

Appendix F
Existing Structures
Study



Structural Assessment Audit Report

CBC 1: Clongriffin to City Centre

Client – National Transport Authority
Stage – Stage 2

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1. Introduction

AECOM in association with Mott MacDonald have been commissioned by the National Transport Authority (NTA) to carry out a Structural Assessment of structures across Core Bus Corridor (CBC) routes as per Section 3.18 in the 'Tender and Schedule' which states;

'The ED shall compile an inventory of all structures (buildings including boundary walls/fences, bridges, culverts, retaining walls, manholes, and any other relevant structures) on the route of the Scheme and those crossing the Scheme. The ED shall determine any structural design requirements for the Scheme and shall design all structures required for the Scheme in accordance with the relevant standards and in accordance with good industry practice.'

The ED shall inspect all relevant existing structures and, following such inspection, shall identify those structures requiring a structural assessment to ensure that they can safely accommodate a revised lane configuration. Due to the proximity of the Scheme improvements to residential and business properties this shall include requirements for a property structural condition survey. In respect of those identified structures, the ED shall carry out a structural assessment in accordance with good engineering practice and shall either confirm the adequacy of the structure to accommodate the Scheme or shall identify and design any remedial or replacement works necessary to meet the Scheme requirements.'

This Report is a desktop inventory of existing structures along the routes and looks at the likely impact of the proposed scheme on the structures within the proposed scheme extents or adjacent to the permanent or likely temporary works. This report does not capture the structural assessment of the individual structures affected by the proposed works, which will be captured separately when the design of the proposed works has sufficiently progressed.

2. Project Overview

The CBC commences at Clongriffin DART Station, and is routed via Clongriffin Main Street which will be extended to join the Malahide Road at a new junction to the north of Clare Hall Junction. The CBC is then routed via Malahide Road to the junction with Marino Mart/Fairview. From here the CBC ties into a separate project, Clontarf to City Centre Cycle Scheme currently proposed by Dublin City Council.

It is intended to route this scheme along Marino Mart, Fairview, Annesley Bridge Road, North Strand Road, and Amiens Street to the Custom House, where it will join the prevailing traffic management regime on the North Quays. Priority for buses is provided along the entire route, consisting primarily of dedicated bus lanes in both directions.

Priority for buses is provided along the entire route, consisting primarily of dedicated bus lanes in each direction, with alternative measures proposed at particularly constrained locations. Cycle facilities are provided along the length of the corridor where practicable to do so. Where this could not be achieved a parallel alternative cycle route is provided offline to the CBC route.

Opportunities for new soft landscaping and urban realm improvements will be reviewed with design development throughout the length of the CBC.

It should be noted the road networks on the scheme fall under the jurisdiction of Dublin City Council for regional road networks.

3. Methodology – Desktop Study

The initial stage was to use the topographical survey to identify the critical structural infrastructure along the routes. Structures identified in the topographical survey are highlighted and given a line type to denote their classification. Table 1 provides the lists of data that was to be sourced as part of the study from the topographical survey. Figure 1 is the key used to classify the structures identified.

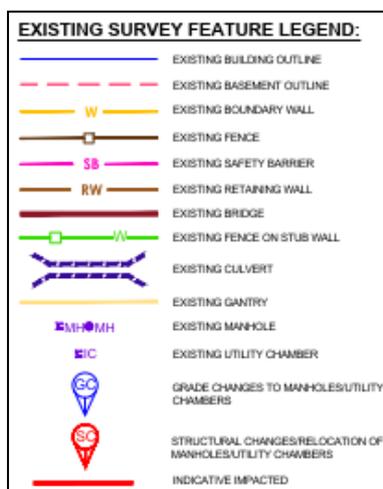


Figure 1 - Structural Assessment Drawing Key

Upon completion of this task a virtual walk through using Google Earth was used to verify the accuracy of the topographical survey & identify any errors, e.g. the mislabelling of structures or any missing structures.

Once an accurate record of the structures along the routes was established, an assessment of the impact of the proposed CBC could be made by overlaying the proposed scheme on top of the identified structures. This clearly showed the impact on above ground structures; however, reviewing structural records/ undertaking further investigations may be required to fully understand the impact of the scheme on the structure foundations. The impact on manholes and utility chambers has also been identified, assessing whether the impact is a:

- Grade change (a change in the existing level);
- Structural change (a change in the loading, e.g. pedestrian footway to bus lane); or
- Relocation of the manhole/inspection chamber.

Table 1 – Drawing Details

Drawing No.	Drawing Title
BCIDA-ACM-STR_SU-0001_XX_00-M2-SS-0001	Existing Structural Assessment Audit

Table 2 - Structure Classification

Element	Classification
Building Structures	<ul style="list-style-type: none"> • Property Boundaries • Basement Boundaries • Culverts & Headwalls

Walls/Fences	<ul style="list-style-type: none"> • Walls • Retaining Walls • Fences on Stub Walls • Fences
Safety Barriers	<ul style="list-style-type: none"> • Concrete and Steel Road Safety Barriers
Existing Bridges	<ul style="list-style-type: none"> • Bridge Deck Extents and Accompanying Retaining Structures
Gantry Structures	<ul style="list-style-type: none"> • Gantry Columns and Gantry Extents
Manholes	<ul style="list-style-type: none"> • Utility Chambers • Manholes

4. Existing Structures

4.1 Building Structures

4.1.1 Property Boundaries

The Clongriffin to City Centre route has limited impact on property boundaries.

Possible conflicts occur at locations;

- Map 3 Land required for bus bay
- Map 6 Land opposite the Hilton Hotel/Burnell Square required for widening road to accommodate additional bus lane.
- Map 6 Land opposite Clarehall required for widening road to accommodate additional cycle track
- Map 6 Land required for widening road to accommodate additional cycle track in the vicinity of the Hilton Hotel/Burnell Square
- Map 9 Land required to form a pedestrian and cycleway link between Malahide Road and Ayrefield Drive
- Map 10 Land required to improve pedestrian width at corner of Malahide Road and Greencastle Road
- Map 10 Land required for bus bay at Leisure Plex Coolock Car Park
- Map 14 Land required around 2 Mornington Park due to rearrangement of Road Layout
- Map 14 Portion of front garden including boundary wall and entrance required at Villa Maria, Mornington Park
- Map 14 Portion of Front Garden including Boundary wall and entrance required at Arva, Mornington Park
- Map 14 Portion of Front Garden including Boundary wall and entrance required at 44A Malahide Road
- Map 14 Portion of Front Garden including Boundary wall and entrance required at 44 Malahide Road
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- Map 15 Portion of Front Garden including Boundary wall and entrance required at Upmeads Mornington Park
- Map 15 Portion of Front Garden including Boundary wall and entrance required at Saint Gerard's Mornington Park
- Map 15 Portion of Front Garden including Boundary wall and entrance required at Iona Mornington Park

- Map 15 Portion of Front Garden including Boundary wall and entrance required at Maria Philomena Mornington Park
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- Map 15 Portion of Front Garden including Boundary wall and entrance required at 1 Upper Artane Cottages
- Map 15 Plot of ground outside retail unit & Goblet Bar & Lounge - Across from Artane Cottages
- Map 15 Plot of ground required for Footpath / Cycletrack opposite Lower Artane Cottages
- Map 16 Plot of ground required for Footpath / Cycletrack in Maypark (Donnycarney Park)
- Map 16 Portion of Front Garden including Boundary wall and entrance required at 1 Maypark
- Map 16 Portion of Front Garden including Boundary wall and entrance required at 2 Maypark
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- Map 17 Portion of Front Garden including Boundary wall and entrance required at 7 Maypark
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- Map 17 Portion of Front Garden including Boundary wall and entrance required at 238 Malahide Road
- Map 17 Portion of Front Garden including Boundary wall and entrance required at 236 Malahide Road
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- Map 18 Portion of Front Garden including Boundary wall and entrance required at 200 Malahide Road
- Map 18 Portion of Front Garden including Boundary wall and entrance required at 198 Malahide Road
- Map 18 Land required for bus bay at Nazareth House

- Map 18 Land required for bus bay at Clontarf Golf and Bowling Club
- Map 20 Portion of Front Garden including Boundary wall and entrance required at Apartments at , Winston Ville
- Map 20 Portion of Front Garden including Boundary wall and entrance required at 64 Malahide Road
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- Map 21 Portion of Front Garden including Boundary wall and entrance required at 1 Malahide Road
- Map 21 Portion of Front Garden including Boundary wall and entrance required at 1B Malahide Road

4.1.2 Basement Boundaries

No Basement boundaries along the route have been identified.

4.1.3 Culverts

The Wad river culvert traverses Malahide Road (Sheet 17). The potential impacts on the culverts running under the scheme need to be verified when the design has been further progressed though at this stage the only impact envisioned being resurfacing of existing 4.2 Walls & Fences

4.2.1 Boundary Wall and Fences

A review of the topographical survey and google earth have identified many types of boundary structures, notably boundary walls, fences, acoustic fences and fences on stub walls. The assessment has identified if the structure will need to be removed or replaced to accommodate the proposed works. The below list includes the number of walls and fences likely required to be removed and replaced.

- Map 3 Land required for bus bay, fence to be removed and replaced
- Map 6 Land opposite the Hilton Hotel/Burnell Square required for widening road to accommodate additional bus lane, fence to be removed and replaced

- Map 6 Land opposite Clarehall required for widening road to accommodate additional cycle track, fence to be removed and replaced
- Map 6 Land required for widening road to accommodate additional cycle track in the vicinity of the Hilton Hotel/Burnell Square, kerbs and footpath to be realigned
- Map 9 Land required to form a pedestrian and cycleway link between Malahide Road and Ayrefield Drive, wall to be removed
- Map 10 Land required to improve pedestrian width at corner of Malahide Road and Greencastle Road, wall to be removed and replaced
- Map 10 Land required for bus bay at Leisure Plex Coolock Car Park, wall to be removed and replaced
- Map 14 Land required around 2 Mornington Park due to rearrangement of Road Layout, kerbs and footpath to be realigned
- Map 14 front boundary wall/fence and entrance required to be set back at Villa Maria, Mornington Park, boundary wall/fence to be removed and replaced
- Map 14 front boundary wall and entrance required to be set back at Arva, Mornington Park
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- Map 21 Front Boundary wall/Fence and entrance required to be set back at 1B Malahide Road

4.2.2 Retaining Walls

No existing retaining walls have been identified impacted by the proposed works.

4.3 Safety Barriers

Safety barriers across the scheme include both single and double-sided steel safety barriers. These safety barriers are located at pedestrian crossings, at junctions, and the carriageway edge with appropriate setbacks. Where required to widen or reconfigure the current roadway assignment the safety barrier requirement will have to be revisited to assess the requirements of the proposed configuration.

4.4 Existing Bridges

Only one existing bridge is found on the Congriffin to City Centre CBC. This bridge will be impacted by the proposed changes along the route.

- Sheet 10 and Sheet 11 Bridge crossing the Santry River.

It is proposed to maintain the cross section of this bridge with the only impact being resurfacing of existing pavement

4.6 Manholes

Manholes and utility chambers are located throughout the scheme. The impact on the manholes and utility chambers has been identified, assessing whether the impact is:

- Grade change (a change in the existing level); or
- Structural change (a change in the loading, e.g. pedestrian footway to bus lane); or
- Required relocation of the manhole/inspection chamber.



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