

Ashton Consulting Engineers

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20 July 2018
Our Ref: 1290

Mrs Jenny Gellatly
Parish Council Clerk
Little Paxton Parish Council
11 Hayling Avenue
Little Paxton
St Neots
PE19 6HG

Dear Mrs Gellatly,

ST JAMES CHURCH BOUNDARY WALL, LITTLE PAXTON

Following my visit to the above property on 28 June 2018, I give below a summary of my findings and recommendations.

PURPOSE OF THE SURVEY

The purpose of the survey is to carry out a condition survey of the eastern boundary wall of the Church which is leaning badly in places and there is a concern about the stability of the wall. This report gives a summary of the condition of the wall and recommendations for remedial works to the wall.

GENERAL DESCRIPTION

The boundary wall is 230mm thick and has a maximum height of 1.0m above ground on the Church side of the wall and a height of 1.35m above ground on the other side of the wall facing the residential property. The wall has 45 degree sloped coping bricks and the brickwork below is a mixture of yellow and red bricks. The coping bricks are either 130mm wide or 65mm wide. The red and yellow bricks were measured as approximately 215 x 65mm high.

The wall is a type of Flemish Garden Wall Bond with three stretcher bricks to one header brick in every course. The wall was originally built with a lime based mortar and has been re-pointed in places with a cement rich mortar. The wall did have a lot of ivy growth on it and most of the ivy was removed prior to my inspection.

SURVEY

At the start of my survey I was accompanied by yourself and you introduced me to the Reverend Yvette Reid of the Church. Yvette Reid confirmed that the Church is a Grade II* Listed Building and explained that any remedial work to the wall would require Faculty approval. You informed me that the Parish Council are responsible for the maintenance of this wall.

For convenience, the length of wall surveyed has been divided into six sections. A detailed list of defects for each section of wall is described in the Schedule of Condition shown in Appendix 1. The wall was surveyed from the church side of the wall and not from the neighbour's side.

CONCLUSIONS AND RECOMMENDATIONS

The wall is reasonable condition but has suffered from ivy and other weeds growing in the mortar joints of the wall and from general weathering. The ivy and weeds have caused the soft lime mortar and bricks to loosen and crack. Over the years the cracks have allowed rainwater ingress and the expansive forces of freezing water has caused the cracks to get bigger and the wall to lean sideways.

The worst leaning in the wall is in Section 3 where the top of the wall is leaning approximately 100mm towards the church and it is recommended that a length of about 5.0 metres of the wall is carefully taken down and rebuilt using the reclaimed bricks and a suitable lime-based mortar to match the original mortar in the wall. Samples of mortar mixes should be made by an experienced brick-layer to with a variety of sands and hydraulic lime:sand mix ratios to identify the most appropriate mix.

The wall near the large tree has been re-built in the past and new cracking has since occurred from the ongoing growth of the tree truck. It is recommended that a short length of wall is rebuilt as a semi-circle around the tree truck as shown on Page Nos.1 and 2 in Appendix 3. The existing footing should be removed near the tree to give a 200mm clear gap between the tree truck and the wall for the future growth of the tree. The existing bricks should be reclaimed and reused with mortar as described above.

I also recommend general repairs to the wall including: the removal of all the ivy and weeds; replacement of badly weathered bricks with matching bricks; re-laying of loose bricks; and re-pointing of loose and open joints with a suitable lime based mortar. The loose mortar haunch at the end pier should be replaced with either a new haunch or bricks laid on edge.

The neighbour's trellis and fence panels would need to be taken down temporarily to allow access for rebuilding the above sections of wall and to carry out the general repairs described above.

The above recommendations would preserve the life of the wall for many years.

Yours sincerely



George Voyias

Ashton Consulting Engineers

Appendix 1: Schedule of Condition

Appendix 2: Photographs

Appendix 3: Proposed Plan and Section at Large Tree

Appendix 1: Schedule of Condition

SCHEDULE OF CONDITION

PROPERTY: ST JAMES CHURCH BOUNDARY WALL

SURVEY DATE: 28.6.18
JOB NO.1290

LOCATION	DESCRIPTION	COMMENT/ DEFECT
Section 1 (Front to 1st Timber Post of Trellis)	Refer to Report	<ul style="list-style-type: none"> - diagonal crack over full height of wall in mortar joints up to 20mm wide - loose coping bricks - five weathered bricks require replacement - ivy roots and stems in wall should be removed - areas of open and loose mortar joints - approximately 50mm lean of wall away from the Church
Section 2 (1st to 3rd Timber Post)	Refer to Report	<ul style="list-style-type: none"> - max lean is 15mm - four badly weathered bricks require replacement - one badly weathered wide coping brick could be replaced - ivy stems and roots remain in wall and should be removed - areas of open and loose mortar joints
Section 3 (3 rd to 6 th Timber Post)	Refer to Report	<ul style="list-style-type: none"> - max lean of wall is 100mm towards the Church - some burial stones are covering the base of the wall so it was not possible to inspect the wall behind these stones - eight badly weathered bricks - ivy stem and roots in wall - areas of open and loose mortar joints - an approximate length of 5.0 m of this wall should be re-built
Section 4 (6 th Timber Post to Large Tree)	Refer to Report	<ul style="list-style-type: none"> - height of the wall at the tree is 730mm on both sides of the wall - max lean occurs near the tree and is 30mm towards the Church - approximately 12 bricks are badly weathered and require replacement - coping brickwork has some small gaps in the mortar which should be filled

LOCATION	DESCRIPTION	COMMENT/ DEFECT
Section 4, continued	Refer to Report	<ul style="list-style-type: none"> - the wall near the tree has been re-built over an area of about 5m and re-pointed with a cement rich mortar - recent cracking has occurred on the wall from the growth of the base of the tree - the wall should be re-built across the width of the tree to prevent further damage to the wall - ivy stem and roots in wall - areas of open and loose mortar joints
Section 5 (Large Tree and next three Fence Panels)	Refer to Report	<ul style="list-style-type: none"> - open gaps in coping bricks - max lean is 20mm towards the Church - approximately 15 red bricks near the top of the wall are badly weathered and require replacement - loose and open mortar joints - ivy stems and roots in wall should be removed
Section 6 (Last section of wall up to Pier)	<p>Refer to Report</p> <p>Pier is 360mm wide and projects 120mm from the face of the wall.</p>	<ul style="list-style-type: none"> - max lean is 20mm towards the Church - five badly weathered bricks should be replaced - gaps in coping bricks should be filled - cracked coping brick should be replaced - mortar haunch on pier is loose and should be either re-done or replaced with matching bricks laid on edge - two loose sections of coping bricks near pier need to be re-laid on fresh mortar - some loose bricks under the coping should also be re-laid - loose and open mortar joints - ivy stems and roots in wall should be removed

Appendix 2: Photographs



Photo No.1: Section 1 of the wall



Photo No.2: Close up of wall coping brick



Photo No.3: Crack in Section 1 with ivy stems and roots



Photo No.4: Loose coping bricks in Section 1



Photo No.5: Weathered bricks in Section 1



Photo No.6: Badly weathered coping bricks and mortar missing under bricks



Photo No.7: Leaning wall in Section 3



Photo No.8: Weathered coping bricks and mortar missing under bricks in Section 3



Photo No.9: Open joints in Section 3 from ivy growth



Photo No.10: Open joint in coping brickwork in Section 4



Photo No.11: Cracking in wall near large tree in rebuilt length of wall



Photo No.12: Wall in Section 5



Photo No.13: Open joint in coping in Section 5



Photo No.14: Cracked coping brick in Section 6



Photo No.15: Loose coping bricks and mortar haunching on pier at the end of the wall

Appendix 3: Proposed Plan and Section at Large Tree

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JOB No: 1290

PAGE No: 1 Rev: A

PROJECT: ST JAMES CHURCH, LITTLE PAXTON

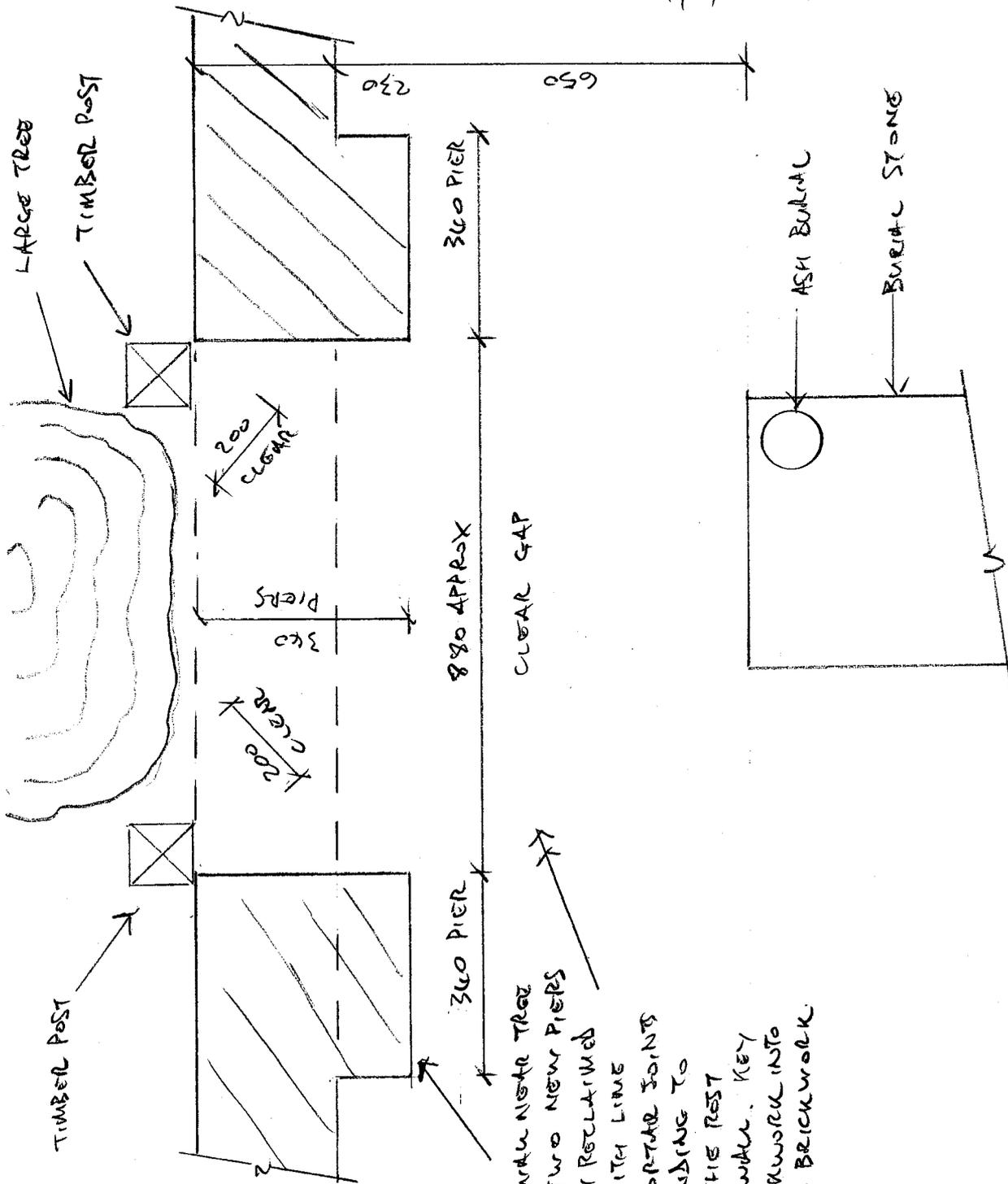
DATE: 20/7/18

ELEMENT: EASTERN BOUNDARY WALL

BY: GV CHKD: [Signature]

27/11/18

REV. A PIERS SHOWN.



REMOVE WALL NEAR TREE
& BUILD TWO NEW PIERS
LAIN WITH RECLAIMED
BRICKS WITH LIME
BASED MORTAR JOINTS
AND BONDING TO
WATCH THE REST
OF THE WALL. KEY
NEW BRICKWORK INTO
EXISTING BRICKWORK

PROPOSED PLAN AT LARGE TREE (1:10)

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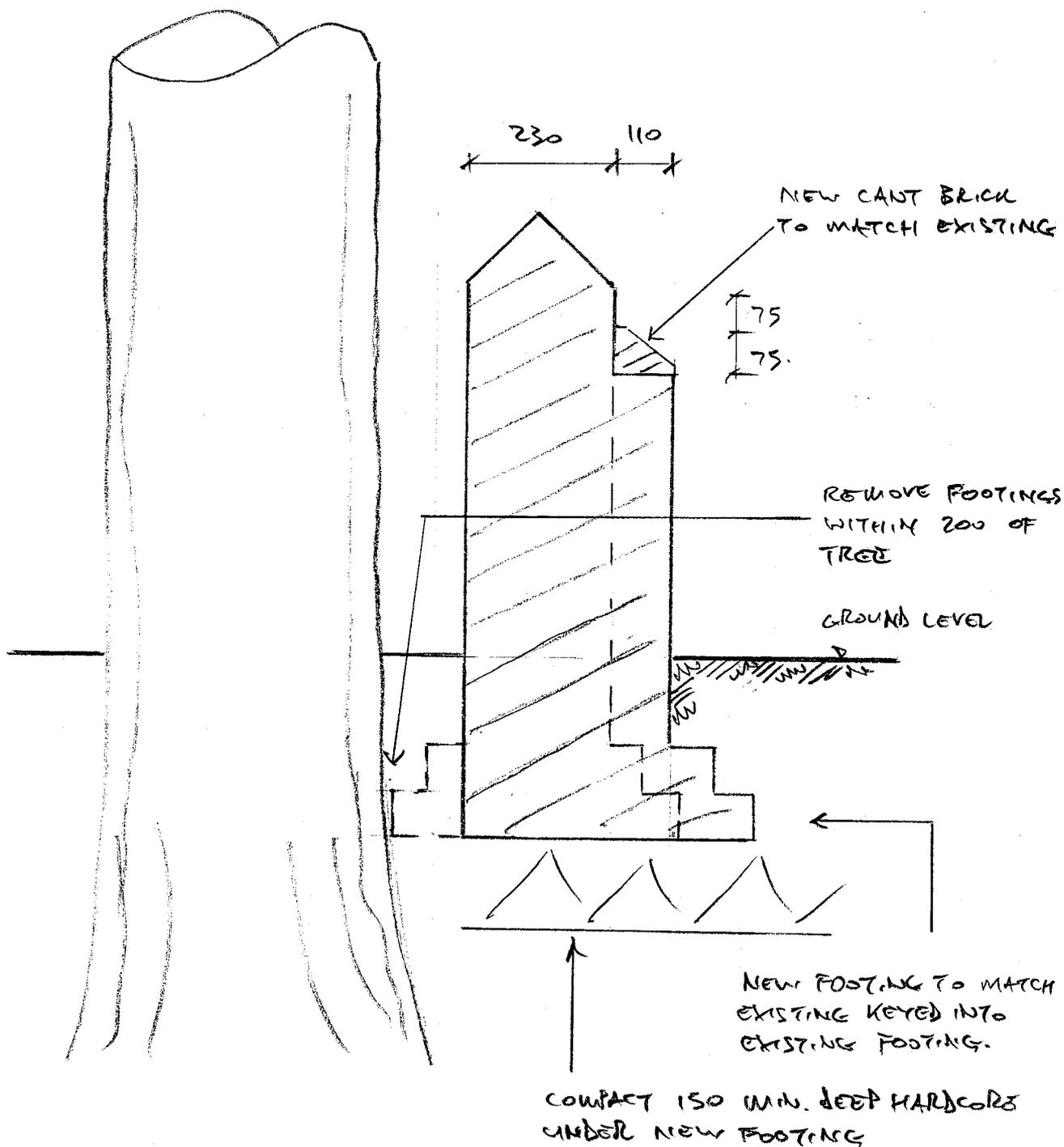
PROJECT: ST SAMES CHURCH, LITTLE PATTON

DATE: 20/2/18

ELEMENT: EASTERN BOUNDARY WALL

BY: GV CHKD: JF

27/11/18 REV. A PRIOR SHOWN



PROPOSED SECTION AT LARGE TREE (1:10)