Bd2

REPORT

FOR
REMEDIAL & REBUILDING WORKS
TO THE
GARDEN WALL

AT
88 FROGNAL
LONDON
NW3 6XB

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Remedial Proposals for Boundary Wall to 88 Frognal London NW3 on behalf of Mr & Mrs Linell

Bd2 were instructed by Mr & Mrs Linell to inspect and prepare a scheme for the remedial works to the existing boundary wall.

The current wall appears to be the original garden wall for the property and was likely constructed prior to the adjacent tree being planted. It would also appear that sections may have been rebuilt or the original wall has been extended.

The wall varies in height from approximately 1.2m up to 2.55m and is generally 330mm thick although in sections the wall reduces to 215mm for the upper section.

A section of the wall along Frognal has already been rebuilt following a collapse. The rebuilt section does not have any mature trees close to the wall and has therefore been rebuilt off the existing footing with reinforced concrete buttress piers installed to provide stability.

For the full extent of the garden to the property the boundary wall is located on the back line of the public footpath and therefore any remedial works need to be constructed within the boundary of the property with the wall rebuilt on the existing line. Whilst undertaking the remedial works the public footpath would need to be closed for the length of the wall being removed and rebuilt.

We understand that the Lime trees within the site along the Church Row section of the wall have Tree Preservation Orders and therefore any works need the approval of the Local Council, the remaining mature trees adjacent the wall are also of concern to the council and Mr & Mrs Linell wish to protect the tree and therefore any works would need to proceed with care and take the location of the trees and root pattern into consideration.

The section of the wall at the corner junction of Frognal and Church Row is in poor condition with 'dead' mortar joints and voids within the wall. A large lime Tree is location immediately adjacent this section of wall and therefore any works need to take consideration of the tree and the root arrangement. The wall has already been adapted to bridge a section of the root base to the tree. This section of wall is separated from the main length of wall along Church Row by a gate access into the garden. A brick arch exists over the gate although the arch is being displaced by the Lime and is currently at risk of collapse (refer to photographs). To provide adequate clearance for the tree the wall local to the tree would need to be reduced in height by approximately 100mm. Due to the details and level of the wall along this section the reduction could be achieve without changing the overall appearance of the elevation.

The first section of wall along Church Row after the garden gate access is in a better condition although the mortar joint and top section will require remedial works and rebuild of loose sections along the top of the wall.

The slow curved section of wall along Church Row is leaning open into the public footpath and has a major crack adjacent a mature Lime tree. The crack has already displaced the wall by 25mm across the crack, which gives an additional out of plumb to that which already exists. The wall is leaning out at the top of the crack and it is our opinion that the tree growth over the years has caused the wall to rotate.

Past attempts have been made to restraint the cracked and bowed section of the wall but these have been unsuccessful and the wall is now in a condition that is considered to be structurally unstable.

The remedial repair proposed under the previous planning approval would not stabilise the wall or strengthen the cracked section. It would also have a major impact on the tree roots.

The general levels along Church Row rise and the height of the wall reduces (refer to photographs) therefore to maintain privacy a timber trellis fence has been added to the wall to form the increased height. This trellis has been installed for the full length of the wall to Church Row to maintain a uniform height.

The client would wish to reinstate the wall to a level height along Church Row thereby increasing the wall height at the east end and reinstating a uniform height of trellis which will be detailed to incorporate the trees.

Due to the proximity of the trees to the damaged sections of wall it will be necessary to install a foundation system that will support the wall and not have a major impact on the trees and root arrangement.

We understand that the wall cannot be replaced by an alternative fence/enclosure system due to the property being located within a Conservation Area.

Due to the trees growth and their proximity to the wall it is evident that the support system already used to the rebuilt the wall section along Frognal and proposed to restrain the wall could not be used as the mass fill concrete bases would cut through the roots.

The trees are within a raised bed along the wall and therefore the levels in regard to the footpath and the garden would need to be checked prior to the finalisation of the proposals and the works commencing although it is evident that the wall is also retaining higher level within the garden to that on the public highway.

The proposals shown on drawing 107641/100 Rev A utilises small diameter piles and cantilever beams to support the perimeter beam below the wall in the area where it is considered that the wall needs to be rebuilt along Church Row.

At the junction of Frognal and Church Row the piled system would not be possible due to the size and proximity of the tree therefore the proposal is to rebuild the wall and install ties/ restraint system within the wall so that any future movement can be rectified without rebuilding. If the arch over the gate is to be reinstated then it would be necessary to locally reduce the height of the wall as stated above and to remove the risk of displacement of the arch it is proposed to form a mechanical fixing so that any forces imposed in the future by the tree will not displace the arch.

Any walls or section of wall to be rebuilt will be taken down carefully, all whole bricks are to be salvaged and reused in the new wall. New bricks used will match the existing and if possible these will be to the manufacturer, colour as the brick used for the rebuilding of the wall along Frognal. Brick bond is to match the bond of the wall to be replaced. Mortar colour and style is to match existing. A lime mix mortar is to be used with the final proportions and sand will be agreed prior to commencement. New bricks will be used to the lower sections of the rebuilt walls with the reclaimed bricks used to for the upper courses.

The final pile solution will be based on investigation works undertaken on site, the investigation will be undertaken by hand digging and/or with the use of air shovels around the base of the trees to locate the larger roots, this will allow the piles to be located and installed to miss the roots.

This investigation works would need to be undertaken with a Tree Specialist in attendance so that the locations can be finalised and marked.

Once the piles are installed the capping beams can be installed to accommodate the root levels and the perimeter beam installed along the existing wall base line.

The roots from the trees are likely to run along the wall face below ground and therefore the existing base area of the wall can be utilised for the perimeter beam. The perimeter beam can be stepped to suit the natural ground and footpath levels along the length of the wall. The perimeter beam would give the appearance of a render band to the base of the wall where it is exposed above the footpath. This render detail already exists along the wall.

For safety and cost planning it is proposed to undertake the remedial works in phases to suit the severity of the condition. Initial works would commence on the eastern section where the wall is leaning together with the removal of the arch and the trellis. On complete of the first section the wall section at the junction of Church Row and Frognal would be rebuilt, finally the remedial works to the central section would be undertaken with reinstatement of the trellis.

We would recommend that the investigation and the installation of the piles are undertaken for the full length of the wall section at one time as the cost of delivery and removal of the piling equipment would increase the cost if multi visits where made.

Once the piles are installed the removal and rebuilding of the wall can be undertaken in sections to suit the condition of the wall. The capping and perimeter beams can be detailed to suit the works being installed in sequence.

Expansion joints would need to be incorporated within the wall to suit sequences and to reduce expansion movement of the long sections of wall. This is a similar condition to that used within the previously rebuilt section of wall where it abuts the existing.

A photographic index of the wall has been provided and is noted on the drawing to assist with the planning consent.

R G Foster
107641 rev A
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