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11th January 2021.

Reference Tree protection recommendations, Arboricultural impact assessment and Arboricultural oversight specifications for a protected tree adjoining the development at Sydenham, St. Jacques, St. Peter Port, GY1 2SU for Premier Properties Limited.

1.1 Instruction.

I have been instructed to advise on tree protection recommendations for a single, protected tree adjoining the proposed development at Sydenham, St. Jacques.

Part of the proposed development falls within the root protection area of a protected tree PT5 within the grounds of Shrubwood, St. Jacques.

The initial concept design had a proposed unit within the root protection area which raised concerns to the extent of root projection expected to be identified and the potential conflict to the tree's rooting system.

2.1 Protected Tree.

The protected tree within Shrubwood is a semi-mature Lime. The tree is in reasonable condition for the specie type showing usual growth patterns for the specie with good vitality and vigour to twig growth.

The tree has been subject to a crown reduction within the last few years and extensive crown lifting as it has increased in mass. These remedial works have resulted in a tree with declining visual amenity value and will most likely be subject to ongoing extensive remedial works as it attains greater mass, due to the pressures of adjoining residential properties.

Given the tree has been subject to extensive remedial husbandry works during its development, I would suggest a useful life expectancy of a minimum of 40 years therefore affording a category A under BS5838 tree categorization.

I have determined that the tree exhibits no attributes to qualify for sub-category grading as either;

- 1 Mainly arboricultural qualities.
- 2 Mainly landscape qualities.
- 3 Mainly cultural values, including conservation.

3.1 The Proposed Development Site.

The proposed development site called Sydenham is sited to the East of the protected tree. The existing workshop adjoining the boundary with Shrubwood most likely pre-dates the establishment of the tree. Due to the extensive topographical differences between the two properties exceeding two metres and a loose retaining wall, it was anticipated the predominant root projection for the tree would be within the host property and further to the West and North-West.

This anticipated root projection given the topographical influences of the site, resulted in the recommendation of exploratory trial holes to ascertain the presence of roots and the extent of their mass.

On the fourth of January, two exploratory trial holes adjoining the boundary and the closest points to the tree were manually excavated at 1 x 1 metre to a depth of 1.2 metre.

In each trial hole, one root was encountered at approximately 400 – 600mm depth with a diameter of less than 50mm. These investigatory roots were mostly void of fibrous rooting mass growth and were noticeably reducing in diameter over the distance of the trial hole.

On ascertaining the information of the encountered roots, the holes were back-filled and no further trial holes were excavated to determine the extent of the root projection.

4.1 Anticipated Root Projection/ Pre-Existing Topographical Influences.

At my initial site inspection, I looked at the tree in relation to the adjoining host property, in relation to the adjoining workshop and topographical differences.

The owner of the tree was anxious to purvey his concerns regarding the potential conflict the proposed development would have on the tree and its root system. I explained that this particular specie of tree was regularly utilised as a street tree which are subject to extensive retention and disturbance of their root system, yet they continue to thrive in relatively hostile environments.

I also commented on the conservatory extension to his property (completed in the early 2000's prior to the Tree Protection Order being applied) and said that if it were now to be a considered application it would be too conflicting to the root system of the tree and would most likely be declined.

He stated that the excavation works for the development encountered no roots from the tree albeit the tree is in closer proximity to the extension than the existing, adjoining workshop.

Whilst I have no evidence contrary to his statement, I find it completely implausible that a significant mass of feeding and structural roots were not encountered during the construction process and removed accordingly.

If the statement is true, it would appear there is significant influence to the rooting symmetry particularly along the level plane and, therefore, whilst the root projection area has been well compensated and accounted for in the plotting towards the adjoining property Sydenham, a very high proportion of the rooting mass should be contained within the garden area of Shrubwood, predominantly towards the North-West and into the adjoining property called Roselle Cottage.

5.1 Revised Design.

Following consultation, it was suggested the position of the building was sited outside of the root protection area, given the extent of the excavation needed to

construct the building at the proposed elevation, and the potential for conflict with the tree's rooting system.

The repositioning and reconfiguration of the dwelling to the North-West of the rear garden now sites it away from the plotted root protection area and therefore will negate potential conflict with the tree.

It is proposed that the area within the root protection area remains unchanged, other than to enhance the area with proactive landscaping which will enhance the proposed development and contribute a high degree of screening privacy to the neighbouring properties to the West.

In addition to the enhancement of the root protection area, as recommended within the arboricultural management plan, the existing concrete floors of the workshop will be removed.

The removal of the buildings and the concrete sub structure will have a positive effect to existing, protected tree by increasing the permeation of essential components to any root mass within Sydenhan's garden.

6.1 Tree Protection.

During their lifetime, trees will be vulnerable to disturbance, injury, environmental changes, pests and diseases. Construction work often exerts pressures on existing trees, as do changes in their immediate environment following the construction. A tree that has taken many decades to reach maturity can be damaged irreparably in a few minutes by actions that might be unwitting, negligent or wilful. The early provision of physical protection from damage is therefore critical.

7.1 Avoiding damage to trees (Impact assessment).

The part of a tree most susceptible to damage is the root system, which, because it is not immediately visible, is frequently ignored. Damage to, or death of, the root system affects the health, growth, life expectancy and safety of the entire tree. The effects of such damage might only become evident several years later.

Damage can be the result of a number of minor but compounding factors that accumulate over time. Materials such as uncured concrete, diesel oil and vehicle washings can all damage roots and lead to adverse impacts on the tree.

Damage to the stem and branches of a tree is not usually sufficient to kill the tree directly, but can make it unsafe by affecting the dynamics and growth of the tree, or by initiating long-term decay. Such damage can also be disfiguring. The attachment of notice boards, cables and other utility apparatus can all damage trees.

The protection of trees and roots should be in accordance with BS 5837 (2012) section 7 and the following points must be taken into consideration.

Considerations should be made for the care and protection of trees and roots as calculated when allowing for the following possible constraints;

- Site construction access.
- Contractors' car parking.
- The space needed for foundation excavations and construction works.
- The location and space needed for all temporary and permanent apparatus and service runs, including foul and surface water drains, land drains, soakaways, gas, oil, water, electricity, telephone, television or other communication cables.
- Working space for cranes, plant, scaffolding and access during works.
- Space for site huts, temporary toilet facilities (including their drainage) and other temporary structures.
- Space for storing (whether temporary or long-term) materials, spoil and fuel and the mixing of cement and concrete.
- The effects of slope on the movement of potentially harmful liquid spillages towards or into protected areas.

8.1 General tree protection fencing (method statement).

Where tree protection measures have been defined as part of the tree protection plan, suitable barriers must be employed to prohibit access over these areas. Scaffold type poles, driven 0.6 meters into the ground and suitably braced, should be faced with steel weld mesh and panelling in accordance with recommendations set out in section 6 in the British Standard 5837. Where it becomes necessary to cross root protection areas the surface must be protected with suitable boarding to minimize anaerobic respiration to the root area as detailed. Where applicable, the installation of construction exclusion fencing to omit pedestrian or vehicular traffic from general areas should be considered rather than individual tree protection fencing.

The implementation of a secure physical tree protection fence should be accompanied with hazard signage clearly indicating the importance of tree

protection. Any personnel working on the construction site must be made aware of the importance the fencing has on protecting the trees during a site introduction briefing.

8.2 Construction Exclusion Zones.

Where appropriate, and to simplify tree protection, the installation of general construction exclusion fencing should be implemented to totally exclude personnel, vehicles or any materials. The exclusion zone can encompass any number of trees rather than individual fencing around the periphery of the calculated protection areas.

Specific to this proposed development is that as only one tree on the adjoining property is subject to protection, a construction exclusion fence could be utilised to encompass all of the protected rooting area.

9.1 Construction Management Plan.

The CMP Construction management plan should be created by the main contractor appointed to undertake the works and will need to demonstrate the commitment for tree and landscape protection. The adherence of tree protection as detailed within this report fulfils criteria for adequate tree protection prior to and during the construction process.

10.1 Access within root protection areas (method statement).

Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.

Where the set-back of the tree protection barrier would expose unmade ground to construction damage, new temporary ground protection should be installed as part of the implementation of physical tree protection measures prior to work starting on site.

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE: The ground protection might comprise one of the following:

- a) For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;
- b) For pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;
- c) For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

11.1 Excavations (method statement).

Where an existing hard surface is scheduled for removal, care should be taken not to disturb tree roots that might be present beneath it. Hand-held tools or appropriate machinery should be used (under arboricultural supervision) to remove the existing surface, working backwards over the area, so that the machine is not moving over the exposed ground. If a new hard surface is to be laid, it would be preferable to leave any existing sub-base in situ, augmenting it where required. Roots, whilst exposed, should immediately be wrapped or covered to prevent desiccation and to protect them from rapid temperature changes.

Any wrapping should be removed prior to backfilling, which should take place as soon as possible. Roots smaller than 25 mm diameter may be pruned back, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability.

Prior to backfilling, retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its high salt content, which is toxic to tree roots), or other loose inert granular fill, before soil or other suitable material is replaced. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

In the event of using pile foundations and to minimize the impact to the trees, the top 800mm of soil should be manually excavated to determine the extent of roots within the vital A plane. Individual roots less than 25mm in diameter may be

cleanly cut and treated as normal excavation recommendations above, otherwise arboricultural advice should be sought.

11.2 Extent of Proposed Works within Root Protection Areas. (Impact Assessment)

As part of the proposed development, it is envisaged that there will be a minor scope of works within root protection areas.

The extent of these works will be to facilitate access to and install the retaining barrier system along the periphery of the root protection area. The fractional incursion within the Root Protection Area as detailed within the Tree Protection Plan has made express considerations for the protection of the roots should they be encountered.

Any proposed retention system shall be constructed in accordance with the BS5837 7.4.2 and be compliant with the following considerations;

- The design should not require excavation into the soil, including through lowering of levels and/or scraping, other than the removal, using hand tools, of any turf layer or other surface vegetation. If it is intended to use the new surface for construction access. It is essential that the extra loading and wear arising from this are taken into account during the design process.
- The excavation needed for the placement of kerbs, edgings and their associated foundations and haunching can damage tree roots. Within the RPA, this should be avoided either by the use of alternative methods of edge support or by not using supports at all.
- There specifically be no increase in the height of the soil within the root protection area other than a light dressing of well composed organic matter to assist with the new landscaping of the area.

NOTE For example, where kerbing of retaining materials are required for light structures, such as footpaths, above-ground peg and board edging might be acceptable. Where areas of hard surface require edge support, the use of sleepers (pinned in place where required), gabions or other non-invasive ground-contact structures, including the use of proprietary products, can provide appropriate solutions.

12.1 Arboricultural supervision.

A retained arboriculturist should be available to give advice for the duration of works and should be consulted prior to the following actions are undertaken:

- Installation or subsequent relocation of tree protection fencing.
- Installation of root protection measures.
- Supervision during the removal of surfaces.
- Inspection of substrate so suitable mulch can be recommended.
- Root severing for roots greater than 25mm in diameter.
- Installation of suitable irrigation and irrigation rates.

13.1 Arboricultural Oversight.

As part of the developer's commitment to tree and root protection, the following considerations form the basis of a proactive arboricultural oversight as part of the overall method statement adopted.

The tree adjoining the development is subject to risk and this risk can be mitigated if the following processes and procedures are undertaken and adhered to;

- Main contractor briefing prior to the start of works.
 1. Present and explain the importance of tree protection.
 2. Explain how trees can be affected by development works.
 3. Detail the method statement for site operatives.
 4. Ensure the main contractor fully understands the importance of the trees within the development.
 5. Supply full contact details for the project arboriculturist.
- Assess risk to trees from site operations.
 1. Identify suitable areas for material storage that are outside of the tree protection fencing.
 2. Assess areas for proposed storage and mixing of hazardous material and liquid runoff.
 3. Ensure tree protection fencing and signage is installed correctly.
- Provisions for arboricultural support and advice.
 1. Ensuring the main contractor understands the role of the project arboriculturalist in limiting risk posed to trees within the development.
 2. Emphasising the importance of proactive tree protection in relation to the operation of works within root protection areas.

3. Agreeing timescales for arboricultural site assessment for staged, programmed works where root protection areas may be subject to incursion.
4. Explain that there shall be unannounced site visits undertaken to ascertain compliance with all tree and root protection measures.

14.1 Limitations.

This report is undertaken without bias and looks purely at the current condition and health of the tree. No responsibility can be accepted for damage to persons or property in the event of a part or whole failure of a tree surveyed. Trees are living structures that are susceptible to damage from pathogens, weather and other factors. The advice given is in accordance with the latest research in tree assessments.

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Tree Dimensions.