

The background is a vibrant red color. It is decorated with several abstract geometric shapes and circles. In the top left, there is a green quarter-circle and a blue circle. In the top right, there is a blue circle with a white center and a dark blue horizontal bar. In the bottom left, there is a blue circle with a white center and a larger blue shape with a white circle inside. In the bottom right, there is a large green quarter-circle and a red shape with a white border. The text is centered on the left side of the page.

**Appendix F Existing
Structures Impact
Assessment Report**

RINGSEND TO CITY CENTRE CORE BUS CORRIDOR SCHEME

STRUCTURAL SURVEY REPORT

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1 INTRODUCTION

1.1 Objective

The aim of this report is to identify, classify and know the bridges and other structures involved in the works associated to the BusConnects project, a National Transport Authority's (NTA) programme. The purpose of this programme, which is part of the Project Ireland 2040, is to solve existing mobility issues in Dublin providing additional bus lanes and reinforcing the cycle route network.

At this time, the report and analysis of the existing structures is mainly based on the information collected during a field visit, in which the layout of the corridors has been traversed and that has allowed an inventory of the bridges affected in greater or smaller way for the project.

In this report, the corridor Ringsend to City Centre Core Bus Corridor will be studied.

1.2 Project location

The Ringsend to City Centre Core Bus Corridor Study Area runs from the Matt Talbot Bridge to Sean Moore Road in an east – west direction, and from the River Liffey to Grand Canal Street in a north-south direction. The route includes two sections: Matt Talbot bridge to Tom Clarke East Link bridge and Tom Clarke East Link Bridge to Seán Moore Road. the Ringsend to City Centre Core Bus Corridor is approximately 1.6 km long from end to end. The entire study area lies within the administrative area of Dublin City Council.

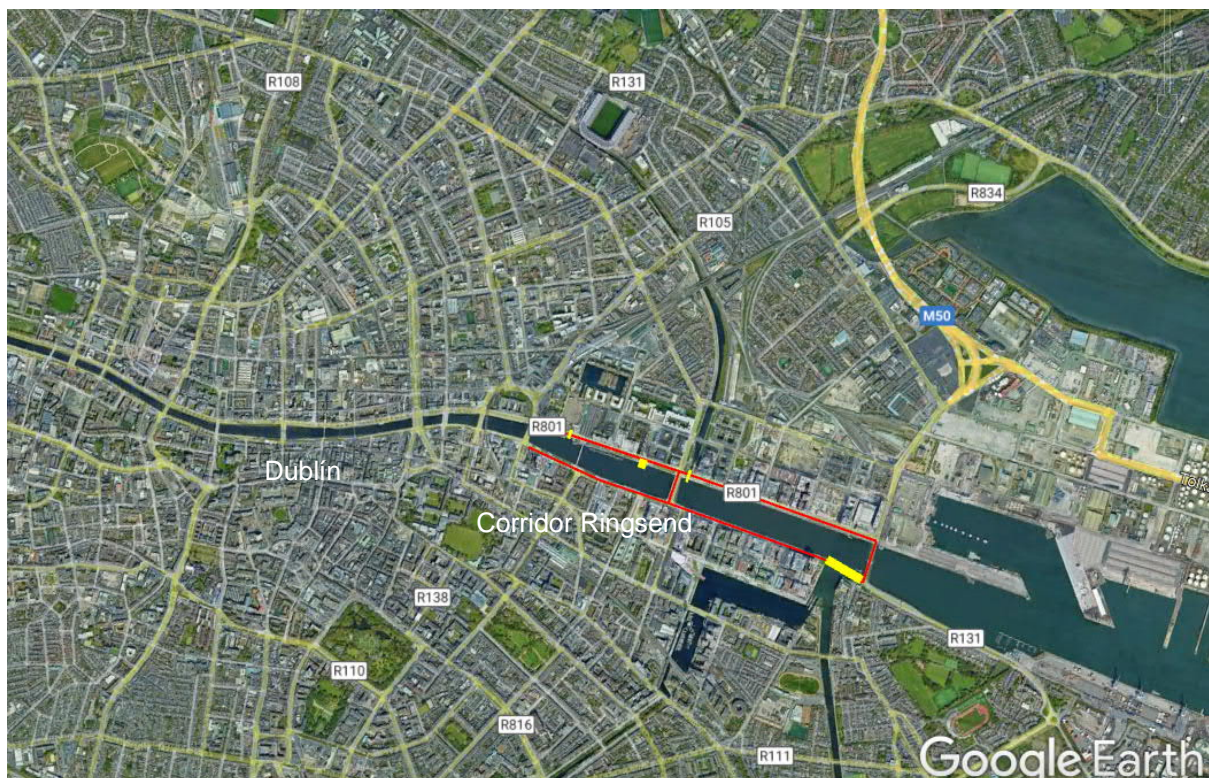


Figure 1: View of Ringsend Corridor

2 METHODOLOGY

The methodology followed in this report is mainly based on data collection and information in the field visit. The information collected is checked against and then complemented with the information available to be able to classify the structures as accurately as possible.

The expected or intended works to be carried out in the existing structures is not the scope of this report. Nevertheless, it is discussed briefly in Section 3 with the current information available at the time this report is written.

2.1 Available information

The existing information used to prepare this Structural Survey is as follows:

2.1.1 Topography information

A topographic survey has been carried out of the Ballymun & Finglas Corridors as part of the project scope. The survey was used to obtain information and overall dimensions of the bridges and structures.

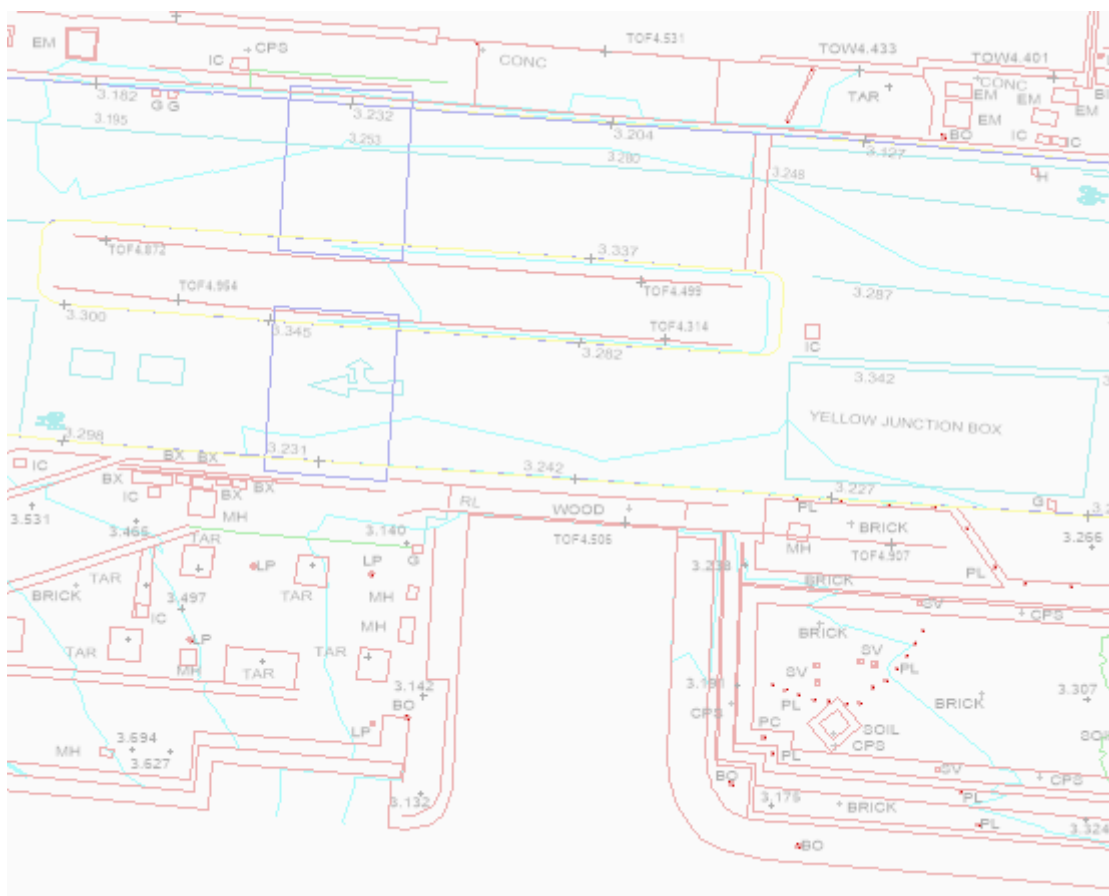


Figure 2: Detail of the topography information in the area of Spencer Dock Draw bridge and Royal Canal Footbridge

2.1.2 Web of the National Inventory of Architectural Heritage

There is a national organization that collects information of buildings and unique and old structures that deserve to be protected. According to the description of his work that is collected on the web (<http://webgis.buildingsofireland.ie/HistoricEnvironment/>):


“The National Inventory of Architectural Heritage (NIAH) is a state initiative under the administration of the Department of Culture, Heritage and the Gaeltacht and established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999.

The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for Culture, Heritage and the Gaeltacht to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS).

The published surveys are a source of information on the selected structures for relevant planning authorities. They are also a research and educational resource. It is hoped that the work of the NIAH will increase public awareness and appreciation of Ireland’s architectural heritage.”

Q

Cross Guns Bridge, Cabragh (ba. W By.), Dublin City



View on map

Survey Data

Reg No	50060185
Date	1860 - 1865
Townland	CABRAGH (BA. W BY.)
County	Dublin City
Coordinates	315097, 236272
Previous Name	Westmoreland Bridge

Description

Single-span canal bridge, likely rebuild of c.1864 at same time as construction of railway bridge to north, carrying Phibsborough Road over Royal Canal. Older canal bridge apparently removed. Ashlar limestone abutments and terminating piers, latter with dressed limestone caps supporting cast-iron lamp standards with acanthus-leaf ornament to bases. Drainage spouts to outer faces of piers. Rubble limestone wing walls. Cast-iron parapets with rounded tops, round-ended vertical perforations and curving buttress-like elements to outer sides. West side of bridge has pipe attached. Canal lock to same side.

Figure 3: Example of the register of the structures in the web

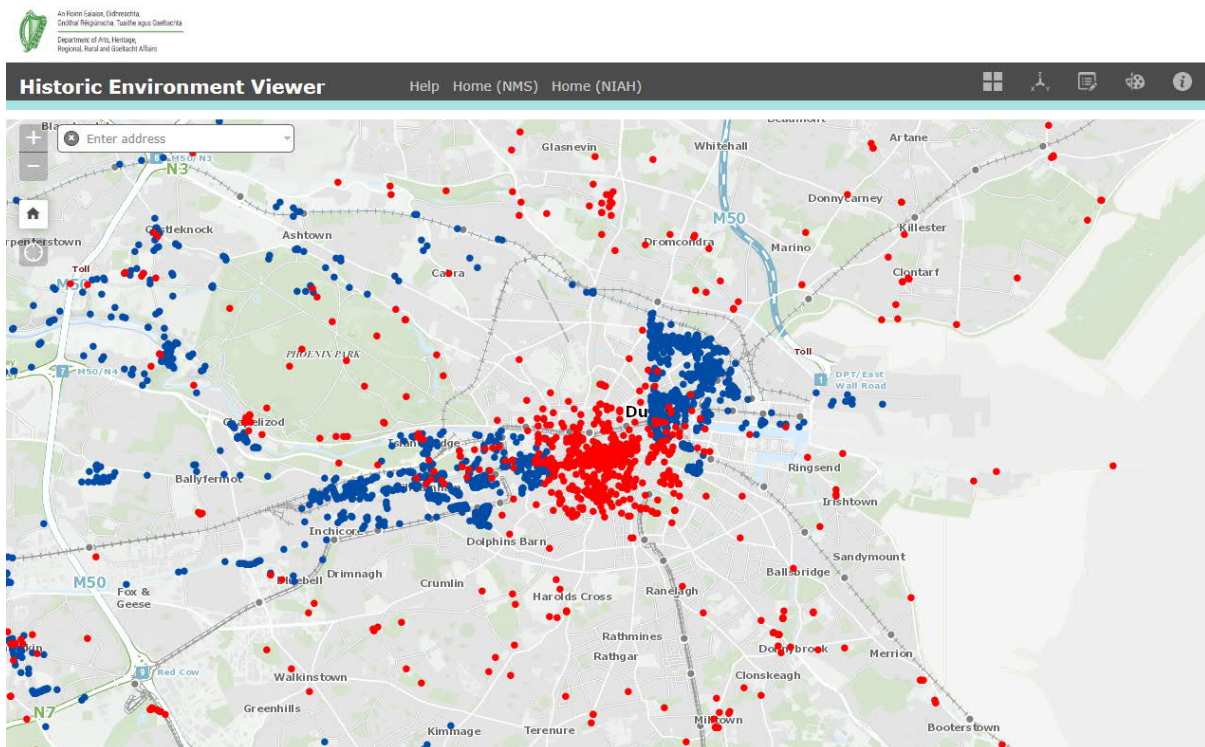


Figure 4: Database with buildings, bridges and other architectural elements in Dublin

2.1.3 Field visit

A field visit to the bridges was carried out by the structures specialist to know better the condition and typologies of the bridges within these corridors. The information collected during the visit can be seen in more detail in the Bridge Data Sheets, included in Appendix A.

During the visit, a visual inspection of the structures was carried out, analysing the typology of the superstructure and of the substructure, the surrounding infrastructure, specific site details, etc. It was also observed if there was any type of pathology or any functional problem in the bridges, and condition of supports and expansion joints, if applicable depending on the structural type. The presence of barriers was identified and recorded its type.

Representative measurements of the bridges were taken in order to study potential widening or the need of new structures instead in the area.

The existing structures surrounding and its environs were also inspected to record its condition and to determine the physical space available just in case there was needed to build new bridges to replace existing ones or to increase the road platform by new structures adjacent to the existing.

Broadly speaking, the modern bridges have sufficient space and clearances to incorporate the proposed road layout with extra lanes in the scheme. Some of the older bridges cannot accommodate the proposed road layout, therefore it is proposed widening them or building new structures adjacent to them. In those bridges where there is no work expected, the site visit and data collection has been done in a more cursory way, because in the absence of any structural work it would not be necessary to take more detailed information.



Figure 5: George's Dock Swing bridge – Expansion joint



Figure 6: Cross beam spacing for the existing cantilever balcony over the River Liffey



Figure 7: Expansion joint detail in the Scherzer bridges

2.2 Required information

This document details the current information available to aid the design in the subsequent stages of the project and to find the best possible solution at constrained points such as existing bridges and structures.

The relevant information required in subsequent design stages are, not exhaustive list, as follows:

- As-built of existing bridges (Drawings and reports)
- Year of construction and maintenance or refurbishment works carried out in the bridges (widening, reinforcements, replacements)
- Rehabilitation projects (if any) of the bridges
- Bridge structural inspection reports (Principal & General Inspections)

Geotechnical information is also critical to undertake the design of new structures and bridge widenings, to design the foundations adequately.

3 STRUCTURAL SURVEY

In the Kimmage corridor, the bridges have been classified into two different types: bridges and footbridges which are relatively new and for which no action is expected; and older bridges, which need to be widened or required the construction of a new bridge adjacent to them.

Some of the older bridges may be considered 'listed' or protected bridge due to their special and historic character. Thus, in those that have this kind of protection, the structural works expected might be limited.

Based on the field visits, the overall condition of all bridges inspected are good, with good conservation condition and without obvious structural pathologies that may represent a H&S risk, from the visual inspection. No intrusive tests were undertaken.

3.1 List of structures

The list of existing structures to be studied is shown below. For more details, refer to Annex A for the complete site information of the bridges.

ID	Name	Inventory Code*	Typology	Obstacle	Station	Expected structural Works?
CBC16-01	East Link Bridge	-	Precast beams bridge/Steel bascule bridge	Liffey River		NO
CBC16-03	Spencer Dock Draw Bridge	-	Steel rolling Scherzer bridge	Royal Canal / Liffey River		YES
CBC16-04	Royal Canal Footbridge	-	Stainless steel beams	Liffey River		NO
CBC16-05	Samuel Becket Bridge	-	Cable-Stayed bridge	Liffey River		NO
CBC16-07	George's Dock Swing Bridge	-	Steel rolling Scherzer bridge	George's Dock Canal		YES

* Inventory Code taken from the plates disposed in the bridges (where available)

Table 1: List of structures Ringsend

East Link Bridge is outside the scope of this report, therefore it was not included in the Bridge Data Sheets in Appendix A. This bridge is at the end of the corridor, and it is not envisaged any work on it.

CBC16-02, Dodder Bridge, will be a new bridge that forms part of this corridor. However, it is not built yet. Thus, it is outside the scope of this report.

CBC16-06, The Royal Canal Footbridge, is already built. It was under construction at the time the site surveys were undertaken. Therefore, some data and information about it is included in the sheet in the Appendix A for information only, as it could be outdated.

The Samuel Becket Bridge is a singular cable-stayed bridge, which can rotate over its pylon. The corridor passes over it, but no structural actions are envisaged on it.

3.2 Expected Structural Works

Therefore, at the moment this report is written, it is envisaged structural works on the following structures:

- Scherzer bridges - Spencer Dock Draw Bridge.
- Scherzer bridges - George's Dock Swing Bridge.

Both existing bridges are narrow for the proposed road layout and the barriers proposed in the BusConnects do not fit into the section. At the moment, different alternatives are under study for these bridges.

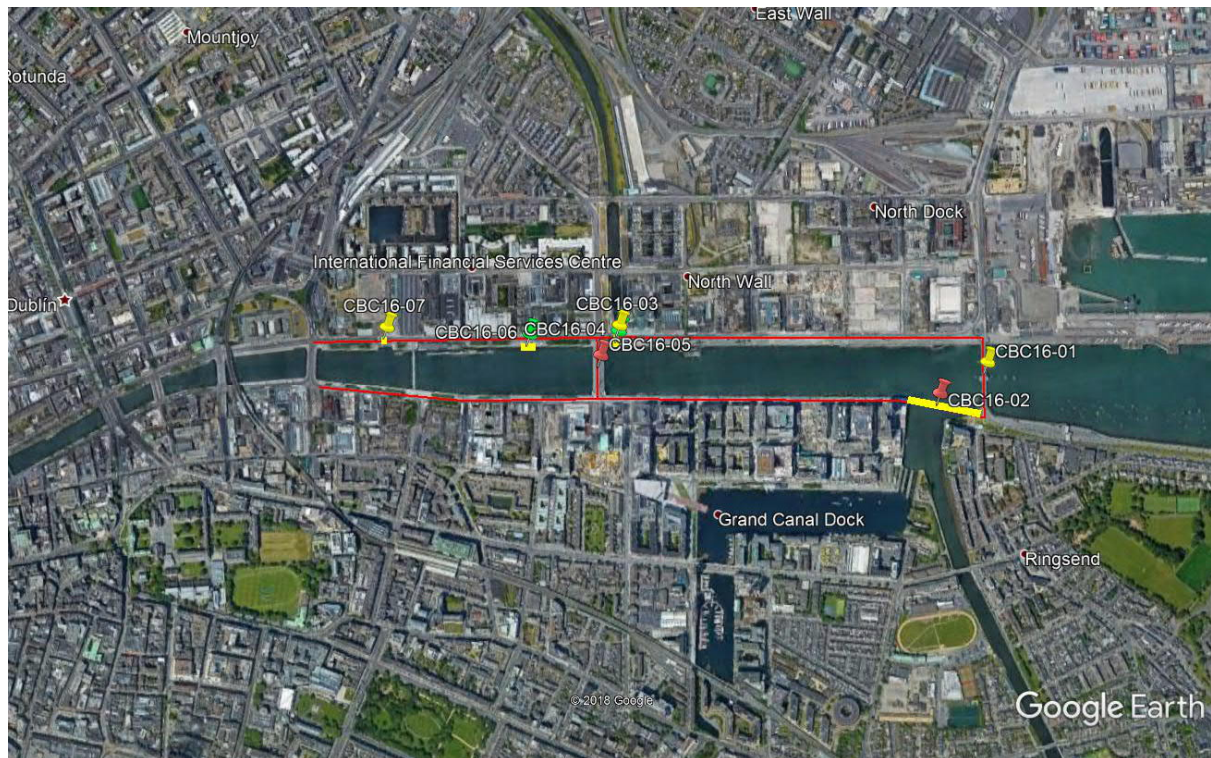


Figure 8: Location of the structures in Kimmage corridor

APPENDIX A – BRIDGE DATA SHEETS

STRUCTURAL SURVEY - BUSCONNECTS CORE BUS CORRIDOR - DUBLIN

Scheme = CBC16-Ringsend to City Centre
Structure ID = CBC16-03
Name = Spencer Dock Draw Bridge



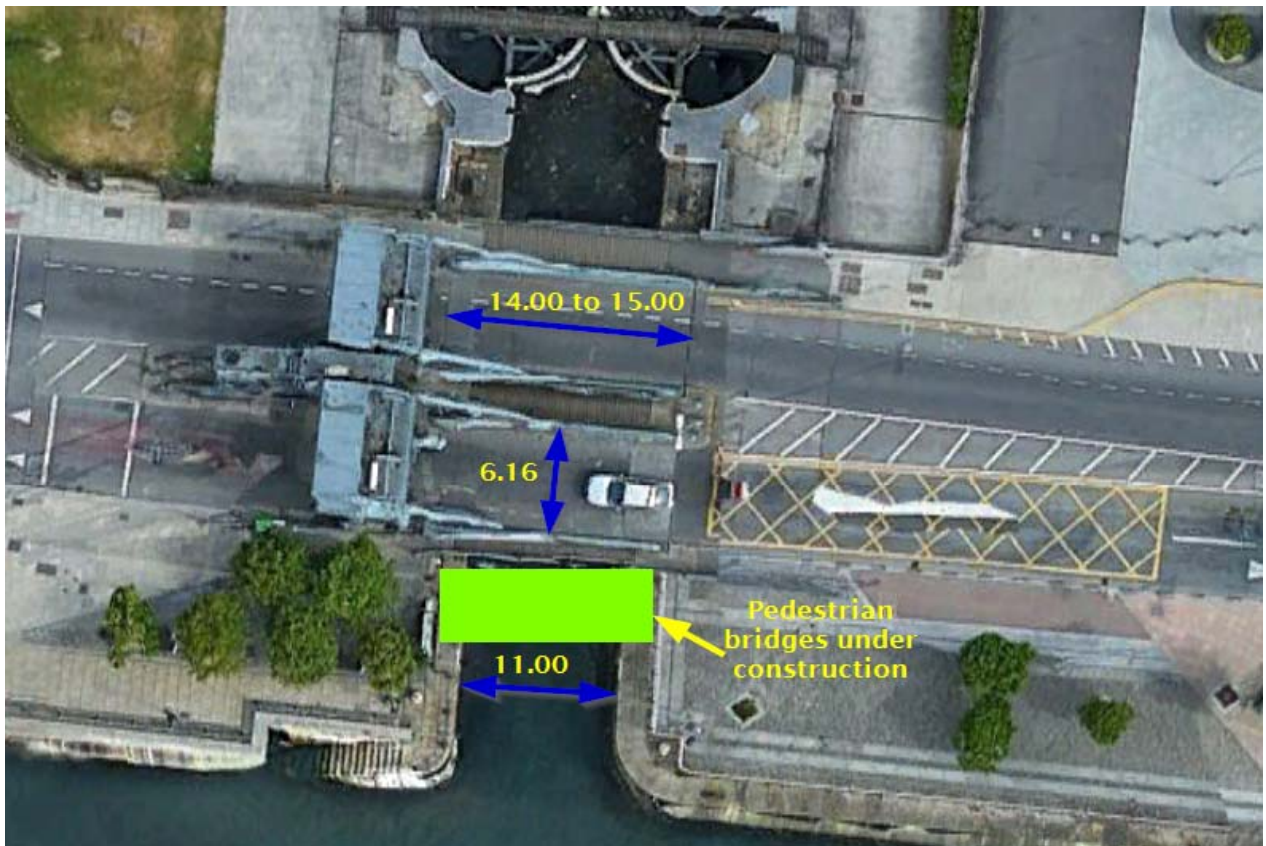
Station = 0.74
Coordinates (DD) = 53.3476058725323,-6.24071090808462
Typology = Steel rolling Scherzer bridge
Total Length [m] = 12.40
Clear length [m] = 7.50
Width [m] = 6.16
Depth [m] = Steel girders 0.95m over the surface

Structure Description

Pair of wrought-iron Scherzer rolling lift bascule bridges, erected c.1935, modelled on bridges of 1911-12 on North Wall Quay, and carrying east and west carriageways over Royal Canal as it meets Liffey. Constructed of riveted wrought-iron with box-like structures crossing carriageways rising from curved sections with corresponding tread plates to carriageway. Each bridge is supported on iron supports flanking carriageway. Curved sections extend eastwards as riveted iron parapets crossing canal, braced at forty-five degree angle to elevated box sections. Timber pedestrian decks cantilevered from iron parapets, concrete paved to north and timber boarded to south and central passage, enclosed by iron railings and arched structure to centre. Four riveted wrought-iron gates on dome-capped iron posts, formerly enclosing each carriageway to either end. Dock to north replaced by modern steel dock gates c.2010 with original granite retaining walls and granite ashlar coping to south end having shaped granite bollards and flight of granite steps to west. Rubble stone walls enclosing dock to north side with tooled semi-circular coping and rock-faced granite ashlar piers, curved to junction with Guild Street. Counterweights not visible below deck.

Sketch

Plan view



Photos

Location



Elevation



Elevation



Expansion joints



Expansion joint



Pedestrian under construction



Bridges and pedestrians under construction



STRUCTURAL SURVEY - BUSCONNECTS CORE BUS CORRIDOR - DUBLIN

Scheme = CBC16-Ringsend to City Centre
Structure ID = CBC16-04
Name = Royal Canal Footbridge



Station = 0.74
Coordinates (DD) = 53.3476825006259,-6.2421796424137
Typology = Stainless steel beams
Total Length [m] = 12.30
Clear length [m] = 7.50
Width [m] = 4.00
Depth [m] = 0.40

Structure Description

Under construction pedestrian bridge, close to the existing Schezer bridge. The pedestrian bridge is built in stainless steel. Total length 12.30m. Clear length 7.50m

Photos

Access



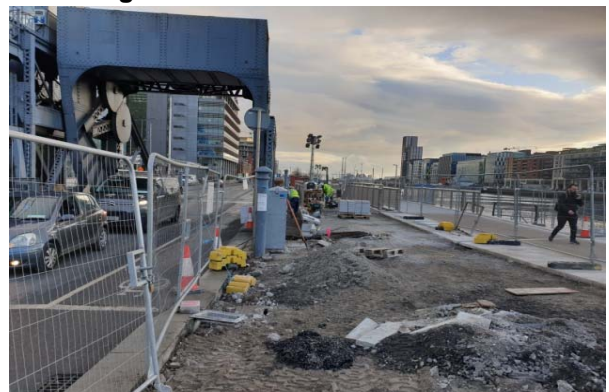
Finished pedestrian and unde construction



Section



Working



STRUCTURAL SURVEY - BUSCONNECTS CORE BUS CORRIDOR - DUBLIN

Scheme = **CBC16-Ringsend to City Centre**
Structure ID = **CBC16-05**
Name = **Samuel Becket Bridge**



Station = 0.69
Coordinates (DD) = 53.3476825006259,-6.2421796424137
Typology = Cable-Stayed bridge
Total Length [m] = 124.00
Span lengths [m] = 124.00
Width [m] = 27.00
Depth [m] =

Structure Description

Cable-stayed bridge over the River Liffey. Opened in 2009. The deck has 4 vehicular traffic lanes, 2 wide bicycle tracks and 2 pedestrian lanes.

The bridge deck is built in steel and can rotate over the pylon to allow marine traffic to pass under it.

Photos

General view



Sidewalk and bicycle lane



Railing



Expansion Joint



STRUCTURAL SURVEY - BUSCONNECTS CORE BUS CORRIDOR - DUBLIN

Scheme = CBC16-Ringsend to City Centre
Structure ID = CBC16-07
Name = George's Dock Swing Bridge



Station = 0.20
Coordinates (DD) = 53.3481643795513,-6.24824531812641
Typology = Steel rolling Scherzer bridge
Total Length [m] = 14.00 to 15.00
Clear length [m] = 11.00
Width [m] = 7.15
Depth [m] = Steel girders 1.75m

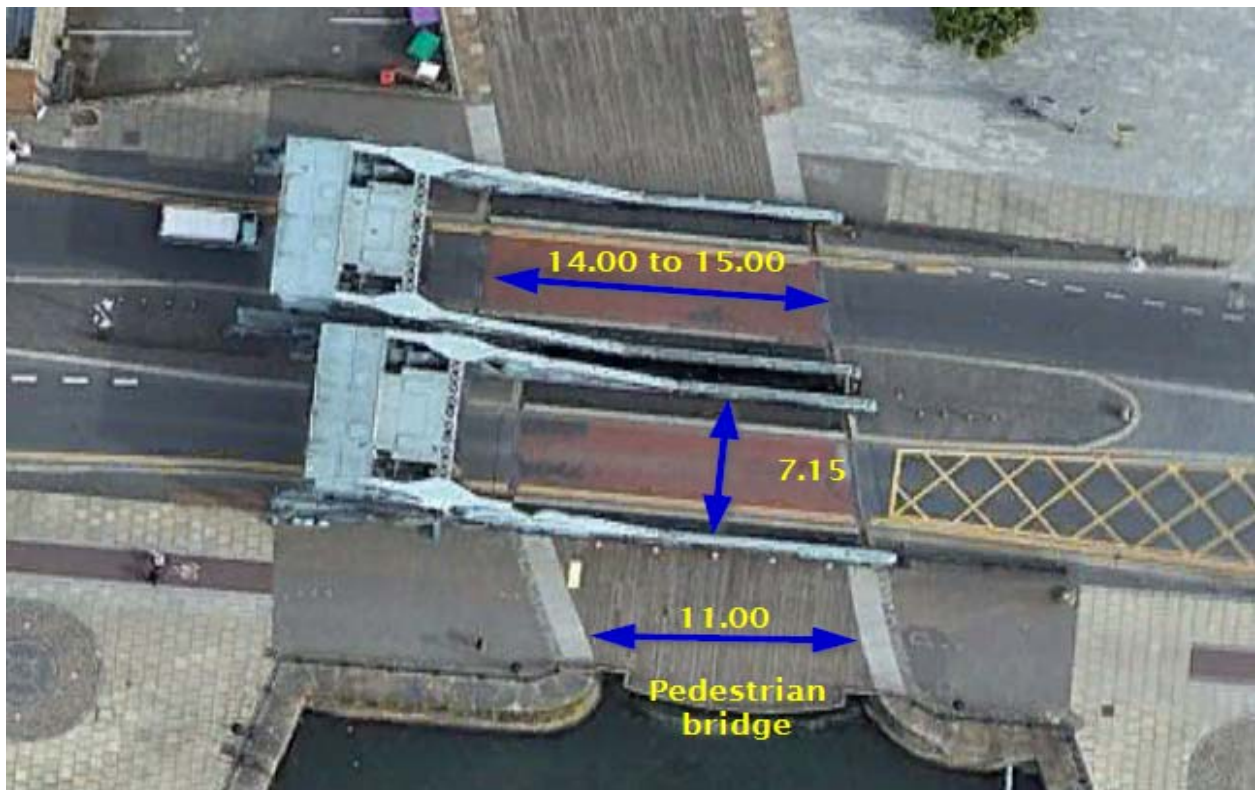
Structure Description

Pair of wrought-iron Scherzer rolling lift bascule bridges, erected 1911-12, carrying east and west carriageways of street over channel connecting George's Dock to Liffey. Constructed of riveted wrought-iron with box-like structures crossing carriageways rising from curved sections with corresponding tread plates to carriageway. Each bridge is supported on iron supports flanking carriageway. Curved sections extend eastwards as riveted iron parapets braced at forty-five degree angle to elevated box sections. Counterweights not visible below deck.

There is a walkway with wooden surface on the south side that is of recent construction. The deck consists of steel beams.

Sketch

Plan view



Photos

Location



Elevation



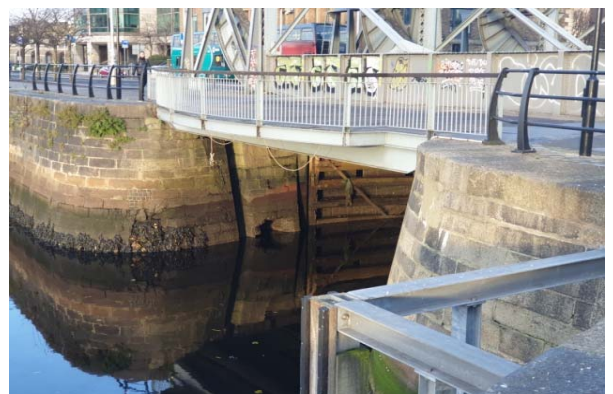
Elevation



Detail of track plates



Dock and pedestrian



Expansion joint



Detail of dumper in the abutment

