

49 & 51 KEW GREEN

Parapet and Flank Wall repairs

July 2024



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Twickenham
TW1 3QS

PREPARED BY

Name: Kieran Kintrea MRICS

SITE DETAILS

Address: 49 & 51 Kew Green

Listing Status: Properties separately Grade II listed

Revision	Reason for Issue	Date of Issue	Issued By
-	First Issue - DRAFT	15.07.24	KK

1 Introduction

- 1.1 Martin Ashley Architects (MAA) have prepared the below document for remedial masonry and lead works at 49 & 51 Kew Green, on behalf of the Royal Botanic Gardens Kew.
- 1.2 49 & 51 Kew Green are connected, but separately listed buildings. 49 Kew Green List Entry Number: 1357732. 51 Kew Green List Entry Number: 1065398.
- 1.3 Alterations and developments of the two buildings are not discussed here in detail but have included a lower range the two buildings which has physically connected the properties. Much of the work proposed is to the parapet wall of 51 Kew Green which rises above this lower range of 49. Whilst at ground floor level this wall would therefore be a Party Wall, it is considered, having taken advice, that where the flank and parapet wall of 51 projects up above the roof of 49, this is not a "Party Wall" under the definition of the Party Wall act, as it does not sit astride the Party Wall line.
- 1.4 It is evident that 51 Kew Green used to form a M shaped pair of gables, following the line of the roof behind. Evidence exists in the wall for raking brickwork courses of the original gable line. Alterations have evidently been undertaken, including it is assumed the replacement of Portland copings with brick on edge details. These alterations have questionable weathering details and the brickwork in the areas of Parapet detail B and C are both live and unsound.
- 1.5 The advice we have received is additionally that if both parties are desirous of the works being undertaken then not Party Wall award is necessary in this situation. MAA have provided this information to RGBK, although we are not qualified to offer Party Wall services or act as Party Wall Surveyors. If RGBK (or the owner of 51 Kew Green) feel they would like to appoint Part Wall surveyors, these appointments would have to be direct and not via MAA.
- 1.6 MAA drawings are:
- KK001 – Parapet Detail at A
 - KK002 – Parapet Detail at B
 - KK003 – Parapet Detail at C
 - KK004 – Photographs of 51 wall
 - KK005 – Extent of reconstruction to 51
 - KK006 – Lead capping of 49/51 Junction
 - KK007 – 49 Flank wall works
- 1.7 Works are to be undertaken to the very highest quality and in accordance with best conservation practice. Only those experienced in working with traditionally constructed buildings are to complete the works detailed below.
- 1.8 Except with the agreement of MAA all leadwork should be completed by a LCA rated excellent member.
- 1.9 Call MAA for a site visit if required during the tender period to deal with any spec/tender queries pre-contract.
- 1.10 The lead gutter of 49 beneath the flank wall of 51 is new and should be carefully protected and cleaned on completion.

2 SCAFFOLDING

- 2.1 Allow to provide all necessary scaffolding for the project.
- 2.2 All scaffolding to be undertaken by a Full Contracting Member of the NASC.
- 2.3 Provide a scaffold design for approval.
- 2.4 Contractor is to familiarize themselves with the access restrictions whilst tendering for the work, noting the glazed roof structures and balconies etc.

3 MASONRY WORKS

- 3.1 The extent of works is as shown on MAA drawings.
- 3.2 The existing parapet detail to the gable walls of 51 is to be taken down and reconstructed for its full length as shown on MAA drawings KK001, KK002 and KK003. More extensive reconstruction is required between Gable 1 and Gable 2 as shown on KK005. General repointing will be undertaken.
- 3.3 Remedial works and pointing are required to the flank wall of 49 as shown on drawing KK007.

Pointing

- 3.4 The hatched area on KK007 will be repointed on the flank wall of 49.
- 3.5 The entire flank wall of 51 (facing 49) is to be raked out and repointed.
- 3.6 To wall of 51 rake out and repoint down to roof level the parapet wall between Gables 1 and 2, below the area of reconstruction, to leave parapet wall in good condition complete, both sides.
- 3.7 Raking out by hand is to be carefully done to avoid damaging the arises of brickwork. A relieving cut could be made in mortar with a Fein Oscillating Multi tool or similar following trials by hand, although approval of this would be subject to a trial and agreement of who can use these tools.
- 3.8 More detailed guidance on raking out and repointing of mortar joints can be found on pages 595-604 of Historic England's Practical Conservation Series for Brickwork – extracts are included within Appendix.
- 3.9 Pointing to be in an NHL 2 mix with aggregates such as Masters Pit Sand in ratios of 1:3 lime: aggregate. Exact aggregates will require agreement, allow for 500x500mm pointing samples of 4 different mixes of a washed, gritty, well graded aggregate sieved to <4mm down. CLS90 from Cornish lime could be considered as another aggregate. Allow for inclusion of PFA in mixes and samples as a way of toning down colour. Complete trials at outset to allow agreement of mix.
- 3.10 Pointing is to be well compacted, the surface opened up whilst leather hard to expose the aggregate and to be thoroughly tamped with a stiff churn bristle brush. Pointing is not to be sponged off.
- 3.11 Pointing is to be slightly recessed to avoid coming over brick arises and artificially widening the mortar joint.
- 3.12 All lime work is to be carefully tended to avoid shrinkage, allow carbonation and control colour of pointing whilst drying.

Bricks

- 3.13 Brickwork alterations are as shown on MAA drawings. The proposal being to reinstate the raking brick courses where missing, and generally add a second to provide sufficient upstand for soakers and flashings above the roof plane behind.
- 3.14 Existing bricks are a Yellow Stock mix. Allow for a matching hand made brick for any brick replacements necessary. For tender purposes allow for 250 bespoke hand made brick replacements to matching size, colour and texture.
- 3.15 It is assumed that the existing raking course will be lifted complete and re-bedded.
- 3.16 The extent of repointing is described above and on drawings. But for confirmation, the entire flank wall of 51, inside and out, is to be repointed, as are all four elevations of the 4 chimney stacks, and the area of 49 Kew Green shown hatched.
- 3.17 Remove existing flaunching and re-launch all 4 stacks complete.
- 3.18 Allow to provide and install Redbank Clay Flue Ventilator (Pepperpot Cowls) to all pots. Colours to match existing pot colours.
- 3.19 Once the reconstruction in Parapet Area B is complete the gap between this area and Stack 2 will be reviewed. It is envisaged that on reconstruction the gap will have reduced somewhat, but the joint will require deep packing and pointing up to prevent water ingress.



Chimney 2 – once reconstruction complete it is anticipated the opening vertical joint will reduce, but will still require deep packing and pointing, with a lead flashing detail over the gap between stack and parapet coping.

Portland Coping

- 3.20 New copings are to be Portland stone from Albion Stone.
- 3.21 New Portland assume in Jordans Whitbed. Provide sample. Profiles and sizes to be taken from existing coping stones at Parapet detail A, call for agreement once access is in place.
- 3.22 Assume each coping is fixed 2no type BMY restraint from Stainless Steel Fixings - www.ssfl.co.uk – with SLSS08065 sleeve anchor and 6x60mm dowels between the joints. At the end a capped dowel is required. This is to be confirmed on site. It is not the intention for any fixings to be visible. For the final coping stone allow to recess 10mm threaded bar into the back of the Portland coping, fixed down into the gable by 500mm to act as a kneeler with concealed fixings.
- 3.23 Existing straps to coping stones are to be removed and holes mortar repaired. Works are to include lifting of all parapet copings on 51 flank wall. The works are not intended to continue down the front elevation of the building.

Structural Works

- 3.24 SFK have provided two sketches relating to structural works.
- 3.25 The below sketch shows the threaded bar repairs necessary to all raking coping details to the flank wall of 51 Kew Green. Particularly in Parapet details A and C, although a short area is required in detail B. Fixings are to be staggered so that there are some on both sides of the parapet.
- 3.26 SFK Drawing 24037.003 shows an indicative area of tie repairs across flues within the flank wall of 49 Kew Green. As noted above, assume these Helifix bars are required to the full flue run up to eaves level, not only the 3 rows shown in SFK drawing.
- 3.27 Call SFK and MAA to site once scaffold is erected to agree scope of works.

4 ROOFING WORKS

- 4.1 The extent of works is as shown on MAA drawings and include new lead cappings to the foot of 51 flank wall.
- 4.2 The works to the parapet details will require the soakers and flashings to the 51 side of the wall to be renewed complete, with the associated lifting of the tiles of the abutment detail to allow reconstruction and replacement.
- 4.3 Carefully lift those tiles required to carry out the works and set aside for reinstatement.
- 4.4 Replace flashings in code 6 and soakers in code 4 lead in accordance with Lead Sheet in roofing, the ultimate guide to best practice. It is envisaged the flashings will be dressed into the raking brickwork course joints and it will therefore not be a stepped flashing.
- 4.5 Allow to replace soakers and flashings to stacks 1 and 3.
- 4.6 Behind stack 2, allow to install a lead parapet capping over the reinstated detail to weather the junction of the stack and parapet wall, dressed, plugged and screwed into joints of stack and with a continuous copper clip on the parapet coping.
- 4.7 At the south end of the 51 Flank wall the lead capping of the low level tile creasing will require confirmation before commencement. Assume for tender purposes that the same detail runs through, but the exact weathering will require confirmation once the parapet reconstruction is complete.



Flank wall to 51 – Awkward detail at south end which will require confirmation once parapet revision complete.

5 COMPLETION

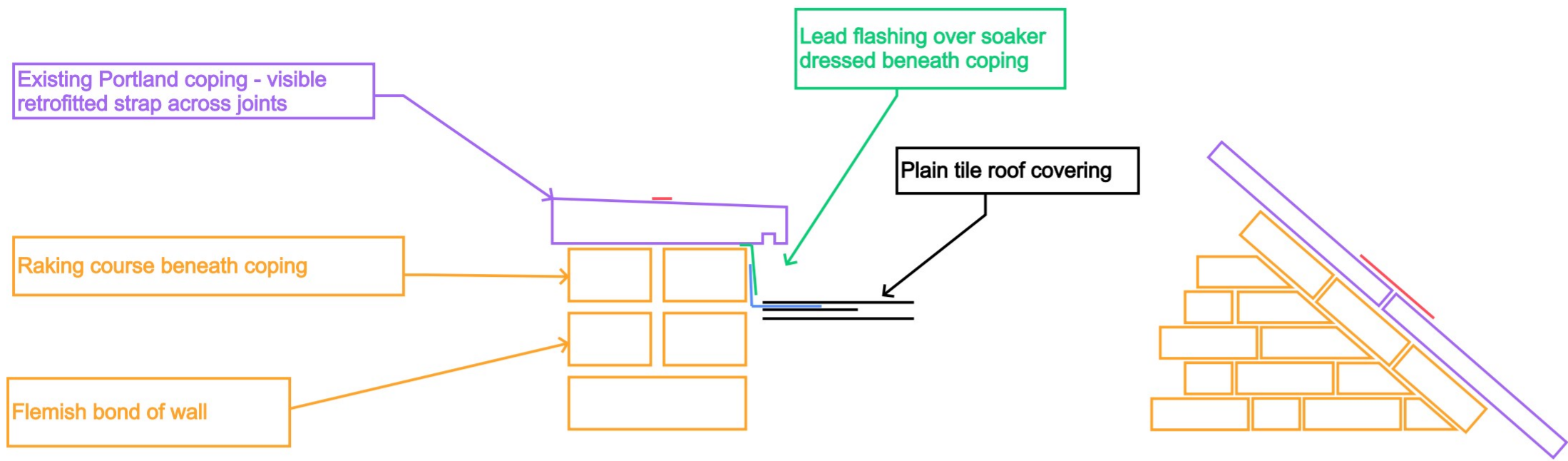
- 5.1 Clear and clean site of all traces of contractor's occupation.

6 CONTEXT PHOTOS

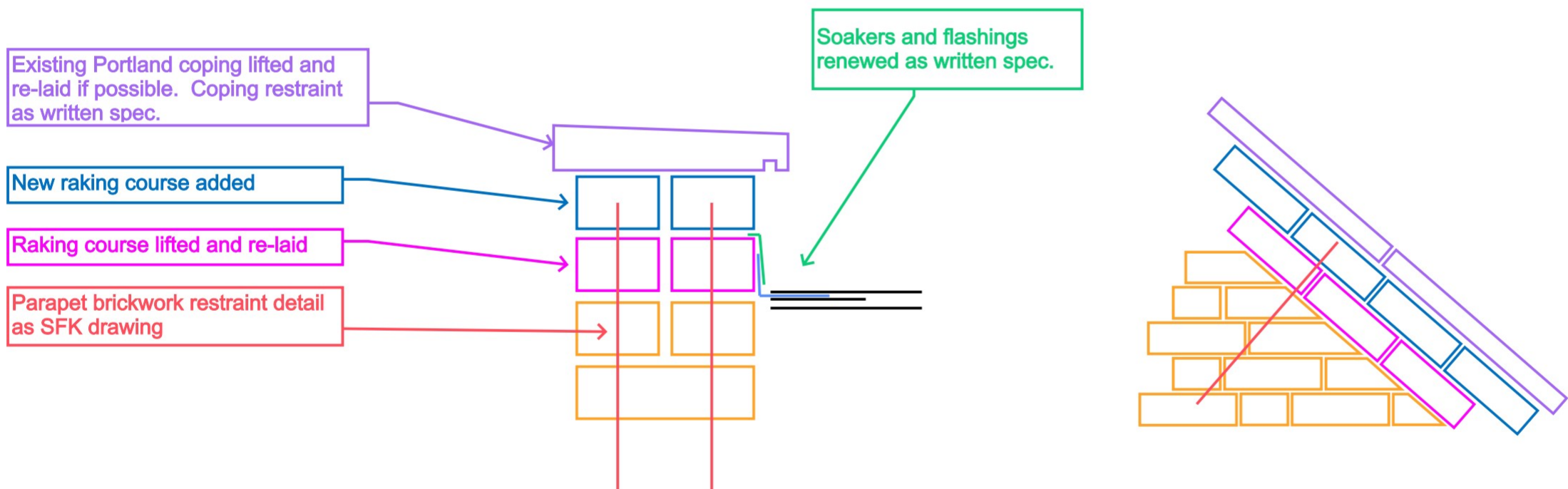
6.1 The below context photos are provided where areas are not shown above or in MAA drawings.




Left: Rear of parapet detail at detail A. **Top right:** Rear of parapet at Detail C. **Bottom Right:** Rear of parapet at Detail B.

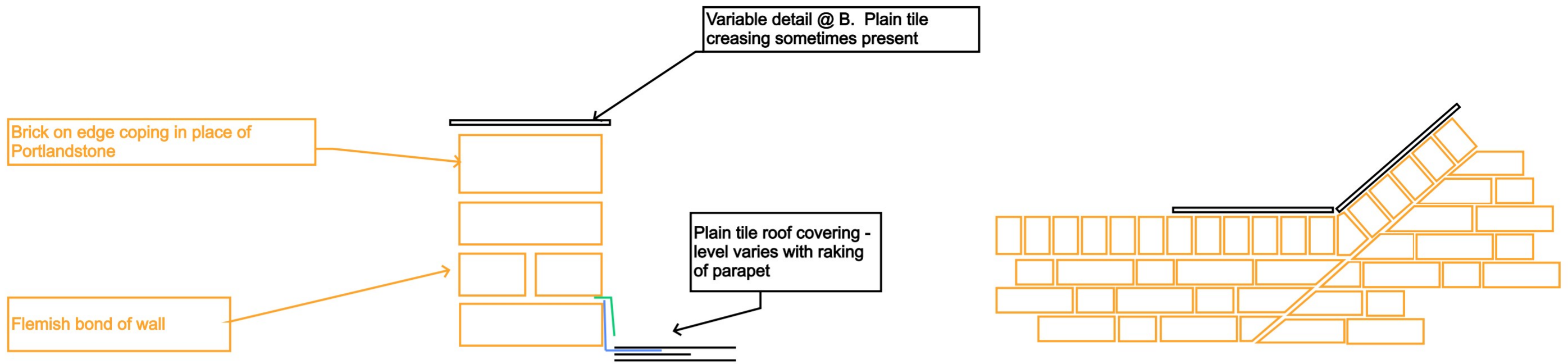


Parapet Detail A - As EXISTING - Section through and outer elevation

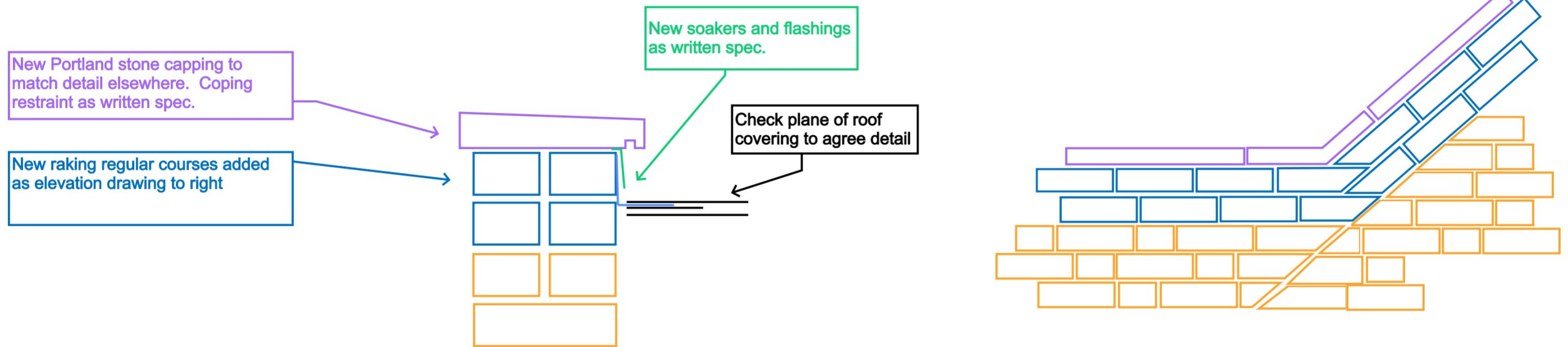


Parapet Detail A - As PROPOSED - Section through and outer elevation


 <p>MARTIN ASHLEY ARCHITECTS</p> <p>46-48 London Road, Twickenham, Middlesex, TW1 3RJ T +44 (0) 20 8948 7788 www.ma-arch.co.uk</p>	Title: Parapet detail A	
	Date: 12/07/2024	Drawn by: KK
Project: 49 & 51 Kew Green	Drawing Number: 2279-13-KK001	

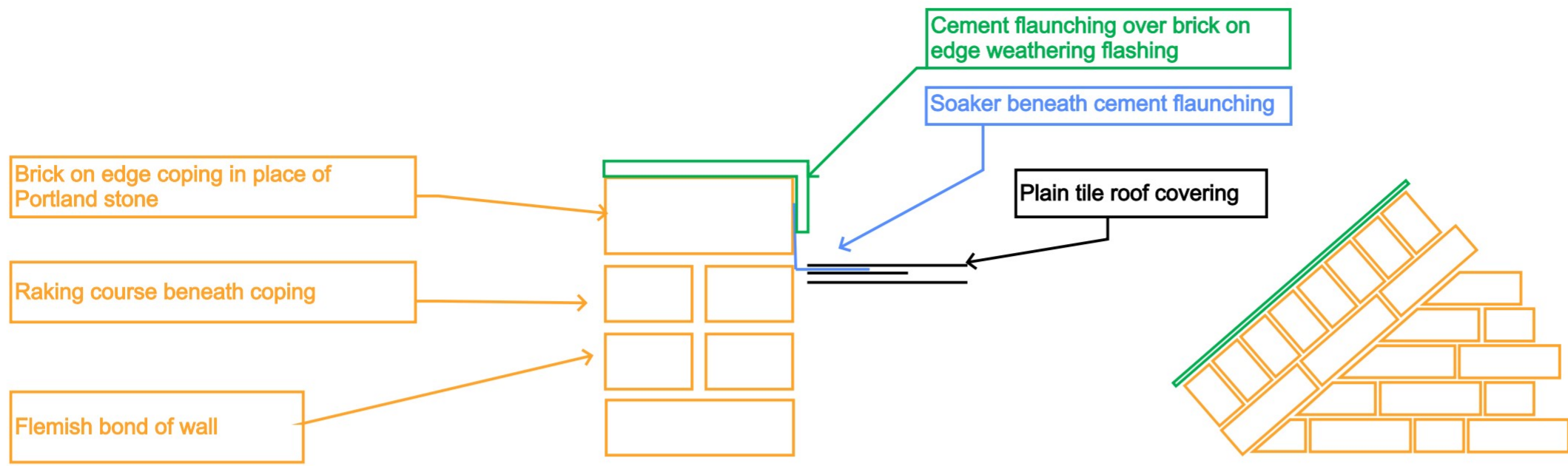


Parapet Detail B - As EXISTING - Section through and outer elevation

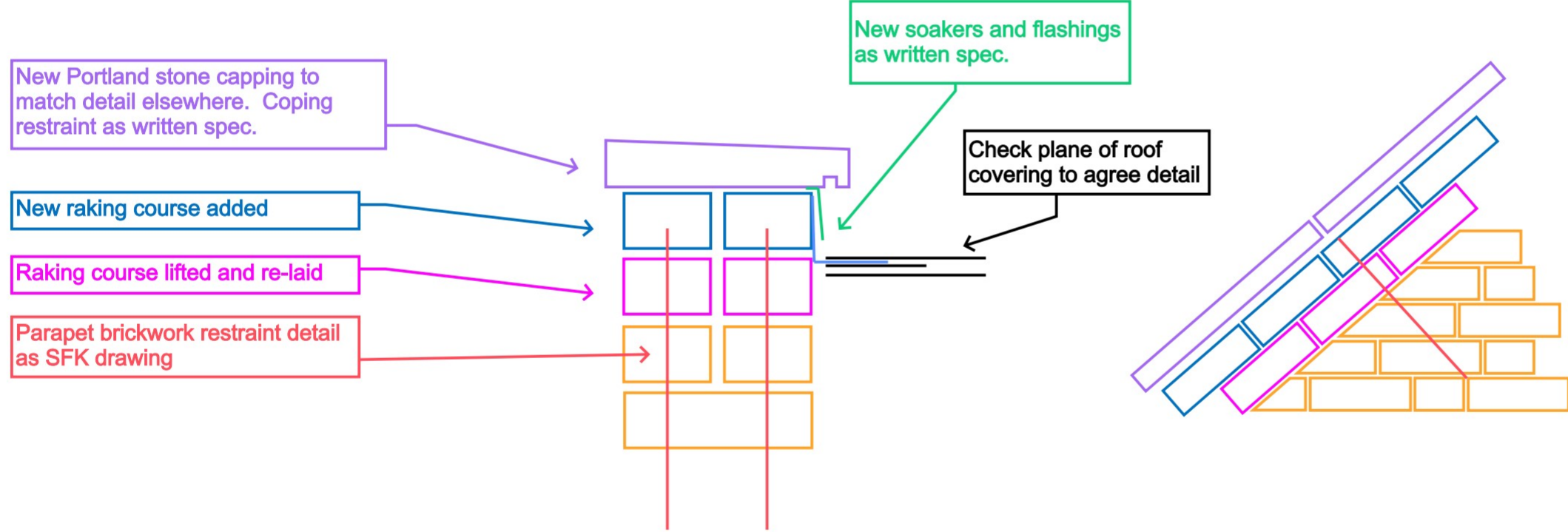


Parapet Detail B - As PROPOSED - Section through and outer elevation


 <p>MARTIN ASHLEY ARCHITECTS 46-48 London Road, Twickenham, Middlesex, TW1 3RJ T +44 (0) 20 8948 7788 www.ma-arch.co.uk</p>	Title: Parapet Detail B	
	Date: 12/07/2024	Drawn by: KK
Project: 49 & 51 Kew Green	Drawing Number: 2279-13 - KK002	



Parapet Detail C - As EXISTING - Section through and outer elevation

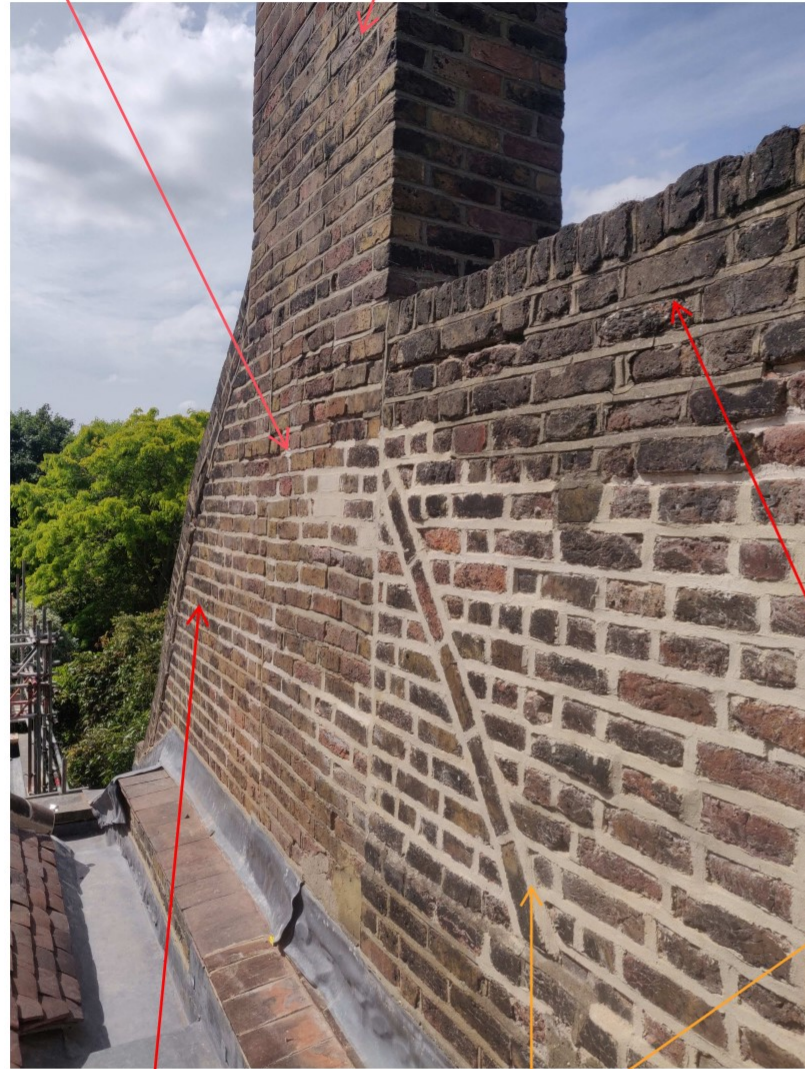


Parapet Detail C - As PROPOSED - Section through and outer elevation

 <p>MARTIN ASHLEY ARCHITECTS</p> <p>46-48 London Road, Twickenham, Middlesex, TW1 3RJ T +44 (0) 20 8948 7788 www.ma-arch.co.uk</p>	Title: Parapet Detail C	
	Date: 12/07/2024	Drawn by: KK
Project: 49 & 51 Kew Green		Drawing Number: 2279-13 - KK003

Gable 2

Chimney 3



Parapet Detail C

Historic raking course/line where previous gable ends infilled

Chimney 2


Chimney 1

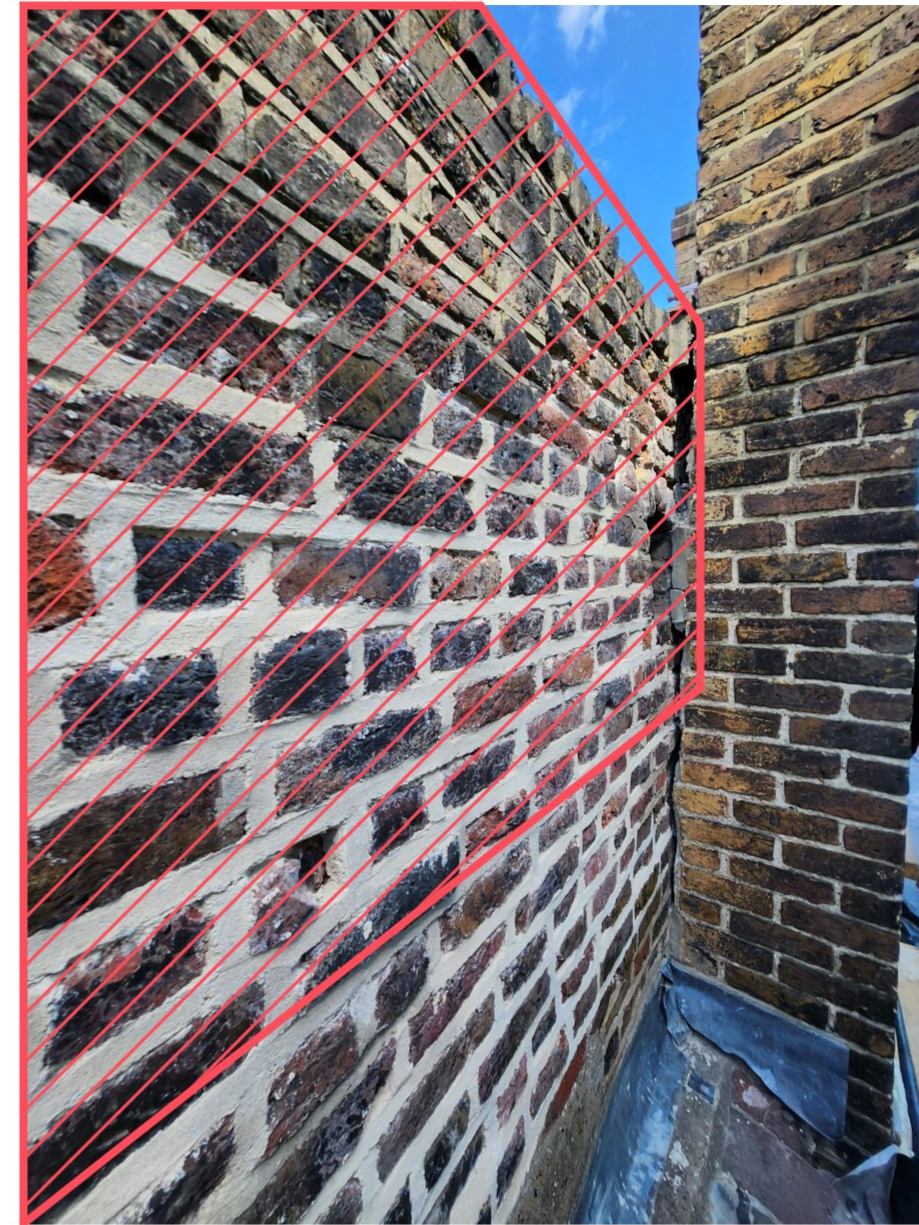
Gable 1



Parapet Detail B

Parapet Detail A


 <p>MARTIN ASHLEY ARCHITECTS</p> <p>46-48 London Road, Twickenham, Middlesex, TW1 3RJ T +44 (0) 20 8948 7788 www.ma-arch.co.uk</p>	Title:	
	51 Kew Green wall photographs	
Project:	Date: 14/07/2024	Drawn by: KK
	Drawing Number:	
49 & 51 Kew Green	2279-13 - KK004	

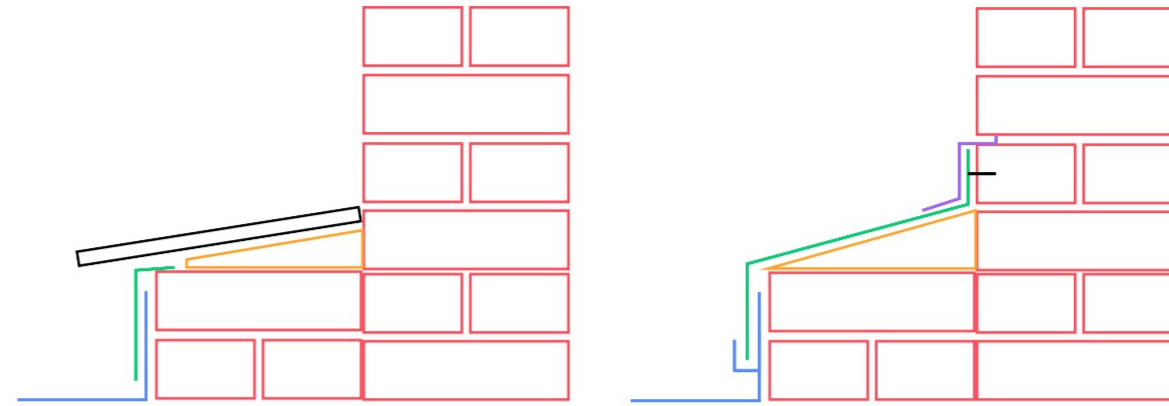


Reconstruction of infill between gables 1 and 2 - In area of Parapet detail B

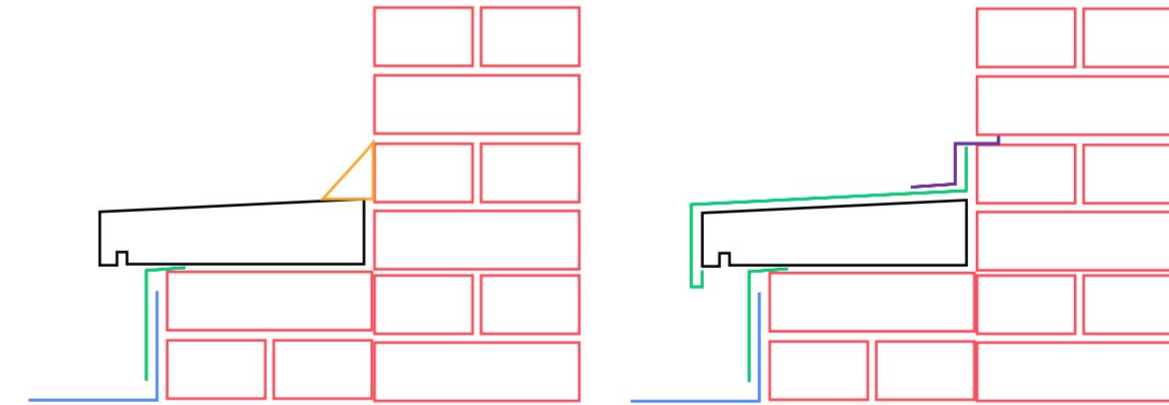


Take down carefully, clean mortar from bricks and reconstruct - cap with Parapet detail B as proposed


 MARTIN ASHLEY ARCHITECTS 46-48 London Road, Twickenham, Middlesex, TW1 3RJ T +44 (0) 20 8948 7788 www.ma-arch.co.uk	Title:	
	Reconstruction extent to 51	
Project:	Date: 14/07/2024	Drawn by: KK
	Drawing Number:	
49 & 51 Kew Green	2279-13 - KK005	



Where tiling creasing exists, allow to remove, refaunch masonry (orange) and lay new code 6 lead capping (green) fixed with one row of fixings at 75mm centres on building paper underlay. Weld lead clips to valley gutter upstand (blue). Install cover flashing (purple) and plug and screw into mortar joint.



Where Portland coping exists, allow to remove flashing (orange) and lay new code 6 lead capping (green) fixed with one row of fixings at 75mm centres on building paper underlay. Clip with continuous copper clip. Install cover flashing (purple) and plug and screw into mortar joint.

 MARTIN ASHLEY ARCHITECTS 46-48 London Road, Twickenham, Middlesex, TW1 3RJ T +44 (0) 20 8948 7788 www.ma-arch.co.uk	Title: Lead capping of 49/51 Junction	
	Date: 14/07/2024	Drawn by: KK
Project: 49 & 51 Kew Green	Drawing Number: 2279-13 - KK006	



Complete indent repair to chimney capping

Chimney 4




Rake out carefully by hand and repoint

SCAFFOLD IS NOT TO BE FIXED INTO ELEVATION

Line of flues with half brick cover. See SFK repair detail. Assume SFK repair detailed needed for full length of flue until stack reaches eaves. Call MAA and SFK as soon as scaffold access is in place for careful survey of elevation.

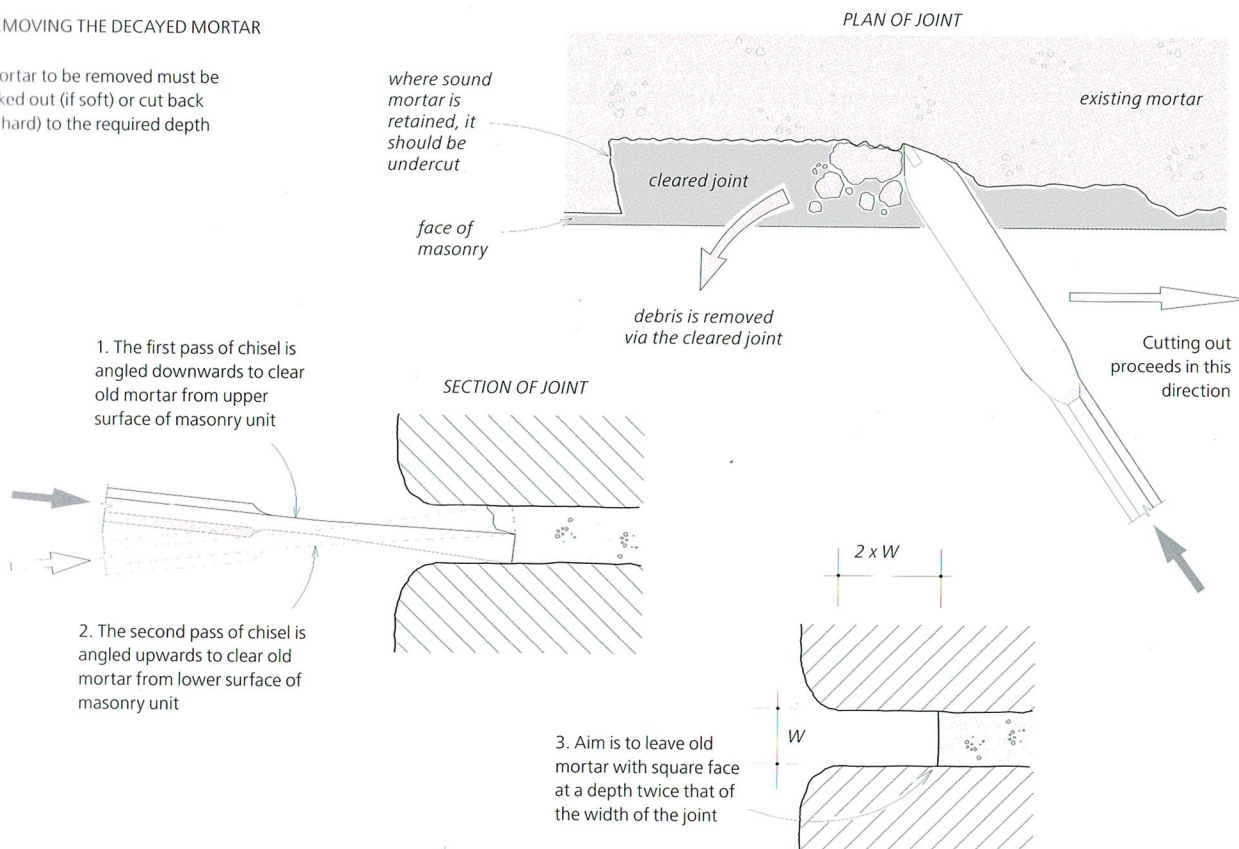
Glass roof beneath

 <p>MARTIN ASHLEY ARCHITECTS</p> <p>46-48 London Road, Twickenham, Middlesex, TW1 3RJ T +44 (0) 20 8948 7788 www.ma-arch.co.uk</p>	<p>Title: 49 Kew Green Flank Wall</p>	
	<p>Date: 14/07/2024</p>	<p>Drawn by: KK</p>
<p>Project: 49 & 51 Kew Green</p>	<p>Drawing Number: 2279-13 - KK007</p>	

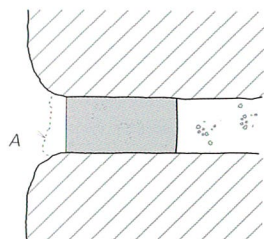
RAKING OUT, PREPARING & REPLACING MORTAR JOINTS

REMOVING THE DECAYED MORTAR

Mortar to be removed must be raked out (if soft) or cut back (if hard) to the required depth



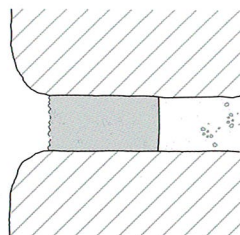
PLACING THE NEW MORTAR



4. Cleared joint is flushed with clean water

While damp, replacement mortar is introduced and compressed with a pointing iron of suitable width to fit into the joint, leaving a surplus of mortar (A)

When 'leather hard', this surplus mortar is scraped back to the desired face: this should be recessed to be within the original joint width



5. After the initial set has taken place, the mortar face is firmly stippled with a stiff bristle ('churn') brush to expose aggregates and give joint a weathered appearance to match the surviving original mortar

Newly placed mortar must be protected from adverse weather and must not be allowed to dry out too rapidly.

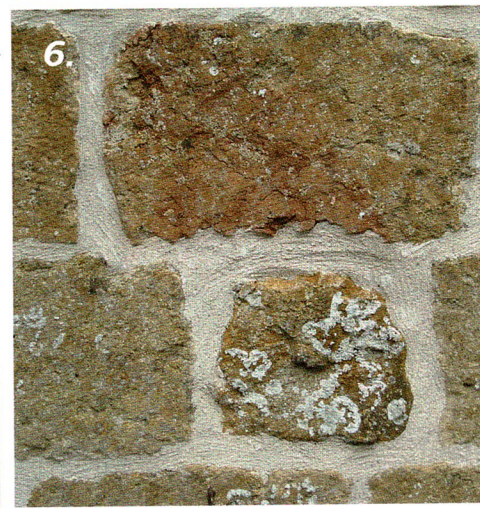
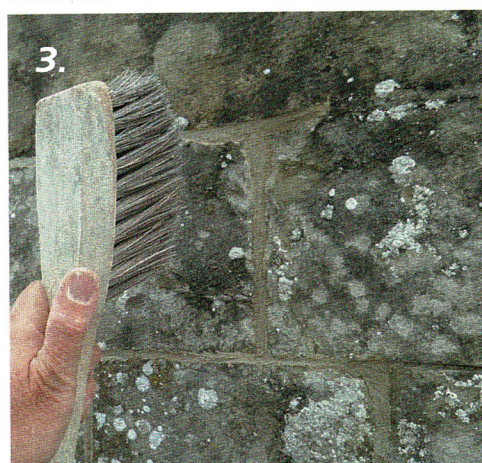
EARTH, BRICK & TERRACOTTA

BRICK: TREATMENT & REPAIR

Historic England Practical Building Conservation Mortars, Renders and Plasters (page 325)

Successful pointing requires a combination of skill, judgement and the correct tools:

1. With skill, a neat wedge of mortar can be picked up on a pointing iron and inserted neatly into the joint, without risk of smearing mortar on the surface of the masonry
2. Using tools that are appropriate for the width of the joint, mortar can be firmly compacted, ensuring solidly filled joint with no voids
3. To form a sympathetic finish to match adjacent weathered mortar, the work can be hit firmly with a stiff bristled churn brush to compact the mortar, remove laitance and expose the aggregate. Judging when to finish the joint is vital; too soon and the brush will leave unsightly marks in the surface and there is the risk of further shrinkage; too late and it will be impossible to close up any shrinkage cracks or remove laitance
4. The completed work is neat and has an attractive texture
5. This repointing was finished too early, while the mortar was still soft. The bristles of the churn have penetrated the mortar leaving 'pin holes'. Rapid drying has drawn lime to the surface of the wet mortar resulting in a light bloom. Further shrinkage has occurred after the work was completed and some of the pointing sounds hollow when tapped, indicating that it has pulled away from the backing
6. This repointing was left too long before finishing - It required a wire brush to remove laitance, and even then some still remained. The wire brush has left striations in the mortar which detract from the appearance of the work.



Historic England Practical Building Conservation Earth, Brick and Terracotta (page 602)

Joint filing

These photographs show the three basic stages in placing mortar and finishing a joint where the aim is to create a slightly recessed and weathered appearance. Where the intention is to match a particular joint profile, the pointing technique will have to be adapted accordingly.

1. Placing mortar in the prepared joints using a pointing iron with a blade narrow enough to fit into the joint. Mortar prepared to the correct consistency will adhere readily to the blade of the pointing iron. The joints are filled to excess and no attempts made at this stage to smooth the surface
2. Once the mortar has stiffened to a "leather-hard" consistency it is further compressed with the pointing iron, then trimmed back to leave the weathered arrisses of the bricks clean and clear of mortar.
3. Finally, the surface of the joint is firmly stippled with a churn brush. This further compacts the mortar in the joint and gives an open-textured, weathered appearance

JOINT FILLING

When the replacement mortar is applied, the inside surfaces of the joints should be damp but not wet. A range of pointing irons of differing blade widths that will fit within the variety of joints to be filled will be needed. So-called 'pointing trowels' and jointing tools that are wider than the joints to be filled should not be used, as they may smear mortar on the face of the bricks, and do not allow it to be firmly compacted into the back of the prepared joint.

Ensuring that the replacement mortar is of the correct consistency is important for successful pointing and clean working. It should not be too wet. A well-prepared lime mortar will be workable and cohesive, and have a consistency similar to soft clay. Mortar of the right consistency can be readily picked up on the blade of the pointing iron, and placed firmly and accurately into the back of the joint. With care it is possible to fill even narrow joints without getting mortar on the surface of the bricks. However, when pointing very narrow joints, the surface of bricks can be protected with plastic-faced adhesive tape. This is applied over the joint to be filled, and a slit is cut with a scalpel or craft knife, following the joint. The mortar is then applied through the slit with a pointing iron of the appropriate width. The preparation of lime mortars is described in detail in the *Mortars, Renders & Plasters* volume of this series. **MORTARS**

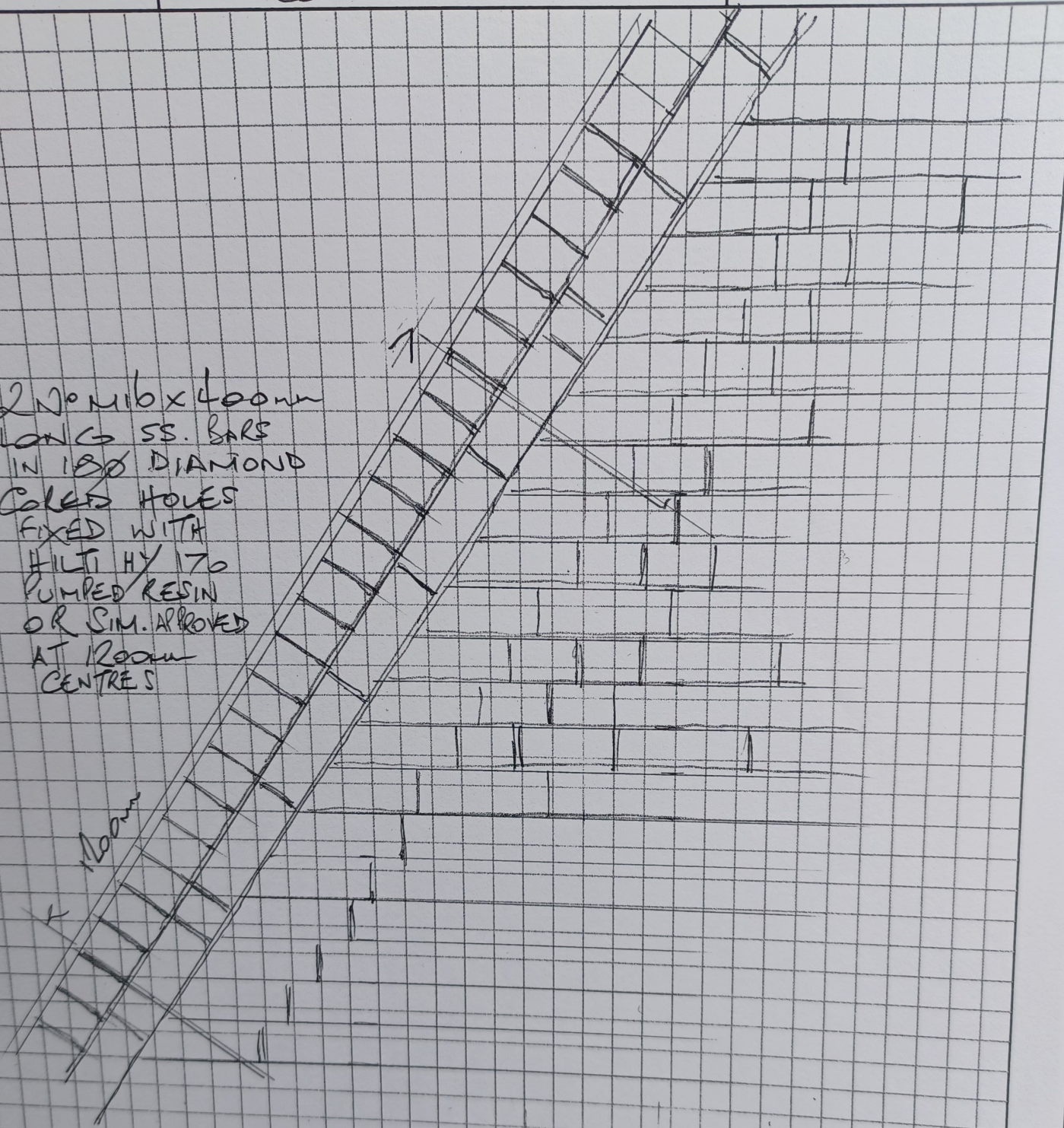
Where possible, pointing should proceed from the upper part of the wall, working downwards, to avoid damaging finished work when dampening-down subsequent areas. Deep joints and voids should first be backfilled with mortar to within 25 mm of the surface, and allowed to stiffen before pointing.



Element: PROPOSED FIXING OF
COILING

Date: 03.04.24

2 No M16 x 400mm
LONG SS. BARS
IN 180 DIAMOND
COLED HOLES
FIXED WITH
HILTI HY 170
PUMPED RESIN
OR SIM. APPROVED
AT 1200mm
CENTRES

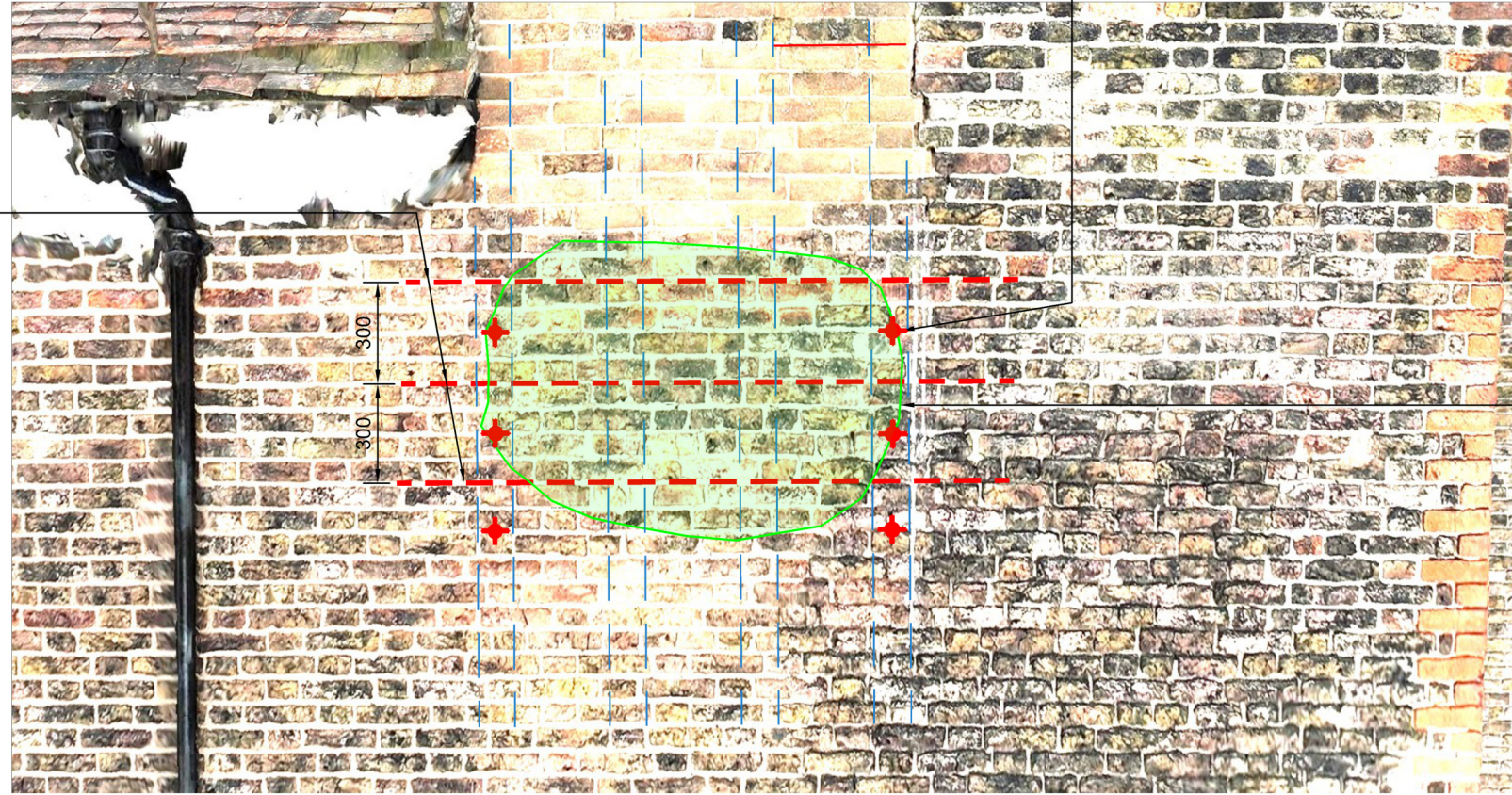


2 No M16 SS
BARS x 400mm
LONG
IN 180 DIAMOND
COLED HOLE
FIXED WITH
HILTI HY 170
RESIN OR
SIM. APPROVED

HORIZONTAL BEDJOINT REINFORCEMENT @ 4 BRICK COURSES. MIN. 300mm EMBEDMENT BEYOND CHIMNEY. USE HELIFIX HELIBARS SET IN HELIBOND CEMENTITIOUS GROUT.

BRICKWORK CHIMNEY
EXACT INTERNAL PROFILE UNKNOWN. IT IS TO BE DETERMINED ON SITE BY CONTRACTOR

3No. EACH SIDE STITCH REPAIR HELIBARS SET IN HELIBOND CEMENTITIOUS GROUT @ 300 VERTICAL CENTRES. EXACT DEPTH TBC ON SITE.



EXTENT OF BULGING BRICKWORK

ELEVATION
NTS



LOCATION
NTS

rev	drawn	chkd	appd	date	description
-	lk	gaw	-	29.04.24	ISSUED FOR DISCUSSION

SFK consulting
2nd Floor, Trinity House,
123 Winchester Road
Chandler's Ford
Eastleigh SO53 2DR
Tel: 023 8251 6969

Project Title: 49 KEW GREEN		Project No: 24037	
Dwg Title: BRICKWORK REPAIR DETAIL		Dwg No: 24037.003	
Drawn: LK	Date: Apr 2024	Scale: NTS @ A3	Rev: -