

CONAULT DESIGN

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**Reconstruction of Boundary Wall
Discharge of Condition 4 & 5
Ref: 23/00803LBC**

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1.0 Introduction

Mathlin Building Solutions submitted a De-construction and Construction Method Statement ref: CH/MS/002 in July this year 2023 to discharge condition 3 of Listed Building Consent 23/00803/LBC, which was approved on the 23rd of August ref 23/01259/DISCON. Unfortunately due to the sudden and unexpected demise of Tony Lloyd of Mathlin Building Solutions there has been an unavoidable delay whilst everyone came to terms with the situation and another suitable contractor with capacity to take on the work could be sourced.

Condition 3 was a pre-commencement condition prior to demolition (dismantling) whereas Condition 4 and 5 are prior to reconstruction. It was not possible to discharge condition 4 until the wall had been dismantled and the condition of the existing brick and percentage which could be reused could be assessed. This also gave an opportunity for the structural engineer to design the junction with the neighbouring wall and assess the existing footings.

2.0 Approved Plans

Listed Building Consent 23/00803/LBC
00803.01 – OS Extract – 11/05/2023
CH18 MPC 02e – Rev Drawing – 30/6/2023
CH18 MPC 03b – Rev Drawing – 30/06/2023

Discharge of Condition 3 23/01259/DISCON
CH/MS/002 – Mathlin Building Solutions

3.0 Structural Engineer – Foundation and junction with neighbouring wall

I visited site on 9th November 2023.

The purpose of the visit was to :Inspect the progress of demolition of the deflected and damaged solid brickwork masonry boundary wall, agree the foundation required for the re-built wall, advise recommendations for the lateral stability of the wall and advise the detail at the western end of the new wall's abutment to the remaining boundary wall of the neighbouring property.

Progress

Approximately 75% of the length of the wall had been demolished down to about 300mm below the property garden level, starting from the eastern end, leaving the remainder at the western end to be completed.

The brickwork of the former wall had been removed from the resulting trench and cleaned.

The removal had left the base of the former wall in site and the top surface of this brickwork had been cleaned of debris. The top of the remaining masonry is flat and level across its width which substantiates the previous opinion that the cause of original damage was lateral wind [and growth of vegetation into parts of the masonry] rather than foundation rotation and failure.

Foundation

As explained above, the cause of original damage was not foundation failure with the conclusion drawn that the existing foundation masonry can remain and support the re-built wall above. The top surface of the brickwork was cleaned at the time of the inspection and ready to receive new brickwork.

Lateral stability

Brickwork masonry piers should be re-built in the same locations as those which existed prior to demolition.

They should be of the same dimensions and fully bonded to the main body of wall masonry.

Tie detail at western end [boundary]

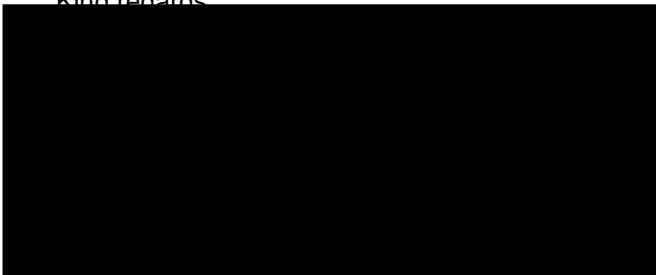
It is recommended that the new wall is **not** connected to the retained masonry wall which exists beyond the western boundary. To connect might induce lateral loading into the new wall from the retained wall if the latter continues to move.

The end of the new wall should be completed with a 450mm long x 215mm projecting pier [450mm deep overall] at the western extremity of the new wall – the end of the new wall and pier will terminate at the property boundary.

The new pier can be built off a 750mm long x 450mm wide concrete pad foundation formed down the side of the existing wall sub-structure and taken into natural subsoil.

I sincerely trust this is clear and sufficient. Please let me have any queries and / or know if more clarification is required.

Kind regards



4.0 Selection and Sorting of Existing Brick for Reuse

Deconstruction was carried out by hand in accordance with the method statement submitted by Mathlin Building Solutions under the supervision of David Partridge to ensure the neighbours wall remained in a safe condition at all times and to limit the risk of sudden and uncontrolled collapse of the wall whilst being dismantled.

Bricks were sorted and cleaned by hand as the wall was dismantled and placed onto pallets. Due to the exceptionally wet weather and the existing condition of the wall the decision was made to leave the pallets open to dry out so they could be covered once at a lower moisture content to reduce the risk of further frost damage.

During demolition it became apparent why the wall may have been unstable and leaning. Whilst the face of the wall is in Flemish bond, rather than the stretches tying the wall in front to back there were a large number of half bricks as can be seen from the section of the neighbours remaining wall. The reason for this may be the inconsistency size of the rather poorly made brick, making it difficult to find bricks of a constant size to marry up front and back, others may have sheared off.

Within the stacks some of the bricks are stamped Darlaston Brick Co.Ltd. Research would suggest that the company was founded in the early 20th century. Darlaston Brick Co, brickworks was situated to the north-west of Darlaston & James Bridge Station, Darlaston, Wednesbury, Staffs. shortly after 1900. There were six rectangular kilns shown on the 1917 OS map. By 1924 it had become the Darlaston Brick Co. Ltd, but by 1938 the site had been cleared and other industry developed. Also included are bricks with unusual frogs stamped BHBC, Bentley Hall Brick Co. Ltd Bentley, Walsall Staffs which started operations in 1934 closing just nine years later in 1943 by the order of the Ministry of Works during the second world war. These and the Darlaston Bricks would appear to be from the capping course, presumably replacement for frost damaged originals.

Info on brick courtesy of David Kitching.



Photo 1 – Neighbours Wall



Photo 2 – Only one stretched front to back visible



Photo 3 – Retained foundation



Photo 4 – relationships to return.



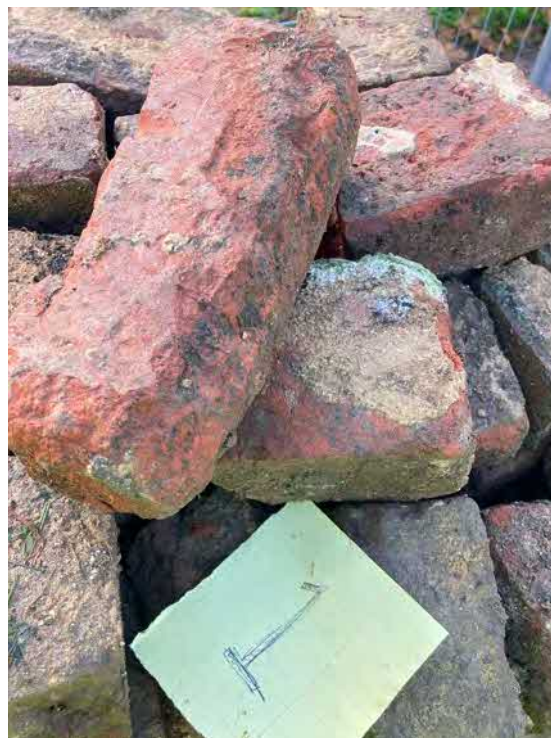
Photo 5 – Brick Stacks 1-6



Photo 6 – Brick Stacks 8-10



Photo 7 – Brick Stacks 7



Stack 1 - rejected subject to final hand sort during disposal
in case any better bricks are in the centre of the stack



Will be some limited rejection



Stack 2 selected for reuse subject to final selection during laying*
*have at least one good face on the stretchers on original inspection
but could expect some limited rejections during the laying process .



Stack 3 selected for reuse subject to final selection during laying*
*have at least one good face on the stretchers on original inspection but could expect some limited rejections during the laying process



Stack 4 - rejected subject to final hand sort during disposal in case any better bricks are in the centre of the stack



Stack 5 - rejected subject to final hand sort during disposal in case any better bricks are in the centre of the stack



Stack 6 selected for reuse subject to final selection during laying*
*have at least one good face on the stretchers on original inspection
but could expect some limited rejections during the laying process



Stack 7 selected for reuse subject to final selection during laying*
*have at least one good face on the stretchers on original inspection
but could expect some limited rejections during the laying process



Stack 8 selected for reuse subject to final selection during laying*
*have at least one good face on the stretchers on original inspection
but could expect some limited rejections during the laying process



Stack 9 - rejected subject to final hand sort during disposal in case
Any better bricks are in the centre of the stack



Stack 10 selected for reuse subject to final selection during laying*
*have at least one good face on the stretchers on original inspection
but could expect some limited rejections during the laying process

5.0 Percentage of Bricks to be Reused

There are approximately 3000 bricks in the wall to be rebuilt of which unusually about a third are half bricks (see above).

Whole bricks	2000 approximately of which	50% (1000) are thought to be reusable
Half Bricks	1000 approximately of which	60% (600) are thought to be reusable*

The client has sourced approximately 1000 bricks, shown on the left (in the photo below) which are a very good visual and material match for the original bricks in the centre with additional bricks being made up from a batch matching the bricks on the right which are similar and from the same area as the Darlaston and BHBC brick which are less friable than the very open structured original brick which will be susceptible to frost. The Darlaston and BHBC brick would be used for the capping.

** In Flemish bond every brick would be a full brick with every other brick presenting as a header on the face passing front to back tying the wall together. This would mean that one third of the bricks would be headers (but full bricks). If fiesable the majority of the 600 half bricks should be replaced with bricks from the new batches tying the wall in front to back. If due to the inconsistency of the original bricks this proves impossible or would result in overly large and untidy perp joints it may be necessary to revert to using the half bricks with stainless steel wall ties, fixed in mortar or resin fixed into brick as required.*



The pallets of original bricks are to be stored and remain on-site within the Heras fenced area.

6.0 Materials and Method of Integration

Approved new bricks will be brought to site and stored alongside the originals for interlacing during reconstruction. The mortar will be stored off site and brought to site as required. This is NHL 3.5 Hydraulic Lime and is supplied in moisture resistant 25Kg paper bags, approx. 40, which need to be stored in a dry environment away from rain damage. The sharp sand making up the second element of the mortar is to be delivered in 800Kg bags (approx. 4 reqd) and stored within the Heras fenced area.

Technical Data

Mortar Mix Proportions

NHL 3.5: Sand	Typical Application
1.1	<ul style="list-style-type: none">- Walls below DPC- Chimneys- Earth retaining walls
1.2	<ul style="list-style-type: none">- External walls- Copings and cappings- Parapets and sills
1.3	<ul style="list-style-type: none">- Facing to solid construction
1.4	<ul style="list-style-type: none">- Internal Walls