

## **NCH – Existing Curtain Walling – Stabilisation Solution– Executive Summary**

The following documents highlight the proposed plan of works and completed works to date, for the stabilisation solution to the existing curtain walling (CW), on the high-level façade of New Century Hall.

To date there have been ten solutions offered for the stabilisation, replacement or refurbishment of the existing curtain walling. All of which have been reviewed by the project design team and MCC planning department since January 2021. On initial review option I, was identified as the preferred solution (NCH – Curtain Walling Information 20.01.21).

Option I was therefore further investigated by RWBHO (Main Contractor), with intrusive investigations approved and completed to the CW (Curtain Walling) mullions, transoms and support fins. These investigations identified issues with the structural buildability of option I; from here, option D was re-investigated with the newfound information generated by the approved investigation works.

Option D was originally discounted due to the health and safety risk of asbestos fibre release due to the Asbestos Insulated Board (AIB) located behind the CW. However, with the further investigation completed for option I it was identified that the existing CW central fixings were the only four locations where asbestos was not present in each bay. Option D was therefore re-developed to fix through these locations.

To verify the safe working conditions of this solution a set of samples were completed, both on an already approved sample bay in which the asbestos was removed, as well as under what will be the full site condition, if the works were to proceed. This included personal and re-assurance monitoring internally and externally whilst the works were completed, to ensure no asbestos release was recorded in the location of the operative completing the works, or where other site operations taking place. Works were completed from a combination of safe working scaffolds and MEWPS (Mobile Elevating Work Platforms).

The sample fixings were successful under both sample and full conditions for the most part, however during some of these samples and during the investigation phase, seven number bays have been highlighted as requiring full asbestos removal before proceeding, due to damaged glass, change in fixing type/location or excessive bowing in a bay.

During the multiple phases of investigation, the wider project design team have been heavily involved, with Shepherd Robson (Architect), SLHA (Heritage Architect) and Healey Consulting (Structural Engineer) offering architectural, conservation and structural input into the proposals. This helped to ensure that the chosen solution has been thoroughly investigated and all parameters covered to make the solution viable.

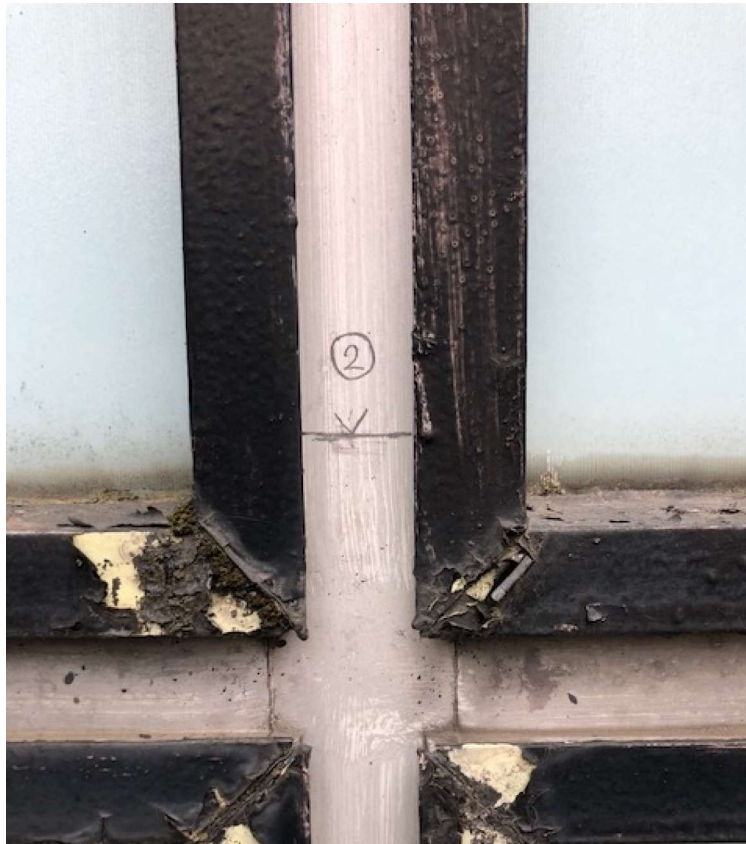
The developed stabilisation method is detailed in the visual systematic guide, generated to give clear insight into how the proposed solution has and will be executed. This stabilisation solution will be introduced to the twenty-three existing bays of CW present on the scheme, with seven bays in total being completed under full asbestos removal conditions, of which further details can be found in the proposed works drawing pack.

The exhaustive list of options that was developed investigated all areas of risk, including health and safety, conservation, buildability as well as cost and programme. Ultimately the solution developed meets the criteria, and has been found through extensive investigation and vast time input from RWBHO and the design team. Throughout the process, an extensive quality control system will be in place to ensure a high quality delivery of the solution, this will also incorporate continuous health and safety monitoring of the asbestos risk.

### **Note:**

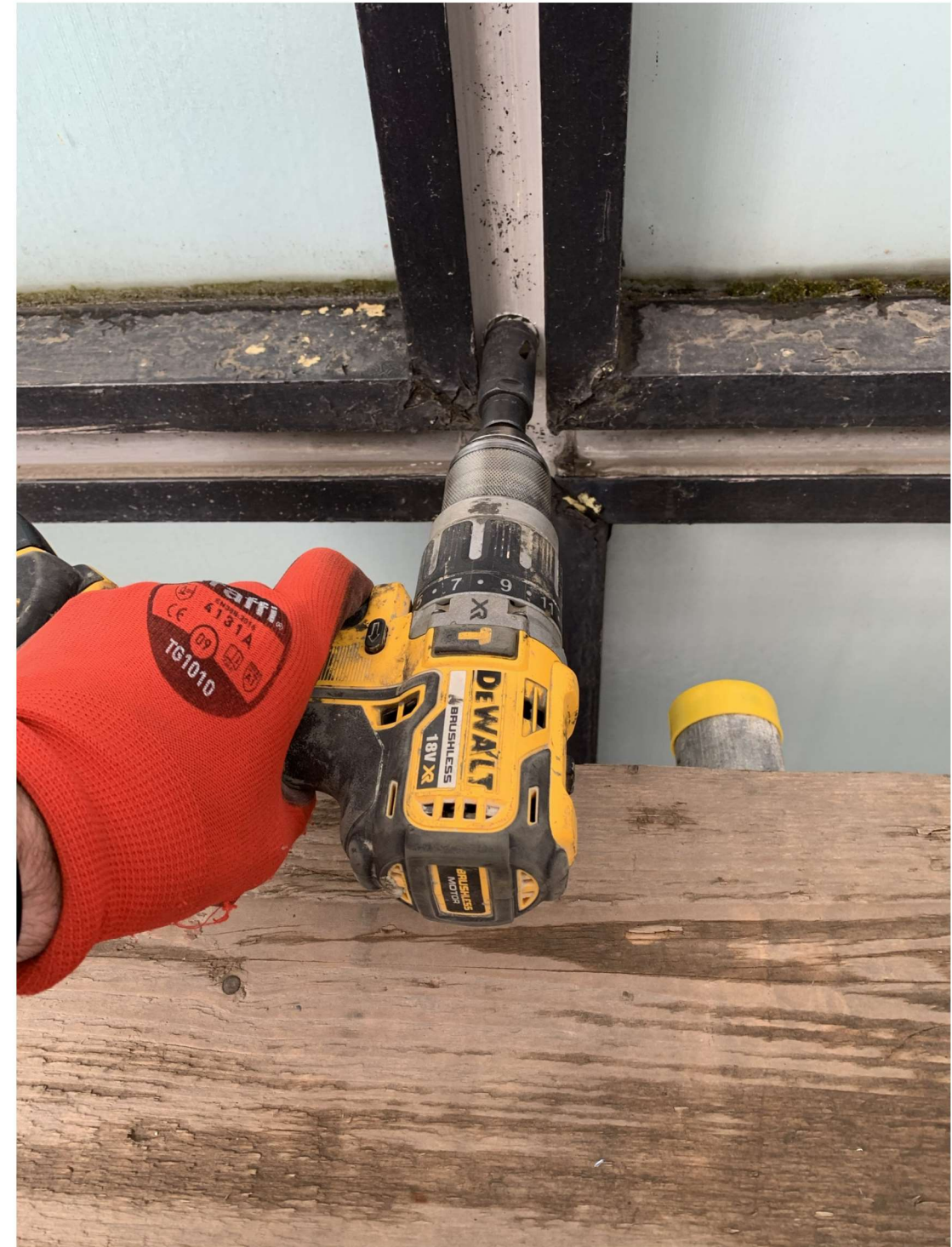
Further development and approval from the design team and MCC Planning Department is required on the 2 items; Replacement glazing (colour and textured finish) and finish to the fixing / nut on the outside of the fixing solution. Samples for both of the above are currently being sourced with further reviews required.

## **NCH - Existing Curtain Wall Repair Sequence**



**1. Mark out top of hole**

**2. Personal and background air monitoring set up**



**3. Drill hole - Cat C Asbestos operative to carry this out**





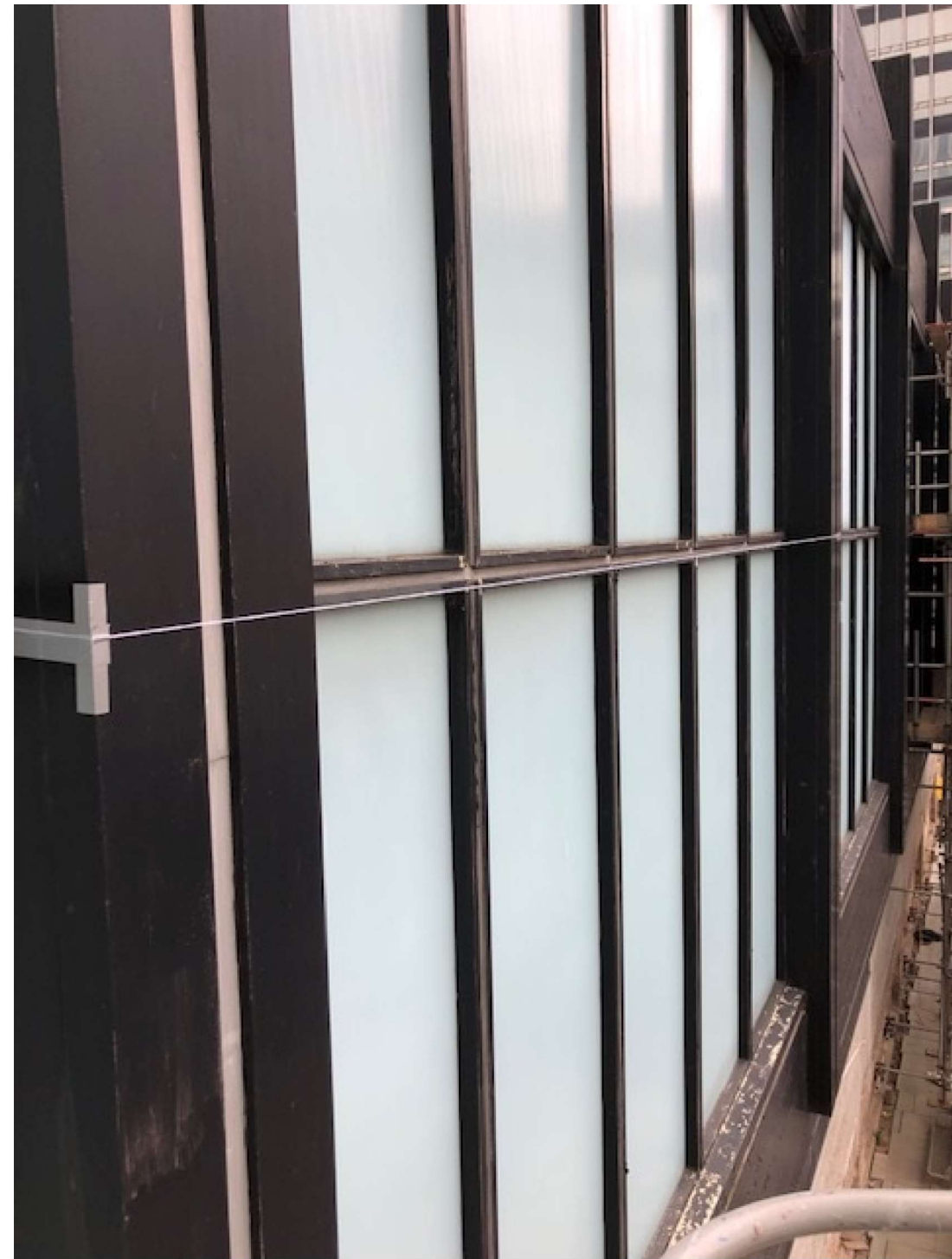
**4. Hole complete for access to drill through original baseplate - avoiding the surrounding AIB**



**5. Hole drilled through base plate and 20mm in to masonry to ensure a key is formed for follow on trades. Plastic sleeve inserted to provide a safe void free from asbestos. This is also required to stop any bi-metallic reaction between the steel bar and anodised aluminium frames.**



**5. 120mm hole drilled through masonry.**



**6. Frame lined up prior to installing resin - Hilti-HY-200**

**8. Carry out  
pull tests**



**7. Insert M12  
threaded bar**



**9. Washer and nut  
installed. Torque to be  
recorded for each fixing**

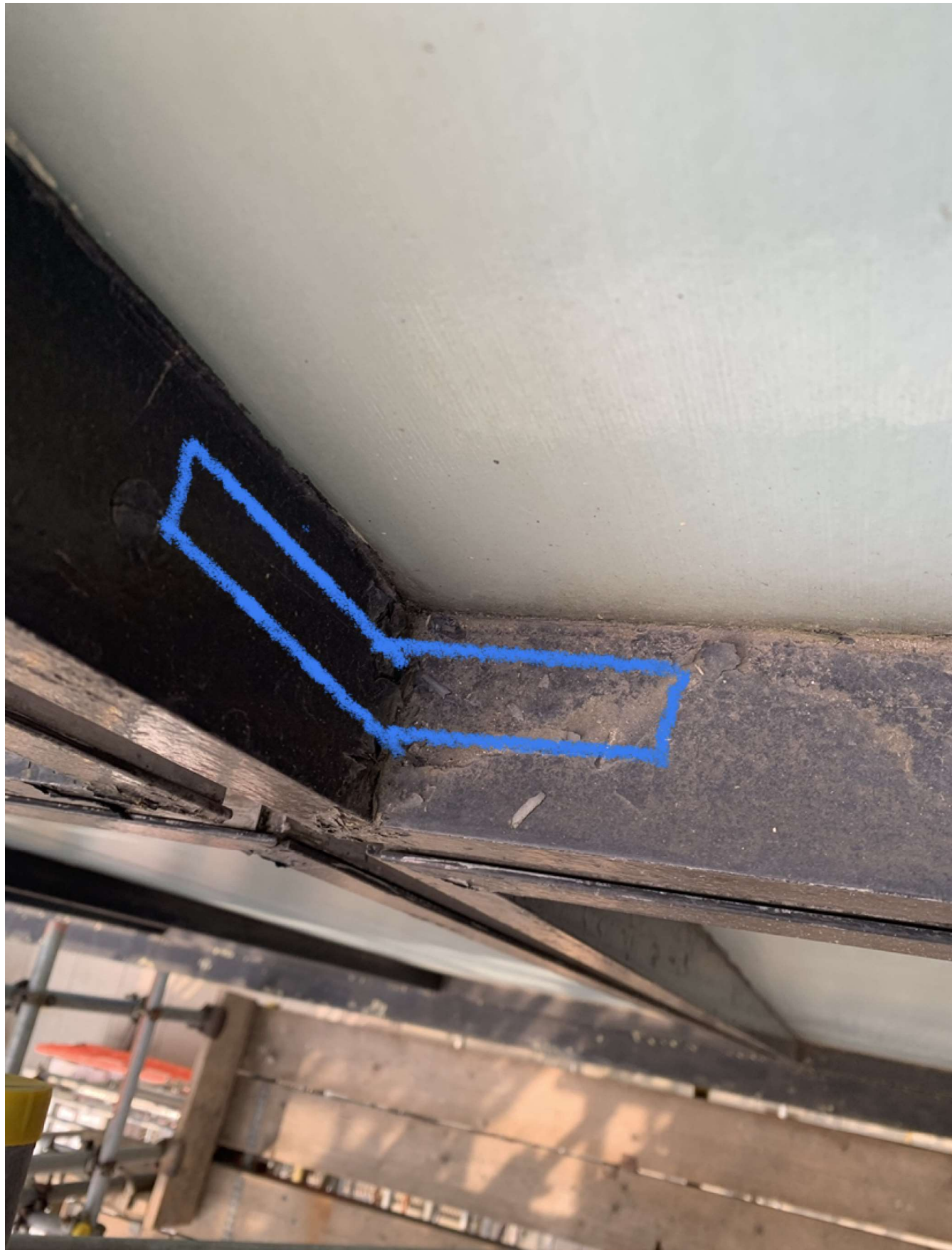




**10. Windows and frames to be cleaned - Soap and clean water only**



**11. Structural mastic to be installed to the perimeter of all windows**



**12. Angles to be installed to all 4no corners the 199 windows**



**13. Aluminium beads PCC Black to be installed to all 4no sides the 199 windows. These will be notched around the angles**