24050-02-001

PROPOSED HOUSING DEVELOPMENT AT CROKE VILLAS, DUBLIN

Stage 1 Quality Audit

(Incorporating a DMURS Street Design Audit, and Audits of Accessibility, Cycling, Walking and Road Safety)

for

Malone O'Regan

May 2024

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1. INTRODUCTION

1.1 Roadplan Consulting has been commissioned by Malone O'Regan to carry out a Quality Audit of a proposed development at Croke Villas, Dublin.

1.2 The proposed development comprises a large-scale residential development including dedicated car parking spaces, bike parking spaces, bicycle stores and bin stores.

1.3 The development is in Croke Villas, close to Croke Park Stadium, and borders the Croke Park GAA Handball Alley, on Sackville Avenue, and The GWR Railway Line.

1.4 Figure 1.1 below is a layout drawing of the development. Sackville Avenue has a speed limit of 50 km/h.

Figure 1.1 – *Site Location Map and Site Layout for the development*

2. QUALITY AUDIT

2.1 Quality Audit is a defined process, independent of, but involving, the design team that, through planning, design, construction and management stages of a project provides a check that high quality places are delivered and maintained by all relevant parties, for the benefit of all end users. Quality Audit is a process, applied to urban roads, traffic management or development schemes, which systematically reviews projects using a series of discrete but linked evaluations and ensures that the broad objectives of place, functionality, maintenance and safety are achieved.

2.2 Quality Audit was introduced in the publication Design Manual for Urban Roads and Streets following concerns that in the design of new streets provisions made for motor vehicles frequently led to a poorly designed public realm. In an urban area there is a high level of competing demand from different classes of road users. A well-balanced street will have minimal visual clutter and obstacles; it will use durable materials and most importantly, will encourage a degree of negotiation between road users as they make their way through it.

2.3 Quality Audit involves various assessments of the impacts of a street scheme in terms of road safety, visual quality and the use of streets by the community. Access for disabled people, pedestrians, cyclists and drivers of motor vehicles is considered.

2.4 In the context of a Quality Audit, road safety assessment is considered to be an appropriate method of examining road safety issues as it incorporates both the hazard identification techniques used in road safety audit and formal risk assessment techniques. This allows the opportunity at an early stage for road safety issues to be considered in a more dynamic way within the design process, and to ensure that safety issues are considered as part of the design rather than after design work is completed.

2.5 The Quality Audit Team reports findings with suggestions for future action. It should be noted that, in a Quality Audit, it is not the intention that suggestions would be binding on the design team; they are offered for detailed consideration in the design process.

2.6 DMURS states that Quality Audits should consist of the following parts:

- DMURS Street Design Audit
- Individual Design Audits
- Quality Audit Report

In the case of this report the individual design audits comprise an RSA, an Accessibility audit, a Walking audit and a Cycle audit.

3. METHODOLOGY

3.1 The Audit Team was as follows:

- George Frisby, Chartered Engineer, MIEI
- Glenn Hingerty, Chartered Engineer MIEI

3.2 Road safety, non-motorised users, visual quality, access for disabled and functionality were considered in the Quality Audit. This exercise focused on issues such as:

- the design rationale as it related to vehicle, cycle and pedestrian movements;
- pedestrian desire lines both to and through the site;
- access requirements for all modes of transport;
- access requirements for disabled people and other vulnerable users;
- any road safety concerns associated with the scheme;
- how the scheme is experienced by those entering it and moving around within the street, including how this affects road user behaviour; and
- any other issues considered relevant to each constituent element of the Quality Audit process.

3.3 The site visit for this quality audit was carried out on 18th March 2024.

The documents provided for the audit were:

Drawing Number	Rev	Drawing Title
SHB5-CVD-DR-MAL-L-P1-0001	P11	Landscape Plan
SHB4-CVD-COA-00-ZZ-DR-AR-05704	P-01	Proposed Site Layout Plan
SHB4-CSD-DR-MOR-C-113	PR6	Swept Path Analysis - Proposed Sightlines
SHB4-CSD-DR-MOR-CS-P3-120	PR	Proposed Road Signs and Markings
SHB4-CSD-DR-MOR-CS-P3-101	PR6	Proposed site Layout
SHB4-CSD-DR-MOR-CS-P1-116	PR4	Swept Path Analysis – Aerial Platform Special Application
SHB4-CSD-DR-MOR-CS-P1-117	PR4	Swept Path Analysis – Refuse Truck

Copies of these audited drawings are contained in Appendix A.

Details of drainage or road lighting are not provided. It is assumed that adequate layouts will be provided for each.

In accordance with DMURS Advice Note No. 4 May 2019 (contained on https://www.dmurs.ie/supplementary-material) a Quality Audit should always contain a DMURS Street Design Audit and Other Design Audits (as required). Section 4 of this report contains the Street Design Audit and Section 5 contains the Other Design Audits (Road Safety, Walking, Cycling, Accessibility). The Street Design Audit is in the format provided as a template on the DMURS website.

4. STREET DESIGN AUDIT

CONNECTIVITY		
Key Issues	**Key DMURS Reference**	**Audit Suggestion**
Strategic routes/major desire lines been identified and are clearly incorporated into the design.	3.1 – Integrated Street Network 3.2.1 – Movement Function 3.3.1 – Street layouts 3.3.4 - Wayfinding	No Comment
Multiple points of access are provided to the site/place, in particular for sustainable modes.	3.3.1 – Street Layouts 3.3.3 – Retrofitting [1]	3.3.1 – It is unclear how residents will access the future cycleway schemes along the canal from the development and/or Sackville Gardens.
Accessibility throughout the site is maximised for pedestrians and cyclists, ensuring route choice.	3.3.1 – Street Layouts 3.3.2 – Block Sizes 3.4.1 – Vehicle Permeability	3.3.1 – It is unclear how residents will access the future cycleway schemes along the canal from the development and/or Sackville Gardens.
Through movements by private vehicles on local streets are discouraged by an appropriate level of traffic calming measures.	3.2.1 – Movement Function 3.2.2 – Place Context 3.4.1 – Vehicle Permeability	No Comment

SELF-REGULATING STREET ENVIRONMENT		
Key Issues	**Key DMURS Reference**	**Audit Suggestion**
A suitable range of design speeds have been applied with regard to context and function.	3.2.1 – Movement Function 3.2.2 – Place Context 4.1.1 – A Balanced Approach to Speed [2]	3.2.1 – There is no through road network through the development.

[1] *When connecting with existing communities a detailed analysis and extensive community consultation should be carried out to identify the optimal location for connections (refer also to the NTA Permeability in Existing Urban Areas: Best Practice Guide).*
[2] *Refer also to the National Speed Limit Guidelines*

SELF-REGULATING STREET ENVIRONMENT		
Key Issues	**Key DMURS Reference**	**Audit Suggestion**
		4.1.1 – The proposed development vehicular access is connected to a local road with a raised crossing. Internal streets have a variety of materials which will induce traffic reduction.
The street environment will facilitate the creation of a traffic clamed environment via the use of 'softer' or passive measures.3	4.2.1 – Building Height and Street Width 4.2.2 – Street Trees 4.2.3 – Active Street Edges 4.2.4 – Signage and Line Marking 4.2.7 – Planting 4.4.2 – Carriageway Surfaces 4.4.9 – On-Street Parking Advice Note 1 – Transitions and Gateways	4.2.1 – No information on building heights is provided within the drawings. 4.2.2 – A landscaped area is proposed in a courtyard area in the centre of Block and Block B. Street Trees appear to be proposed along most streets. Planting creates a sense of place and unique character to each streetscape. Care should be taken to ensure the street trees do not block visibility splays at the proposed junctions and pedestrian crossings. Their location should not create risk for mobility impaired users with regard to falling leaves or surface rooting trees creating tripping hazards. 4.2.4 – Adequate signage and road markings should be provided according to the TSM and DMURS at all junctions and elsewhere as required. 4.4.2 – Some variety of carriageway material has been proposed which can induce traffic calming. Excessive amounts of variance however may cause confusion for vision impaired users.

[3] *In retrofit situations a detailed analysis should be carried out to establish what measures exist, what their likely effectiveness is and level of intervention required to achieve the designed design speed.*

SELF-REGULATING STREET ENVIRONMENT		
Key Issues	**Key DMURS Reference**	**Audit Suggestion**
A suitable range of design standards/ measures have been applied that are consistent with the applied design speeds.	4.4.1 – Carriageway Widths 4.4.4 – Forward Visibility 4.4.5 – Visibility Splays 4.4.6 – Alignment and curvature 4.4.7 – Horizontal and Vertical Deflections Advice Note 1 – Transitions and Gateways	4.4.4 – Forward visibility at all carriageway deflections should be kept clear of all obstructions including parked vehicles, and vegetation/landscaping. 4.4.5 – Visibility Splays at all junctions should be kept clear of all obstructions including vegetation / landscaping. This includes future maintenance of tree growth in proximity to junction visibility splays.

PEDESTRIAN AND CYCLING ENVIRONMENT		
Key Issues	**Key DMURS Reference**	**Audit Suggestion**
The built environment contributes to the creation of a safe and comfortable pedestrian environment.	4.2.1 – Building Height and Street Width 4.2.3 – Active Street Edges 4.2.5 – Street Furniture 4.4.9 – On-Street parking	4.2.5 – Information on streetlights throughout the development is not provided within the drawings. It is assumed that adequate lighting will be provided. Its effectiveness should not be impacted by trees or parked vehicles on streets.
Footpaths are continuous and wide enough to cater for the anticipated number of pedestrian movements.	3.2.1 – Movement Function 3.2.2 – Place Context 4.2.5 – Street Furniture 4.3.1 - Footways, Verges and Strips 4.3.2 - Pedestrian Crossings	4.2.5 – Segregated footways have been provided and appear to be clear of obstructions which may reduce their effective width.
Cycling facilities will cater for cyclists of all ages and abilities.	3.2.1 – Movement Function 3.2.2 – Place Context 4.3.5 – Cycle facilities	3.2.1 – Cyclists will be expected to mix amongst general vehicular traffic to access the proposed development. There is no proposed tie-in provision for future cycle schemes in the GDA Cycle network strategy. 4.3.5 – There does not appear to be adequate secured cycle facilities, for standard or cargo cycles, provided, especially with the reduced amount of vehicular parking. These will be particularly important as terraced dwellings with no rear accesses feature in the proposed development.
The particular needs of visually and mobility impaired users been identified and incorporated in the design.	4.2.5 - Street Furniture 4.3.1 - Footways, Verges and Strips 4.2.5 - Street Furniture 4.3.2 - Pedestrian Crossings 4.3.4 - Pedestrianised and Shared Surfaces	4.3.1 – Footpaths throughout the development may be used by cycles as there is no designated cycleway network.

VISUAL QUALITY		
Key Issues	**Key DMURS Reference**	**Audit Suggestion**
The landscape plan responds to the street hierarchy and the value of the place.	3.2.1 – Movement Function 3.2.2 – Place Context 4.2.2 – Street Trees 4.2.7 – Planting Advice Note 1 – Transitions and Gateways	4.2.2 – A landscaped area is proposed in a courtyard area in the centre of Block A & B. Street Trees appear to be proposed along most streets. Planting creates a sense of place and unique character to each streetscape. Care should be taken to ensure the street trees do not block visibility splays at the proposed junctions and pedestrian crossings. Their location should not create risk for mobility impaired users with regard to falling leaves or surface rooting trees creating tripping hazards.
Street furniture is orderly placed.	3.2.1 – Movement Function 3.2.2 – Place Context 4.2.5 - Street Furniture 4.3.1 - Footways, Verges and Strips	4.3.1 – Footways largely appear clear of proposed obstacles that may reduce their effective width; however, it is not clear where bins will be stored on collection day. This may pose a hazard for those with visual and mobility impairments.
The use of signage and line marking has been minimised.	3.2.1 – Movement Function. 3.2.2 – Place Context. 4.2.4 - Signage and Line Marking.	No comment
Materials and finishes used throughout the scheme have been selected from a limited palette and respond to the value of the place?	3.2.1 – Movement Function 3.2.2 – Place Context 4.2.6 – Materials and Finishes 4.2.8 – Historic Contexts 4.3.2 – Pedestrian Crossings 4.4.2 – Carriageway Surfaces Advice Note 2 – Materials and Specifications	4.2.6 – It is not clear if there is clarity between footways and roadways for pedestrians with visual impairments.

ADDITIONAL COMMENTS

5. ROAD SAFETY

5.1 Issue

It is noted that the proposed raised tables and grade changes throughout the development (Figure 5.1 and Figure 5.2), do not feature drainage measures on either side of continuous ramps. This lack of drainage may result in ponding water, and/or associated silt forming, which may result in cyclists slipping and falling onto the road with associated injuries.

Figure 5.1 – *Raised Crossings without drainage detail*

Figure 5.2 – *Raised Crossings without drainage detail*

Suggestion

Ensure that adequate drainage measures are included for all such grade changes.

5.2 **Issue**

It is noted that the proposed parking bays throughout the development (e.g. Figure 5.3 and Figure 5.4) do not feature drainage measures. This lack of drainage may result in ponding water, and/or associated silt forming, which may result in pedestrians accessing or egressing parked vehicles from slipping with associated injuries.

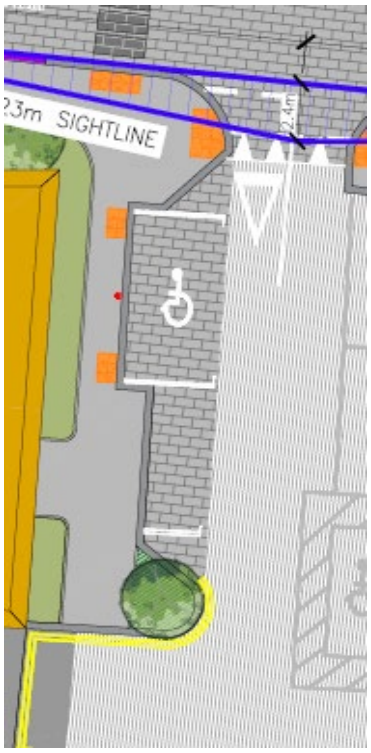

Figure 5.3 – *Parking bays without drainage detail*

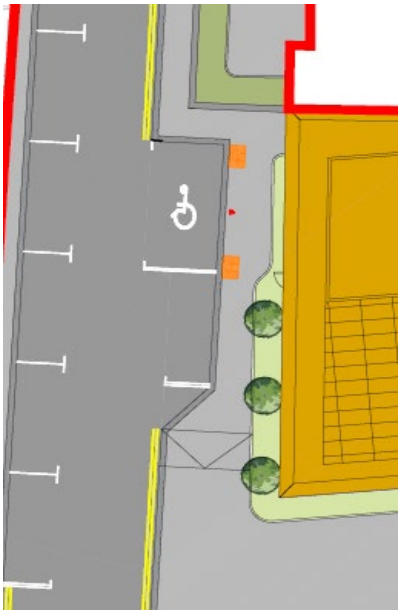

Figure 5.4 – *Parking bays without drainage detail*

Suggestion

Ensure that adequate drainage measures are included for all such parking bays.

5.3 **Issue**

Sightlines at the priority junction in Figure 5.5 appears to be interrupted by a tree. This may increase the likelihood of vehicle collisions due to the reduced sightlines created by this tree, especially so close to Ballybough Road.

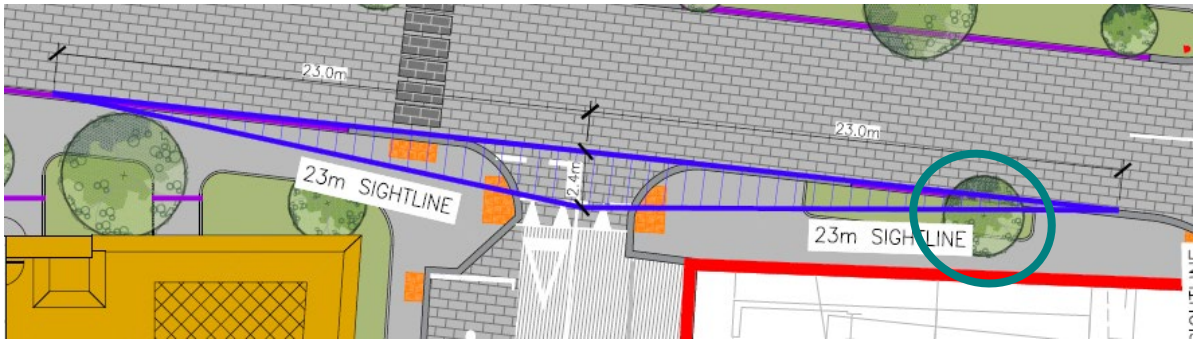

Figure 5.5 – *Visibility Splay interrupted by tree*

Suggestion

Ensure adequate visibility splays at all junctions from edge of carriageway. Remove trees or any other obstructions from visibility splays.

5.4 **Issue**

The stopping sight distance (for vehicles approaching from the northwest) appears to be obstructed by a proposed tree (Figure 5.6), which may compromise visibility. This may increase the likelihood of vehicle collisions due to the reduced sightlines created by trees. Visibility of pedestrians approaching the priority crossing may also be obscured, potentially causing injuries for users.

Figure 5.6 – *Stopping Sight Distance compromised by tree*

Suggestion

Ensure adequate stopping sight distance along all roadways, particularly at bends.

5.5 **Issue**

The sightlines at the junction in Figure 5.6 have been assessed for a 'major' arm of the junction. As the Yield line is curved on the minor arm, it is not clear where the visibility splay should be or if it is adequate. Incomplete visibility splays can give rise to sudden braking or vehicle collisions.

Suggestion

Visibility splays should be assessed for the minor arm at this junction, 2.4 metres back from the corresponding edge of carriageway.

5.6 **Issue**

The development features a social housing development, and redevelopment of Sackville Ave, and surrounding streets with an adjacent development already approved. There does not appear to be an increase in parking provision in this area which may result in informal parking on the plaza area, which is at the same level/grade as the roadway. In addition to challenges for pedestrians (including those with vision or mobility impairments) this may compromise sightlines especially in the areas close to the junction in Figure 5.7 causing an increased likelihood of collisions or pedestrian injury. Precedent of illegal/informal parking on footways was observed on Google Streetview (Figure 5.8).

Figure 5.7 – *Plaza area with at-grade footways which may cause informal parking*

Figure 5.8 – *Precedent of informal / illegal parking (from Google Streetview)*

Suggestion

Ensure appropriate parking provision. Ensure vehicles can't be parked on footways through provision of bollards or similar.

5.7 **Issue**

Swept Path Analyses for various vehicle types have been supplied but they are not exhaustive and do not show vehicles making all likely manoeuvres at all junctions. Some swept path analyses show vehicles doing a turnabout (Figure 5.9) while others show vehicles following onto the alignment of Sackville Ave (Figure 5.10). It is not clear if the proposed street network is adequate for all anticipated vehicle manoeuvres, and this may increase the likelihood of vehicle collisions or larger vehicles overrunning footways with associated pedestrian injuries, especially in the context of parked vehicles.

Figure 5.9 – *Large vehicle making a turnabout manoeuvre*

Figure 5.10 – *Large vehicle following new route to Sackville Ave*

Suggestion

Ensure all required/intended vehicular movements can be supported by the road network without having to mount kerblines, boundaries or parking bays.

5.8 **Issue**

Proposed trees on Sackville Ave will overhang onto the carriageway, based on drawings provided (Figure 5.11). This may increase the likelihood of vehicles swerving to avoid damage, resulting in collisions with other vehicles or sideswipes of cyclists.

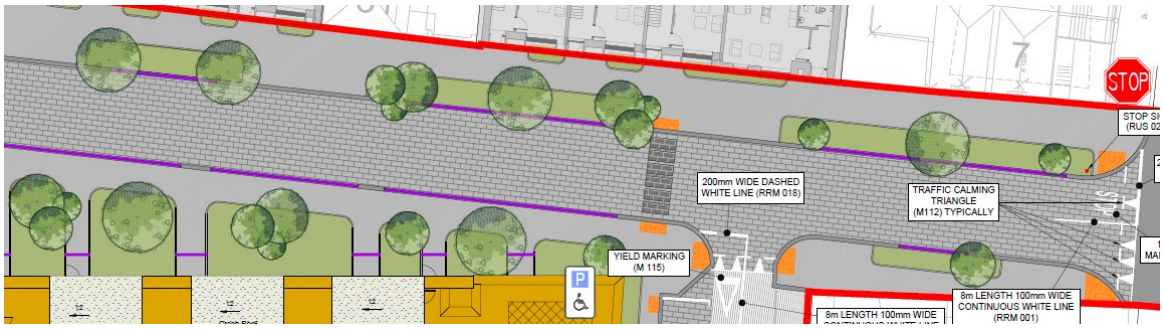

Figure 5.11 – *Proposed Trees overhanging onto realigned street (Sackville Ave)*

Suggestion

Ensure trees do not overhang onto carriageway. Maintain trees as required. Review tree planting proposals in conjunction with swept path analyses.

5.9 **Issue**

Street lighting was observed during the site visit (Figure 5.12) but it is not clear how it integrates with, or will be altered to facilitate the proposed design. The existing street lighting is only currently on the Southern side of the street and its effectiveness may be reduced by proposed trees which may cast shadows on the roadway and opposite footway. This may increase the likelihood of collisions with vehicles, cyclists or pedestrians crossing the street while compromising navigation for pedestrians with vision impairments.

Figure 5.12 – Proposed Trees overhanging onto realigned street (Sackville Ave)

Suggestion

Ensure trees do not compromise street lighting. Enhance lighting provision to both sides of the street and carry out shadow analysis.

5.10 **Issue**

The stop sign warning in Figure 5.13 may not be visible to approaching motorists, due to the proposed trees. The may also may not see the Stopline which is at the bottom of the ramp on the raised carriageway and may be obscured from vision. This may cause vehicles to overshoot resulting in collisions.

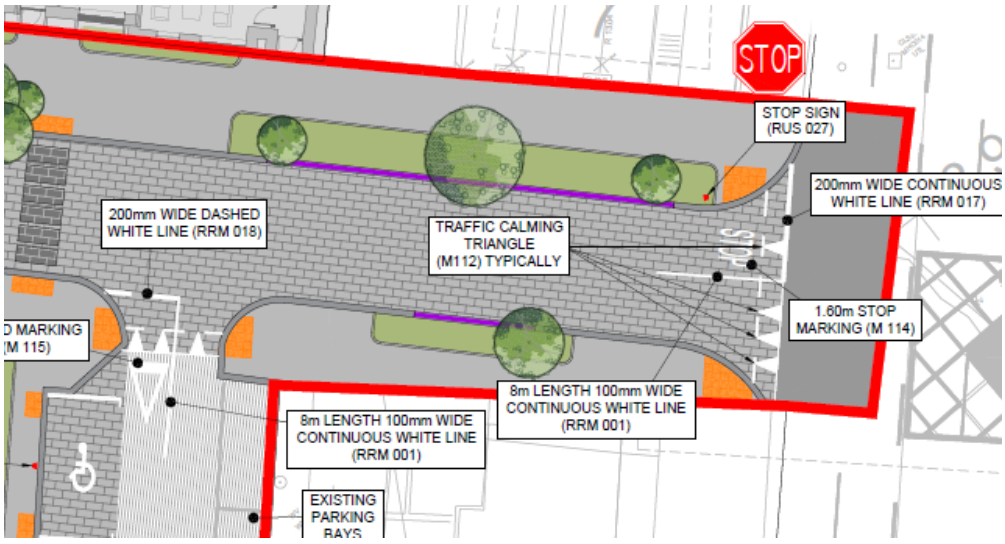

***Figure 5.13 –** Proposed Trees hiding Stop sign and Stopline at the bottom of ramp*

Suggestion

Ensure full visibility of Stop sign and Stopline for all users an approach. Remove/relocate trees as required.

5.11 **Issue**

It is intended that the area on the east side of the cul-de-sac in the southwest corner of the development act as a shared space between vehicles turning and pedestrians travelling to and from the residential units. The use of this area as a shared space may increase collision risk particularly as it involves vehicles turning and reversing.

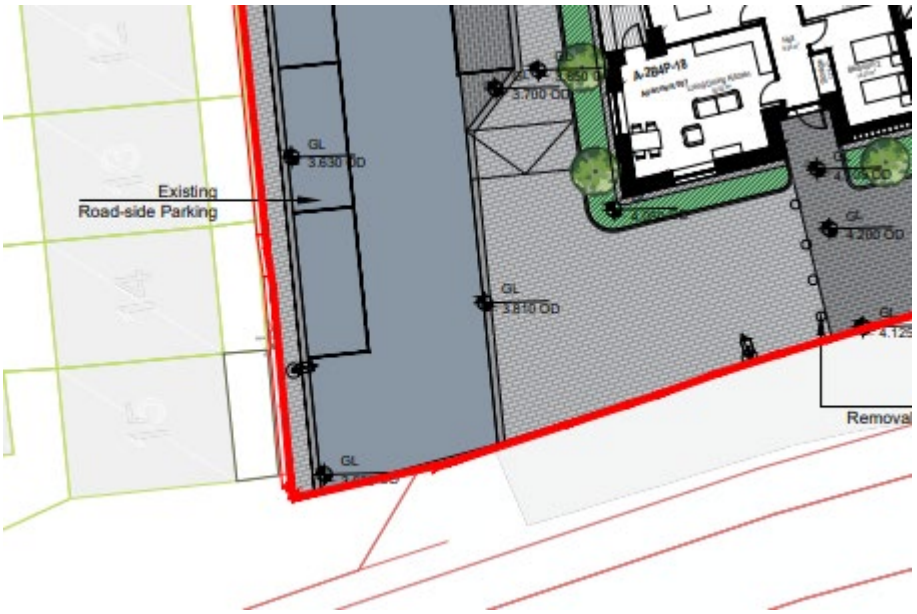

Figure 5.14 – *Proposed shared space at turning area*

Suggestion

Provide a segregated footpath and vehicular turning area at this location.

6. WALKING

6. 1 Issue

Inter-visibility between pedestrians and drivers at crossings in the proposed development may be significantly compromised by the proposed tree locations. This may increase the risk of collisions and pedestrian injuries at these locations because of trees including, but not limited to, those circled in Figure 6.1 and Figure 6.2.

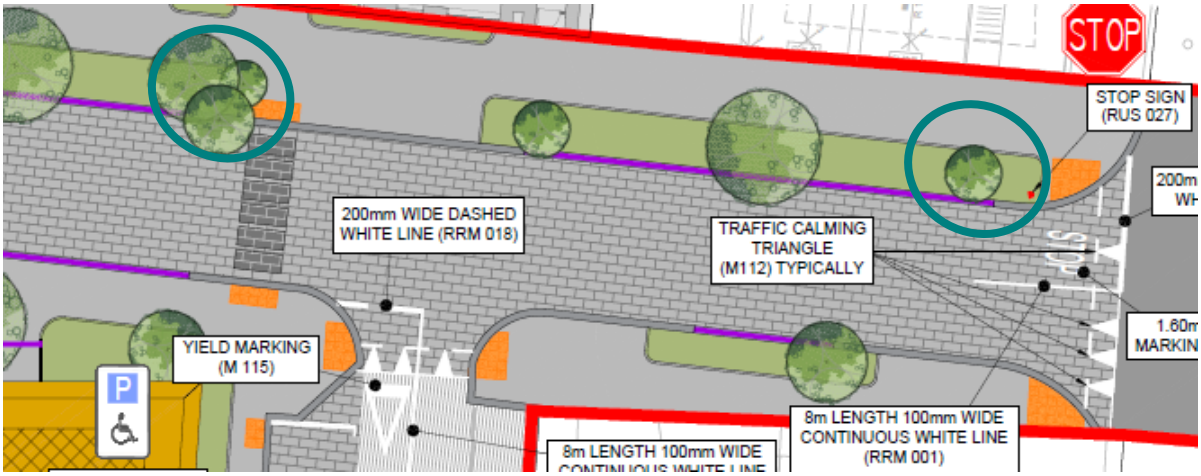

Figure 6.1 – *Proposed Trees compromising intervisibility of pedestrians and motorist at crossings*

Figure 6.2 – *Proposed Trees compromising intervisibility of pedestrians and motorist at crossings*

Suggestion

Ensure adequate inter-visibility between pedestrians and drivers at priority crossings. Relocate trees as appropriate.

6. 2 Issue

Inter-visibility between pedestrians and drivers at crossings in the proposed development may be significantly compromised by parked vehicles in the disabled bay (Figure 6.4). This may increase the risk of collisions and pedestrian injuries at this location.

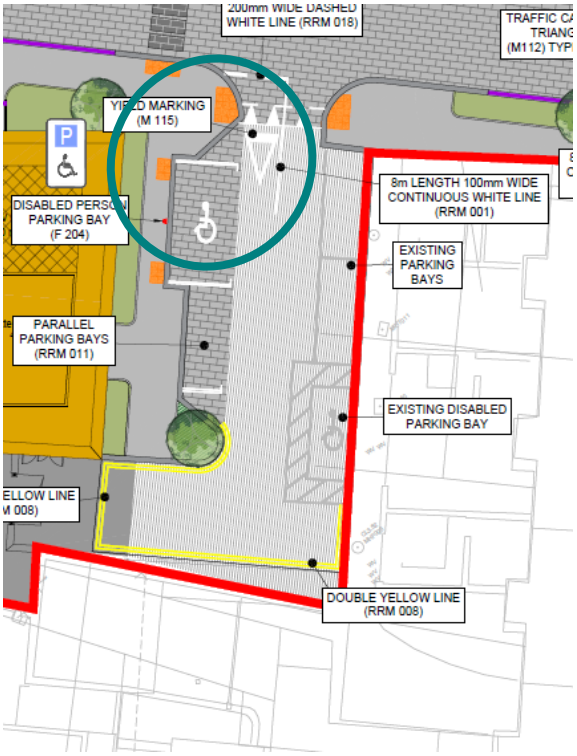

Figure 6.3 – *Proposed Disabled Bay compromising intervisibility when occupied*

Suggestion

Ensure adequate inter-visibility between pedestrians and drivers at priority crossings.

6. 3 **Issue**

At the Sackville Ave / Ballybough Road Junction there are multiple warning sign poles in close proximity. This will reduce the effective width of the footway and the level of service of this footway (Figure 6.4).

Figure 6.4 – *Warning Sign Poles reducing effective width of footway*

Suggestion

Rationalise the amount of street clutter and street poles.

6. 4 **Issue**

Sackville Ave is a main Croke Park match day access route. The proposed redevelopment of Sackville Ave features trees and what appear to be grassed areas or planters surrounding them. It is unclear what (if any) tripping hazards may be created by these for unsuspecting match-goers walking in crowds along the street.

Figure 6.5 – *Incomplete pedestrian desire line*

Suggestion

The proposed design of Sackville Ave should be considered in the context of match day temporary traffic management with relevant stakeholders.

6. 5 **Issue**

The proposed redevelopment of Sackville Ave features many trees (Figure 6.5). It is unclear what (if any) tripping hazards, due to differentially lifting footways, may be created by these trees if surface rooting species are specified.

Suggestion

Ensure appropriate tree species specification. Consult an arborist as required. Install tree pits as appropriate.

7. CYCLING

7. 1 **Issue**

While there is no proposed cycle infrastructure in the development, the local DMURS type street adopted is intended to be a low-speed environment. It is not clear however how the development will tie into the proposed 'Secondary' Cycle Route (blue in Figure 7.1) along Ballybough Road, the 'Utility Greenway' Route (green in Figure 7.1) along the canal / railway alignment or the 'Primary Orbital' Route (dark red in Figure 7.1) along the canal / railway alignment. A lack of coordination may reduce the effectiveness of these schemes, proposed by Dublin City Council and National Transport Authority, and undermine potential to achieve cyclist desire lines.

Figure 7.1 – *GDA Cycle Network (www.nationaltransport.ie/wp-content/uploads/2023/01/2022-GDA-Cycle-Network.pdf)*

Suggestion

Consider wider network impacts of future schemes to support a network of segregated cycleways through the development. Consult with Dublin City Council Active Travel to ensure the development is futureproofed.

7. 2 **Issue**

It is unclear if the proposed secure cycle storage in the development (e.g. Figure 7.2) will be adequate for the envisaged densities, especially in the absence of vehicular parking. While some space for cargo cycles has been provided, it is not clear how many or if the space for manoeuvrability required has been included. This may cause cyclists to lock cycles to other street furniture, creating a navigation risk and reducing the effective widths of footways, especially for cargo cycle users.

Figure 7.2 – *Secure cycle storage*

Suggestion

Provide adequate volumes of secure storage for cycles and cargo cycles.

8. ACCESSIBILITY

8. 1 Issue

A proposed disabled bay (Figure 8.1 and Figure 8.2) shows conflicting information between drawings regarding how much footway space is between the edge and the building and how much will be grassed area. Inclusion of ramps recessed into the footway at this location may significantly reduce the effective width of the footway and post challenges for pedestrians with mobility impairments. The provision of tactile paving to access the disabled bay may also result in confusion for pedestrians with a vision impairment who may assume this is a pedestrian crossing. These pedestrians may then cross the street, meet a kerb with no tactile paving, and become disoriented.

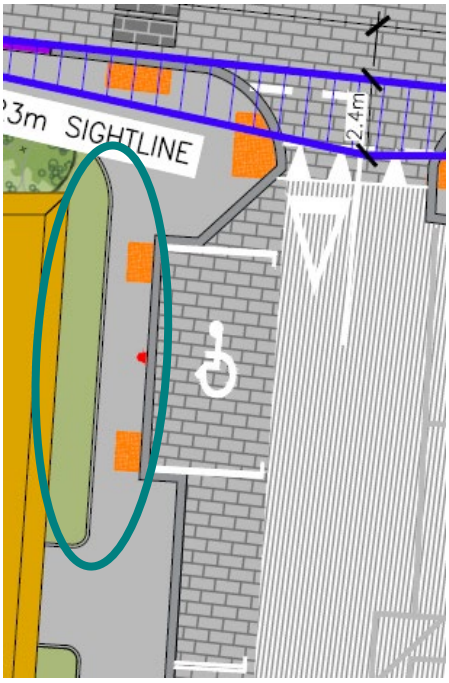

Figure 8.1 – *Proposed disabled bay*

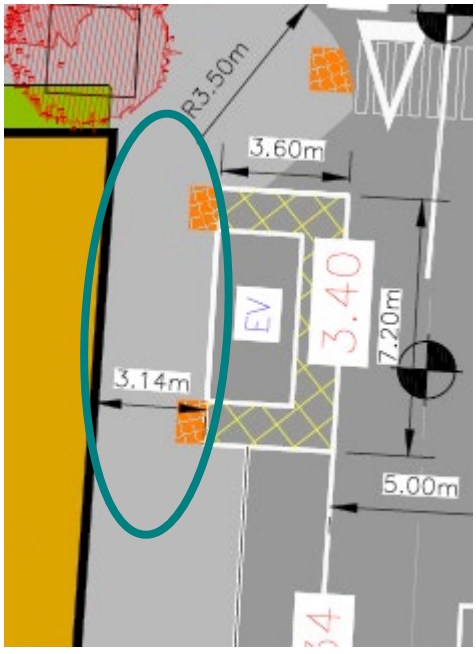

Figure 8.2 – *Proposed disabled bay*

Suggestion

Ensure adequate access routes around and adjacent to the disabled bays. Remove tactile paving from access ramps.

8. 2 **Issue**

An existing disabled bay (Figure 8.3 and Figure 8.4) was observed to have tactile paving ramps down to access the disabled bay. This may result in confusion for pedestrians with a vision impairment who may assume this is a pedestrian crossing. These pedestrians may then cross the street, meet a kerb with no tactile paving, and become disoriented.

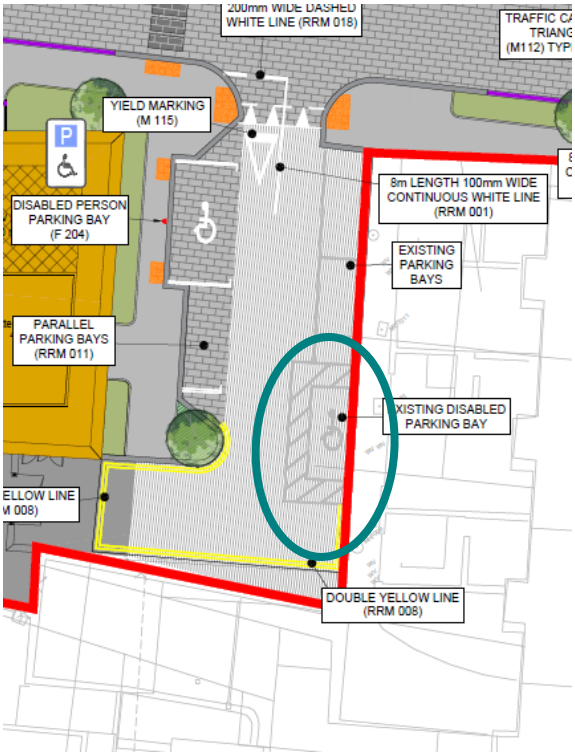

Figure 8.3 – *Existing disabled bay*

Figure 8.4 – *Existing disabled bay*

Suggestion

Remove tactile paving from access ramps.

8. 3 **Issue**

A proposed disabled bay (Figure 8.4 and Figure 8.5) shows conflicting information between drawings regarding how much footway space is between the edge and the building and how much will be grassed area. Inclusion of ramps recessed into the footway at this location may significantly reduce the effective width of the footway and post challenges for pedestrians with mobility impairments. The provision of tactile paving to access the disabled bay may also result in confusion for pedestrians with a vision impairment who may assume this is a pedestrian crossing. These pedestrians may then cross the street, meet a kerb with no tactile paving, and become disoriented.

Figure 8.4 – *Proposed disabled bay*

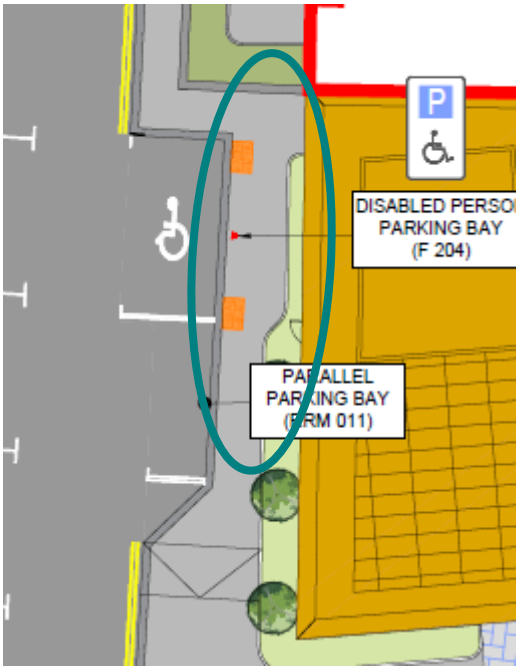

Figure 8.5 – *Proposed disabled bay*

Suggestion

Ensure adequate access routes around and adjacent to the disabled bays. Remove tactile paving from access ramps.

8. 4 **Issue**

Proposed ramps and steps within the development courtyard area including, but not limited to, those in Figure 8.6, do not appear to feature railings or tactile paving. This means that users with mobility or vision impairments may struggle to navigate this area.

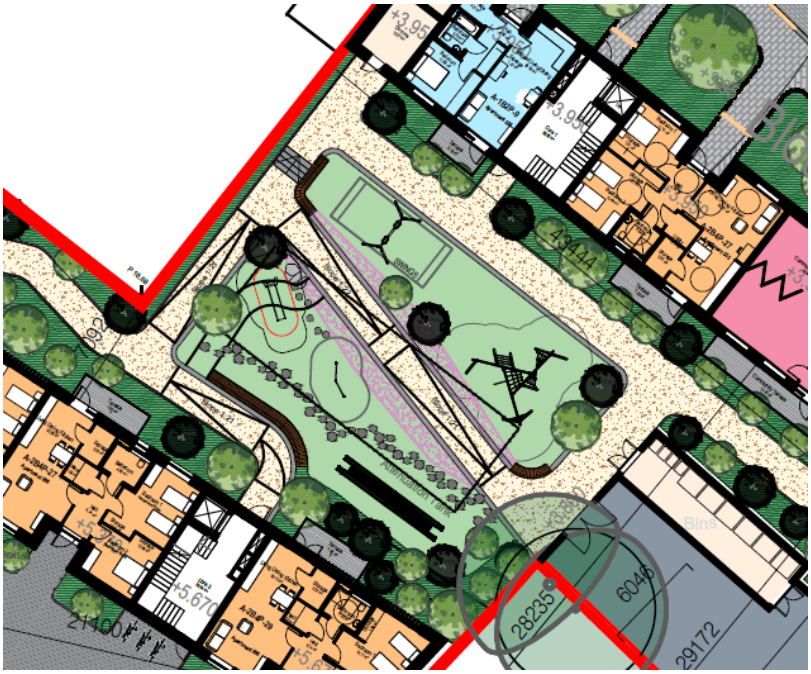

Figure 8.6 – *Ramps and steps with no tactile paving*

Suggestion

Ensure provision of tactile paving and railings at all locations as required.

8. 5 **Issue**

DMURS style Local Shared Streets (E.g. Figure 8.3 and Figure 8.4) feature in the proposed development. As these feature roads and footways with no level difference, this may pose a risk that pedestrians with a vision impairment may wander out onto the carriageway (at locations other than a formal crossing) and be struck by a vehicle.

Figure 8.7 – *Local Shared Street*

Suggestion

Include an upstand between the footway and carriageway, or a tactile delineation line, to support navigation by vision impaired pedestrians with a cane.

8. 6 **Issue**

The proposed infrastructure appears to provide for a tie-in to Sackville Gardens (Figure 8.8 and Figure 8.9). It is not clear how the existing segregated roadway and footway on Sackville (Figure 8.10) will tie into the proposed shared space local street proposed. They may cause confusion for a pedestrian with a vision impairment and an increased likelihood of vehicles colliding with pedestrians.

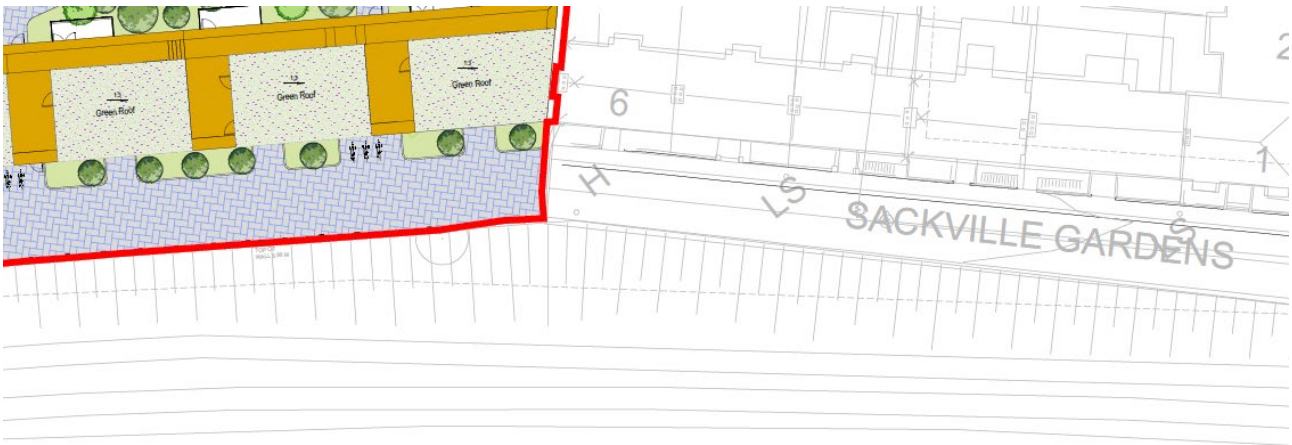

Figure 8.8 – *Sackville Gardens Access*

Figure 8.9 – *Sackville Gardens Access*

Figure 8.10 – *Sackville Gardens Access*

Suggestion

This tie in should be redesigned to ensure continuity and clarity for pedestrians with vision and mobility impairments.

8. 7 **Issue**

It is unclear what the refuse collection strategy is for this development. Most road edges in the development feature parallel parking in designated bays. This creates a risk that refuse bins will be left on the roadway and block sightlines, or left on the segregated footways and thereby reduce the effective width thereof resulting in navigation challenges, particularly for those with vision or mobility impairments.

Suggestion

Revise refuse collection strategies in conjunction with infrastructure provision. Install singular/centralised bin storage areas.

QUALITY AUDIT FEEDBACK FORM

Scheme: Croke Villas Development, Dublin

Document Number: 24050-02-001

Date Audit Completed: 11th April 2024

Paragraph No. in Safety Audit Report	To Be Completed By Designer			To Be Completed by Audit Team Leader
	Problem accepted (yes/no)	Recommended measure Accepted (yes/no)	Describe alternative measure(s). Give reasons for not accepting recommended measure. Only complete if recommended measure is not accepted.	Alternative measures or reasons accepted by auditors (yes/no)
5.1	Yes	Yes	----------	----------
5.2	Yes	Yes	----------	----------
5.3	Yes	Yes	----------	----------
5.4	Yes	Yes	----------	----------
5.5	Yes	Yes	----------	----------
5.6	Yes	Yes	----------	----------
5.7	Yes	Yes	----------	----------
5.8	Yes	Yes	----------	----------
5.9	Yes	Yes	----------	----------
5.10	Yes	Yes	----------	----------
5.11	Yes	Yes	----------	----------
6.1	Yes	Yes	----------	----------
6.2	Yes	Yes	----------	----------
6.3	Yes	Yes	----------	----------
6.4	Yes	Yes	----------	----------
6.5	Yes	Yes	----------	----------
7.1	Yes	Yes	----------	----------
7.2	Yes	Yes	----------	----------
8.1	Yes	Yes	----------	----------
8.2	Yes	No	Item 8.2 is outside the development boundary.	Yes
8.3	Yes	Yes	----------	----------
8.4	Yes	Yes	----------	----------

8.5	Yes	Yes	----------	----------
8.6	Yes	Yes	----------	----------
8.7	Yes	Yes	----------	----------

Safety Audit Signed off ..... **Design Team Leader**

Print Name ..... **Date** .....

Safety Audit Signed off ..... **Employer**

Print Name ..... **Date** 16/05/2024

Safety Audit Signed off ..... **Audit Team Leader**

Print Name George Frisby ..... **Date** 16/5/2024

Please complete and return to:

Roadplan Consulting,
7, Ormonde Road
Kilkenny
E-mail: info@roadplan.ie

APPENDIX A – DRAWINGS

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS, SPECIFICATIONS AND THE PRELIMINARY HEALTH & SAFETY PLAN.

ALL DIMENSIONS ARE IN mm UNLESS NOTED OTHERWISE. DO NOT SCALE DIMENSIONS.

THE CONTRACTOR SHALL CHECK ALL DIMENSIONS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED TO THIS OFFICE IN WRITING.

NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY		
ARCH	SHB4-CVD-ZZZ-M2-COA-AR-SITEWORKS	20/10/2023

LEGEND

- PROPOSED STREET CENTRELINE
- PROPOSED ROAD
- PROPOSED FOOTPATH
- PROPOSED LANDSCAPING
- PROPOSED GRASS
- PROPOSED BUILDING
- PERMEABLE PAVING
- TACTILE PAVING

EXISTING GAA HANDBALL ALLEY

Block B

Block A

EXISTING RETAINING WALL

PROPOSED REMOVABLE BOLLARDS

DRAFT
04/12/2023

REV	DESCRIPTION	DATE	BY	CHK
PR6	LANDSCAPING UPDATED	20.12.23	JC	PB
PR5	MINOR AMENDMENTS	04.12.23	JC	PB
PR4	LAYOUT UPDATED	28.11.23	JC	PB
PR3	ISSUED FOR INFORMATION	26.11.23	JC	PB
PR2	ISSUED FOR INFORMATION	22.11.23	JC	PB
PR1	ISSUED FOR INFORMATION	16.11.23	KD	PB
PR	ISSUED FOR INFORMATION	06.10.23	JC	PB

STATUS
P1 – INFORMATION

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W: www.maloneoregan.ie
Offices also in:
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WATERFORD T: +353 51 876 855 E: waterford@morce.ie

CLIENT
NDFA

JOB NAME
CROKE VILLAS

DRG. NAME
PROPOSED SITE LAYOUT

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:250	SEPT'2023	JC	PB	PB	PR6

DRG. NO.
SHB4-CVD-DR-MOR-CS-P3-101

N:\23006_NDFA_Social Housing Bundles 4 & 5 PPP\07 Sites & Design\04 05 Croke Villas\07 Design And Drawings\01 Drawings\PR - Preliminary\23006 - B405 - 101 - Site Layout Phase 1 - Rev PR6.dwg

DON'T FORGET SAFETY

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NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY		
ARCH	SHB4-CVD-ZZZ-M2-COA-AR-SITEWORKS	20/10/2023

SIGHTLINES COMPLY WITH TRANSPORT INFRASTRUCTURE IRELAND STANDARD DN-GEO-03060

SIGHTLINES COMPLY WITH DESIGN MANUAL FOR URBAN ROADS AND STREETS

EXTENT OF GRANTED PART 8 DEVELOPMENT SHADED GREY

EXTENT OF GRANTED PART 8 DEVELOPMENT SHADED GREY

EXISTING GAA HANDBALL ALLEY

2.4m SIGHTLINE

23m SIGHTLINE

23m SIGHTLINE

23m SIGHTLINE

23m SIGHTLINE

23m SIGHTLINE

2.4m

2.4m

2.4m

2.4m

23.0m

23.0m

23.0m

23.0m

Green Roof

External Plant 41.44 m²

SWINGS

FOSTER TERRACE

SACKVILLE GARDENS

DRAFT
29/02/2024

REV	DESCRIPTION	DATE	BY	CHK
PR5	LAYOUT REVISIONS	29.02.24	JD	COB
PR5	LANDSCAPE AREAS REVISED	19.02.24	JD	COB
PR4	LAYOUT REVISIONS	17.02.24	JD	COB
PR3	MINOR AMENDMENTS	04.12.23	JC	PB
PR2	ISSUED FOR INFORMATION	28.11.23	JC	PB
PR1	ISSUED FOR INFORMATION	27.11.23	JC	PB
PR	ISSUED FOR INFORMATION	19.07.23	SL	PB

STATUS
P1 – INFORMATION

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DUBLIN 14
D14 XT57
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Offices also in:
GALWAY T: +353 91 531 069 E: galway@morce.ie
WATERFORD T: +353 51 876 855 E: waterford@morce.ie

CLIENT
NDFA

JOB NAME
CROKE VILLAS

DRG. NAME
SWEPT PATH ANALYSIS
PROPOSED SIGHT LINES

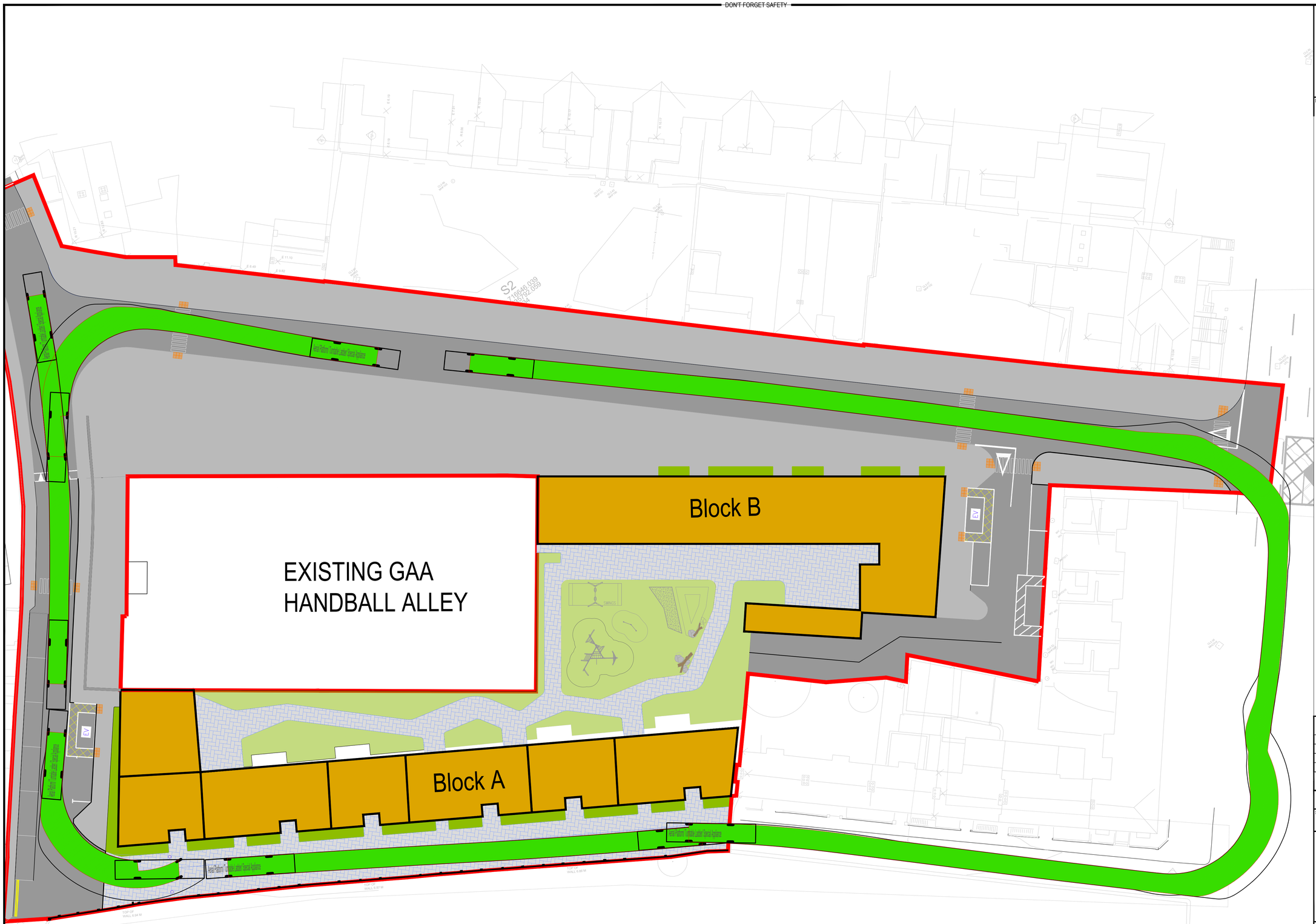
JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:250	JULY'2023	SL	PB	PB	PR6

DRG. NO.
NDFA-SHB4-05-DR-MOR-C-113

R:\2023\23006\04 05 Croke Villas\07 Design And Drawings\01 Drawings\PR6 - Preliminary\23006 - SHD5 - 113 - Sight Lines Phase 1 - Rev PR6.dwg

DON'T SCALE DIMENSIONS

DON'T FORGET SAFETY



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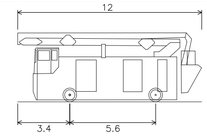
NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY		
ARCH	SHB4-CVD-ZZZ-M2-C0A-AR-SITEWORKS	20/10/2023

VEHICLE SWEPT PATH LEGEND

SATISFACTORY	SATISFACTORY: SWEPT PATH WORKS WITH CURRENT LAYOUT
FEASIBLE	FEASIBLE: SLIGHT DIFFICULTIES BUT SWEPT PATH COULD WORKS WITH MINOR LAYOUT MODIFICATIONS
NOT ACCEPTABLE	NOT ACCEPTABLE: SWEPT PATH NOT POSSIBLE WITH LAYOUT AND SIGNIFICANT ALTERATION REQUIRED
	SOLID HATCH INDICATES FORWARD MOTION OF THE VEHICLE
	LINED HATCH INDICATES REVERSE MOTION OF THE VEHICLE

*N.B. COLOUR OF SOLID/LINED HATCHES IN LEGEND TO MATCH RELEVANT COLOUR OF THE AUTO-TRACK IN THE DRAWING (i.e. IF SWEPT PATH IS A SATISFACTORY GREEN THEN SO WILL HATCHES BE SHOWN AS ABOVE)



AERIAL PLATFORM/ TURNTABLE LADDER/ SPECIAL APPLIANCE

OVERALL LENGTH	12.000M
OVERALL WIDTH OVERALL	2.550M
BODY HEIGHT	4.500M
MIN BODY GROUND CLEARANCE	0.130M
TRACK WIDTH	2.550M
LOCK-TO-LOCK TIME	4.00S
CURB TO CURB TURNING RADIUS	13.750M

DRAFT
04/12/2023

REV	DESCRIPTION	DATE	BY	CHK
PR4	MINOR AMENDMENTS	04.12.23	JC	PB
PR3	LAYOUT UPDATED	28.11.23	JC	PB
PR2	ISSUED FOR INFORMATION	27.11.23	JC	PB
PR1	ISSUED FOR INFORMATION	22.11.23	JC	PB
PR	ISSUED FOR INFORMATION	06.10.23	JC	PB

STATUS
P1 – INFORMATION

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WATERFORD T: +353 51 876 855 E: waterford@morce.ie

CLIENT
NDFA

JOB NAME
CROKE VILLAS

DRG. NAME
SWEPT PATH ANALYSIS
AERIAL PLATFORM SPECIAL APPLICATION

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:500	SEPT'2023	JC	PB	PB	PR4

DRG. NO.
SHB4-CVD-DR-MOR-CS-P1-116

N:\23006_NDFA_Social Housing Bundles 4 & 5\P1\07 Sites & Design\B4-05 Croke Villas\07 Design And Drawings\01 Drawings\PR - Preliminary\23006 - B4(5) - 116 - Swept Path Analysis Special Application Phase 1- Rev PR4.dwg

DON'T SCALE DIMENSIONS

DON'T FORGET SAFETY

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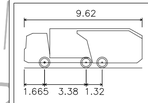
NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY		
ARCH	SHB4-CVD-ZZZ-M2-COA-AR-SITEWORKS	20/10/2023

VEHICLE SWEPT PATH LEGEND

SATISFACTORY	SATISFACTORY: SWEPT PATH WORKS WITH CURRENT LAYOUT
FEASIBLE	FEASIBLE: SLIGHT DIFFICULTIES BUT SWEPT PATH COULD WORKS WITH MINOR LAYOUT MODIFICATIONS
NOT ACCEPTABLE	NOT ACCEPTABLE: SWEPT PATH NOT POSSIBLE WITH LAYOUT AND SIGNIFICANT ALTERATION REQUIRED
	SOLID HATCH INDICATES FORWARD MOTION OF THE VEHICLE
	LINED HATCH INDICATES REVERSE MOTION OF THE VEHICLE

*N.B. COLOUR OF SOLID/LINED HATCHES IN LEGEND TO MATCH RELEVANT COLOUR OF THE AUTO-TRACK IN THE DRAWING (i.e. IF SWEPT PATH IS A SATISFACTORY GREEN THEN SO WILL HATCHES BE SHOWN AS ABOVE)



PHOENIX 2-18W (WITH ELITE 2 6X2MS CHASSIS)

OVERALL LENGTH	9.620M
OVERALL WIDTH OVERALL	2.530M
BODY HEIGHT	3.211M
MIN BODY GROUND	0.416M
CLEARANCE TRACK WIDTH	2.530M
LOCK-TO-LOCK TIME	4.00S
CURB TO CURB TURNING RADIUS	9.550M

Block B

EXISTING GAA
HANDBALL ALLEY

Block A

DRAFT
04/12/2023

REV	DESCRIPTION	DATE	BY	CHK
PR4	MINOR AMENDMENTS	04.12.23	JC	PB
PR3	ISSUED FOR INFORMATION	28.11.23	JC	PB
PR2	ISSUED FOR INFORMATION	27.11.23	JC	PB
PR1	ISSUED FOR INFORMATION	23.11.23	JC	PB
PR	ISSUED FOR INFORMATION	06.10.23	JC	PB

STATUS
P1 - INFORMATION

MALONE O'REGAN CONSULTING ENGINEERS
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WATERFORD T: +353 51 876 855 E: waterford@morce.ie

CLIENT
NDFA

JOB NAME
CROKE VILLAS

DRG. NAME
SWEPT PATH ANALYSIS
REFUSE TRUCK

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:250	SEPT'2023	JC	PB	PB	PR4

DRG. NO.
SHB4-CVD-DR-MOR-CS-P1-117

N:\23006_NDFA_Social Housing Bundles 4 & 5 PPP\07 Sites & Design\04 I-S Croke Villas\07 Design And Drawings\01 Drawings\PR - Preliminary\23006 - B4IS - 117 - Swept Path Analysis Refuse Truck Phase 1 - Rev PR4.dwg

DONT SCALE DIMENSIONS

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NOTES

BY	DRAWING No. & REFERENCE	DATE
SURVEY		
ARCH	SHB4-CVD-ZZZ-M2-CDA-AR-SITEWORKS	20/10/2023

LEGEND

- PROPOSED ROAD (MACADAM)
- PROPOSED ROAD (PAVING)
- EXISTING MACADAM ROAD
- PROPOSED FOOTPATH
- PROPOSED GRASS
- PROPOSED BUILDING
- INFILTRATION PERMEABLE PAVING
- TACTILE PAVING

REFER TO LANDSCAPE ARCHITECTS DRAWINGS FOR SURFACING DETAILS

TRAFFIC CALMING TRIANGLE (M112) TYPICALLY

EXTENT OF GRANTED PART 8 DEVELOPMENT SHADED GREY

EXTENT OF GRANTED PART 8 DEVELOPMENT SHADED GREY

200mm WIDE DASHED WHITE LINE (RRM 018)

YIELD MARKING (M 115)

8m LENGTH 100mm WIDE CONTINUOUS WHITE LINE (RRM 001)

STOP SIGN (RUS 027)

200mm WIDE CONTINUOUS WHITE LINE (RRM 017)

200mm WIDE DASHED WHITE LINE (RRM 018)

TRAFFIC CALMING TRIANGLE (M112) TYPICALLY

1.60m STOP MARKING (M 114)

YIELD MARKING (M 115)

8m LENGTH 100mm WIDE CONTINUOUS WHITE LINE (RRM 001)

8m LENGTH 100mm WIDE CONTINUOUS WHITE LINE (RRM 001)

TRAFFIC CALMING TRIANGLE (M112) TYPICALLY

DISABLED PERSON PARKING BAY (F 204)

EXISTING PARKING BAYS

DOUBLE YELLOW LINE (RRM 008)

DOUBLE YELLOW LINE (RRM 008)

EXISTING GAA HANDBALL ALLEY

PARALLEL PARKING BAYS (RRM 011)

EXISTING DISABLED PARKING BAY

DOUBLE YELLOW LINE (RRM 008)

DOUBLE YELLOW LINE (RRM 008)

DISABLED PERSON PARKING BAY (F 204)

PARALLEL PARKING BAYS (RRM 011)

PARALLEL PARKING BAY (RRM 011)

DOUBLE YELLOW LINE (RRM 008)

Green Roof

SWINGS

SACKVILLE GARDENS

DRAFT
29/02/2024

REV	DESCRIPTION	DATE	BY	CHK
PR	ISSUED FOR INFORMATION	29.02.24	JD	COB

STATUS

P1 – INFORMATION

MALONE O'REGAN CONSULTING ENGINEERS
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CLIENT
NDFA

JOB NAME
CROKE VILLAS

DRG. NAME
PROPOSED ROAD SIGNS AND MARKINGS

JOB REF	SHEET	SCALE	DATE	BY	ENG	APP	REV.
23006	A1	1:250	SEPT'2023	JC	PB	PB	PR

DRG. NO.
SHB4-CVD-DR-MOR-CS-P3-120

R:\2023\23006\B4\05 Croke Villas\07 Design And Drawings\01 Drawings\PR - Preliminary\23006 - B405 - 120 - Road Signs & Markings Phase 1 - Rev PR.dwg

DON'T SCALE DIMENSIONS

LEGEND:

PAVING TYPE 1
Natural Flag Paving
Silver Grey Granite

PAVING TYPE 2
Permeable Concrete Paving
Light Grey Granite

PAVING TYPE 3
Resin-bound Aggregate paving
Buff coloured aggregate

PAVING TYPE 4
Tarmac surface

PAVING TYPE 5
Retained Tarmac

PLANTING TYPE 1
Grass

PLANTING TYPE 2
Shrub Panting

PLANTING TYPE 3
Wildflower Meadow

PAVING EDGE TYPE 1
Granite Kerb
300mm Silver Granite

PAVING EDGE TYPE 2
Concrete kerb
100mm precast concrete unit

PAVING EDGE TYPE 3
Corten Steel
100mm Wide

PAVING EDGE TYPE 3
Gravel Strip
300mm to building

Timber Stepping Stones

Tree
Proposed

Bike Stands

Benches

Drainage channel

Corten Steel Tree pit surround

REV	DESCRIPTION	DATE
P11	ISSUED FOR REVIEW	28.03.2024
P10	ISSUED FOR REVIEW	06.03.2024
P09	ISSUED FOR REVIEW	19.02.2024
P08	ISSUED FOR REVIEW	13.02.2024
P07	ISSUED FOR REVIEW	25.01.2024
P07	ISSUED FOR REVIEW	19.01.2024
P06	ISSUED FOR REVIEW	09.01.2024
P05	ISSUED FOR REVIEW	08.12.2023
P04	ISSUED FOR DRAFT	27.11.2023

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PROJECT TITLE:
Social Housing Bundle 4 & 5
CLIENT:
NDFA
DRAWING NAME:
Landscape Plan
DRAWING NUMBER:
SHB5-CVD-DR-MAL-L-P1-0001
JOB NUMBER:
LSOC003
STATUS:
DRAFT PLANNING

DRAWN:	CHECKED:	SCALE:
FMCC	FP	1:250 @ A1

NOTES:
All dimensions are in millimeters unless otherwise stated and shall be checked and confirmed by the contractor on site. Any discrepancies shall be immediately reported to the landscape architects. Work to figured dimensions only - Do not scale from drawing. Do Not Scale. Use Figured Dimensions Only. Not for Construction Purposes unless Specifically Marked.

www.mitchell.ie info@mitchell.ie +353 1 454 5066