Title: **QUALITY AUDIT**

INCLUDING ROAD SAFETY AUDIT STAGE 1

CASTLEFORBES DEVELOPMENT

Client: **DBFL Consulting Engineers**

Date: **November 2020**

Report reference: **0899R01**

VERSION: **FINAL**

Prepared By:

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1.0 Introduction

This report was prepared in response to a request from Mr. Nick Fennor, DBFL Consulting Engineers for a Quality Audit of the proposed Castleforbes Development on behalf of Glenveagh Homes.

The Quality Audit has been carried out in accordance with the guidance in the Design Manual for Urban Roads and Streets (DMURS), produced by Department of Transport Tourism and Sport in March 2013 and as updated in June 2019.

This Quality Audit includes a road safety audit, an access audit, a walking audit and a cycle audit.

The Road Safety and Quality Audit Team comprised of;

Team Leader: **Norman Bruton**, BE CEng FIEI, Cert Comp RSA.

Team Member: **Owen O'Reilly** B.SC. Eng Dip Struct. Eng NCEA Civil Dip Civil.Eng CEng MIEI

The Quality Audit involved the examination of drawings and other material provided by DBFL and a site visit by the Audit Team, together, on the 16th November 2020.

The weather at the time of the site visit was somewhat wet and the road surface was wet.

The problems raised in this Quality Audit may belong to more than one of the categories of Audit named above. A table has been provided at the start of Section 3 of this report detailing which category of audit each problem is associated with.

Recommendations have been provided to help improve the quality of the design with regard to the areas described above. A feedback form has also been provided for the designer to complete indicating whether or not he/she will accept those recommendations or provide alternative recommendations for implementation.

The information supplied to the Audit Team is listed in **Appendix A.**

A feedback form for the Designer to complete is contained in **Appendix B.**

A plan drawing showing the problem locations is contained in **Appendix C**.

2.0 Background

It is proposed to construct a strategic housing development between Sheriff Street Upper (R101) and East Road in Dublin 1. The development will consist of multistorey building blocks. There would be two vehicular accesses off Sheriff Street Upper to basement/undercroft car parks. There would also be pedestrian and emergency vehicle access from Sheriff Street Upper. Pedestrian access would also be provided off East Road. An existing ramped access to industrial units North of the site would be maintained. Surface bicycle parking would be provided throughout the development.

It is proposed to provide signalised pedestrian crossings on two of the three arms of the Castleforbes junction with Sheriff Street Upper.

On Street Bus bays will be provided on either side of Sheriff Street Upper. East Road is also a bus route.

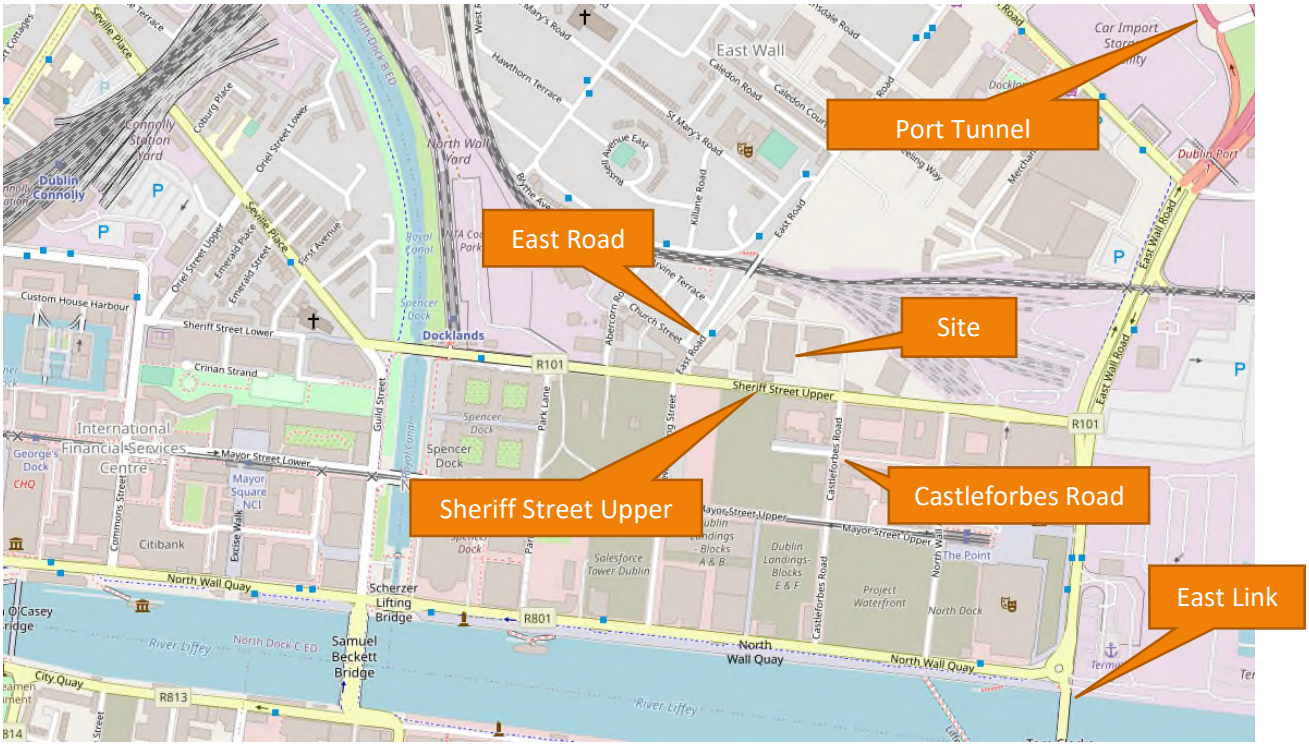
The site is located close to the Luas Red Line and Sheriff Street Upper joins the East Wall Road which connects with Dublin Port Tunnel and the M50 motorway.

A possible future bridge over the railway lines to a neighbouring development is shown on the drawings without detail.

This area of Sheriff Street Upper was undergoing significant redevelopment at the time of the Audit and it is expected that the entire area will be more suitable for residential living as this work is complete.

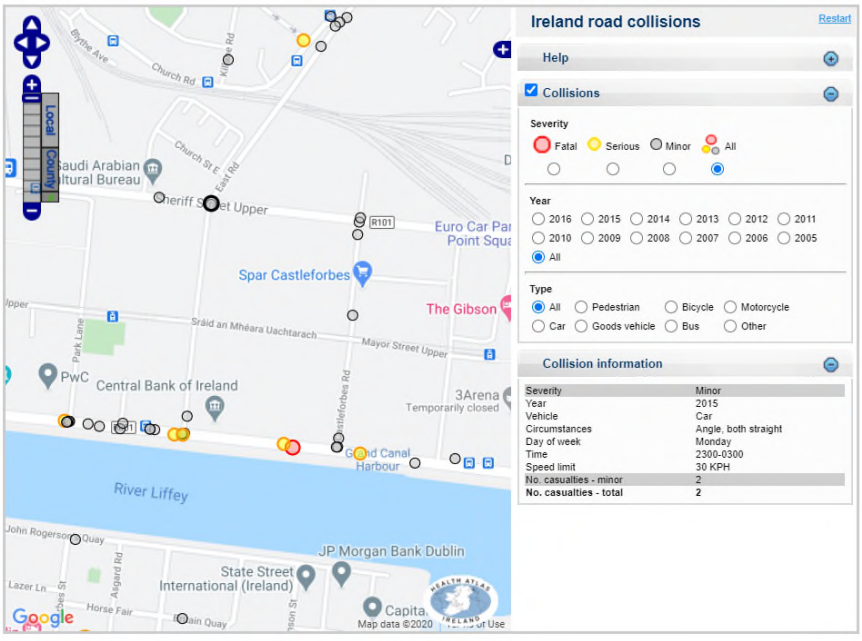
There is permission for a hotel at the corner of Sheriff Street Upper and East Road however it is not being built as part of this proposal and will be a temporary green space.

The location of the site is shown below.



Site Location Map (courtesy of openstreetmap.org)

A review of the Road Safety Authority's website shows that between the years 2005 and 2016 there was one recorded minor injury collision at the East Road Junction and three minor injury collisions at the Castleforbes Road Junction.



3.0 Main Report

Summary Table of Problem Categories

Problem Reference	Access Audit	Walking Audit	Cycling Audit	Road Safety Audit	Quality Audit
3.1		✓		✓	✓
3.2				✓	✓
3.3		✓		✓	✓
3.4				✓	✓
3.5				✓	✓
3.6				✓	✓
3.7	✓				✓
3.8				✓	✓
3.9	✓				✓

3.1 Problem

LOCATION

Drawing 180159-2100 P02 Roads Layout, East Road.

PROBLEM

The proposed pedestrian access on East Road does not have a clear route for pedestrians from the public footpath. There is a possible pinch point at the hotel site and pedestrians have to share space with vehicles coming up and down the ramp to the commercial units to the North of the development.

RECOMMENDATION

It is recommended that a wide and clearly defined route be provided for pedestrians without having to share space with commercial vehicles. Gradients for pedestrians should be no steeper than 5%.

3.2 Problem

LOCATION

Drawing 180159-2100 P02 Roads Layout, Vehicular Access Sheriff Street Upper.

PROBLEM

The bus stops On Sheriff Street Upper are in close proximity to the vehicular entrance to the basement car park. There is a risk that parked buses will obscure visibility for drivers exiting the car park leading to cars being stopped on the footpath blocking the path of pedestrians.

The Buildout for the eastbound bus lane is within the swept path for drivers turning left into the car park and could lead to reversing movements to complete the manoeuvre.

RECOMMENDATION

It is recommended that the bus stops be located where they do not obstruct movements or visibility from the development accesses.

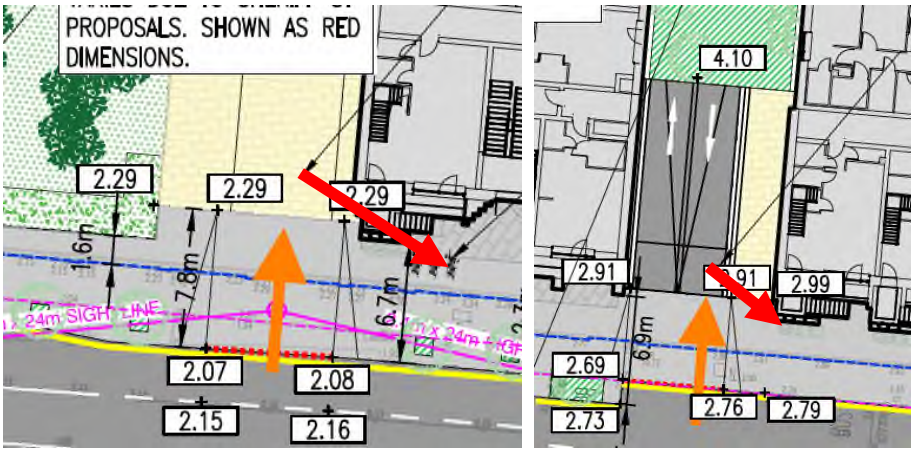
3.3 Problem

LOCATION

Drawing 180159-2100 P02 Roads Layout, Vehicular Accesses Sheriff Street Upper.

PROBLEM

It is unclear if there will be sufficient visibility for drivers exiting the basement car parks to pedestrians or cyclists on the footpaths on Sheriff Street Upper. Without adequate visibility collisions could occur.



RECOMMENDATION

It is recommended that the visibility envelopes for pedestrians at the interface between the accesses and the footpath be kept clear of obstacles and building elements.

3.4 Problem

LOCATION

Drawing 6608_0300 Rev – Proposed Site Landscape Layout.

PROBLEM

There is a risk that the proposed trees along the edge of the carriageway will block visibility to signal heads (either primary or secondary) which could result in collisions.

Example

Example

RECOMMENDATION

It is recommended that trees be removed from in front of traffic signals and from within visibility splays.

3.5 Problem

LOCATION

Drawing 180159-2101 Rev P02, Western Basement layout.

PROBLEM

The basement circulatory layout road markings suggest that there can be two-way traffic on the second aisle however there is no exit for northeast bound traffic and no turning area if all the spaces are occupied. This could lead to wrong way driving and head-on collisions.

RECOMMENDATION

It is recommended that the layout be revised.

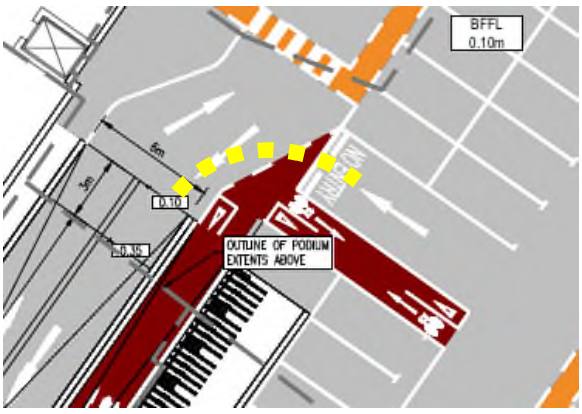
3.6 Problem

LOCATION

Drawing 180159-2101 Rev P02, Western Basement layout.

PROBLEM

It is unclear if vehicles exiting the western basement can undertake the left hand turn at the base of the ramp without colliding with the structural wall or the dividing strip between the downward and upward lane in the ramp.



RECOMMENDATION

It is recommended that a swept path analysis be carried out for this manoeuvre to be sure that it can be easily undertaken by all classes of vehicles that are expected to use the basement car park.

3.7 Problem

LOCATION

Drawing 180159-2101 Rev P02, Western Basement layout.

PROBLEM

There is no apparent provision for electric charging of vehicles. Electric vehicles require additional space especially for those vehicles with side inlet charging so that users and users of adjacent spaces have room to avoid tripping on cables.

RECOMMENDATION

It is recommended that provision be made for electric vehicle charging.

3.8 Problem

LOCATION

Drawing 180159-2102 Rev P02, Eastern Basement layout.

PROBLEM

The basement circulatory layout road markings suggest that there can be two-way traffic on the middle aisle however there is no exit for northeast bound traffic and no turning area if all the spaces are occupied. This could lead to wrong way driving and head-on collisions.

RECOMMENDATION

It is recommended that the layout be revised.

3.9 Problem

LOCATION

Basement disabled car parking.

PROBLEM

As there is no surface disabled car parking it is important that the basement levels allow for the height required for high top conversion vehicles.

RECOMMENDATION

It is recommended that the minimum space of 2.6m (Part M of Building Regulations) be allowed for High top conversion vehicles or that supplementary surface parking for such vehicles be provided.

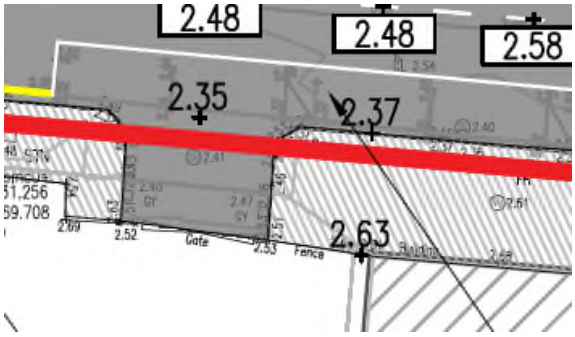
4.0 Observations

4.1 Observation

It is assumed that the bus stop on East Road is to be retained.

4.2 Observation

It is assumed that the carping bays shown across the access on the southern side of Sheriff Street Upper is a draughting error.



4.3 Observation

It is unclear where and how refuse will be collected.

5.0 Quality Audit Statement

This quality Audit has been carried out in accordance with the guidance given in DMURS and takes into consideration the principles approaches and standards of that Manual.

The quality audit has been carried out by the persons named below who have not been involved in any design work on this scheme as a member of the Design Team.

Norman Bruton **Signed:** 

(Quality Audit Team Leader) **Dated: 30/11/2020**

Owen O'Reilly **Signed:** 

(Quality Audit Team Member) **Dated: 30/11/2020**

Appendix A

List of Material Supplied for this Quality Audit;

- Drawing 180159-2100 P02
- Drawing 180159-2101 P02
- Drawing 180159-2102 P02
- Drawing 180159-2100 P02
- Drawing 6608_0300 Rev – Proposed Site Landscape Layout.
- Drawing 1826-OMP-B1-B1-DR-A-1000 Rev 1 S0
- Drawing 1826-OMP-B1-B1-DR-A-1000 Rev 1 S0
- Drawing 1826-OMP-ZZ-00-DR-A-1100 Rev 1 S0

Appendix B

Feedback Form

QUALITY AUDIT FORM – FEEDBACK ON QUALITY AUDIT REPORT

Scheme: Castleforbes Development
Quality Audit- Planning
Date Audit Completed: 16-11-2020

Paragraph No. in Quality Audit Report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measures (describe)	Alternative measures accepted by Auditors (Yes/No)
3.1	Yes	No	The existing vehicle access off East Road, to the west of the proposed development, is for access to an existing Irish Water Pumping Station. While we acknowledge that pedestrians will occasionally encounter vehicular traffic from this area, it is anticipated that this will be low given that the only vehicles entering this space will be staff for the Irish Water Pumping Station and that no pedestrian access to the proposed development is being proposed to the north of the access highlighted. As alternative measure, the landscaping proposals will be amended at detailed design to reduce the green landscaped area to facilitate a wider pedestrian entrance to minimise pedestrian/vehicular conflicts	Yes
3.2	Yes	No	We acknowledge that this concern may arise given the proximity of the bus stop to the basement entrance/exit. The location of the bus stop could be relocated away from the basement entrance/exit; however, the area is outside the control/ownership of the applicant and in the charge of DCC. We agree to approach DCC to relocate this bus	Yes

			stop. Should DCC allow the applicant to relocate the bus stop, and grant the necessary licenses, then same will be facilitated.	
3.3	Yes	Yes		
3.4	Yes	Yes		
3.5	Yes	Yes	We acknowledge that this concern may arise, however the parking spaces will be assigned to residents of the development and it is unlikely that a vehicle will access the area without the intention of parking. To accommodate the unlikely event of this occurring, the motorcycle space will be relocated during detailed design to allow for turning space of vehicles. In addition to the relocation of the motorcycle space and the 6.2m wide aisle, this will create enough space for a 3-point turn.	Yes
3.6	Yes	Yes		
3.7	Yes	Yes	Electric vehicle (EV) parking provisions have been allowed for as part of the development proposals. The exact location of the EV parking spaces will be identified during the detailed design stages of the project in coordination with other services and utilities in the basement.	Yes
3.8	Yes	No	We acknowledge that this concern may arise, however the parking spaces will be assigned to residents of the development and it is unlikely that a vehicle will access the area without the intention of parking. To accommodate the unlikely event of this occurring, the aisle will be made one way at detailed design.	Yes
3.9	Yes	Yes		

Signed  **Date** **20/11/2020**

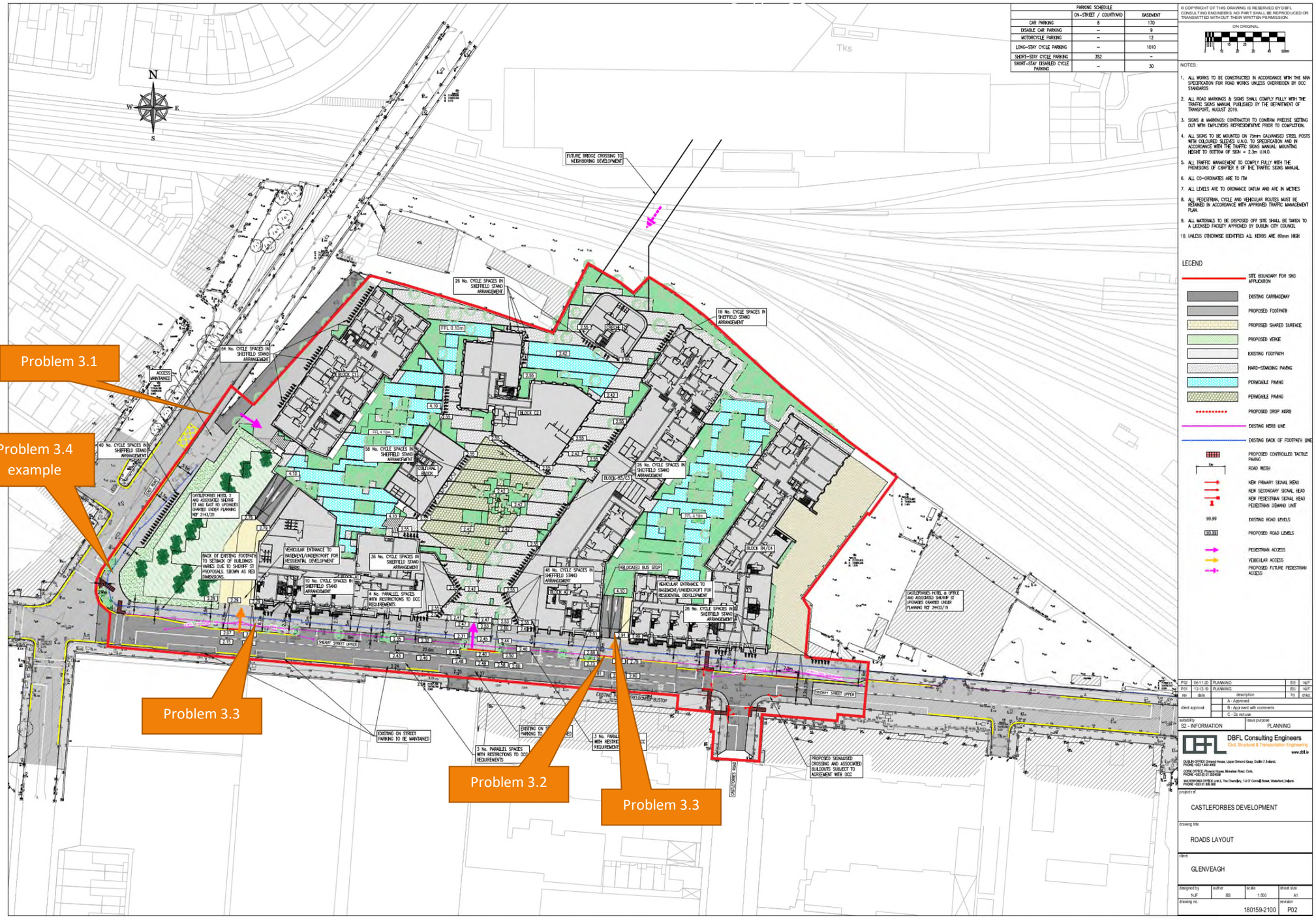
Design Team Leader

Signed.....  **Date**: 30/11/2020

Audit Team Leader

Appendix C

Problem Location Plan.


Problem 3.1
Problem 3.4 example
Problem 3.3
Problem 3.2
Problem 3.3
FUTURE BRIDGE CROSSING TO NEIGHBOURING DEVELOPMENT
PARKING SCHEDULE
ON-STREET / COURTYARD
BASEMENT
CAR PARKING 8 170
DISABLE CAR PARKING – 9
MOTORCYCLE PARKING – 12
LONG-STAY CYCLE PARKING – 1010
SHORT-STAY CYCLE PARKING 352 –
SHORT-STAY DISABLED CYCLE PARKING – 30
NOTES:
1. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NRA SPECIFICATION FOR ROAD WORKS UNLESS OVERRIDDEN BY DCC STANDARDS
2. ALL ROAD MARKINGS & SIGNS SHALL COMPLY FULLY WITH THE TRAFFIC SIGNS MANUAL PUBLISHED BY THE DEPARTMENT OF TRANSPORT, AUGUST 2019.
3. SIGNS & MARKINGS: CONTRACTOR TO CONFIRM PRECISE SETTING OUT WITH EMPLOYERS REPRESENTATIVE PRIOR TO COMPLETION.
4. ALL SIGNS TO BE MOUNTED ON 75mm GALVANISED STEEL POSTS WITH COLOURED SLEEVES U.N.O. TO SPECIFICATION AND IN ACCORDANCE WITH THE TRAFFIC SIGNS MANUAL. MOUNTING HEIGHT TO BOTTOM OF SIGN = 2.3m U.N.O.
5. ALL TRAFFIC MANAGEMENT TO COMPLY FULLY WITH THE PROVISIONS OF CHAPTER 8 OF THE TRAFFIC SIGNS MANUAL
6. ALL CO-ORDINATES ARE TO ITM
7. ALL LEVELS ARE TO ORDNANCE DATUM AND ARE IN METRES
8. ALL PEDESTRIAN, CYCLE AND VEHICULAR ROUTES MUST BE RETAINED IN ACCORDANCE WITH APPROVED TRAFFIC MANAGEMENT PLAN.
9. ALL MATERIALS TO BE DISPOSED OFF SITE SHALL BE TAKEN TO A LICENSED FACILITY APPROVED BY DUBLIN CITY COUNCIL
10. UNLESS OTHERWISE IDENTIFIED ALL KERBS ARE 80mm HIGH
LEGEND
SITE BOUNDARY FOR SHD APPLICATION
EXISTING CARRIAGEWAY
PROPOSED FOOTPATH
PROPOSED SHARED SURFACE
PROPOSED VERGE
EXISTING FOOTPATH
HARD-STANDING PAVING
PERMEABLE PAVING
PERMEABLE PAVING
PROPOSED DROP KERB
EXISTING KERB LINE
EXISTING BACK OF FOOTPATH LINE
PROPOSED CONTROLLED TACTILE PAVING
ROAD WIDTH
NEW PRIMARY SIGNAL HEAD
NEW SECONDARY SIGNAL HEAD
NEW PEDESTRIAN SIGNAL HEAD
PEDESTRIAN DEMAND UNIT
99.99 EXISTING ROAD LEVELS
99.99 PROPOSED ROAD LEVELS
PEDESTRIAN ACCESS
VEHICULAR ACCESS
PROPOSED FUTURE PEDESTRIAN ACCESS
P02 06.11.20 PLANNING BS NJF
P01 12.12.19 PLANNING BS NJF
A - Approved
B - Approved with comments
C - Do not use
S2 - INFORMATION
PLANNING
DBFL Consulting Engineers
Civil, Structural & Transportation Engineering
CASTLEFORBES DEVELOPMENT
ROADS LAYOUT
GLENVEAGH
180159-2100
P02