

Proposed Concorde Residential Development, Naas Road, Walkinstown, Dublin 12

Client: Burlington Real Estate

Stage 1/2 Road Safety Audit







PROPOSED CONCORDE RESIDENTIAL DEVELOPMENT, NAAS ROAD, WALKINSTOWN, DUBLIN 12

Description:

Stage 1/2 Road Safety Audit

Author:

Ken Swaby

Mark Andrews

Audit Brief Submitted By:

Barrett Mahony Consulting Engineers

Distribution:

Barrett Mahony Consulting Engineers





1	AUDIT INFORMATION	
1.1	Title	RSA CONCORDE S1/2
1.2	Audit Reference Number	RSA CONCORDE S1/2 KS 291
1.3	Project Code	CONCORDEQA
1.4	Date Audit Completed	11 th January 2019
1.5	Audit Team	
	Team Leader	Ken Swaby, ILTP
	Team Member	Mark Andrews, ILTP
1.6	Information Received	

	ITEM	Supplied	Comments
А	Plans	Yes	Received from Barrett Mahony Consulting Engineers
			Barrett Mahony Consulting Engineers Drawings:
			 Proposed Foul & Surface Layout, ref. C-1000, rev. PL1 Proposed Basement Drainage Layout, rev. C-1001, rev. PL1 Proposed Road & Surface Layout, ref. C-1002, rev. PL1 Watermain Layout, ref. C-1003, rev. PL1 Proposed Signalized Junction Layout, ref. C-1004, rev. PL1 Proposed SuDS Layout, ref. C-1005, rev. PL1 Proposed SuDS Layout, ref. C-1005, rev. PL1 Autoroute Refuse Vehicle Tracking, ref. C-1051, rev. PL1 Autoroute Fire Tender Tracking, ref. C-1052, rev. PL1 Standard Drainage Details, ref. C-1200, rev. PL1 Standard Watermain Details, ref. C-1220, rev. PL1 Standard SuDS Details, ref. C-1225, rev. PL1 Stephen Diamond Associates Landscape Architects Drawing: Master plan – Southern Section, ref. 18-489-PD-01
В	Traffic Count Data	No	
С	Speed Count Data	No	
D	Accident Data	No	
Е	Design Standards	No	
F	Design Brief	No	



ITEM	Supplied	Comments
G Other Data	Yes	 <u>Received from Barrett Mahony Consulting Engineers</u> 1. <i>Civil Engineering Infrastructure Report for Planning</i>, ref. 18.232–IR–01, Issue P1 (02/11/2018)



2 INTRODUCTION

- 2.1.1 This is a Stage 1/2 Road Safety Audit which examines the road safety implications of the proposed Concorde Residential Development on Naas Road, Walkinstown Dublin 12, and its connection to the existing road network.
- 2.1.2 This Stage 1/2 Road Safety Audit has been undertaken as part of a wider Quality Audit for the proposed development, which also includes an Access Audit, Cycle Audit and Walking Audit. The main Quality Audit report is included under separate cover. Where problems are considered to relate to both documents they have been repeated.
- 2.1.3 The Feedback Form for this Stage 1/2 Road Safety Audit is included in **Appendix A** of this report.
- 2.1.4 This Stage 1/2 Road Safety Audit is based upon drawings provided to the design team, as included under paragraph 1.6, and also attached as **Appendix B**.
- 2.1.5 The extent of the Road Safety Audit is within the redline boundary off the proposed access road, as shown on the drawings listed in paragraph 1.6 above, and along the proposed access road itself and the Naas Road at the approaches to the proposed development access.
- 2.1.6 The Quality Audit including Road Safety Audit has been carried out in accordance with the Design Manual for Urban Roads and Streets (DMURS).
- 2.1.7 This Stage 1/2 Road Safety Audit has been conducted in accordance with the Transport Infrastructure Ireland publication entitled *Road Safety Audit*, ref. GE-STY-01024, March 2015.
- 2.1.8 A site visit was carried out on Tuesday 8th January 2019 in daylight conditions, at approximately 11:00hrs. The weather was fine and dry.
- 2.1.9 This Stage 1/2 Road Safety Audit specifically examines the road safety aspects of the proposed development. It is not an appraisal of policy or strategic issues associated with the planning of the development and it does not examine or verify the compliance of the design to any other design criteria or guidelines. The designer and all concerned stakeholders must therefore defend all actions taken on the basis that such care was taken, as was in all circumstances reasonably required, to ensure that the roadway was not unsafe for road users. It is important, therefore that where possible the recommendations in this report are acted upon.
- 2.1.10 Street lighting details have not been provided as part of this audit, and so have not been audited. Streetlighting details will need to be audited at detailed design stage.
- 2.1.11 Basement layout and parking details have not been provided as part of this audit, and so have not been audited. Basement layout and parking details will need to be audited at detailed design stage.
- 2.1.12 Basement illumination details have not been provided as part of this audit, and so have not been audited. Basement illumination details will need to be audited at detailed design stage.





3 ITEMS RESULTING FROM PREVIOUS ROAD SAFETY AUDITS

The audit team are not aware of these proposals having been previously audited.



4 ITEMS RESULTING FROM STAGE 1/2 ROAD SAFETY AUDIT

4.1 General

Problem 4.1.1

The information provided for audit shows a proposed vehicular access junction to the development in close proximity to the existing Concorde Industrial Estate Access Road / Naas Road signalised junction. It is further noted that the proposed Stop Line to the Naas Road junction is within the mouth of the proposed development access junction. This configuration presents various potential conflicting turning movements within the confines of the junctions.

Recommendation 4.1.1

It is recommended that the design team ensures that there is appropriate separation between the Concorde Industrial Estate Access Road / Naas Road signalised junction and proposed development access junction to minimise potential vehicular conflict points.

It is further recommended that the design team ensures that the proposed STOP line and pedestrian crossing at the Naas Road junction are appropriately located to minimise potential vehicular conflict points. This may require inclusion of a pedestrian crossing refuge island and/or reduced kerb radii.

Problem 4.1.2

The site inspection has shown that at the existing Concorde Industrial Estate Access Road / Naas Road signalised junction the Concorde Industrial Estate arm has relatively low green time in the traffic signal cycle. The site inspection has further shown that the traffic signals do not appear to respond on demand to traffic queuing at the junction on the Concorde Industrial Estate access road. This may lead to excessive and / or uncontrolled queueing in two lanes on the Concorde Industrial Estate Access Road across the proposed development access junction, which presents a further potential risk of conflict at the junctions.

Recommendation 4.1.2

It is recommended that the design team ensures that the traffic signals at the Naas Road / Concorde Industrial Estate Access Road junction are appropriate in terms of phasing, cycle times and detection systems to minimise potential excessive or uncontrolled queueing on the Concorde Industrial Estate access road.

It is further recommended that consideration be given for providing formal left and right-turn traffic lanes on the Concorde Industrial Estate Access Road at the approach to Naas Road.

Problem 4.1.3

The information provided for audit shows a proposed vehicular access junction to the development in close proximity to the existing Concorde Industrial Estate Road / Naas Road signalised junction. Without appropriate visibility between the intersections it is possible that traffic may emerge without appropriate knowledge of traffic at other intersections.





Recommendation 4.1.3

It is recommended that the design team ensures that the intersections have adequate intervisibility and that the proposals do not have features that would restrict the visibility of drivers utilising the intersections.

Problem 4.1.4

The drawings provided for audit do not include sightline assessments for vehicles exiting the proposed development access onto the existing Carriglea Industrial Estate Access Road. Inappropriate visibility splays present a potential risk of vehicles emerging unaware of the presence of oncoming traffic and coming into conflict.

Recommendation 4.1.4

It is recommended that the design team ensures that appropriate visibility splays are available in both directions from the proposed development access junction onto the existing Carriglea Industrial Estate Access Road, and that such visibility splays can be appropriately maintained.

Problem 4.1.5

The landscape and engineering drawings submitted for audit do not fully correlate in terms of the proposed planting. Inappropriate planting may be restrictive to visibility throughout the site, both in terms of forward visibility and junction visibility envelopes. This may potentially lead to side swipe and shunt accidents at junctions, shunt accidents throughout the site or vehicle / pedestrian collisions at junctions and crossing points.

Recommendation 4.1.5

It is recommended that the design team ensures that the drawings for all design disciplines are consistent in layout and detail. It is further recommended that the design team ensures the proposed planting are suitably located and maintained to ensure appropriate visibility throughout the site is provided and maintained.

Problem 4.1.6

The swept path assessment drawings submitted for audit show a Fire Tender navigating the site via the footpath / cycle track access route along the southern boundary of the site, however the landscape drawing submitted includes planting that appears to conflict with this proposed Fire Tender emergency access route. An inappropriate design layout may result in Fire Tenders being restricted in accessing the required areas in the case of an emergency.

Recommendation 4.1.6

It is recommended that the design team ensures that the drawings for all design disciplines are consistent in layout and detail. It is further recommended that the design team ensures that the facilities provided are appropriate to allow the relevant Fire Tender vehicles required by the local authority to safely manoeuvre within the site.





Problem 4.1.7

The landscape, architecture and engineering drawings submitted for audit vary in terms of the geometrical configuration of the building at the far western end of the site. It is unclear if a Fire Tender has sufficient space between boundary treatment and building line at this location to navigate the Fire Tender route proposed on the swept path assessment drawings. An inappropriate design layout may result in Fire Tenders being restricted in accessing the required areas in the case of an emergency.

Recommendation 4.1.7

It is recommended that the design team ensures that the drawings for all design disciplines are consistent in layout and detail. It is further recommended that the design team ensures that the facilities provided are appropriate to allow the relevant Fire Tender vehicles required by the local authority to safely manoeuvre within the site.

Problem 4.1.8

The swept path assessment drawings submitted for audit show a Refuse vehicle turning into the site at the entrance to the proposed basement car park and reversing back onto the public road. Vehicles performing turning manoeuvres within the public road present a potential risk of conflict with other users as they are restrictive in terms of the visibility of the driver, and also may not be anticipated by other road users.

Recommendation 4.1.8

It is recommended that the design team ensures that the facilities provided and / or refuse collection procedures are appropriate to ensure vehicles do not have to perform turning manoeuvres within the public road and that drivers are deterred from performing such manoeuvres.

Problem 4.1.9

The information provided for audit indicate that there is inappropriate space for refuse and rigid delivery vehicles to perform three-point turn manoeuvres within the proposed hammerhead turnabout area at the northwest corner of the site. This may lead to such vehicles mounting the footpath or performing turning manoeuvres at locations that might not be anticipated by other road users and potentially result in conflict.

Recommendation 4.1.9

It is recommended that the design team ensures that the facilities provided are appropriate for all relevant vehicles to safely manoeuvre within the site.





Problem 4.1.10

The 'Proposed Road & Surface Layout' drawing (ref. C-1002) provided for audit shows a footpath linking to the southern side of the basement car park vehicular access ramps. The intended pedestrian desire line is unclear from this configuration and it is unclear if vehicles egressing the basement have a sufficient dwell area at the top of the ramps before having to yield to pedestrians. This may present a potential risk of conflict between motorised traffic and pedestrians or other non-motorised users.

Recommendation 4.1.10

It is recommended that the design team ensures that appropriate pedestrian facilities are provided in the vicinity of the entrance to the basement car park.

Problem 4.1.11

The information provided for audit does not show how the proposed footpaths and cycle tracks will connect to the wider network beyond the southern boundary of the site. Without appropriate connections vulnerable road users may be confused as to how or where to continue their journey safely, potentially leading to conflict with other road users.

Recommendation 4.1.11

It is recommended that the design team ensures that the proposed cycle and footway facilities connect to the wider network and that where they terminate appropriate provision is made to inform the road user of how they should continue their journey safely.





5 COMMENTS

It is recommended that the full proposals are subject to a standalone Stage 2 Road Safety Audit at detailed design stage and prior to commencement of the development on site.





6 CONCLUSIONS

It is considered that the site, as currently proposed, is generally conducive to safe access and egress by all forms of road user. It is recommended however that the specific issues raised in this report be taken into account and that appropriate measures be put in place where practicable to mitigate the concerns raised.

This Stage 1/2 Road Safety Audit Report recommends various actions, which should be considered for inclusion in the detailed design process. Where recommendations are not incorporated into the design this should be documented in an Exception Report and forwarded to the ILTP Road Safety Audit Team. The Design Team should document and provide the rationale for incidences where the audit recommendations have not been incorporated or where alternatives are put forward.

The Design Team should respond to all issues raised in this Stage 1/2 Road Safety Audit Report through returning a signed copy of the Road Safety Audit Feedback Form.





7 ROAD SAFETY AUDIT TEAM STATEMENT

7.1 Statement

We certify that the drawings and documents provided with the Audit Brief have been examined. The examination has been carried out with the sole purpose of identifying any features of the scheme that could be improved or modified in order to improve the safety of the scheme. The problems that we have identified have been noted in the report, together with suggestions for improvement, which we recommend should be considered for implementation.

7.2 Signatures

7.2.1 Audit Team Leader Signature

Name:	Ken Swaby	
Position:	Transport Engineer	

Date:

11 / 01 / 2019

Organisation:

ILTP Consulting

Her

Signed:

7.2.2 Audit Team Member Signature

Name:	Mark Andrews
Position:	Transport Engineer
Date:	11 / 01 / 2019
Organisation :	ILTP Consulting

Signed:





APPENDIX A ROAD SAFETY AUDIT FEEDBACK FORM

Road Safety Audit Reference

Audit Stage

Stage 1/2

RSA CONCORDE S1/2 KS 291

Date Road Safety Audit Completed 11th January 2019

Para No. in Report	Problem Accepted (Y/N)	Recommendation Accepted (Y/N)	Comments / Alternative Measures (Describe)	Alternative Measures Accepted by Auditor? (Y/N)
4.1.1	Y	Y	PEDESTRIAN CROSSING LOCATED CLOSER TO NAAS ROAD JUNCTION. ACCESS ROAD TO DEVELOPMENT MOVED FURTHER SOUTH TO MAXIMISE SEPARATION. ADDITIONAL ROAD SIGNAGE AND CLARIFICATION NOTES ADDED	Y
4.1.2	Y	Y	ADDITIONAL DETAIL INCLUDED ON DRAWINGS. DEDICATED TURNING LANES NOT CONSIDERED NECESSARY	Y
4.1.3	Y	Y	As 4.1.1	Y
4.1.4	Y	Y		Y



Para No. in Report	Problem Accepted (Y/N)	Recommendation Accepted (Y/N)	Comments / Alternative Measures (Describe)	Alternative Measures Accepted by Auditor? (Y/N)
4.1.5	Y	Y	COORDINATION WITH LANDSCAPE ARCHITECT CARRIED OUT	Y
4.1.6	Y	Y	FURTHER DETAIL TO BE ADDED TO SEPTH PATH DRAWING AND COORDINATION WITH LANDSCAPE LAYOUT	Y
4.1.7	Y	Y	As 4.1.6	Y
4.1.8	Y	Y	REFUSE TRUCK LAYBY LOCATION REVISED	Y



Para No. in Report	Problem Accepted (Y/N)	Recommendation Accepted (Y/N)	Comments / Alternative Measures (Describe)	Alternative Measures Accepted by Auditor? (Y/N)
4.1.9	Y	Y	REVISED SWEPTH PATH ANALYSIS CARRIED OUT AND AJUSTMENTS TO LAYOUTS MADE WHERE NECESSARY	Y
4.1.10	Y	Y	CLARIFICATION ADDED TO LAYOUT DRAWINGS	Y
4.1.11	Y	Y	As 4.1.10	Y



Signed

Lion 520

Design Team Leader

Date 15/01/19

(Please Complete and return to the Auditor)

Safety Audit Signed Off;

en

Road Safety Audit Team Leader Date <u>15/01/2019</u>



APPENDIX B DESIGN TEAM DRAWINGS SUBMITTED FOR QUALITY / ROAD SAFETY AUDIT (AS LISTED UNDER PARAGRAPH 1.6 ABOVE)





A1 Landscape

MASTERPLAN - OPTION 01- PERPENDICULAR PARKING



GREEN ROUTE

1.8m FOOTPATH

		SPECIFICATION KEY
	Q25/ GRA BS:7	110 - PAVING: NATURAL STONE PAVING 95x63mm in random length of 200 x 400 x 600 mm flame-textured MID-GREY NITE paving. 6mm joints to paving units to be filled with wet/slurry mix jointing material to '533, colour neutral. Sub-base to engineer's design detail and specification. Apply two coats of clear wet look sealer to prevent staining.
	Q21/ •Agg •Cen •Adm •Colc •Add •Slab •Finis •Sub •Form •Saw	 115A - PAVING: EXPOSED AGGREGATE CONCRETE SURFACING regate: size maximum 10 and 20 rounded river-washed gravel. Additional aggregate requirements: Aggregate size (maximum) 10 mm PCG and 20 mm PCG by Kilsaran or EQA, fine aggregate: washed sand and CRF dust by Kilsaran or EQA. nent: Cemll/A-L by Irish Cement and "GGBS" by Ecocem or EQA. tixtures: "Adva 411 HRWRA", "VMar5 VMA" byGrace Construction Products & "150-12 Fibremest" by Curtis Enterprises or EQA. bur: to march trial panel titonal mix requirements: "Pieri VBA Bio 2" or EQA vegetable.based surface retarder and curing agent fortextured concrete landscaping. b thickness: 150 mm C40 concrete with reinforcement to engineer's specification sh: Exposed aggregate surfacing. base ned joints: at 5 m centres, temporary forms: square edged with a steel top surface, placing concrete: compact thoroughly at edges to give level, closely abutted joints with no lipping. m Crack at min 3m ctrs: not less than one quarter the depth of the slab in depth and as narrow as practicable. Sawing sufficiently early to prevent random cracking (within 24 hours of casting slab) and to produce strong, well defined arrises. Groove filling: sealant.
	TAR	MAC TO ENGINNER'S SPECIFICATION.
	PER	MEABLE PAVING TO ENGINEERS DETAILS & SPECIFICATION
	•	10mm doiomitious blinding dust material to seal all interstices. 50mm compacted depth golden-coloured limestone hard-compacting gravel (IMAG or EQA).
		 Q26/360 Surface course: Wet pour, in situ laid polyurethane bound EPDM rubber crumb surface to BS 7188. Wet Pour Rubber Surfacing 'Base Course' or 'Shock Pad' is manufactured from 100% Recycled SBR (Styrene Butadiene Rubber) rubber crumb which is mixed with a polyurethane resin binder. Colour: Yellow. Thickness: 40mm
	Q30 - • •	PLANTING: GRASS LAWN Excavate lawn areas to 125mm depth & break up base of area to ensure free drainage. Backfill with min. 150mm depth multi-purpose grade topsoil to BS3882 to lawn area Seed with low maintenance hard-wearing non-ryegrass amenity grass seed mix at 25g per m ² or approved wildflower meadow seed mix as indicated.
	Q31 •	- ORNAMENTAL SHRUBS AND PERENNIALS Planting to 300mm depth (CORTEN STEEL) BS3882 multi-purpose topsoil on free-draining sub-base, topped with 90gs/m ² black landscape fabric and 75mm depth medium-grade pine bark mulch. Ornamental perennial planting to comprise ornamental grasses & flowering perennials to soften the visual impact of the development.
	Pla •	nting - Hedgerows: Native & naturalised hedgerow species to provide biodiversity, support for wildlife & screening as they mature. Transplant planting to 300mm depth BS3882 multi-purpose topsoil on free-draining sub-base, topped with 90gs/m² black landscape fabric and 75mm depth medium-grade pine bark mulch.
	Q31 • •	- SEMI-MATURE NATIVE TREES Semi-mature native species provided with 1200mm ³ multi-purpose grade topsoil to BS: 3882, topped with black 90gs/m ² landscape fabric secured with plastic pegs at 300mm c/cs & 75mm depth medium-grade bark mulch. Trees double- staked & supplied with planting accessories, and provided with root restrictors within 2m of paving, underground services and foundations.
\overline{ullet}	Q31 •	- CLEAR-STEMMED TO 2M HEIGHT SEMI-MATURE TREES Semi-mature trees provided with 1200mm ³ multi-purpose grade topsoil to BS: 3882, topped with black 90gs/m ² landscape fabric secured with plastic pegs at 300mm c/cs & 75mm depth medium-grade bark mulch. Trees double- staked & supplied with planting accessories, and provided with root restrictors within 2m of paving, underground services and foundations.
9	Q50. • •	 /220A - WOODEN BENCH WITH BACKREST 500mm width x 400mm depth x 3500mm length planed smooth Grade A green Douglas Fir to 500mm height from FGL. Timber to be FSC-certified and sourced sustainably. Base frame of galvanised mild steel (powder coated to RAL 8004 Copper brown) with stainless steel fasteners, bolted to C20P concrete foundation to engineer's specification, finished 100mm below FGL. Seat and backrest of solid Douglas Fir softwood Shop drawings to be produced by contractor prior to fabrication.
	Q50 • lim fea •	I/253 - NATURAL STONE BOULDERS 1000-1500mm Ø rounded natural stone glacial boulders of Irish granite or estone grouped to act as single and grouped informal seating elements and tures Set 100-200mm deep into landscape finish.
		 COVERED BICYCLE STANDS 200 no Covered cycle parking spaces located within communal courtyard spaces. 60 no uncovered spaces along site frontage onto Naas road
		EXIT STAIRWAY • Canopy above exit stair from basement car park and bicycle parking spaces
	• wal	1.8m helght solld steel bar ralling painted black on 400mm helght plinth I

0<u>1 5 10 1</u>5m

STEPHEN DIAMOND ASSOCIATES

CHARTERED LANDSCAPE ARCHITECTS

68 Pearse Street Dublin 2				tel:	01 6775670
email: ma	ail@sdacla.ie			fax:	01 6775669
Client:	XXXXXXX				
Project:	Concorde site				
Title:	Master plan				
Drg No:	18-489-PD-01	Date Issued:	2018-12-06	Scale:	1:350 @ A1
Drawn:	MΔ	Purpose: Plann	ina	Checked:	 חפ





PROPOSED BASEMENT DRAINAGE LAYOUT SCALE @ A0: 1:200 SCALE @ A2: 1:400

NC	DTES			
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2. CONSULTANTS TO BE INFORMED BEFORE WORK PROCEEDS.	IMMEDIATELY OF ANY DISCREPANCIES			
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NEW RISING MAIN				
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SURFACE ACCESS JUNCTION	AJ			
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ISSUE	DATE DESCRIPTION DRN P.E. ORIG P.D.									
DRAWIN	G STAGE	PLANNING								
BARRE	BARRETT MAHONY Consulting Engineers, Civil. Sublin Office: Sandwith House, 52-54 Lower Sandwith Street, Dublin 2, Ireland. Tel: (01) 677 3200 Fax: (01) 677 3164 London Office: 12 Mill Street, London SE1 2AY, United Kingdom Tel: (0044) 084 5413 2722 Consulting Engineers, Civil. Structural. Project Management F-mail: bmce@bmce ie. Web: www.bmce ie.									
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	MODEL REV.	SUITABILITY S1								
DRAWING TITLE PROPOSED BASEMENT DRAINAGE LAYOUT										
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PROPOSED ROADS & SURFACE LAYOUT SCALE @ A1: 1:250 SCALE @ A3: 1:500

	1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEERS & ARCHITECT'S DRAWINGS.FIGURED DIMENSIONS ONLY (NOT SCALING) T
	BE USED. WHERE A CONFLICT OF INFORMATION EXISTS OR IF IN ANY DOUBT - <u>ASK</u> .
	2. CONSULTANTS TO BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES BEFORE WORK PROCEEDS.
	CIVIL LEGEND
	PERMEABLE PAVING TO ARCHITECT'S SPECIFICATION WITH HIGH LEVEL OVERFLOW TO SURFACE WATER NETWORK. REFER TO DETAIL IN DRAWING C1210
	BITUMOUS CONCRETE ASPHALT ROAD SURFACE
	NATURAL STONE PAVING AS PER LANDSCAPE ARCHITECT'S SPECIFICATION
	CONCRETE FOOTPATH REFER TO DRG. C1210 FOR DETAILS
	CYCLE LANE AS PER LANDSCAPE ARCHITECT'S LAYOUT
	SOFT LANDSCAPING AS PER LANDSCAPE ARCHITECT'S SPECIFICATION
	HARD COMPACTING GOLDEN GRAVEL TO TREE PIT AS PER LANDSCAPE ARCHITECT'S SPECIFICATION
	SYNTHETIC SURFACING AS PER LANDSCAPE ARCHITECT'S
	SPECIFICATION
	PAVING SURFACING AS PER LANDSCAPE ARCHITECT'S SPECIFICATION
	EXPOSED AGGREGATE CONCRETE SURFACE AS PER
	COVERED BICYCLE STANDS
	TACTILE BLISTER PAVING (BUFF IN COLOUR). REFER TO DWO C1215 FOR DETAILS.
	NATURAL STONE BOULDERS AS PER LANDSCAPE ARCHITECT
	SPECIFICATION SPECIFICATION
	WOODEN BENCH AS PER LANDSCAPE ARCHITECTS SPECIFICATION
	SOLID STEEL BAR RAILING AS PER LANDSCAPE ARCHITECTS
	DRAWING C-1210 FOR DETAILS.
	DK "DK" DENOTES DROPPED KERB, i.e. 0-6mm UPSTAND. (NOTE KERBS TO FRONT OF PARKING/DRIVEWAYS SHALL BE LIMITE
	PROVIDED ELSEWHERE UNLESS OTHERWISE NOTED.)
E	DENOTES PROPOSED TRAFFIC SIGN ON NEW 76.1mmØ CHS GALVANISED POST AND FOUNDATION
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ISSUE



AWING No.	
CCRD-BMD-00-ZZ-DR-C-	1003

MODEL REFERENCE CCRD-BMD-00-ZZ-DR-C-1010

DRAWING TITLE WATERMAIN LAYOUT

ISSUE

MODEL REV. SUITABILITY
P1
S1





NOTES

- 1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEERS & ARCHITECT'S DRAWINGS.FIGURED DIMENSIONS ONLY (NOT SCALING) TO BE USED. WHERE A CONFLICT OF INFORMATION EXISTS OR IF IN ANY DOUBT <u>ASK'</u>.
- 2. CONSULTANTS TO BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES BEFORE WORK PROCEEDS.

	·	DK																	
SITE BOUNDARY	DENOTES PROPOSED TRAFFIC SIGN ON NEW 76.1mmØ CHS GALVANISED POST AND FOUNDATION	"DK" DENOTES DROPPED KERB, i.e. 0-6mm UPSTAND. (NOTE KERBS TO FRONT OF PARKING/DRIVEWAYS SHALL BE LIMITED TO 25mm UPSTAND. STANDARD 125mm KERBS TO BE PROVIDED ELSEWHERE UNLESS OTHERWISE NOTED.)	NEW IN-SITU CONCRETE KERB. REFER TO DETAIL B ON DRAWING C-1210 FOR DETAILS.	SOLID STEEL BAR RAILING AS PER LANDSCAPE ARCHITECTS SPECIFICATION	WOODEN BENCH AS PER LANDSCAPE ARCHITECTS SPECIFICATION	NATURAL STONE BOULDERS AS PER LANDSCAPE ARCHITECTS SPECIFICATION	TACTILE BLISTER PAVING (BUFF IN COLOUR). REFER TO DWG C1215 FOR DETAILS.	COVERED BICYCLE STANDS	EXPOSED AGGREGATE CONCRETE SURFACE AS PER LANDSCAPE ARCHITECT'S SPECIFICATION	PAVING SURFACING AS PER LANDSCAPE ARCHITECT'S SPECIFICATION	SYNTHETIC SURFACING AS PER LANDSCAPE ARCHITECT'S SPECIFICATION	HARD COMPACTING GOLDEN GRAVEL TO TREE PIT AS PER LANDSCAPE ARCHITECT'S SPECIFICATION	SOFT LANDSCAPING AS PER LANDSCAPE ARCHITECT'S SPECIFICATION	CYCLE LANE AS PER LANDSCAPE ARCHITECT'S LAYOUT	CONCRETE FOOTPATH REFER TO DRG. C1210 FOR DETAILS	NATURAL STONE PAVING AS PER LANDSCAPE ARCHITECT'S SPECIFICATION	BITUMOUS CONCRETE ASPHALT ROAD SURFACE REFER TO DETAIL ON DRAWING C1210	PERMEABLE PAVING TO ARCHITECT'S SPECIFICATION WITH HIGH LEVEL OVERFLOW TO SURFACE WATER NETWORK. REFER TO DETAIL IN DRAWING C1210	CIVIL LEGEND

DRAWING NO.	DRAWING TITLE PROPOSED	MODEL REFERENCE	DEVELOPM		PL1 02.11.18 ISSUE DATE DRAWING STAGE	_
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04 Issue PL1	N LAYOUT	MODEL REV. SUITABILITY	BM PROJECT No. 18.232		Street, Dublin 2, Ireland.	_



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	SUDS LEGEND
	GREEN ROOF DRAINAGE MAT ON PODIUM AREAS
	IMPERMEABLE ROOF ON PROPOSED STRUCTURES
	PERMEABLE PAVING TO ARCHITECT'S SPECIFICATION WITH HIGH LEVEL OVERFLOW TO SURFACE WATER NETWORK. REFER TO DETAIL IN DRAWING C1210 BITUMOUS CONCRETE ASPHALT ROAD SURFACE
_	CONCRETE FOOTPATH
_	GRASSCRETE OR SOFT LANDSCAPING AS PER LANDSCAPE
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	BASEMENT LINE
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	REQUIREMENTS UNLESS NOTED OTHERWISE. REFER TO IRISH WATER DETAILS FOR ADDITIONAL INFORMATION.
ESS THAN	4. REFER TO THE STRUCTURAL WATERMAIN DETAILS DRAWING FOR A TYPICAL SERVICE LAYOUT UNDER A FOOTPATH
IN 150 MIN. E WHERE I 1.2m	5. CONNECTION OF BRANCHES TO THE MAIN LINE ARE TO BE BY MEANS OF 45° BRANCH CONNECTIONS, SADDLE CONNECTIONS NOT ALLOWED.
DNCRETE	6. INTERNAL GROUND FLOOR FOUL CONNECTIONS TO DRAIN SEPARATELY FROM THE UPPER STOREYS.
DLE JLLY N	 ALL BURIED PIPES UNDER GROUND FLOOR SLABS TO BE ENCASED IN CONCRETE. ALL GULLY GRATINGS AND LIDS TO BE MIN. D400
	RATING.
FINISH AS	
SPECIFIED	
IOT LESS THAN	
CASED IN 150 MIN. NCRETE WHERE COVER 1.2m	
C16/20 MIX CONCRETE	
UND TO SADDLE CONNECTION LY SPUR LINE INTO MAIN WATER LINE	
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	DRAWING STAGE PLANNING
	Dublin Office: Sandwith House, 52-54 Lower Sandwith Street, Dublin 2, Ireland. Tel: (01) 677 3200 Fax: (01) 677 3164
	London Office:BARRETT MAHONYLondon Office:12 Mill Street, London SE1 2AY, United KingdomTel: (0044) 084 5413 2722
	Consulting Engineers, Civil . Structural . Project Management.E-mail: bmce@bmce.ie Web: www.bmce.ie
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	BURLINGTON REAL ESTATE
	PROJECT TITLE BM PROJECT No.
	DEVELOPMENT 18.232 MODEL REFERENCE MODEL REV. SUITABILITY
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STANDARD DRAINAGE DETAILS

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