

A53 INTRUSIVE INVESTIGATION

Core samples & Endoscope survey



CoreFIX Ltd

Prepared for Assured CMS



Project: Intrusive Investigation of Masonry Arch (A53)

Client: Assured CMS

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Date: 08/09/2025

Report Status: FINAL

Report Reference: REP01/2507E029

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Scope:

A survey has been requested by Assured CMS (for Metrolink) to investigate for potential voids behind arch barrel, CoreFIX carried out both core samples and an endoscope survey into six locations, 3 at the south end of the arch and 3 at the north end of the arch.

Methodology:

- Safe access was made using PASMA ops and a scaffold tower to setup underneath each core location and safely core to the required depth.
- Core locations were specified on site by Assured CMS's site op; this consisted of 1 core at the crown of the arch both at the south and north end and two cores and the mid sections of the arch at both the south and north ends.
- A Rig mounted drill with a 52mm core bit was used for ease of drilling and successful core recovery, followed by an endoscope to gain an internal view of the arch structure at each location.

- Photos, measurements and videos were taken for each core locations and are detailed/included below.

Results & Observations:





Core 1:

Location:	Crown, South End
Material Description	950mm Depth – Brickwork
Endoscope Results – No voids found:	



Photographs:





core 1
crown
south side



**core 1
crown
south side**





core 1
crown
south side
recovery
950mm
52mm core





Core 2:

Location	Mid Crown – South End
Material Description	700mm Brickwork, 250mm Void
Endoscope Results – Void Discovered	



Photographs









Core 3

Location	Mid Crown – South End
Material	880mm Brickwork
Endoscope Results – No Voids Discovered	



Photographs:





**core 3
mid crown
south side**



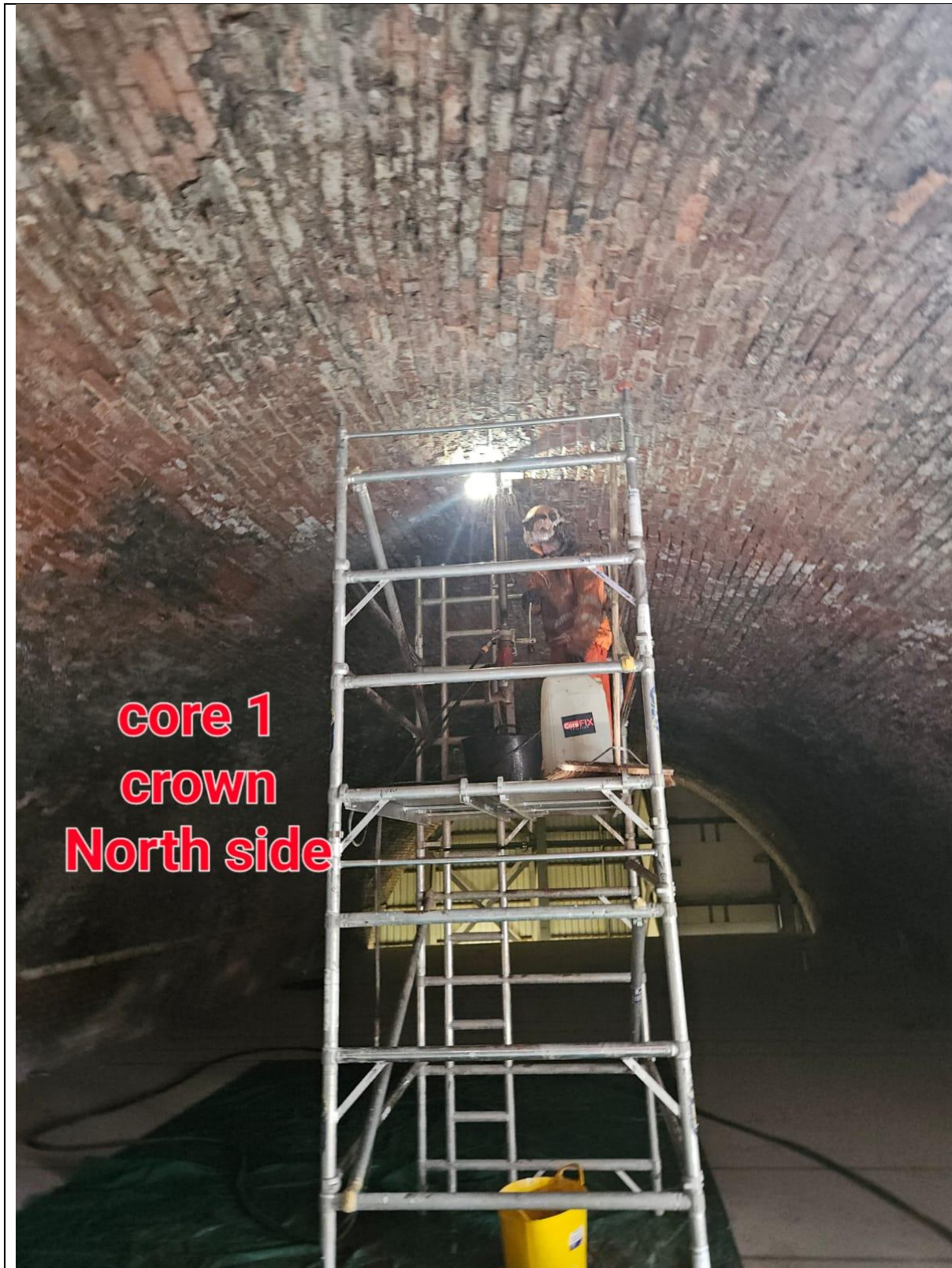






Core 4:

Location	Crown – North side
Material	850mm Brickwork
Endoscope Results – No Voids	



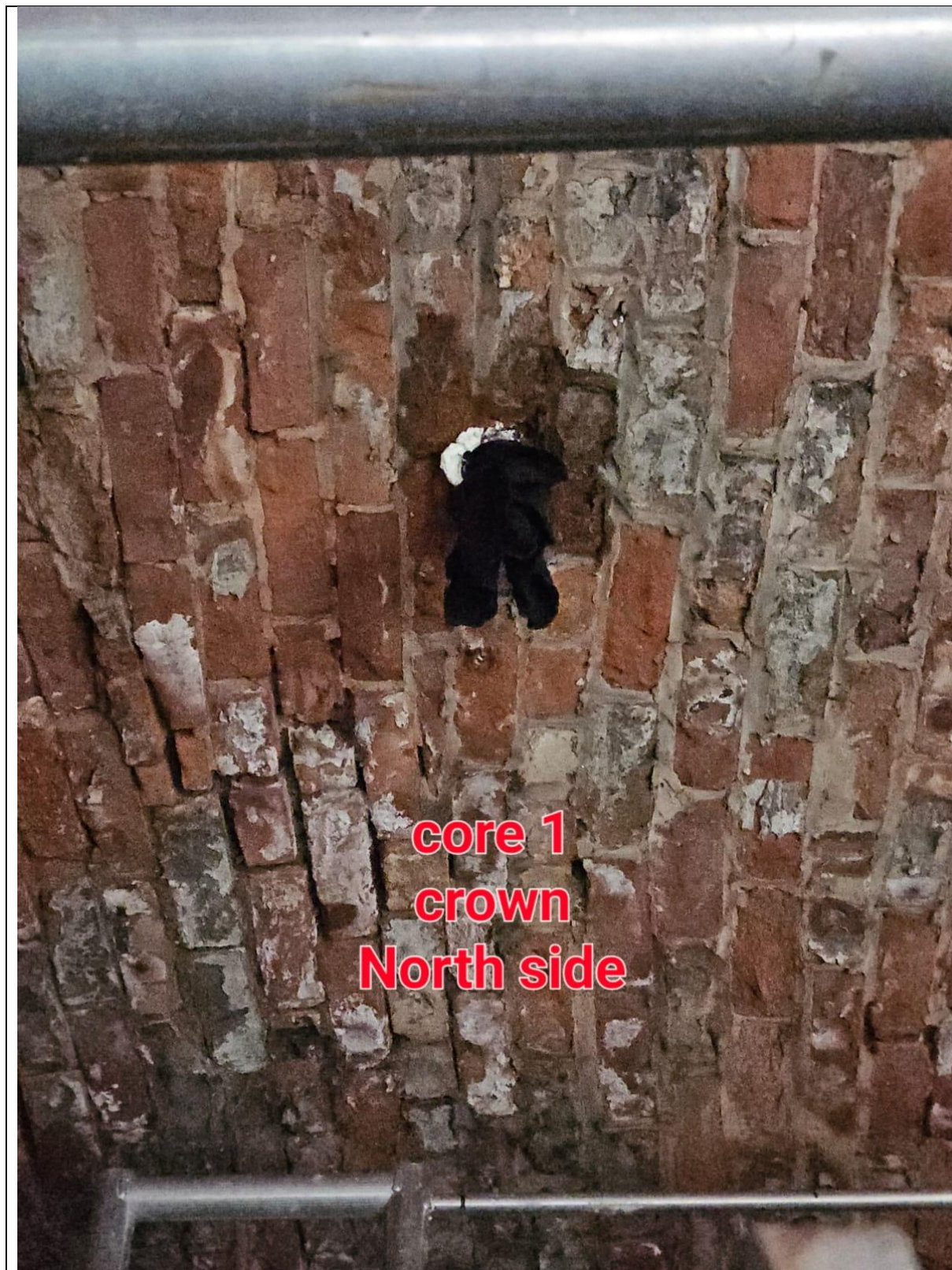
**core 1
crown
North side**









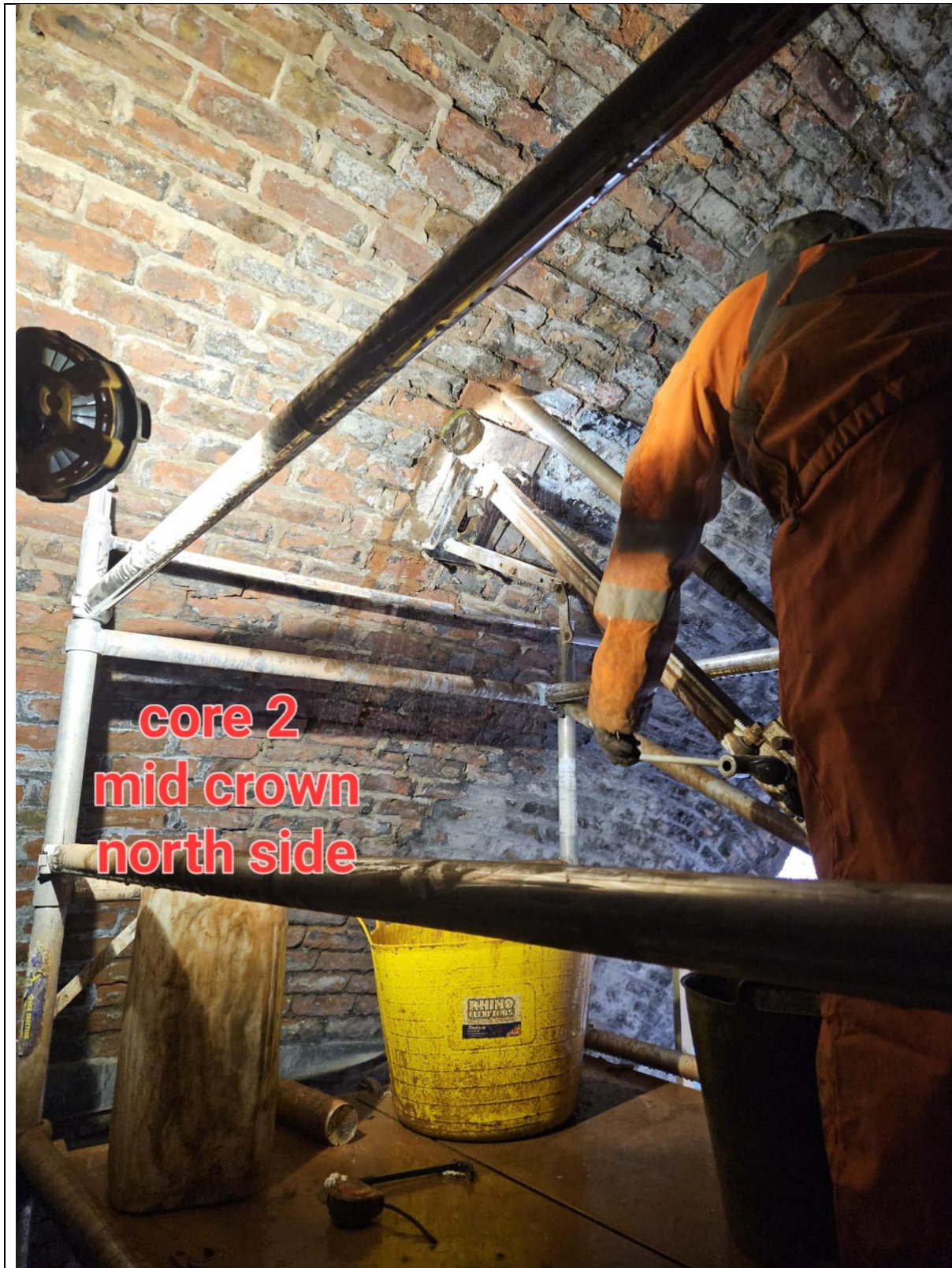


Core 5:

Location	Mid Crown – North End
Material	960mm - Brickwork
Endoscope Results – No Voids	



Photographs





core 2
mid crown
north side
960mm depth
full brick





Core 6:

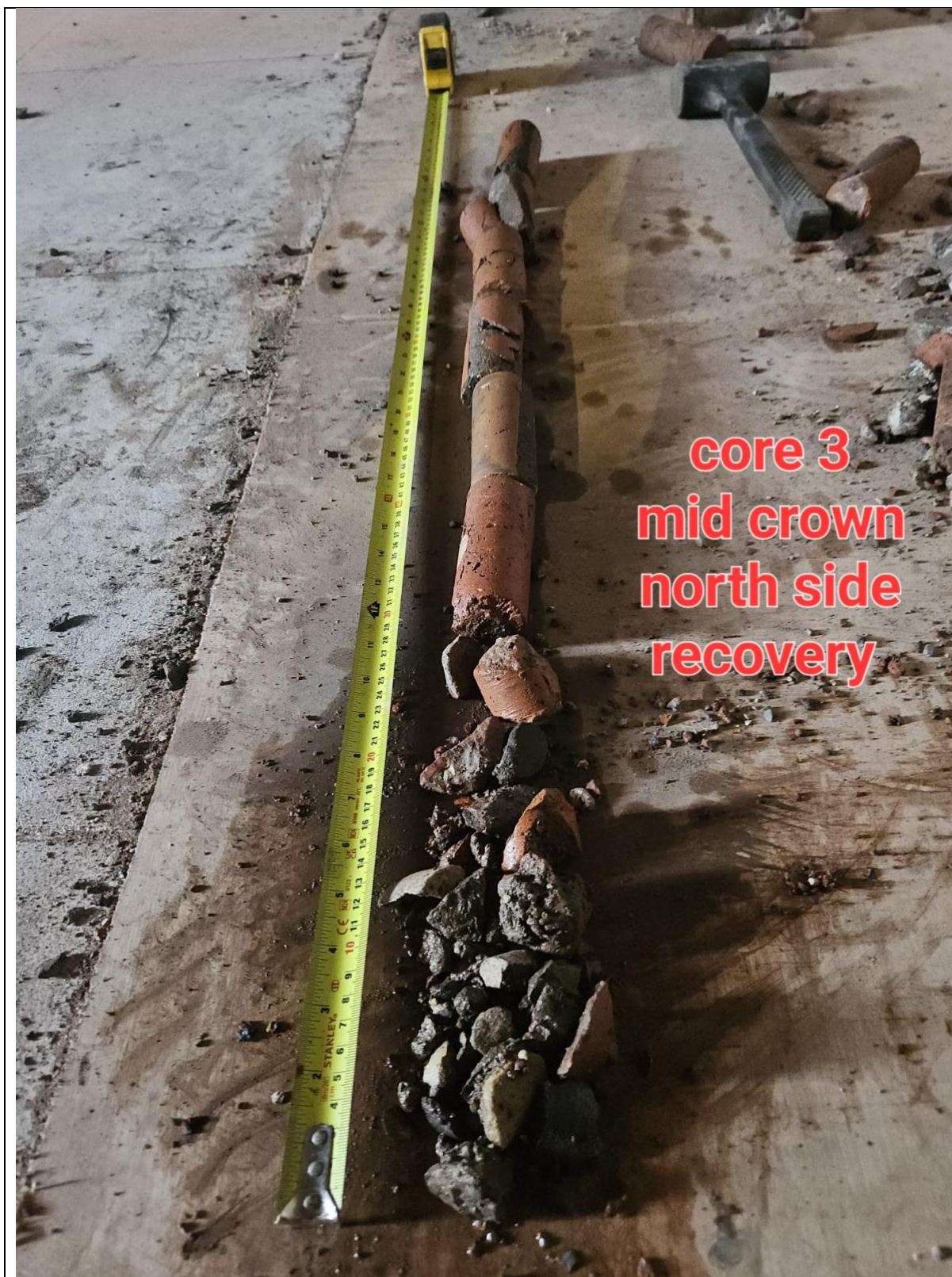
Location:	Mid Crown – North Side
Material:	950mm – Brickwork
Endoscope Results – No Voids	



Photographs:

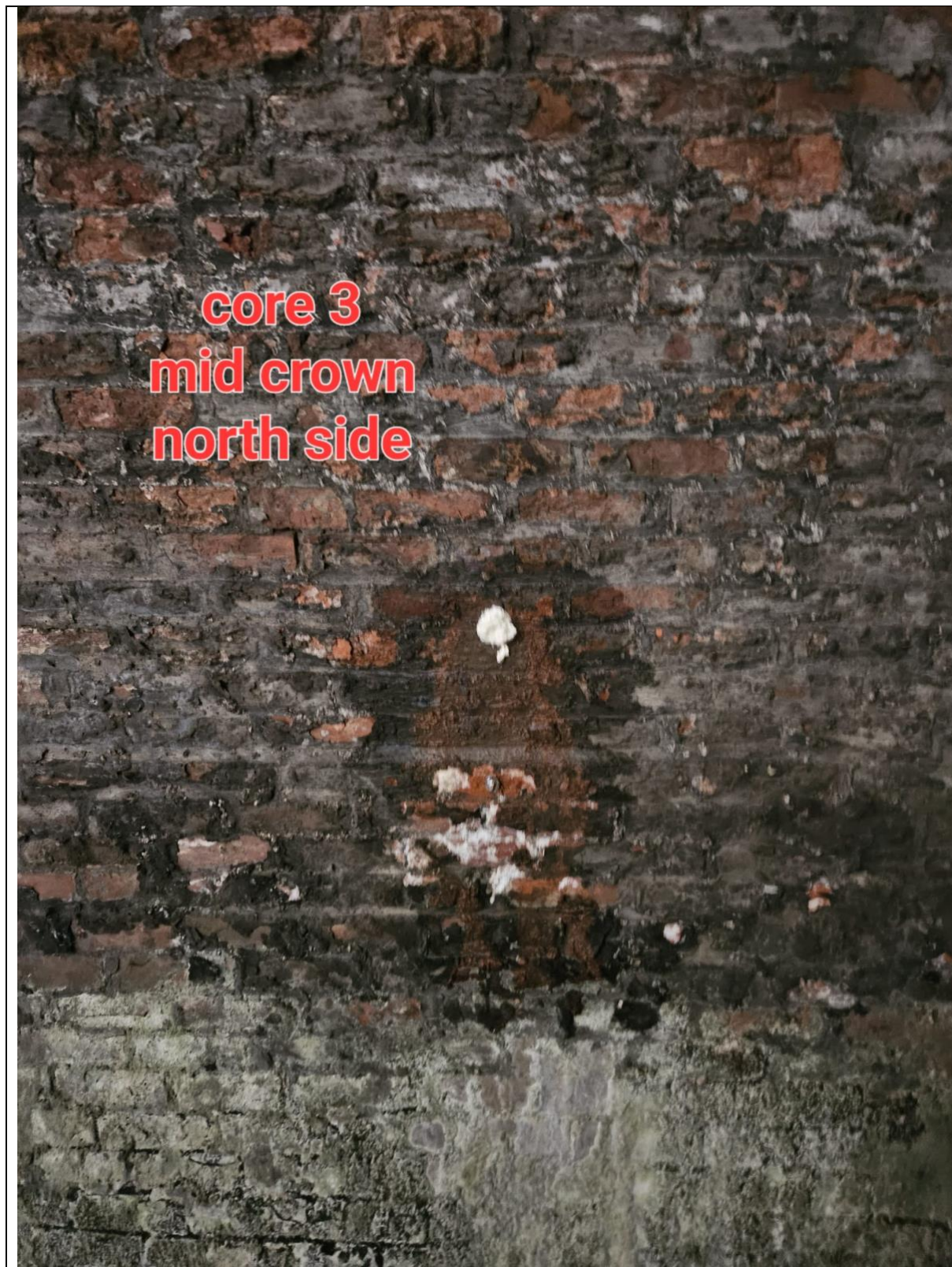






core 3
mid crown
north side
recovery





Discussion/Conclusion:

As shown only 1 location (Mid Crown - Right hand side facing south end of the tunnel) showed presence of voids behind the arch, the rest of the cores provided full brickwork

retrieval as shown above. The depth of brickwork cored ranged between 850-950mm. While no voids were present in the rest of the cores, to gain further knowledge of the extent of the voids a localised survey around the area where a void was present would give more insight into its extents if deemed necessary.

The arch was measured externally at 800mm so all core samples were through entirety of the arch to ensure voids weren't missed.

Appendices:

All recorded photos, videos and endoscope survey will be included within handover file.

