

Title: **QUALITY AUDIT (Stage 1)**

For;

**Proposed Strategic Housing Development At Carmanhall
Road, Sandyford Industrial Estate, Dublin 18.**

Client: **AECOM**

Date: **January 2021**

Report reference: **0951R01**

VERSION: **Interim (Site visit yet to be completed)**

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1.0 Introduction

This report was prepared in response to a request from Mr. Zachary Cave of AECOM for a Quality Audit of the proposed Strategic Housing Development at Carmanhall Road, Sandyford Industrial Estate Dublin 18.

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 is a Stage 1 audit includes a road safety audit (generally in accordance with TII Publication GE-DTY-01024), an access audit, a walking audit and a cycling 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 a site visit could not be undertaken at this time due to Covid-19 travel restrictions. A site visit will be undertaken during the detailed design stage- subject to lifting of restrictions.

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 build a strategic housing development consisting of 428 units on a brown field site in Sandyford Industrial Estate.

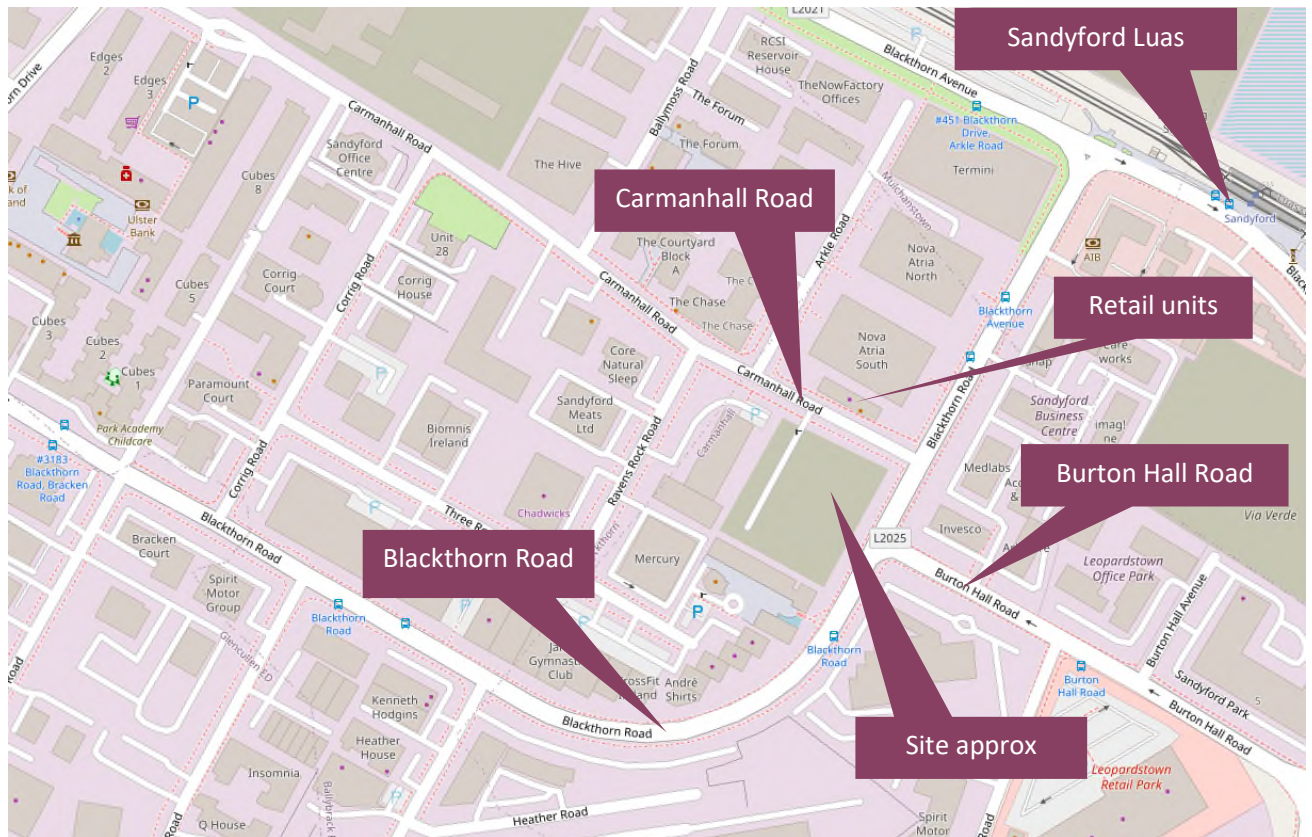
A vehicular access would be provided at the northern boundary of the site off Carmanhall Road. It is proposed to relocate a signalised pedestrian crossing of Carmanhall Road to the East of the access road.

Provision has been made for future cycling facilities along Blackthorn Road however the design has not been finalised and is subject to agreement with DLRCC.

It is proposed to provide 145 car parking spaces 774 cycle parking spaces.

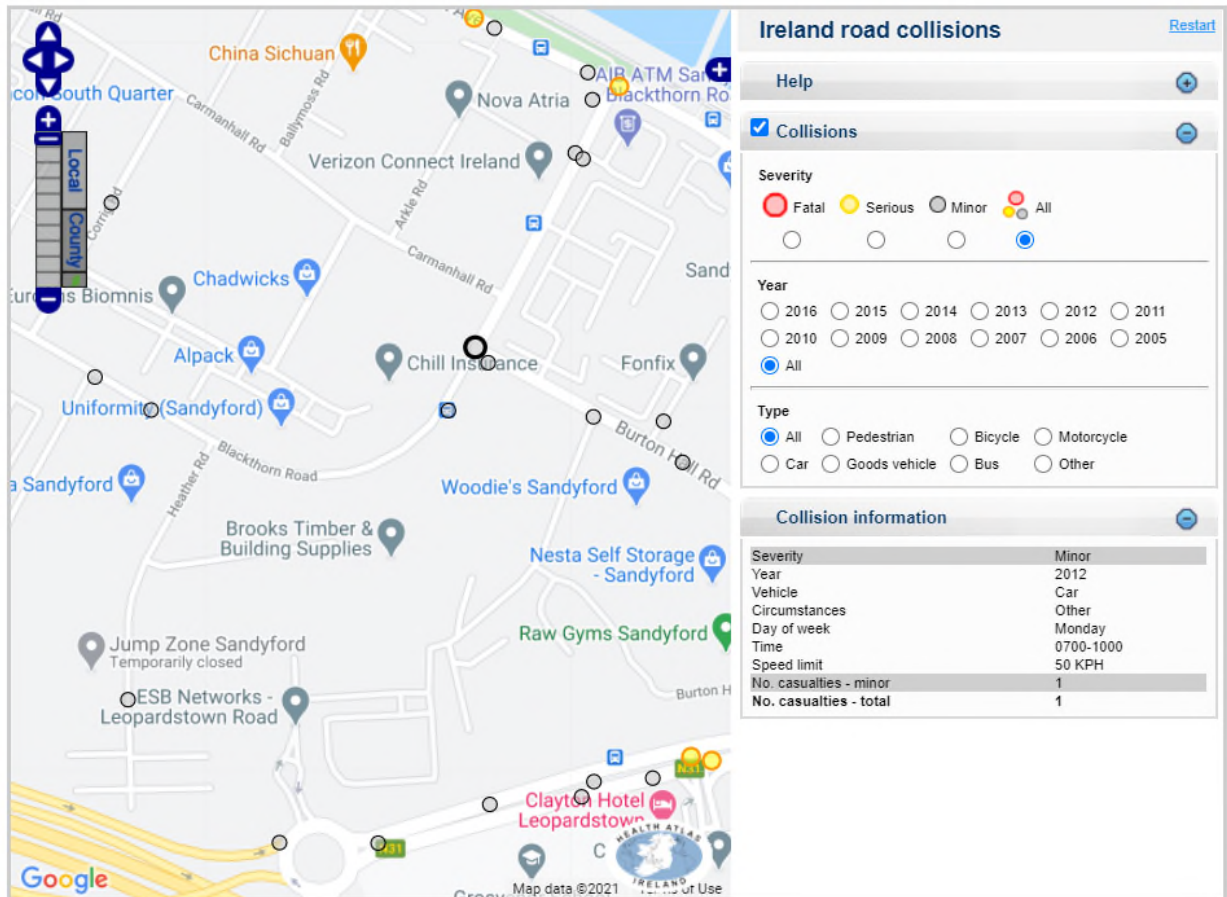
Blackthorn Road is a bus route.

The site location map is shown below.



Site Location Map (image courtesy of www.maps.openstreetmap.ie)

The Road Safety Authority’s website shown that in the 12-year period 2005 to 2016 that there were no recorded collisions on Carmanhall Road and there were two minor injury collisions at the junction of Blackthorn Road and Burton Hall Road.



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			✓		✓
3.10		✓			✓
3.11				✓	✓
3.12		✓		✓	✓
3.13		✓		✓	✓
3.14	✓			✓	✓

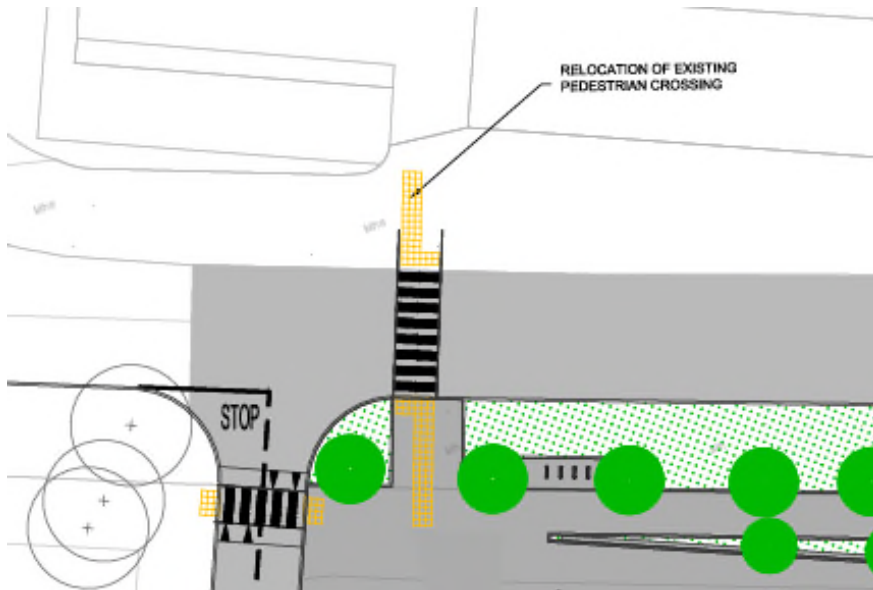
3.1 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

It is proposed to relocate the signalised pedestrian crossing on Carmanhall Road to the eastern side of the new vehicular access. The proposed location coincides with an emergency access route to the building on the opposite side of Carmanhall Road. The signal heads and location of other street furniture could block the route of emergency vehicles.



RECOMMENDATION

It is recommended that the crossing be located where it does not interfere with access for emergency vehicles.

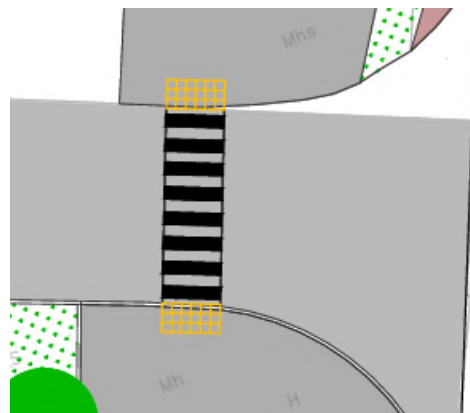
3.2 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

The uncontrolled pedestrian crossing shown on Carmanhall Road close to the Blackthorn Road junction is shown to have black and white stripes. This may lead to confusion between drivers and pedestrians. Pedestrians may think that they have priority as the striped markings resemble a controlled zebra crossing however there are no belisha beacons and drivers may assume that pedestrians will wait on the footpath until they pass. The confusion could lead to collisions.



RECOMMENDATION

It is recommended that the stripes be removed. Similarly the stripes on the access road to the car park should be removed.

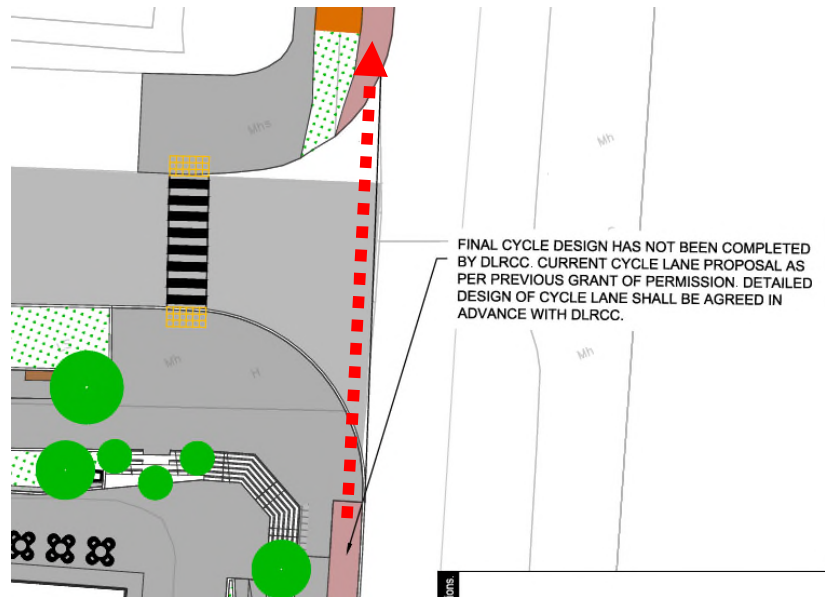
3.3 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

It is understood that the cycle design has not been completed at Blackthorn Road. There is a risk however of a discontinuity at the junction with Carmanhall Road if a cycle lane is not provided across the junction mouth. If a discontinuity occurs in the cycle lane then cyclists may opt not to use it and may stay on the carriageway where they would be at greater risk of being struck by a passing vehicle.



RECOMMENDATION

It is recommended that the finalised design of the cycle track does not include cyclists having to yield to traffic at the junction.

3.4 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

There is no facility for cyclists to turn right from the existing cycle track on Blackthorn Avenue into Carmanhall Road. Without an area for cyclists to wait and then get onto the carriageway to facilitate turning could result in cyclists preferring to stay on the carriageway rather than use the cycle facilities.



RECOMMENDATION

It is recommended that waiting facilities (jug turn or similar) and turning facilities (dropped kerbs) are provided for right turning cyclists.

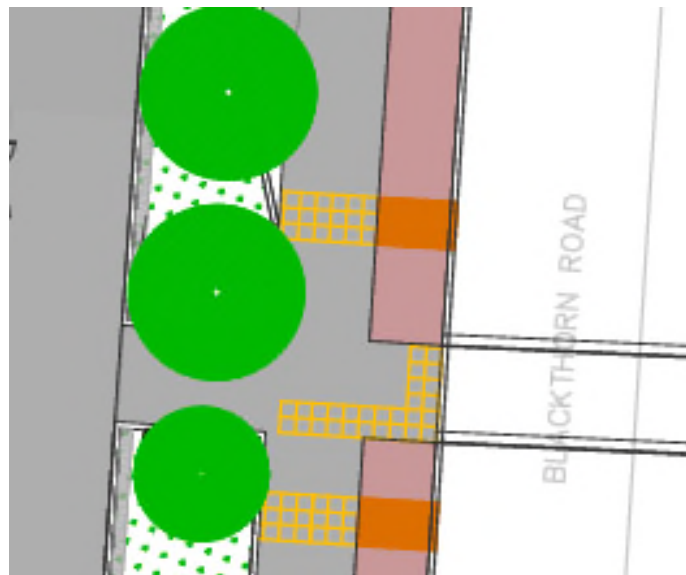
3.5 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

There is an existing signalised pedestrian crossing of Blackthorn Road on the northern side of the Burton Hall Road junction. Given the proposed cycle lane on Blackthorn Road and the anticipated increase in cycling generated by the proposed development there is a risk that the pedestrian crossing will be used by cyclists which may lead to collisions with pedestrians.



RECOMMENDATION

It is recommended that the pedestrian crossing be upgraded to a toucan crossing.

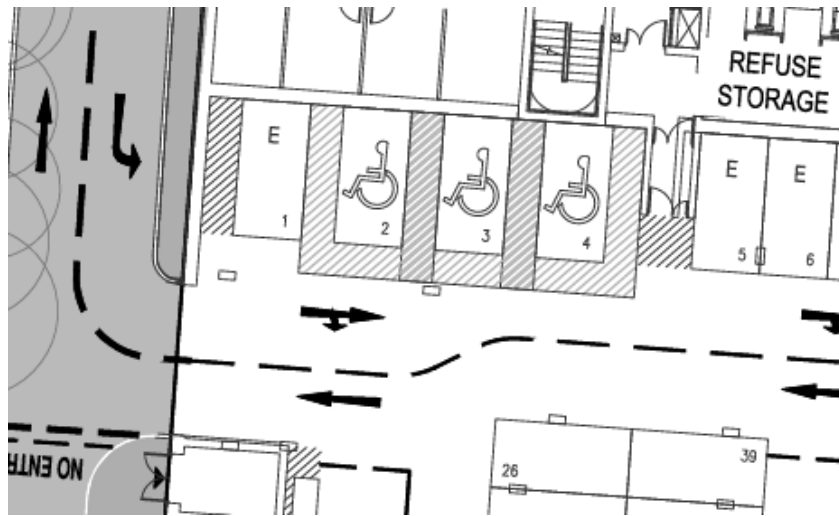
3.6 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

The buffer zone around disabled parking spaces 3, 4, 36, 49, 95 & 96 extend into the carriageway. If vehicles are travelling over this area then there will be no room for disabled users to occupy this space for accessing their vehicle.



RECOMMENDATION

It is recommended that the buffer zones do not overlap with the driving aisle as per the guidance provided in Part M of the Building Regulations.

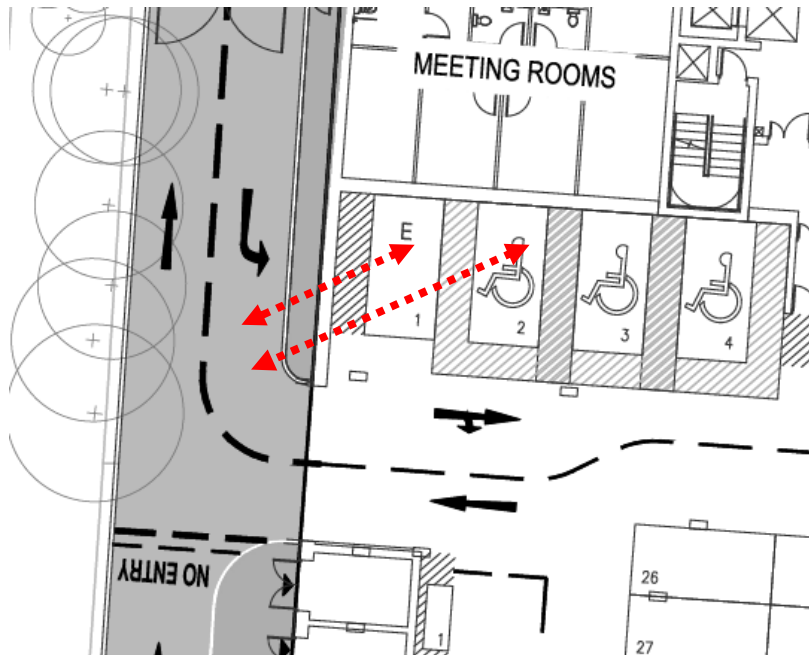
3.7 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C

PROBLEM

It is unclear if drivers exiting EV space no. 1 and disabled space no. 2 will have suitable visibility to vehicles entering the car park. Without suitable visibility there is a risk of rear-end collisions.



RECOMMENDATION

Ensure that there is sufficient visibility for drivers exiting these spaces.

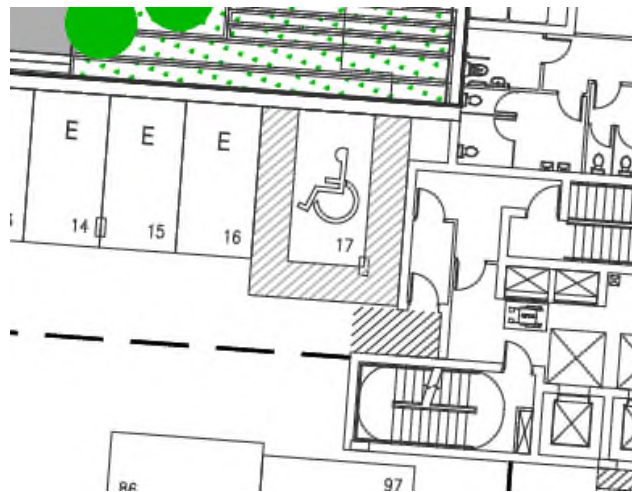
3.8 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

It is unclear if a driver using disabled parking space no. 17 would be able to exit from this space without colliding with the stair core.



RECOMMENDATION

It is recommended that disabled space no. 17 be relocated. The potential of limited neck movement of drivers should be taken into account when locating disabled parking bays.

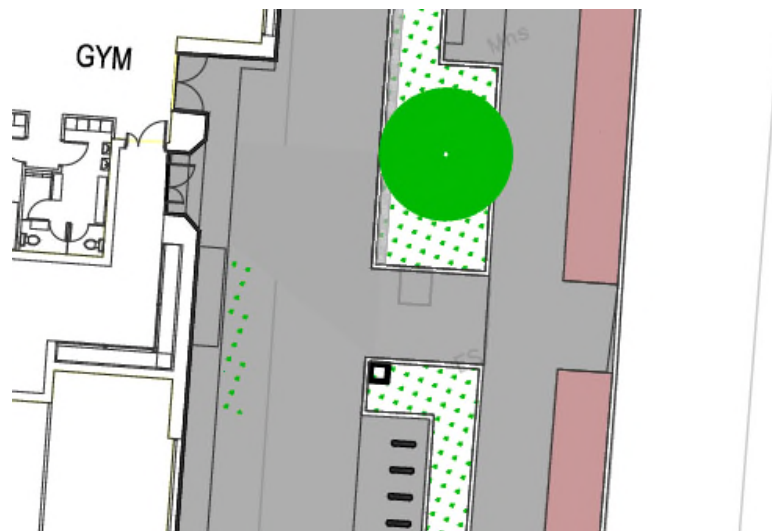
3.9 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

It is unclear why there is a proposed section of footway along the cycle track on Blackthorn Road. This could lead to collisions between cyclists and pedestrians and there is currently no pedestrian crossing of Blackthorn Road on the southern arm of the Burton Hall Road junction.



RECOMMENDATION

It is recommended that either the footpath be removed or that a signalised crossing be provided with a suitable shared space with ladder and tramline tactile paving being provided similar to the northern crossing.

3.10 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

There will be a pedestrian desire line from the access to the development beside the Gym to the bus stop on the opposite side of Blackthorn Road. There is no signalised crossing of Blackthorn Road along this desire line.



RECOMMENDATION

It is recommended that a signalised pedestrian/toucan crossing be incorporated into the traffic signals at the southern side of Blackthorn Road/Burton Hall Road junction.

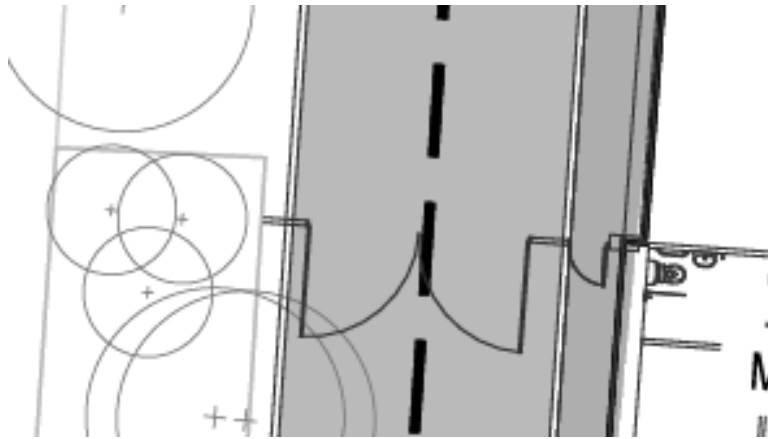
3.11 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

There is a risk that the posts for the gates at the entry to the car park could be scraped by passing vehicles as two vehicle try and ‘squeeze’ past at the local narrowing of the effective carriageway width.



RECOMMENDATION

It is recommended that the gate posts be kept outside the carriageway.

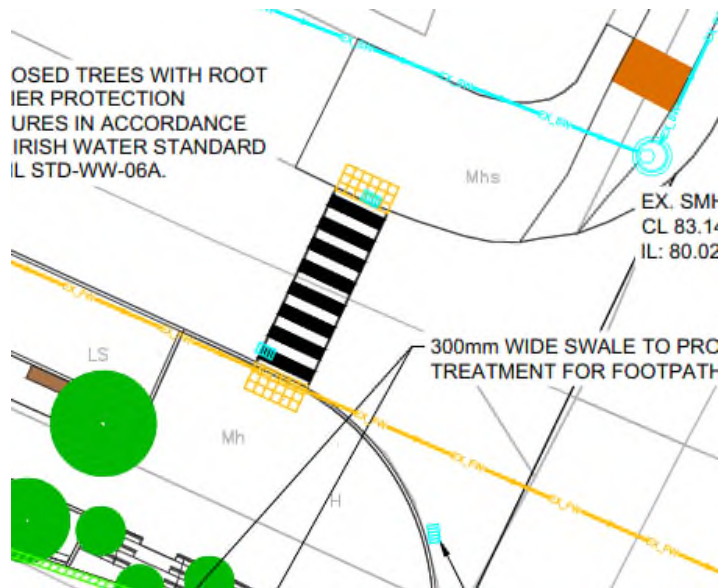
3.12 Problem

LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-0502 Rev C.

PROBLEM

There are existing road gullies shown at the uncontrolled pedestrian crossing of Carmanhall Road. This could lead to trips and falls for pedestrians especially for those with narrow heels.



RECOMMENDATION

It is recommended that the gullies be moved outside the crossing area.

3.13 Problem

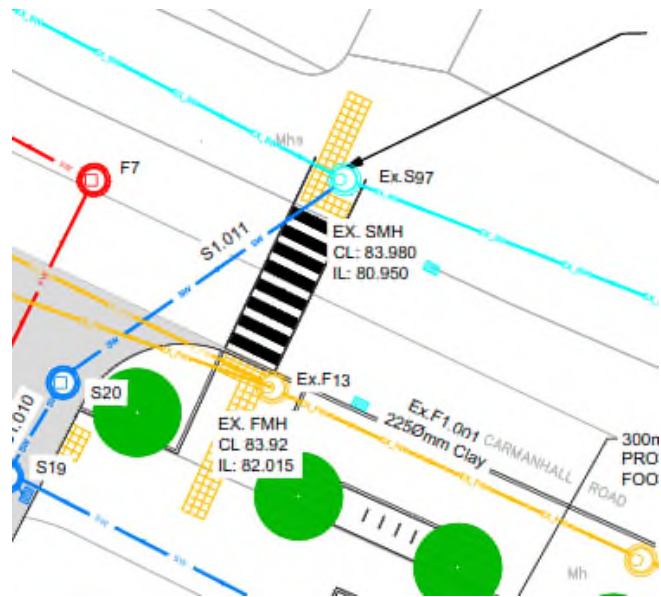
LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-0502 Rev C

PROBLEM

There is a risk that the provision of dropped kerbs at the proposed signalised pedestrian crossing on Carmanhall Road could lead to surface water ponding at the crossing which in turn could lead to slips and falls particularly in wet or icy conditions.

QUALITY AUDIT – SHD CARMAN HALL ROAD
AECOM



RECOMMENDATION

It is recommended that the gullies be provided upstream of the crossing area.

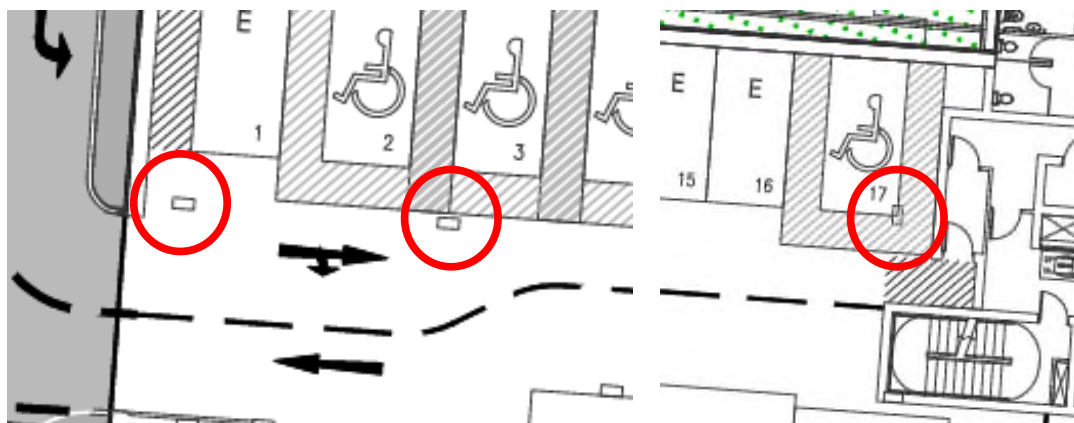
3.14 Problem

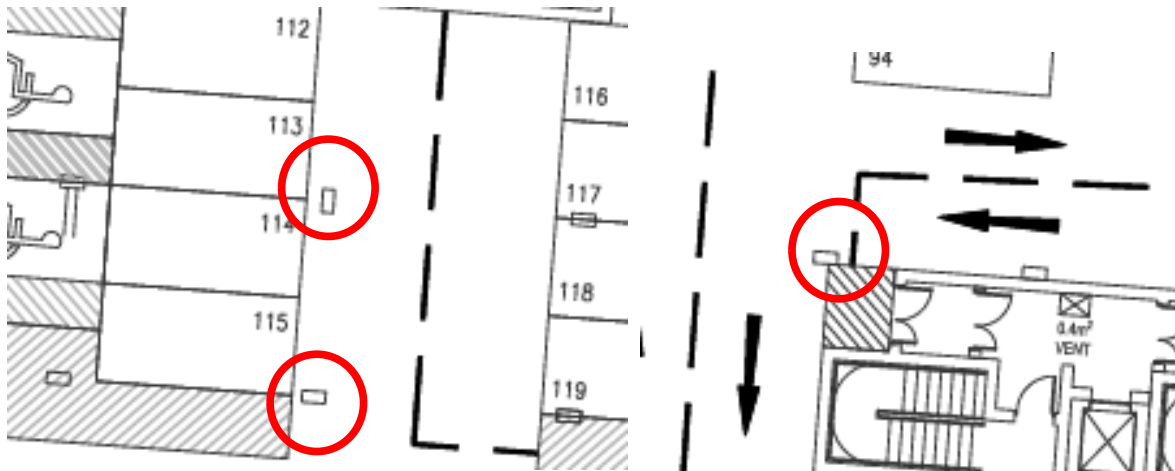
LOCATION

Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C.

PROBLEM

Some structural columns appear to be within the parking spaces and carriageway of the car park. These would be hazards for parking and driving on the aisles.





RECOMMENDATION

It is recommended columns are not within parking spaces and within the carriageway of the car park.

4.0 Observations

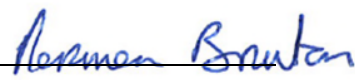
4.1 Observation

It is assumed that suitable height clearance has been provided at the car park to allow for refuse vehicle to enter and circulate.

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: 2/2/2021

Owen O'Reilly Signed: 
(Quality Audit Team Member) Dated: 2/2/2021

Appendix A

List of material Supplied for this Quality Audit;

- Drawing PR461030-ACM-XX-00-DR-CE-10-001 Rev C
- Drawing PR461030-ACM-XX-00-DR-CE-10-101 Rev C
- Drawing PR461030-ACM-XX-00-DR-CE-10-502 Rev C
- Drawing PR461030-ACM-XX-00-DR-CE-10-503 Rev A
- Drawing PR461030-ACM-XX-00-DR-CE-10-504 Rev A
- Drawing PR461030-ACM-XX-00-DR-CE-10-601 Rev B
- Drawing PR461030-ACM-XX-00-DR-CE-10-2701 Rev B

Draft Transport Assessment provided by way of background information.

Appendix B

Feedback Form

QUALITY AUDIT FORM – FEEDBACK ON QUALITY AUDIT REPORT

Scheme: SHD Carmanhall Road

Quality Audit- Stage 1

Date Audit (site visit) Completed TBC

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	Y	Y	The design team are currently engaging with Dun Laoghaire Rathdown Traffic and Parks Department to integrate the scheme proposals in with the proposed works to both Carmanhall Road and Blackthorn Road. During the detailed design stage, the issue raised will be taken into account and the necessary stakeholders consulted when preparing the final design.	Yes
3.2	Y	Y	The uncontrolled crossing adjacent to the Carmanhall Road / Blackthorn Road junction has had the line markings removed.	Yes
3.3	Y	Y	The design team are currently engaging with Dun Laoghaire Rathdown Traffic and Parks Department to integrate the scheme proposals in with the proposed works to both Carmanhall Road and Blackthorn Road. During the detailed design, the issue raised will be taken into account when preparing the final design.	Yes
3.4	Y	Y	The design team are currently engaging with Dun Laoghaire Rathdown Traffic and Parks Department to integrate the scheme proposals in with the proposed works to both Carmanhall Road and	Yes

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)
			Blackthorn Road. During the detailed design, the issue raised will be taken into account when preparing the final design.	
3.5	Y	Y	The design team are currently engaging with Dun Laoghaire Rathdown Traffic and Parks Department to integrate the scheme proposals in with the proposed works to both Carmanhall Road and Blackthorn Road. During the detailed design, the issue raised will be taken into account when preparing the final design.	Yes
3.6	Y	Y	The car park layout has been revised from 2 way to 1 way which ensures that adequate space is provided to ensure that vehicles will avoid the buffer areas	Yes
3.7	Y	Y	An ope is to be provided along the wall to the west of car parking space no. 1 to ensure that drivers can observe vehicles reversing from these spaces.	Yes
3.8	Y	Y	An autotracking assessment has been undertaken of these spaces and the scheme drawings have been updated accordingly	Yes
3.9	Y	Y	Cycle lane has been continued at this location	Yes
3.10	Y	Y	The design team are currently engaging with Dun Laoghaire Rathdown Traffic and Parks Department to integrate the scheme proposals in with the proposed works	Yes

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)
			to both Carmanhall Road and Blackthorn Road. It is acknowledged that a desire line does exist to this bus stop and this issue raised will be taken into account when preparing the final design.	
3.11	Y	Y	Gate posts have been set back at this location as specified.	Yes
3.12	Y	Y	The design team are currently engaging with Dun Laoghaire Rathdown Traffic and Parks Department to integrate the scheme proposals in with the proposed works to both Carmanhall Road and Blackthorn Road. The crossing has been moved to take account of the gullies at this location with the gully on the north side of Carmanhall Road to be relocated upstream of the crossing as requested.	Yes
3.13	Y	Y	The design team are currently engaging with Dun Laoghaire Rathdown Traffic and Parks Department to integrate the scheme proposals in with the proposed works to both Carmanhall Road and Blackthorn Road. During the detailed design, the issue raised will be taken into account when preparing the final design.	Yes
3.14	Y	Y	An autotracking assessment has been undertaken and these spaces have been checked to ensure that vehicles can enter and exit safely. Columns have been relocated and the car park has been altered to a one-way only	Yes

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)
			to reduce potential conflict with columns	

Signed *Zachary Cox*
Design Team Leader

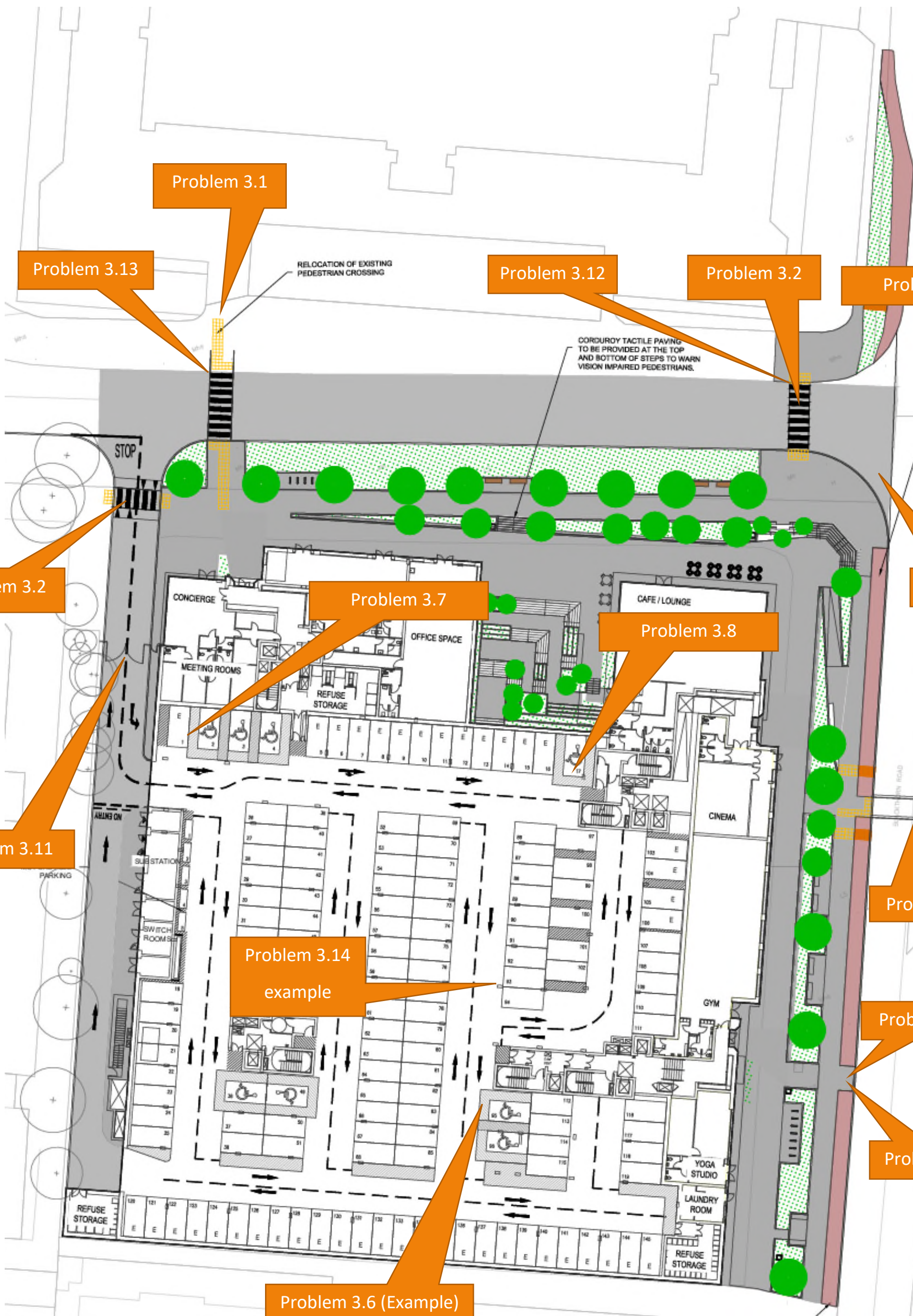
Date01/02/2021.....

Signed *Norman Boutan*
Audit Team Leader

Date: ...2/2/2021.....

Appendix C

Problem Location Plan.



Problem 3.1

Problem 3.13

Problem 3.12

Problem 3.2

Problem 3.4

Problem 3.2

Problem 3.7

Problem 3.8

Problem 3.3

Problem 3.11

Problem 3.14
example

Problem 3.5

Problem 3.9

Problem 3.6 (Example)

Problem 3.10

RELOCATION OF EXISTING PEDESTRIAN CROSSING

CORRIDOR TACTILE PAVING TO BE PROVIDED AT THE TOP AND BOTTOM OF STEPS TO WARN VISION IMPAIRED PEDESTRIANS.

CONCIERGE

MEETING ROOMS

OFFICE SPACE

REFUSE STORAGE

CAFE / LOUNGE

CINEMA

GYM

YOGA STUDIO

LAUNDRY ROOM

REFUSE STORAGE

REFUSE STORAGE

ARMS ON

SUBSTATION

SWITCH ROOMS

SECTORY ROAD

PARKING

STOP

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38

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