

## Columbia Threadneedle Investments

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### Pre-Demolition Waste Audit

Hyde Park, Hayes, Hillingdon, UB3 4AZ -  
HPH5, HPH2 and MSCP

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## Table of contents

1	Executive Summary .....	3
2	Audit Summary Table.....	4
3	Limitations and Exceptions .....	5
4	Introduction.....	6
4.1	General.....	6
4.2	Terms of Reference .....	6
4.3	Circular Economy (CE) .....	6
4.4	Pre-demolition Waste Audit (PWA) Requirements .....	6
4.5	Whole Life-Cycle Assessment (WLC).....	7
5	Audit Methodology .....	8
5.1	Assessment and Suitability of Materials for Reuse/recycling or Other Waste Management Methods.....	8
5.2	Pre-demolition Waste Audit (PWA) Procedure .....	8
5.3	Estimation of Types, Weights and Amounts of Key Demolition Products .....	8
5.4	Below Ground Services.....	9
5.5	Recommendation for Materials Management and Target Setting .....	9
5.6	Assessment of Embodied Carbon Quantities within KDPs.....	10
5.7	Site Waste Management Plan .....	12
5.8	Hazardous Materials .....	12
6	Site Information .....	13
6.1	Site Description .....	13
6.2	Proposed Scope of Development .....	13
6.3	Information Provided .....	14
6.4	Site Audit.....	14
7	Summary of Total Key Demolition Products .....	15
7.1	Total Weight by Tonnes of Key Demolition Products .....	16
7.2	Total Weight by Volume (m <sup>3</sup> ) of Key Demolition Products.....	17
7.3	Total Embodied Carbon CO <sub>2</sub> e (Tonnes).....	18
8	Recommendations .....	18
8.1	Materials by Key Group.....	18
8.2	Materials by Building Element Group.....	35
9	References .....	37

Appendices

Figures

Figure 1 – Site Location Plan

Figure 2 – Floor Layout Plans

Appendix A – Construction Waste Groups

Appendix B – Material Weight Conversion Factors

Appendix C – Pre-Demolition Waste Audit Photos

Appendix D – Buildings Elements Group Table



# 1 Executive Summary

This Pre-demolition Waste Audit (PWA) has been undertaken on HPH5, HPH2 and MSCP and external areas of Hyde Park, Hayes by Sweco UK Ltd (Sweco), on the instructions of Columbia Threadneedle Investments (the Client). The audit was undertaken between 01 and 11 April 2025.

The extent of the audit is presented in Figure 2 (red line drawing).

The PWA has been undertaken to determine, as far as reasonably practicable, the volume and quantity of key demolition products (KDPs) that have the potential to be reused/retained, recycled or disposed.

The PWA has been prepared to accompany the proposed planning application and potential decisions made during RIBA pre-application process and/or attain BREEAM Credits for the redevelopment at the site, of which no details have been provided.

Hyde Park, Hayes consists of a 10-acre office buildings (use class e) campus located within the Hillington area of Middlesex. The Site is located between Millington Rd, approximately 0.4 miles South West of Hayes and Harlington train station and is approximately 2.8 miles North East of Heathrow Airport.

The footprint of the Site is approximately 2.47 Hectares. Descriptions of the Site are presented in section 6.1.

The PWA has estimated the KDPs to total 16,942.10m<sup>3</sup> and 34,266.05 tonnes. The total of embodied carbon is estimated to be 2,695.21 tonnes.

The total KDPs have been categorised into groups and the estimated volumes and weights of the KDPs have then been calculated. This information is presented in section 6.

The suitability of these KDPs for reuse/retaining, recycling and recovery has subsequently been considered, in accordance with the Waste Hierarchy (England and Wales) Regulations 2011.

It is estimated that >99% of KDPs (by tonnage) have the potential to be diverted from landfill by either reuse on and/or off site or by recycling.

## 2 Audit Summary Table

Key Demolition Product (KPD)	European Waste Group	Estimated total Volume (m <sup>3</sup> )	Estimated total Weight (Tonnes)	Estimated Total CO <sub>2</sub> e (Tonnes)
Asphalt/Bitumen	1703	245.94	508.07	1.66
Carpet/Vinyl	200111	174.49	674.39	1395.44
Ceramics	107103	7.13	14.02	0.05
Concrete/Cement	170101 170102	12,987.41	29,504.82	96.78
Glass	17202	34.46	86.16	3.32
Insulations	170604	2,037.57	89.98	0.50
Metals	0714	369.96	2,557.86	103.31
Plasterboard/ Gypsum	170802	237.49	166.24	3.77
Plastics	170203	1.14	2.03	4.20
Wood	070201	846.53	662.50	1,086.20
	<b>Total</b>	<b>16,942.10</b>	<b>34,266.05</b>	<b>2695.21</b>

### 3 Limitations and Exceptions

This report and its findings should be considered in relation to the terms and conditions proposed and scope of works agreed between Sweco and the Client.

The copyright in this report and other plans and documents prepared by Sweco is owned by them and no such report, plan or document may be reproduced, published or adapted without their written consent. Complete copies of this report may, however, be made and distributed by the Client as an expedient in dealing with matters related to its commission.

This report is prepared only for our Client and is not intended to be relied on by any other party. Third parties should not rely on the facts, matters or opinions set out in this report without the express written permission of Sweco.

The estimation of material types, quantities and condition is based on the visual observations at the time of the survey and does not take account of future usage or clearance of the Site.

All actions set out in this report are recommendations only and alternative uses or disposal actions may be undertaken by the Principal Contractor.

The report provides an estimation of material quantities for guidance only. It is the Principal Contractor's responsibility to record and report actual materials present and accurate volumes of each material.

## 4 Introduction

### 4.1 General

This Pre-demolition Waste Audit (PWA) has been undertaken on buildings HPH5, HPH2 and MSCP & external areas of Hyde Park, Hayes by Sweco UK Ltd (Sweco), on the instructions of Columbia Threadneedle Investments (the Client). The audit was undertaken between 01 and 11 April 2025. The extent of the audit is presented in Figure 2 (red line drawing).

The PWA has been carried out in line with the BRE Code of Practice Pre-redevelopment Audits (July 2017) to meet the requirements of the BREEAM Wst01 Construction Waste Management standard during the proposed planning application process.

### 4.2 Terms of Reference

The terms of reference for this report were presented in Sweco proposal reference: 65214976-SWE-XX-XX-T-GO-2001-P01 dated 21 January 2025 and accepted in an emailed instruction to proceed, dated 14 March 2025, from Montague Evans on behalf of the Client.

### 4.3 Circular Economy (CE)

The main principle of the circular economy puts emphasis on the sustainable use of KDPs during the demolition or redevelopment process. This in turn leads to carbon efficiencies and the retention of high-grade construction materials.

The circular economy sets out the following principles which should be a fundamental part of the building design process:

1. Building in layers – ensuring that different parts of the building are accessible and can be maintained and replaced where necessary.
2. Designing out waste – ensuring that waste reduction is planned in from project inception to completion, including consideration of standardised components, modular build, and reuse of secondary products and materials.
3. Designing for longevity.
4. Designing for adaptability or flexibility.
5. Designing for disassembly.
6. Using systems, elements or materials that can be reused and recycled.

These six principles are used to follow the application of the waste hierarchy set out in section 4 of this report by ensuring the generation of waste is avoided or reduced during the demolition or redevelopment process.

As part of the circular economy, a pre-demolition or pre-redevelopment waste audit should be undertaken during the pre-application stage and should inform the design. The PWA report should be submitted in support of a Circular Economy Statement and BREEAM Assessment (where relevant).

Estimations of KDPs within the PWA report should be referenced alongside, and used in support of, developing the Site Waste Management Plan (SWMP) or Resource Management Plan (RMP), in its aim to promote resource efficiency in following the waste hierarchy outlined within section 4 this report.

### 4.4 Pre-demolition Waste Audit (PWA) Requirements

The circular economy requirements to be included within this PWA report are as follows:

1. Where substantial demolition is proposed, an explanation and justification of why the decision to demolish the existing building has been made, and the considerations in developing the site following the four design approaches for existing structures:

- **Reuse and retrofit** – Retaining the majority of the building fabric.
  - **Partial retention and refurbishment** – Significant elements of carbon heavy aspects of the building are retained in place (e.g. substructure /floors etc).
  - **Disassemble and reuse** – Reusing sections of the building on or off site.
  - **Demolish and recycle** – Traditional demolition with materials used on site or other sites.
2. Drawings that indicate the extent of the proposed development showing whether any parts of the building are being retained.
  3. A detailed inventory of the KDPs that make up the building that will need to be managed upon demolition/redevelopment.
  4. An estimation of quantities of KDPs and whether they are suitable for reuse, reclamation, recycling or disposal.
  5. Target reuse and reclamation rates (%).
  6. A schedule of practical and realistic providers who can act as brokers for each of the reclaimed materials.
  7. An estimation of embedded carbon within KDPs to support the Whole Life-Cycle (WLC).

Items 1 and 2 should be provided by the Client. Where no information is received, these are excluded from the report.

#### 4.5 Whole Life-Cycle Assessment (WLC)

Where relevant (e.g. major demolition of the buildings), a WLC Assessment is required.

This should be undertaken in three stages:

- Pre-application stage.
- Planning application submission (RIBA Stage 2/3).
- Post Construction Stage.

Reference to this should be made within the PWA report (where required). This method of assessment is the standard UK framework for appraising the environmental impacts of the built environment and should be carried out following BS EN 15978: 2011 (Sustainability of construction works - Assessment of Environmental Performance of Buildings Calculation Method).

This sets out the principles and calculation method for the WLC Assessment of the environmental impacts of built projects and should demonstrate the actions that have been, and will be, taken to reduce carbon emissions.

The WLC assessment should cover the development's carbon emissions over its lifetime, accounting for:

- Any carbon emissions associated with pre-construction demolition.
- Any carbon savings associated with the retention, reuse and recycling of existing structures and materials that are already on-site.
- Operational carbon emissions (both regulated and unregulated).
- Embodied carbon emissions.

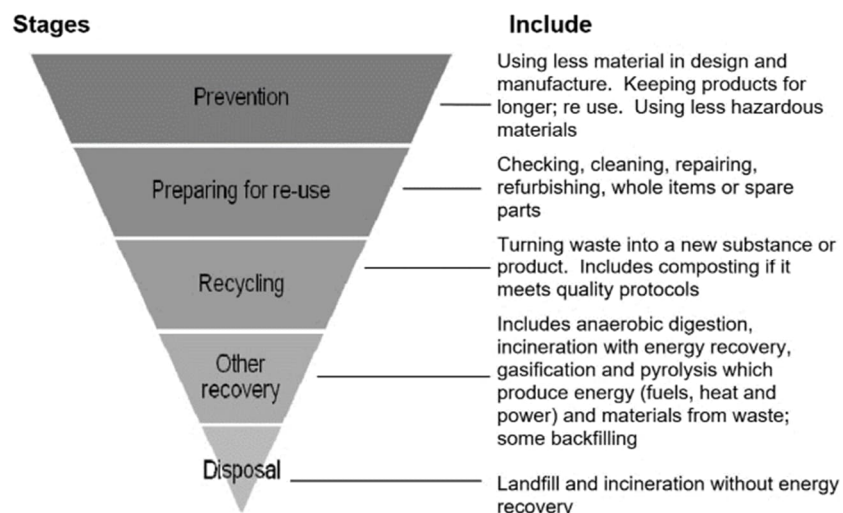
- Any future potential carbon savings post end-of-life, including savings from reuse and recycling of building structure and materials.

## 5 Audit Methodology

### 5.1 Assessment and Suitability of Materials for Reuse/recycling or Other Waste Management Methods

The aim of this PWA is to identify, as far as reasonably practicable, the estimated quantities of KDPs that have the potential to be reused/retained, recycled or disposed in accordance with the Waste Hierarchy (England and Wales) Regulation 2011:

1. **Prevention** – Using less material in design and manufacture, keeping products for longer, reuse, using less hazardous materials.
2. **Preparing for reuse** – checking, cleaning, repairing, refurbishment, whole items or spare parts.
3. **Recycling** – turning waste into new substance or produce. It includes composting if it meets quality protocols.
4. **Other recovery** – Includes anaerobic digestions, incineration with energy recovery, gasification and pyrolysis, which produces energy (fuels, heat and power) and materials from waste.
5. **Disposal** - Landfill and incineration without energy recovery.



### 5.2 Pre-demolition Waste Audit (PWA) Procedure

The PWA incorporates the following steps:

- Collection and examination of information received.
- Site audit comprising non-intrusive visual survey of the building and/or site.
- Estimation of types and amounts of KDPs.
- Estimation of embodied carbon quantities within KDPs.
- Assessment of suitability of materials for reuse/retaining, recycling or disposal
- A schedule of practical and realistic providers who can act as brokers for each of the reclaimed items.
- Recommendations for materials management and target setting.

### 5.3 Estimation of Types, Weights and Amounts of Key Demolition Products

Assumptions and estimations of KDP types have been made based on the type and condition of materials on the Site at the time of audit via visual assessment only. These have been estimated and presented as tonnes/m<sup>3</sup> as per the BRE Code of Practice Pre-redevelopment Audits (July 2017).

All materials have been identified as per the categories within the European Waste Group classification (presented in Appendix A).

Weights have been estimated as per their categories in the table of conversion factors (presented in Appendix B).

Where limitations on access are presented, estimations and assumptions have been made based on visualisations at the time and the similarities of floors or areas.

Where fixtures and fittings (e.g. door handles, hinges, etc) constitute less than 10% of the volume of an element (e.g. door/windows etc), these have not been recorded.

No testing of materials for contamination and/or suitability for reuse have been made. Therefore, it is recommended further investigations by qualified persons are undertaken prior to the decisions to retain or reuse materials.

For external hardstanding areas, where present (e.g. macadam/asphalt), an assumed thickness has been used to calculate volumes. From our experience of reviewing ground investigation reports of previous car parks/hardstanding surfaces, and taking into consideration worst case scenarios, we will calculate the thickness of asphalt/macadam surfaces to be 10cm/0.1m thick unless proven otherwise.

Steel rebar, where presumed present within structural concrete, will be calculated at 0.2 tonnes (200kg) per m<sup>3</sup> of concrete. Whilst the size and quantity of rebar varies depending on structure age, type and location, this has been taken as an average from the Concrete Buildings Scheme Design Manual (ISBN 1-904818-44-7) unless proven otherwise.

Steel mesh, where presumed within concrete base slabs (both internal and externally) will be calculated at 0.02 tonnes per m<sup>3</sup> of concrete.

The estimation of soils and/or excavation materials are excluded from this report.

#### **5.4 Below Ground Services**

No estimates of below ground services (e.g. drainage, cables, pipework, etc) have been made.

#### **5.5 Recommendation for Materials Management and Target Setting**

Material management and target setting is to be undertaken by the Principal Contractor, who should set targets for different waste management methods to determine the overall amounts of materials to be used on or off site in their original form, recycled/retained on site or closed/open loop recycled off site.

Section 7 has set out the recommendations for the diversion of materials from landfill. These are recommendations only and alternative actions may be agreed by the Client and Principal Contractor.

Sweco has not been involved in the design and planning of the proposed redevelopment and is therefore unable to determine quantities and volumes of materials that can be reused on and or off-site.

Where reuse/recycling targets have not been provided (e.g. in accordance with the BREEAM table below), recommendations for the potential reuse/recycling of materials will be made for the total quantities per KDP.

BREEAM credits	Type of waste	Volume	Tonnage
One credit	Non-demolition	70%	80%
	Demolition	80%	90%
	Excavation	N/A	N/A
Exemplary level	Non-demolition	85%	90%
	Demolition	85%	95%
	Excavation	95%	95%

Information presented within this audit report is for guidance only and actual types and quantities of KDPs should be determined and measured by the Principal Contractor and outlined within the Site Waste Management Plan (SWMP)/Resource Management Plan (RMP).

Recommendations for reuse and recycling are always subject to further inspection by qualified person(s). In many cases, plant work and materials may be unsuitable for reuse/recycling due to its age, condition or not meeting current building regulation standards, which cannot be determined by visual observations alone.

Where possible, local companies and/or additional website sources of information have been identified for the purpose of reclamation and/or reuse. It should be understood that this is for information only and there may be alternative companies available. Sweco does not endorse and is not affiliated with any business or information provider included within this report.

## 5.6 Assessment of Embodied Carbon Quantities within KDPs

The PWA includes an assessment of both end-of life and potentially avoided future carbon for the quantified materials where they may be reused without significant further processing.

The emissions associated with EN 15978:2011 life cycle modules C2-C4 have been provided as part of this pre-demolition audit. Modules C2-C4 are end of life emissions, and cover the emissions under the following actions and activities associated with removal of existing materials from the site:

**C2:** transporting the demolition waste to sorting/recycling or to end of life disposal site. The assumption used here is that materials are typically transported 50km from the site to processing/disposal.

**C3:** sorting, collection, processing of the demolition wastes for the different routes (reuse, recycling, energy recovery, final disposal) at a waste processing facility.

**C4:** final disposal of the demolition wastes at a disposal site, including any required pre-treatment and the management of the disposal facility.

At present, the various materials that have been identified through the surveys and calculation relevant to this assessment have been assigned typical end of life values related to the material and product group, as determined by the Waste and Resources Action Programme (WRAP). Sweco have used the One Click LCA software (a GLA compliant tool for whole life carbon assessments) to input the identified material quantities and calculate the carbon associated with the end-of-life emissions for the removed materials.

Future development end-of-life scenarios for the materials groups, including identification of reuse potential and high-value recycling routes, would allow us to challenge and analyse these applied assumptions in greater detail.

The assumed end of life scenarios used to determine the carbon data, broadly grouped by material category, can be summarised as follows:



Material/Product Group	EOL Assumption for Carbon Calculation	One Click LCA Selection/EoL Description
Concrete	Recycled (downcycled)	Concrete crushed to aggregate and used as sub-base
Carpets	Incinerated	Plastic-based material incineration
Steel (all)	Recycled	Steel recycling
PUR Insulation	Incinerated	Plastic-based material incineration
Aluminium	Recycled	Aluminium recycling
Glass	Recycled (downcycled)	Glass recycling, but assumed to lower-grade cullet
Timber (all)	Incineration	Timber incineration
PVC	Incineration	Plastic-based material incineration
Plasterboards	Recycled	Gypsum recycling
Glass Wool	Landfill	Landfill
Mineral Wool	Landfill	Landfill
Vinyl flooring	Incineration	Plastic-based material incineration
Ceramics	Recycled (downcycled)	Crushed & used as backfill
Asphalt	Recycled	Reprocessed & reused
Brickwork	Recycled (downcycled)	Crushed & used as backfill
Blockwork	Recycled (downcycled)	Crushed & used as backfill

Given that it is very difficult to ascertain the specific supplier and manufacturing details of the original materials installed within the building, generic and market-typical selections of Environmental Product Declarations (EPDs) or suitable approved Life Cycle Inventory (LCI) data have been used to represent the existing materials and calculate the associated emissions.

All data used is allocated in accordance with the carbon data rules set out in Section 3.3 of the RICS Professional Statement – *Whole life carbon assessment for the built environment (2017) publication*, the foremost whole life carbon assessment methodology in the UK.

The C2-C4 emissions therefore represent the carbon associated with typical waste routes for key material groups identified as part of the pre-demolition audit from site gate to their end of life. When the actual demolition takes place, the Principal Contractor should record the extent of reuse, recycling and disposal for the materials removed from site as accurately as possible. Carbon values could then be updated by the Principal Contractor if they are suitably qualified to do so.

The carbon distribution demonstrates where key end of life impacts of removed materials lie. This provides an alternative assessment lens as to the value of reuse and recycling compared to simply looking at total tonnage of removed materials. Key areas of focus can be clearly identified to reduce emissions from typical end of life treatment processes.

The emissions associated with C1 are not included above. Module C1 covers emissions associated with actions and activities from the Principal Contractor on site during the demolition process. This includes energy, waste and fuels use, and their associated emissions, during the period of demolition.

Section 3.5.4.1 of the RICS Professional Statement provides an assumption for calculating this, which is 3.4 kgCO<sub>2</sub>e/m<sup>2</sup> of Gross Internal Area (GIA) of the existing building. At this stage, Sweco has not been provided with the GIA of the existing building but the C1 emissions could be easily calculated for the purposes of complete end of life emissions reporting if the GIA data is available.

It would also be possible to use C1 to set a carbon target for site emissions if the client wished to do so. This could then form part of a demolition contract, which the Principal Contractor would report against.

As the majority of Principal Contractors record site energy, water and fuels use, as well as waste processing, the data to ratify the targets should be available anyway as part of the normal demolition reporting process.

In terms of future carbon emissions reductions, reuse of existing materials should always be the first priority. This typically reduces emissions both for the end of life impacts (C2-C4), but also potentially avoids future emissions from manufacturing similar materials for use in new buildings, which can be very extensive (far more so than C2-C4 emissions).

Where possible, materials for potential reuse should be identified and opportunities for reuse on the same site (either in situ for elements such as structures or as part of the redevelopment design for other materials). The findings of the demolition audit should be shared with the architect to establish opportunities for onsite reuse/repurposing in the first instance.

This not only reduces C2-C4 emissions, but also reduces embodied carbon for the redevelopment by avoiding the significant emissions associated with manufacturing. These emissions are categorised under EN 15978:2011 as Modules A1-A3. Sweco has estimated these emissions in the background, which can be used to support and quantify future decisions related to potential for reuse.

Where this is not possible, routes for reuse of materials offsite should then be progressed. Utilisation and interrogation of the Principal Contractor's supply chains should provide opportunities for this. While this would not benefit the whole life carbon assessment of the on-site redevelopment, it would potentially reduce manufacturing emissions associated with other local or national developments.

This also provides a quantifiable circularity message that would help establish the demolition process as a sustainable activity that facilitates future reuse and recycling of materials.

The UK is experiencing a growth in businesses and providers of circular and reuse solutions, focusing on refurbishment and re-selling of materials from building demolition. There is, however, a limited supply of recovered materials returning back into the market at the moment, therefore every opportunity should be explored to support the availability of recovered materials. This is particularly important as the UK works towards its Net Zero goals, in which construction and material circularity plays a critical role.

## **5.7 Site Waste Management Plan**

It should be noted that it is the Principal Contractor's responsibility to record and report actual materials present and accurate volumes of each material via a SWMP/RMP, for example using the SMARTWASTE tool or via written documents. This is normally required to demonstrate construction resource efficiency and diversion of resources from landfill.

A SWMP can be provided by Sweco on request.

The estimates of KDPs within this report, and suggestions for disposal, recycling and/or reuse, are intended be incorporated into the SWMP.

## **5.8 Hazardous Materials**

The identification and disposal of hazardous materials should be undertaken in line With the Hazardous Waste Regulations 2005 and the Health and Safety at Work Act 1974 (HSWA 1974).

All premises constructed prior to the year 2000 may incorporate asbestos containing materials (ACMs). The location, type and extent of ACMs have not been included within the scope of this report and therefore should be identified via a refurbishment and/or demolition asbestos survey prior to the start of works.

Where works on or the removal of the ACMs is required, it should be noted that all work with asbestos must be carried out in accordance with the Control of Asbestos Regulations 2012. It should be understood that during the removal of ACMs, additional KDPs may also be required to be disposed of as hazardous waste in a designated landfill.

## 6 Site Information

### 6.1 Site Description

Hyde Park, Hayes consists of a 10-acre mixed use commercial campus located within the Hillington area of Middlesex. The site is located between Millington Rd, approximately 0.4 miles South West of Hayes and Harlington train station and approximately 2.8 miles North East of Heathrow Airport.

The footprint of the area within the extent of the audit is approximately 5.58 acres/22,600m<sup>2</sup>.

The scope of the Pre-Demolition Audit consists of the following:

#### HPH2

Estimated to have been constructed circa 2010, the building primarily consists of structural concrete construction, with cassette profile metal wall panels and façade windows/doors. Internally the 2-storey building is predominantly made up of open plan offices and communal staircases & lobbies.

#### HPH5

Estimated to have been constructed in 2014, the building primarily consists of a structural concrete frame and masonry/composite floor slab and profile steel decking construction, with cassette profile metal wall panels and façade windows/doors. Internally the 4-storey building is predominantly made up of open plan offices with communal staircases, lobbies and a basement car park.

#### Multi-Storey Car Park (MSCP)

Estimated to have been constructed circa 2000, the building primarily consists of structural concrete construction with cassette profile metal wall panels. Internally the 4-storey building is predominantly made up of vehicle parking bays and communal staircases.

#### External Areas

The external areas of the site consist of hardstanding vehicle parking surfaces and roads, landscaped communal areas with footpaths, mature trees and shrubs throughout.

The location and outline of the site is presented as Figure 1.

The National Grid reference for the approximate centre of the site is TQ 09186 79235.

### 6.2 Proposed Scope of Development

outline planning application (all matters reserved excluding access) for

The proposed development of the Hyde Park site consists of the demolition of existing buildings (above basement level) and the delivery of a residential development (Class C3), consisting of flexible residential/commercial floorspace, new public realm, landscaping, play space, car parking, cycle parking and associated works.

### **6.3 Information Provided**

The following information has been provided to Sweco in support of the PWA report:

- Floor layout drawings.

### **6.4 Site Audit**

The audit of the Site was undertaken between 01 and 11 April 2025. Photos of the Site are presented in Appendix D.

At the time of the audit, HPH2 and the MSCP was in active use. HPH5 was not in active use.

The following restrictions/limitations were present:

- No intrusive/destructive investigations were undertaken.
- No access to lift shafts.
- No access to HPH2 ground floor offices was permitted.

## 7 Summary of Total Key Demolition Products

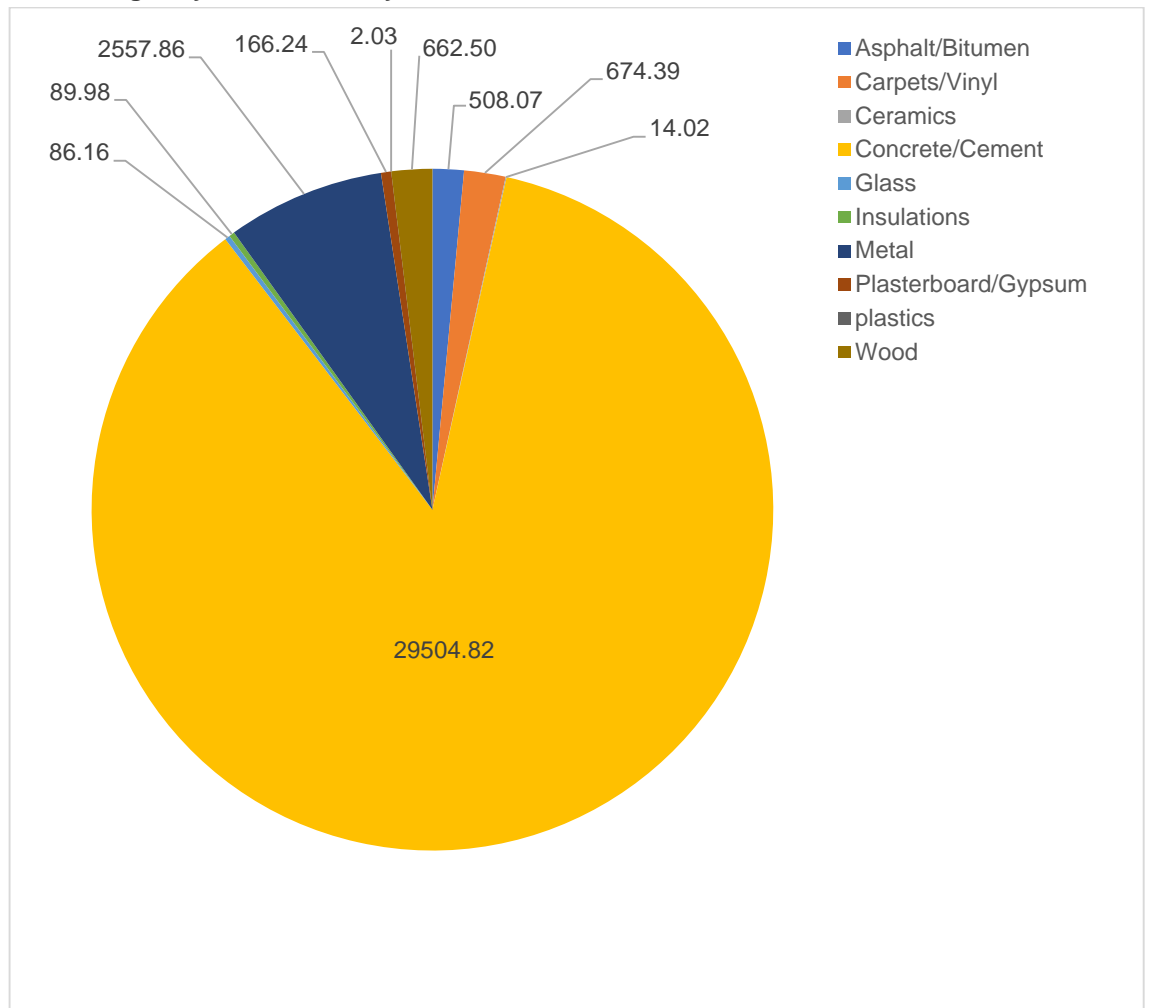
The results of the audit have estimated KDPs to total 16,942.10m<sup>3</sup> and 34,266.05 tonnes. The total of embodied carbon is estimated to be 2,695.21 tonnes.

KDPs are categorised as per the Wst 01 construction waste management construction waste group table in Appendix A and calculated as per the material weight factors in Appendix B.

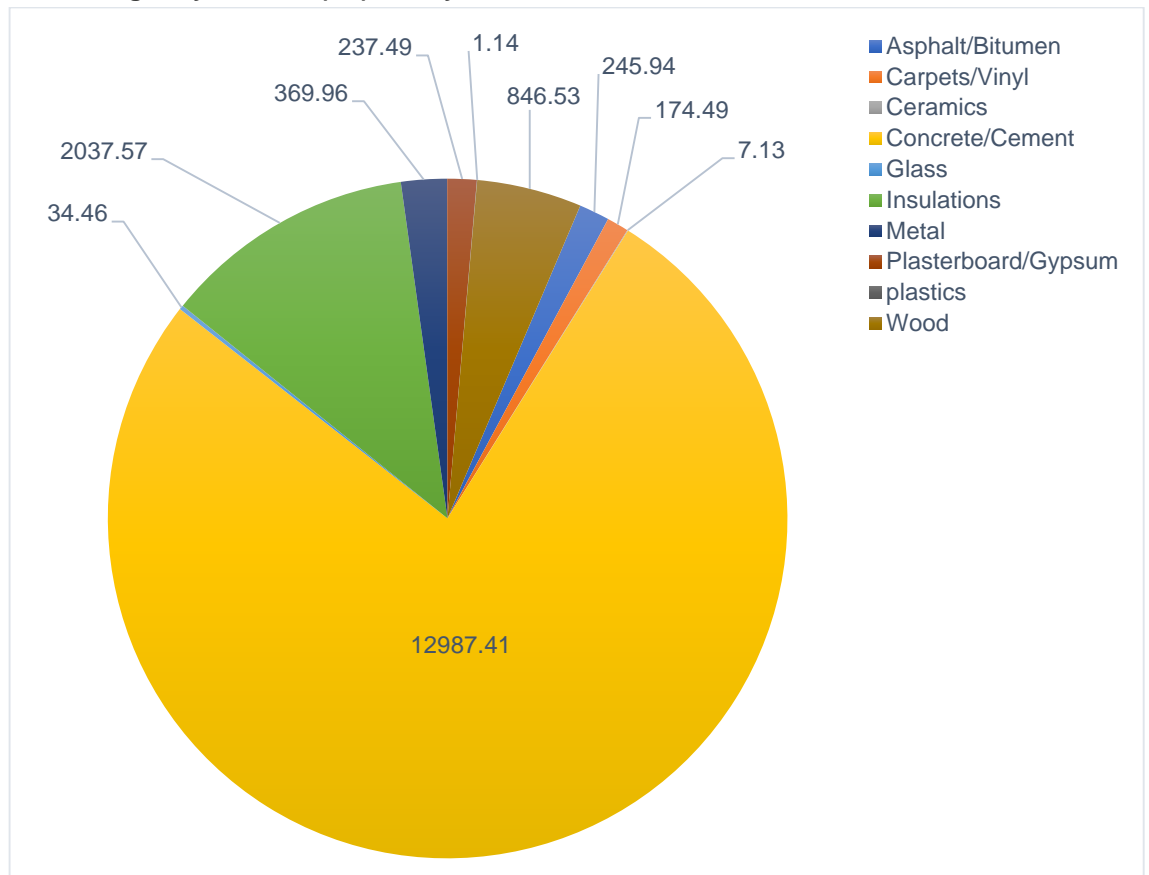
Total estimated volumes and weights of KDPs are as follows:

Key Demolition Product (KPD)	European Waste Group	Estimated total Volume (m <sup>3</sup> )	Estimated total Weight (Tonnes)	Estimated Total CO <sub>2</sub> e (Tonnes)
Asphalt/Bitumen	1703	245.94	508.07	1.66
Carpet/Vinyl	200111	174.49	674.39	1395.44
Ceramics	107103	7.13	14.02	0.05
Concrete/Cement	170101 170102	12,987.41	29,504.82	96.78
Glass	17202	34.46	86.16	3.32
Insulations	170604	2,037.57	89.98	0.50
Metals	0714	369.96	2,557.86	103.31
Plasterboard/ Gypsum	170802	237.49	166.24	3.77
Plastics	170203	1.14	2.03	4.20
Wood	070201	846.53	662.50	1,086.20
<b>Total</b>	<b>Total</b>	<b>16,942.10</b>	<b>34,266.05</b>	<b>2695.21</b>

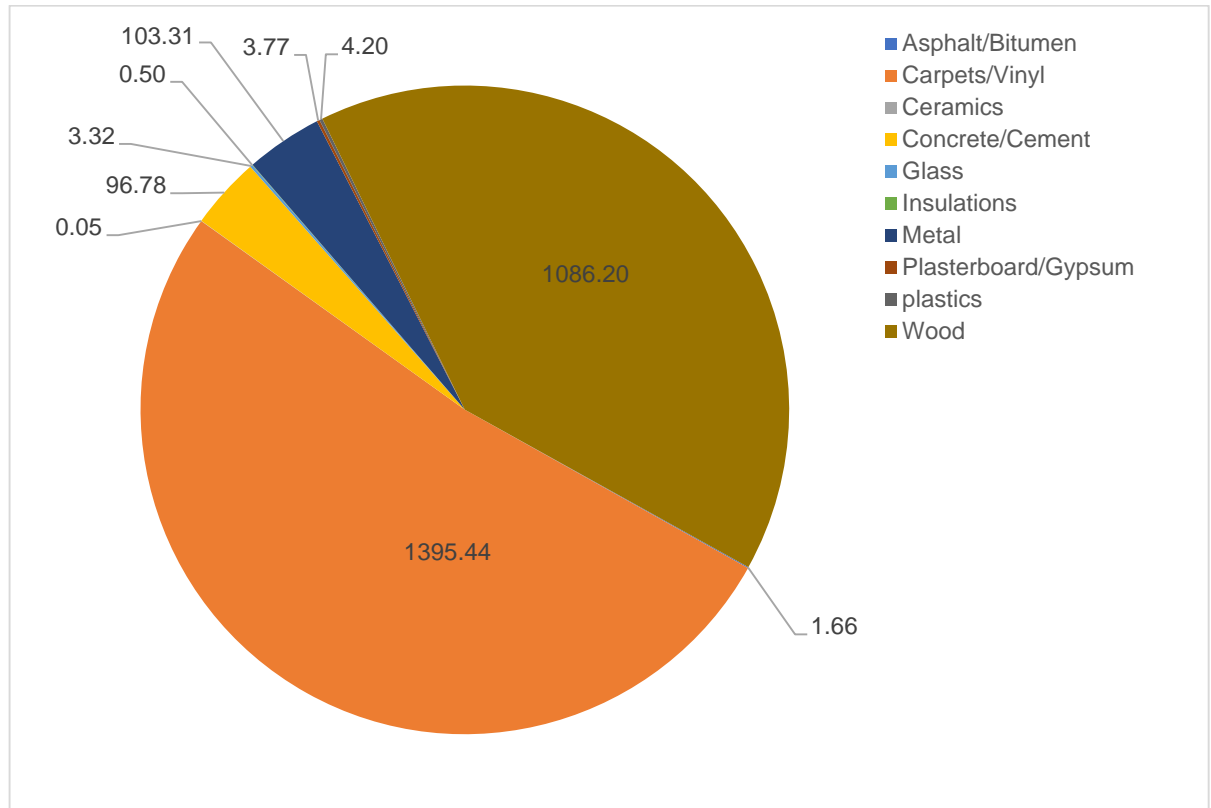
## 7.1 Total Weight by Tonnes of Key Demolition Products



## 7.2 Total Weight by Volume (m³) of Key Demolition Products



### 7.3 Total Embodied Carbon CO<sub>2</sub>e (Tonnes)



## 8 Recommendations

The assessment and suitability of KDPs for reuse, recycling and recovery have been set out as per the recommended waste hierarchy outlined in Section 4.1 and should be followed as much as reasonably practicable.

### 8.1 Materials by Key Group

Key Group	Total Volume (m <sup>3</sup> )	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Asphalt/ Macadam/ Bitumen	245.94	508.07	1.66					
Item	Volume (m <sup>3</sup> )	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
Bitumen flat roof lining felt	7.63	7.63	0.04	Good			✓	✓
External Asphalt hardstanding surfaces	238.30	500.43	1.62	Good-Fair		✓	✓	
Comments and Recommendations								
Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.								
Options are to crush and to be reuse Asphalt planings as aggregate products.								
Local Refuse Centres, Businesses or Further Information Sources								

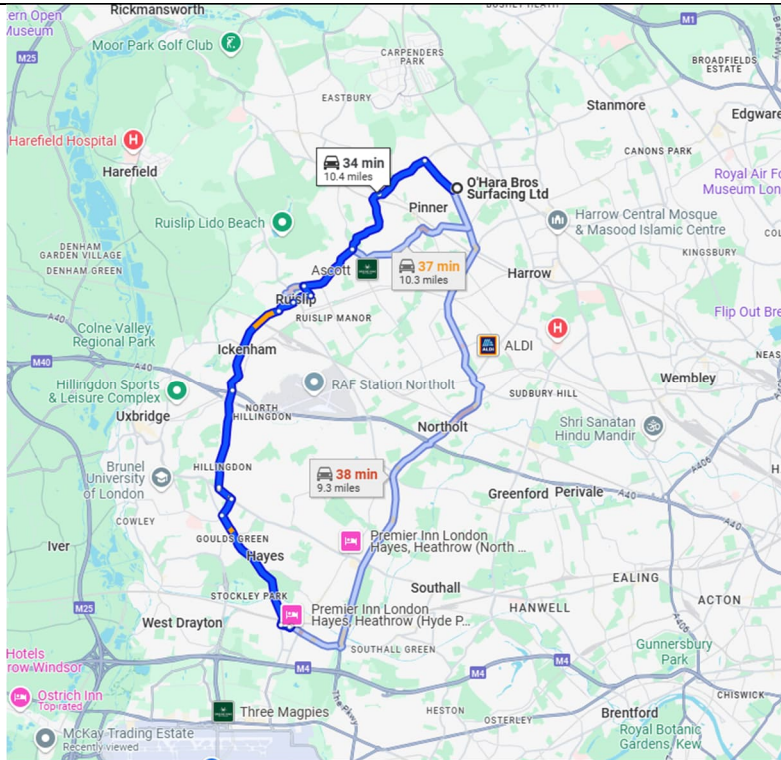


**O'Hara Bros Surfacing Ltd:** <https://oharabros.co.uk/services/aggregates-recycling>

**Aggregate Industries:** <https://www.aggregate.com/locations>

### Location of Recycling Contractor to Site

O'Hara Bros Surfacing Ltd, O'Hara Bros Surfacing, Pinner Park Farm, Pinner HA5 4SU



Key Group	Total Volume (m <sup>3</sup> )	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Carpet/Vinyl	174.49	674.39	1,395.44					
Item	Volume (m <sup>3</sup> )	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
Vinyl flooring throughout	2.45	3.42	7.09	Good-Fair		✓	✓	
Carpet throughout	172.04	670.95	1,388.34	Good-Fair		✓	✓	

### Comments and Recommendations

Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.

Carpet tiles in good condition can be carefully removed, graded for visual condition and reused on-site. Where the visual condition is deemed unsuitable for high traffic parts of the new buildings, these can still be reused in areas where furniture will cover more floor space.

Surplus carpet tiles or those deemed unsuitable for reuse on-site can be either donated to charity or recycled via a suitable waste recycling company or takeback scheme.

Vinyl flooring is commonly layed with adhesive bonding it to the floor and therefore may be damaged on removal.

### Local Refuse Centres, Businesses or Further Information Sources

**Envirocycle London:** <https://envirocyclelondon.com/>

**Used Carpet Tiles:** <https://www.usedcarpettiles.com/>

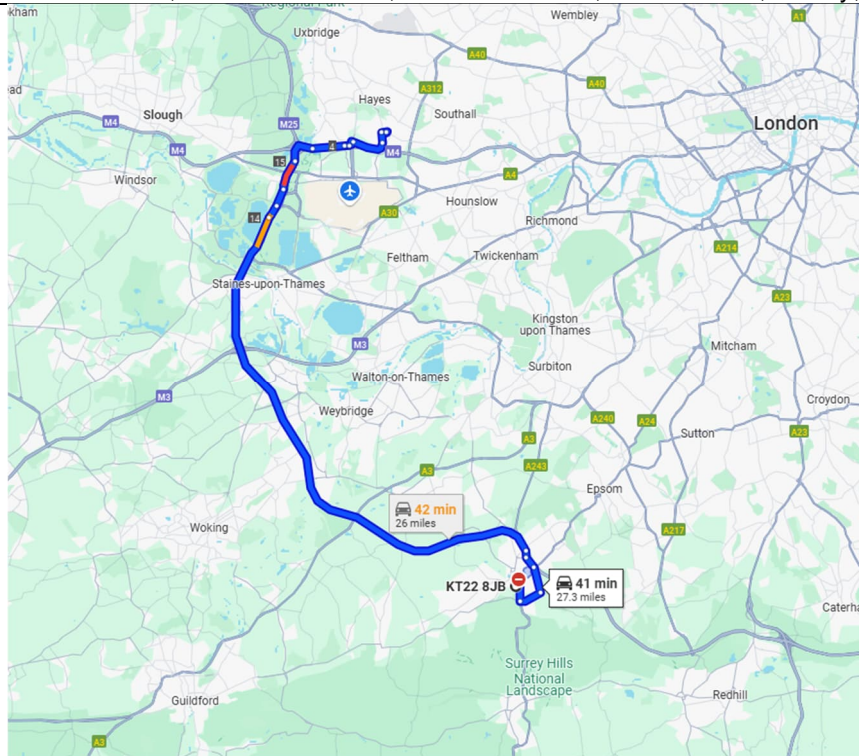
**Recofloor:** <https://www.recofloor.org/>

### Contract Flooring Association:

<https://cfa.org.uk/userfiles/files/Zero%20Avoidable%20Waste%20in%20Flooring%20-%20A%20Scoping%20Study.pdf>

### Location of Recycling Contractor to Site

Envirocycle London Ltd, Thorncroft Manor, Thorncroft Drive, Leatherhead, Surrey, KT22 8JB



Key Group	Total Volume (m³)	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Ceramics	7.13	14.02	0.05					
Item	Volume (m³)	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
WCs and basins throughout	1.15	2.07	0.01	Good/ Fair		✓	✓	
Floor tiles throughout	5.97	11.94	0.04	Good			✓	
Comments and Recommendations								

Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.

Subject to inspection by a qualified persons, Wcs and basins may be suitable for reuse on or off-site. Doc-M accessibility furniture should also be carefully removed and stored with its associated sanitaryware for reuse.

Alternatively, where deemed unsuitable for reuse, all ceramic products can be downcycled, crushed and reused for within aggregates on or off-site.

#### Local Refuse Centres, Businesses or Further Information Sources

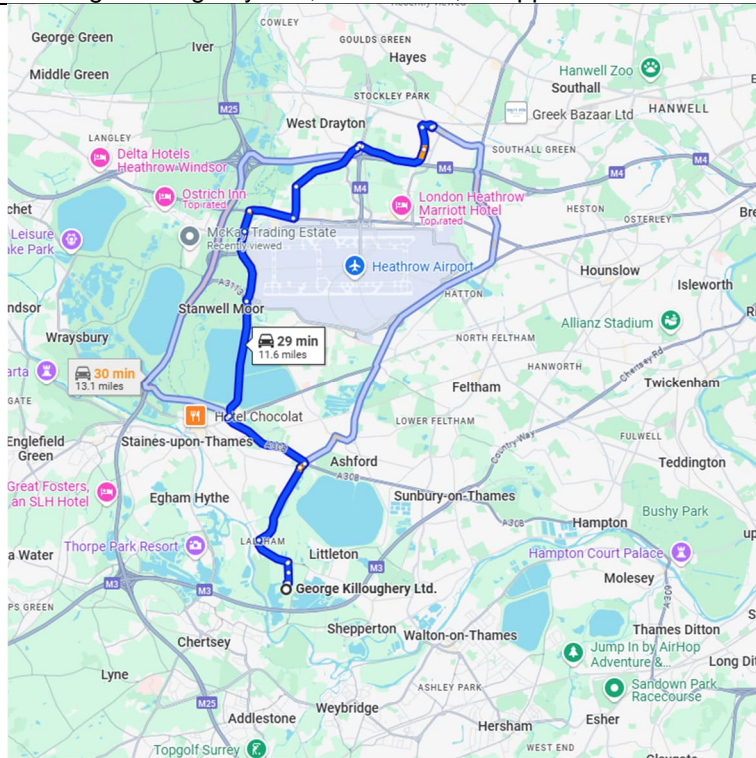
**Killoughery:** <https://www.killoughery.co.uk/services/recycled-aggregates/>

**Powerday Commercial:** <https://powerday.co.uk/material-recycling-facilities/recycled-aggregates-concrete/>

**Salvoweb:** <https://www.salvoweb.com>

#### Location of Recycling Contractor to Site

George Killoughery Ltd., Littleton Ln, Shepperton TW17 0NF



Key Group	Total Volume (m³)	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Concrete/ Cement/ Stone	12,987.41	29,504.82	96.78					
Item	Volume (m³)	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
Concrete dense block walls throughout	670.91	1341.82	4.40	Good			✓	
Brick walls to buildings throughout	150.24	255.40	0.83	Good		✓	✓	
Low level external brick walls	7.48	12.71	0.04	Good		✓	✓	
Cement external paving slabs	113.81	170.71	0.56	Good		✓		
HPH5 lining sheets to perimeter of roof	1.49	2.24	<0.01	Good			✓	
HPH2 central courtyard floor tiles	0.46	0.69	<0.01	Good		✓		
Cement external kerb stones throughout	14.20	21.30	0.07	Good		✓		
HPH2 cement shower tray x 1	<0.01	0.01	<0.01	Good		✓	✓	
HPH2 floor slabs throughout	3,024.70	6,956.81	22.81	Good			✓	
HPH2 cement staircases to roof	32.59	74.96	0.24	Good			✓	
HPH2 cement emergency exit staircases	28.08	64.58	0.21	Good			✓	
MSCP concrete lining to floor slabs	441.75	1,016.02	3.33	Good			✓	
External concrete hardstanding surfaces throughout	310.20	713.46	2.34	Good-Fair			✓	
HPH2 balcony stone floor tiles	1.97	4.93	0.01	Good			✓	
HPH5 stones/gravel to roof top	166.38	415.95	1.36	Good		✓		
HPH5 cement roof to rooftop staircase	3.81	8.78	0.03	Good			✓	
Concrete pillars and joists throughout	602.63	1,386.04	4.54	Good			✓	



HPH5 concrete floor slabs throughout	3,839.33	8,830.45	28.96	Good			✓	
HPH5 concrete walls to building	378.40	870.32	2.85	Good			✓	
MSCP trough profile floor slabs	2,650.50	6,096.15	19.99	Good			✓	
MSCP cement roof to emergency exits staircases	6.40	14.72	0.05	Good			✓	
MSCP cement emergency exits staircases	58.20	133.86	0.44	Good			✓	
MSCP perimeter walls	483.84	1,112.83	3.65	Good			✓	

#### Comments and Recommendations

Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.

Where possible, retaining and redeveloping around concrete structures will always be the most sustainable way to maintain closed loop circular economy practice in extending a buildings life and extracting maximum value. It is strongly recommended the suitability for retention on site is determined prior to demolition.

Brickwork can potentially be carefully removed and reuse on or off-site. Investigations may be required to determine the suitability for its internal or external reuse by considering factors like (but not limited to) frost resistance, water absorption and compressive strength as these will not have been made in accordance with BS EN 771-1. This should be confirmed by qualified persons.

Steel rebar is presumed to be present within concrete structural elements throughout. This should be separated from its concrete housing if removed and crushed.

External hardstanding cement kerb stones, paving slabs and decorative stone features, can be retained or reused either as part of the new development or off-site subject to inspection and condition.

All materials deemed unsuitable for reuse and/or retention can be broken down and used as aggregates on or off-site.

#### Local Refuse Centres, Businesses or Further Information Sources

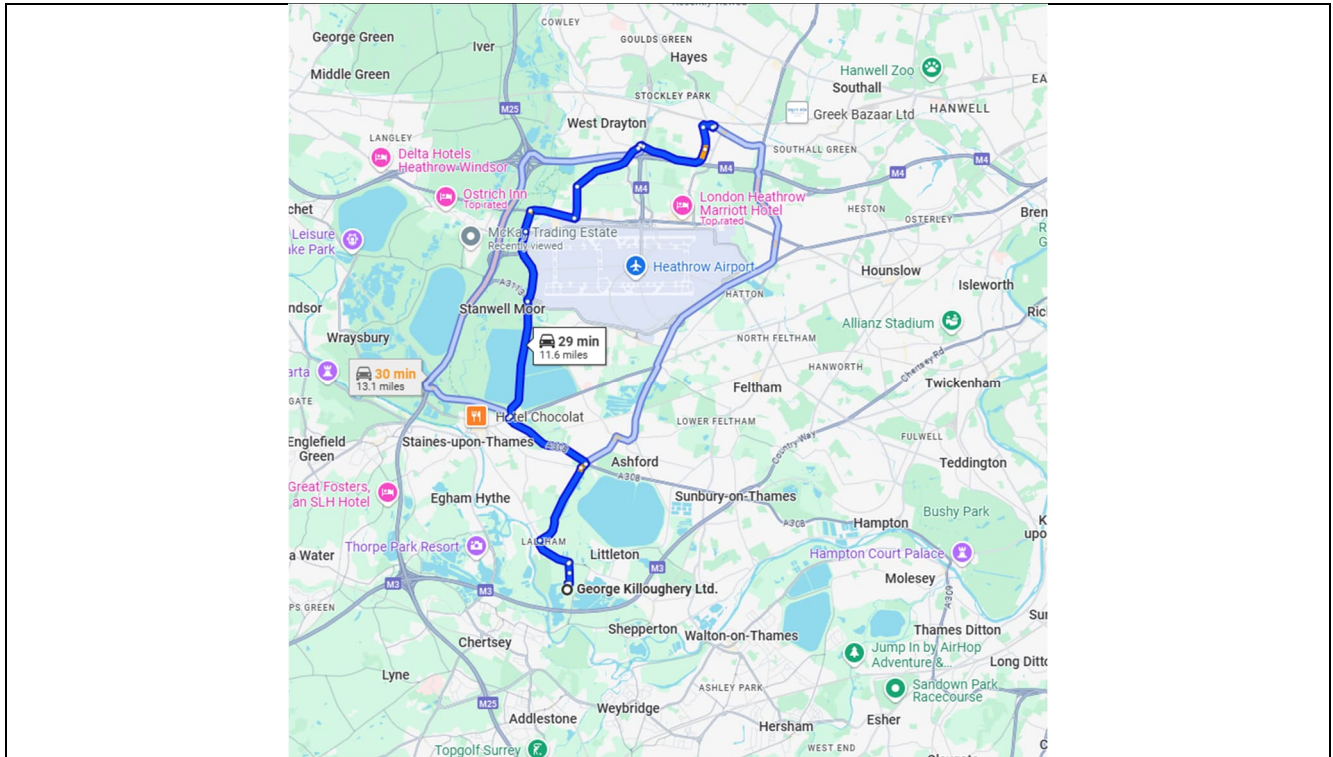
**Killoughery:** <https://www.killoughery.co.uk/services/recycled-aggregates/>

**Powerday Commercial:** <https://powerday.co.uk/material-recycling-facilities/recycled-aggregates-concrete/>

**Salvoweb:** <https://www.salvoweb.com>

#### Location of Recycling Contractor to Site

George Killoughery Ltd., Littleton Ln, Shepperton TW17 0NF



Key Group	Total Volume (m³)	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Glass	34.46	86.16	3.32					
Item	Volume (m³)	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
Window and door panes Throughout (various thicknesses)	13.47	33.67	1.30	Good			✓	
HPH5 Skylights	1.728	4.32	0.17	Good			✓	
Office partition panels (0.01m thick)	13.42	33.57	1.29	Good		✓	✓	
Glass Balustrades throughout	4.74	11.02	0.46	Good		✓		
Mirrors throughout	0.95	2.36	0.09	Good		✓		
HPH2 basin worktops x 6	0.13	0.34	0.01	Good		✓		
HPH2 Shower screen x 1	<0.01	<0.01	<0.01	Good		✓		
<b>Comments and Recommendations</b>								

Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.

Due to age and efficiency, it is unlikely the majority of the windows throughout will be suitable for reuse, as the average life expectancy of windows is up to 20 years if properly maintained.

Whilst the windows may not have reached their maximum life expectancy, it may not be in the developments best interest to reuse on-site therefore, unless confirmed by qualified persons, these can be close loop recycled and turned back into glass products.

Glazing identified for recycling should be separated from its housing frames to avoid contamination and rejection from the recycling company unless specified otherwise.

Alternative options are to break up and use as aggregates, however this should not be the preferred option.

#### Local Refuse Centres, Businesses or Further Information Sources

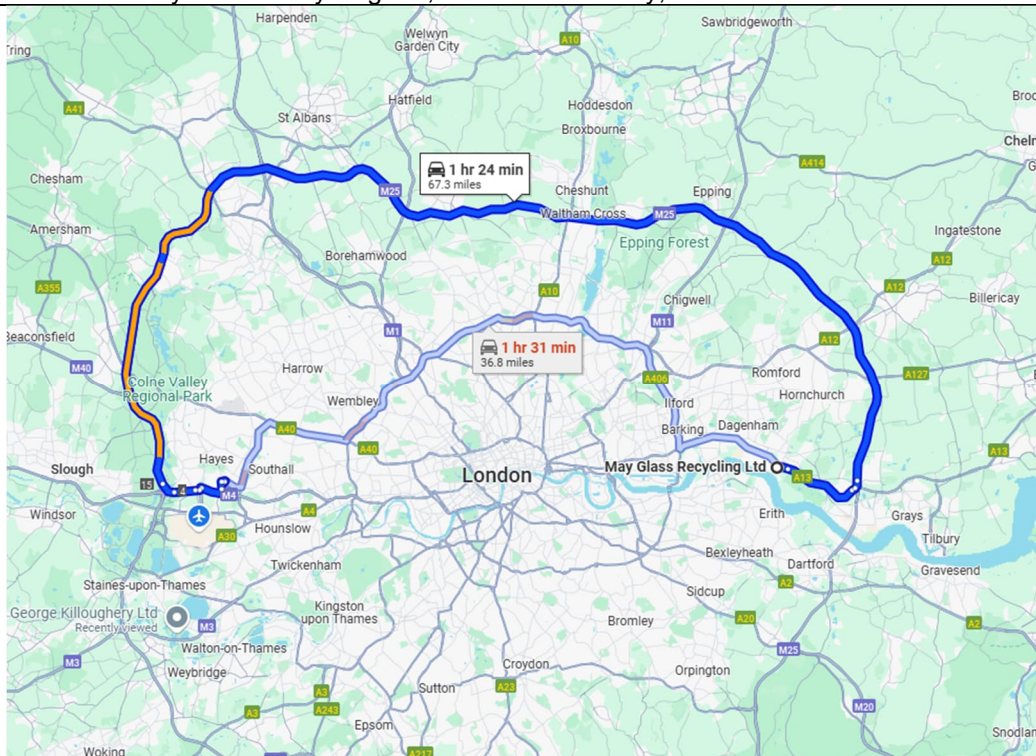
**May Glass Recycling:** <https://mayglassrecycling.co.uk/>

**Salvoweb:** <https://www.salvoweb.com>

**Day Aggregates:** <https://www.daygroup.co.uk/day-glass-recycling/>

#### Location of Recycling Contractor to Site

May Glass Recycling Ltd, 5a Salamons Way, Rainham RM13 9UL



Key Group	Total Volume (m³)	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Insulations	2,037.57	89.98	0.50	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
Glass Fibre suspended ceiling tiles	19.01	1.90	0.01	Good		✓		

throughout (0.01m thick)								
Polyurathane Insulation to roof tops throughout (0.1m thick)	745.37	0*	0*	Good			✓	
HPH5 Polyurathane Insulation below external wall cladding (0.1m thick)	112.20	0*	0*	Good		✓	✓	
HPH5 Polyurathane Insulation to basement ceiling (0.1m thick)	396	0*	0*	Good		✓	✓	
HPH2 Polyurathane Insulation below windows (0.1m thick)	48	0*	0*	Good		✓	✓	
HPH5 Polystyrene Insulation to Roof (0.1m thick)	86.68	0**	0**	Good			✓	
Glass fibre suspended ceiling panels	250.50	50.10	0.27	Good		✓	✓	
Mineral wool insulation to partition walls	81.20	8.12	0.04	Good		✓	✓	
Mineral wool insulation pads to suspended ceilings	257.60	25.76	0.14	Good		✓		
Glass fibre insultaion lining to ventilation	60.00	6.00	0.03	Good		✓	✓	

#### Comments and Recommendations

Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.

\* It should be noted that the BREEAM material weight conversion factors guide (Appendix B) which is used to determine key demolition product (KDP) weights, estimates Polyurethane Insulation to have a weight of 0.00 tonnes per M3. This may not be representative of actual weights with those insulation materials present.

\*\* It should be noted that the BREEAM material weight conversion factors guide (Appendix B) which is used to determine key demolition product (KDP) weights, does not include Polystyrene Insulation estimations. Therefore, the calculations for Polyurethane Insulation have been used for estimated volumes only.

Subject to condition and inspection by qualified persons, ceiling tiles as well as their aluminium grid frames can be removed and safely segregated and stored for reuse either on or off-site. Alternatively, subject to meeting the required criteria, unsuitable ceiling tiles can potentially be upscale recycled into new tiles. The manufacturer of ceiling tile should be identified to determine options for recycling.

Where insulation materials are identified to be unsuitable for reuse or recycling these should be disposed of as per the hazardous waste regulations 2005 (where relevant).



### Local Refuse Centres, Businesses or Further Information Sources

**Workplace Interiors Workshop:** <https://workplaceinteriorshop.co.uk/knowledge-base/where-can-i-recycle-ceiling-tiles/>

**Mil-Tek:** <https://www.miltek.co.uk/materials/insulation/>

**Rockwool:** <https://www.rockwool.com/uk/about-us/sustainability/recycling/>

**Rockfon:** <https://www.rockfon.co.uk/sustainability/our-sustainability-services/recycling-service/>

**Chc Waste Management:** <https://www.chcwastemgt.co.uk/recycling/polyurethane-recycling/>

**Salvoweb:** <https://www.salvoweb.com>

Key Group	Total Volume (m³)	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Metal	369.96	2,557.86	103.31					
Item	Volume (m³)	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
Aluminium partition wall and ceiling frames throughout	3.84	13.77	66	Good		✓	✓	
Aluminium suspended ceiling frames	0.72	1.96	0.08	Good		✓	✓	
Aluminium suspended ceiling lights (x>2316)	1.48	4.01	0.16	Good		✓	✓	
Aluminium glass partition frames	0.02	0.06	<0.01	Good		✓	✓	
Aluminium window frames to windows throughout	0.06	0.14	<0.01	Good			✓	
Steel window frames throughout	4.14	29.00	1.17	Good			✓	
Steel roller shutter doors throughout x 3	0.07	0.53	0.02	Good-Fair		✓	✓	
Steel glass partition frames throughout	0.20	1.40	0.05	Good		✓		
Raised access floor feet throughout x 42,161	0.84	5.90	0.23	Good		✓		

Steel suspended ceiling tiles throughout	25.70	179.91	7.28	Good		✓		
Steel suspended ceiling tile frames throughout	9.26	64.87	2.62	Good		✓		
Steel internal hand rails throughout	0.90	6.33	0.25	Good		✓		
Steel external hand rails throughout	0.36	2.50	0.10	Good		✓		
Steel ventilation and rooftop plant throughout	6.70	46.90	1.89	Good		✓	✓	
MSCP Iron guttering	0.07	0.57	0.02	Good		✓	✓	
HPH2 steel canopy roof sheets	0.28	2.01	0.08	Good		✓	✓	
HPH2 steel profile sheet "decking" to floor slabs	15.76	110.33	4.46	Good			✓	
HPH2 steel staircases x 2	0.88	6.16	0.25	Good		✓		
HPH2 steel frames to 2 x emergency exits	20.60	144.22	5.83	Good		✓	✓	
HPH2 steel roof wall cladding	2.70	18.90	0.76	Good		✓	✓	
HPH2 steel cassette wall cladding	0.60	4.24	0.17	Good		✓	✓	
HPH2 steel frames to external wall cladding	1.66	11.65	0.47	Good		✓		
HPH2 steel roof sheets	0.15	1.07	0.04	Good			✓	
HPH2 external canopy steel roof frames and pillars	0.25	1.80	0.07	Good		✓		
HPH2 2x steel emergency exit staircases to roof	0.06	0.44	0.02	Good		✓		
HPH2 external steel wall cladding	0.96	6.72	0.27	Good		✓		
HPH2 steel wallcladding frames	0.10	0.75	0.03	Good		✓		

HPH2 2x steel lift cabs and motors	-	-	-	Good		✓	✓	
HPH2 5x steel lift cabs and motors	-	-	-	Good		✓	✓	
HPH5 basement security turnstiles x 2	-	-	-	Good		✓		
HPH5 roof top modular unit	-	-	-	Good		✓		
HPH5 steel roof top perimeter fence	0.57	4.04	0.16	Good		✓	✓	
HPH5 steel radiators to staircase x 3	0.03	0.29	0.01	Good			✓	
HPH5 steel kitchen extractor	0.07	0.58	0.02	Good		✓		
HPH5 steel frames and pillars to central lobby stairs	1.02	7.17	0.29	Good		✓		
HPH5 steel vertical pillars to balcony area	2.00	14.00	0.56	Good		✓		
HPH5 steel skylight roof frames	1.71	12.00	0.48	Good		✓		
HPH5 steel roof to central section	0.70	4.85	0.19	Good			✓	
HPH5 steel cassette cladding to walls	1.64	11.52	0.46	Good		✓		
HPH5 steel cassette cladding to staircase walls	0.82	5.77	0.23	Good		✓		
HPH5 steel wall cladding frames	0.25	1.78	0.07	Good		✓		
HPH5 steel roof lining below felt	2.48	17.38	0.70	Good			✓	
HPH5 steel sheet pile walls to basement	18.23	127.59	5.16	Good		✓	✓	
HPH5 3 x steel side staircases	0.71	5.00	0.20	Good		✓		
HPH5 steel kitchen roller shutter	0.05	0.34	0.01	Good		✓		
HPH5 26x roof top fan units	-	-	-	Good		✓	✓	
HPH5 2x air con free standing units	-	-	-	Good		✓	✓	
MSCP steel cassette wall cladding	2.30	16.12	0.65	Good			✓	

MSCP steel 2 x staircase cassette cladding	0.73	5.12	<0.10	Good			✓	
MSCP 10x steel lamp posts	0.05	0.36	0.01	Good			✓	
External areas 47x steel lamp posts	0.18	1.29	0.05	Good		✓	✓	
MSCP crash "Armco" barrier	1.00	6.93	0.28	Good		✓		
MSCP steel window security bars	1.40	9.76	0.40	Good-Fair			✓	
MSCP 2 x steel lift cabs and motors	-	-	-	Good			✓	
Steel rebar	239.60	1,677.20	67.87	-			✓	

#### Comments and Recommendations

Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.

It should be understood metal products identified throughout are non-exhaustive and visual appearance alone cannot always determine options for reuse. A methodical approach and the inspection of all materials by qualified person during strip out should be made to determine if it can be carefully removed and disassembled, stockpiled/segregated and reused as part of the new development or salvaged and reused off-site.

Roof and wall sheets, structural joists and frames can potentially be reused on or off-site subject to inspection and confirmation by qualified persons. These may require reconditioning depending on condition.

Frames to suspended ceilings and plasterboard ceilings/walls where present can be carefully removed and reused on or off-site subject to condition.

Radiators throughout vary in sizes and heat output. Whilst some may be suitable for reuse off site, due to the cost and efficiency of installing new radiators, the likely option is to recycle unless otherwise confirmed by qualified persons.

The modular unit on HPH5 roof can be removed without being disassembled and reused.

The reuse of Lift cabs and motors should be confirmed by qualified lift engineers/consultants.

The reuse of ventilation plant and air conditioning units should be confirmed by qualified engineers/consultants

If broken up on site, steel rebar should be removed from its concrete housing and segregated with scrap metals.

All metals and plant deemed unsuitable for reuse/recycling can be collected by a waste management company for recycling, salvage and sold as scrap.

#### Local Refuse Centres, Businesses or Further Information Sources

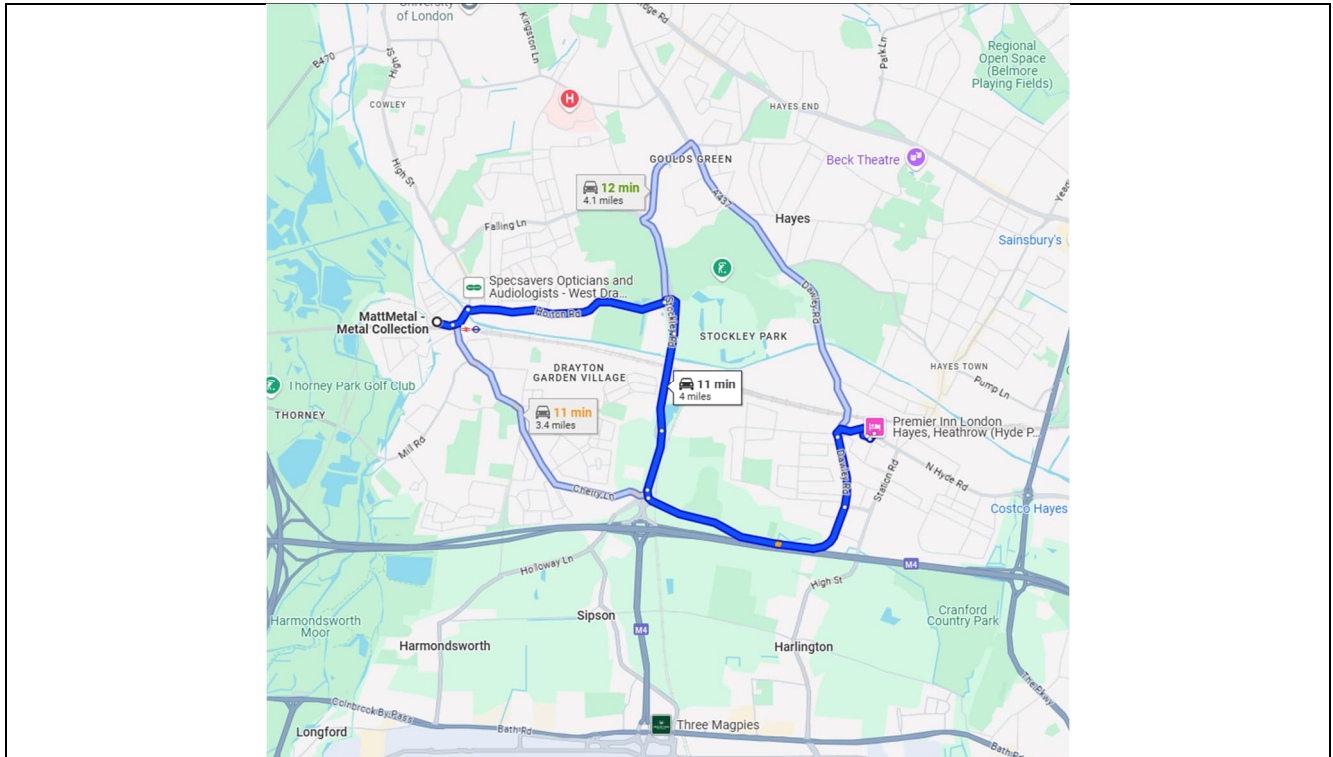
**Matt Metal Ltd:** <https://mattmetal.co.uk/about-scrap-metal-merchants/>

**Hornlane Metal Recycling Ltd:** <http://www.hornlanemetals.co.uk/>

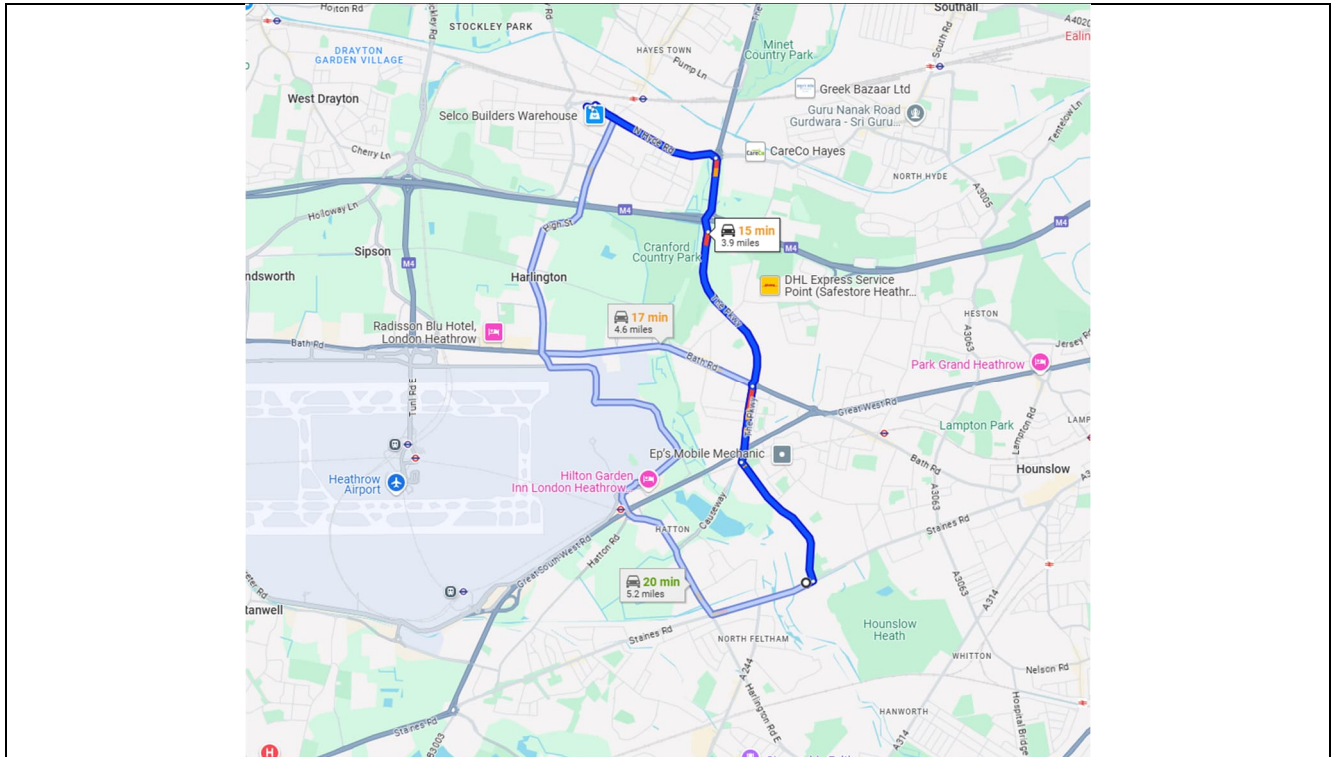
**Salvoweb:** <https://www.salvoweb.com>

#### Location of Recycling Contractor to Site

Matt Metal – Unit 22, The Old Coal Yard, Tavistock Rd, West Drayton UB7 7QT

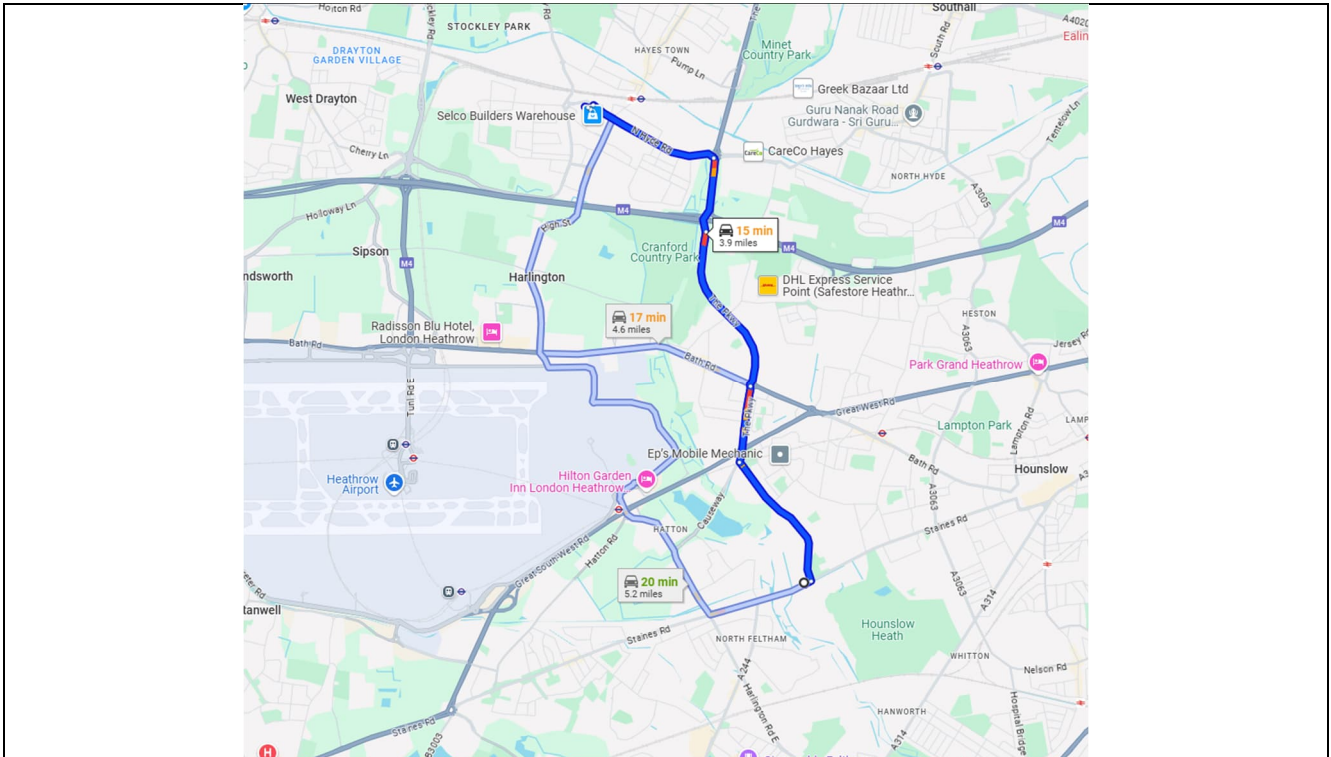


Key Group	Total Volume (m³)	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Plasterboard/ Gypsum	237.48	166.23	3.77					
Item	Volume (m³)	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
Ceiling and wall Panels throughout	237.48	166.23	3.77				✓	
Comments and Recommendations								
Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.								
Given the method of its removal, it is unlikely that the decision to reuse plasterboard will be made during the new construction, however timber and/or metal frames where present may be salvageable for reuse on or off-site subject to inspection by a qualified person.								
Plasterboard waste can be recycled into new plasterboard products via a closed loop recycling service.								
Waste plasterboard and plaster should be stockpiled separately and not be mixed with other waste products to avoid contamination.								
Local Refuse Centres, Businesses or Further Information Sources								
<b>Ron Smith Recycling:</b> <a href="https://www.ronsmithrecycling.co.uk/">https://www.ronsmithrecycling.co.uk/</a>  <b>British Gypsum:</b> <a href="https://www.british-gypsum.com/sustainability/our-sustainability-services/our-plasterboard-recycling-service">https://www.british-gypsum.com/sustainability/our-sustainability-services/our-plasterboard-recycling-service</a>  <b>Powerday:</b> <a href="https://powerday.co.uk/waste-management/plasterboard-recycling/">https://powerday.co.uk/waste-management/plasterboard-recycling/</a>								
Location of Recycling Contractor to Site								
Ron Smith Recycling, St Albans Farm, Staines Road, Feltham TW14 0HH								



Key Group	Total Volume (m³)	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes) C2-C4 (EoL)					
Plastics	1.14	2.03	4.20					
Item	Volume (m³)	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
HPH2 Guttering and downpipes	0.10	0.14	0.29				✓	
HPH5 Guttering and downpipes	0.06	0.08	0.17				✓	
HPH5 PVC wall hygiene sheets	0.26	0.36	0.75				✓	
HPH2 GRP water tank	0.72	1.44	2.98			✓		
<b>Comments and Recommendations</b>								
Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.								
When deemed unsuitable for reuse, uPVC and PVCu are suitable for closed loop recycling to be transformed into new plastic materials.								
<b>Local Refuse Centres, Businesses or Further Information Sources</b>								
<b>Ron Smith Recycling:</b> <a href="https://www.ronsmithrecycling.co.uk/">https://www.ronsmithrecycling.co.uk/</a>								
<b>Powerday:</b> <a href="https://powerday.co.uk/waste-management/plastic-recycling/">https://powerday.co.uk/waste-management/plastic-recycling/</a>								
<b>Salvoweb:</b> <a href="https://www.salvoweb.com">https://www.salvoweb.com</a>								
<b>Location of Recycling Contractor to Site</b>								
Ron Smith Recycling, St Albans Farm, Staines Road, Feltham TW14 0HH								





Key Group	Total Volume (m³)	Total Weight (Tonnes)	Total CO2e (Tonnes) C2-C4 (EoL)					
Wood Item	Volume (m³)	Weight (Tonnes)	CO2e (Tonnes)	Condition	Retain	Reuse on/ off-site	Recycle	Dispose
Raised access flooring (RAF) throughout	773.25	618.60	988.32			✓		
MDF wc cubicles, basin units and IPS panels throughout	38.40	26.88	65.59			✓	✓	
HPH2 balcony decking	2.04	0.81	1.28			✓	✓	
HPH2 canteen laminate flooring	0.67	0.54	0.88			✓	✓	
HPH5 reception desk to main lobby	0.35	0.28	0.44			✓	✓	
HPH5 central communal stairs	2.34	0.93	1.47			✓	✓	
HPH5 central stage	0.81	0.32	0.51			✓	✓	
MDF kitchen units throughout	8.85	6.19	15.14			✓	✓	
Doors and frames throughout x >220	19.80	7.92	12.44			✓	✓	
Comments and Recommendations								

Sweco is unable to determine on-site reuse quantities due to having no involvement in, or knowledge of, the proposed re-development.

It should be understood wood products identified throughout are non-exhaustive and visual appearance alone cannot always determine options for reuse. A methodical approach and the inspection of all materials during strip out should be made to determine if it can be carefully removed and disassembled, stockpiled/ segregated and reused on-site or salvaged and reused off-site via donation to independent business / charities that can transform timber into further products. In many cases timber products can be reconditioned and adapted for reuse (e.g doors and frames).

Subject to their condition, doors can potentially be reused on or off-site. Fire doors if not being reused on-site can potentially be reused off-site subject to meeting the necessary fire safety rating where required and insurance requirements.

Kitchen, units subject can be safely dismantled and either reused on or off-site or donated to charity and reuse organisations.

Materials identified as MDF are not suitable for recycling. The best option for this material is for use as biomass fuel and incinerated.

Many wood products can be open loop recycled off-site by independent businesses / charities that can refurbish/recondition timber into further products. It is strongly recommended that this be the preferred option prior to recycling.

All wood products deemed unsuitable for reuse should be separated into Grades A, B and C for recycling and stored separately to avoid contamination. Whilst not identified on site, any wood falling in to the Grade D category should be disposed of as hazardous waste.

#### **Local Refuse Centres, Businesses or Further Information Sources**

**Ron Smith Recycling:** <https://www.ronsmithrecycling.co.uk/>

**Solo Wood Recycling:** <https://solowoodrecycling.co.uk/>

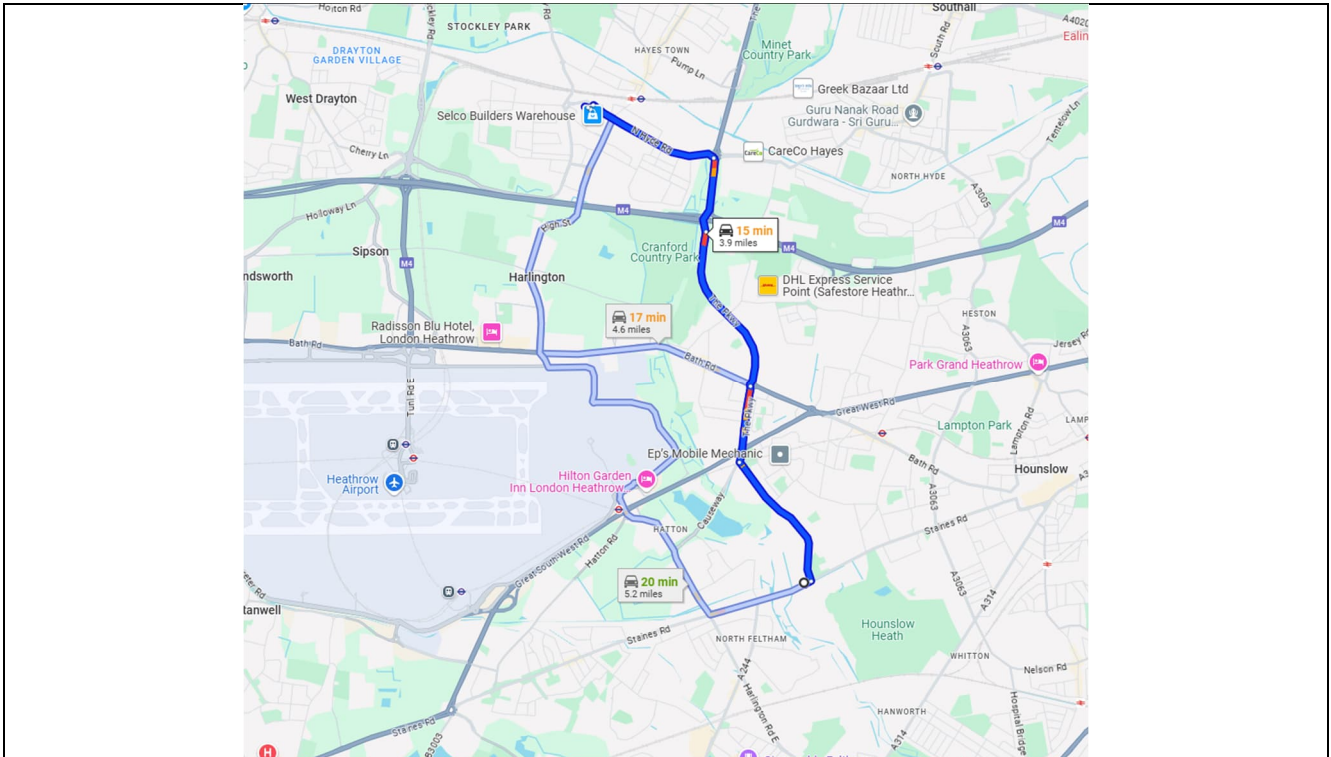
**Community Wood Recycling:** <https://communitywoodrecycling.org.uk/>

**Powerday:** <https://powerday.co.uk/waste-management/wood-recycling/>

#### **Location of Recycling Contractor to Site**

Ron Smith Recycling, St Albans Farm, Staines Road, Feltham TW14 0HH





## 8.2 Materials by Building Element Group

The following is a breakdown of materials as per the requirements of the WLC assessment, categorised in accordance with the RICS New Rules of Measurement Classification System table (NRM Level 2) which can be found in Appendix E.

Building Element Group	Total Volume (m <sup>3</sup> )	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes)
Superstructure	14,321.73	30,562.87	200.12
<b>Key Group</b>	<b>Volume (m<sup>3</sup>)</b>	<b>Weight (Tonnes)</b>	<b>CO<sub>2</sub>e (Tonnes)</b>
Asphalt/Bitumen	7.63	7.63	0.04
Concrete/Cement	12,372.89	28,165.03	92.38
Glass	33.37	83.44	3.21
Insulations	1,340.26	0*	<0.01
Metal	307.67	2,131.29	86.04
Plasterboard/Gypsum	237.48	166.24	3.76
Plastics	0.26	0.36	0.75
Wood	22.40	9.22	14.66

\*See 8.1- Materials by key group - Insulations

Building Element Group	Total Volume (m <sup>3</sup> )	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes)
Finishes (Wall/Floor Ceiling)	748.31	1,140.61	2121.28
<b>Key Group</b>	<b>Volume (m<sup>3</sup>)</b>	<b>Weight (Tonnes)</b>	<b>CO<sub>2</sub>e (Tonnes)</b>
Carpet/Vinyl	174.48	674.38	1,395.43
Ceramics	5.97	11.94	0.04
Wood	567.85	454.28	725.80

Building Element Group	Total Volume (m <sup>3</sup> )	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes)
Fittings, Furnishings and Equipment	1,005.47	645.53	360.06
Key Group	Volume (m <sup>3</sup> )	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)
Ceramics	1.15	2.07	0.01
Concrete/Cement/Stone	<0.01	<0.01	<0.01
Glass	1.08	2.71	0.10
Insulations	697.30	89.98	0.49
Metal	51.42	352.20	14.25
Wood	254.49	198.54	345.19

Building Element Group	Total Volume (m <sup>3</sup> )	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes)
Building Services/MEP	7.99	50.69	4.97
Key Group	Volume (m <sup>3</sup> )	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)
Metal	7.27	49.25	1.99
Plastics	0.72	1.44	2.98

Building Element Group	Total Volume (m <sup>3</sup> )	Total Weight (Tonnes)	Total CO <sub>2</sub> e (Tonnes)
External Works	858.58	1866.34	8.77
Key Group	Volume (m <sup>3</sup> )	Weight (Tonnes)	CO <sub>2</sub> e (Tonnes)
Asphalt/Bitumen	238.30	500.43	1.61
Concrete/Cement	614.50	1,339.76	4.39
Metals	3.58	25.10	1.01
Plastics	0.16	0.22	0.46
Wood	2.04	0.81	1.28

It is estimated that, unless specified otherwise by qualified persons, >99% of KDPs (by tonnage) have the potential to be diverted from landfill by either retention, reuse on and/or off-site, or by recycling.

The predicted <1% of residual demolition waste must be disposed via licensed waste disposal facilities and/or landfill as per the Hazardous Waste Regulations (England and Wales) 2005 (where relevant).

It is important that the results of this PWA are communicated to the necessary persons or project teams, including the Principal Contractor.

Prior to the commencement of redevelopment works, a target should be set based on the recommendations within this report and reviewed/compared on completion.

Following the comparison of actual targets achieved, a summary of the deviations from the targets along with the reasons for these deviations should be recorded to improve performance of future projects.

## 9 References

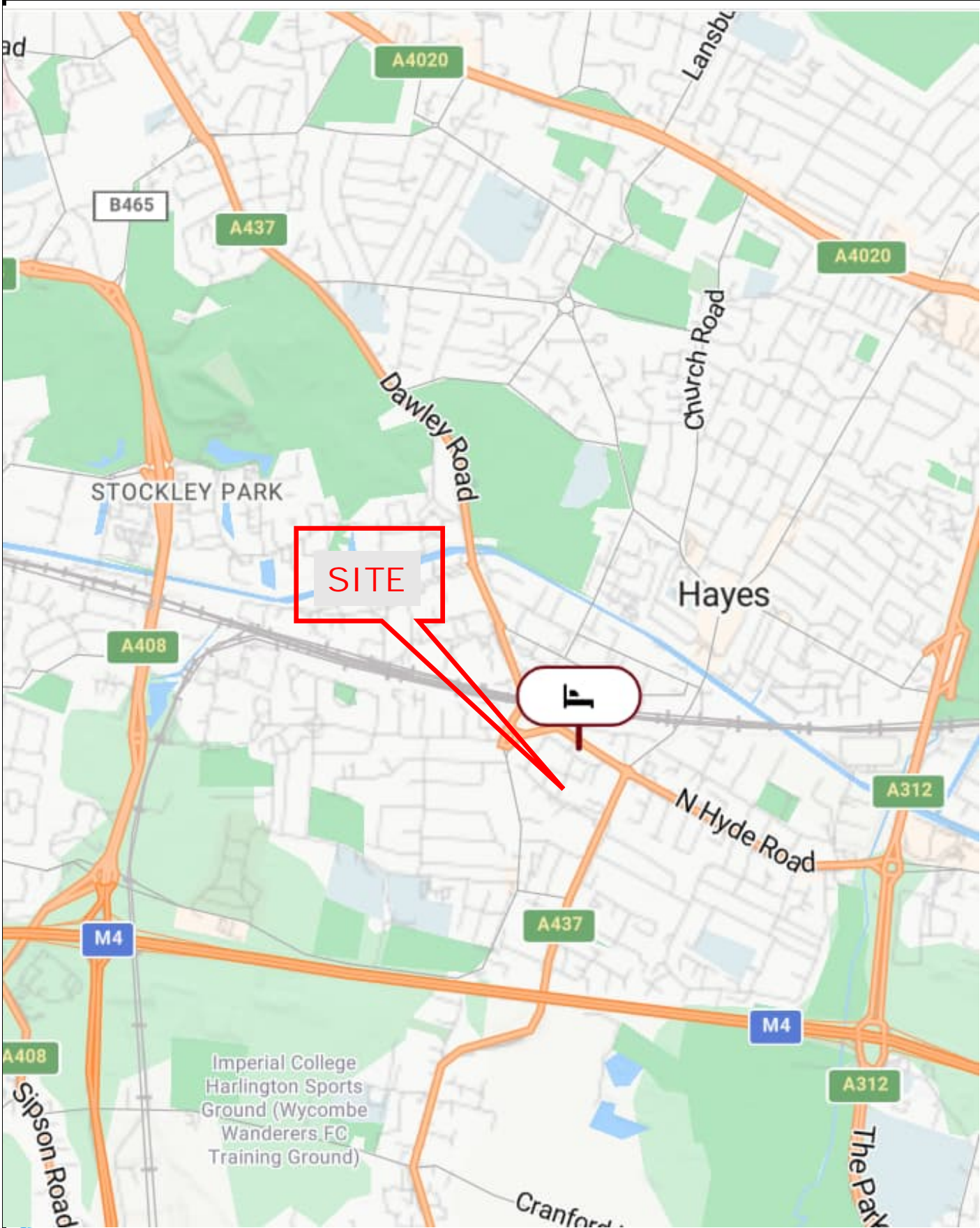
- 1 The Waste (England and Wales) Regulations 2011 and amendments.
- 2 Environmental Protection Act 1990.
- 3 Environmental Permitting Regulations (England and Wales) 2010 and amendments.
- 4 Hazardous Waste Regulations (England and Wales) 2005.
- 5 The Waste Electrical and Electronic Equipment Regulations 2006.
- 6 The Waste Batteries and Accumulators Regulations 2009.
- 7 Relevant quality protocols.
- 8 Control of Asbestos Regulation 2012 (CAR2012)
- 9 BRE Pre-redevelopment Audit Guidance (2017)
- 10 BREEAM New Construction Manual 2018
- 11 BREEAM WST 01 Construction Waste Management
- 12 GLA Circular Economy Statements (March 2022)
- 13 RICS Whole Life Carbon Assessment for the Built Environment (2017)
- 14 Defra PB13530 Waste Hierarchy Guidance (2011)
- 15 <https://www.gov.uk/how-to-classify-different-types-of-waste/construction-and-demolition-waste>
- 16 <http://www.hse.gov.uk/waste/waste-electrical.htm>

## **Figures**

**Figure 1 – Site Location Plan**

**Figure 2 – Floor Layout Plans**





C01	30.04.25	-	JW	CJ	JD
REV	DATE	REVISION	MADE	CHK	APP
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FINAL ISSUE					
SUITABILITY DESCRIPTION					
SUITABLE FOR INFORMATION					

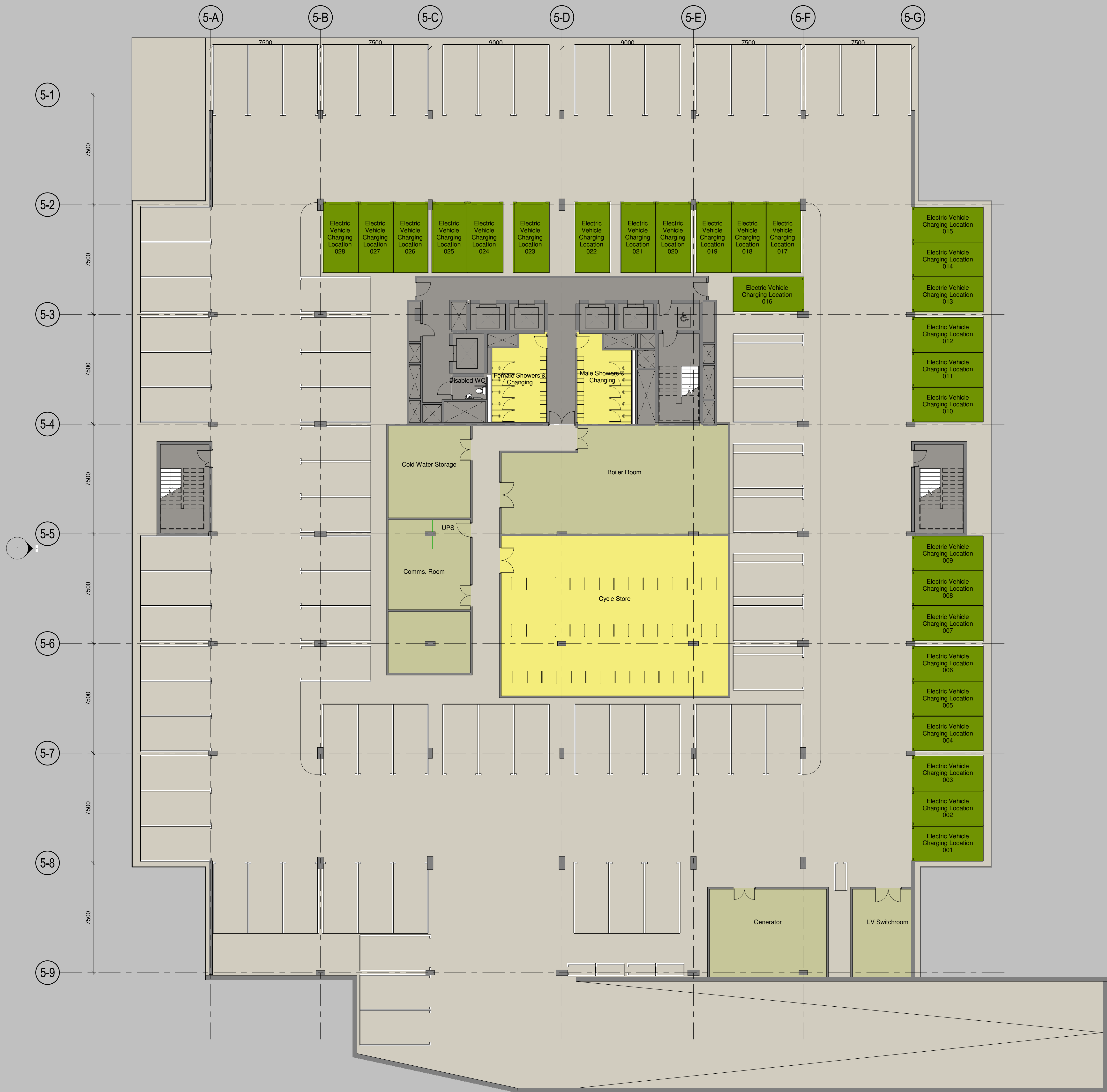


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COLUMBIA THREADNEEDLE INVESTMENTS UK INTERNATIONAL LTD
PROJECT
HYDE PARK, HAYES

DRAWING TITLE						
SITE LOCATION PLAN						
SCALE		SWECO REF.		7E+07	REVISION	
NTS @A3		65214976		S2	C01	
PROJECT	ORIGINATOR	VOLUME/ SYSTEM	LEVELS & LOCATIONS	TYPE	ROLE	NUMBER
65214976	SWE	XX	XX	D	GE	FIG 1







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Gross External Area (Office Accomodation)	
Level	Area
00 Ground Floor	3030.1 m²
01 First Floor	2554.6 m²
02 Second Floor	2765.3 m²
03 Third Floor	2765.3 m²
04 Fourth Floor	2765.3 m²
Grand total	13880.6 m²

Total Basement Area  
(Car park, Core and plant) = 3685m2

Enclosed Basement Area  
(Core and plant) = 426m2

Parking Schedule		
Level	Type	Total Spaces
-01 Basement	Disabled Space	7
-01 Basement	Motorcycle Space	5
-01 Basement	Standard Space	96
00 Ground Floor	Disabled Space	6
00 Ground Floor	Standard Space	31
Grand total		145

F	Total basement area description added	27/07/12	AF	JM
E	Total basement area added	27/07/12	AF	JM
D	SEA schedule added	26/07/12	AF	JM
C	Area schedules removed	25/07/12	HM	AF
B	Column removed, remaining column moved to central grid line	06/06/12	HM	AF
A	24 electric car points & additional plant space added	30/05/12	HM	JM

Rev	Description	Date	Dwn	Chk
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Basement Floor Plan

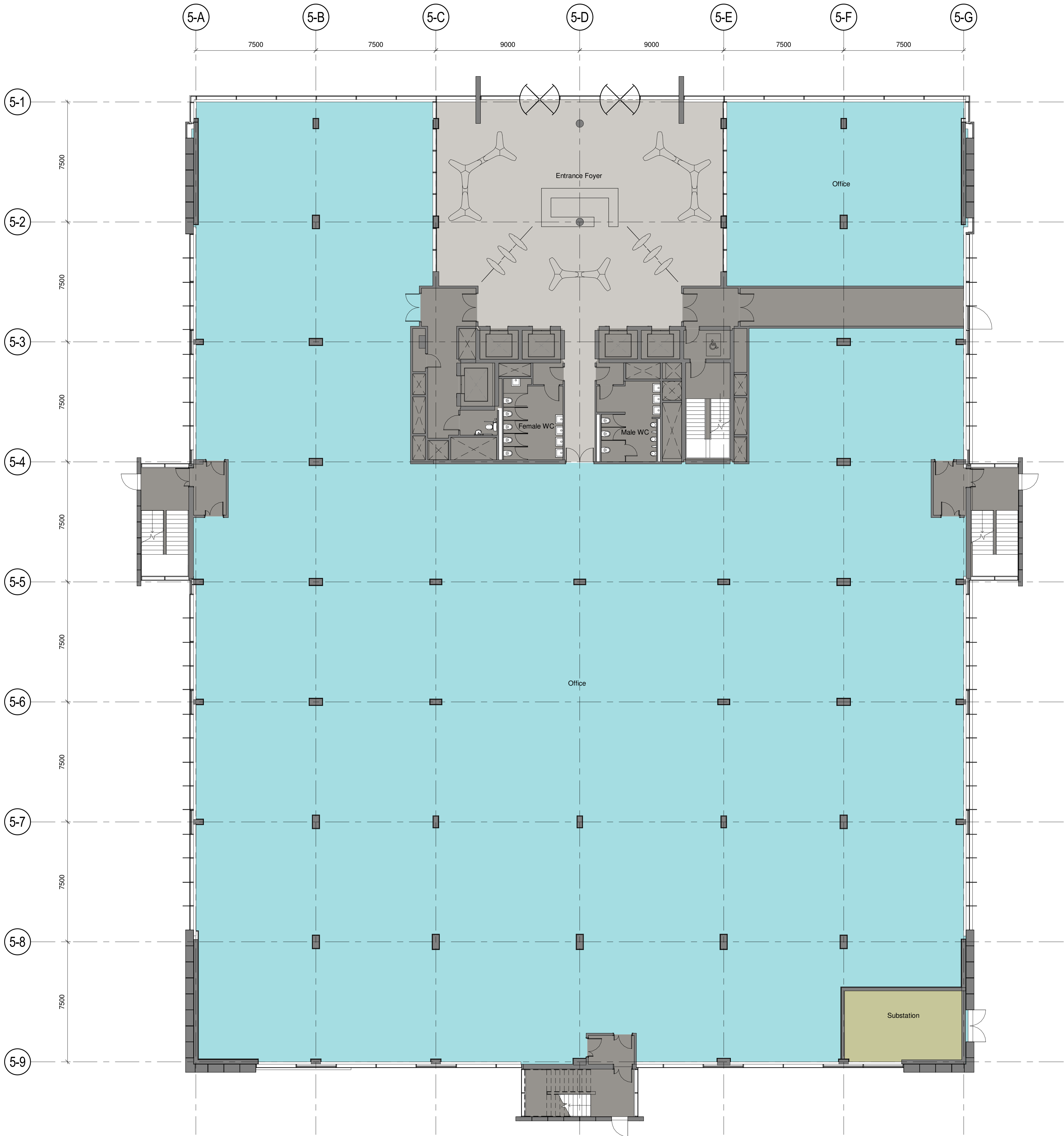
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Gross External Area (Office Accomodation)	
Level	Area
00 Ground Floor	3030.1 m <sup>2</sup>
01 First Floor	2554.6 m <sup>2</sup>
02 Second Floor	2765.3 m <sup>2</sup>
03 Third Floor	2765.3 m <sup>2</sup>
04 Fourth Floor	2765.3 m <sup>2</sup>
Grand total	13880.6 m <sup>2</sup>

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E	Total basement area description added	27/07/12	AF	JM
D	total basement area added	27/07/12	AF	JM
C	GEA schedule added	26/07/12	AF	JM
B	Area schedules removed	25/07/12	HM	AF
A	Column removed, remaining column moved to central grid line, Reception amended to suit	06/06/12	HM	AF

Rev	Description	Date	Drw	Chk
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Ground Floor Plan

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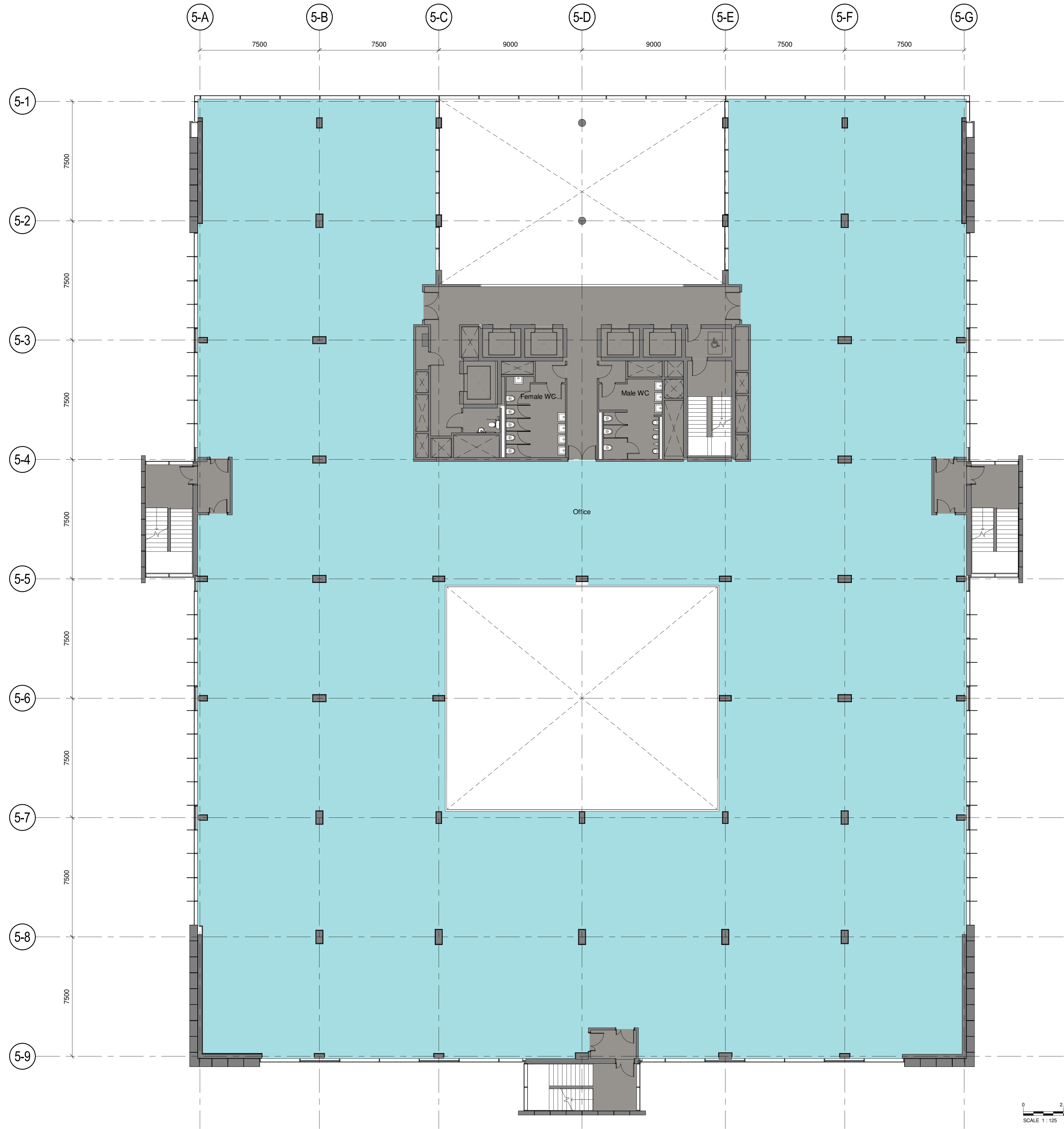
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Gross External Area (Office Accomodation)	
Level	Area
00 Ground Floor	3030.1 m²
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D	total basement area added	27/07/12	AF	JM
C	GEA schedule added	26/07/12	AF	JM
B	Area schedules removed	25/07/12	HM	AF
A	Column removed; remaining column moved to central grid line	06/06/12	HM	AF

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First Floor Plan

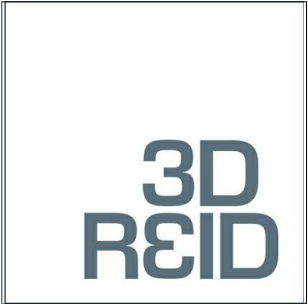
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Gross External Area (Office Accomodation)	
Level	Area
00 Ground Floor	3030.1 m²
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D	total basement area added	27/07/12	AF	JM
C	GEA schedule added	26/07/12	AF	JM
B	Area schedules removed	25/07/12	HM	AF
A	Column removed; remaining column moved to central grid line	06/06/12	HM	AF

Rev	Description	Date	Drw	Chk
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Second Floor Plan

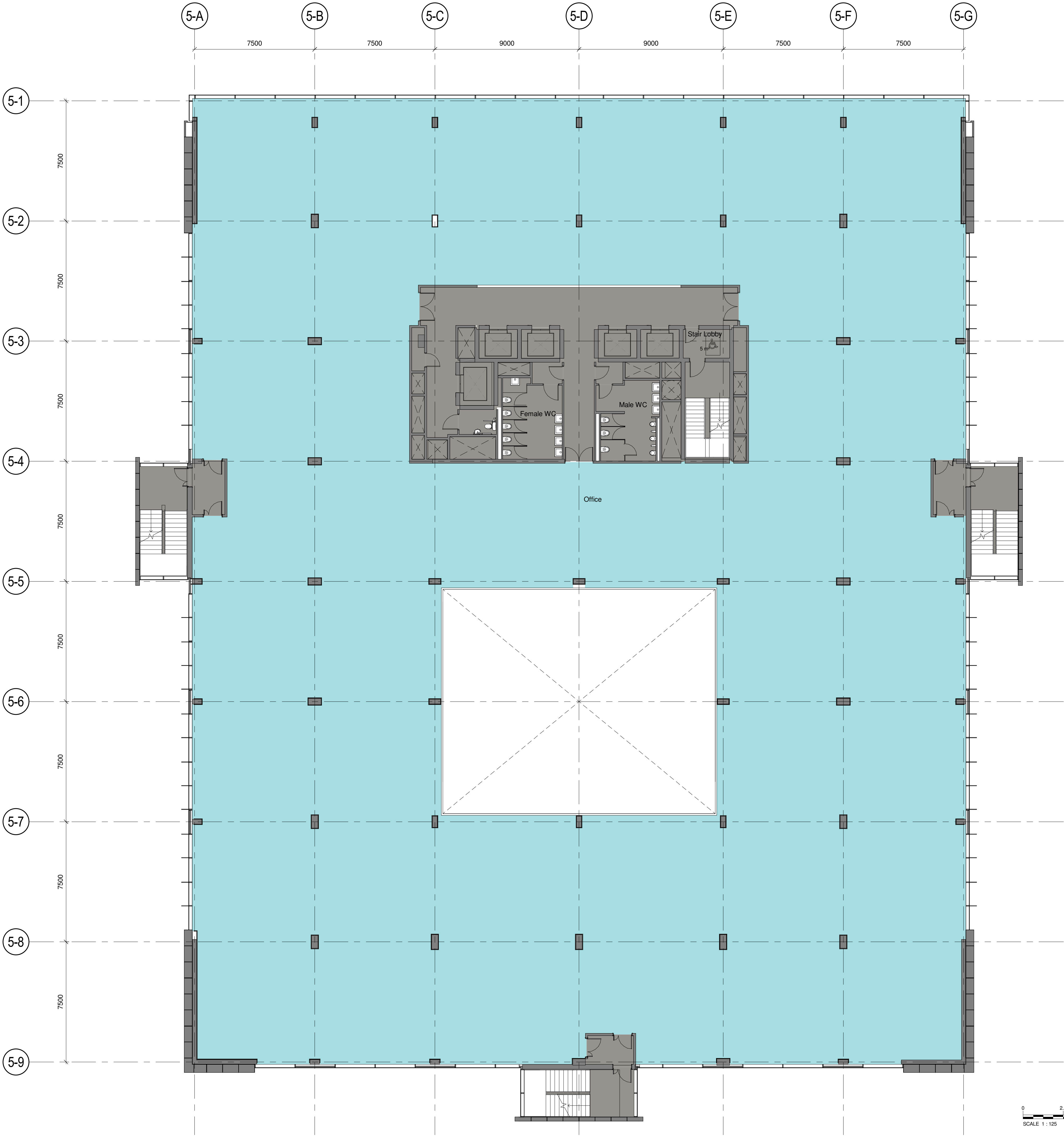
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Gross External Area (Office Accomodation)	
Level	Area
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D	total basement area added	27/07/12	AF	JM
C	GEA schedule added	26/07/12	AF	JM
B	Area schedules removed	25/07/12	HM	AF
A	Column removed; remaining column moved to central grid line	06/06/12	HM	AF

Rev	Description	Date	Drw	Chk
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Third Floor Plan

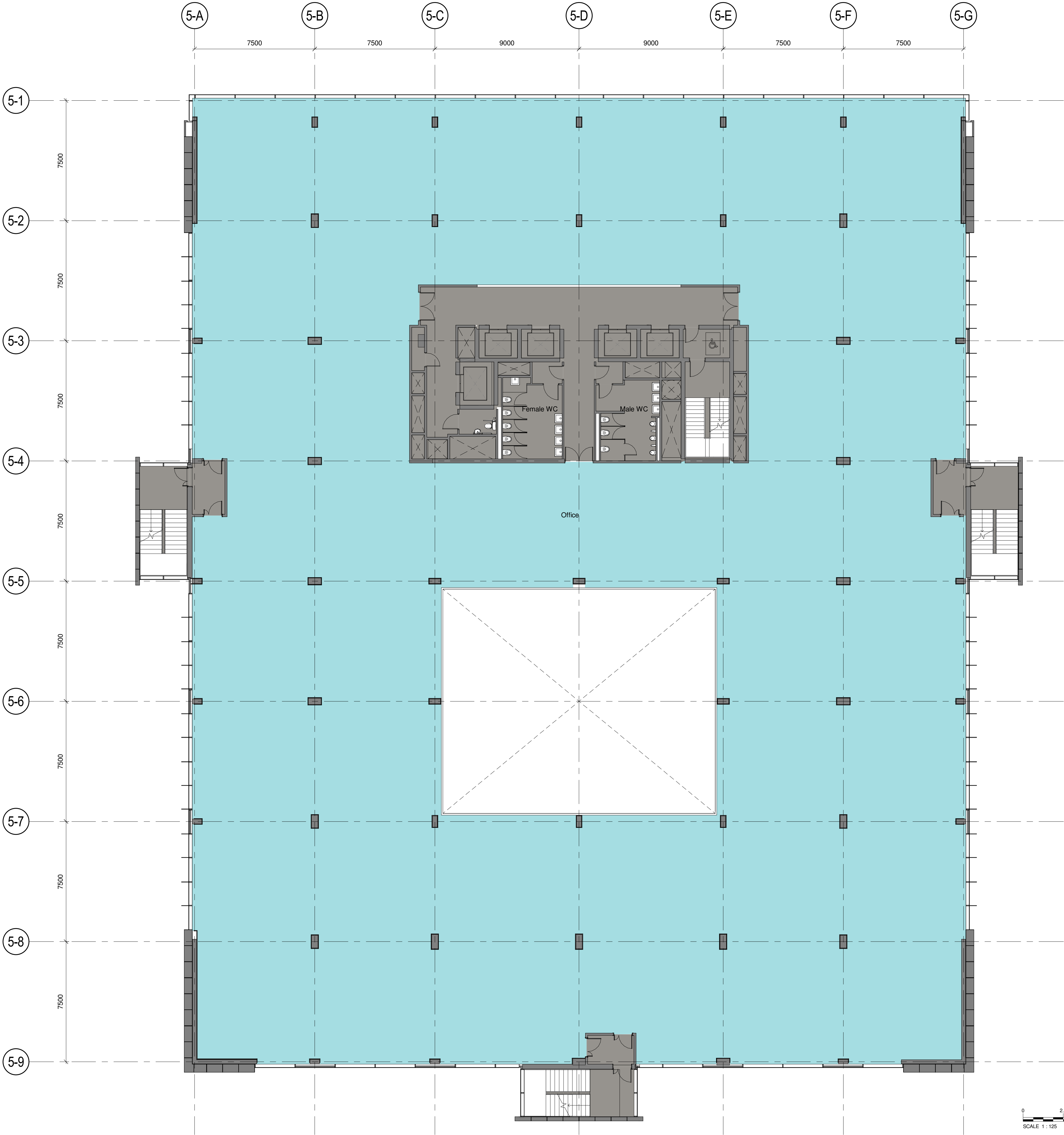
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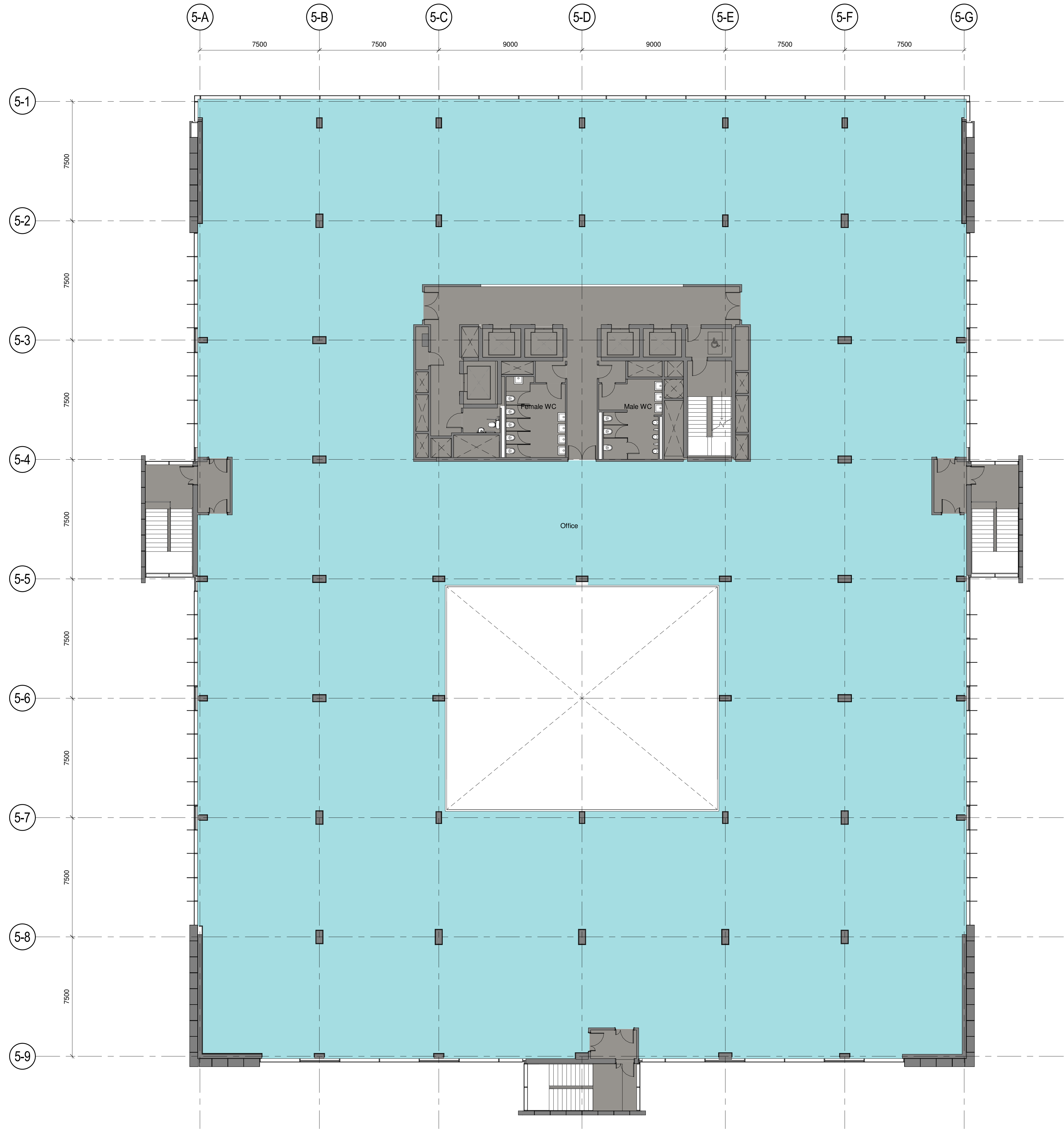
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Gross External Area (Office Accomodation)	
Level	Area
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C	GEA schedule added	26/07/12	AF	JM
B	Area schedules removed	25/07/12	HM	AF
A	Column removed; remaining column moved to central grid line	06/06/12	HM	AF

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Fourth Floor Plan

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**KEY:**

NEW SUSPENDED PLASTERBOARD CEILING WITH 12mm SHADOW GAP

NEW ARMSTRONG ORCAL MICRO -  
PERFORATED CEILING TILE IN  
HILHOUETTE XL 3mm, 500x500 MODULE

NEW SPOT LIGHTS TYPE TBC

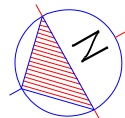
NEW ARMSTRONG ORCAL PREMIUM EXTR  
MICRO — PERFORATED CEILING, 3mm B  
500x300 MODULE

GLASS FIN™ CEILING LIGHT BOX

PHOTO LUMINESCENT RUNNING MAN  
50x155 mm

PHOTO LUMINESCENT TIRE EXIT SIGN

**BE ACTION NOTICE.**



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create + support

HPH2

ARCHITECTURAL  
CEILING LAYOUT  
GROUND FLOOR

JHG	NTS a1A1	Feb 2008
-----	----------	----------

code	unit	category	company, city	country
258U	A	LO	0300	•

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KEY:



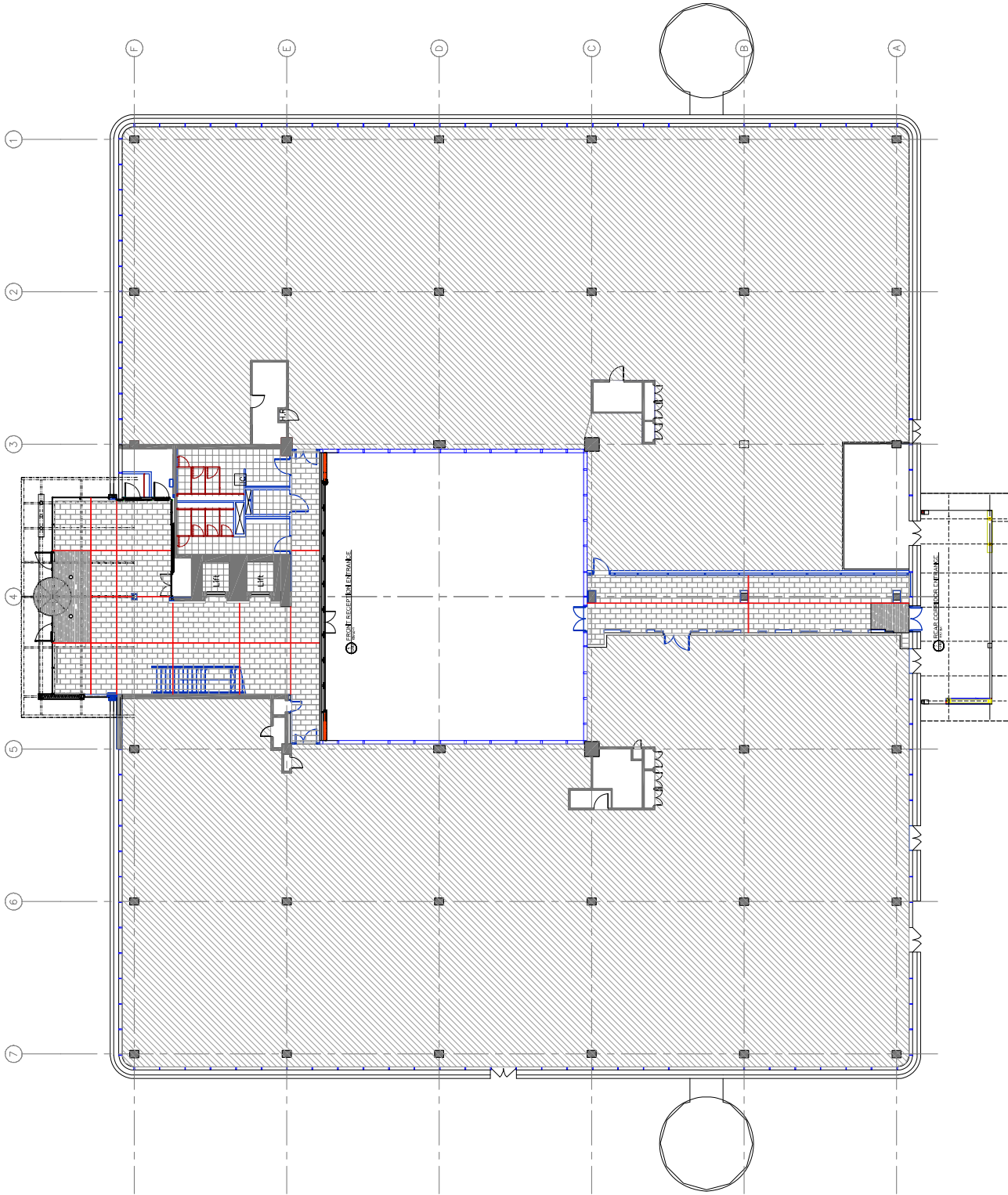
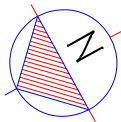
NEW FLOOR TILES TO BE 300 x 300 mm  
STONE TILES BY WANDERSLOOT



NEW FLOOR TILES TO BE 300 x 300 mm  
STONE TILES BY WANDERSLOOT



FINISH AS TENANT APPROVED FIT OUT



AS BUILT

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Commercial Interiors  
CREATIVE SUPPORT  
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HPH2

ARCHITECTURAL  
FLOOR FINISHES  
GROUND FLOOR

DATE: JHG  
SCALE: NTS at A1  
DATE: FEB 2008

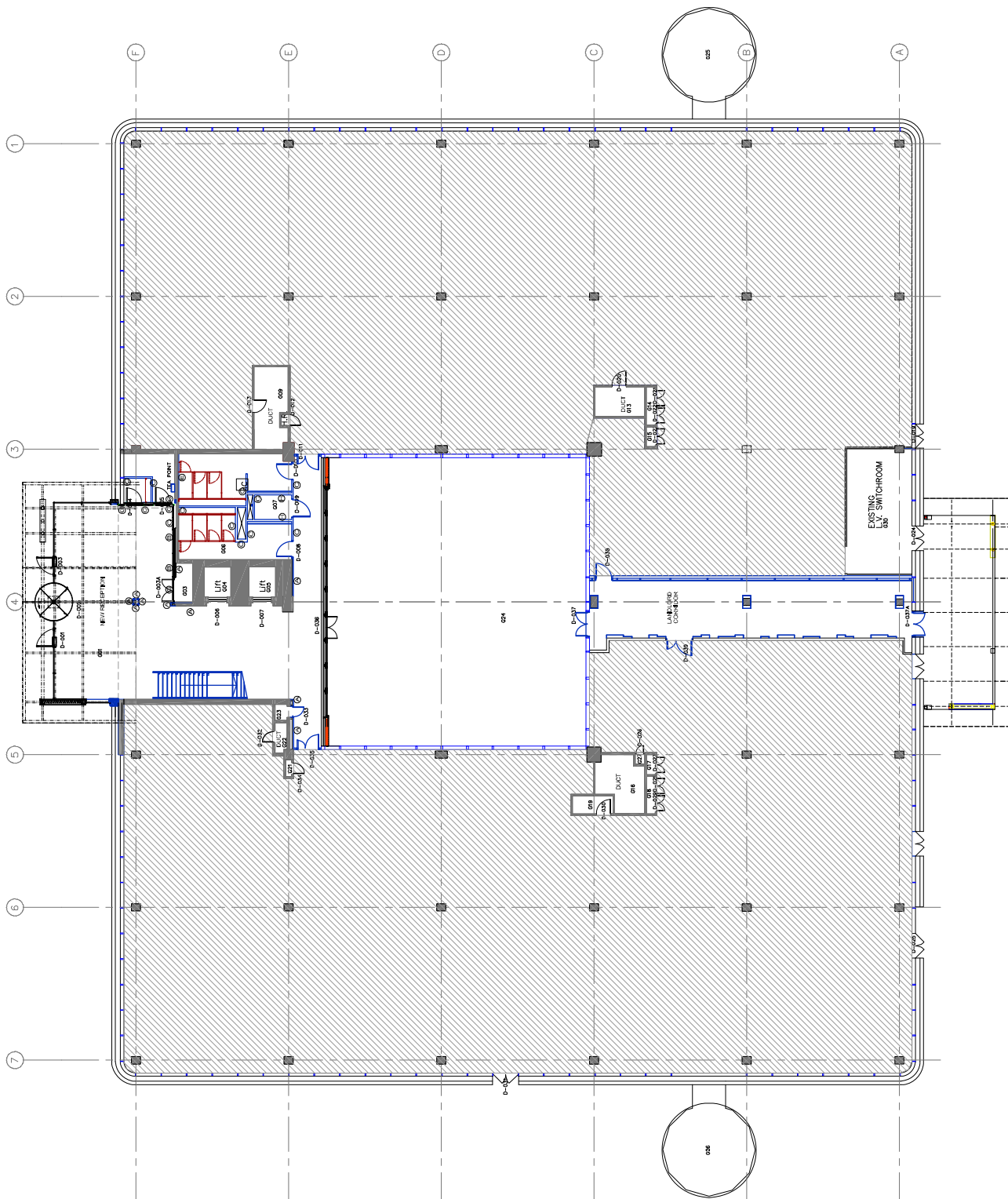
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HPH2

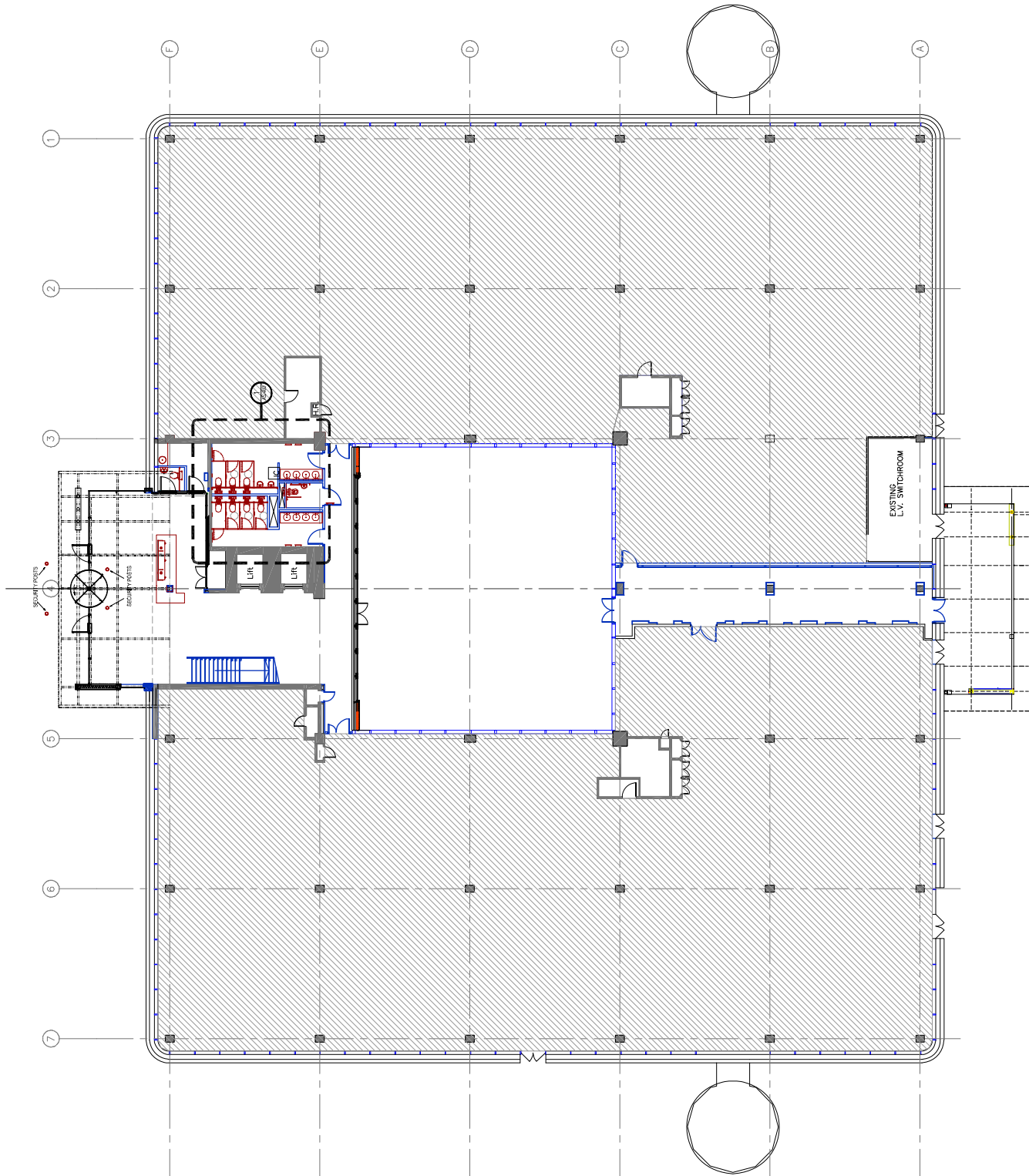
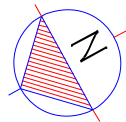
ARCHITECTURAL  
GENERAL ARRANGEMENT  
GROUND FLOOR

13A1	trifluor	solids	-800
JHG		NTS at A1	FEB 2008

code	code	code	code
1258U	A	LO	0100

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HPH2

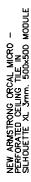
ARCHITECTURAL  
SPACE PLAN  
GROUND FLOOR

Author	JHG	Drawn by	NTS at A1	Check by	NTS at A1	Date	FEB 2008
Project No.	1258U	Area	A	LO	0200	Scale	1:100

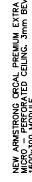
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NEW SUSPENDED PLASTERBOARD CEILING  
WITH 12mm SHADOW GAP



NEW SPOT LIGHTS TYPE TBC



**NEW ARMSTRONG ORCAL PREMIUM EXTRA  
MICRO - PERFORATED CEILING, 3mm BEV  
1500x300 MODULE**

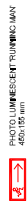
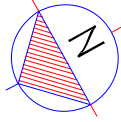


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**THE  
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CEILING LAYOUT  
FIRST FLOOR**

JHG	End Year	Scale	JHG
JHG		NTS at A1	FEB 2008

300 Hz	Scale	200 dB	Model
1258U	A	LO	1300

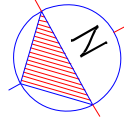


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KEY:




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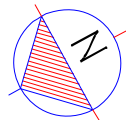
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UWAT	End Year	Scale	Year
JHG	-	NTS at A1	FEB 2008

code	category	category	category
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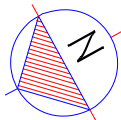
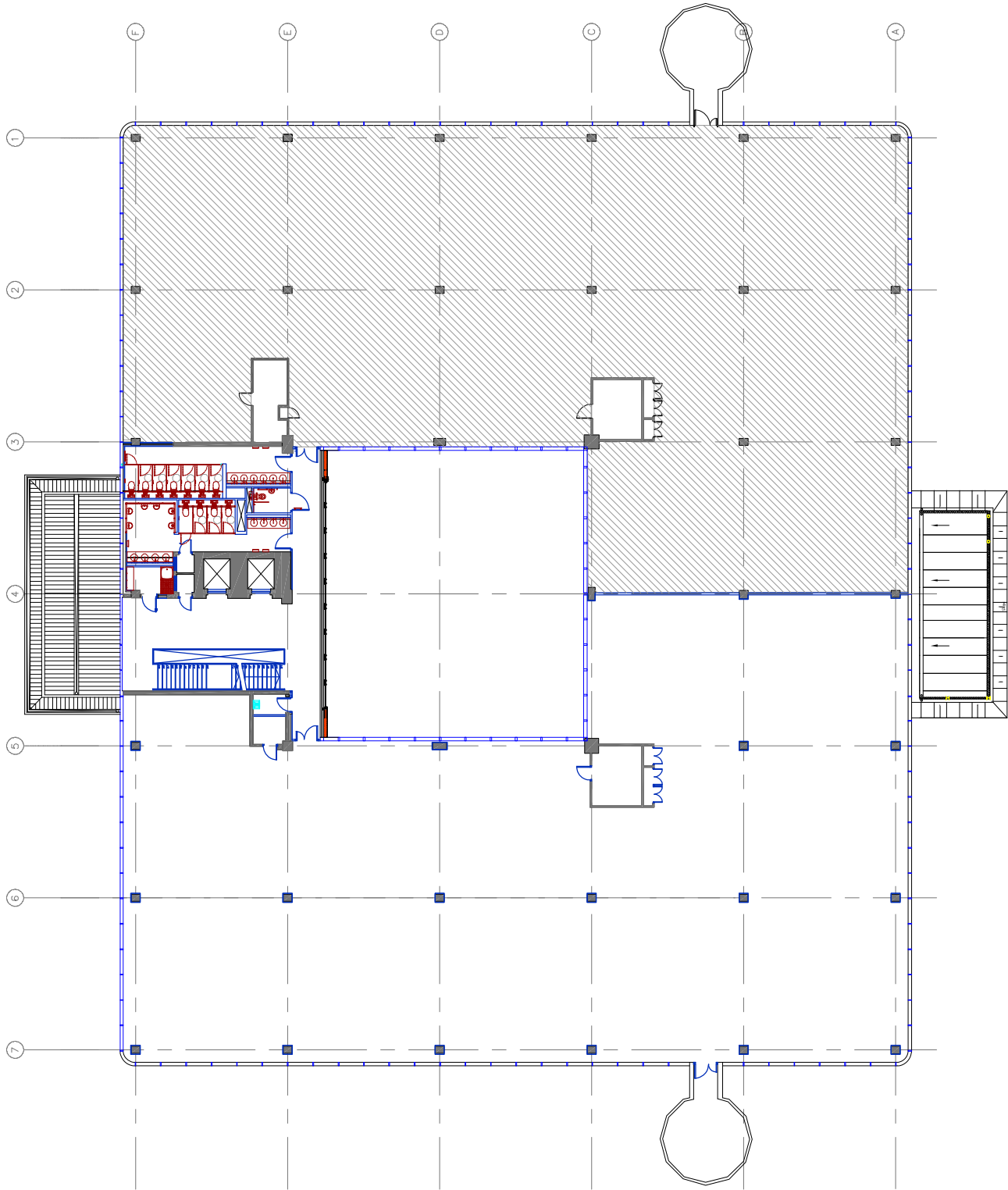
ARCHITECTURAL  
GENERAL ARRANGEMENT  
FIRST FLOOR

TRAY	2 to 3 per	Soils	Use
JHG	~	NTS at A1	FEB 2008

model	category	category	category
1258U	A	LO	1100

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HPH2

ARCHITECTURAL  
SPACE PLAN  
FIRST FLOOR

DATE: JHG  
SCALE: NTS at A1  
DATE: FEB 2008

NO. 1258U  
A  
LO 1200

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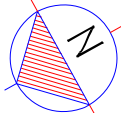
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ARCHITECTURAL  
CEILING LAYOUT  
SECOND FLOOR

1258U

A

LO

2300

1258U

A

LO

2300

1258U

A

LO

2300

1258U

A

LO

2300

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NEW FLOOR TILES TO BE 305 x 605mm WHITE "PATARA" LIMESTONE STONE TILES BY MANDARIN STONE.



NEW FLOOR TILES TO BE 300 x 600mm WHITE "PATARA" LIMESTONE STONE TILES BY MANDARIN STONE.



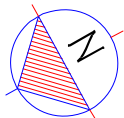
FINISH AS TENANT APPROVED FIT OUT

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NEW STONE SKIRTING. REFER TO DRAWING: 053050-40-201



NEW UNOLEUM FINISH COLOUR GREY.  
0854 450115 NA



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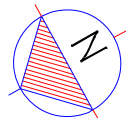
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1258U	A	LO	2700	DATE	~	DATE	~

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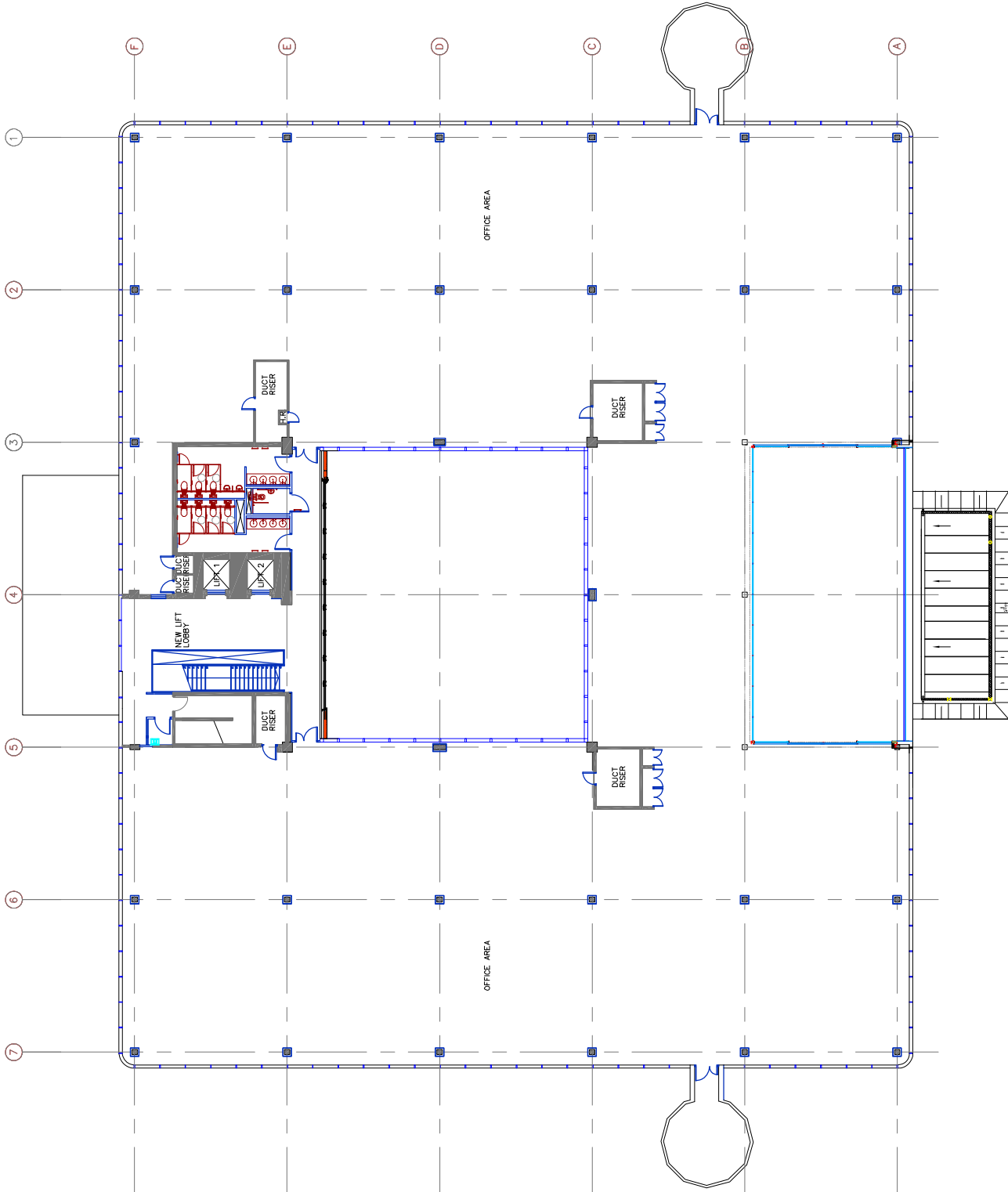
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JHG	~	Scale	JHG
			FEB 2008

rate	classification	category	percentage rate
258U	A	LO	2100

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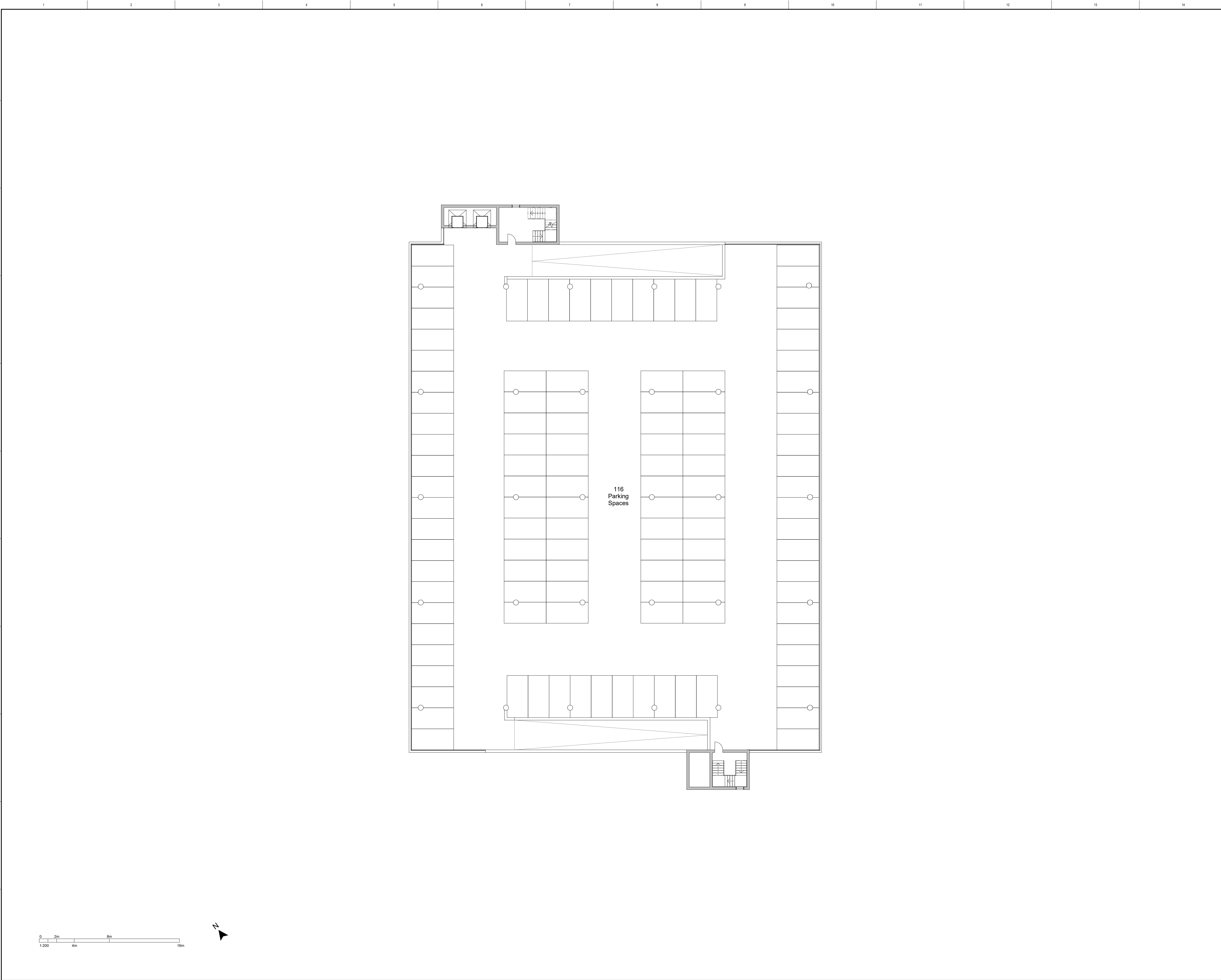
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SECOND FLOOR

DATE	12/08/2008	BY	JHG	SCALE	1:500	NTS at A1	DATE	FEB 2008
NO.	1258U	A	LO	2200				



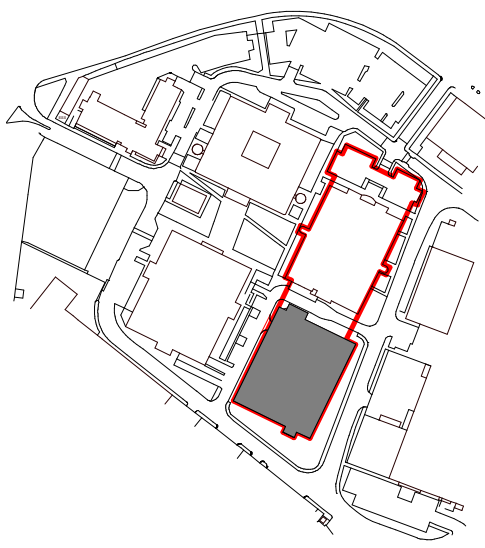
Client Name

Structural Engineer Name

Services Engineer Name

Consultant Name

Key plan



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No.	Suit.	Date	Comment	Drawn	Checked
Revs					

Issue Purpose

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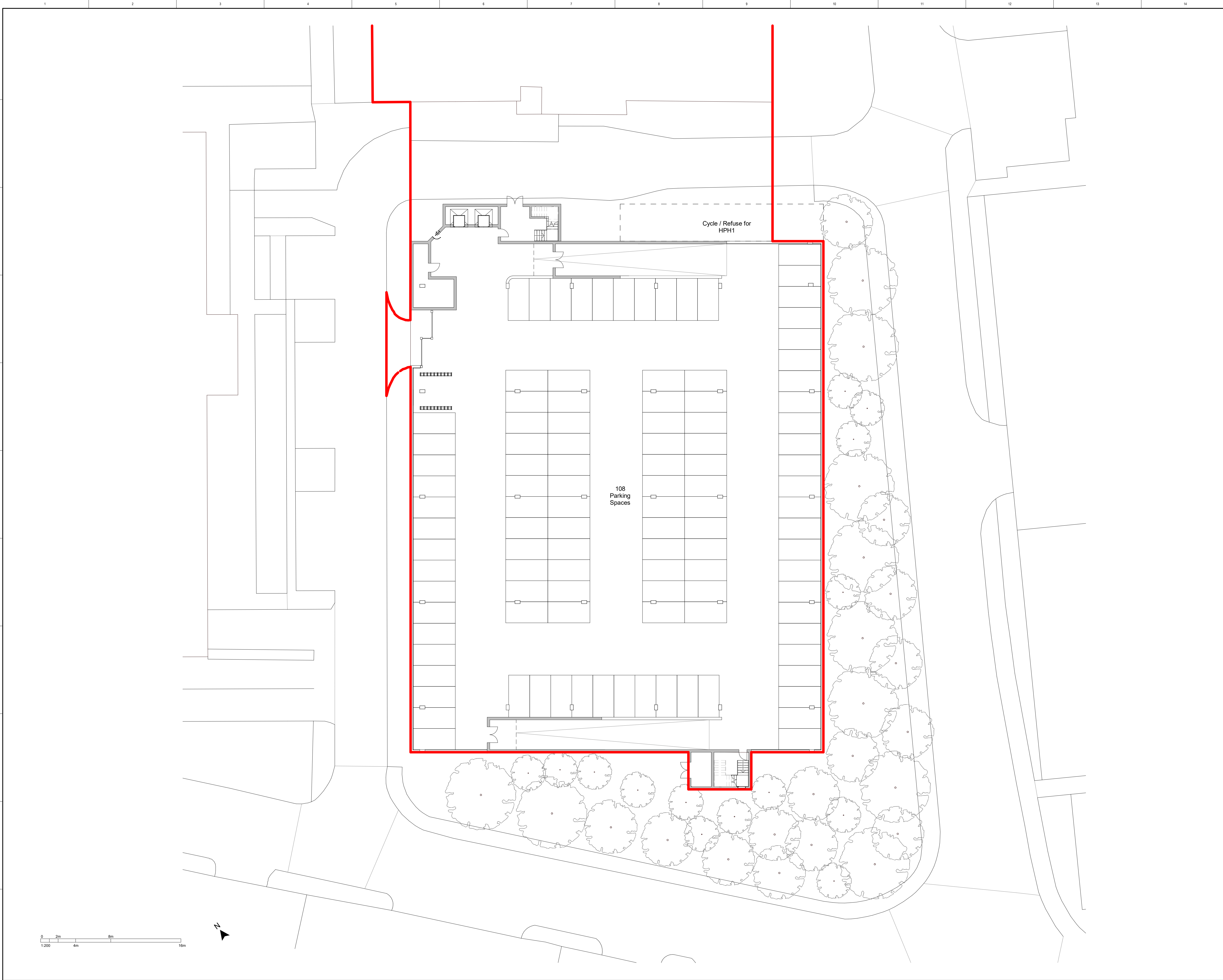
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General Arrangement Level Roof

Drawn	Date	Scale @ A1
II	10/25/24	1 : 200

Project	Originator	Volume	Level	Type	Role	Number	Suitability	Revision
A12440	TPB	CP	05	DR	A	041105 S2	P01	

BIM Model Ref: A12440-TPB-ZZ-M3-A-0001-S0-P01





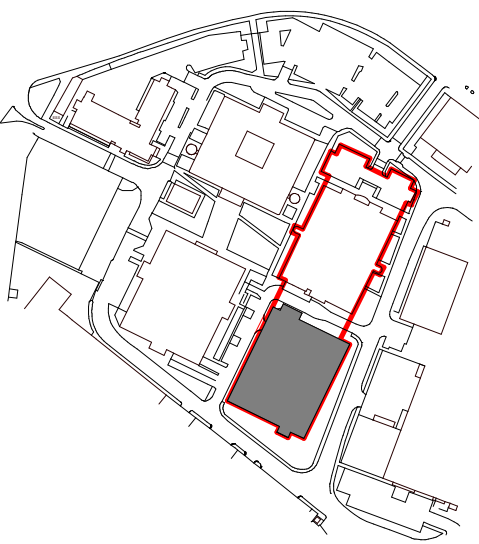
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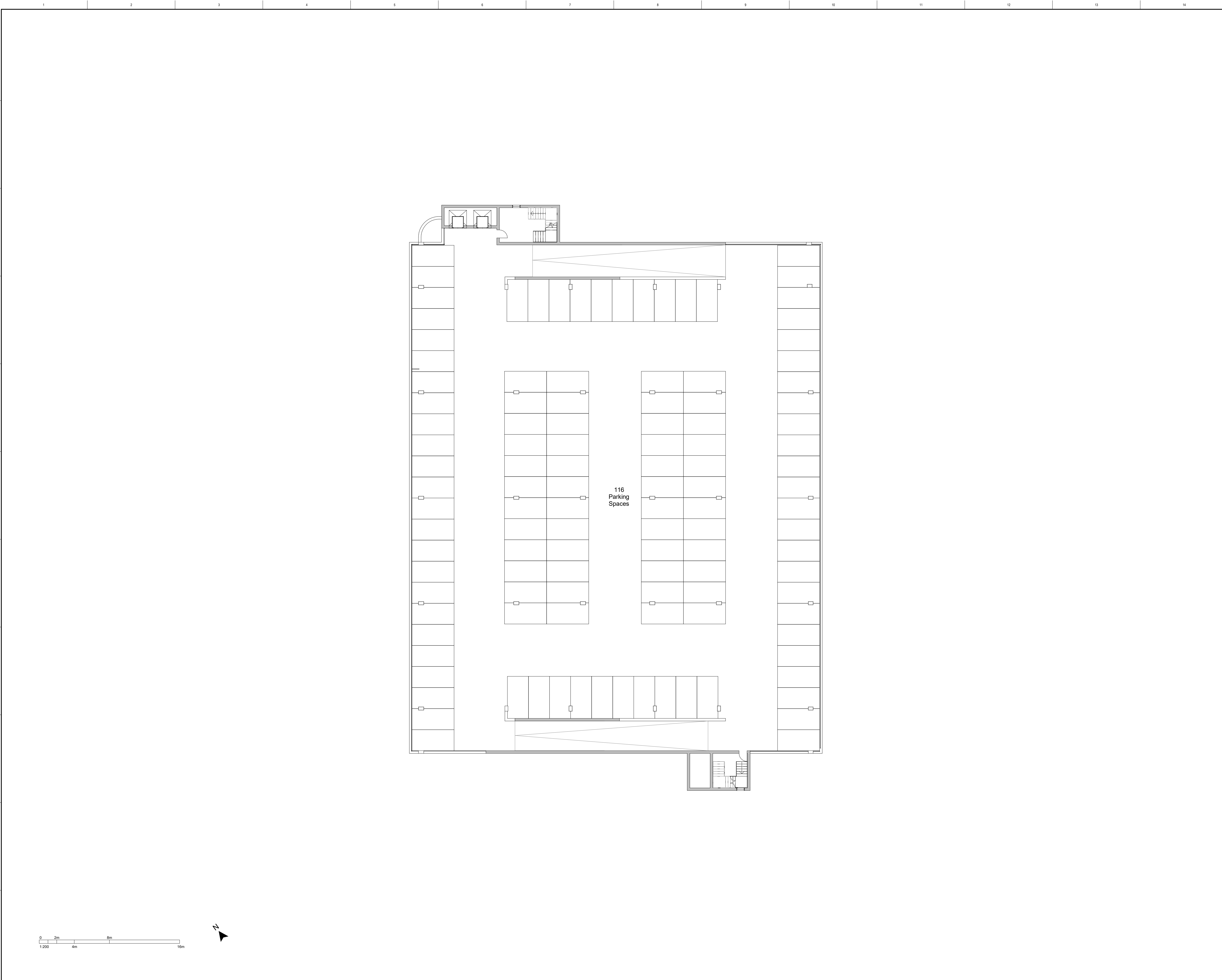
Drawing Title

Multi Storey Car Park  
General Arrangement Level 00

Drawn	Date	Scale @ A1
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BIM Model Ref: A12440-TPB-ZZ-M3-A-0001-S0-P01



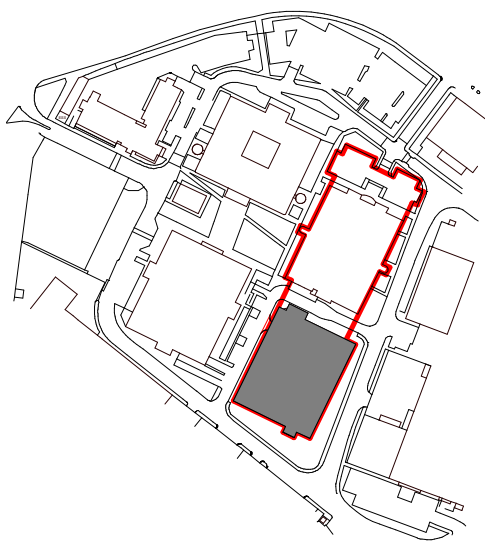
Client Name

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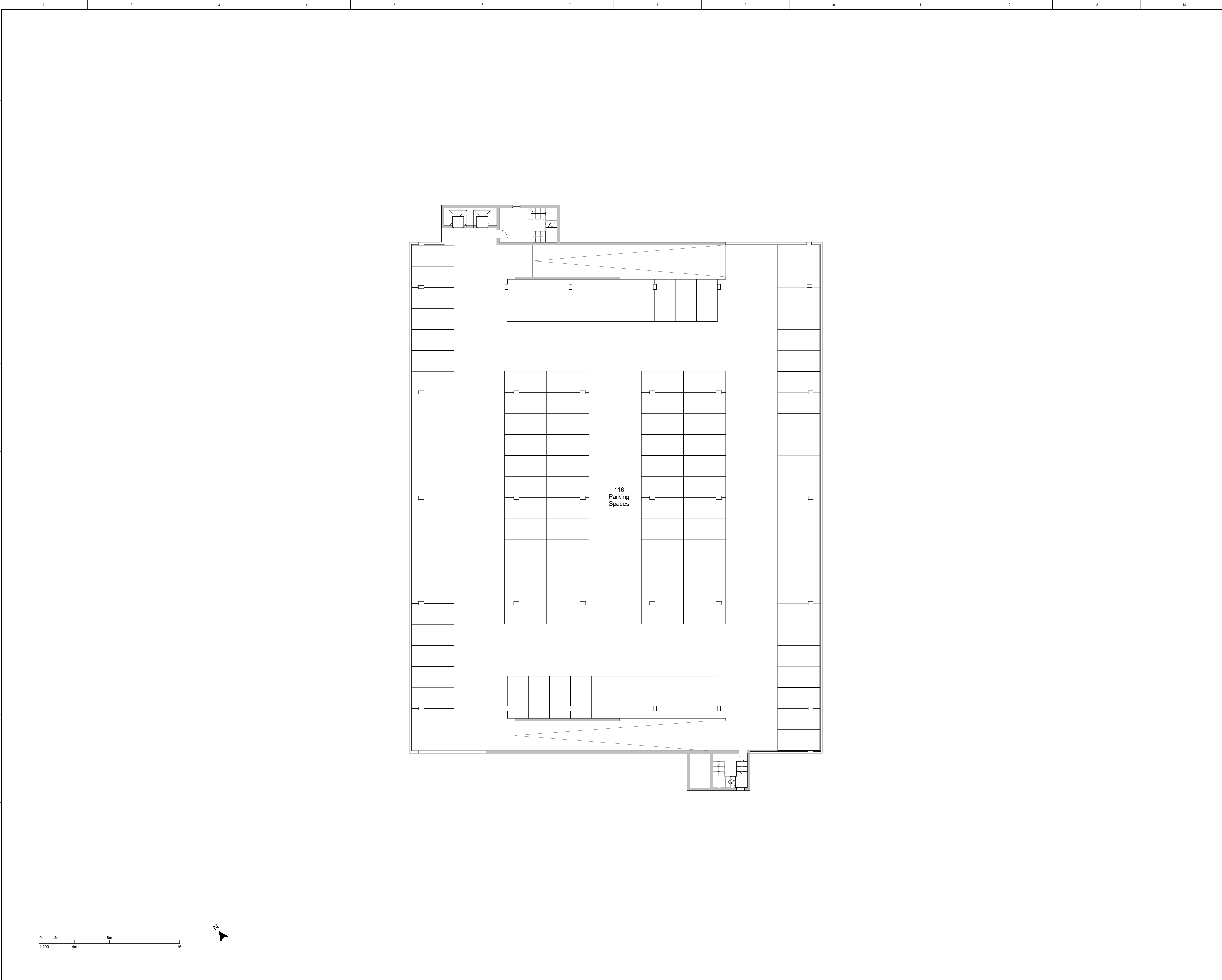
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General Arrangement Level 01

Drawn	Date	Scale @ A1
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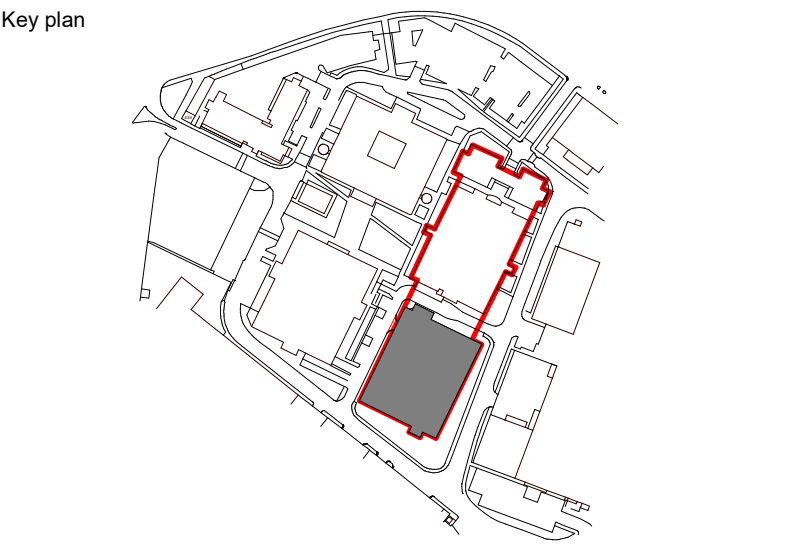


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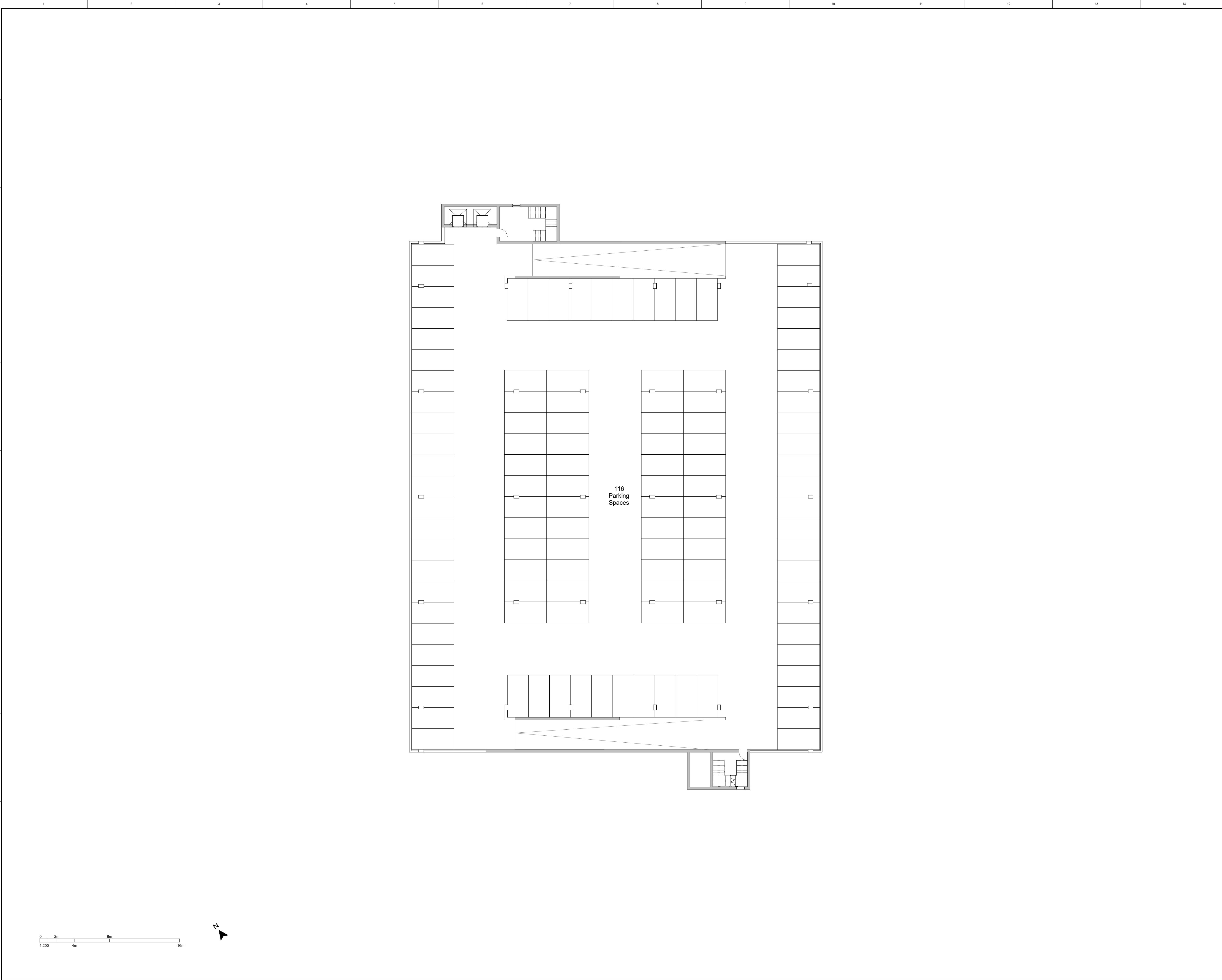
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Drawing Title  
Multi Storey Car Park  
General Arrangement Level 02

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Project	Originator	Volume	Level	Type	Role	Number	Suitability	Revision
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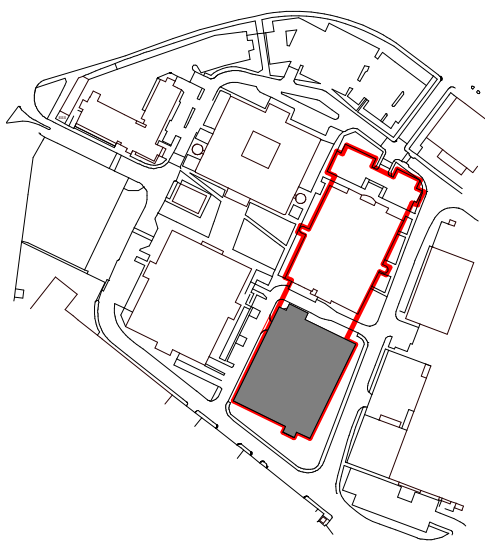
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Structural Engineer Name

Services Engineer Name

Consultant Name

Key plan



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Drawing Title

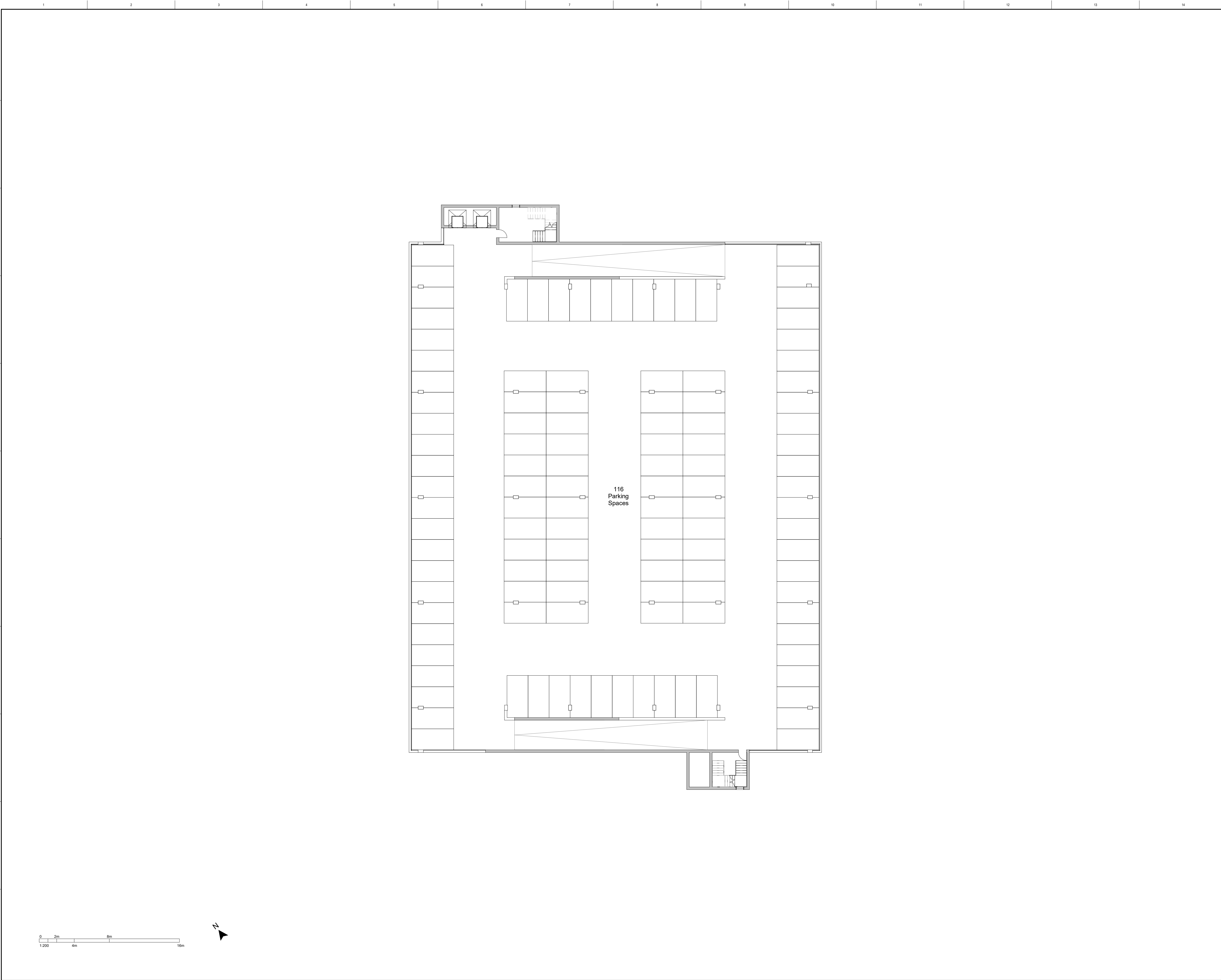
Multi Storey Car Park  
General Arrangement Level 03

Drawn	Date	Scale @ A1
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Project	Originator	Volume	Level	Type	Role	Number	Suitability	Revision
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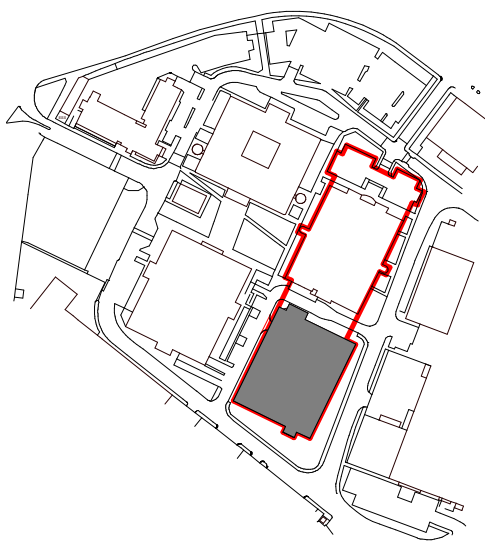
Client Name

Structural Engineer Name

Services Engineer Name

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Revs					

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Drawing Title

Multi Storey Car Park  
General Arrangement Level 04

Drawn	Date	Scale @ A1
II	10/25/24	1 : 200

Project	Originator	Volume	Level	Type	Role	Number	Suitability	Revision
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BIM Model Ref: A12440-TPB-ZZ-M3-A-0001-S0-P01

## **Appendix A – Construction Waste Groups**

## Construction Waste Groups

European Waste Catalogue	Key Group	Examples
170102	Bricks	Bricks
170101	Concrete	Pipes, kerb stones, paving slabs, concrete rubble, precast and in situ
17202	Glass	Glass (Uncontaminated)
170604	Insulation	Glass fibre, mineral wool, foamed plastic
1501	Packaging	Paint pots, pallets, cardboard, cable drums, wrapping bands, polythene sheets
170201	Timber	Softwood, hardwood, boards products such as plywood, chipboard, medium density fibreboard (MDF)
1602	Electrical and electronic equipment	Electrical & electronic TVs, fridges, air-conditioning units, lamps equipment
200301	Canteen/office	Office waste, canteen waste, vegetation
1301	Oils	Hydraulic oil, engine oil, lubricating oil
1703	Asphalt and tar	Bitumen, coal tars, asphalt
170103	Tiles and ceramics	Ceramic tiles, clay roof tiles, ceramic, sanitary ware
1701	Inert	Mixed rubble/excavation material, glass
1704	Metals	Radiators, cables, wires, bars, sheet
170802	Gypsum	Plasterboard, render, plaster, cement, fibre cement sheets, mortar
170203	Plastics	Pipes, cladding, frames, non-packaging sheet
200307	Furniture	Tables, chairs, desks, sofas
1705	Soils	Soils, clays, sand; gravel, natural stone
Most relevant EWC	Liquids	Non-hazardous paints, thinners, timber treatments

European Waste Catalogue	Key Group	Examples
Most relevant EWC	Hazardous	Defined in the Hazardous Waste List (HWL) of the European Waste Catalogue (EWC)
Most relevant EWC	Floor coverings (soft)	Carpets, vinyl flooring
Most relevant EWC	Architectural Features	Roof tiles, reclaimed bricks, fireplaces
170904 (Mixed)	Mixed/ other	Efforts should be made to categorise waste into the above categories wherever possible

\*Additional information and EWC Waste Category numbers can be found on document BREEAME Wst 01 Construction waste management, and the following link (<https://www.gov.uk/how-to-classify-different-types-of-waste/construction-and-demolition-waste>)



## **Appendix B – Material Weight Conversion Factors**

## Conversion factors for common materials arising from demolition projects

Material	Tonnes/m <sup>3</sup>	Material	Tonnes/m <sup>3</sup>
Aggregates	1.8	Mineral wool insulation	0.1
Aluminium	2.7	Mortar	1.7
Asphalt	2.1	Oriented Strand Board	0.6
Bitumen	1.0	Paving	2.3
Blocks	2.0	Polyethylene	0.1
Bricks	1.7	Plaster	0.7
Cables (not hazardous)	2.3	Plasterboard	0.7
Carpets	3.9	Plywood	0.8
Cement	1.5	Polypropylene	0.9
Chipboard	0.7	Polyurethane insulation	0.0
Clay roof tiles	1.9	Poly Vinyl Chloride	1.4
Copper	8.9	Render	2.3
Expanded Polystyrene insulation	0.0	Ready Mix Concrete	2.3
Glass	2.5	Roof tiles	2.5
Glass fibre insulation	0.1	Slate	2.9
Glass Reinforced Plastic	2.0	Softwood	0.4
Hardboard	1.0	Stainless steel	7.8
Hardwood	0.8	Stone	2.5
Internal building tiles	2.2	Structural Concrete	2.3
Iron	7.6	Tin	7.3
Lead	7.4	Vinyl flooring	1.4
Low density fibre board	0.6	Waste paper insulation	0.0
Medium Density Fibreboard	0.7	Wool fleece	0.0
Mild steel	7.0	Zinc	4.0

## **Appendix C – Pre-Demolition Waste Audit Photos**

## Photographs Relating to Pre-Demolition Waste Audit

Project Name: Hyde Park, Hayes

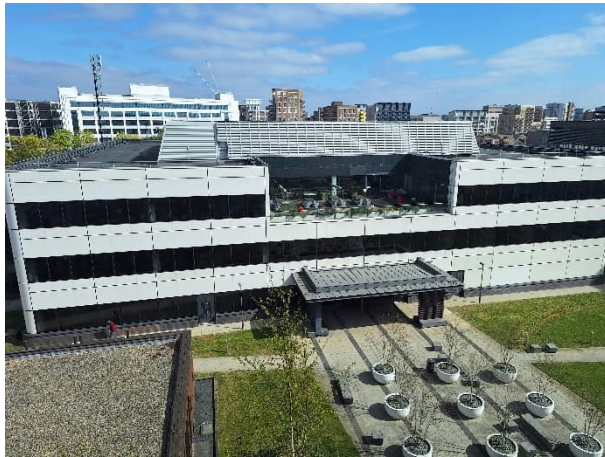
Project Reference: 65214976

Project Manager: John Wootton

Date: 30/04/2025

Document Reference: 65214976-SWE-XX-XX-T-GO-0001

Revision: P01



GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT

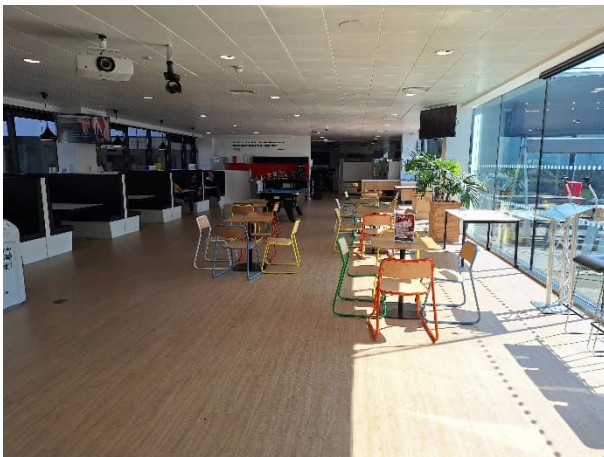


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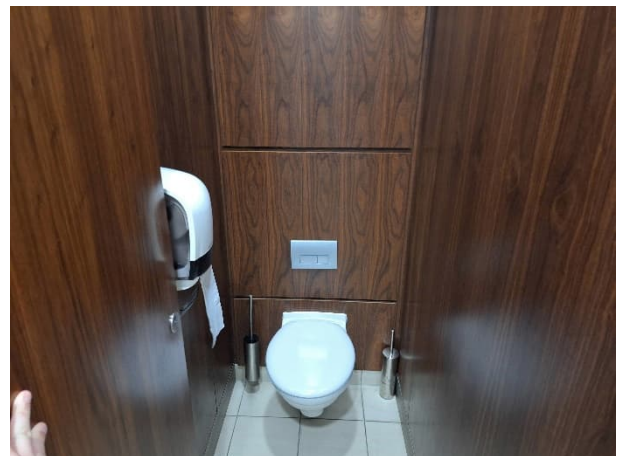
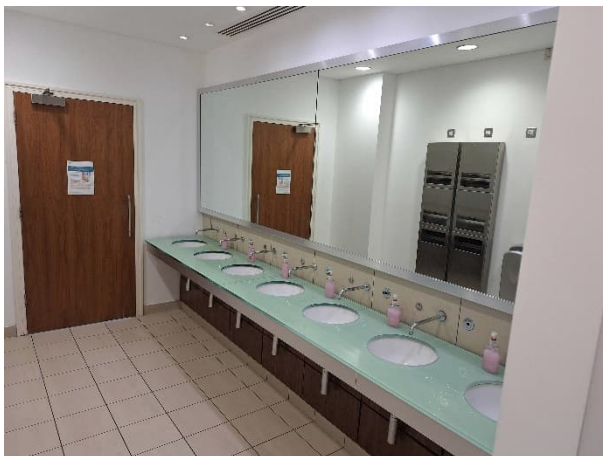




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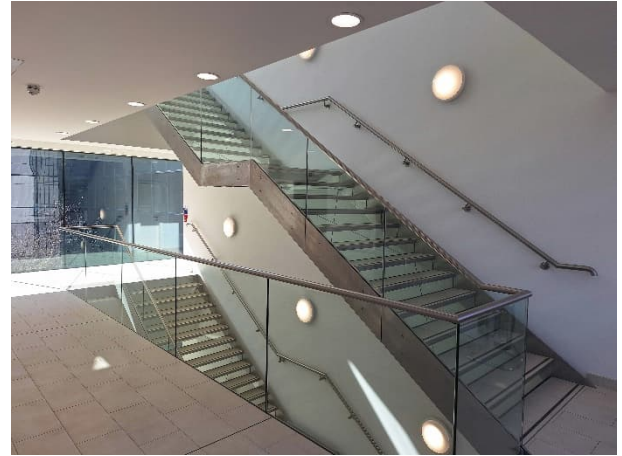


GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT





GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT

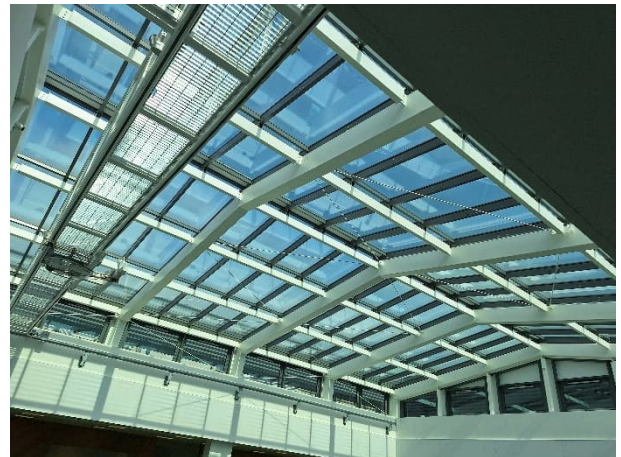




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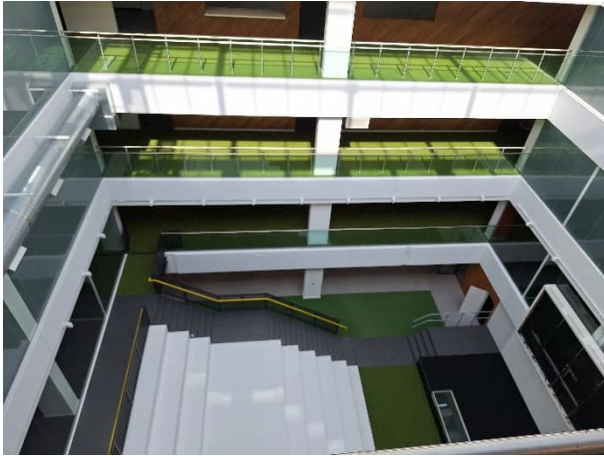


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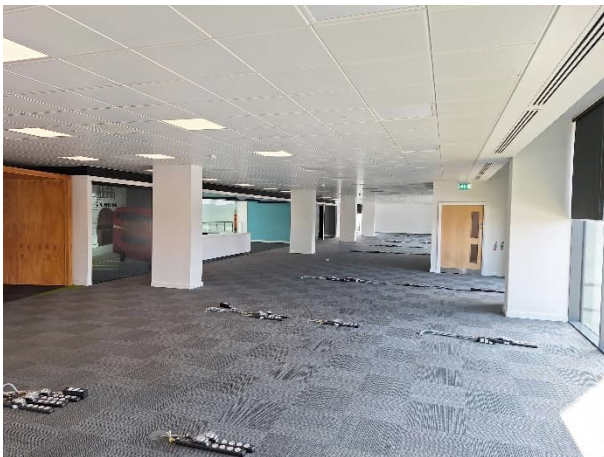


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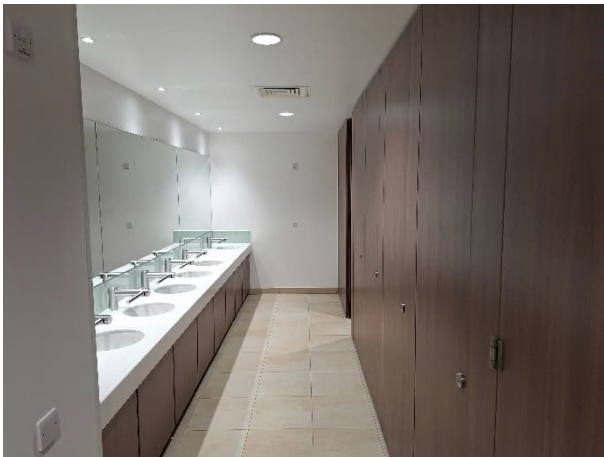




GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT

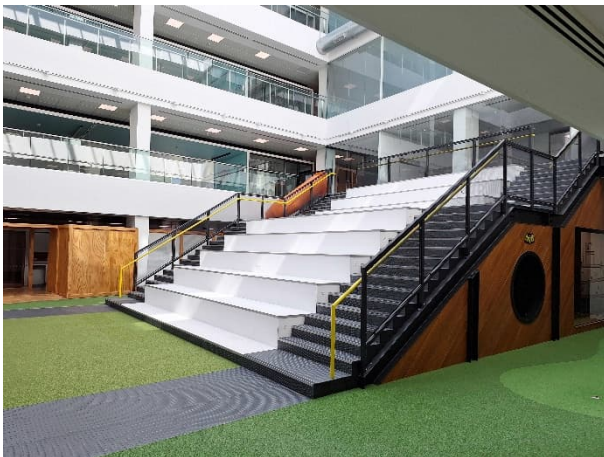


GENERAL VIEWS THROUGHOUT

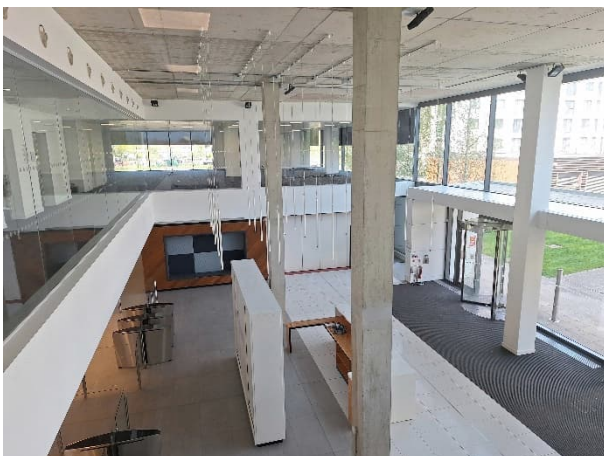




GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT



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GENERAL VIEWS THROUGHOUT

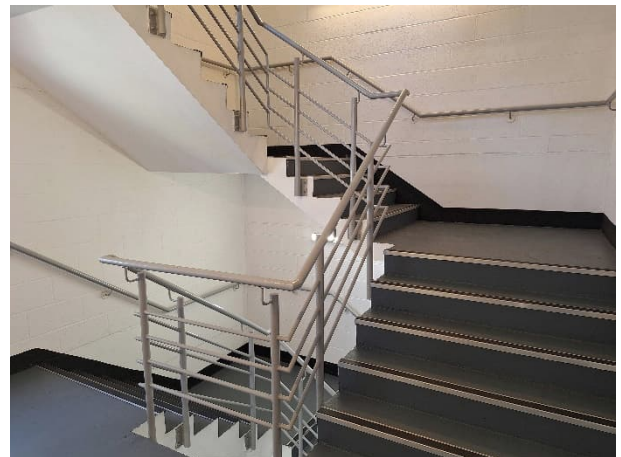
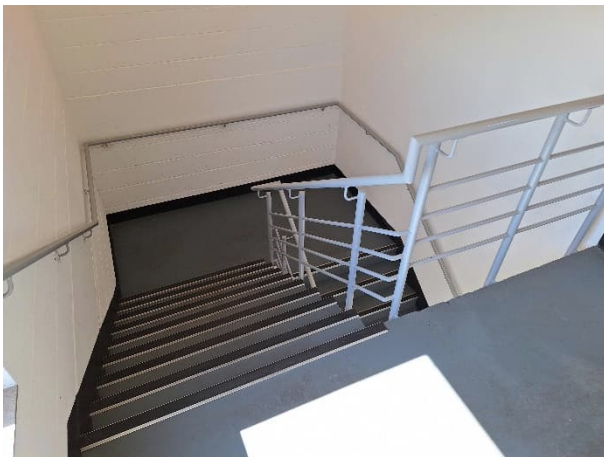


GENERAL VIEWS THROUGHOUT





GENERAL VIEWS THROUGHOUT



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GENERAL VIEWS THROUGHOUT

**Appendix D – Buildings Elements Group Table**

## Building Element Group Table

BUILDING ELEMENT GROUP	BUILDING ELEMENT (NRM LEVEL 2))
Demolition	0.1 Toxic/hazardous/contaminated material treatment 0.2 Major demolition works
0 Facilitating works	0.3 and 0.5 Temporary/enabling works 0.4 Specialist groundworks
1 Substructure	1.1 Substructure
2 Superstructure	2.1 Frame 2.2 Upper floors incl. balconies 2.3 Roof 2.4 Stairs and ramps 2.5 External walls 2.6 Windows and external doors 2.7 Internal walls and partitions 2.8 Internal doors
3 Finishes	3.1 Wall finishes 3.2 Floor finishes 3.3 Ceiling finishes
4 Fittings, furnishings and equipment (FFE)	4.1 FFE including building-related* and non-building-related**
5 Building services/MEP	5.1–5.14 Services including building-related* and non-building-related**
6 Prefabricated buildings and building units	6.1 Prefabricated buildings and building units
7 Work to existing building	7.1 Minor demolition and alteration works
8 External works	8.1 Site preparation works 8.2 Roads, paths, pavings and surfacings 8.3 Soft landscaping, planting and irrigation systems 8.4 Fencing, railings and walls 8.5 External fixtures 8.6 External drainage 8.7 External services 8.8 Minor building works and ancillary buildings

\* Building-related items: building-integrated technical systems and furniture, fittings and fixtures built into the fabric or included in the shell and core specification. Building-related MEP and FFE typically include the items classified under Shell and Core and Category A fit-out.

\*\* Non-building-related items: loose furniture, fittings and other technical equipment like desks, chairs, computers, refrigerators, etc. Such items are usually part of Category B fit-out. Therefore, for Shell and Core construction this is not part of the assessment scope.

N.B. Scope comparison with BREEAM 2018: items 2.1 to 2.6 is mandatory for BREEAM Mat01 assessment and items 1 and 5 are optional.