

TREES

Introduction

There are no trees on the site, the existing buildings and concrete surfaced yard are just within the Root Protection Areas (RPA) of trees that are outside of the site located along the strip of land that lies between the east boundary fence and the highway. The buildings are to be converted to one dwelling on the same footprint. The concrete yard is to be changed to a permeable surface. The existing trees will all be retained and protected during the works. Some of the development works and re-surfacing are scheduled within Root Protection Areas (RPAs), appropriate foundations will be designed by a Structural Engineer taking in to account the location of the trees. These works must employ special construction techniques in order to minimise disturbance to tree roots. Providing that appropriate protective measures and construction techniques are enforced during development the trees can be retained and should provide amenity benefits for into the future. The development should not have a major long term impact on the retained tree stock that are all outside of the site. The retained trees should not conflict significantly with the site usage. None of the trees are protected by a Tree Preservation Order or fall within a Conservation Area.

Impact

The trees are marked on the site plan 5081 02. The plan also shows Root Protection Areas (RPA) for the trees which have been calculated in accordance with BS5837. The RPAs should be considered as a Construction Exclusion Zone (CEZ). The existing fence, runs along the east of the site, forming the boundary between the development site and London Road and separates the trees from the development area. The fence will remain in position during and after the works. The existing concrete yard surface will serve to protect the tree roots during the main conversion works and its replacement will be the last scheduled activity. Access facilitation pruning is not required. Necessary works within the CEZ must employ special construction techniques as detailed in order to minimise disturbance to tree roots. The ground around the trees on the highway side of the fence will remain undisturbed. Changes of ground level or re-grading of the surface will not be required with this development, ground levels will remain as existing. Providing that appropriate protective measures and special construction techniques are enforced during demolition and development the trees can be retained and should provide wildlife and amenity benefits into the future. The development should not have a major long term impact on the trees.

Method Statement

Retained trees will need protection and special measures during the construction process.

SITE / ACCESS

No vehicles, machinery or heavy movement should be allowed over the CEZ/RPAs, used on the land or around the trees and any excavations required for the construction within the CEZ/ RPAs will be dug by hand. Protective fencing will not be required as the existing fence and concrete surface are to remain and there is adequate space elsewhere within the site to accommodate construction equipment and materials.

TREE PROTECTION

It is not considered necessary in this case but should it be required the trees will be protected by the installation of protective wrapping around the trunks of each tree. This shall be installed prior to the commencement of any works and remain in place for the duration of construction. It shall consist of a minimum of 3 layers of hessian with an outer wrapping of at least 2 rounds of chestnut paling fencing or similar extending from ground level to a minimum height of 2 metres, held in place with wire bands with no fixings into the tree. If the period of construction exceeds a period of 6 months from installation, the protection shall be checked to ensure that there is no restriction or stem damage. This shall continue at 6 month intervals, making appropriate adjustments as necessary.

GROUND PROTECTION

Ground protection will be required to cover the RPAs as marked. This should take the form of a temporary multi-layered protective barrier to reduce ground compaction as detailed below:

- Temporary Ground Protection Layers -
 - Base Layer - Undisturbed soil containing tree roots.
 - Layer 1 - Minimum 10cm depth of compressible fill (e.g. woodchip) - must be replenished if on-going compression occurs.
 - Layer 2 - Top layer - temporary boarding system capable of forming construction access e.g. Greentek Ground guards for vehicles, or, possibly lesser surfacing for foot access only.

CONSTRUCTION EXCLUSION ZONES

Development processes that lead to soil compaction in tree rooting zones and physical damage to trees can adversely affect long-term tree health. The area which falls within the RPAs should be deemed to be within a CEZ and signed and treated as such.

No works should be allowed into the CEZ, but as access within this area is necessary to undertake the development special construction techniques should be utilised. Where works necessary for the development have to be undertaken in the CEZ / RPAs special construction techniques will be necessary, as specified. The CEZ is indicated on the attached plan and the demarcation of this area shall be planned and programmed as the first priority operation, and shall be processed before any other work takes place on the site. No storage of any building materials or any other materials should be allowed within the CEZ or RPAs. Once the exclusion zones have been demarcated and tree protection or ground protection carried out, construction work can commence. All weather notices should be erected at either end of the CEZ with words such as: "Construction Exclusion Zone - Keep out". In addition, the following should be addressed or avoided -

- A. Care should be taken when planning site operations to ensure that no operations, objects, tools, materials etc. come into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible.
 - B. Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10 m of the tree stem.
 - C. Fires, if allowed, should not be lit in a position where their flames can extend to within 5m of foliage, branches of trunk. This will depend on the size of the fire and the wind direction.
 - D. Notice boards, telephone cables or other services should not be attached to any part of the trees.
 - E. It is essential that allowance should be made for the slope of the ground so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards trees.
- The removal of the CEZ demarcation and signage will be one of the last operations undertaken on the site.

Special Construction Techniques

Some development works are scheduled within RPAs of the trees. These works must employ special construction techniques in order to minimise disturbance to tree roots. Depending on site conditions the development may require work to the foundations / floor of the north east corner of the building. Where this occurs within the RPAs of retained trees excavations shall be carried out by a combination of hand digging and no dig construction techniques, as detailed below. Appropriate foundations will be detailed by a Structural Engineer.

EXCAVATIONS WITHIN ROOT PROTECTION AREAS

All excavations for landscaping or re-surfacing works within RPAs must be carried out following the guidelines set out in NJUG Volume4 (National Joint Utilities Guidance Volume 4 Guidelines for the Planning, Installation And Maintenance Of Utility Apparatus in Proximity To Trees issue 2).

Hand Digging / Airspade

The objective of hand digging is to retain as many undamaged roots as possible. Hand digging within RPA must be undertaken with great care preferably using an airspade, preferably under supervision. After careful removal of any surface materials digging must proceed with hand tools. Clumps of roots less than 25mm in diameter (including fibrous roots) should be retained in situ without damage. Throughout the excavation works great care should be taken to protect the bark around the roots.

Principle Rules of No Dig Construction

The principal rules of no dig construction are as follows:

- 1. No roots are to be severed
- 2. Soil must not be compacted
- 3. Oxygen and water must be able to diffuse into the soil beneath engineered surfaces

No Dig Construction Method:

- Ground vegetation should be carefully removed with any organic material being removed to prevent the build-up of anaerobic conditions beneath the surfacing which will damage the tree roots.
- No digging should take place within the protective zone except for the careful removal of organic matter by hand tools. Hollows must be filled with sharp sand, any digging to remove rocks or protrusions must be by hand taking care not to sever any roots over 25mm in diameter.
- Stumps should be ground out rather than excavated to prevent damage to the retained trees roots.

Backfilling

Backfilling should where required be carefully carried out to avoid direct damage to roots and excessive compaction of the soil around them. The backfill should, where possible, include the placement of an inert granular material mixed with top soil or sharp sand (not builder's sand) around the roots. This should allow the soil to be gently compacted prior to construction without damage to the roots securing a local aerated zone enabling the root to survive in the longer term.

If required backfilling outside the direct influence of tree roots should be carried out using the excavated soil. This should not be compacted but lightly "tamped" and usually left slightly proud of the surrounding surface to allow natural settlement. Other materials should not be incorporated into the backfill.

Root Protection

Fine roots are vulnerable to desiccation once they are exposed to the air. Larger roots have a bark layer which provides some protection against desiccation and temperature change. The greatest risk to these roots occurs when there are rapid fluctuations in air temperature around them e.g. frost and extremes of heat. It is therefore important to protect exposed roots where they are to be left open overnight where there is a risk of frost. In winter, before leaving the site at the end of the day, the exposed roots should be wrapped with dry sacking. This sacking must be removed before the trench is backfilled.

All roots greater than 25mm diameter should be preserved and worked around. These roots must not be severed unless absolutely necessary following approval from the sites Arboricultural Consultant. If after consultation severance is unavoidable, roots must be cut back using a sharp tool to leave the smallest wound possible. It is not anticipated that severance of any large roots will be required.

Careful hand digging will be employed within the RPAs with extreme care being taken not to damage tree roots and root bark. Exposed roots if left overnight will be covered to offer protection from the elements. No roots above 25mm in diameter will be severed.

Removal and replacement of hard surfacing

Hard surface replacement within the RPAS, the existing wearing course will be removed under arboricultural supervision, the existing subbase will be retained and re-utilised. The new permeable hard surfacing will be constructed using a 'No Dig' surfacing situated over the retained sub-base and where needed using a proprietary cellular confinement system (GeoWeb or similar) filled with gravel.

Schedule of Arboricultural Works

- a. Provide site managers with a copy of the Arboricultural report. The site manager should be made aware of the tree protection requirements and the guidance provided in this report. A pre-start meeting to ensure the correct installation of protection measures and demarcation of the construction exclusion zone is strongly recommended.
 - b. Tree Protection Plans to be mounted in works cabins.
 - c. Brief all site staff regarding protective measures (on-going).
 - d. Install protective measures including information signs.
 - e. Carry out works, including special construction techniques and hand digging to be employed within RPA / CEZ.
 - f. De-install protective measures - only once all other development activity is completed.
 - g. Completion.
- All staff on site should be briefed regarding the protective measures to be enforced. Construction should not proceed prior to the installation of the protective measures and these should remain in place for the entire duration of the construction phase. Only once the construction phase is completed in its entirety should the protective measures be removed.

To protect trees during construction all protective measures must be implemented before works commence on site with the LPA informed so inspection of said measures can be approved.

Conclusions

Provided that appropriate protection of retained trees is suitably implemented along with specialist construction methods as advised above, the layout will not have any material affect or impact on the sustainable public amenity values or to the site's contribution to the landscape.

DRAINAGE

Foul Drainage

Foul drainage will be to a new proprietary sewage treatment plant discharging to a drainage field. The STP lies 7m from the proposed building and would be accessible to a vehicle to be emptied.

Roof and Surface Water

The site lies in Flood Zone 1, the area at lowest risk of fluvial flooding. It also lies in an area at very low risk of surface water flooding. The roof area of the buildings will not increase. Rainwater will be collected in butts for re-use with any excess discharging to a soakaway. The existing yard is formed of an impervious concrete surface which will be replaced with a permeable surface.

- Application area
- Existing fence to be retained
- Existing trees all located between east boundary of site and London Road
- Tree Root Protection Areas (RPA) calculated in accordance with BS5387:2012
- Existing buildings proposed for conversion to residential use
- Existing concrete surface - The existing hard surface will be retained to act as ground protection within the RPAs until the replacement surfacing is due to be installed. Afterward the existing wearing course will be removed under arboricultural supervision, the existing subbase will be retained and re-utilised.
- Temporary ground protection as specified
- New permeable surface to be compacted gravel on retained sub-base, incorporating proprietary cellular confinement system if required
- Manual excavation for any work to foundations and floor structure within the RPAs of trees, to a depth of 600mm.

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THE RURAL PLANNING PRACTICE

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Client	Mr A Coveney	
Address	Equestrian Yard near Kings Farmhouse, London Road, Balcombe RH17 6QA	
Drawing Title	Convert Equestrian Building to One Single Dwelling Trees and Drainage	
Scale	1:100 on A1	Drawing No.
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