PUNCH
consulting engineers

Ashroe Bridge-L1123, Co Limerick

Engineering Inspection Report

September 24th 2024

221254		**Project Title:**	**Limerick Bridge Rehabilitation Schemes 2023-2025**		
Date of Visit:	24/09/2024	**Time of Visit:**	09.00	**Site Location:**	**Ashroe L1123, Co. Limerick** 52.684692, -8.417322
Site Contact Name:	-			**Role/Title:**	-
Purpose of Visit:	**Engineering Bridge Inspection**			**Company:**	**Limerick City and County Council**
Weather Conditions:	**Fresh with clear skies & dry, 12 Degrees Celsius.**				

Bridge Orientation & Bridge Elements referenced within Report

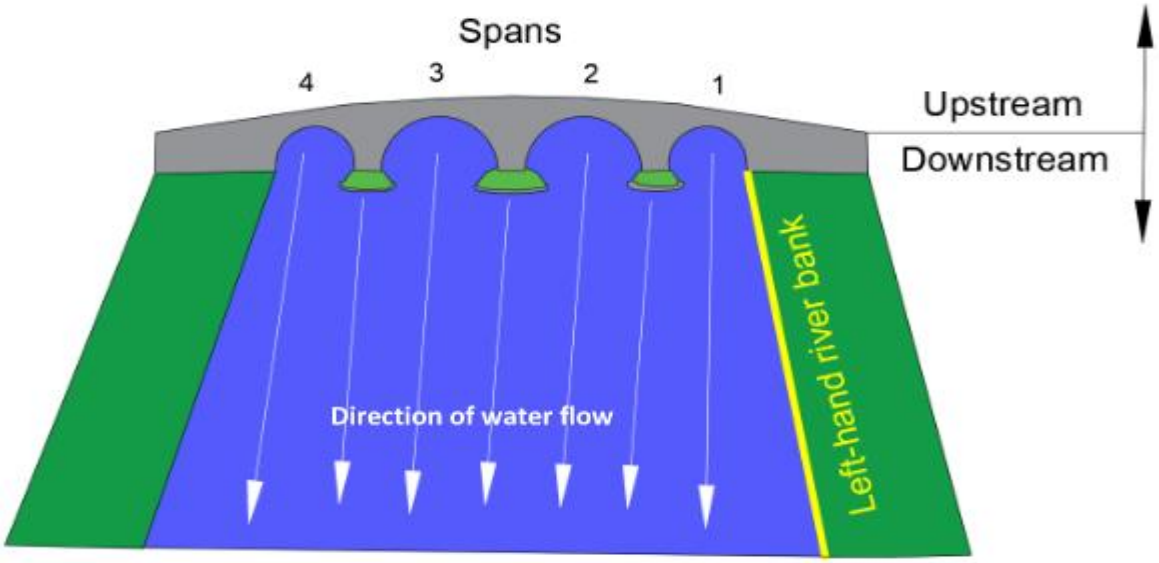


Figure 1.1 Reference Bridge Orientation

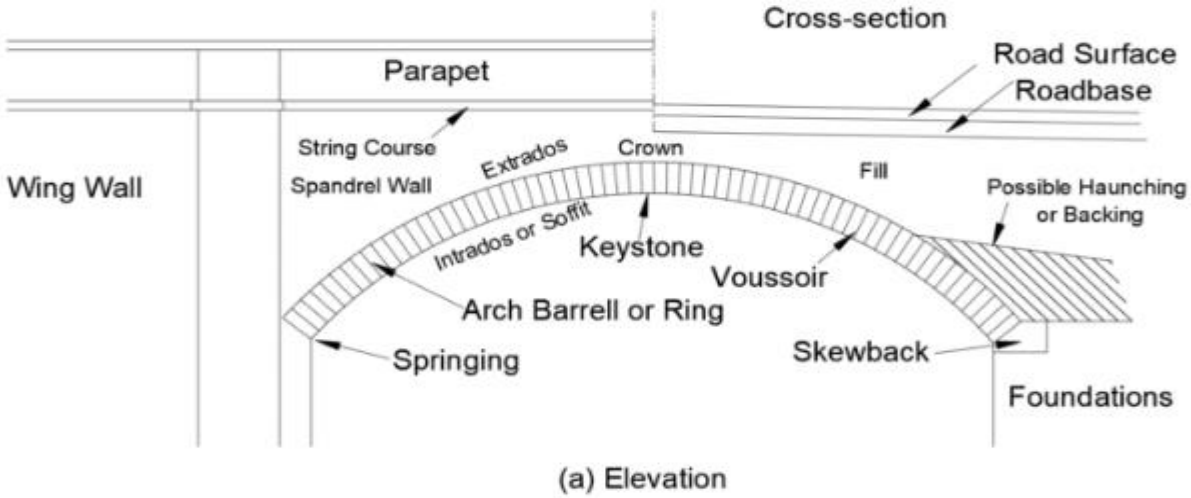


Figure 1.2 Arch Bridge Nomenclature

Visit Details

- Following a request by Limerick City & County Council to review the bridge structure at Ashroe on the L1123 between the Towns of Newport & Murroe, Punch visited the site on Tuesday September 24th to undertake an Engineering Inspection.

- The structure is a triple arch masonry skew bridge which is covered in light vegetation. The bridge is perpendicular to the L1123 road, which increase risk to drivers traversing the bridge. To aid sightlines on approach to the bridge, the parapet walls have been reduced in height previously with railing provided in lieu for guarding purposes.

- Due to previous river realignment works the bridge is at an angle to the Clare River, which is causing silt deposits on the right bank with scouring occurring on the left bank; the landowner has placed some rock armour as an anti-scour measure. Arch 3 is dry and with heavy deposits of stone a silt. In addition, a natural wear has been formed across the river channel with deposits, which would hamper fish movements in low flow conditions.

- A significant circumferential crack between the arch barrel and voussoir stones was observed on the downstream side of Arch 1. It is a large open crack which continues into the abutment wall on the left bank. Several stones are also missing in the crown of the arch barrel. The downstream Training Wall is also compromised due to lateral pressure of trees growing behind. Mortar loss and some open joints were observed on the spandrel, abutment & parapet walls and the other arch elements of the bridge.

- Heavy scouring around both cutwaters to both piers on the upstream elevation was observed; previous anti-scour concrete protection is now compromised. Significant mortar loss and missing stones were observed to the base of all piers and abutments along their lengths.

Recommendations

- A Condition Rating (CR) of 3 has been assigned to the bridge structure under the Bridge Asset Management Project rating criteria.

3	*Significant damage, repair needed very soon. i.e., within next financial year.*

- Repair works would include:

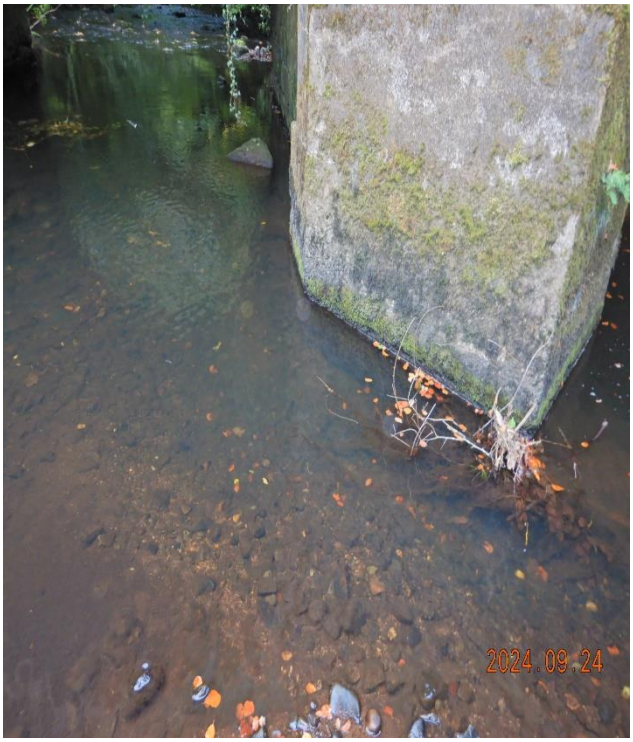
1. Repair of provision existing anti-scour concrete skirts to the base of both cutwaters.
2. Repair of bases to all stonework to bases of abutments and piers with back check grouting subsequently.
3. Concrete saddle to Arch 1 to enhance its structural integrity. Stitching of the voussoir stones and the arch barrel (downstream elevation).
4. Repair of adjoining Training Wall to Arch 1 (Downstream)
5. Removal of vegetation and repointing and stone replacement to all elements of the bridge structure.
6. Review of existing Traffic Signage.

Consultation with the OPW & IFI to address drainage and river channel issues observed should be undertaken prior to formulating extents of works schedule.

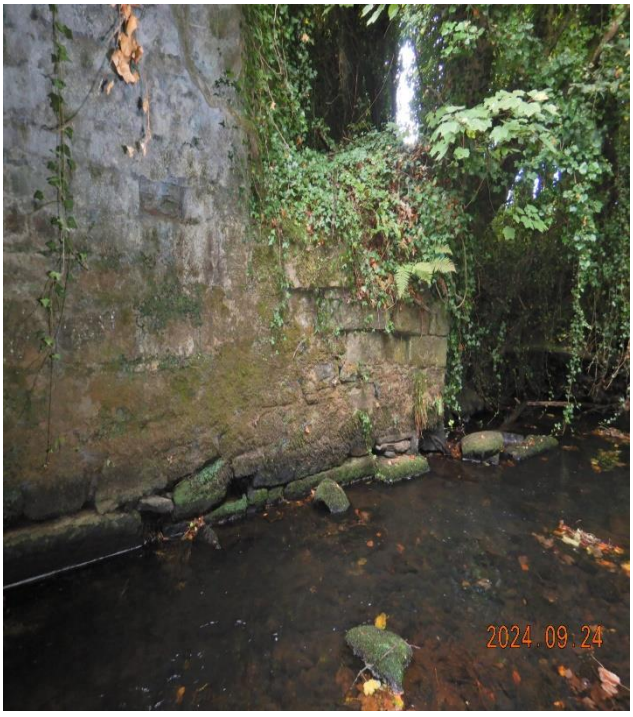
Site Visit By: Patrick Keogh — 24th September 2024

Signature — *Date*

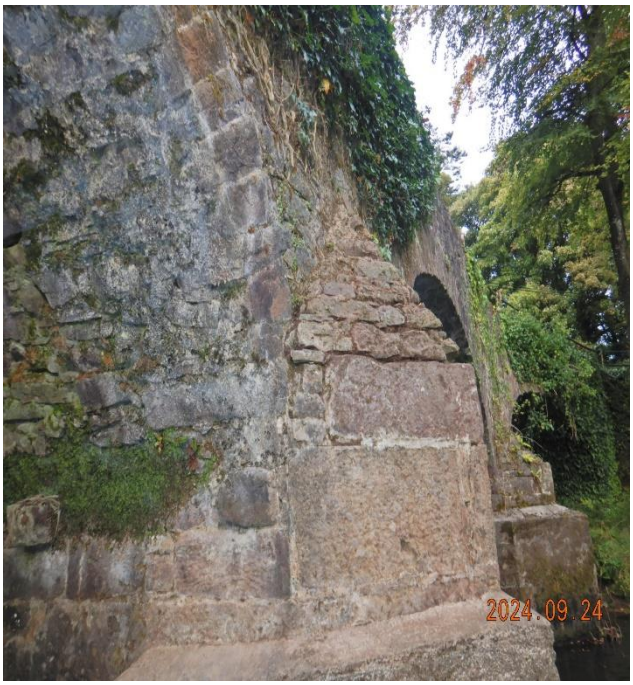
Appendix A - Photographs

	
Bridge approach from South (Murroe)	Bridge approach from North (Newport)
	
Existing concrete protection to cutwaters	Deep Hole infront of Cutwater – Turbulent Flow

	
Arch 3 – Dry with silt & stone deposits	Vegetation on Downstream Elevation

	
Scouring of Pier 2 – open cracks and material loss (Typical to all foundations)	Compromised Training Wall downstream of Arch 1 on left bank

	
Arch 1 – Open Circumferential crack and missing stones to crown of arch	Vegetation on Downstream Elevation

	
Scouring of Pier 1 – open cracks and material loss (Typical to all foundations)	Loss of mortar resulting in loose stonework to cutwater

	
Formation of natural weir from deposits upstream of Bridge	Scouring to Pier 1

	
Arch 1– Skew Arch (Open Joints to base of Abutment Wall - Typical to all foundations)	Arch 2 – Viewed from Downstream