

**Application for Approval of Details Reserved by Condition
Discharge of Condition 4 – Specification of brickwork to South boundary wall.
Planning Application Reference: HGY/2025/2929**

1. Purpose and Scope of Report

The purpose of this document is to discharge Condition 4 regarding the specification of the proposed brickwork for the replacement boundary wall as described in the approved drawings SWL-ELE-09 (P4), SWL-PLA-04 (P7) and SWL-SEC-11 (P7) as well as the Heritage, Energy, Design and Access Statement (DAS).

Condition 4 states:

“Prior to the partial demolition of the brick south boundary wall, the specification of the proposed brickwork to be used in the replacement boundary wall shall be submitted to and approved in writing by the Local Planning Authority. The development shall then be carried out in accordance with the approved details.”

Reason: To preserve the character and appearance of the Highgate Conservation Area in compliance with Policies DM1 and DM9 of the Development Management DPD 2017 and the provisions of the National Planning Policy Framework.

This submission provides the specification of brickwork for the replacement boundary wall as shown on approved drawings SWL-ELE-09 (P4), SWL-PLA-04 (P7), and SWL-SEC-11 (P7).

Whilst it is the Applicant’s intention to reclaim as much existing bricks as possible in accordance with Condition 5, it may be the case that replacement bricks are also needed. The selection of these replacement bricks are now described in this report.



Photograph A – Uncleaned section of existing boundary wall.

2. Existing Wall Analysis

Given the existing walls had extensive algae growth (Photograph A), a large section of wall was cleaned so as to enable an appropriate match in texture and colour.

Photograph B overleaf shows the wall immediately after cleaning and Photograph C overleaf shows the wall once dry.

Efflorescence and Approach to Brick Matching

Following cleaning of the boundary wall to remove algae, significant efflorescence was observed on the lower half face of the existing bricks, particularly in a dry state (Photograph C). This efflorescence is likely caused by soluble salts migrating through the brickwork from the retained earth and groundwater behind the wall. It is a symptom of moisture-related deterioration and is not an inherent characteristic of the bricks themselves, nor a feature of the wall's heritage significance.

Historic England's published guidance on the Principles of Repair for Historic Buildings¹ advises that replacement materials "*will normally be the same as the original or parent material or where this is no longer available or appropriate, have compatible properties, both technically and aesthetically.*" The parent material in this case is the brick as originally manufactured and laid, a predominantly yellow stock of a warm tone, not the whitened, salt-encrusted surface that results from prolonged moisture exposure. The guidance further advises that "*interventions should maximise the life expectancy of significant building fabric consistent with sustaining its significance*" and that effective repair requires an understanding of "*why its materials are starting to fail, as well as what can be done to prevent it happening again.*" This is directly relevant: the efflorescence is evidence of an active deterioration mechanism (salt crystallisation within the pore structure of the brick), which over successive wetting and drying cycles causes progressive surface spalling and material loss. Matching new bricks to this efflorescent appearance would replicate a defect rather than a heritage characteristic, and would not address the underlying cause of deterioration. The guidance also notes that "*inappropriate or poorly-executed repairs may fail prematurely and accelerate the deterioration of the original building fabric*" – a concern already evidenced in the poor quality repointing carried out under the 2014 consent (HGY/2014/3447), the effects of which are visible on the existing wall (See photographs A and B).

For these reasons, the brick selection and tinting process documented in this report was carried out against sections of the wall that had been cleaned and from which efflorescence had been removed, in order to establish the true colour and character of the existing bricks. Where efflorescence could not be fully removed despite repeated cleaning, those areas were wetted to suppress the surface salts and reveal the underlying brick colour (Photograph F). This approach seeks to ensure that the proposed replacement bricks are matched to the genuine material character of the existing wall, consistent with Historic England's published principles and the requirements of Policies DM1 and DM9 of the Development Management DPD 2017.

Aside from the efflorescence, the existing South boundary wall to be rebuilt comprises a blend of three types of brick namely:

1. A predominantly heavily weathered yellow stock (forming the majority of the wall seen mostly in the mid and upper courses).
2. A yellow stock brick, more frequent at the base courses.
3. An occasional red, very infrequent in number, randomly distributed throughout.

¹ Historic England, Principles of Repair for Historic Buildings, available at <https://historicengland.org.uk/advice/technical-advice/buildings/principles-of-repair-for-historic-buildings/>

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Photograph B - Cleaned section of existing boundary wall in a wet state.



Photograph C - Cleaned section of existing boundary wall in a dry state.

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The South boundary wall's mortar is in a poor condition and as mentioned in the DAS there is evidence that this was poorly re-pointed in 2014 (Planning reference HGY/2014/3447) with a colour in contrast to the existing. Given the amount of mortar degradation it is also hard to definitively establish what the original pointing of this wall was, there is some evidence to suggest a flush pointing at the base however the upper courses exhibit a recess which in part could be due to erosion. The boundary wall perpendicular to this, facing West (to be underpinned) is more textured and contains mostly red bricks of a lighter or darker appearance (see Photograph C to the left). The pointing to the upper section is in good condition and notably demonstrates a flush pointing technique, a style consistent with the age of the wall.

3. Replacement brick specification

For the South boundary wall to be re-built, the following replacement brick types were considered:

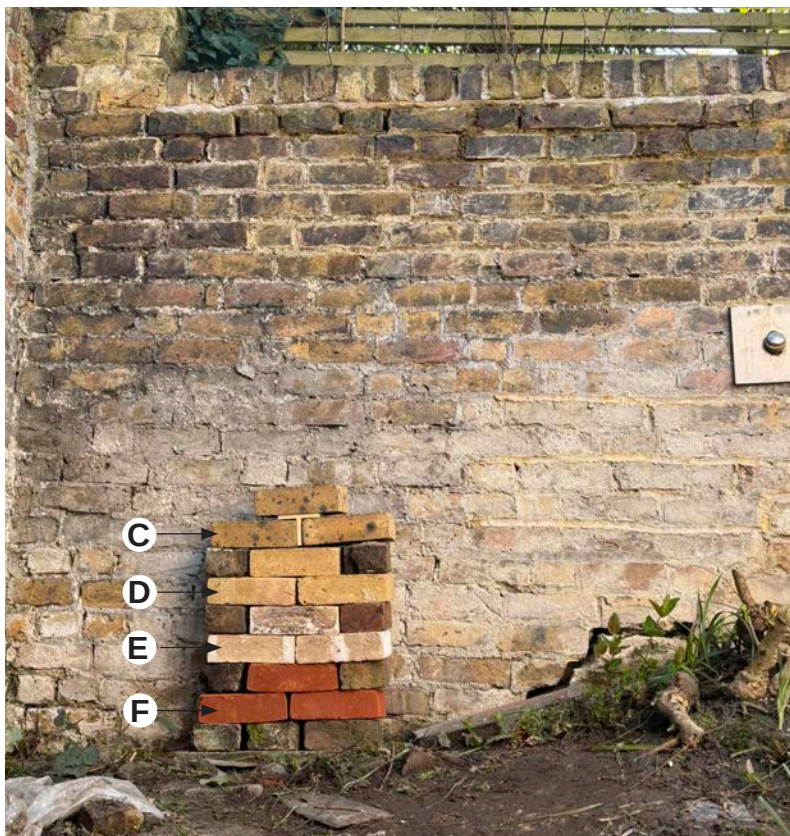
- A – Ibstock Leicester Grey Stock
- B – Weinerberger Terca St Ives Cream
- C – Michelmersh Danehill Yellow
- D – EH Smith Docklands Yellow
- E – EH Smith London Weathered Yellow
- F – EH Smith Warnham Red Stock

These bricks are labelled and compared to the existing boundary wall in the photographs below:



Photograph D – Cleaned section of existing boundary wall in a dry state.

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*Photograph E - Shortlisted bricks against the dry wall.
Note some disregarded half bricks were used to support the wall to the sides.*



Photograph F - Closeup of Shortlisted bricks also showing a wetted section of the existing wall to remove efflorescence.

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Analysis of brick samples to walls

On Inspection it was considered that:

A – Ibstock Leicester Grey Stock

Was too much of a mismatch for further consideration.

B – Weinerberger Terca St Ives Cream

Looked too white and the texture of the bricks were different to the existing.

C – Michelmersh Danehill Yellow

Was a good match to some of the existing bricks as shown in the photographs, particularly when efflorescence was removed. The upper portion of existing bricks however exhibited a much stronger dark weathered appearance, therefore brick tinting was considered to overcome this and is discussed later in this report.

D – EH Smith Docklands Yellow

Had a similar appearance to some bricks but was not as good a match as the Danehill Yellow, it was also more uniform in colour and very light and in a similar way to the Danehill Yellows would need tinted to match the upper portion of existing heavily stained bricks.

E – EH Smith London Weathered Yellow

Was a match to some of the lower bricks if efflorescence was accepted, however the applicant feels this is not good practice for reasons noted further in this report.

F – EH Smith Warnham Red Stock

Had a very strong red colour that appeared inappropriate. It was therefore investigated whether the C Danehill Yellow could be tinted red as an alternative.

4. Brick Tinting

As noted above, brick tinting was considered to match the Michelmersh Danehill Yellows to the nearest existing bricks, a weathered tint and a red tint type were used from Bebbingtons to build up a different colour as shown below. The tinting is permanent and weather resistant and allows fine adjustment to account for specific nuances in combinations of reclaimed and new bricks.



Photograph G – Use of brick tinting to create a better match

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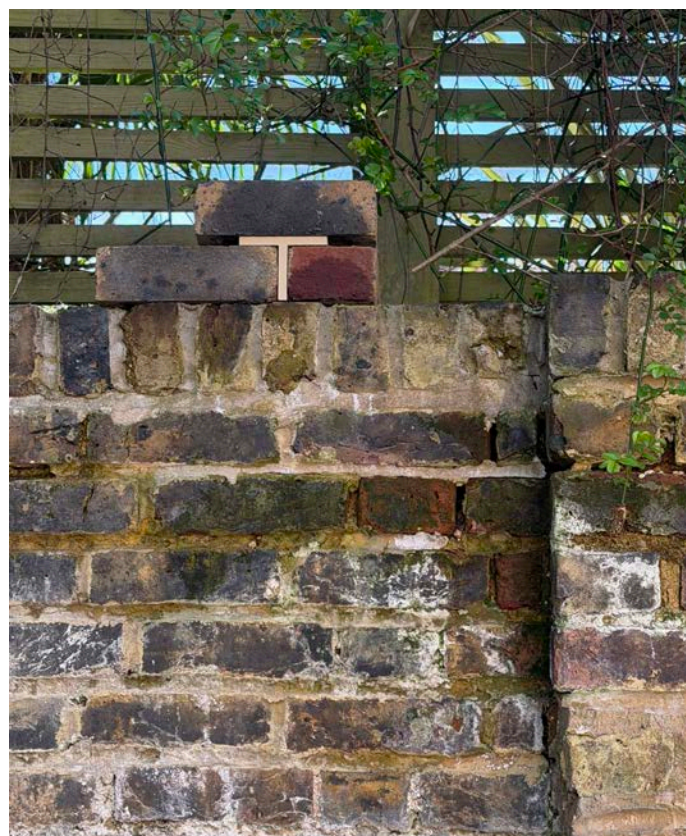


Photograph H - Photograph of tinted Danehill Yellows at the top of the boundary wall



Photograph J - Photograph of tinted Danehill Yellows at the top of the boundary wall with a red half brick test

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Photograph K Closeups of tinted Danehill Yellow Bricks, the right photo red has been further stained compared to the left photo.

Summary on Brick Selection and specification

As noted previously, it is the applicant's intent to reclaim as many existing bricks as possible, therefore the expected number of new bricks will hopefully be low.

As indicated in photos D to K, the most appropriate matching new brick was considered to be the Danehill Yellow which can also be locally tinted to match in with existing bricks. The Tinting process has the advantage of being fine tuned once completed to take account of specific nuances in combinations of existing bricks and will be carried out by a tinting firm such as Chameleon whom were previously mentioned in the DAS regarding replacement tinted bricks for the main house.

The Danehill Yellow is therefore proposed as a replacement brick if additional bricks are needed in the replacement boundary wall. The Product Technical Information Sheet is included overleaf.

The proposed brickwork will be laid in Flemish bond to match the original wall, in accordance with Condition 5 and the approved section drawing SWL-SEC-11.

Product Technical Information Sheet

Freshfield Lane™

Danehill Yellow

Configuration (EN 771.1):	Frogged Clay Facing Brick	Dimensions:	215 x 102.5 x 65 mm
Compressive Strength:	>= 27 N/mm²	Dimensional Tolerance:	T2
Compressive Strength Category:	II	Dimensional Range:	R1
Freeze/Thaw Resistance:	F2	Water Absorption:	=< 12 %
Soluble Salts Content Category:	S2	Initial Rate of Water Absorption:	2.5 kg/m².min
Reaction to Fire:	Class A1	Dangerous Substances:	N/A
Thermal Conductivity (P = 50):	0.45 W/m.K	Thermal Resistance (P = 50):	0.23 m².K/W
Thermal Conductivity (P = 90):	0.51 W/m.K	Thermal Resistance (P = 90):	0.2 m².K/W
Void Percentage:	6 - 11 %	Net Dry Density:	1690 kg/m³
Water Vapour Permeability Coefficient:	5/10	Gross Dry Density:	1460 kg/m³
Bond Strength (fixed value):	0.15 N/mm²	Density Tolerance:	D1
Quantity per Pack:	400	Product Weight:	2.225 kg
DoP common root reference code:	--FL65FAB--	Products per Square Metre:	60

Clay bricks are manufactured and supplied to relevant clauses of BS EN 771-1.

Declarations of performance, environmental and other policies can be found on the company website: www.mbhplc.co.uk. Further information is available via our sales department on 0844 931 0022 or email sales@mbhplc.co.uk.



5. Mortar Specification

The next item considered for the wall was the mortar type and colour. A sample selection of Natural Hydraulic Lime Mortar (NHL 3.5) was considered using the Wormersley's Ironstone Mortar selection as a guide.

These mortar mixes are shown against the existing wall in Photograph L. The existing walls exhibit significant mortar joint degradation, dirt and staining, it is also evident that a poor mortar match was made for the original repairs given that its colour is a significant contrast to the existing wall (Photographs A and B) demonstrate this. Analysis of sections of the cleaned wall suggest that the predominant colour of mortar is a light white yellow colour, it was therefore concluded that a suitable matching colour of mortar to this be proposed.



Photograph L - Comparison of mortar in upper wall with example pre-mixed NHL 3.5 Lime mortars.

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Photograph M Comparison of mortar in lower wall with example pre-mixed NHL 3.5 Lime mortars.



Photograph N Comparison of mortar in underpinned wall perpendicular to the South boundary wall to be rebuilt.

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Summary of Mortar Selection

On inspection it is evident that currently available lime mortar mixes can achieve a good match. Wormersley's provide a match classed as 'Ironstone Lite' and 'Ironstone Yorkshire' that look similar to the existing, however when compared with the adjacent underpinned wall the 'Ironstone Yorkshire' looks like a more consistent match throughout.

It is therefore proposed that an NHL 3.5 mortar similar to the Ironstone Yorkshire be used for the rebuilding of the wall using a flush pointing technique more commonly consistent with the age of the wall and also evidenced in some of the better preserved sections of the adjacent boundary wall as shown in Photograph N.

6. Conclusions and Policy Compliance

The proposed brickwork specification has been developed to preserve the character and appearance of the Highgate Conservation Area in accordance with Policies DM1 and DM9 of the Development Management DPD 2017 and the NPPF. The use of reclaimed historic bricks as the primary material, supplemented where necessary by carefully matched Michelmersh Danehill Yellow bricks with in-situ tinting, together with an appropriate NHL 3.5 lime mortar and flush pointing technique, seeks to ensure the rebuilt wall section will be materially consistent with the existing locally listed boundary wall and sympathetic to its heritage significance.