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Ref: NYP/16/104

REF: Land to Plot 2 `Delf Garth', High Street, Dodworth – Boundary Wall Remedial Works

Introduction

A previous conditional survey report was carried out by ourselves to the existing boundary retaining wall of the site, formerly occupied by the Pheasant Inn, at 88 – 90 High Street, Dodworth, Barnsley on the 12th April 2016. This comprised a visual inspection of the external boundary wall on to High Street in the south corner of the development.

Discussion

From our observations, the boundary retaining wall is of solid coursed stone construction, approx. 450 thk, which extends 30m from the bottom corner boundary back up the hill before the construction changes to a 9" solid brick built wall. The existing stone wall is approx. 1.8m in height, of 8 courses and a copping / header stone. Refer to Photo 1.

It is our opinion the it will be necessary to undertake rebuilding works to the existing stone boundary wall. The lower section of the boundary wall, from the existing telegraph pole to the corner of the site, approx. 20m in length, has suffered distortion. The stone construction appears to be bulging, and sections of the coursed stone are cracked on the bed joints. Refer to Photo 2. We suggest that the structural issues viewed are a direct result of the influence of existing trees, which are in very close proximity to the boundary wall, refer to Photo 3.

An arboricultural report has also been produced by AWA Tree Consultants, dated 10th October 2016. The report discusses the impact and condition of trees located specifically with the confines of plot 2. There are 7 main trees, ref T1 – T2, of varying species, size and maturity and condition. A schedule and location plan of the trees is included in Appendix taken from AWA's report.

The arboricultural report states that it is likely the root growth of trees T1 & T2, as well as extended roots of T3, T4 & T5, are causing structural damage to the existing stone boundary wall. The report concludes that these 5 trees are not viable, or of value, to retain and could be removed.

Recommendations

We would suggest that although the wall has been damaged, due to pressures from tree root growth, it does appear that the wall is rotating about the foundation. From our inspection of the wall, the 2 courses of stone above pavement level appear to be structurally sound with no distortion. This would suggest that tree roots have pushed the upper section of the stonework outwards.

We would suggest that if the trees are removed this will remove surcharge pressure off the back of the upper section of the wall. In this regard, appropriate remedial works would be to take down rebuild and realign the upper section of the wall. To be able to undertake rebuilding remedial works to the wall, and to maintain the structural integrity following repairs it will be necessary to remove trees T1 – T5, as noted in AWA's report.

To undertake remedial works, aimed to retain the trees, a more robust new retaining wall would be required to be designed and built. It is our opinion that it would not be feasible to safely retain and protect the existing trees during construction works. It is likely that material from behind the wall would have to be removed to an extent to facilitate the safe construction of foundations and new wall, that the trees and root growth would be damaged and undermined.

Remedial Works

Prior to commencing any excavation works a specialist arboriculturist should be consulted to ensure that trees which are to remain are protected and that remedial works are not going to cause damage to the trees and roots.

It will be necessary for a specialist contractor to remove the canopy and trunks of the trees reference T1 – T5. No remedial works to the wall, or the removal of ground behind the existing wall, should be carried out before the removal of trees has been completed.

Once all necessary protection measures are in place to the trees remedial works to the damaged / destabilised section of the stone wall can then commence. We suggest the order of remedial works should be as follows,

1. Remove backfill material from directly behind the existing wall, and stockpile. No excavation plant machinery should be sited on raised / retained ground directly at the wall / boundary line. Any machinery employed should be sited at a distance away from the wall equal to the height of the wall plus a minimum of 1m.

2. The ground behind the wall should be battered to a safe angle of repose to facilitate a safe working zone to the rear of the wall.

3. Inspect the rear to the existing wall and the existing foundation construction. Amend construction proposals if required.

4. Removal of the top 7 courses of the wall, including the header stones, can be undertaken. This could be carried out in sections or in its entirety.

5. Re build the wall, using existing stonework if possible, allowing for movement joints in the coursed stone at 10m max intervals and/or at steps in the wall line depending on the wall span between previous joints.

6. Backfill wall in line with requirements, with arisings. Allow for installation of any necessary land drainage.

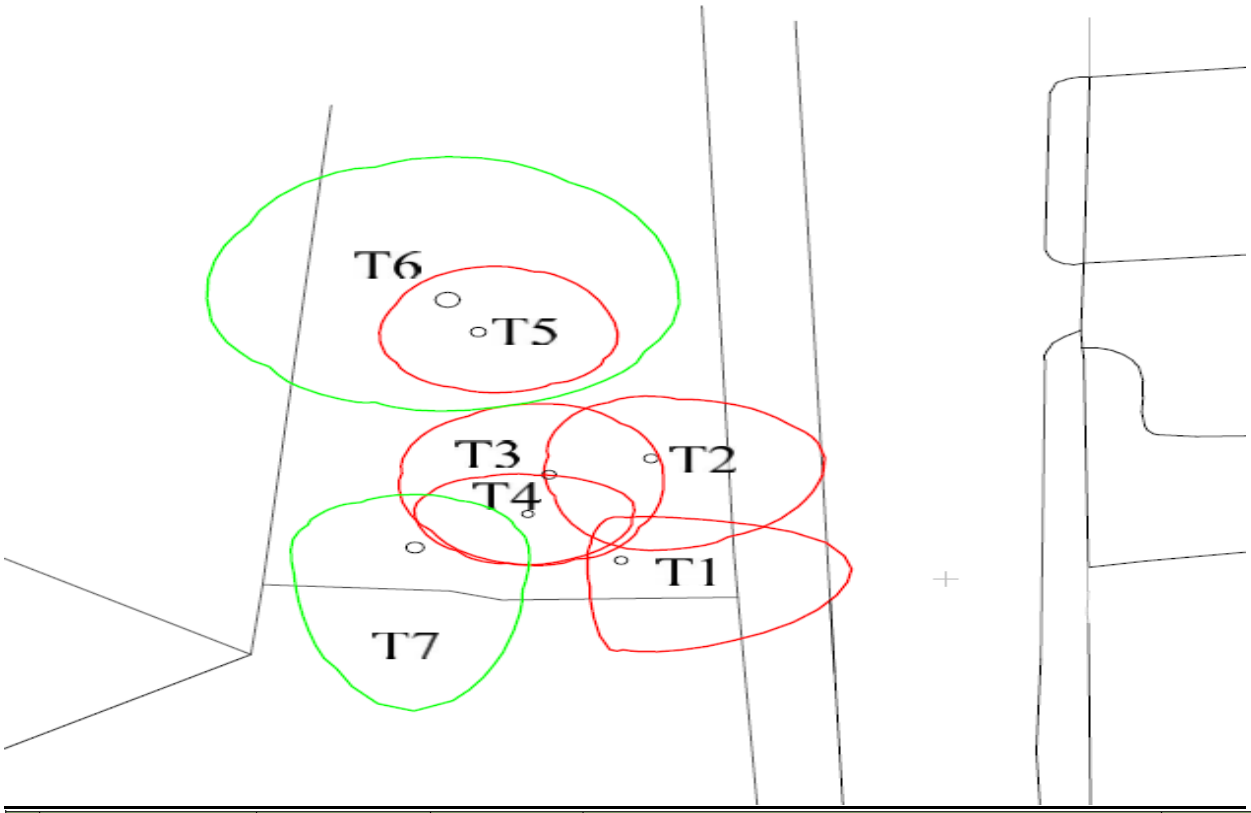
7. Remove tree protection measures.

Photo 1

Photo 2

Photo 3

Existing Tree Plan



	Tree Species		Measurements					Crown (m)					Tree Condition							Management
Tree ID	Common Name	Latin Name	Maturity	Height (m)	Stems	Stem Dia (mm)	Estimated	Ave Height	N	E	S	W	Roots	Stem	Crown	Comments	Physiology	Structural	Life Expectancy	Works
T1	Ash	*Fraxinus excelsior*	Early Mature	8	4	230, 260, 190, 180	No	2	2.5	8	5	1	Likely to be growing out to the damaged boundary retaining wall	Multiple stemmed at base. Significant lean.	Unbalanced. Overhanging adjacent land.	Overhanging road. No long term value	Fair	Poor	10 to 20 yrs	Remove
T2	Sycamore	*Acer pseudoplatanus*	Mature	17	1	490	No	7	3.5	6	5	3.5	Likely to be growing out to the damaged boundary retaining wall	Single stemmed. Slight lean. Bark damage.	Unbalanced. Overhanging adjacent land.	Overhanging road. Limited value.	Fair	Fair	20 to 40 yrs	Remove
T3	Sycamore	*Acer pseudoplatanus*	Mature	15	1	480	No	10	4	4	5	5	Likely to be growing out to the damaged boundary retaining wall	Single stemmed. Vertical. Bark damage.	Small/ sparse. High crown	Limited long term value.	Fair	Fair	20 to 40 yrs	Remove
T4	Sycamore	*Acer pseudoplatanus*	Early-mature	15	1	390	No	8	2	4	3	3.5	Likely to be growing out to the damaged boundary retaining wall	Single stemmed. Bark damage.	Small/ sparse. Moderate deadwood. Slightly unbalanced.	Suppressed by larger trees. No long term value.	Fair	Fair	>40 yrs	Remove
T5	Horse Chestnut	*Aesculus hippocastanum*	Mature	15	1	520	No	7	4	4	3	4	No visual defects	Single stemmed. Bark damage. Minor cavities. Minor decay. Slight lean.	Small/ sparse. Discolouration of leaves from leaf miner.	Nails in stem. Probable bleeding canker.	Fair	Fair	20 to 40 yrs	Remove
T6	Oak	*Quercus robur*	Mature	19	1	840	No	9	8	8	6	8	Decay. Damage to buttress roots.	Single stemmed. Bark damage. Vertical.	Normal. Slightly unbalanced.	Unbalanced due to previous adjacent trees which have since been removed.	Good	Good	>40 yrs	No action
T7	Oak	*Quercus robur*	Mature	17	1	600	No	8	3	4	9	4	No visual defects	Single stemmed. Slight lean. Bark damage.	Normal. Minor deadwood. Overhanging adjacent land.	Historic stem damage with reaction growth.	Good	Good	>40 yrs	No action