Operational Waste Management Strategy

Fox Court

November 2023

Waterman Infrastructure & Environment Limited
Pickfords Wharf, Clink Street, London, SE1 9DG
www.watermangroup.com

Client Name:	Clare Real Estate (14 Gray's Inn Road) Ltd
Document Reference:	WIE19467-100-R-9-3-4-OWMS
Project Number:	WIE19467

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

Issue	Date	Prepared by	Checked by	Approved by
Draft	July 2023	Ellie Booth	Sarah Owen	Sarah Owen Senior Associate

Comments	First issue in draft for client and design team comment

Second	October 2023	Ellie Booth	Sarah Owen	Sarah Owen Senior Associate

Comments	Second issue in draft for client and design team comment

Third	November 2023	Ellie Booth	Sarah Owen	Sarah Owen Senior Associate

Comments

Disclaimer

This report has been prepared by Waterman Infrastructure & Environment Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

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1. Introduction

1.1 The Brief

Clare Real Estate (14 Gray's Inn Road) Ltd (the Applicant) has appointed Waterman Infrastructure & Environment Limited (Waterman) to prepare an operational waste management strategy (OWMS) report to support the proposed development of Fox Court, 14 Grays Inn Road, London WC1X 8HN (the Site) within the administrative boundary of the London Borough of Camden (LBC).

1.2 The Proposed Development

This OWMS accompanies a detailed planning application seeking permission for the following (*"description of development"*):

"Demolition of existing facades, retaining existing reinforced concrete frame and basement structures; refurbishment and reconfiguration of the existing office (Use Class E) building for continued office use including extensions with new facades to the west elevation fronting Grays Inn Road (9 storeys), to the northern courtyard elevation facing Brookes Court (9 storeys), to the existing 5 storey north-east wing fronting Brook Street (3 storeys) and to the south elevation (8 storeys); external alterations, provision of rooftop amenity terraces, landscaping and associated works".

1.3 The Site

The Site is currently occupied by a 9-storey purpose-built office building (14,287m^2 GIA of office floorspace).

The proposed development comprises the following components:

- *"Retrofit and extension of the existing office building to provide additional office accommodation, with an uplift of 8,579sqm GIA (9,652sqm GEA).*
- *Existing reinforced concrete frame to be retained, along with ground floor slab and basement structure.*
- *Extensions to west, north and south sides of the building with new facades.*
- *Provision of a central atrium space between the existing structure and the northern extension for internal circulation and rooftop amenity spaces for tenants, including urban greening.*
- *Provision of cycle parking and servicing at basement level, provision of plant space at roof and basement levels."*

The proposed development will comprise a single building in a U-shape. A ground floor plan is included in Appendix A.

1.3.1 Areas

The scheme includes the "*refurbishment and reconfiguration of the existing office (Use Class E) building for continued office use".*

Table 1: Proposed areas and uses

Uses	Net Internal Area (NIA) (m^2)
Office	14,601
Jewellery workshops	795
Total	**15,396**

1.4 Report Scope

The purpose of this OWMS is to detail how waste will be stored, managed, and collected when the

proposed development is complete. It outlines the types and volumes of waste predicted to arise. It sets out anticipated waste storage capacity requirements (bin numbers) for the proposed uses.

This report also provides the author of the Circular Economy Statement with information it needs to satisfy the Greater London Authority's waste reporting requirements.

This document should be read in conjunction with other submission documents, including the Circular Economy Statement.

1.5 Exclusions and Limitations

This report was undertaken in accordance with a scope of works agreed between Waterman and the Applicant as detailed in Waterman's fee letter (reference WIE19467.101.Q.1.1.2 dated August 2022).

The benefit of this report is made to Clare Real Estate (14 Gray's Inn Road) Ltd.

Waterman has endeavoured to assess all information provided to it during this work but makes no guarantees or warranties as to the accuracy or completeness of this information.

The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at the Site.

2. Policy, Guidance and Standards

The following policy, guidance, and standards were considered in developing this OWMS.

2.1 The Building Regulations 2010 Approved Document H[1]

This Approved Document provides practical guidance. It sets out the requirements of Schedule 1 and Regulation 7 of the Building Regulations 2010 (SI 2010/2214) for England and Wales. Requirement H6, *"Solid Waste Storage"* specifies:

"(1) Adequate provision shall be made for storage of solid waste.

(2) Adequate means of access shall be provided:

(a) for people in the building to the place of storage

(b) from the place of storage to a collection point […]"

Requirement H6 stipulates waste storage should be designed and sited so as not to be prejudicial to health or local amenity.

2.2 British Standard 5906:2005[2]

This British Standard (BS 5906:2005) is a Code of Practice for methods of storage, collection, segregation for recycling and recovery, and on-site treatment of waste. This standard relates to residential and non-residential buildings and healthcare establishments. It is applicable to new buildings, refurbishments and conversions of residential and non-residential buildings, including but not limited to retail and offices. It expands upon the legal requirements set out in The Building Regulations 2010, Approved Document H, requirement H6 as above. BS 5906:2005 advises that:

"Designers should consider:

- *easy and safe access for waste producers, including older persons or persons with disabilities;*
- *easy and safe access for collectors and collection vehicles;*
- *location and space (including avoidance of opportunity to cause nuisance or injury);*
- *protection against animal scavenging of waste;*
- *aesthetics of the development;*
- *noise (e.g. glass handling);*
- *ease of maintenance, including cleaning;*
- *robust construction;*
- *safety from fire risk and smoke;*
- *lighting;*
- *ventilation;*
- *sound insulation; and*
- *special requirements (e.g. separate storage and collection provisions for healthcare waste and bulky waste)."*

The document then goes on to provide specific guidance to enable calculations of storage capacity, issues to consider for different building types or occupiers, and design considerations for waste storage and handling areas. As well as recommending the maximum distances waste collection operatives should have to manoeuvre bins e.g., 10m for four wheeled bins or 15m for two wheeled bins.

[1] GOV.UK (2010) *"The Building Regulations 2010, Drainage and Waste Disposal"* H6 Solid Waste Storage, page 53. Available at www.gov.uk/government/publications/drainage-and-waste-disposal-approved-document-h (accessed 24 July 2023).

[2] British Standard BS 5906:2005: Waste management in buildings – Code of practice, December 2005 Revision, Committee reference B/508/1.

2.3 Building Research Establishment's Environmental Assessment Method

The Building Research Establishment's Environmental Assessment Method (BREEAM) process evaluates the procurement, design, construction, and operation of a development against targets that are based on performance benchmarks. It is applicable to non-domestic buildings only.

Available BREEAM credits include the operational waste credit Wst 03 which requires the provision of:

- dedicated space for segregating and storing recyclable waste. The space should be clearly labelled, accessible to all future users, and of an appropriate capacity.
- equipment where appropriate for *"consistent and large amounts of operational waste generated"*, such as static compactors, balers, or space for storing food waste; and
- a water outlet near organic waste storage facilities for cleaning and hygiene purposes.

The BREEAM New Construction UK 2018 manual[3] advises on allocating waste storage provision for non-domestic uses. It recommends the following provisions for recyclable wastes as a minimum:

- at least 2m^2 per 1,000m^2 of net floor area for buildings < 5,000m^2.
- a minimum of 10m^2 for buildings ≥ 5,000m^2; and
- an additional 2m^2 per 1,000m^2 of net floor area where catering is provided (with an additional minimum of 10m^2 for buildings ≥ 5,000m^2).

The net floor area should be rounded up to the nearest 1,000m^2. We recommend a similar allocation is made for residual waste (albeit minus the additional provision required for catering / food waste).

2.4 Greater London Authority

2.4.1 The London Plan 2021[4]

London Plan policy SI 7, reducing waste and supporting the circular economy, promotes the following targets:

- zero biodegradable or recyclable waste to landfill by 2026;
- at least 65% of municipal waste will be recycled by 2030;
- designing developments with adequate, flexible, and easily accessible waste storage space; and
- supporting separate collection of dry recyclables (at least card, paper, mixed plastics, metals, glass) and food.

A response to these targets is set out in section 4 below.

Policy SI 7 also requires the submission of a Circular Economy Statement (CES) which should demonstrate:

- how much waste the proposal is expected to generate;
- how waste will be managed in accordance with the waste hierarchy; and
- how performance will be monitored and reported.

2.4.2 Mayor of London's Circular Economy Statement Guidance 2022[5]

The Mayor of London published its CES guidance in March 2022 which explains how to prepare a CES compliant with London Plan policy SI 7.

The CES guidance encourages applicants to submit a draft operational waste management plan at planning application stage. The plan should demonstrate:

[3] Technical Manual SD5078: BREEAM UK New Construction 2018, 1.2
[4] GLA London Plan 2021 available from https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/london-plan-2021 (accessed 24 July 2023).
[5] GLA Circular Economy Statements Guidance (March 2022) available from https://consult.london.gov.uk/circular-economy-statements (accessed 24 July 2023).

- how much operational waste the proposed development is expected to generate (in tonnes per annum);
- how and where waste will be managed in accordance with the waste hierarchy;
- adequate, flexible, easily accessible space for storing and collecting waste;
- the development supports separate collection of dry recyclables, food, and other waste;
- how operational performance will be monitored and reported;
- consideration of measures such as consolidated smart logistics and community-led waste minimisation schemes; and
- at least 75% of business waste will be recycled by 2030 (in order to achieve the London Plan target of 65% recycling of municipal waste).

A response to these requirements is set out in section 4 below.

More information about the Applicant's circular economy aspirations can be found in its CES report submitted as part of the planning application.

2.5 Local Authority Planning Policy and Guidance

2.5.1 LBC Local Plan 2017[6]

Policy CC5 *"Waste"* of the local plan states LBC seeks to make Camden a low waste borough. It aims to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials. LBC commits to making sure developments *"include facilities for the storage and collection of waste and recycling"*.

2.5.2 LBC Planning Guidance – Design 2021[7]

Chapter eight of LBC's guidance provides direction on the *"storage and collection of recycling and waste"*. The key messages of the chapter are:

"Developers should ensure that all waste systems and storage areas in new developments or refurbished developments are:

- *designed to provide adequate space for the temporary storage of all types of waste, including internal storage areas with sufficient space for the separation of temporary storage of all recycling, food waste and residual waste;*
- *sensitively designed and located in relation to the local environment especially in conservation areas and listed buildings;*
- *safely located and accessible for all users, including waste contractors, and designed to minimise nuisance to occupiers and neighbours and their amenity;*
- *sufficiently flexible to accommodate future increases in recycling targets;*
- *designed to include where appropriate, innovative waste management solutions that increase efficiency and help meet and exceed recycling and other waste reduction targets."*

[6] LBC Local Plan 2017, available at https://www.camden.gov.uk/local-plan-documents (accessed 21 July 2023).
[7] LBC document titled *"Camden Planning Guidance – Design"* dated January 2021, available at https://www.camden.gov.uk/planning-policy-documents (accessed 24 July 2023).

3. Operational Waste Management Strategy

3.1 Overview

The proposed development seeks to provide an office building of up to nine storeys, to include jewellery workshop space at basement and ground floor levels.

The proposed office building is anticipated to produce a range of residual, mixed dry recyclable (MDR), food, and occasional wastes including bulky waste (from refurbishment activities) and waste electrical and electronic equipment (WEEE). The MDR will likely comprise of paper / card and food packaging, including plastic and cans. The jewellery workshop will also produce these wastes, as well as small quantities of other wastes such as scrap metals, cleaning solvents etc.

Waste will be collected from office floors and the jewellery workshop by facilities management (FM) staff and taken to the ground floor bin store.

The location and arrangement of the bin store is shown on the ground floor plan in Appendix A.

As there are steps down to the bin store, it may be easier for the FM staff to drop the bags of waste over the balustrade. The relevant bins will be positioned below, against the northern wall of the bin store. This assumes that the balustrade is low enough, and that the FM staff can stand close enough to the balustrade to avoid having to reach out with the weight of the waste in their hands.

The FM staff will therefore have to ensure that there is always capacity in the bins against the northern wall (by swapping the full bins out for the empty bins located elsewhere in the store).

The FM staff will then use a wheeled bin press to compact residual and MDR waste. Other specialist wastes from the jewellery workshop will be taken to the bin store or loading bay in advance of collection, bulky waste and WEEE may be removed from the bin store, or from the loading bay on an ad hoc basis.

Waste will be collected by private waste collection contractor(s) at appropriate frequencies, or LBC as a commercial service.

Refuse Collection Vehicles (RCVs) will be able to stop on Brooke Street within 10m of the bin store to be serviced.

3.2 Estimated Storage Requirements

The design supports the separate collection of three waste streams: residual, MDR, and food waste. A bin store for these wastes will be provided, as shown on the plan in Appendix A. The store will be monitored by the facilities management staff to ensure appropriate housekeeping etc.

LBC do not have commercial waste storage metrics, therefore waste storage capacity requirements for the proposed development have been estimated using the below information, calculations and assumptions:

- proposed area schedule[8];
- British standard equation for office waste *"volume arising per employee [50 litres] x number of employees"*[9]*;*
- British standard equation for industrial units (for the jewellery workshops) *"volume per m^2 of floor area [5 litres] × floor area"*
- assumed compaction ratio of 1:3 for residual waste and 1:2 for MDR waste (food waste cannot be compacted);
- assumed split of 75% MDR waste and 25% residual waste in order to have enough capacity to achieve the London Plan recycling target, because MDR waste requires more space due to its

[8] Buckley Gray Yeoman document titled *"Proposed Area Schedule (Office Only)"*, revision P1, dated 21 September 2023.
[9] See footnote 2.

compaction ratio;

- assumed daily collection of waste with two days' worth of storage provided to cater for missed collections;
- 1,460 office employees based on an assumed employment density of 10m^2 per employee[10]; and
- 53 jewellery workshop employees based on an assumed employment density of 15m^2 per employee[11].

Requirements are summarised in the table below and assume:

- waste will be stored within the following containers:
  - 1,280 litre Eurobins for MDR and residual waste; and
  - 240 litre bins for food waste; and

Detailed waste storage capacity calculations for residual and MDR wastes are presented in Appendix B.

Table 2: Waste storage capacity requirements

Use	NIA (m^2)	Assumed food waste*	Daily waste storage capacity requirements with compaction		
			No. of 1,280 litre residual waste bins	No. of 1,280 litre MDR waste bins	No. of 240 litre food waste bins
Office	14,601	Yes	2	9	2
Jewellery workshops	795	No	1	1	-
Total	**15,396**	**-**	**3**	**10**	**2**

*it is assumed there will be small kitchenettes on the office floors.

3.3 Waste Management within the Site and Collection

Waste will be collected from office floors and jewellery workshops by facilities management staff and taken to the ground floor bin store. The management staff will then use the wheeled bin press to compact residual and MDR waste. The jewellery workshop staff will make their own arrangements for specialist wastes removal and will bring the wastes to the bin store in advance of collection.

Waste will be collected by private waste collection contractor(s) at appropriate frequencies, or LBC as a commercial service.

Refuse collection operatives will access the Site from Brooke Street and be expected to service bins directly from the bin store, including to return empty bins back to their original positions within the store.

Plans showing the swept path analyses for a 3.5t and a 7.5t panel van are included in Appendix A.

[10] High density for an office use class based on Homes & Communities Agency Employment Density Guide third edition dated November 2015 – which suggests a density of 10m^2 NIA per person.
[11] High density for a *"small business workspace"* use class based on Homes & Communities Agency Employment Density Guide third edition dated November 2015 – which suggests a density of 15-40m^2 per person.

4. Circular Economy Statement Principles

The following sections respond to the London Plan's policy and CES expectations listed in section 2.4 above.

4.1 Operational Waste Arisings

The following sources have been used to estimate operational waste arisings from the proposed office areas (in tonnes per annum):

- area set out in Table 1 above;
- waste arising per employee as reported in Old Oak and Park Royal Development Corporation's (OPDC's) *Waste Management in High-Density Development Supplementary Planning Document*[12] (adopted June 2022);
- Homes & Communities Agency Employment Density Guide third edition dated November 2015; [13]
- 1,460 office employees based on an assumed employment density of 10m^2 per employee; and
- 53 jewellery workshop employees based on an assumed employment density of 15m^2 per employee.

Based on these sources, it is estimated that the proposed office area could generate approximately 477.39 tonnes of waste per annum. Calculations are included in Appendix B.

4.2 Operational Waste Storage Space

As described in section 3 above, the design includes adequate and easily accessible waste storage space. The proposed bin-based waste management system has been designed with flexibility in mind. The complement (number and type) of bins can be adjusted in response to the development's recycling rate, for instance, and will seek to achieve the 75% recycling target by 2030.

Future office tenants will be expected to monitor operational performance (e.g. rate and quality of recycling) (as detailed in section 4.5 below) and adjust recyclable waste storage provisions as necessary. This could involve swapping 1,280 litre residual waste bins for smaller food or glass waste bins for example.

4.3 Operational Waste Collections

As described in section 3, the design supports the separate collection of residual, MDR, and food waste. MDR may be further segregated into card, paper, plastics and metal (depending on the nature of the waste produced by the tenants) for separate collection.

4.4 Implementation of the Waste Hierarchy

Regulation 12 of the Waste (England and Wales) Regulations 2011 requires waste producers or those handling waste to comply with the waste hierarchy (prevention, prepare for reuse, recycling, recovery, disposal) unless it can be justified on environmental or technical grounds that this is not appropriate. The waste hierarchy gives top priority to preventing waste. When waste is created, the hierarchy prioritises preparing it for reuse, then recycling, then recovery (including energy recovery), then last of all disposal (including landfill). In order to comply with London Plan policy SI 7, no recyclable or biodegradable waste should be despatched to landfill.

Commercial tenants will be expected to take into account the waste hierarchy when making decisions about off-site waste management solutions for their waste. Guidance is available on the application of

[12] OPDC's *Waste Management in High-Density Development Supplementary Planning Document* available from https://www.london.gov.uk/about-us/organisations-we-work/old-oak-and-park-royal-development-corporation-opdc/planning/supplementary-planning-documents/waste-management-high-density-development-spd (accessed 25 July 2023).

[13] High density for an office use class and also a light industrial use class based on Homes & Communities Agency Employment Density Guide third edition dated November 2015 – which suggests a density of 10m^2 NIA per office employee and 47m^2 NIA per industrial space employee.

the waste hierarchy[14]. For the waste types to be routinely generated by the development, the following waste options should be preferred (after prevention actions have been taken to minimise the quantities of waste to be despatched from the development, and source segregation has been undertaken to minimise the proportion of residual waste):

Mixed dry recyclable wastes

In the first instance, commercial tenants should consider sorting the recyclables on-site to separate out paper / cardboard from plastics, metal, and glass. With despatch for further sorting / grading where the sorted recyclates are then despatched again for recycling back into packaging materials or paper products etc. rather than being used as fuel. Tenants should enquire as to what happens to the residual waste from sorting the mixed recyclables – it should not go to landfill.

Food waste

Commercial tenants should despatch food waste for anaerobic digestion rather than composting – which is recognised in the guidance as a deviation from the waste hierarchy supported by evidence.

Residual waste

It is this waste stream that requires most detailed discussion with waste management contractor to understand the fate of the waste and the energy efficiency of the solution. Ideally, tenants will despatch for processing to produce refuse derived fuel (processing plants are able to recover some fractions of the mixed waste for recycling) where the fuel displaces coal or other fossil fuel. As a minimum tenants should not despatch for landfill disposal.

4.5 Performance Monitoring and Reporting

The facilities management team will be responsible for overseeing waste storage arrangements (appropriate positioning of bins within bin stores, housekeeping, etc.), as well as monitoring and reporting operational performance, including:

- reporting missed collections;
- recording bulky waste and other ad hoc collections;
- ensuring waste is presented for collection at the appropriate time and location;
- fielding feedback from tenants;
- responding to any incidents or problems with servicing activity; and
- regularly reviewing the development's performance.

Office and workshop tenants will be expected to monitor and report waste management performance as required. It is likely the facilities management team will be responsible for making arrangements for waste collections and so compliance with the waste duty of care[15].

The waste duty of care applies to anyone who produces commercial waste. It expects waste holders to *"…take all reasonable steps to ensure that when you transfer waste to another waste holder that the waste is managed correctly throughout its complete journey to disposal or recovery"*[16]. This can be done by carrying out detailed checks and requesting evidence to confirm waste has reached its final destination. The duty of care also requires waste producers to provide information including a written description of waste when it is transferred to another person (sometimes referred to as a waste transfer note). The duty of care obligations therefore provide a mechanism through which future tenants can accurately check and record their waste collection activities by engaging in more detailed discussions

[14] E.g. Defra, Guidance on applying the waste hierarchy, June 2011 https://www.gov.uk/government/publications/guidance-on-applying-the-waste-hierarchy (accessed 25 July 2023).
[15] See Defra and Environment Agency guidance available from https://www.gov.uk/government/publications/waste-duty-of-care-code-of-practice (accessed 25 July 2023).
[16] Page 4 of the guidance referenced in footnote above.

with their waste management contractor(s).

4.6 Consideration of Consolidated Smart Logistics

Waste collections will be undertaken by commercial waste management contractor(s) or LBC as a commercial service at suitable frequencies. It is reasonable to assume commercial waste collection operators will seek to optimise their routings. When it comes to appointing contractor(s), the following will be considered where possible to consolidate waste collections:

- providing shared waste storage facilities (as described in section 3);
- specifying the use of split body RCVs that can collect more than one waste type at a time;
- appointing contractor(s) who can provide waste collections on a "*just-in-time*" basis, e.g. attend to collect waste only when bins are full;
- ensuring waste collections take place on specific days at specific times;
- requesting RCV data from contractor(s) such as routes and emissions which could be as part of duty of care audits or similar; and
- sharing this data with future office tenants to engage and encourage sustainable waste management behaviours.

As the proposed development is entirely commercial, other measures such as community-led waste minimisation schemes have not been considered for routine operational waste.

APPENDICES

A. Plans and Drawings

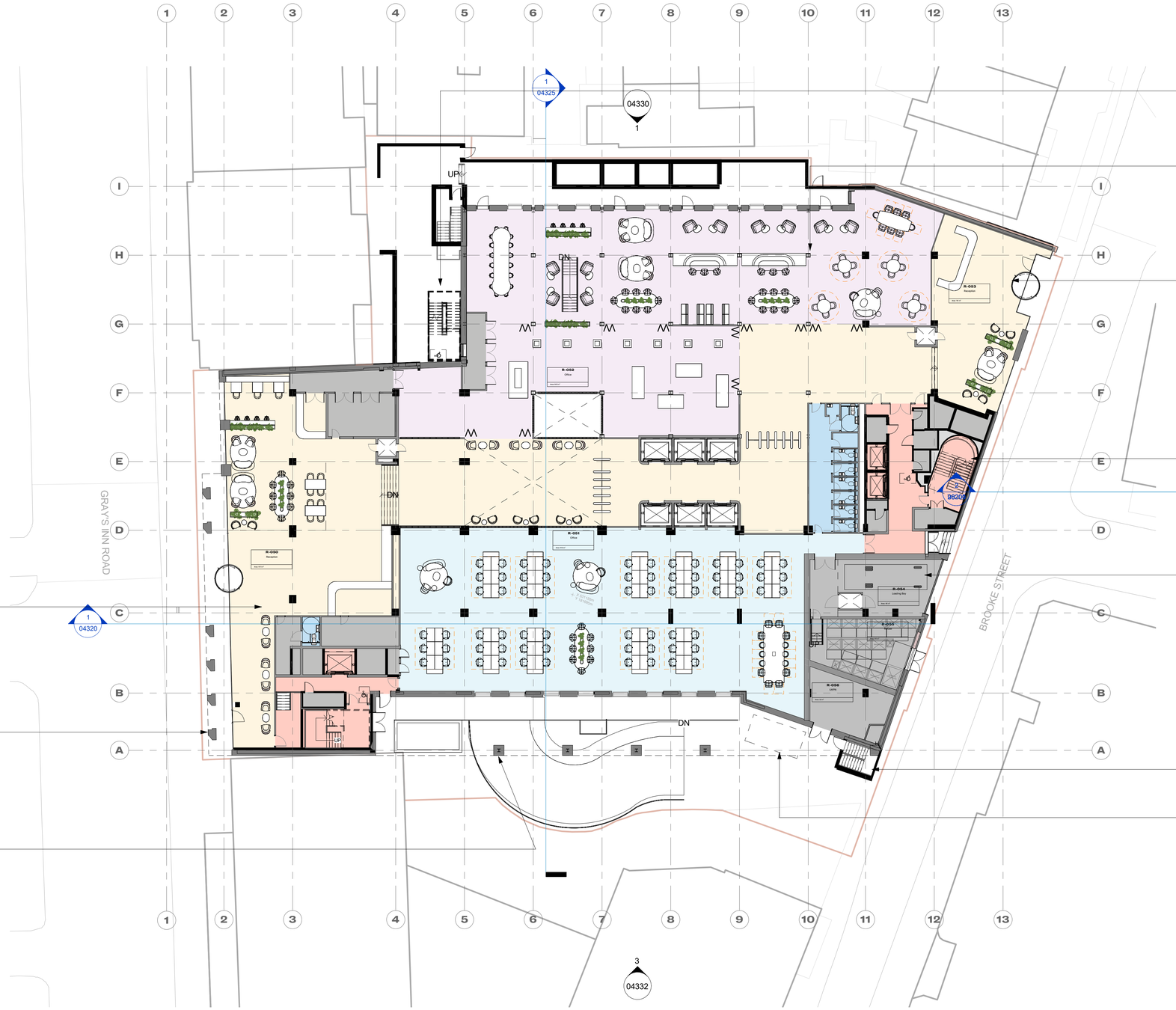
Buckley Gray Yeoman drawing titled *"Planning – Proposed Plan – Level 00"* with drawing number *"1195-BGY-XXX-100L-DR-A-04300"*, dated 31 October 2023.

Waterman drawing titled *"Swept Path Analysis 3.5t Panel Van"* with reference *"WIE19467-SA-0005"*, revision P01, dated 25 July 2023.

Waterman drawing titled "*Swept Path Analysis 7.5t Panel Van*" with reference "*WIE19467-SA-0002*", revision P02, dated 25 July 2023.

By Department Legend

- Afforable WorkSpace
- Core-Fire
- Office
- Risers
- Core-Other
- WC's
- Plant
- Reception



04233 1

12. New light weight metal fire escape stair

13. Hybrid steel and CLT extension in existing courtyard

14. New reception entrance on Brookes Street

15. Existing core to be upgraded to fire fighting core

16. Relocated loading bay entrace

17. New substation with entrance onto courtyard

18. 1 m. disabled parking space shown in dashed

21. Reception slab lowered to be at grade to Gray's Inn Road

20. New brick clad columns forming colonnade supporting new elevation above

19. New columns to support extension above

0 1 2 5m

N

GENERAL NOTES:

1. These drawings are for costing and information only and are **NOT** to be used for tender or construction.

2. These architectural drawings have been based off Point2 Surveyors pre-strip out 2D survey drawings issued on November 2022 and therefore, may not include various areas not fully surveyed or building anomalies which could alter the scope and information of these drawings.

REV	DATE	NOTE
A	31.10.23	Issue for Planning

CLIENT: **Clare Real Estate Ltd**

PROJECT: **Fox Court**

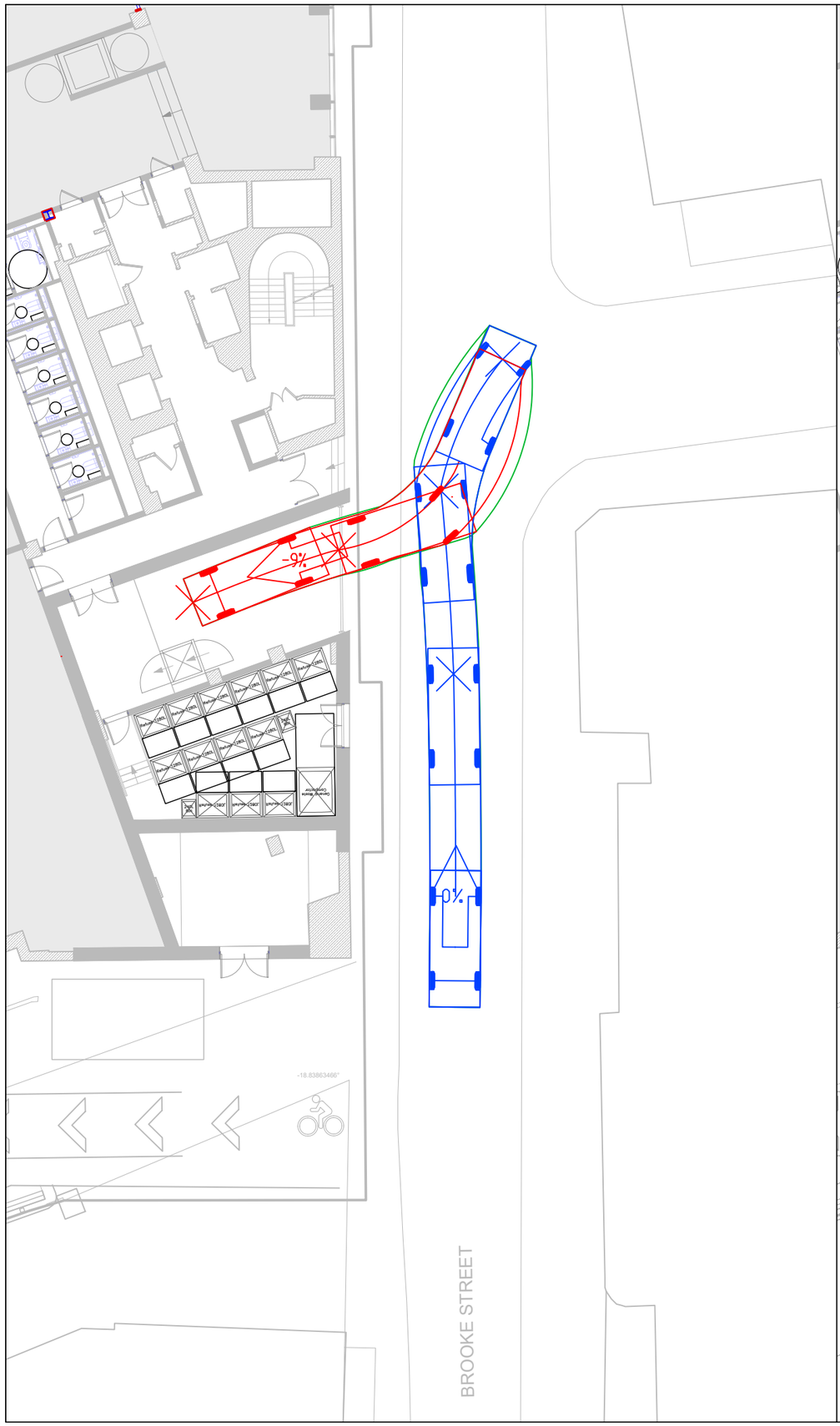
DWG No.: **1195-BGY-XXX-100L-DR-A-04300** REVISION: **A**

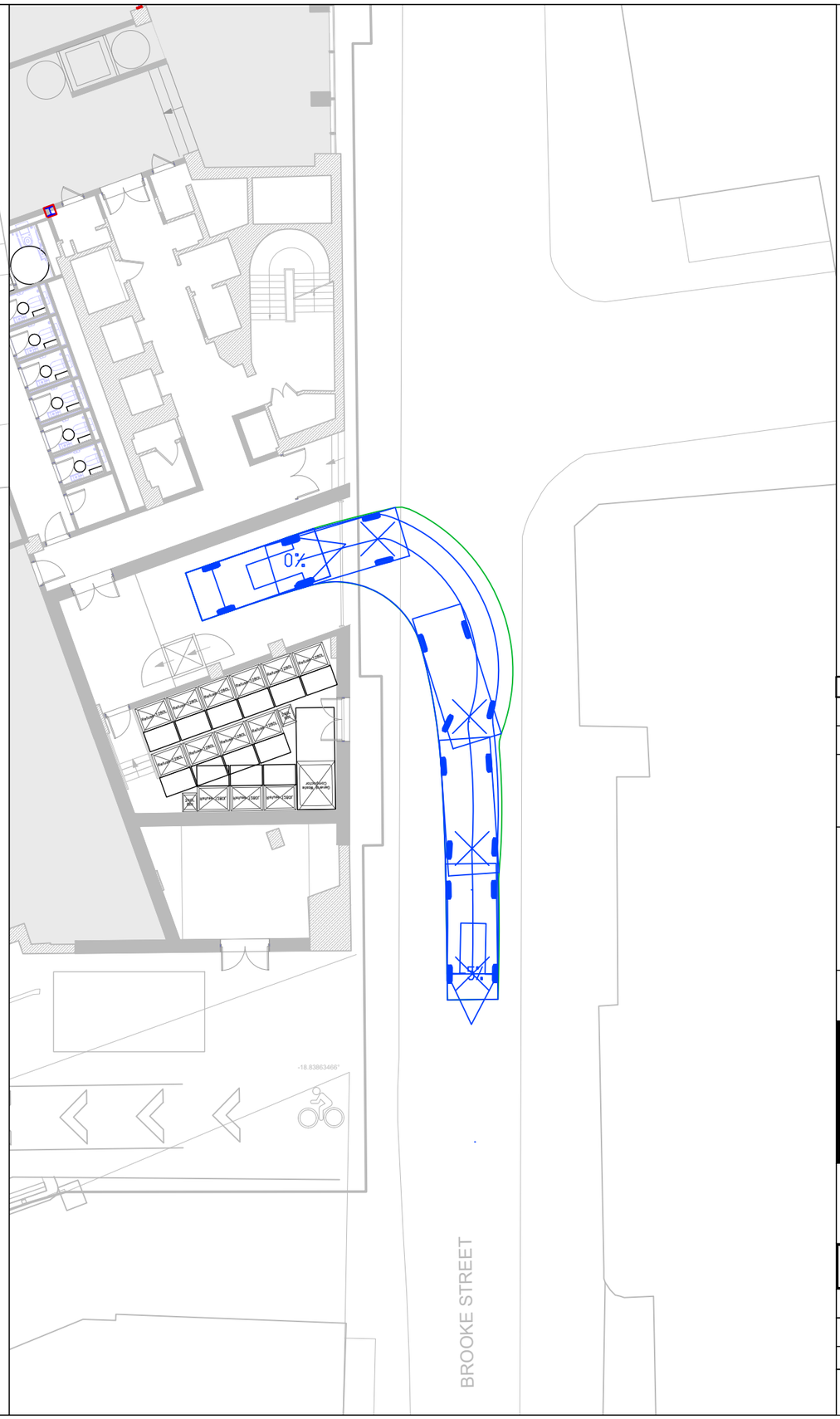
DRAWING: **Planning - Proposed Plan - Level 00**

STATUS: **PLANNING** APPROVED BY: **TB** SUITABILITY: **S4**

SCALE: **1 : 200 @A1** DATE: **31.10.23**

BGY
BUCKLEY GRAY YEOMAN
+ 44 20 7033 9913
BGY.CO.UK





3.5t Panel Van	
Overall Length	5.339m
Overall Width	1.986m
Overall Body Height	2.565m
Min Body Ground Clearance	0.338m
Track Width	1.986m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	6.400m

Rev	Date	Description	By	Chk
P01	25.07.23	ISSUED	JH	MP

Amendments

Project

FOX COURT

Title

SWEPT PATH ANALYSIS
3.5t Panel Van

Client

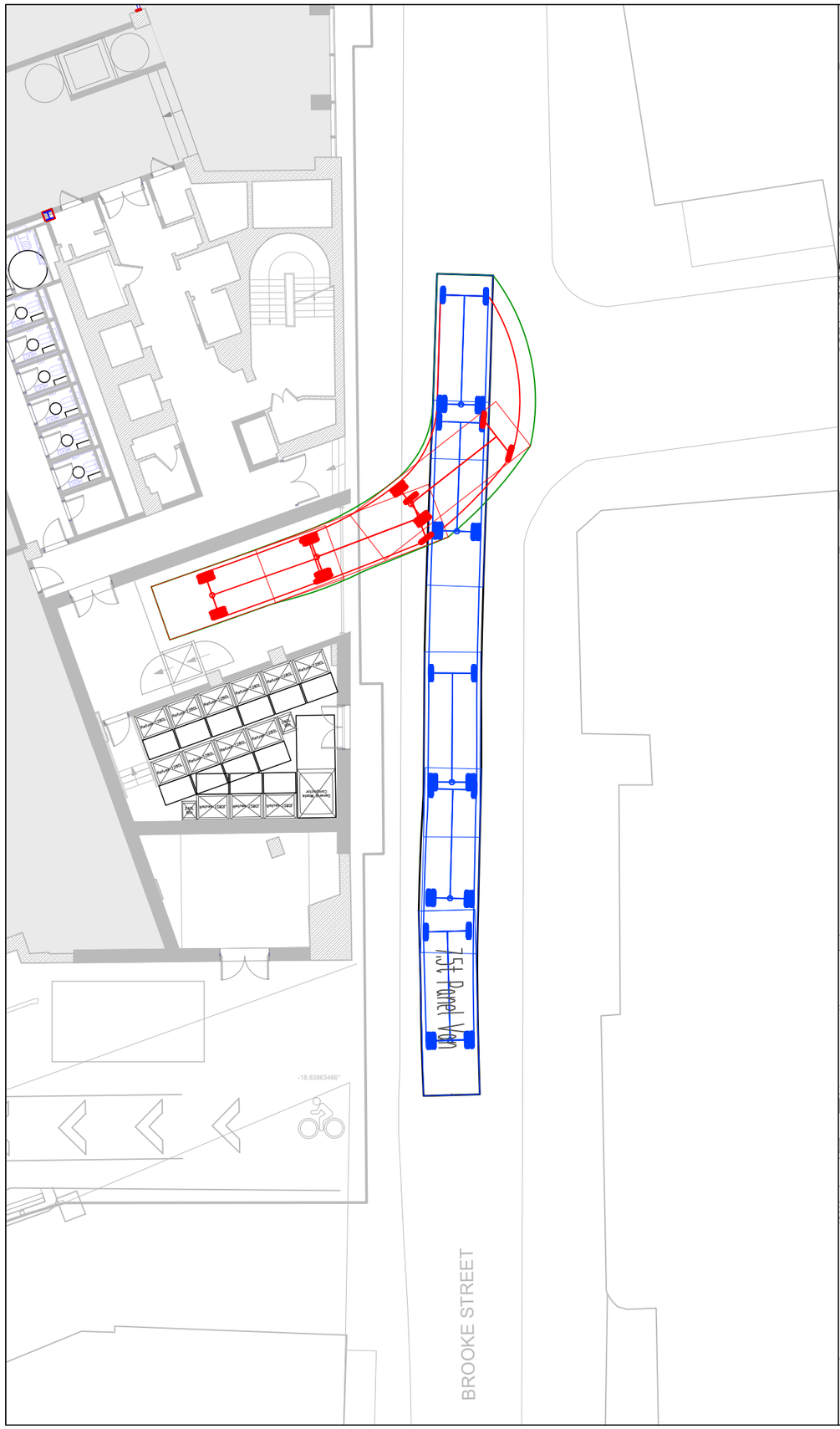
General Projects and Valeo Capital

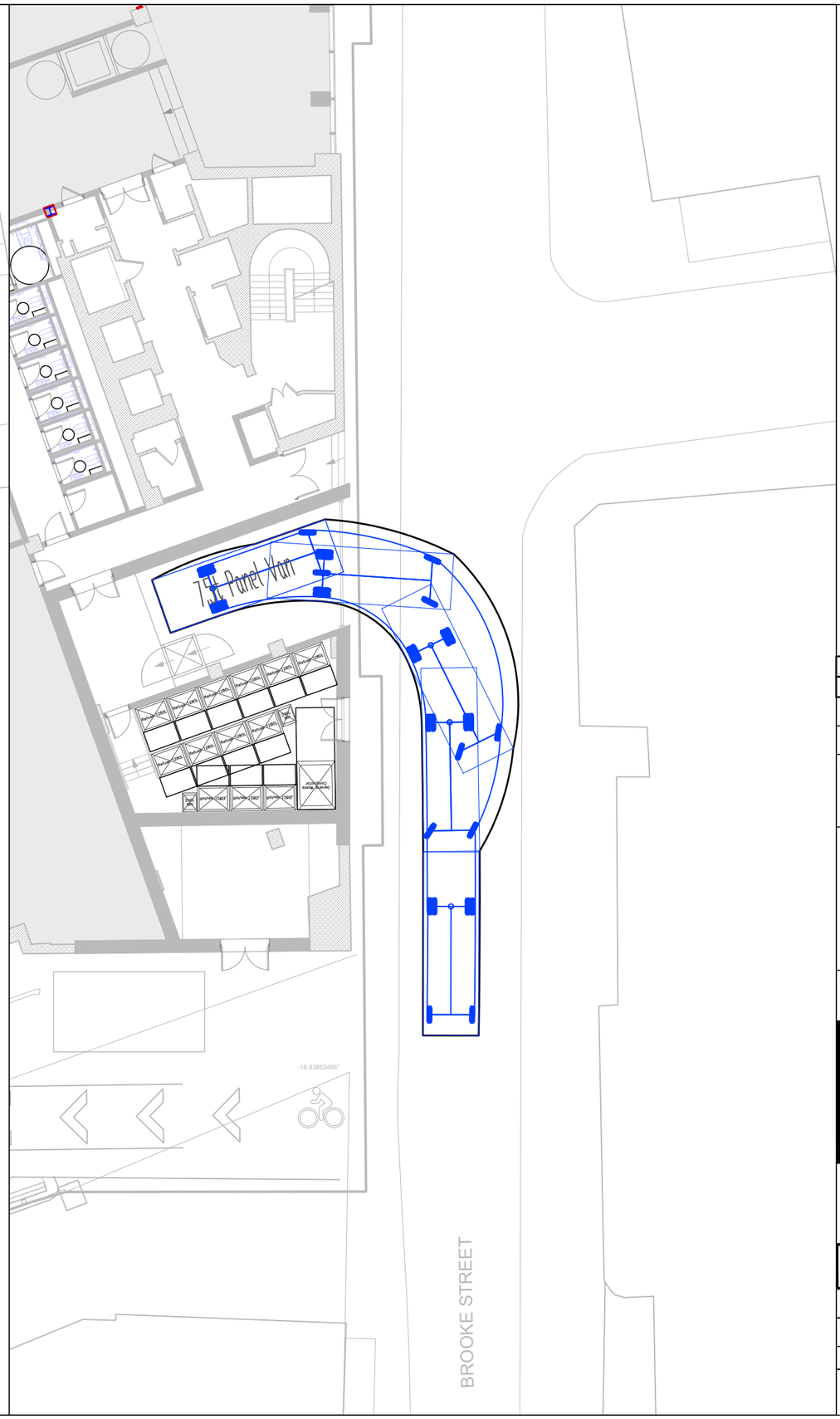
Pickfords Wharf, Clink Street, London SE1 9DG
t 0207 928 7888
mail@watermangroup.com www.watermangroup.com

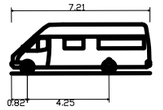
WIP S0

Designed By	Director	Waterman Ref
JH	AB	WIE19467
Drawn By	**Date**	**Scales @ A3**
GF	07/06/2023	1:200

Project - Originator - Volume - Level - Type - Role - Number	Revision
WIE19467-SA-0005	P01







7.5t Panel Van	
Overall Length	7.210m
Overall Width	2.192m
Overall Body Height	2.544m
Min Body Ground Clearance	0.316m
Track Width	1.865m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	7.400m

Rev	Date	Description	By	Chk
P01	25.07.23	LOADING BAY UDPATED	JH	MP
P01	17.07.23	ISSUED	JH	MP

Amendments

Project

FOX COURT

Title

SWEPT PATH ANALYSIS
7.5t Panel Van

Client

General Projects and Valeo Capital

Pickfords Wharf, Clink Street, London SE1 9DG
t 0207 928 7888
mail@watermangroup.com www.watermangroup.com

WIP S0

Designed By	Director	Waterman Ref
JH	AB	WIE19467
Drawn By	**Date**	**Scales @ A3**
GF	07/06/2023	1:200

Project - Originator - Volume - Level - Type - Role - Number	Revision
WIE19467-SA-0002	P02

B. Waste Storage Capacity Calculations

Operational waste storage capacity calculations (bin numbers)

Use	NIA (m^2)	British Standard equation	No. of employees	Weekly waste arisings (litres)	Two days' worth waste (litres)	Residual waste arisings (litres)	MDR waste arisings (litres)	Equivalent No. of 1,280 litre bins for daily collection with compaction	
								No. of residual waste bins (rounded)	No. of MDR waste bins (rounded)
Office	14,601	volume arising per employee [50 l] x number of employees	1,460	73,005	29,202	7,301	21,902	2.00	9.00
Jewellery workshop	795	volume per m^2 of floor area [5 l] × floor area	53	3,975	1,590	398	1,193	1.00	1.00
Total	**15,396**	**-**	**-**	**76,980**	**30,792**	**7,698**	**23,094**	**3.00**	**10.00**

These office waste storage capacity calculations are based on the method set out in section 3.

Circular economy calculations

Waste per annum

Use	NIA (m^2)	Assumed employment density (m^2 per employee)	No. employees	Tonnes per annum
Office	14,601	10	1,460	416.89
Jewellery workshop	795	15	53	60.5
Total	**15,396**	**-**	**1,513**	**477.39**

The above calculations are based on the sources and assumptions listed in section 4.

We are Waterman, where every project matters

We deliver progressive, sustainability-driven environmental and engineering consultancy services across every sector. We think differently, and we're harnessing our collective expertise to deliver greener, healthier and well-connected communities, networks and built environments.

Based in strategic locations throughout the UK and Ireland, our team of specialists is at the forefront of tackling the climate emergency and forging a path to a Net Zero built environment.

UK & Ireland Office Locations