

NOMA Plots 2 & 3

Angel Square

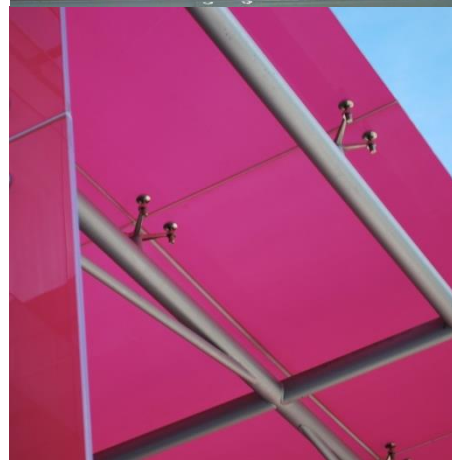
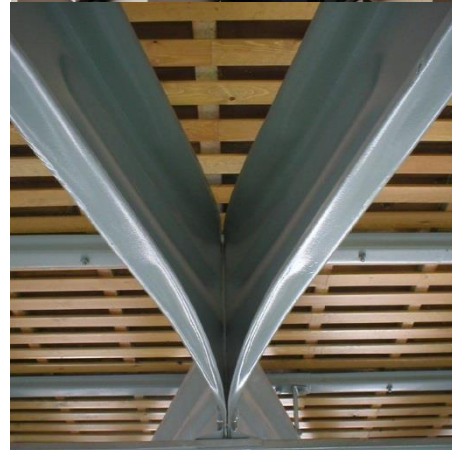
Waste Management Strategy

Curtins Ref: 81536-CUR-XX-XX-T-TP-00003

Revision: P04

Issue Date: 28 June 2022

Client Name: NOMA (GP) Limited



Merchant Exchange
17 – 19 Whitworth Street West
Manchester. M1 5WG.
Tel: 0161 236 2394
www.curtins.com

CIVILS & STRUCTURES • TRANSPORT PLANNING • ENVIRONMENTAL • INFRASTRUCTURE • GEOTECHNICAL • CONSERVATION & HERITAGE • PRINCIPAL DESIGNER
Birmingham • Bristol • Cambridge • Cardiff • Douglas • Dublin • Edinburgh • Glasgow • Kendal • Leeds • Liverpool • London • Manchester • Nottingham

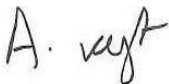


Control Sheet

Rev	Description	Issued by	Checked	Date
P01	First Issue, Draft	AV	AV	13 May 2022
P02	Second Issue, for Planning	AV	AV	23 June 2022
P03	Third Issue, for Planning	LL	AV	24 June 2022
P04	Fourth Issue, for Planning	LL	AV	28 June 2022

This report has been prepared for the sole benefit, use, and information for the client. The liability of Curtins with respect to the information contained in the report will not extend to any third party.

Author	Signature	Date
Lynnie Ler MEng (Hons) Transport Planner		28 June 2022

Reviewed	Signature	Date
Alex Vogt BSc (Hons) MSc FCIHT TPP Board Director		28 June 2022

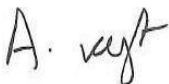
Authorised	Signature	Date
Alex Vogt BSc (Hons) MSc FCIHT TPP Board Director		28 June 2022

Table of Contents

1.0	Introduction.....	1
1.1	Background	1
1.2	Purpose of the Report	2
1.3	Structure of the Report	2
2.0	Site Location and Highway Layout.....	3
2.1	Site Location.....	3
2.2	Existing Use and Access Arrangements	3
2.3	Surrounding Highway Network.....	4
3.0	Waste Management Policy	7
3.1	Introduction.....	7
3.2	Waste Management Plan for England (January 2021)	7
3.3	Waste Management in Buildings – Code of Practice (BS 5906:2005)	8
3.4	Building Regulations	9
3.5	Controls on Animal By-Products	9
3.6	Waste Storage and Collection Guidance for New Developments (GD 04 – v6.00, Sept 2017)	9
4.0	Waste Forecasting and Strategy.....	10
4.1	Introduction.....	10
4.2	Waste Forecast	10
4.3	Bin Types	12
4.4	Waste Management Strategy – Internal Arrangements.....	14
4.5	Waste Management Strategy – Collections.....	14
5.0	Summary and Conclusions	16
5.1	Summary	16
5.2	Conclusions.....	17

Figures

Figure 2.1 – Location Plan in Relation to Manchester City Centre	3
Figure 3.1 – Evolution of Waste Management Practices.....	8

Tables

Table 1.1 – Development Summary.....	1
Table 4.1 – Summary of Development Proposals for Waste Forecast Considerations.....	10
Table 4.2 – Development Weekly Waste Volume Forecast (Plot 2)	11
Table 4.3 – Development Weekly Waste Volume Forecast (Plot 3)	12
Table 4.4 – Number of Required Bins (Plot 2)	13
Table 4.5 – Number of Required Bins (Plot 3)	13

Drawings

Drawing 81536-CUR-XX-00-D-TP-05001 – (Swept Path Analysis) 11.2m Large Refuse Vehicle
Drawing 81536-CUR-XX-00-D-TP-06001 – Waste Management Strategy

Appendices

Appendix A – Development Proposals
Appendix B – MCC Waste Pro Forma

1.0 Introduction

1.1 Background

1.1.1 Curtins has been appointed on behalf of NOMA (GP) Ltd to provide traffic and transportation advice in relation to the redevelopment of 2 & 3 Angel Square.

1.1.2 The proposed development comprises plots M and N of the adopted NOMA Masterplan, known as 2 and 3 Angel Square, with the following development description:

“An application for full planning permission comprising:

Erection of 2 Angel Square, a 14 storey building (excluding roof top plant) to form a mixed use office development (Use Class Egi) with two flexible commercial units at Upper Ground floor Level (Use Classes Ea, b, c, e, f, and / or Use Class Sui Generis (p) and (q)), and with a flexible office (Use Class Egi) and/or restaurant (Use Class Eb) space at Level 12, along with Lower Ground Level car and cycle parking, hard and soft landscaping and other associated works;

Erection of 3 Angel Square, a 13 storey building (excluding roof top plant) to form a mixed use office development (Use Class Egi) with two flexible commercial units provided over Lower and Upper Ground Floor Levels (Use Classes Ea, b, c, e, f, and / or Use Class Sui Generis (p) and (q)), a further flexible commercial unit at Upper Ground Floor Level only allowing for ancillary seminar space and / or Sui Generis Use Class (t) Cinema space, together with an ancillary gym space at Upper Ground Floor, as well as Lower Ground Level car and cycle parking, hard and soft landscaping and other associated works.”

1.1.3 The development summary is as follows:

Element	Plot 2	Plot 3
Overall Gross Internal Area (GIA) (sqm)	25,803	30,938
• Office (Use Class Egi), including:	25,237	29,841
○ Flexible office (Use Class Egi) and / or restaurant (Use Class Eb) space at Level 12	1,129	N/A
○ Ancillary gym	N/A	176
○ Flexible office and / or Sui Generis Use Class (t) Cinema Space	N/A	592
• Commercial retail (Use Classes Ea, b, c, e, f, and / or Use Class Sui Generis (p) and (q))	566	1,097
Car Parking Spaces	15	15
Cycle Parking Spaces and Lockers	122	148
Cycle Showers	13	17

Table 1.1 – Development Summary

- 1.1.4 The proposed landscape masterplan and upper and lower ground floor plans are included in **Appendix A**.

1.2 Purpose of the Report

- 1.2.1 This Waste Management Strategy (WMS) has been prepared to consider the potential refuse and recyclable waste volumes of Plots 2 & 3 Angel Square, including organic waste and for all uses of this development. This WMS also provides details of the collection arrangements.

1.3 Structure of the Report

- 1.3.1 Following this introduction, **Section 2** of the report provides a comprehensive description of the site location, including use and highway network surroundings whilst relevant local and national waste policy is summarised in **Section 3**.
- 1.3.2 **Section 4** contains the waste forecasting methodology used to establish the likely refuse generation associated with the development proposals, providing details of recycling, waste management and collection procedures.
- 1.3.3 The report is summarised and concluded in **Section 5**, with the completed MCC waste pro forma included in **Appendix B** to the rear of the report.

2.0 Site Location and Highway Layout

2.1 Site Location

- 2.1.1 The site measures approximately 0.8 hectares of previously developed land. The site is bound by Angel Street to the north, 1 Angel Square (the Co-operative Group headquarters) and the Angel Square turning circle (for taxis / drop-offs) to the west, Miller Street to the south, and Moda Living's Angel Gardens residential scheme to the east.
- 2.1.2 The site is located to the northern edge of Manchester City Centre, and is in close proximity of the wide range of retail, office, leisure, residential, and transport infrastructure associated with the city. The following **Figure 2.1** illustrates the site in relation to the local highway network:

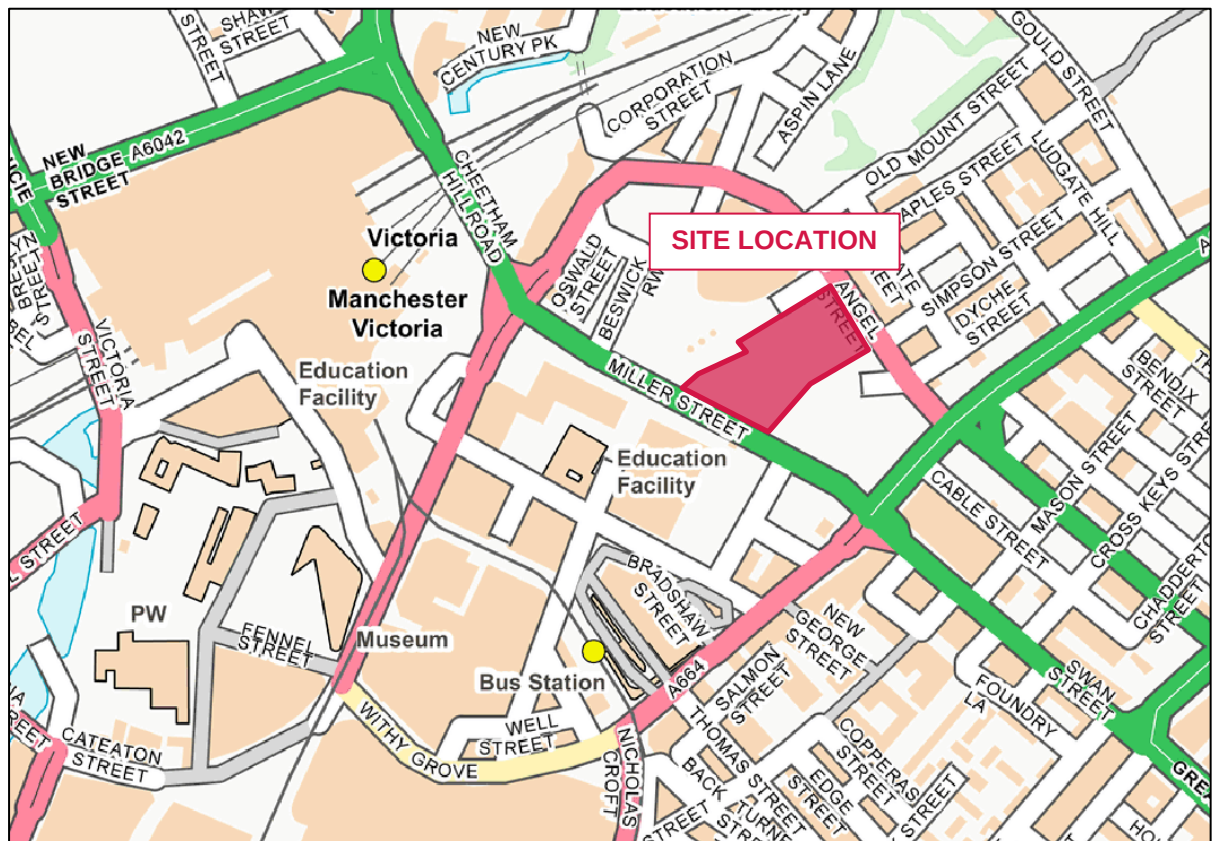


Figure 2.1 – Location Plan in Relation to Manchester City Centre
(Source: OS Maps, 2018)

2.2 Existing Use and Access Arrangements

- 2.2.1 The site currently comprises two development plots, identified as Plots M & N of the NOMA Masterplan as defined in the NOMA Strategic Regeneration Framework Update 2020 (SRF). The site is currently in use as surface car parking, with c. 100 spaces (excluding former space for parking within the footprint of the marketing suite, as this is currently undergoing construction and the spaces are no longer usable). There are also small pockets of informal and formal areas of shrubbery and trees within the site.

- 2.2.2 There is a significant change in levels across the site, with the lowest part being in the west corner, rising to the north and east towards Angel Street. The difference in level across the site between Angel Street and Miller Street is typically a storey, creating a lower and upper ground floor.
- 2.2.3 Following a review of the Definitive Records, there are no Public Rights of Way (PRoW) extending through the site. Notwithstanding, there is a wide public realm to the south of 1 Angel Square / to the west of the site which accommodates pedestrian and cycle movement between Angel Street and Miller Street. From this public realm, there is subsequently a wide Toucan crossing across Miller Street towards Dantzic Street, which is also pedestrianised for a certain extent.
- 2.2.4 Vehicular access to the existing car park is currently provided from Angel Street. The access takes the form of a priority-controlled T-junction, with dropped kerbs and tactile paving across the access to facilitate pedestrian crossing. Pedestrian and cycle access can be undertaken in a similar manner to the vehicular access.

2.3 Surrounding Highway Network

A665 Miller Street / Ring Road

- 2.3.1 The A665 Miller Street runs along the southern boundary of the site. The A665 comprises a two-lane carriageway, and forms part of the arterial route circling the city centre. The A665 Ring Road commences at a signalised junction with the A665 Cheetham Hill Road near the Green Quarter (north-west of the site) and continues for a length of c. 2.3km towards the south-east of Manchester city centre, terminating at the Pin Mill Brow (a fork in the road where it diverges into the A635 Ring Road and A665 Chancellor Lane) in Ardwick.
- 2.3.2 Miller Street comprises approximately 300m of this whole length and is one-way in a westerly direction. The highway extends for approximately 300m between a signalised junction with Rochdale Road, Shudehill and Swan Street in the east, to a signalised junction with Cheetham Hill Road and Corporation Street in the west. Both signalised junctions have pedestrian crossing facilities, complete with dropped kerbs and tactile paving.
- 2.3.3 The carriageway along Miller Street itself is typically 8m wide and has up to three lanes. There are well-maintained footways on both sides of the carriageway which are approximately 3m in width. The road is well-lit with street lighting.
- 2.3.4 There is also a Toucan crossing facility located adjacent to Dantzic Street, which is complete with dropped kerbs and tactile paving. Most of the junctions along the A665 also have controlled crossing points, pedestrian refuge islands and advanced cycle stop lanes to facilitate pedestrian and cycle movement in a safe manner.
- 2.3.5 In the vicinity of the site, the A665 is subject to Traffic Regulation Orders (TROs) in the form of single (no loading between 08:00 – 09:30 Mon – Sat and 16:30 – 18:00 Mon – Fri) and double yellow (no

waiting at any time) parking restrictions throughout its entire length. There are also “SLOW” markings on the road to enforce the speed limit of 30mph.

A664 Ring Road / Angel Street

- 2.3.6 The A664 runs adjacent to the north of the site. The road commences at the signalised junction with the A665 Ring Road to the west of the site and extends in a north-easterly direction for c. 120m, where this stretch is known as the A664 Ring Road. To the north of the site, the road then widens into three lanes and continues as Angel Street for c. 320m prior to terminating at a signalised four-arm junction with the A664 Rochdale Road and A665 Ring Road. The roads provide vehicular and pedestrian access to the Co-Op building at One Angel Square and are both one-way in an easterly direction, with an additional advisory cycle lane along Angel Street.
- 2.3.7 The junctions along the A664 have shared pedestrian and cycle crossing facilities complete with dropped kerbs and tactile paving, and advance cycle stop lines. There are also well-maintained footways along both sides of the road of up to 4m wide, street lighting at regular intervals, and it can be observed that there are high levels of pedestrian footfall in the area due to the proximity of employment opportunities and car parks.
- 2.3.8 Towards the north-west of the site, the footway is separated from the road by a large grass verge and also links pedestrians to Corporation Street and Red Bank which run parallel and perpendicular to the railway lines respectively.
- 2.3.9 The A664 is subject to a speed limit of 30mph throughout and has TROs in the form of double yellow parking restrictions.

Corporation Street

- 2.3.10 Corporation Street extends south-westwards from the junction with the A665 Ring Road for a length of circa 575m in total (albeit the usable length of the carriageway for vehicles terminates at a signalised junction with Withy Grove after 310m, where vehicles must then turn left). The remainder of the road is only accessible by the Metrolink trams and pedestrians / cyclists.
- 2.3.11 The carriageway is two-way and typically 8m wide, but much of the road is shared between vehicles and tram lines entering / exiting the Victoria station. There are footways on both sides of the road which are approximately 3m in width, together with segregated and advisory cycle lanes approaching the city centre. There are also advanced cycle stop lanes at the signalised junctions.
- 2.3.12 Pedestrian infrastructure is excellent, comprising wide footways with an average width of 4m on both sides of the road which are complete with dropped kerbs and tactile paving. Some parts of the footway are also designated as shared use between pedestrian and cyclists. Corporation Street also has many signalised crossing points at major junctions and is also well-lit with street lighting.

2.3.13 Corporation Street is subject to a speed limit of 20mph. The majority of the road is subject to TROs in the form of double yellow parking restrictions, however there is a loading bay adjacent to the National Football Museum, where goods vehicles are allowed to load and unload between 04:00 and 22:00 from Mondays to Sundays. The road is also signed as a no stopping zone between 22:00 and 04:00.

2.3.14 There are a number of bus stops along Corporation Street which host services to Stockport, Oldham, and Bury (detailed in **Section 4.4** below). In the wider vicinity of the site, the bus stops are in good condition and are complete with a shelter, seating, flag and pole, and timetable information.

A664 Rochdale Road

2.3.15 Further to the east of the site, the A664 Rochdale Road extends north from a signalised junction at the A665 Ring Road and Shudehill, then extends towards the north-east for c. 5.5km through Collyhurst, Harpurhey, and Blackley, where it meets the M56 Junction 20 and continues as the A664 Manchester New Road.

2.3.16 In the vicinity of the site, the highway comprises a two-way carriageway measuring c. 15m in width, with two lanes in both directions. Additionally, the road widens at some signalised junctions to accommodate turning lanes and / or central reserves.

2.3.17 There are footways on both sides of the carriageway which range between c. 2.5m wide and c. 5m wide. At the signalised junctions with the A665 Ring Road / Shudehill and A664 Angel Street / A665 Ring Road, there are pedestrian crossing facilities complete with dropped kerbs, tactile paving, advance cycle stop lanes and some pedestrian guard rails. The road is well-lit with street lighting at regular intervals.

2.3.18 There are many bus stops along the A664 Rochdale Road, which host services to areas such as Higher Blackley, Bury, Oldham, Crumpsall, Rochdale, Shudehill, Manchester Royal Infirmary, and Piccadilly Gardens amongst other locations (detailed in **Section 4.4** below). The bus stops in the vicinity of the site have a good level of infrastructure, such as a shelter, seating, notice boards with timetable information, and a flag and pole.

2.3.19 The A664 Rochdale Road is subject to a speed limit of 30mph. There are TROs along the road in the form of single and double yellow line parking restrictions. At some signalised junctions, there are also yellow box junctions to prevent congestion.

3.0 Waste Management Policy

3.1 Introduction

- 3.1.1 When developing refuse strategies, it is important to be cognisant of the national and local waste management policies. The following section of the report provides an overview of the policies relevant to the proposed development.

3.2 Waste Management Plan for England (January 2021)

- 3.2.1 The Waste Management Plan for England, to be read in combination with the Resources and Waste Strategy issued in 2018, sets out measures to eliminate avoidable plastic waste, tackle confusion over household recycling, and make sure that those responsible for creating polluting products pay for the costs of that pollution.
- 3.2.2 The Resources and Waste Strategy identifies five strategic ambitions:
- *“To work towards all plastic packaging placed on the market being recyclable, reusable or compostable by 2025;*
 - *To work towards eliminating food waste to landfill by 2030;*
 - *To eliminate avoidable plastic waste over the lifetime of the 25 Year Environment Plan;*
 - *To double resource productivity by 2050; and*
 - *To eliminate avoidable waste of all kinds by 2050.”*
- 3.2.3 The next figure, included on the Waste Management Plan, identifies the evolution of *The Waste Hierarchy* through the years, its current status, and the goal for 2030:

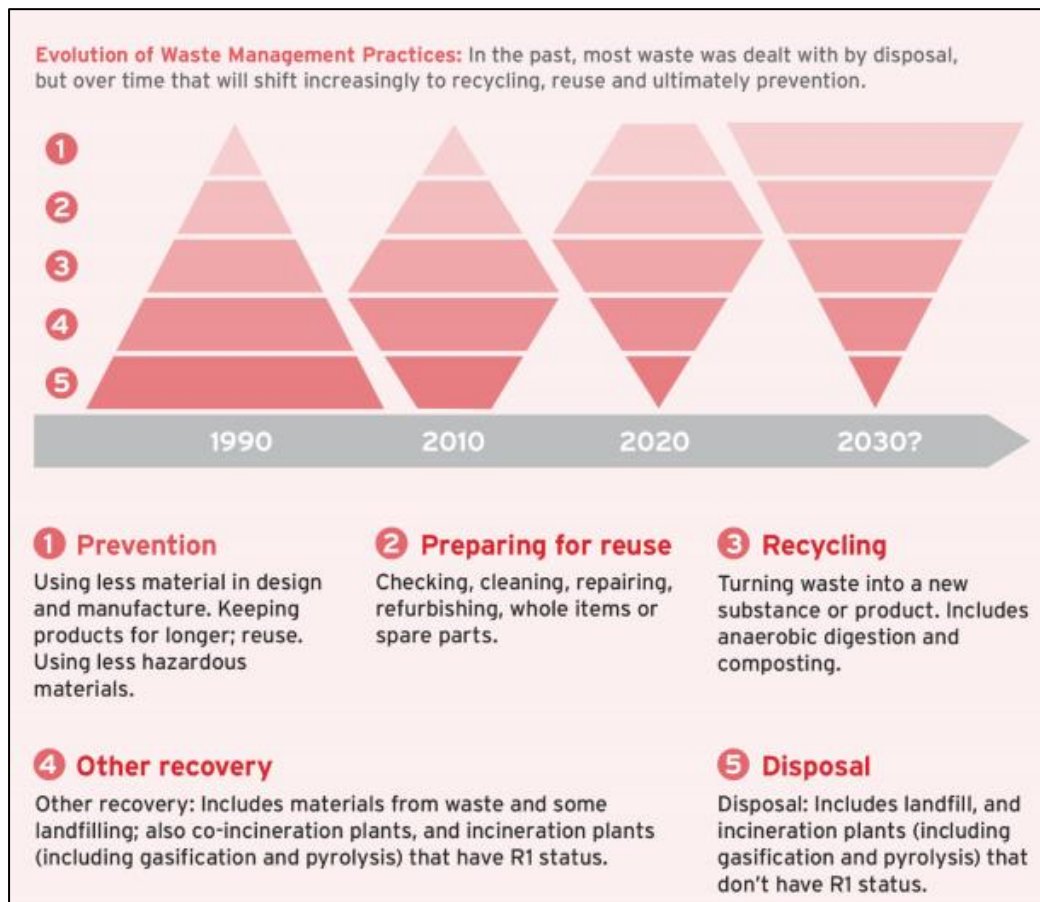


Figure 3.1 – Evolution of Waste Management Practices

(Source: Defra)

3.2.4 The 2030 hierarchy gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill).

3.2.5 This Waste Management Strategy (WMS) adheres to the above guidance, prioritising recycling.

3.3 Waste Management in Buildings – Code of Practice (BS 5906:2005)

3.3.1 To complement the Waste Management Plan for England, a National Code of Practice (BS 5906:2005) document has been developed and this provides guidance relating to waste forecasting for new developments.

3.3.2 This WMS has consulted the weekly arisings included within this Code of Practice, to further support the estimated waste generation set on MCC's GD 04 waste guidance for the anticipated restaurant and retail uses of the site (assumed as food and beverage (F&B) use for robustness).

3.3.3 This code of practice also includes guidance for office developments. However, the forecast is based on the number of employees, and at the time of writing there is no information on the potential number of employees. Therefore, all calculations for this use have been based on MCC's GD04 guidance.

3.4 Building Regulations

- 3.4.1 In addition to the above guidance, all new developments must comply with the requirements set out in Part H6 of the Building Regulations 2000 which states that adequate means of storing solid waste should be provided and adequate means of access should be provided for people in the building to the place of storage.
- 3.4.2 This WMS proposes waste storage areas which comply with the requirements set by Building Regulations document.

3.5 Controls on Animal By-Products

- 3.5.1 Organic waste recycling is subject to DEFRA's Controls on Animal By-Products - Guidance on regulation (EC) 1069/2009 and accompanying implementing Regulation (EC) 142/2011, enforced in England by the Animal By-Products (Enforcement) (England) Regulations 2011.
- 3.5.2 The regulations predominantly relate to food waste. These regulations state that if the volume of waste is over 20kg, it must be stored and labelled in a special container and will be collected by a licensed carrier, who records all stages of the waste movement.
- 3.5.3 It is the occupier's responsibility to ensure that a licensed waste company is arranged, and that it complies with the regulation.

3.6 Waste Storage and Collection Guidance for New Developments (GD 04 – v6.00, Sept 2017)

- 3.6.1 At a more local level, Manchester City Council has prepared a Waste Storage and Collection Guidance Note which contains minimum standards to be considered for the storage and collection of waste. This guidance follows the recommendations set on the Waste Management Plan for England, strongly encouraging and promoting high levels of quality recycling.
- 3.6.1 The note states that all planning applications for new developments and conversions must include a Waste Management Strategy that includes:
- An estimated storage area for the waste produced by the development, including office and retail / restaurant uses;
 - Details of internal and external stores for both waste and recycling; and
 - Location of the proposed collection point and details of the route the collection will take.
- 3.6.2 The following sections of this report provide additional information on each of the above points whilst the pro forma document, contained at the rear of the guidance note, is included as **Appendix B**.

4.0 Waste Forecasting and Strategy

4.1 Introduction

- 4.1.1 A key element of national and local policy is to ensure that new developments maximise recycling while minimising waste generation. It is important to ensure that developments facilitate high recycling rates by providing convenient, attractive, and simple means to achieve the Government's goals.

4.2 Waste Forecast

- 4.2.1 The waste forecast has been calculated based on the recommendations set by the Waste Storage and Collection Guidance for New Developments (GD04), Version 6.00.
- 4.2.2 The proposed development will comprise office, retail, and potential restaurant uses. Any reception and management office areas will be ancillary to the main office use. Therefore, these areas have not been considered for calculation purposes.
- 4.2.3 The proposed development floor space has been summarised in **Table 1.1** earlier, and the proposed development layout can be found in **Appendix A**. For robustness, it is assumed that the space on Level 12 of Plot 2 (denoted as potential flexible office and / or restaurant) is classed as restaurant uses, due to the higher trip generating potential of restaurant uses.

Development Plot	Gross Internal Area (GIA) by Use Class (sqm)			
	Commercial Retail	Restaurant	Office	Total
Plot 2	566	1,129	24,108	25,803
Plot 3	1,097	N/A	29,841	30,938

Table 4.1 – Summary of Development Proposals for Waste Forecast Considerations

Plot 2 Waste Forecast

- 4.2.4 For Plot 2, the waste weekly arisings for the office uses have been calculated based on MCC's GD04 Guidance recommendations for offices of 2,600l per 1,000m² of gross floor space. An initial recycling percentage of 60% has been estimated for calculation purposes. The recycling rate can be updated upon review of the actual recycling rates following occupation.
- 4.2.5 The retail uses of the proposed development are located at the upper ground floor, and there would be a restaurant located on the twelfth floor. The total retail and restaurant use would have an approximate Gross Internal Area (GIA) of 1,695 sqm. For robustness, the retail uses have been assumed to be Food and Beverage (F&B) (Use Class E(a, b, c)) uses, as this typically generate more waste than any of the other retail and commercial classes.
- 4.2.6 Therefore, the retail and restaurant uses have been based on the same local guidance, following the recommendations for Restaurants / Fast Food Outlets of 1,500l per 20 dining spaces.

- 4.2.7 For robustness and to cater for any potential use, 507 dining spaces have been assumed for calculation purposes, in light of likely F&B cover / occupancy rates and considering typical back of house requirements. At 60%, the recycling rates for these uses are considered to be equal to the office use recycling rates.
- 4.2.8 Based on the requirements for Plot 2, **Table 4.2** forecasts the waste volume generated by both the proposed office and retail and restaurant uses associated with the development:

Office Use – Plot 2	
Waste Stream	Refuse Volume (24,108 sqm)
Non-recyclable Waste	25,072 l
Dry mixed Recycling	28,206 l
Glass Recycling	9,402 l
Office Use Total	62,681 l
Retail and Restaurant Use – Plot 2	
Waste Stream	Refuse Volume (507 seats)
Non-recyclable Waste	15,225 l
Dry Mixed Recycling	13,702 l
Glass Recycling	5,709 l
Organic Food Recycling	3,426 l
Retail and Restaurant Total	38,061 l
Plot 2 Total	100,742 l

Table 4.2 – Development Weekly Waste Volume Forecast (Plot 2)

Plot 3 Waste Forecast

- 4.2.9 The waste weekly arisings for the Plot 3 office uses have also been calculated based on MCC's GD04 Guidance recommendations for offices 2,600l per 1,000m² of gross floor space. An initial recycling percentage of 60% has been estimated for calculation purposes. The recycling rate can be updated upon review of the actual recycling rates following occupation.
- 4.2.10 The retail uses of the proposed development are located at the lower and upper ground floors and would have an approximate GIA of 1,097 sqm. Similar to the approach for Plot 2, the retail uses have been assumed to be Food and Beverage (F&B) uses, as this typically generate more waste than any of the other retail and commercial classes.
- 4.2.11 Therefore, the retail uses have been based on the same local guidance, following the recommendations for Restaurants / Fast Food Outlets of 1,500l per 20 dining spaces.
- 4.2.12 For robustness and to cater for any potential use, 328 dining spaces have been assumed for calculation purposes, in light of likely F&B cover / occupancy rates and considering typical back of house requirements. At 60%, the recycling rates for these uses are considered to be equal to the office use recycling rates.

4.2.13 Based on the requirements for Plot 3, **Table 4.3** forecasts the waste volume generated by both the proposed office and retail uses associated with the development:

Office Use – Plot 3	
Waste Stream	Refuse Volume (29,841 sqm)
Non-recyclable Waste	31,035 l
Dry mixed Recycling	34,914 l
Glass Recycling	11,638 l
Office Use Total	77,587 l
Retail Use – Plot 3	
Waste Stream	Refuse Volume (328 seats)
Non-recyclable Waste	9,853 l
Dry Mixed Recycling	8,868 l
Glass Recycling	3,695 l
Organic Food Recycling	2,217 l
Retail Total	24,633 l
Plot 3 Total	102,220 l

Table 4.3 – Development Weekly Waste Volume Forecast (Plot 3)

4.2.14 The recycling rate can be updated upon review of the actual recycling rates following occupation.

4.3 Bin Types

4.3.1 Given the potential volumes involved for the use of the proposed development, the most suitable containers for the general waste and recycling streams would be a combination of 1,100 l Eurobins and 660 l bins.

4.3.2 The collection would be undertaken by a private company, and the frequency has been calculated to be the following:

- Plot 2: 5 times a week for both the office and retail / restaurant uses; and
- Plot 3: 5 times a week for both the office uses and retail uses; noting that:
- Depending on final retail use, retail collections could be reduced to 3 times a week or less.

4.3.3 However, based on the variable nature of the retail uses, this report includes robust calculations as a worst-case scenario, and it is considered that the frequency of these collections will be arranged after occupation / based on the actual waste generation volumes. The management company and staff of the retail uses will be in charge of monitoring bin usage and adjusting the collection frequency accordingly.

Plot 2 Waste Container Forecast

4.3.4 The following **Table 4.4** summarises the required waste containers per stream for Plot 2. This table has been produced following the recommendations set by MCC's GD04 Waste Guidance Document,

assuming the waste collection frequencies summarised above, and described in detail in the following **Chapter 4.5**.

- 4.3.5 There would be an opportunity to reduce the collection frequency if the final retail uses are not F&B, and the below table sets out a worst-case scenario in terms of frequency of collection:

Office Use (5x a week collections)	
Waste Stream	Number of Bins
Non-recyclable Waste	5 x 1,100 l
Dry Mixed Recycling	5 x 1,100 l + 1 x 660 l
Glass Recycling	2 x 1,100 l
Office Use Total	12 x 1,100 l + 1 x 660 l
Retail and Restaurant Uses (5x a week collections)	
Waste Stream	Number of Bins
Non-recyclable Waste	3 x 1,100 l
Dry Mixed Recycling	3 x 1,100 l
Glass Recycling	1 x 1,100 l + 1 x 660 l
Organic Food Recycling	1 x 1,100 l
Retail and Restaurant Uses Total	8 x 1,100 l + 1 x 660 l
Development Total	20 x 1,100 l + 2 x 660 l

Table 4.4 – Number of Required Bins (Plot 2)

Plot 3 Waste Container Forecast

- 4.3.6 The following **Table 4.5** summarises the required waste containers per stream for Plot 3 in the same manner. There would be an opportunity to reduce frequency collection if the final retail uses are not F&B, and the below table sets out a worst-case scenario in terms of frequency of collections:

Office Use (5x a week collections)	
Waste Stream	Number of Bins
Non-recyclable Waste	6 x 1,100 l
Dry Mixed Recycling	7 x 1,100 l
Glass Recycling	3 x 1,100 l
Office Use Total	16 x 1,100 l
Retail Uses (5x a week collections)	
Waste Stream	Number of Bins
Non-recyclable Waste	2 x 1,100 l
Dry Mixed Recycling	2 x 1,100 l
Glass Recycling	1 x 1,100 l
Organic Food Recycling	1 x 660 l
Retail Uses Total	5 x 1,100 l + 1 x 660 l
Development Total	21 x 1,100 l + 1 x 660 l

Table 4.5 – Number of Required Bins (Plot 3)

4.4 Waste Management Strategy – Internal Arrangements

4.4.1 The four main waste streams are:

- General, non-recyclable waste;
- Dry mixed Recycling (Comprising cardboard and paper, plastic and aluminium);
- Glass Recycling; and
- Organic food (Only for potential F&B uses).

4.4.2 The proposals for the development include independent waste stores at the lower ground floor level for both plots, with space for c. 23x 1,100 l bins at Plot 2 and 30x 1,100 l bins at Plot 3 respectively.

4.4.3 The waste storage rooms have been sized to accommodate and operate the number of bins required in the above **Tables 4.4** and **4.5**. It should be noted that these calculations have been made on worst-case assumptions. Upon operation, there would be opportunity to increase the number of collections as and where necessary.

4.4.4 It is envisaged that initially at least 60% of the bins in the waste store would be dedicated to recycling. This percentage could be increased at any point based on actual recycling rates.

4.4.5 The management company would be responsible for monitoring the recycling rates and promote actively high recycling rates within the staff of the different uses. This could be achieved by giving information on the benefits of recycling and information on how to segregate.

4.4.6 The waste storage areas will be well lit and ventilated, including access to a water feed. The floor will comprise an easily cleaned surface and adequate drainage will be provided.

4.4.7 The management company would be responsible for keeping the waste storage facilities clean and safe. They would also be responsible for cleaning the bins on a regular basis and arranging for replacing damaged bins when necessary.

4.5 Waste Management Strategy – Collections

4.5.1 **Drawing 81536-CUR-XX-00-D-TP-06001** shows the location of the waste storage rooms and the routes from the stores to the collection point for both plots.

4.5.2 The management company would be responsible for moving the bins to the collection point on collection day. The waste operators will collect the bins and load them into the refuse vehicle.

4.5.3 The collection point for Plot 2 would be located along the Angel Square turning circle layby, located directly opposite Plot 2; whereas the collection point for Plot 3 would be located along the service road to the east of Plot 3, adjacent to and shared with the Angel Gardens development. **Drawing 81536-CUR-XX-00-D-TP-05001** to the rear of the report demonstrates that a 11.2m large refuse vehicle can

safely service Plots 2 and 3 from the Angel Square turning circle and from the service road between Plot 3 and Angel Gardens respectively.

- 4.5.4 Once the bins have been emptied, containers would be carried immediately back to the bin stores by the management team.
- 4.5.5 Furthermore, it is important to highlight that collections are arranged with private contractors and that timings can be agreed upon. As a result, the bins will await collection along the public realm for a limited amount of time, with the management company returning the bins to the waste store immediately after collection.

5.0 Summary and Conclusions

5.1 Summary

5.1.1 Curtins has been appointed on behalf of NOMA (GP) Ltd to provide traffic and transportation advice in relation to the redevelopment of 2 & 3 Angel Square.

5.1.2 The proposed development involves Plots 2 & 3 of the adopted NOMA Masterplan (in which the site is denoted as Plots M & N), with the following development description:

“An application for full planning permission comprising:

Erection of 2 Angel Square, a 14 storey building (excluding roof top plant) to form a mixed use office development (Use Class Egi) with two flexible commercial units at Upper Ground floor Level (Use Classes Ea, b, c, e, f, and / or Use Class Sui Generis (p) and (q)), and with a flexible office (Use Class Egi) and/or restaurant (Use Class Eb) space at Level 12, along with Lower Ground Level car and cycle parking, hard and soft landscaping and other associated works;

Erection of 3 Angel Square, a 13 storey building (excluding roof top plant) to form a mixed use office development (Use Class Egi) with two flexible commercial units provided over Lower and Upper Ground Floor Levels (Use Classes Ea, b, c, e, f, and / or Use Class Sui Generis (p) and (q)), a further flexible commercial unit at Upper Ground Floor Level only allowing for ancillary seminar space and / or Sui Generis Use Class (t) Cinema space, together with an ancillary gym space at Upper Ground Floor, as well as Lower Ground Level car and cycle parking, hard and soft landscaping and other associated works.”

5.1.3 This Waste Management Strategy (WMS) has been prepared to consider the potential refuse and recyclable waste volumes, including potential organic waste, and for all uses of the proposed development. This WMS also provides details of the collection arrangements.

5.1.4 The waste forecast has been calculated based on the recommendations set by the Waste Storage and Collection Guidance for New Developments (GD04), Version 6.00 and further supported by the estimations set on the Code of Practice BS 5906:2005.

5.1.5 The office use has been calculated as Office Use (Use Class E(g)). For robustness, the waste generation of the retail uses at the lower and upper ground floors of both plots has been calculated as a worst-case scenario (F&B – Use Class E(a, b, c)).

5.1.6 The report concludes that both the office and retail / restaurant use will be served by private refuse collections. The bins will be transported to the collection point by the management company for the office uses and the staff for the retail / restaurant uses.

- 5.1.7 The collection point for Plot 2 would be located along the Angel Square turning circle layby, located directly opposite Plot 2; whereas the collection point for Plot 3 would be located along the service road to the east of Plot 3, adjacent to and shared with the Angel Gardens development.
- 5.1.8 Plot 2 is anticipated to be served by five-times-a-week collections for both the office and retail / restaurant uses, whereas Plot 3 will be served by five-times-a-week collections for both the office and retail uses. The collection frequency is subject to be updated following occupation, as typically the waste generated by both the office and retail uses varies significantly based on the final occupier.
- 5.1.9 The proposals include a waste storage room at the lower ground floor levels. The size of the bin stores has been determined accordingly whilst consideration to segregation and recycling has been given.

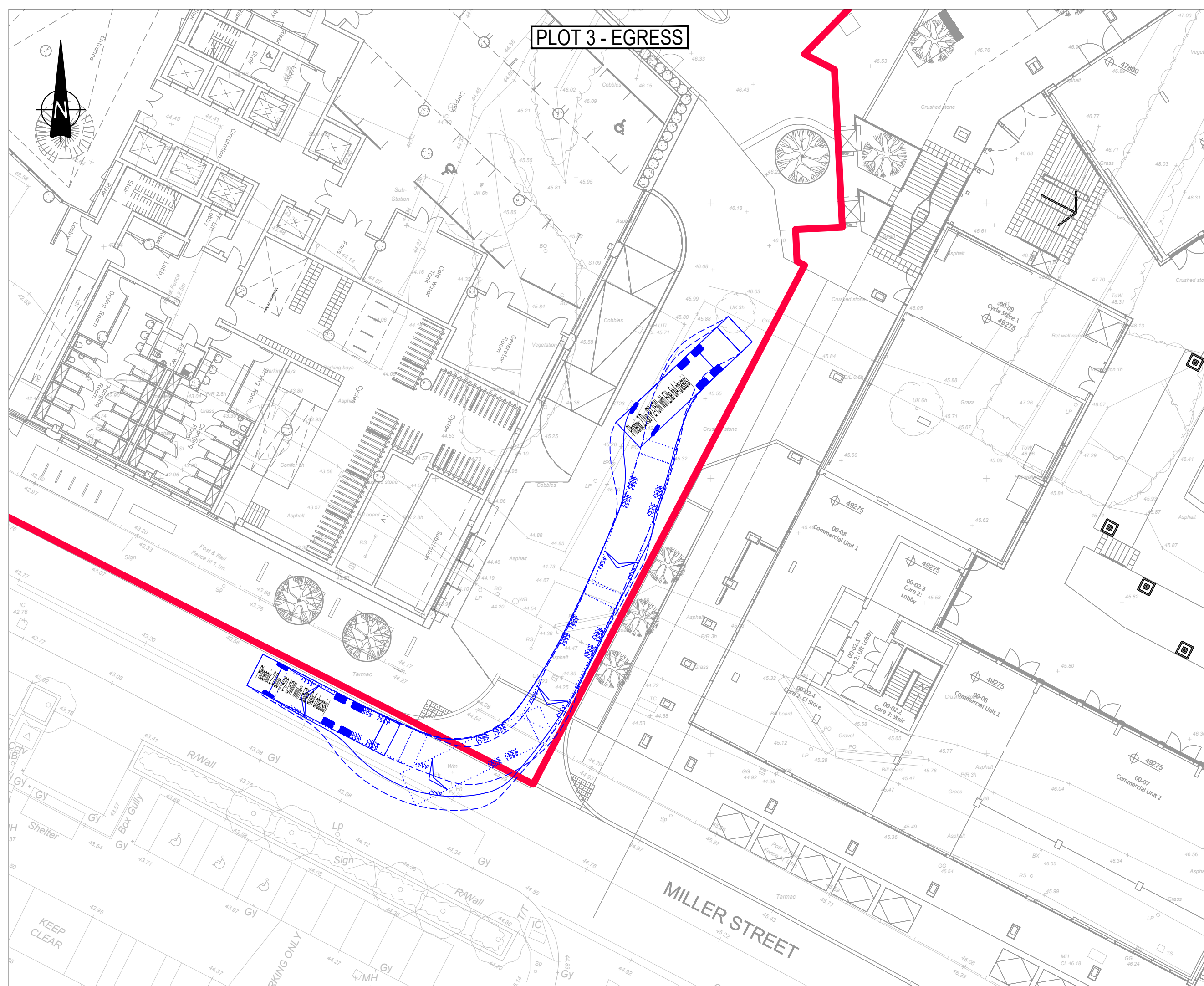
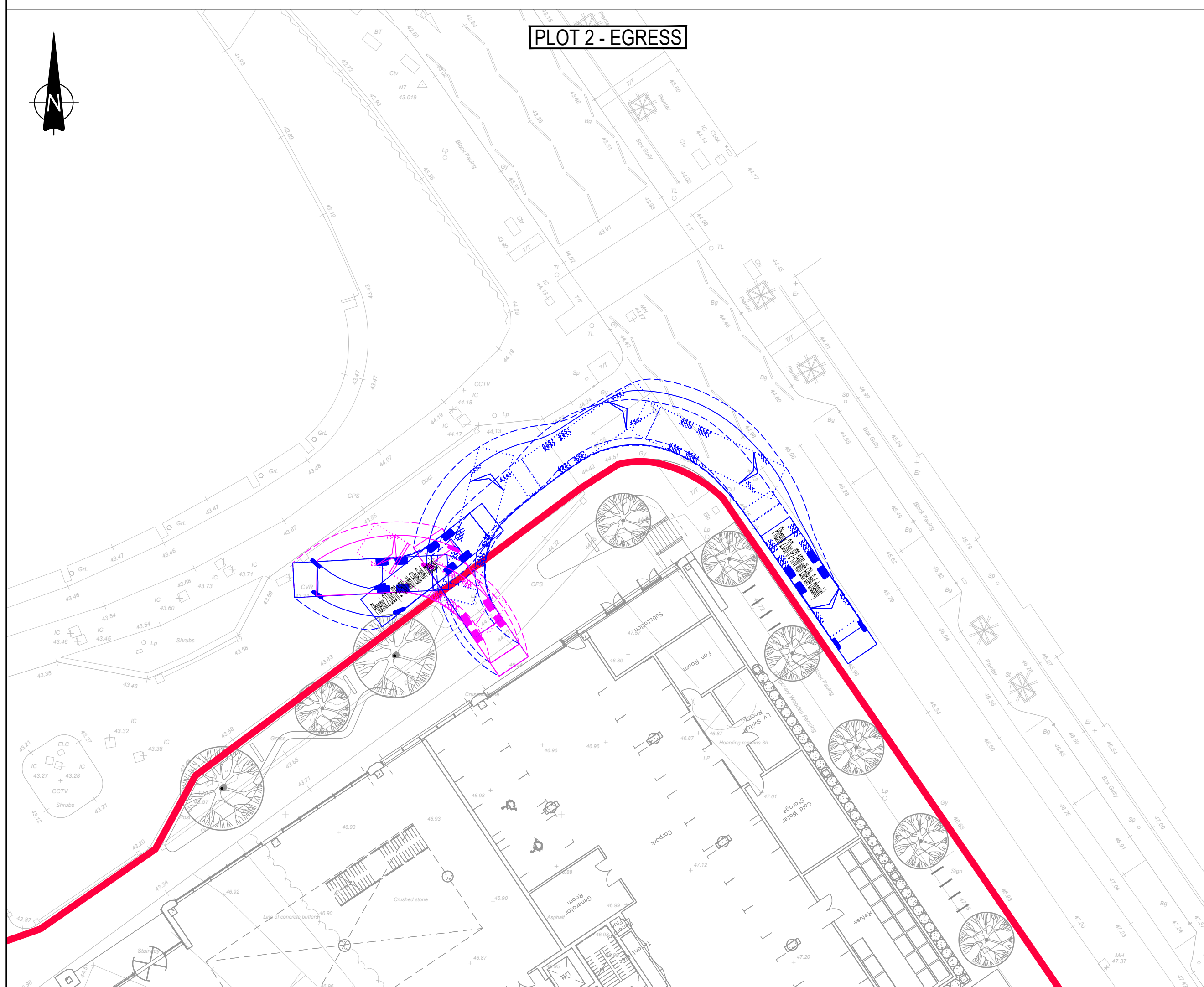
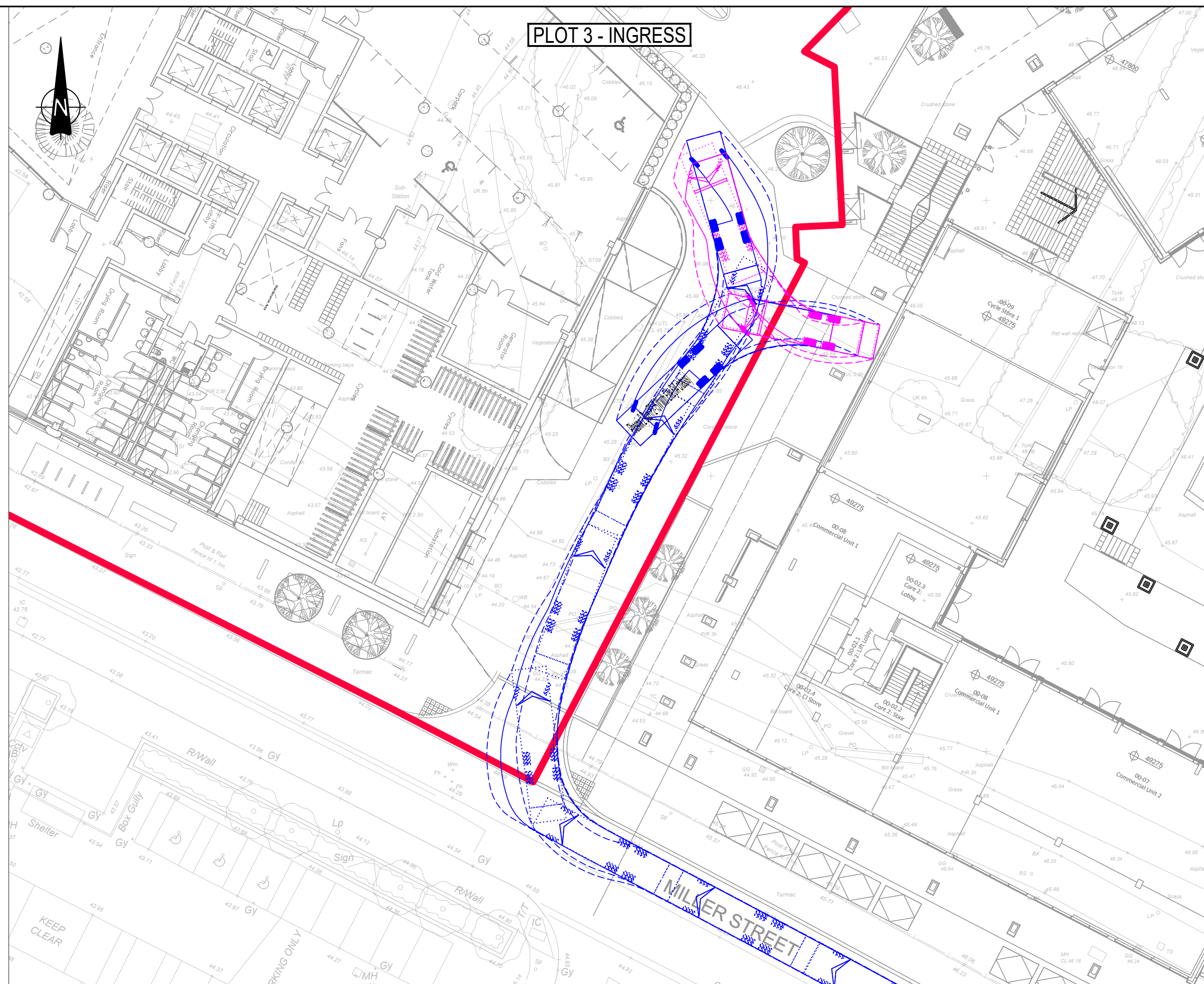
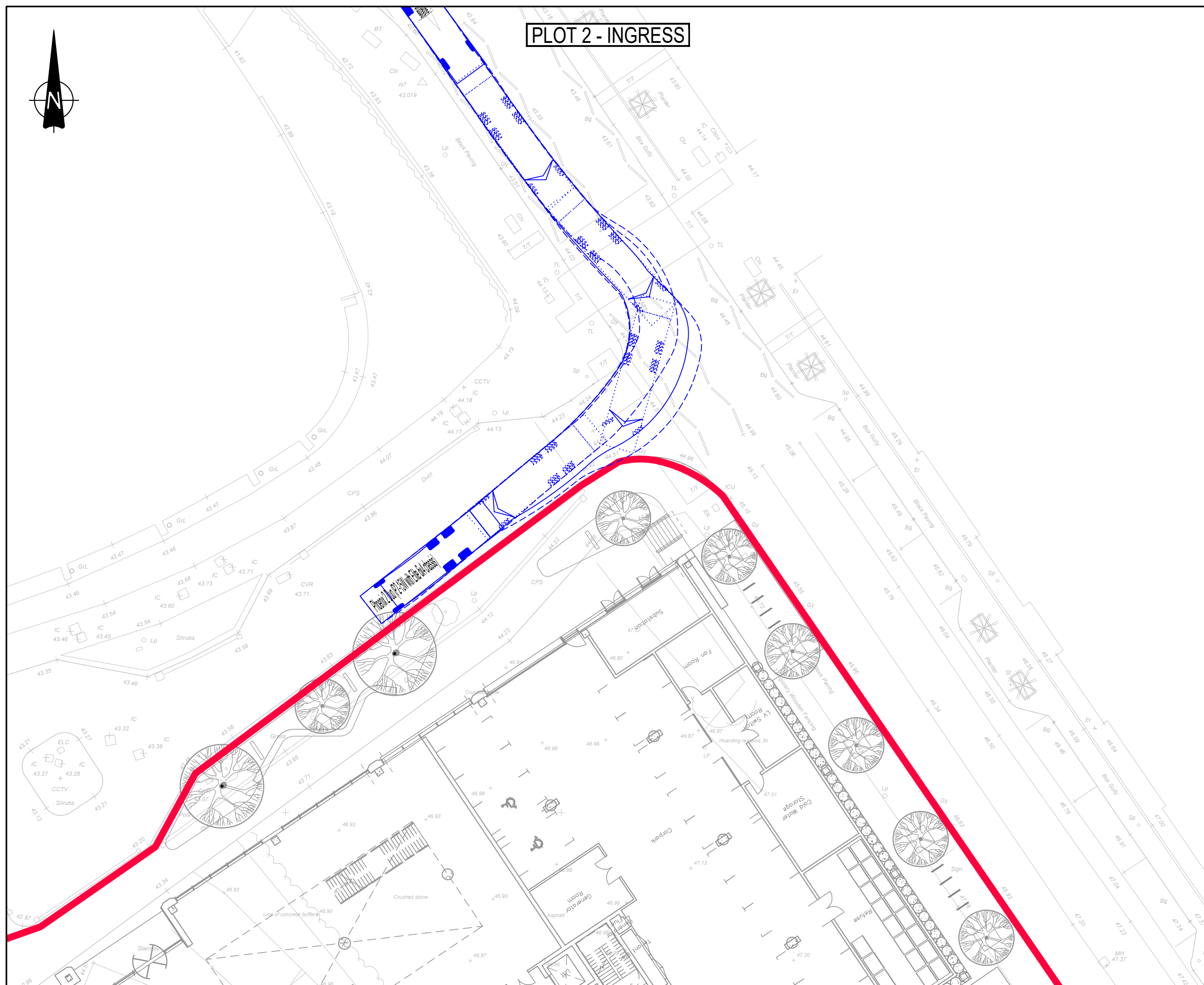
5.2 Conclusions

- 5.2.1 From a waste management perspective, there are no reasons why the development proposals should not be granted planning approval.

Drawings

Drawing 81536-CUR-XX-00-D-TP-05001 – (Swept Path Analysis) 11.2m Large Refuse Vehicle

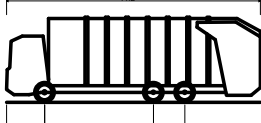
Drawing 81536-CUR-XX-00-D-TP-06001 – Waste Management Strategy



- ## GENERAL NOTES:
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
 2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
 3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
 4. FOR GENERAL NOTES REFER TO DRAWING.
 5. THE CONTENT OF THIS DRAWING IS FOR INDICATIVE INFORMATION ONLY AND NOT SUITABLE FOR CONSTRUCTION PURPOSES
 6. LAYOUT BASED ON CARTWRIGHT PICKARD'S DRAWING REFS : '947-CPA-P3-00-DR-A-0200-P01' AND '947-CPA-P2-00-DR-A-0200-P01
 7. LANDSCAPE LAYOUT BASED ON PLANT'S DRAWING REF : 'PL2190.1-PLA-XX-XX-DR-L-1000-P05'

KEY: RED LINE BOUNDARY

VEHICLE PROFILE:



Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)
Overall Length
Overall Width
Overall Body Height
Min Body Ground Clearance
Track Width
Lock to lock time
Kerb to Kerb Turning Radius

11.200m
2.530m
3.751m
0.304m
2.500m
4.00s
9.500m

P03	Layout updated	23/06/22	DD	
P02	Layout updated	06/05/22	DD	
Rev:	Description:	Date:	By:	C



Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG
0161 236 2394
manchester@curtins.com
www.curtins.com

Status

PLANNING

Project

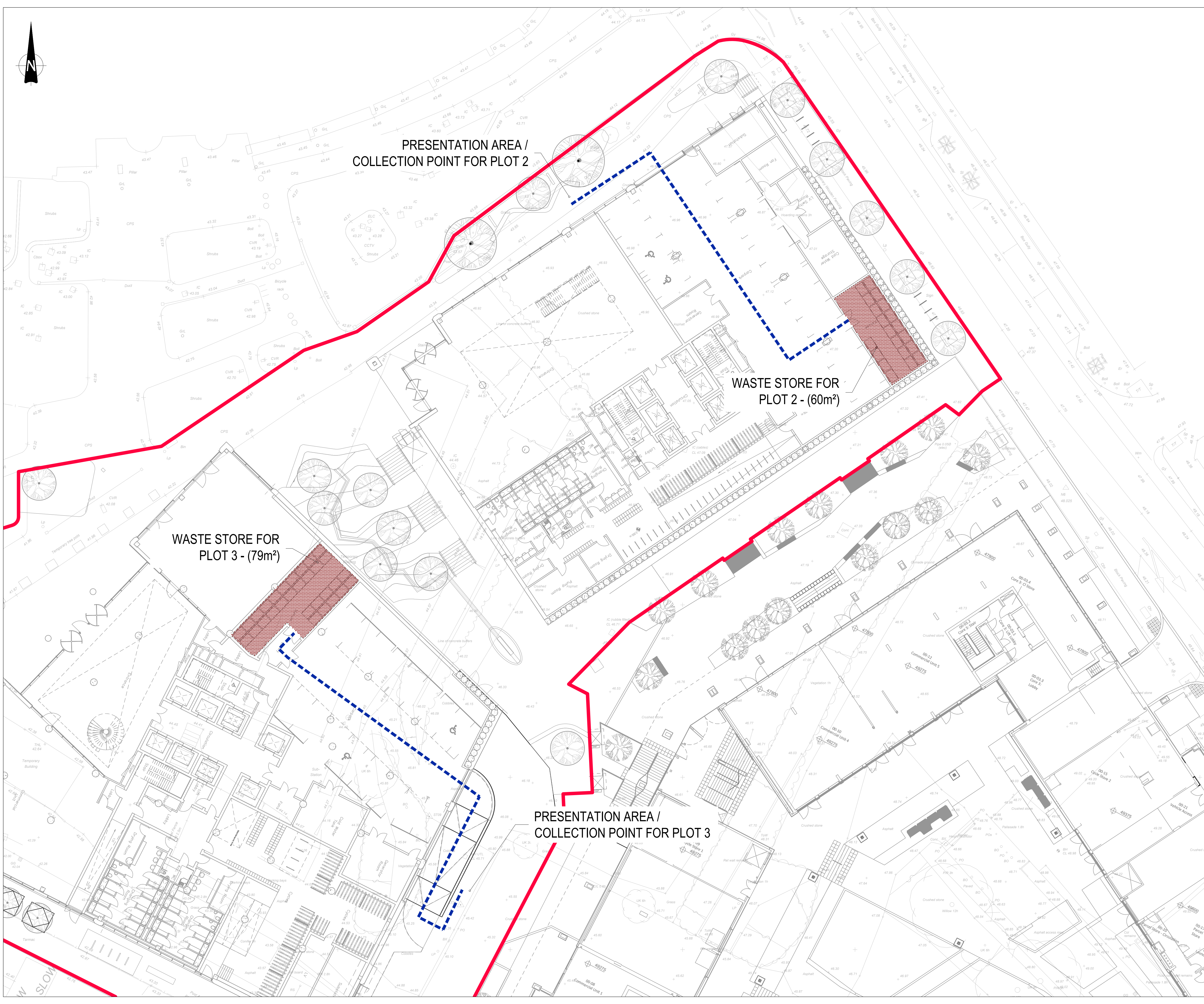
NOMA PLOTS 2 & 3 - MANCHESTER

Drug Tit

SWEPT PATH ANALYSIS

11.2m REFUSE VEHICLE

Size:	Date:	Drawn By:	Designed By:	Checked By:			
A1	21/04/22	DD	DD	AV			
Scale: 1:250							
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:	Re
081536 - CUR - XX - XX - D - TP - 05001 - P							



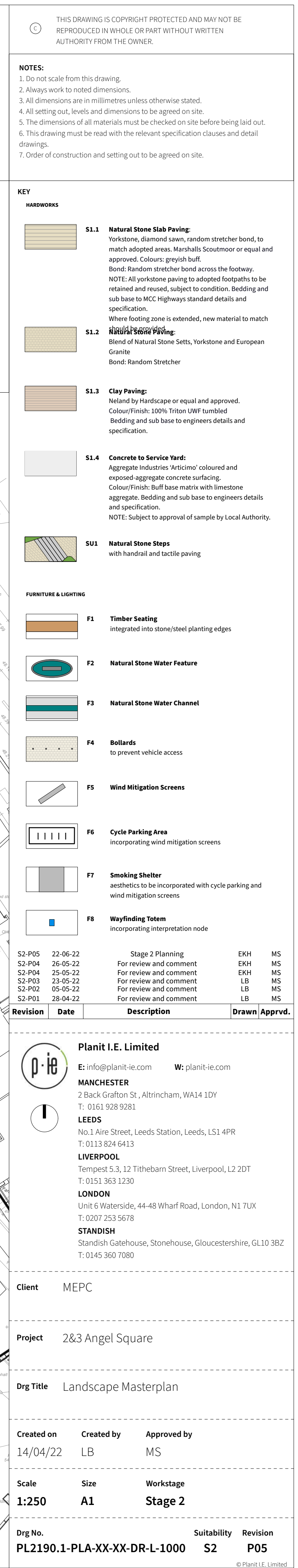
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS AND SPECIFICATIONS.
2. DO NOT SCALE THIS DRAWING. ANY AMBIGUITIES, OMISSIONS AND ERRORS ON DRAWINGS SHALL BE BROUGHT TO THE ENGINEERS ATTENTION IMMEDIATELY. ALL DIMENSIONS MUST BE CHECKED / VERIFIED ON SITE.
3. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
4. FOR GENERAL NOTES REFER TO DRAWING.
5. THE CONTENT OF THIS DRAWING IS FOR INDICATIVE INFORMATION ONLY AND NOT SUITABLE FOR CONSTRUCTION PURPOSES
6. LAYOUT BASED ON CARTWRIGHT PICKARD'S DRAWING REFS.: '947-CPA-P3-00-DR-A-0200-P01' AND '947-CPA-P2-00-DR-A-0200-P01
7. LANDSCAPE LAYOUT BASED ON PLANT'S DRAWING REF.: 'DL2190.1-PLA-XX-XX-DR-1-1000-P05'

WASTE STORE FOR
PLOT 2 - (60m²)

PRESENTATION AREA /
COLLECTION POINT FOR PLOT 3

Rev:	Description:			Date:	By:	Chkd:
 Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG 0161 236 2394 manchester@curtins.com www.curtins.com Civil & Structures • Transport Planning • Environmental • Infrastructure • Geotechnical • Conservation & Heritage • Principal Designer Birmingham • Bristol • Cambridge • Cardiff • Douglas • Dublin • Edinburgh • Glasgow • Harrogate • Leeds • Liverpool • London • Manchester • Nottingham						
Status:						
PRELIMINARY						
Project:						
NOMA PLOTS 2 & 3 - MANCHESTER						
Drg Title:						
WASTE MANAGEMENT STRATEGY						
Size:	Date:		Drawn By:	Designed By:	Checked By:	
A1	23/06/22		LL	LL	DD	
Scale: 1:200						
Project No:	Originator:	Volume:	Level:	Type:	Role:	Category / Number:
Rev:						
081536 - CUR - XX - XX - D - TP - 06001 - P01						

Appendix A – Development Proposals



Drawing Original Size
A1

Notes
Unless indicated, this drawing is for information only and should not be used for construction. Do not scale, use figured dimensions only. All dimensions to be checked on site. This drawing should be printed and read at the original size, as stated. Cartwright Pickard Architects accepts no responsibility for errors that occur as a result of reviewing this drawing at any other size.

Cartwright Pickard Architects prepared this drawing using Revit 2022 and does not accept liability for any loss or degradation of that information held in the drawing resulting from the translation from the original file format to any other file format or from the recipient's reading of it in any other programme or an earlier version of the programme referred to above. Cartwright Pickard Architects accepts no liability for use of this drawing by parties other than the party for whom it was prepared or for purposes other than those for which it was prepared.

DWG Issues

When this drawing is issued in DWG format it is an uncontrolled version and is provided to enable the recipient to prepare its own documents/drawings for which it is solely responsible. It is based on background information current at the time of issue.

Cartwright Pickard Architects accepts no liability for any alterations to, additions to or discrepancies arising out of changes to such background information which occur after it has been issued by Cartwright Pickard Architects.

Drawing Revisions

Date:	Rev:	Note:	Check:
08.06.22	P01	Draft Planning Application	RO
21.06.22	P02	Planning Issue	RO

Client

MEPC

Project

947 | Angel Square Plots 2 & 3

Building Name

Plot 2

Drawing Title

GA Plan - Level LG

Scale

1:100 @ A1

Drawing Created

03/21/22

Revision

P02

Drawing No.

947-CPA-P2-00-DR-A-0200

London Office
1 Canal Side Studios
8-14 St Pancras Way
London NW1 0QG
Tel 020 7554 3500

cartwrightpickard.com
© Cartwright Pickard Architects Ltd.



Drawing Original Size
A1

Notes
Unless indicated, this drawing is for information only and should not be used for construction. Do not scale, use figured dimensions only. All dimensions to be checked on site. This drawing should be printed and read at the original size, as stated. Cartwright Pickard Architects accepts no responsibility for errors that occur as a result of reviewing this drawing at any other size.

Cartwright Pickard Architects prepared this drawing using Revit 2022 and does not accept liability for any loss or degradation of that information held in the drawing resulting from the translation from the original file format to any other file format or from the recipient's reading of it in any other programme or an earlier version of the programme referred to above. Cartwright Pickard Architects accepts no liability for use of this drawing by parties other than the party for whom it was prepared or for purposes other than those for which it was prepared.

DWG Issues

When this drawing is issued in DWG format it is an uncontrolled version and is provided to enable the recipient to prepare its own documents/drawings for which it is solely responsible. It is based on background information current at the time of issue.

Cartwright Pickard Architects accepts no liability for any alterations to, additions to or discrepancies arising out of changes to such background information which occur after it has been issued by Cartwright Pickard Architects.

Drawing Revisions

Date:	Rev:	Note:	Check:
08.06.22	P01	Draft Planning Application	RO
21.06.22	P02	Planning Issue	RO

CARTWRIGHT
PICKARD

Client

MEPC

Project

947 | Angel Square Plots 2 & 3

Building Name

Plot 2

Drawing Title

GA Plan - Level UG

Scale

1:100 @ A1

Drawing Created

03/21/22

Revision

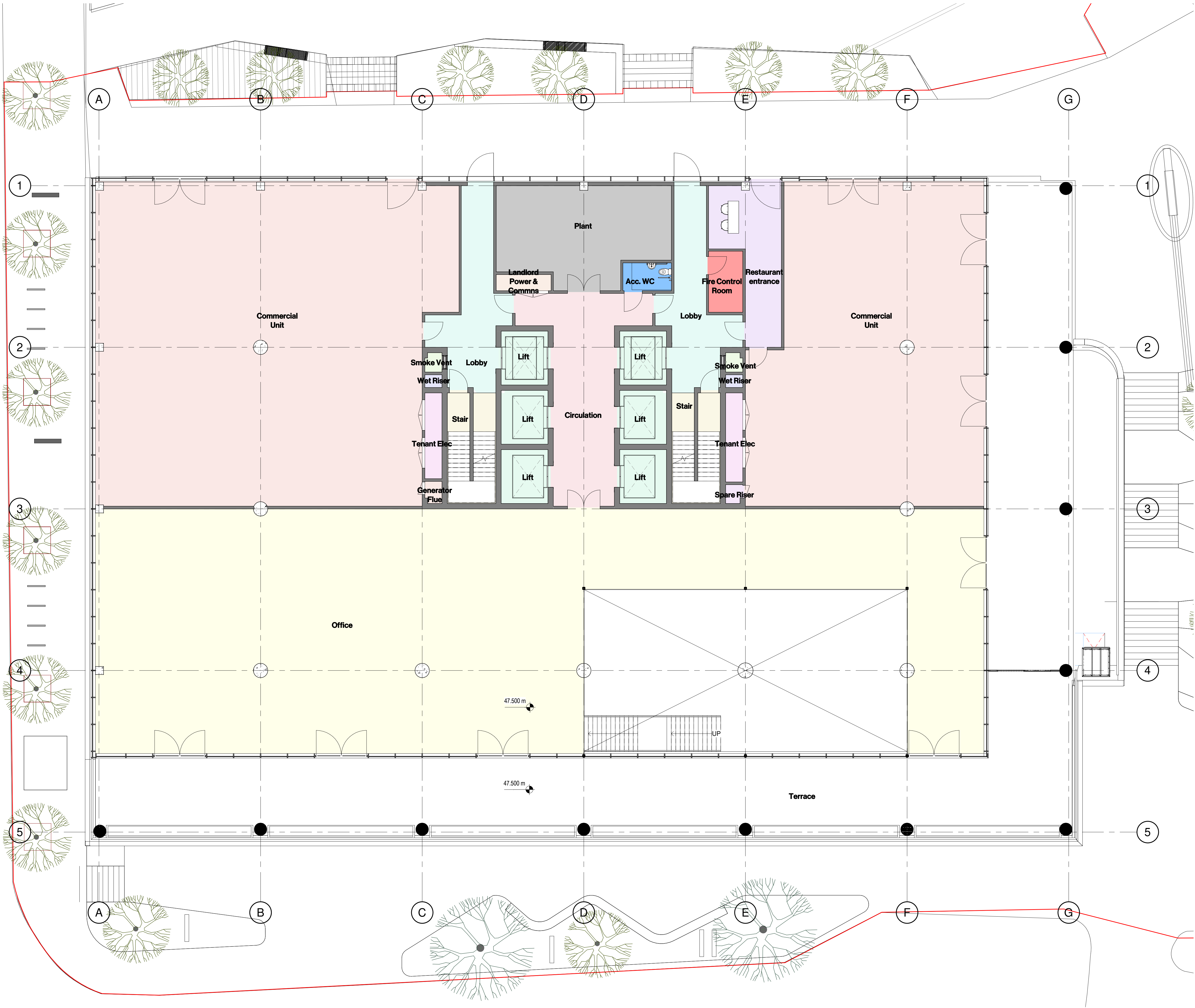
P02

Drawing No.

947-CPA-P2-01-DR-A-0201

London Office
1 Canal Side Studios
8-14 St Pancras Way
London NW1 0QG
Tel 020 7554 3500

cartwrightpickard.com
© Cartwright Pickard Architects Ltd.





Drawing Original Size
A0

Notes
Unless indicated, this drawing is for information only and should not be used for construction. Do not scale, use figures and dimensions only. All dimensions to be checked on site. This drawing should be printed and read at the original size, as stated. Cartwright Pickard Architects accepts no responsibility for errors that occur as a result of reviewing this drawing at any other size.

Cartwright Pickard Architects prepared this drawing using Revit 2022 and does not accept liability for any loss or degradation of that information leading to the drawing resulting from the transition from the original file format to any other file format or from the recipient's reading of it in any other program or at another version of the program referred to above. Cartwright Pickard Architects accepts no liability for use of this drawing by parties other than the party for whom it was prepared or for purposes other than those for which it was prepared.

DWG Issues
When this drawing is issued in DWG format it is an uncorrected version and is provided to enable the recipient to prepare to own documents/drawings to which it is solely responsible. It is based on background information current at the time of issue.

Cartwright Pickard Architects accepts no liability for any alterations to, additions to or omissions or any other changes to such background information which occur after it has been issued by Cartwright Pickard Architects.

Drawing Revisions				Check:
Date:	Rev:	Note:		RO
08.06.22	P01	Draft Planning Application		RO
21.06.22	P02	Planning Issue		RO

CARTWRIGHT
PICKARD

Client
MEPC

Project
947 | Angel Square Plots 2 & 3

Building Name
Plot 3

Drawing Title
GA Plan - Level LG

Scale
1:100 @ A0

Drawing Created
June 2022

Revision
P02

Drawing No.
947-CPA-P3-00-DR-A-0200



London Office
Cartwright Pickard
24-25 Finsbury Way
London EC2A 4DU
Tel: 020 7554 5000

Cartwright Pickard Architects Ltd
© Cartwright Pickard Architects Ltd



Drawing Original Size
A0

Notes
Unless indicated, this drawing is for information only and should not be used for construction. Do not scale, use figures and dimensions only. All dimensions to be checked on site. This drawing should be printed and read at the original size, as stated. Cartwright Pickard Architects accept no responsibility for errors that occur as a result of reviewing this drawing at any other size.

Cartwright Pickard Architects prepared this drawing using Revit 2022 and does not accept liability for any loss or degradation of that information leading to the drawing resulting from the translation from the original file format to any other file format or from the recipient's reading of it in any other program or at a later version of the program referred to above.

Cartwright Pickard Architects accept no liability for use of this drawing by parties other than the party for whom it was prepared or for purposes other than those for which it was prepared.

DWG Issues
When this drawing is issued in DWG format it is an uncontrolled version and is provided to enable the recipient to prepare to own documents/drawings for which it is solely responsible. It is based on background information current at the time of issue.

Cartwright Pickard Architects accept no liability for any alterations to, additions to or omissions from drawings or changes to such background information which occur after it has been issued by Cartwright Pickard Architects.

Drawing Revisions				Check:
Date:	Rev:	Note:		RO
08.06.22	P01	Draft Planning Application		RO
21.06.22	P02	Planning Issue		

CARTWRIGHT
PICKARD

Client
MEPC

Project
947 | Angel Square Plots 2 & 3

Building Name
Plot 3

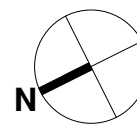
Drawing Title
GA Plan - Level UG

Scale
1:100 @ A0

Drawing Created
June 2022

Revision
P02

Drawing No.
947-CPA-P3-01-DR-A-0201



London Office
Cartwright Pickard
24-25 Finsbury Way
London M1 1DG
Tel: 020 7556 5000

cartwrightpickard.com
© Cartwright Pickard Architects Ltd

Appendix B – MCC Waste Pro Forma

Appendix E Proforma for Planning Applications



**MANCHESTER
CITY COUNCIL**

Planning Application – Waste Management Strategy

Planning Application Number: TBC

Date Submitted: 28/06/22

Estimated volumes/ m² required by the development

Low Rise Domestic

Waste Types	Capacity Required (litres)	Number of bins required per household	Confirm what is to be provided
General refuse	140 / 240	1 x wheeled bin	
Pulpable Recycling	140 / 240	1 x wheeled bin	
Mixed Recycling	140 / 240	1 x wheeled bin	
Garden Waste	140 / 240	1 x wheeled bin	
Food Waste	23	1 x 23 litre caddy	

High Rise Apartment Developments

	Yes/No - how much space has been provided?
0.43m ² has been provided per apartment for the container space. Space to manoeuvre and access containers individually has also been provided so that each container can be accessed and removed for collection individually.	

Please state number of bins you propose, showing calculations where appropriate.

Has / will a contract be obtained with a licenced waste carrier?	☒
--	-------------------------------------

Are the stores for residential and commercial separate from each other?	☒
---	-------------------------------------

Please provide details of internal stores / segregation of waste and recycling.

--

Please provide details of container stores, attaching plans if appropriate.

Cleaners / staff of the office and commercial uses will collect waste internally before taking it to the bin store at the ground floor, in close proximity to the core. It is envisaged that a private collection company would collect the waste at the following frequency for both plots, subject to revision following occupation:

- Plot 2: 5 times a week for office and retail / restaurant uses.
- Plot 3: 5 times a week for office and retail uses.

The bin store has been sized to accommodate this frequency of collection.

Ensure all bins in the store are accessible	☒
Ensure recycling facilities are as easy to access as general refuse	☒

Please confirm details of waste store ventilation and hygiene / cleaning proposals

Ventilation -	Consideration has been given to appropriately ventilate the waste storage facilities. Details have been provided in relevant documentation.
Hygiene -	Storage rooms will be constructed in impermeable materials. The management company will be responsible of cleaning the facilities.

Please provide details of who will be responsible for placing the bins at the collection point and returning them to the store / property promptly e.g. resident / management company

The management company and the staff of the commercial units
--

Please ensure that you have attached:

Detailed plans of waste stores	☒
Location plans showing stores	☒
Location plans showing the proposed collection point and the route the collection vehicle will take	☒

Please ensure that you have completed this form in accordance with our GD04 Waste Storage and Collection Guidance for New Developments

Our Locations

Birmingham

2 The Wharf
Bridge Street
Birmingham
B1 2JS
T. 0121 643 4694
birmingham@curtins.com

Bristol

Quayside
40-58 Hotwell Road
Bristol
BS8 4UQ
T. 0117 302 7560
bristol@curtins.com

Cambridge

50 Cambridge Place
Cambridge
CB2 1NS
T. 01223 631 799
cambridge@curtins.com

Cardiff

3 Cwrt-y-Parc
Earlswood Road
Cardiff
CF14 5GH
T. 029 2068 0900
cardiff@curtins.com

Douglas

Varley House
29-31 Duke Street
Douglas
Isle of Man
IM1 2AZ
T. 01624 624 585
douglas@curtins.com

Dublin

11 Pembroke Lane
Dublin 2
D02 CX82
Ireland
T. +353 1 507 9447
dublin@curtins.com

Edinburgh

1a Belford Road
Edinburgh
EH4 3BL
T. 0131 225 2175
edinburgh@curtins.com

Glasgow

Queens House
29 St Vincent Place
Glasgow
G1 2DT
T. 0141 319 8777
glasgow@curtins.com

Kendal

Units 24 & 25 Riverside Place
K Village
Lound Road
Kendal
LA9 7FH
T. 01539 724 823
kendal@curtins.com

Leeds

Ground Floor
Rose Wharf
78-80 East Street
Leeds
LS9 8EE
T. 0113 274 8509
leeds@curtins.com

Liverpool

51-55 Tithebarn Street
Liverpool
L2 2SB
T. 0151 726 2000
liverpool@curtins.com

London

40 Compton Street
London
EC1V 0BD
T. 020 7324 2240
london@curtins.com

Manchester

Merchant Exchange
17-19 Whitworth Street West
Manchester
M1 5WG
T. 0161 236 2394
manchester@curtins.com

Nottingham

32-34 Stoney Street
Nottingham
NG1 1LL
T. 0115 941 5551
nottingham@curtins.com