Waterman Moylan
Engineering Consultants

Go-Ahead Bus Depot, Ballymount Road Lr., Dublin 12

Engineering Response to F equest for Additional Information. (Reg Ref SD21A/0213)

DEcember 2021

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Engineering Consultants

Client Name:	Go-Ahead Ireland
Document Reference:	17-130r.014
Project Number:	17-130

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2008, BS EN ISO 14001: 2004 and BS OHSAS 18001:2007)

Issue	Date	Prepared by	Checked by	Approved by
1	16 December 2021	Brian McCann	Joe Gibbons	Joe Gibbons

Comments

Waterman Moylan
Engineering Consultants

Disclaimer

This report has been prepared by Waterman Moylan, 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.

Content

Figures

Tables

Appendices

Drawings

Waterman Moylan Drg No 17-130-P107 Rev A *Proposed Site Layout*

Waterman Moylan Drg No 17-130-P200 Rev A. *Proposed Surface Water Drainage Layout*

Waterman Moylan Drg No 17-130/P250 *Elevations – Existing*

Atelier Architects Drg No P300 Rev 03 *Proposed Elevations.*

1. Introduction

1.1 Introduction

This Engineering Response to the Request for Additional Information issued by South Dublin County Council on 29th September 2021 on foot of a planning application for additional parking and the provision of electric charging facilities for buses at the existing depot on Ballymount Road Lower, Dublin 12 has been prepared by Waterman Moylan on behalf of Go-Ahead Ireland (Reg Ref SD21A/0213).

This Response is in respect of Items 1.1, 4, 5 and 6 of the RFI. It is accompanied by the following drawings

- Waterman Moylan Drg No 17-130-P107 Rev A *Proposed Site Layout*
- Waterman Moylan Drg No 17-130-P200 Rev A. *Proposed Surface Water Drainage Layout*
- Waterman Moylan Drg No 17-130/P250 *Elevations – Existing*
- Atelier Architects Drg No P300 Rev 03 *Proposed Elevations.*

An aerial view of the site is presented in Figure 1.

1.2 Background

The response to the various items in the RFI has been prepared by different members of the project design team as set out in Table 1.

The responses prepared by Waterman Moylan and included in this document are to Items 1.1, 4.0, 5.0, 6a and 6b as listed below.

Table 1 Allocation of Responses to RFI

Item No	Description	Response Prepared By
1.1	Elevations	Waterman Moylan
1.2	Photomontages	Redline Studios
1.3	Sections	Ronan Mac Diarmada + Associates
2.0	Trees	Ronan Mac Diarmada + Associates
3.0	Tree Planting	Ronan Mac Diarmada + Associates
4.0	Drainage	Waterman Moylan
5.0	Surface Water	Waterman Moylan
6a	Sightlines	Waterman Moylan
6b	Parking	Waterman Moylan

1.3 Discussions with SDCC

During the preparation of this Response, Waterman-Moylan contacted SDCC in November 2021 to discuss the draft submission of this Response for clarification purposes before final submission.

Contact was made with the Planning Department in order to ascertain the appropriate contact to discuss the draft submission of further information response before formal printed submission. In response, SDCC requested that the formal submission of 6 copies be submitted to SDCC rather than have a meeting or send a draft for review.

Figure 1 Aerial View of Site

2. Item 1.1: Elevations

Request

1. The Planning Authority has concerns regarding the visual impact of the proposed development. The applicant is requested to provide the following information, to enable full assessment of the visual impact:

   1. 'As permitted' elevations (under SD17A/0428).

Response:

In response to Item 1.1, the following drawings are included in this Response

(a) Waterman Moylan Drg No 17-130/P250 *Elevations – Existing*

This drawing was prepared from Waterman Moylan Drg No 17-130/P106 Elevations – Existing included with the subject planning application lodged in (Reg Ref SD21A/0428)

It shows the existing elevations in 2021. No changes are proposed as part of this application.

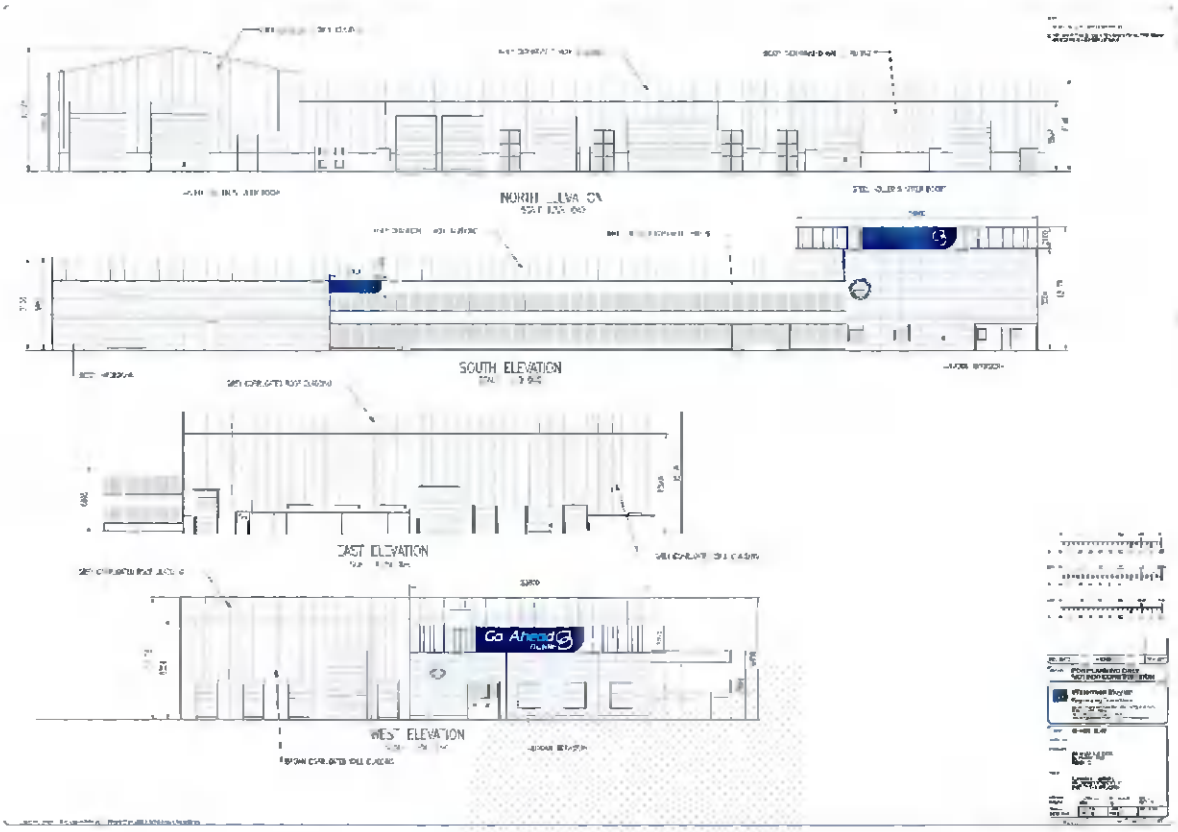


Figure 2 Waterman Moylan Drg No 17-130/P250 Elevations – Existing

(No changes proposed as part of this application)

(b) Atelier Architects Drg No P300 Rev 03 *Proposed Elevations.*

This drawing shows the 'as-permitted' elevations from the previous application lodged in December 2017 (Reg Ref SD17A/0428).

The annotation *'Drawing submitted as part of SD17A/0428'* was added in 2021.

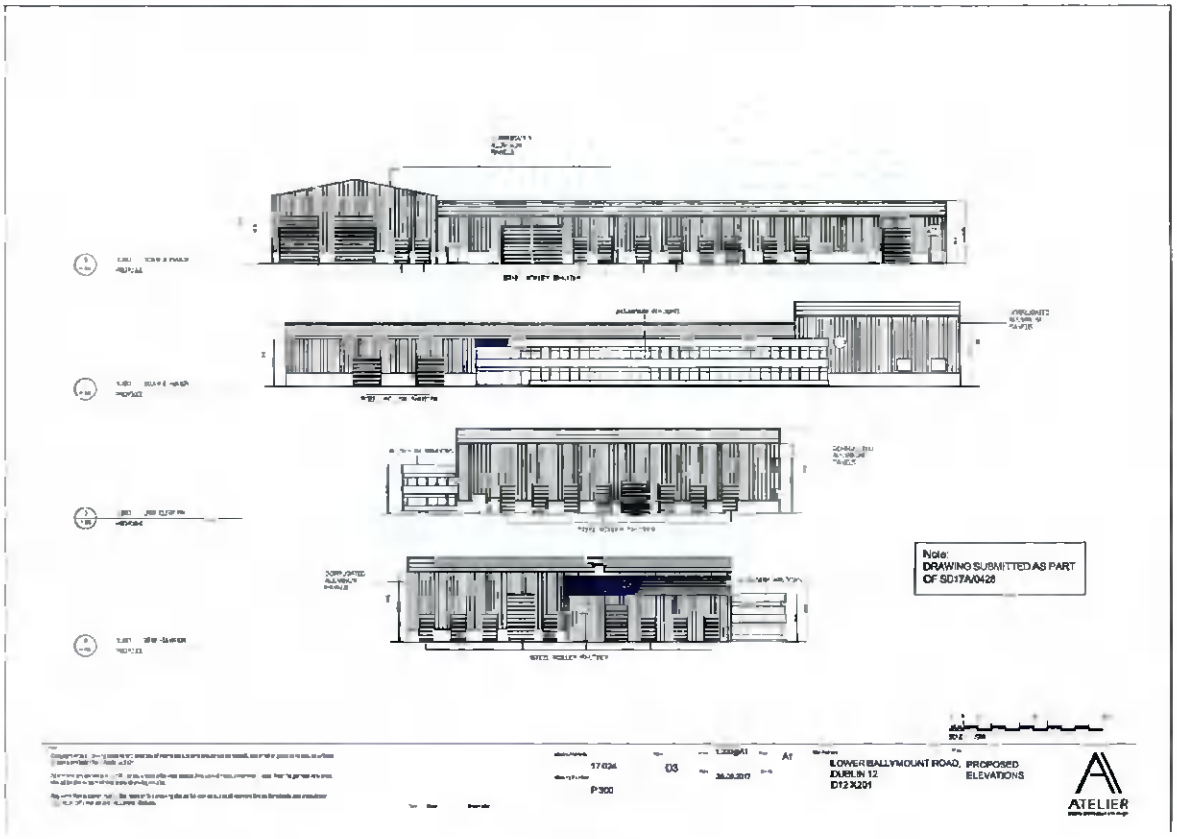


Figure 3 Atelier Architects Drg No P300 Rev 03 Proposed Elevations.

(Drawing submitted as part of SD17A/0428)

3. Item 4 (a): Surface Water Drainage SuDS

Request

The current drainage scheme does not fully comply with the objectives of the development plan in terms of Green Infrastructure or as regards the proper implementation of SUDS. There is a lack of SuDS (Sustainable Drainage System) or natural solutions shown for the proposed development. Natural SUDS features should be incorporated into the proposed drainage system. SUDS should be an integrated multi-disciplinary approach which locally addresses water quality, water quantity, and provides for amenity and biodiversity enhancement which meets the objectives of South Dublin County Council Development Plan 2016-2022. The applicant is requested to submit a revised drawing and report to clearly show what SuDS are proposed for the development.

Response:

This Response comprises a report and revised drawing and to clearly show what SuDS measures are proposed for this development. The text of the report is set out below and Waterman Moylan Drg No 17-130-P200 Rev A *Proposed Surface Water Drainage Layout* is included with the Response. See Figure

The subject site is particularly constrained in relation to free area available to implement SuDS measures as the site is already currently mainly hardstanding. In order to facilitate the extension of existing yard slab areas to provide the additional parking areas, a further extension of hardstanding areas is required. This has in turn reduced the available area to provide SuDS measures on site.

As part of the SuDS design, the SuDS features have been maximised in relation to available area. This is outlined below and shown on Waterman Moylan Drawing No. 17-130-P200 Rev A *Proposed Surface Water Drainage Layout.*

The SuDS elements proposed for the subject site include:

- Swales - shallow, broad and vegetated channels designed to store and/or convey runoff and remove pollutants. They have been designed as conveyance structures to pass the runoff to the next stage of the treatment train and also to promote infiltration where soil and groundwater conditions allow.

  Swales have been included along the outer edge of the proposed extended concrete slab on the eastern and southern boundaries to intercept runoff and promote infiltration. Please see Drawing No 17-130-P200 A for the location of these.

- Tree Pit / Soakaway – surface runoff will infiltrate / discharge into areas used by trees. This infiltration will allow surface water to be stored for the tree's use as well promoting surface water infiltration. It will also assist with the removal of any pollutants and reducing the amount of hardstanding area within the development.

  Tree pits have been included at the south-western corner and north-eastern corners of the extended slab to intercept runoff and promote infiltration. Please see Drawing 17-130-P200A for the location of these.

- Petrol Interceptor – the proposed petrol interceptor will filter out hydrocarbon pollutants from rainwater runoff. It is typically used in pavement construction to prevent fuel contamination of water courses carrying away the runoff. Petrol interceptors work on the premise that some

hydrocarbons such as petroleum and diesel float on the top of water. The contaminated water enters the interceptor typically after flowing off the paved area and entering a channel drain before being deposited into the first tank inside the interceptor. The first tank builds up a layer of the hydrocarbon as well as other scum preventing it from entering the water course.

In compliance with the RFI, the Petrol Interceptor, previously located after the proposed attenuation tank system, has been relocated to be prior of the proposed attenuation tank system to assist in reducing the contamination of the proposed attenuation tank system with hydrocarbons. Please see Drawing 17-130-P200A for the revised location of the petrol interceptor.

Surface Water attenuation – Due to insufficient space for detention basins or other SUDS storage measures on the subject site, on-site attenuation is required to allow for temporary storage of the restricted outflow. The proposed Stormtech attenuation tank will attenuate surface water that is above the restricted outflow that is equivalent of the existing agricultural runoff. This ensures the development will not give rise to any impact downstream of the site.

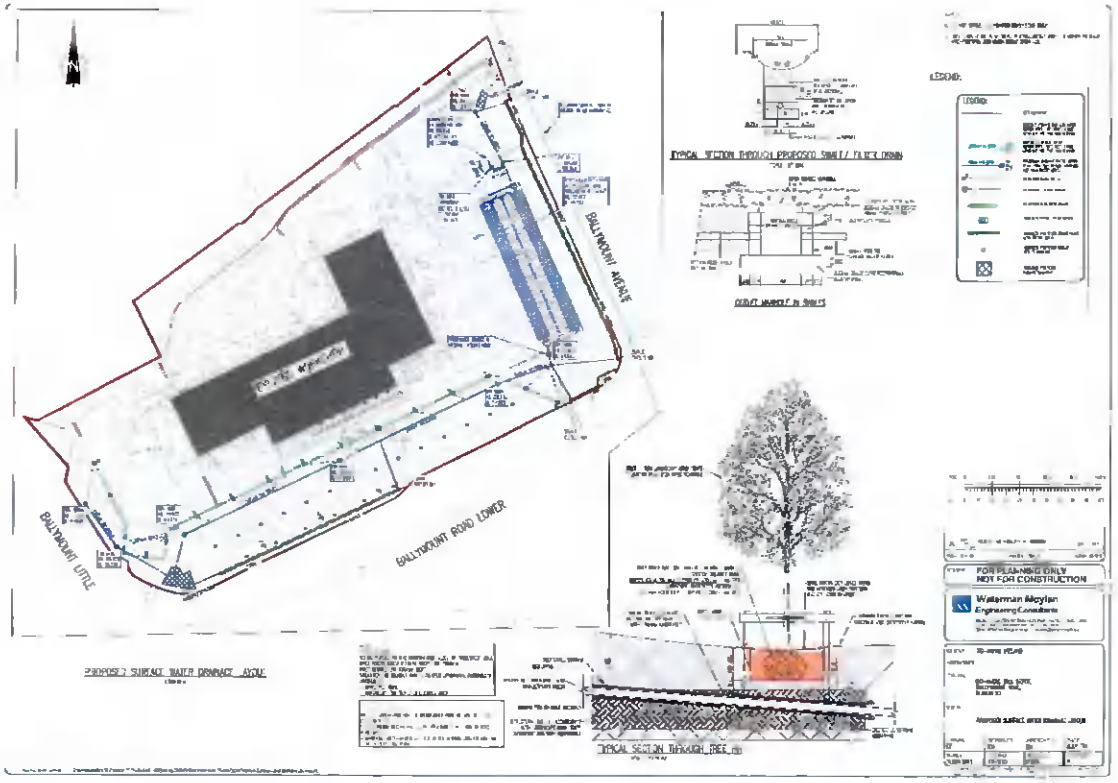


Figure 4 Waterman Moylan Drg No 17-130-P200A Proposed Surface Water Drainage Layout

4. Item 4(b) Surface Water Drainage - Attenuation

Request

In accordance with Paragraph 11.6.1(iii) of the County Development Plan, 'In general, all new developments will be required to incorporate Sustainable Urban Drainage Systems (SUDS). SUDS include devices such as swales, permeable pavements, filter drains, storage ponds, constructed wetlands, soakaways and green roofs. In some exceptional cases and at the discretion of the Planning Authority, where it is demonstrated that SUDS devices are not feasible, approval may be given to install underground attenuation tanks or enlarged pipes in conjunction with other devices to achieve the required water quality. Such alternative measures will only be considered as a last resort'. The applicant is requested to omit the proposed attenuation tank and provide sufficient SUDS, unless it can be demonstrated that SUDS are not feasible.

Response

This Response comprises a report and revised drawing no 17-130/P200A to clearly demonstrate that only limited SuDS measures are feasible on the subject site and that on-site attenuation storage is required to achieve the required water quality and limit the surface water outflow from the site to the required rate.

The purpose of the surface water attenuation on the subject site is to attenuate the surface water runoff from the proposed development hardstanding areas to greenfield runoff. This will ensure the development will not give rise to any impact downstream of the site.

The documents submitted with the planning application included a report on percolation tests carried out on the subject site prior to lodging the planning application. The results of the tests confirmed that there is not adequate subsoil percolation on site to naturally infiltrate all of the surface water to ground via a soakaway or similar or to limit the surface water outflow to a specified restricted rate.

In advance of the planning application, Hydrocare Environmental Ltd were appointed late in 2019 to carry out infiltration testing on the subject site at the location of the proposed paving extension. Hydrocare attended site on the 16th of January 2020. Infiltration testing was carried out at 4 No. locations in accordance with BRE Digest 365 guidance document. The report was issued on 24th of January 2020 and a copy was included with the Engineering Reports submitted as part of the planning application.

The infiltration rate tests carried out by Hydrocare Environmental in early 2020 showed low levels of percolation on site. The results are summarised in Table 2 below.

Table 2 Results of Infiltration Tests:

Test Hole No.	*Depth of Hole [mBGL]*	*Water Table Level [mBGL] (N/A if not encounterd)*	*Bedrock Level [mBGL] (N/A if not encounterd)*	*Infiltration Rate [m/s]*
1	1.50	NA	NA	4.28E-06
2	1.50	NA	NA	5.20E-06
3	1.50	NA	NA	4.35E-06
4	1.50	NA	NA	9.20E-06

While there will be some percolation of water to ground naturally in SuDS measures such as the swales and base of the attenuation tank, this was not allowed for this in the attenuation calculations, so as to ensure a robust calculation for the volume required in the attenuation tank.

The subject site is particularly constrained in relation to the free area available to implement SuDS measures as much of the site is already mainly hardstanding. In order to facilitate the extension of existing yard slab areas to provide the additional parking areas, a further extension of hardstanding areas is required. This has in turn, reduced the available area to provide SuDS measures on site.

As part of the SuDS design, the SuDS features have been maximised in relation to available area. This is outlined below and shown on Waterman Moylan Drawing No. 17-130-P200A *Proposed Surface Water Drainage Layout*.

The SuDS elements proposed on the subject site are described below.:

- Swales – Swales have been included along the outer edge of the proposed extended concrete slab on the eastern and southern boundaries to intercept runoff and promote infiltration. Please see drawing 17-130-P200A for the location of these.
- Tree pit/ Soakaway –Tree pits have been included at the south-western corner and north-eastern corner of the extended slab to intercept runoff and promote infiltration. Please see drawing 17-130-P200 for the location of these
- Petrol Interceptor –the petrol interceptor, previously located after the proposed attenuation tank system, has been relocated to be prior of the proposed attenuation tank system to assist in reducing the contamination of the proposed attenuation tank system with hydrocarbons. Please see drawing 17-130-P200A for the location of these.
- Surface Water attenuation – due to insufficient space for detention basins or other SUDS storage measures, a below ground attenuation tank is required to allow for temporary storage of the restricted outflow. The proposed Stormtech attenuation tank will attenuate surface water that is above the restricted outflow that is equivalent of the existing agricultural runoff. This ensures the development will not give rise to any impact downstream of the site.

5. Item 5: Surface Water Drainage - Layout

Request

a. *The applicant is requested to submit a revised drawing showing the surface water layout for the development up to and including the point of connection to the public sewer. The drawing should include the location of all Aj's, manholes, pipe size, material type and direction of flow.*

b. *The applicant is requested to submit a revised drawing showing a petrol interceptor on surface water network prior to surface water entering surface water attenuation system. This is required to reduce the risk of attenuation system being from contaminated from hydrocarbons.*

Response

In response to this item of the RFI, revised Drg No 17-130/P200A Proposed Surface Water Drainage Layout is included with the Response to the RFI. See Figure 5.

This drawing shows the layout of the proposed surface drainage system including pipe sizes, material type, direction of flow together with the locations of all AJs and manholes.

As requested, the Petrol Interceptor, previously located after the proposed attenuation tank system, has been relocated to be prior of the proposed attenuation tank system This is to assist in reducing the contamination of the proposed attenuation tank system with hydrocarbons. Please see drawing 17-130-P200 for the location of same.

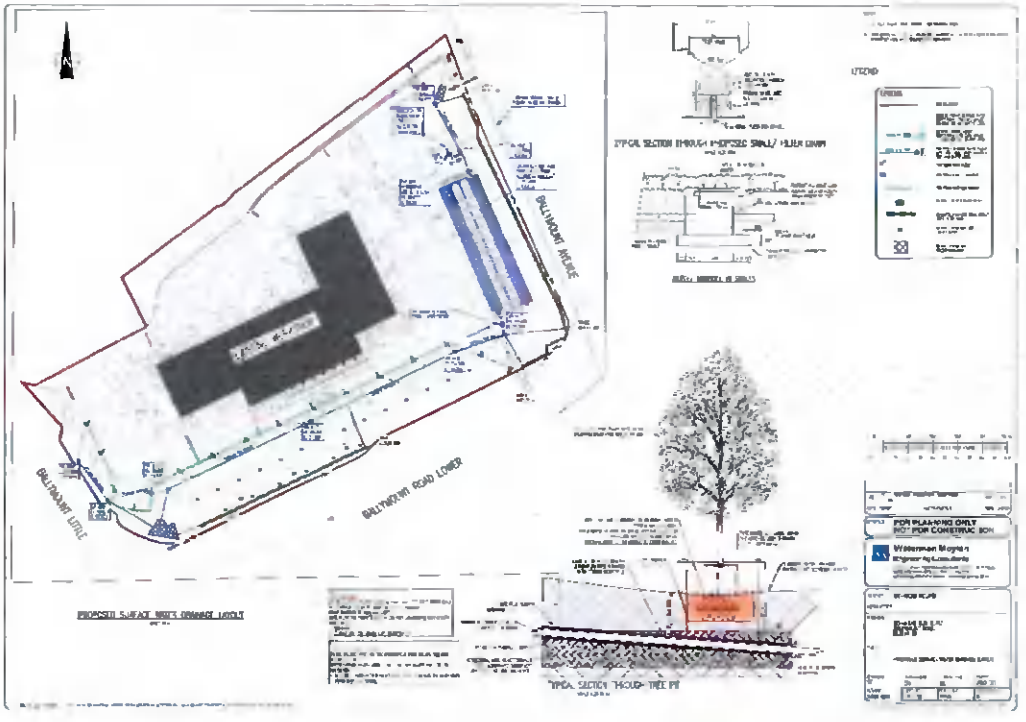


Figure 5 Waterman Moylan Drg No 17-130-P200A Proposed Surface Water Drainage Layout

6. Item 6a: Visibility Splays

Request:

The applicant is requested to provide a revised layout plan indicating

a. *a visibility splay of 2.0m x 45m in both directions from the entrance. Sightlines should be to the near side edge of the road to the right-hand side of entrance and to the centreline of the road to the left-hand side of the entrance (when exiting).*

Response:

In response to Item 5, revised Waterman Moylan Drg No 17-130/P107 Rev A is included with this Response. See Figure 6.

This drawing shows a visibility splay of 2.4m x 45m in both directions from the proposed new entrance on Ballymount Avenue. The visibility splay was based on sightlines should be to the near side edge of the road to the right-hand side of entrance and to the centreline of the road to the left-hand side of the entrance (when exiting).

The visibility splay has been co-ordinated with the landscape consultants to ensure that there will no above ground planting within the visibility splay.

Figure 6 Waterman Moylan Drg No 17-130/P107A Proposed Site Layout

7. Item 6b: Parking

Request:

The applicant is requested to provide a revised layout plan indicating

b. 5% of vehicular parking spaces for mobility impaired users, and 10% vehicular parking spaces to be equipped with electrical charging.

Response:

In response to Item 6b, revised Waterman Moylan Drg No 17-130/P107 Rev A *Site Layout – Proposed* is included with this response. See Figure 6.

The proposed car parking on the subject site is 33 spaces.

In addition, the application provides for the use of a number of bus spaces for car parking during the day when the buses are out on service. These shared areas will be used by able bodied bus drivers none of whom by virtue of their work can be mobility impaired. The number of driver cars to be parked on bus spaces would be up to 250.

In compliance with the Development Plan, total of 2 spaces are required to be allocated to mobility impaired users (5%) and a total of 4 spaces to be equipped for electric charging (10%).

The actual provision, as shown on the attached copy of Waterman Moylan Drg No 17-130/P107 Rev A *Proposed Site Layout,* is 4 spaces for mobility impaired, an overprovision of 2 spaces and 15 spaces for electric charging, an overprovision of 11 spaces.

Further capacity for the electric charging of cars will be available from the multi-purpose chargers in the bus charging area when the electric buses are out of the depot on service.

APPENDICES

A. Drawings

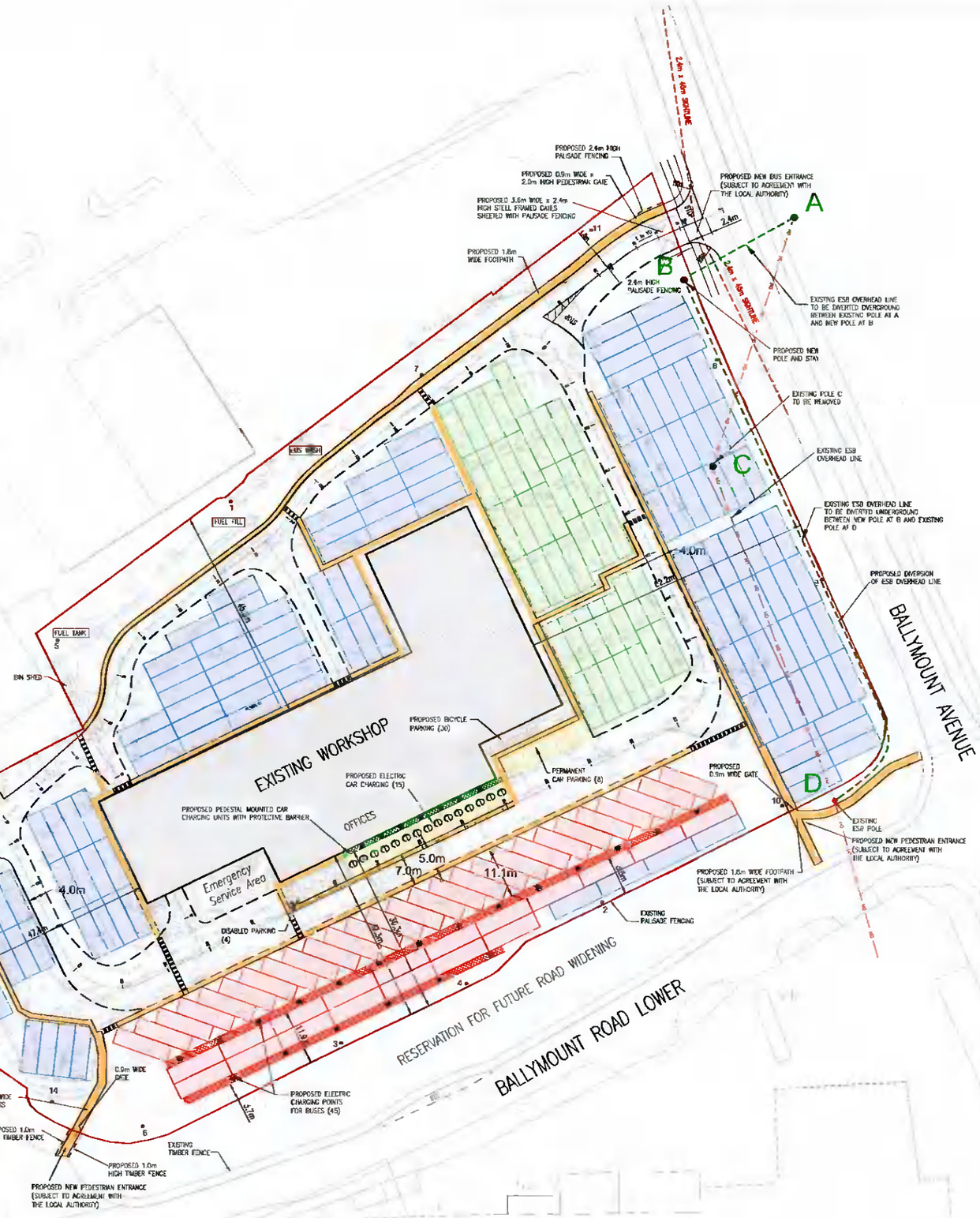
NOTES:

1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND:

- EXTENT OF PLANNING APPLICATION BOUNDARY
- 40 No. permanent parking spaces for single decker bus 11.6m (bay 3.0x12.2m)
- 136 No. permanent parking spaces for double decker bus 10.6m (bay 3.0x11.2m)
- 45 No. permanent parking and charging spaces for electric bus. (bay 3.5x12.5m)
- 2 No. 1.5m wide islands with electric chargers for buses (45)
- 5 No. permanent parking spaces for motorcycles
- 14 No. permanent parking spaces for cars
- 15 No. permanent electric charging spaces for cars
- 4 No. disabled parking spaces for cars
- 3 • Pole for Public Lighting
- 30 No. Bicycle Parking

Total permanent bus parking 221 Spaces
Total permanent car parking 33 Spaces
Total shared car parking 250 Spaces



REV.	DATE	AMENDMENT	DRN	APPD
A	15/11/21	SIGHTLINES ADDED	GB	BMC

STATUS: FOR PLANNING ONLY NOT FOR CONSTRUCTION

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CLIENT: GO-AHEAD IRELAND

ARCHITECT:

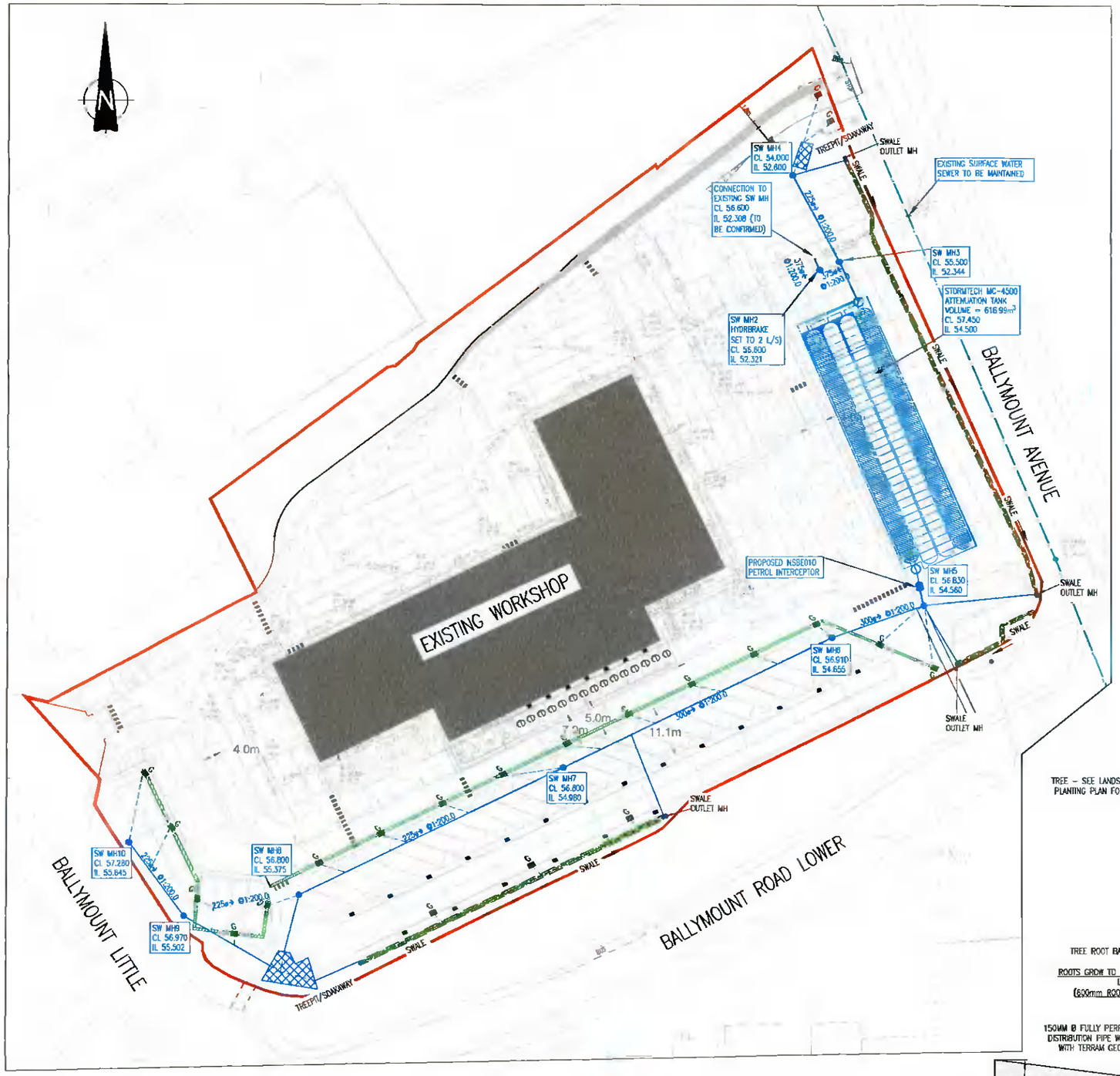
PROJECT: GO-AHEAD BUS DEPOT, BALLYMOUNT ROAD, DUBLIN 12

TITLE: SITE LAYOUT - PROPOSED

DRAWN	DESIGNED	APPROVED	DATE
C.Byrne	BMC	JG	JUNE '21
SCALE	JOB NO.	DRC NO.	REVISION
1:500 @A1	17-130	P107	A

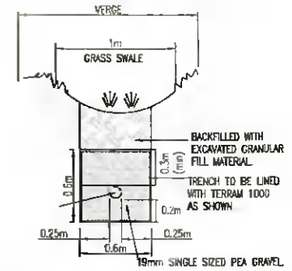
Nov 15, 2021 - 2:38pm Drawing Location: M:\Projects\17\17-130\Cad\Civil\Planning 2020\17-130-P107-Site Layout - Proposed.dwg

[redacted]



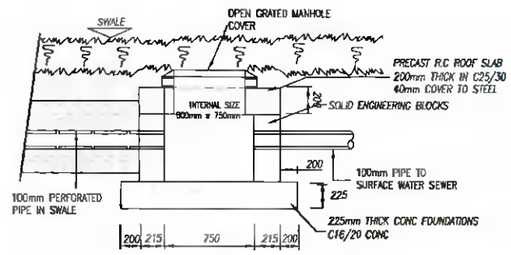
PROPOSED SURFACE WATER DRAINAGE LAYOUT

1:500 @ A1



TYPICAL SECTION THROUGH PROPOSED SWALE/ FILTER DRAIN

SCALE 1:25 @A1

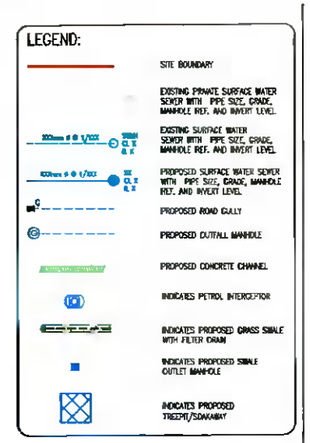


OUTLET MANHOLE IN SWALES

NOTES:

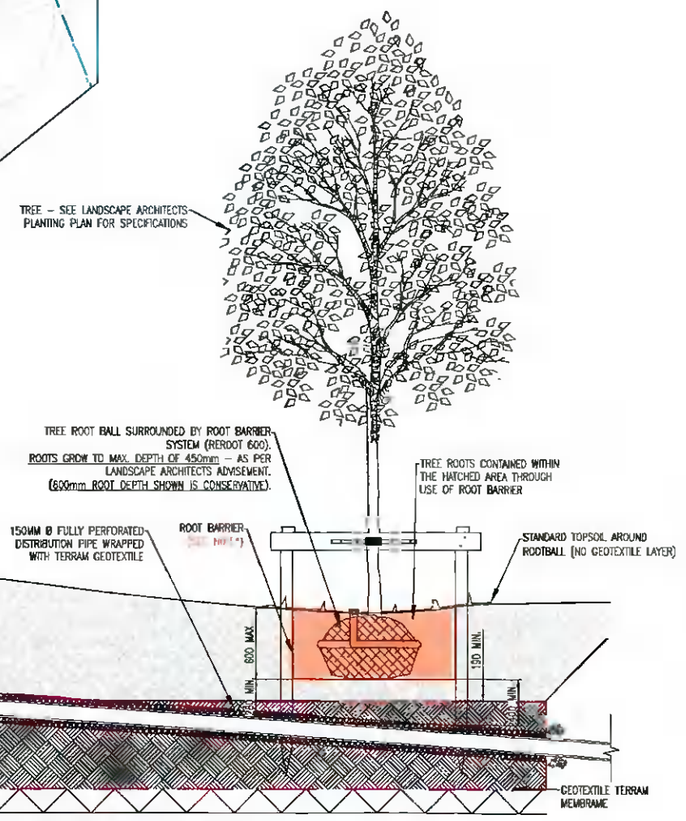
1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

LEGEND:



TO BE PLACED AT THE BOTTOM AND SIDES OF TREE ROOT BALL.
TREE ROOTS GROW TO MAX. DEPTH OF 450mm.
ROOT BARRIER AT 600mm DEPTH.
SPECIFICATION: REROOT 600 – AS PER LANDSCAPE ARCHITECTS ADVISEMENT.
- MATERIAL: HDPE
- DURABILITY: 50 YEARS LIFE EXPECTANCY

TO BE PLACED AROUND THE PERMEABLE PIPE BELOW THE BIO RETENTION TREE PIT.
SPECIFICATION: ROOTGUARD – AS PER LANDSCAPE ARCHITECTS ADVISEMENT.
- MATERIAL: NON-WOVEN GEOTEXTILE EXTRUSION COATED WITH HDPE
- DURABILITY: 25 YEARS



TYPICAL SECTION THROUGH TREE PIT

SCALE 1:25 @ A1

1:500 0 10.0 20.0 30.0 40.0 50.0m
0 10 20 30 40 50 60 70 80 90 100

REV.	DATE	AMENDMENT	DRN	APPD
A	10/11/21	FURTHER INFORMATION SUBMISSION	GB	KV

STATUS: **FOR PLANNING ONLY NOT FOR CONSTRUCTION**

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CLIENT	GO-AHEAD IRELAND
ARCHITECT	
PROJECT	GO-AHEAD BUS DEPOT, BALLYMOUNT ROAD, DUBLIN 12
TITLE	PROPOSED SURFACE WATER DRAINAGE LAYOUT

DRAWN	DESIGNED	APPROVED	DATE
CF	EN	BG	JULY '21
SCALE	JOB NO.	DRG. NO.	REVISION
1:500 @A1	17-130	P200	A

NOTES:
1. DO NOT SCALE USE FIGURED DIMENSIONS ONLY
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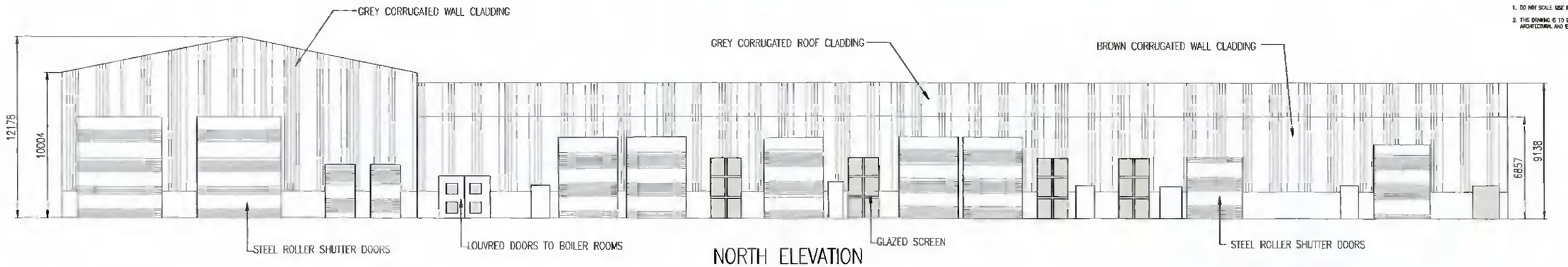

NORTH ELEVATION
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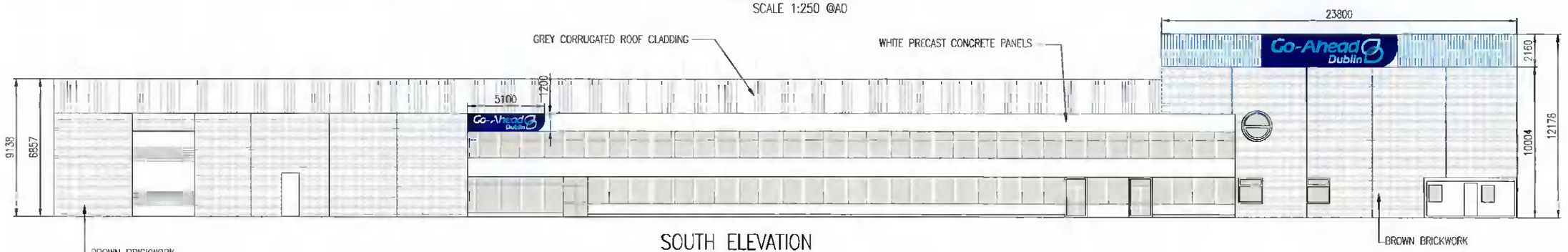

SOUTH ELEVATION
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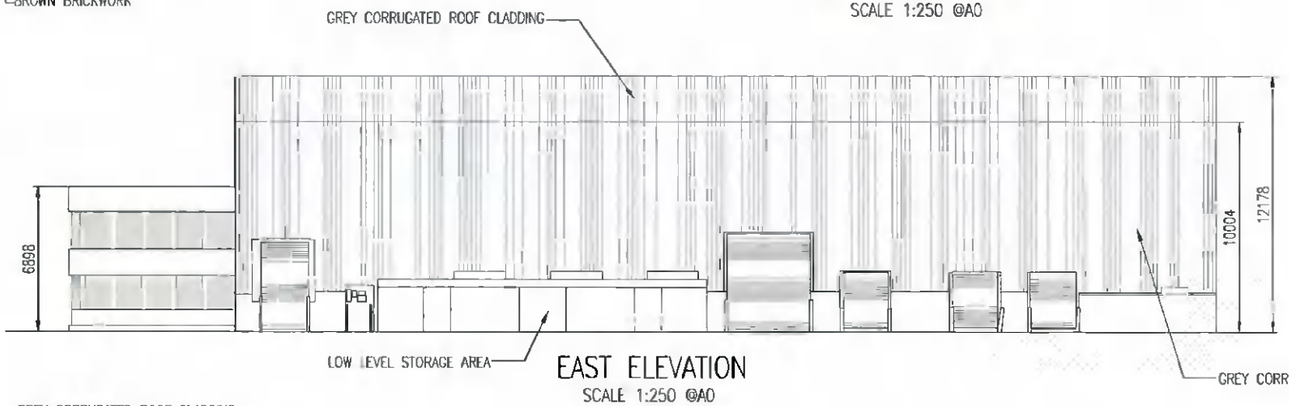

EAST ELEVATION
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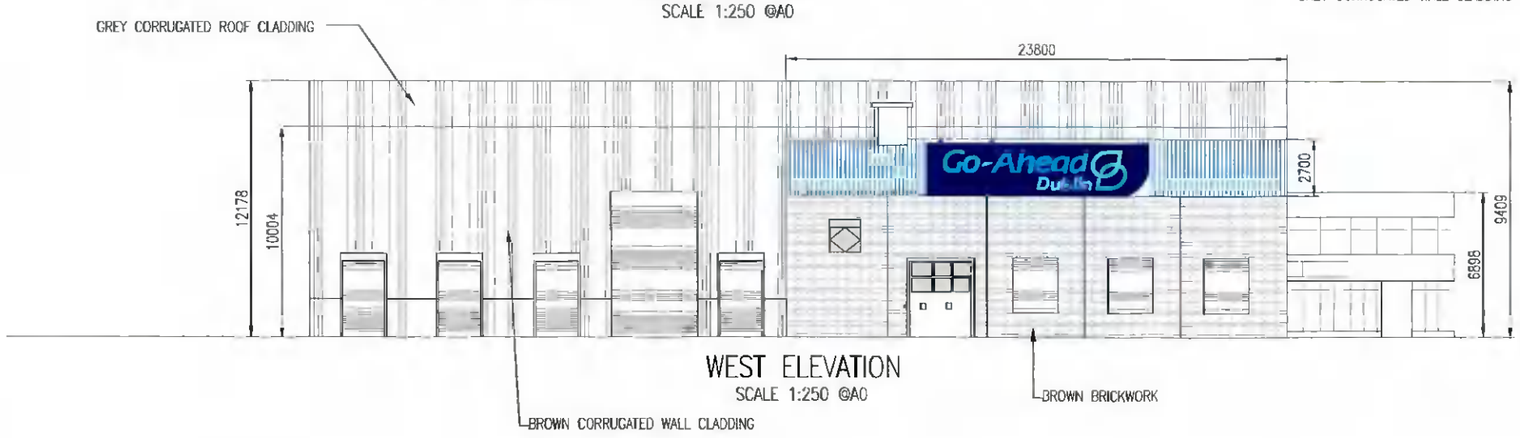

WEST ELEVATION
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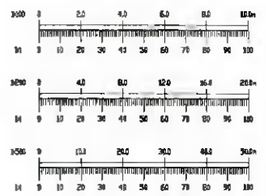

REV.	DATE	AMENDMENT	DRN	APP'D

STATUS: **FOR PLANNING ONLY NOT FOR CONSTRUCTION**

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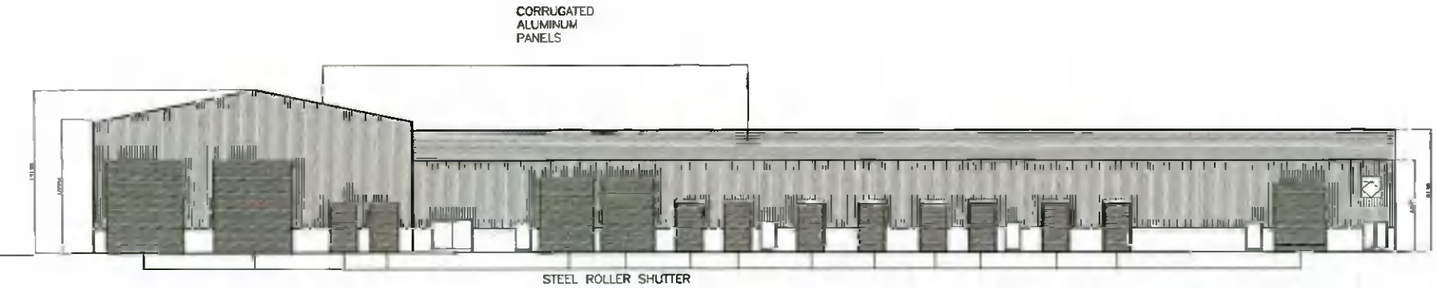
CLIENT: CO-AHEAD IRELAND

ARCHITECT:

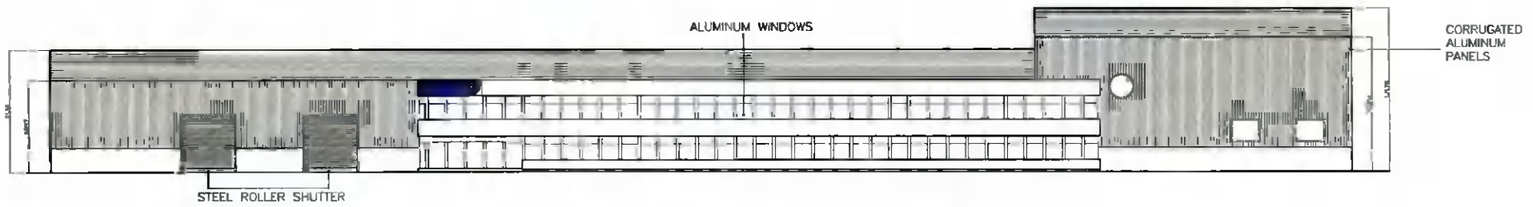
PROJECT: CO-AHEAD BUS DEPOT, BALLYMOUNT ROAD, DUBLIN 12

TITLE: ELEVATIONS – EXISTING
NO CHANGES PROPOSED AS PART OF THIS APPLICATION

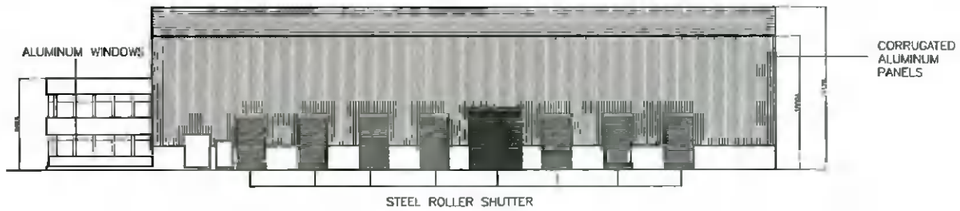
DRAWN	DESIGNED	APPROVED	DATE
E.Byrne	EMC	JC	OCT. '21
SCALE	JOB NO.	DWG. NO.	-REVISION
1:250 @A0	17-130	P250	



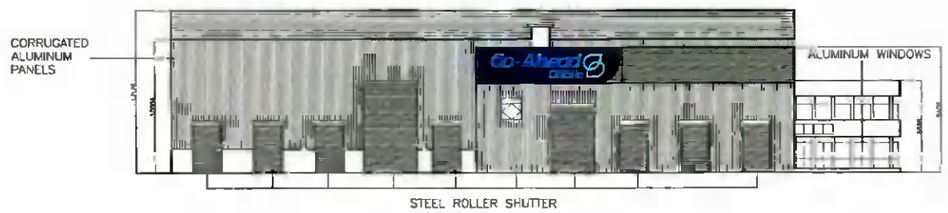
1 / P 300 1:200 NORTH ELEVATION
PROPOSED



2 / P 300 1:200 SOUTH ELEVATION
PROPOSED



3 / P 300 1:200 EAST ELEVATION
PROPOSED



4 / P 300 1:200 WEST ELEVATION
PROPOSED

Note:
DRAWING SUBMITTED AS PART OF SD17A/0428.

SCALE : 1/200

Rev Date Description

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Site Address: LOWER BALLYMOUNT ROAD, DUBLIN 12 D12 X201

Title: PROPOSED ELEVATIONS

ATELIER
Interior architecture and design

UK and Ireland Office Locations