

Broadmeadow

Broadmeadow viaduct carries the main Dublin to Belfast railway line across the Broadmeadow estuary north of Malahide in north county Dublin. The first viaduct was built with timber for the Dublin & Drogheda railway during 1844. Erosion of the riverbed around the piles caused its foundations to be weakened by strong currents. Following short - term remedial work, it was replaced with a new structure of wrought iron spans on masonry piers during 1860. The new locomotives (*4 - 4 - 0 Compounds*) of the early 1930's required that the piers be strengthened with additional ballasting that also entailed continued maintenance. During the period from 1966 - 1968 the sea air caused deterioration of the wrought iron with the result that these spans were also replaced with the current prestressed concrete structure. (*A twenty metres section of the viaduct collapsed on Friday 21st August 2009 at 6.30pm: Repairs of four million euros were required to enable the reopening of the line on the 16th of November that year*) Over the years several other piers have been strengthened with the riverbed weir restored. The present structure is the third on this site. [\[viii\]](#)

Loopline

The original design of the Loopline bridge was carried out in 1837 by John Chaloner Smith engineer to the Dublin, Wicklow & Wexford Railway Company. Later it was modified for him to ensure the passing in parliament of the project during 1884. Contractors were the Scottish Arrol brothers. This viaduct they constructed was completed during 1891. It had a span of one hundred & seventeen metres with three spans. Construction consisted of wrought Iron lattice girders on a double row of braced cast Iron piers. The viaduct section was located on faux granite white limestone piers. The bridge section carried two rail lines of sharply curved ballasted track that also consisted of three spans of thirty - eight metres, forty metres & thirty - nine metres. The viaduct was approximately 6.1 metres over the street level. The two river piers were braced cast Iron cylindrical piers. Two cylindrical members per pier were hollow & constructed as caissons. These had been sunk through approximately three metres of river mud with gravel. Anchored into rock by means of centred dowels extended 1.5 metres into the hard layer. The cylinders were in - filled with concrete. The six cylinders were constructed in a series of vertical levels. The top three sections were three metres in diameter. They tapered from 4.2 metres of diameter sections. These cylinders were braced together by a central cross - brace also diagonals that were enclosed by concrete. A cast iron surround was 75 mm to 50 mm gauge. Above the high - water level the cylinders were cross braced by a semi - circular arched member with hollow spandrel. The uppermost parts of the cylinders were topped by ornamented sections that carried the main lattice girders. The spans were simply supported with a fixed bearing at one end also a roller bearing at the other end. The cross - girders originally carried a steel trough deck: due to deterioration these were replaced between 1958 & 1960. They were reconditioned with an extra top flange plate also troughing was replaced by a system of steel stringers welded to the flat deck plating. The original single line of bracing between the cross - girders was replaced by two rows of new angle cross - bracing. Two sketches of the viaduct feature on this site. [\[ix\]](#)

Loughlinstown

This disused viaduct was erected to a design attributed to William Dargan. This five - arched viaduct spanned a road. It was constructed during 1852 - 1853. It was opened by the Dublin & Wicklow Railway Company (*DWR*) during 1854. Viaduct was constructed with rock faced granite ashlar walls centred on benchmark - inscribed margined. It had rock faced

granite ashlar tapered piers of rock faced cut - granite coping to parapets. There were a series of five round arches with margined rock faced granite ashlar voussoirs. The viaduct was closed during 1958. (*of interest perhaps - a discreet benchmark remains from the preparation of maps by the 1824 Ordnance Survey*) Registered number 60260097. Coordinates are 324410, 222818. Several images feature on this site. (*date recorded 14th November 2012*) [\[x\]](#)

The Loopline bridge or the Liffey viaduct was designed by John Chaloner Smith engineer of the Dublin, Wicklow & Wexford Railway Company. Constructed over the River Liffey to connect rail services of both north & south city between 1889 & 1891. It was constructed of limestone piers, wrought iron lattice girders on a double row of piers with five spans. The viaduct is approximately six metres above street level also it supports two railway tracks. This bridge is referenced by James Joyce in his *'Ulysses'* as *'A skiff, a crumpled throwaway, Elijah is coming, rode lightly down the Liffey, under Loopline bridge, shooting the rapids where water chafed around the bridgepiers, sailing eastward past hulls and anchorchains, between the Customhouse old dock and George's quay'*. Coordinates are 53.34 80 N, 6.25 46. Several views of the viaduct feature on this site. [\[xi\]](#)

Loopline Bridge - Design and Engineering Bridges of Dublin Dublin City Council is referenced at this site: https://en.wikipedia.org/wiki/Loopline_Bridge

John Chaloner Smith chief engineer to the Dublin, Wicklow & Wexford Railway (*DWWR*) was also responsible for the seven hundred & twenty metres tunnel adjacent to the bridge as well as the famous loop line elevated railway viaduct over the River Liffey in Dublin. [\[xii\]](#)

Liffey Viaduct

Liffey Railway viaduct was constructed during 1872 to 1877. The bridge was constructed of wrought iron with a classic lattice pattern & truss design. The line spanned a total of thirty - four metres from Heuston Station on the south of Liffey to the northside. The railway line runs underground through the Phoenix Park for six hundred & ninety - two metres. (*During the 1916 Easter Rising on Easter Sunday evening British troops were transferred across the bridge to take control of the riverbank at the North Wall through this tunnel*) A YouTube video of the Phoenix Park tunnel may be viewed at this link. (*'The Journal' 28th November 2018*) [\[xiii\]](#)

Nine Arches

Milltown or Baile an Mhuilinn is a southside suburb within Dublin. The name *'Milltown'* was named from a working mill that was located by the river Dodder during the eighteenth or nineteenth centuries: the remains are still visible. A spectacular nineteenth century railway bridge across the Dodder was part of the Harcourt line that ran from Harcourt Street to Bray. This bridge or the area immediately surrounding it became known informally as *'The Nine Arches.'* The bridge was re - opened for the Luas Light Rail System that runs from Grafton Street to Sandyford. An amazing view of this viaduct may be viewed at this site. (*William Murphy 22 December 2006*) [\[xiv\]](#)

'The Nine Arches' viaduct was constructed during 1854. It opened on 10th July that year for the Harcourt Street Railway line. The line closed on 31st December 1958. The bridge was derelict for over forty years until construction began for the Green Luas Tram Line that

opened during 2004. Coordinates are 30 80 99 N, 6.25 1 221 W. A postcard image from 1909 with other images may be viewed at this link. [\[xv\]](#)

This site has excellent views of the Nine Arches viaduct :

<https://www.excellentstreetimages.com/in-the-year-twentytwenty/places-to-visit-while-in-dublin/milltown-viaduct-and-chimney/>

YouTube videos of Milltown viaduct may be viewed at these links:

https://www.youtube.com/watch?v=u_xDdKXE3gw (11th April 2013)

https://www.youtube.com/watch?v=u_xDdKXE3gw (Luas 28th February 2014)

<https://www.youtube.com/watch?v=cf64mxwbENk> (Luas 31st May 2 Single-span iron 020)

Store Street

Constructed circa 1890 this Store Street Railway viaduct crosses over the road. The construction was a single - spanned Iron railway of stone & brick arches. It was designed by John Chalconer Smith chief engineer to the Dublin, Wicklow & Wexford Railway Company. The initial proposal was controversial as it was thought that it would block the view to the Custom House also that it would alter the skyline of the city. It was believed that a rail link was required for the transport of transatlantic mail between Kingstown & Queenstown. The viaduct is also known as The Loop Line bridge & The Liffey viaduct or the City of Dublin Junction Railway. It was constructed between 1889 & 1891 as a link to Amiens Street Station on the north side of the Liffey & to Westland Row on the south side. Its construction consisted of flat spanned riveted steel girder carriageway that was supported on rock - faced limestone. There were yellow brick abutment walls. This viaduct had panelled & riveted iron parapets later steel railings. The railway line was over a series of round arches with brick soffits. It had random coursed rock - faced limestone piers, spandrels also parapets with brick coping. Rainwater downpipes of square - profiled cast - iron Inset were constructed to walls between the arches that opened at base of carriageway. Painted render surrounded several arches whilst others had square - headed openings with double - leaf metal doors. Registered number 50010145. Coordinates are 316396, 234762. Several images feature on this page. (*date recorded 3rd November 2011*) [\[xvi\]](#)

Talbot Street

Talbot Street viaduct was designed by J. Chalconer Smith engineer to the Dublin, Wicklow & Wexford Railway Company. It has been known as the Liffey viaduct, City of Dublin Junction Railway bridge or The Loopline. It was constructed between 1889 to 1891 as a link with Westland Row on the south of the river Liffey also Amiens Street on the north side of the Liffey. Erected as a necessity to transport movement of transatlantic mail from Kingstown to Queenstown. This bridge is a triple - span railway viaduct constructed circa 1890. It had a flat spanned riveted steel girder carriageway that was supported on two pairs of fluted cast iron cylindrical piers with collar & plinth mouldings. There were further pairs of rendered piers to the North erected in approximately 2006. Bow - string panelled & riveted central parapet with star motifs had curved panels over supporting piers with parapets across spans to either side. The manufacturer's insignia is located at plinth base of piers 'A.

Handyside & Co. Ltd. ' Registered number 50010134. Coordinates are 316486, 234845. Several images feature on this page. (date recorded 3rd November 2011) [xvii]

This railway viaduct established during 1891 crosses over Talbot Street. It is listed among other bridges on this link: <https://www.dublintown.ie/the-history-of-talbot-street/>

Additional Information

This Royal Canal *phase 2* provided a multi - span viaduct over the railway with a cycle track, footway with linear park from Guild street to North Strand road: <https://www.rod.ie/projects/royal-canal-phase-2-viaduct>

A list of bridges may be viewed at this link: https://en.wikipedia.org/wiki/List_of_Dublin_bridges_and_tunnels

Publications that may be of interest include the following:

Johnson Stephen 1997 *Johnson's Atlas and Gazetteer of the Railways of Ireland* (Midland Publishing Ltd): <https://catalogue.nli.ie/Record/vtls000043560>

Mc Carron Pdraig & Mc Adam Aiden 2003 *The Harcourt Street Line - Back on Track* (Curragh Press): <https://library.rds.ie/cgi-bin/koha/opac-detail.pl?biblionumber=79692>

Phillips & Hamilton's 2003 PDF on *Project History of Dublin's River Liffey Bridges* 156 issue BE4 Bridge Engineering may be viewed at this link: <https://web.archive.org/web/20170812060126/http://www.berthamilton.com/13329.pdf>

[viii] Broadmeadow Viaduct (https://en.wikipedia.org/wiki/Broadmeadow_viaduct) [Assessed 26th March 2021]

[ix] Loopline Bridge (<http://www.bridgesofdublin.ie/bridges/loopline-bridge/design-and-engineering>) [Assessed 27th March 2021]

[x] Cherrywood Road (<https://www.buildingsofireland.ie/buildings-search/building/60260097/cherrywood-road-cherrywood-loughlinstown-dublin>) [Assessed 27th March 2021]

[xi] Loopline Bridge (https://en.wikipedia.org/wiki/Loopline_Bridge) [Assessed 25th March 2021]

[xii] Barrow Viaduct (<http://www.industrialheritage.eu/2021/European-Year-Rail/ENDANGERED/IE/Barrow-Viaduct>) [Assessed 27th March 2021]

[xiii] Double Take (<https://www.thejournal.ie/liffey-viaduct-4356374-Nov2018/>) [Assessed 26th March 2021]

[xiv] The Nine Arches (<https://www.flickr.com/photos/infomatique/330785676>) [Assessed 25th March 2021]

[xv] Nine Arches Bridge (https://en.wikipedia.org/wiki/Nine_Arches_Bridge) [Assessed 25th March 2021]

[xvi] Store Street (<https://www.buildingsofireland.ie/buildings-search/building/50010145/store-street-dublin-1-dublin-city>) [Assessed 26th March 2021]

[xvii] Talbot Street Viaduct (<https://www.buildingsofireland.ie/buildings-search/building/50010134/talbot-street-dublin-1-dublin>) [Assessed 25th March 2021]