) will be in accordance with BS 5486: Part 1, Form 4 –a separation Type 3, suitable for the supply capacity and be complete with necessary MCCB’s and MCB’s together with 25% spareways.

3.12.1.2 Sub main cables will be provided from the LV panel board to sub distribution boards and busbar trunking feed points, extended in XLPE/SWA/LSF copper cables to BS 5467. All distribution systems will be continually rated and

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designed in accordance with BS 7671 Requirements for Wiring Regulations. Sub main cables will be supported on proprietary ladder rack and/or hot dipped galvanised steel medium return flange tray all secured on purpose made Unistrut metal brackets at intervals not more than two metres. All cables will be evenly spaced and securely clipped to the cable tray and identified where necessary with cable markers. All designed as "Spaced" in line with BS 7671. Sub Main Cables shall not be installed in purlin rails.

3.12.1.3 Distribution boards will be provided to suit the expected occupation of the building. All distribution boards will be provided with MCB's/RCBOs for circuit protection. All distribution boards and cabling will be sized with a minimum spare capacity of 25%.

3.12.2 General LV Power

3.12.2.1 Low voltage power supplies will emanate from local distribution boards to serve small power outlets for cleaning purposes, hand dryers (supplied by tenant / occupier as part of their own fit out), mechanical equipment, maintenance, showers etc.

3.12.2.2 Within the office area wall mounted single 13 amp switched socket outlets for cleaning purposes will be provided assuming a 10m lead on equipment.

3.12.2.3 Separate circuits will be provided to common parts, i.e. staircases, plant rooms etc.

3.12.2.4 Wiring of final circuits will be carried out utilising LSF cables enclosed in trunking and conduit, modular wiring or LSF/LSF cables with suitable mechanical protection.

3.12.2.5 Small power to the first floor Main Office to be provided via a raised access floor with outlet boxes at one 3 compartment floor box containing 1 No double 13A BS1363 socket outlet, space for a quad data outlet and one double blank plate. 1no. floor box will be provided per 10sqm of office space and will be complete with a three-meter power lead to interconnect to the under floor bus bar system which will be installed below the raised access floor. Voice and data cabling will be installed by the tenant / Occupier as part of their own fit out.

3.12.2.6 The under-floor bus bar system will be designed to prevent circuit overload when all outlets are connected to the floor boxes.

3.12.2.7 In addition to the floor boxes, a general small power installation in the first floor office area and ground floor core/reception area shall be installed consisting of power supplies to BS1363 pattern switched socket outlets which will be used for cleaning purposes located in each section of the ground/first floor office area (max distance between outlets 10m). A minimum of 2No twin sockets shall be installed in the ground floor core area and to fused connection units for hand driers and all other items of mechanical plant, fire alarm panels etc. requiring power. Hand drier units to be installed as part of the tenant / occupiers own fit out.

3.12.3 General Lighting

3.12.3.1 Lighting to the office areas will comprise recessed modular LED luminaries incorporating high frequency control gear. The lighting arrangement will

provide an average illuminance of 400lux on the working plane at a uniformity of 0.8, in compliance with CIBSE Lighting Guide 7, 2015.

3.12.3.2 The luminaries will be arranged on a suitable grid with switching provided via PIR's in compliance with Building Regulations Part L.

3.12.3.3 The lighting system will be wired utilising LSF cables enclosed in trunking and conduit, modular wiring or LSF/LSF cables with suitable mechanical protection. The system will provide flexibility to modify the installation with minimal future disruption. Final connections to luminaries will be via a plug and socket arrangement with heat resistant flex.

3.12.3.4 Lighting to entrance and reception areas will comprise recessed LED downlights incorporating high frequency control gear. Pendant feature lighting will be provided within the double height atrium area. The Contractor is to consider potential Reception desk layouts when considering small power socket locations as well as lighting provision.

3.12.3.5 Lighting to landlord and common areas will comprise surface/recessed LED luminaries either ceiling or wall mounted. The lighting will be switched via PIR's and wired utilising LSF cables in trunking and conduit or LSF/LSF cables. The main entrance will be provided with an over-ride switch. A plug and socket arrangement will be utilised for luminaries above suspended or false ceilings.

3.12.3.6 The following Average Lighting Levels will be provided:

3.12.3.6.1	Occupied Areas	400 lux.
3.12.3.6.2	Reception	300 lux.
3.12.3.6.3	Toilets	150 lux.
3.12.3.6.4	Stairways	200 lux.
3.12.3.6.5	Plant Rooms	150 lux.

3.12.4 Emergency Lighting

3.12.4.1 The system will comply with the requirements of BS 5266, the Local Authority and will operate on mains or local sub circuit failure.

3.12.4.2 The emergency lighting system will comprise self-contained battery units and provide three-hour illumination. Where possible these will be integrated into the general luminaries.

3.12.4.3 Test switches will be provided centrally or integrated into the general lighting switch plates.

3.12.4.4 All areas will be provided with exit luminaries and legends in accordance with current legislation.

3.12.5 Voice and Data Systems

3.12.5.1 Facilities are to be provided to allow analogue and digital communications services to enter the building. A total of 2 ducts dedicated to the facility will

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be installed from the boundary of the site into the building. 1 nr 13amp SP spur will be provided adjacent to the BT incoming ducts. These shall be in a discreet but accessible location.

3.12.6 Security Systems

3.12.6.1 To be installed by Occupier.

3.12.7 Fire Detection and Alarm System

3.12.7.1 A fire detection and alarm system with an analogue addressable fire alarm panel located at the main entrance will be installed. The system shall be open protocol and will provide L1 cover to the office area in accordance with BS 5839, Part 1, 2017.

3.12.7.2 The system will be activated by manual break glass call points or automatic detectors. The alarm will be provided by electronic sounders all in accordance with BS 5839, Part 1, 2017.

3.12.8 Metering

Sub meters shall be provided as per the building regulations but not less than the following:

- Office Lighting;
- Office Small Power;
- M & E Plant;
- Operational Areas;
- Ancillary Areas.

3.12.9 Bonding and Earthing

3.12.10 All necessary bonding and earthing in compliance with the requirements of the current Edition of the IEE Wiring Regulations will be provided with particular note to incoming gas and water services.

3.12.11 Lightning Protection System

Where required by Building Control a Lighting Protection Installation will be provided in accordance with BS 6651: 1992 utilising the building structure wherever possible. The installation shall generally be by means of copper or aluminium earth leads and earthing rods protected by an accessible inspection cover

3.12.12 Testing and Commissioning

The complete electrical installations will be tested and commissioned to give correct working. A Completion Certificate in conformance with NICEIC, record drawings, protective device charts and details of installed plant and equipment will be incorporated into an Operating and Maintenance Manual.

The Contractor shall nominate a suitable person to monitor the commissioning on behalf of the Client in accordance with BSRIA and IEE Regulations.

A draft copy will be provided as detailed in Section 1 of this document prior to Practical Completion which also details the copies required at Practical Completion

3.12.13 Health and Safety Files / Operating and Maintenance Manuals

The Health and Safety Files / Operating and Maintenance Manuals are to be in the format as detailed within the Employers Requirements.

A draft copy will be provided as detailed in Section 1 of this document prior to Practical Completion which also details the copies required at Practical Completion. Electronic versions of the file is also to be provided to follow the same format as the hard copies.

3.13 Vertical transportation

3.13.1 Passenger Lift

3.13.1.1 Two-story accommodation will be provided with a lift. The lift will be of the lift motor room less type Passenger Lift with adjacently located access doors.

3.13.1.2 The lift will be finished from the manufacturers' standard range and will be compliant with Part M of the Building Regulations.

3.13.1.3 Operational and maintenance information will be provided in accordance with BSEN 81, CIBSE and BSRIA.

3.13.1.4 The lift will be an 8-person /630 kg passenger lift and will operate at a speed of not less than 0.63m/s.

3.13.1.5 The Contractor will be required to process the installation of the British Telecom lift line and pay all associated charges.

3.14 External Works

3.14.1 Service yard

3.14.1.1 The service yard and associated access areas will be excavated to the required formation level, trimmed and compacted with a layer of sub-base and where required, capping to the Structural Engineers details and in accordance with the Highways England Manual of Contract Documents for Highways Works.

3.14.1.2 Where the slabs are constructed in phases, the compacted sub-base layer must be constructed at least 1m beyond the relevant shutter lines to ensure that infill bays can be adequately compacted and finished. Plate Bearing Tests shall be undertaken on the completed sub-base at a rate of at least one test per 1,000 square metres to verify that the equivalent surface sub-base modulus is in accordance with the structural engineer's design assumption.

3.14.1.3 The surface tolerances to the sub-base layer shall be +5mm/ −30mm.

3.14.1.4 A minimum 190mm thick (minimum design and construction thickness) bed of reinforced concrete will be laid on 1200 gauge polythene or similar slip membrane using air entrained concrete with a minimum cube strength of

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35N/mm2 at 28 days, reinforced with at least one layer of fabric reinforcement to the engineer's details.

3.14.1.5 Bay sizes and all longitudinal, contraction, induced, expansion and isolation joints will be formed in accordance with the recommendations of the Structural Engineer, based on the guidance in Concrete Society Technical Report 66 and are to be kept to the minimum, capable of withstanding turning and loads imposed by a 44-tonne articulated vehicle.

3.14.1.6 The yard slab is to be designed in accordance with TRRL Road Report No 87 Thickness Design of Concrete Roads for design traffic of 5 million standard axles but will still need to be a minimum of 190mm thick with at least one layer of fabric reinforcement. All external joints to be sealed at Practical Completion. Joints to be re-inspected at 12 months defects inspection and re-sealed as necessary. The main yard slabs will be laid to maximum falls of 1:30 generally (except for level access ramps) and minimum falls of 1:80, with the gradients generally sloping away from the building. Short sections of slab on the approach to the loading docks may be constructed at up to 1:20, but only if required to suit the constraints of the site.

3.14.1.7 The 15m zone in front of the loading dock door positions will be designed and constructed to maintain a level bed for the docking lorries. At level access doors, the first 15m shall be laid at a maximum fall away from the building of 1:40 where practical, taking account of the constraints of the site, but in no case shall the slope be steeper than 1:30. If there is a level access door very close to a dock leveller meaning that the levels at the end of the yard wall will be outside of the previously mentioned falls, then a suitable proposal is to be proposed to the Employer for approval.

3.14.1.8 The surface of the concrete is to be finished using a serrated float or wire brush, to provide grooves parallel to the slope of the pavement, with 100mm trowelled margins adjacent to the shutters. 100mm trowelled margins around manhole covers, access pit covers and the like.

3.14.1.9 The surface tolerance for the concrete pavement shall be +10mm from the design level and not more than 10mm deviation under a 2m straight edge (except at changes in gradient) using the method in BS8204

3.14.1.10 As soon as excess moisture has evaporated from the surface of the concrete a resin curing compound should be sprayed uniformly over the still plastic concrete. During hot sunny periods a curing compound containing a suspension of fine particles of Aluminium or other white pigment should be used.

3.14.1.11 During adverse weather conditions including hot sunny periods, freezing temperatures, winds in excess of 10mph and rain, the slabs should be protected with suitable tents of polythene, insulating mats or similar as required, in addition to the curing compound.

3.14.1.12 Drainage channels with steel gratings will not be used in areas of the service yard where they can be trafficked by turning vehicles. Drainage channels at docks are to be positioned to avoid trailer legs.

3.14.1.13 Kerbing to service yard perimeter to be 125 HB2 type kerbs unless in areas where high impact risk is present when Trief kerbs shall be used.

3.14.1.14 Thermoplastic lining for lorry parking bays to be white and nominally 100mm wide.

3.14.1.15 A sample bay is to be constructed for approval by the Employer and Employers Agent to set the quality for the remainder of the yard.

3.14.1.16 Armco protection shall be provided to vulnerable areas of the building both internally and externally including electric panel, incoming gas, and other vulnerable service points.

3.14.2 Car parking bays and all other circulation areas to be of a close graded Bitumen Macadam. These areas will be designed for the use of private cars and light commercial vehicles up to 3.5 tonnes (2.0 tonnes axle load). Macadam surfacing to roadways serving the car parking areas, where indicated on the drawings, will be laid on a prepared hardcore bed with a 100mm consolidated thickness of two course bituminous macadam, consisting of a 75mm base course with a 25mm wearing course - both to BS EN 13108-1:2006. Overall construction thickness to be 450mm thick minimum

3.14.3 Car parking spaces will be of a size 2.4 m x 4.8 m minimum and the road width between bays will be 6.0 m minimum. Disabled car parking spaces will be to a size of 3.6 m x 6 m and 5% of the total number of spaces or to meet current legislation.

3.14.4 2nr 100mm dia. ducts shall be provided from the building to 10% of the car parking spaces for future electric car charging as shown on the drawings. 1 nr 32A double car charging point shall be provided as indicated.

3.14.5 5% of car parking spaces are to be marked for car sharing in white lining as shown on the drawings

3.14.6 Where indicated, 254 mm x 127 mm half battered precast concrete kerbs to BS 340 will be laid. Dropped kerbs to be provided at pedestrian cross overs and cycle routes (all as Engineers details).

3.14.7 Pathways will be constructed from tarmacadam with concrete paviors to the office entrance. Dropped kerbs, and paving, will be provided for disabled access as required by the DDA and Building Regulations.

3.14.8 Soft landscape areas to be laid with suitable depth of topsoil. The landscaping to be executed in accordance with landscape plan approved by the Planning Authority and within the first planting season of the scheme and maintained for a minimum 12-month period following Practical Completion.

3.14.9 1 No. external watering points are to be provided, one to the office location and one adjacent to the warehouse – to Landscape Contractor approval.

3.14.10 A bicycle storage/parking area is to be provided to comply with the Planning Authority requirements and must be a BREEAM or "Sold Secure Bronze Standard" compliant product to ensure sufficient theft protection.

3.14.11 Refuse area to be designated on drawings and must be resistant to arson with a non-flammable construction. The entry door / gate is to have an auto close auto lock facility with an internal thumb turn exit facility. An external drain point is to be provided. A bib tap and foul drainage should be provided.

3.14.12 External condenser compound where indicated shall be fences to 1.8m high with close boarded timber fencing and matching lockable gates.

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3.14.13 Any retaining structures required to external areas will be appropriate for the location and gradient and all to the Structural Engineers details.

3.14.14 The Service Yard will be secured by Coated Galvanised Paladin Fencing 2.400m high, all in accordance with the Planning Authorities requirements. A double vehicle gate will be provided at the entrance to the service yard together with a single leaf pedestrian gate. Where noted on the drawings service yard gates will be manual sliding.

3.14.15 The main site access road will be designed to comply with current Birmingham City Council highways standards but will not be offered for adoption.

3.15 External Drainage

3.15.1 General

3.15.2 Connections from the site boundary to main foul and surface water sewers will be made in accordance with the requirements of Sewers for Adoption (latest edition) and the requirements of the Local Drainage Authority.

3.15.3 Where possible manholes, gullies and/ or drainage gullies are to be positioned outside of the HGV circulation areas, access roads, away from the front of level access doors or the office main entrance doors or the main personnel access into the building. No manholes will be located within the warehouse. If manholes are in landscape areas only the covers should be visible.

3.15.4 Surface water drainage from the development to be attenuated within the site (where required) and thereafter to private main drains. All paved areas will drain via separators/interceptors appropriate to the drained site area (ref Environment Agency Pollution Prevention Guidelines document PPG3) with surface water ultimately draining to adoptable surface water sewers.

3.15.5 The drainage system generally will be in accordance with BS EN 752:2008.

3.15.6 The general design criteria will be based upon a 1 in 2-year return and a rainfall intensity of 55mm per hour and no flooding in a 1 in 30-year storm condition.

3.15.7 Drainage attenuation should be designed for a one in 100 year + at least 20% storm event.

3.15.8 In the warehouse area 2Nr foul pop-up points are to be taken into this area for future installation of toilets, wash hand basins and showers. These pop-up points are to be located as tight as possible to the perimeter wall and are to be connected to the main foul drainage system.

3.15.9 Undertake a CCTV survey of all drainage two weeks prior to Practical Completion

3.15.10 Pipework

Foul and surface water drainage will be constructed to the details shown on the drainage drawing. Drainage pipework internal to the building areas will have a concrete bed and surround.

3.15.11 Where required, pipework will be protected in accordance with the 'Simplified Tables of External Loads on Buried Pipelines'.

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3.15.12 All necessary bends, junctions and other fittings required to complete the work will be provided. Flexible joint collars will be provided to drainage pipework when leaving the building areas

3.15.13 Manholes

Manholes will be constructed to the depths required using either precast concrete rings and heavy-duty cover slabs or in Class B engineering brickwork. The bases of manholes will incorporate all necessary clayware channels and junction fittings and will be benched in fine granolithic concrete.

3.15.14 Galvanised step irons will be included in the walls of manholes and the manhole covers will be of galvanised steel or cast iron of an appropriate load bearing capacity.

3.15.15 No manholes will be located within the warehouse.

3.15.16 Gullies/Drainage Channels to Yard and Roadways

The drainage of the yard areas to be laid falls to heavy duty drainage channels. "Gatic Ultraslot" (throat width 30mm minimum) or equivalent or better quality maybe proposed for approval by the Employer) and standard heavy duty gulley outlets where appropriate.

3.15.17 Gullies to roads and car park areas will generally be precast concrete road gullies, trapped with rodding eye fitted with heavy-duty cast-iron gully grate and frame.

3.15.18 Petrol Interceptors

An alarmed petrol/oil interceptor, as required by the Environment Agency, will be installed and ventilated to serve the surface water drainage system to external paved areas (ref Environment Agency Pollution Prevention Guidelines document PPG3or BS 858).

3.15.19 In landscaped areas a network of land drains will be provided to drain any waterlogged areas and areas of standing water.

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3.16 External Services

3.16.1 External Lighting

3.16.1.1 The external lighting will consist of column and wall mounted high efficiency luminaries designed to provide the lighting levels detailed below.

3.16.1.1.1	Perimeter of Building	20 lux (average)
3.16.1.1.2	Car Park Areas	20 lux (average)
3.16.1.1.3	Lorry Parking Areas	30 lux (average)
3.16.1.1.4	Dock Leveler Areas	50 Lux (average)
3.16.1.1.5	Office Entrance	50 lux (average)

3.16.1.2 All external lighting will be controlled via a photocell and timeclock arrangement.

3.16.2 Electrical Supply

3.16.2.1 The total capacity of each unit is as noted in the summary table at the start of this document.

3.16.2.2 The main intake and meter will be located as noted on the drawings together with the main building panel board.

3.16.2.3 For an LV Solution the Contractor shall provide an incoming LV Electrical Substation in accordance with the Local Electricity Boards requirements. The Location of this will be in full compliance with the Local Electricity Boards requirements with regards to access etc. From this incoming substation the Main Contractor shall provide all cabling necessary, complete with ducts and any associated builders work to connect to the building's main LV distribution panel.

3.16.2.4 For an HV Solution the Main Contractor shall provide an incoming electrical substation in accordance with the Local Electricity Boards requirements. The Location of this will be in full compliance with the Local Electricity Boards requirements with regards to access and will likely be at the site boundary.

3.16.2.5 From this incoming substation the Main Contractor shall provide all cabling necessary, complete with ducts and any associated builders work to connect to the building's Transformer/s. The Transformers will be sized by the Main Contractor to meet the load detailed above. From the Transformers the Main Contractor will allow for all cabling necessary to connect to the Main LV distribution panel.

3.16.3 Gas Supply

3.16.3.1 The Main Contractor shall organise for the gas supply from the Local Utility Authorities gas network to provide total gas requirement as noted in the summary table at the start of this document. The gas demand makes allowance for full heating of the warehouse area (to +18 degrees C)

3.16.3.2 The Main Contractor shall include to provide a gas meter housing within an agreed position within the site boundary to accommodate the future Main

"Billing" gas meter, the Main Contractor shall include to install a suitably sized concrete plinth for the gas booster set.

3.16.3.3 The Main Contractor shall install all associated ducting from the external gas meter location to the dedicated energy monitoring control panel.

3.16.3.4 The Main Contractor shall allow for the future installation of all necessary gas governors to achieve the required gas pressures.

3.16.3.5 The Main Contractor shall provide all trenching to the most current NJUG Standards to allow for the entire below ground installation of the gas supply pipe.

3.16.3.6 All associated cable ducting from the external gas meter to the dedicated energy monitoring control panel will be provided.

3.16.4 Mains Water Supply

3.16.4.1 A water supply from the Local Utility Authorities water network to provide the peak site demand at minimum 1.5 bar pressure at the point of entry to the Main Offices building for each building will be provided.

3.16.4.2 The local water authority will install the water supply applied for; from the local water infrastructure to within the site boundary where it will terminate with a "billing" water meter within a purpose-built pit; to the local water authority requirements.

3.16.4.3 The local water authority water meter will be complete with M-bus Automated Meter Reading (AMR) System capable of being monitored by the dedicated energy monitoring control panel located within the building.

3.16.4.4 All associated wiring from the external water meter to the dedicated energy monitoring control panel.

3.16.4.5 A metered domestic water supply will be extended from the site boundary/public supply within the site boundary, the entire installation sized accordingly for the buildings peak flow rate as detailed above, the main will rise within the Main offices. The Transport office areas will also be fed from the on-site mains network either from underground services or via the warehouse.

3.16.4.6 All Trenching will be provided to the most current NJUG Standards to allow for the entire below ground installation of the water supply pipework.

3.16.5 Sprinkler Tank Water Supply - NOT APPLICABLE.

3.16.5.1 Underground ducts will be provided to enable a sprinkler system to be installed in future.

3.16.6 Telecom Provision

3.16.6.1 2 Nr 90mm diameter ducts will be provided from the site boundary to a designated intake point to serve the communications requirements of BT. 2 no additional duct systems will be provided for use by others. Each set of ducts will enter the building and pass below ground to provide a system to cater for the future.

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3.16.6.2 2 Nr vacant ducts not less than 75Ø will be provided from the corners of the building to external locations within the soft landscaping to suit the required wire ways of a possible future CCTV installation and external signage provision.

3.16.6.3 All ducts will be left clear with secured drawcords.

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