

Ref: SW.AMS.259.14 - The Royal Oak, 19 Langstone High St, Havant PO9 1RY

Mr A Hollington
Hollington Architect & Design Team Ltd
129 Alma Road
Bournemouth
Dorset
BH9 1AG



Friday, 12th December 2014

Dear Mr Hollington,

ARBORICULTURAL INFORMATION TO SUPPORT A PLANNING APPLICATION FOR THE ROYAL OAK, 19 LANGSTONE HIGH STREET, HAVANT, HAMPSHIRE PO9 1RY

Further to your instructions and the site survey visit undertaken by my associate Mr Hayden, I am writing to confirm details of the arboricultural matters connected with this planning application. We have carefully considered the site, the trees, and the practical requirements of implementing this scheme. The site survey and layout drawings kindly provided to assist us have been used to produce the plans at appendix 1.

As this is essentially an external landscaping project of limited scope, it would seem it is both proportionate and appropriate for the arboricultural matters to be dealt with by letter format supported by a series of drawings, rather than a detailed report. This document, including appendices, comprises of 14 pages and is published as a contiguous PDF.

As a starting point, it is understood that the site is not covered by any tree preservation orders (TPO); however, it is located within a designated conservation area, affording the three trees growing there a degree of formal protection. Notwithstanding this, trees, irrespective of any formal protection that may be in place, are material considerations in the planning process, and as such the planners will need to be satisfied that the proposed changes will not adversely affect any good quality trees worthy of retention.

Arboricultural constraints

The site, which for the purposes of this report comprises of the rear garden of the Royal Oak public house is predominantly covered by worn areas of poor quality lawn/bare soil, and contains only three trees and a cabbage palm.

The trees have been carefully inspected to assess their quality and condition. Attached to this letter as appendix 1a is a tree constraints plan SW1 (site as is), which depicts the locations, dimensions and quality categories of the trees as surveyed. Canopy spreads have been plotted in the directions of the cardinal (and where appropriate inter-cardinal) points of the compass. The root protection areas (RPA) depicted by the red circles drawn around each tree have been calculated by applying the appropriate formula given in section 4.6 of BS5837:2012 - *Trees in relation to design, demolition & construction - Recommendations*.

No trees require removal either for management reasons or to implement the proposed changes. However, some pruning works of a relatively minor nature, which will have little, if any, appreciable adverse effect on either tree health or amenity are detailed at appendix 2.



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The site is reasonably level, but historic use of the seating areas has led to erosion of the lawn to bare soil and exposure of areas of surface roots from T2 Monterey pine (image 1). As will be demonstrated, all retained trees and vegetation features can be accommodated within the context of this proposed garden improvement scheme.



Image 1: Showing roots of T2 protruding above the surface of the existing worn and bare lawn

Arboricultural impacts

The proposed changes are shown shaded **BLUE** on plan SW2 (site as proposed). To avoid the risk of significant root damage and soil compaction the use of self-propelled plant and machinery **must** be prohibited. The activities judged to have a potential to impact upon the trees are as follows:

1. Installation of the concrete pad for the bin store (T1). This occupies $3.86\text{m}^2/1.11\%$ of the [theoretical] RPA of T1 at a distance of 8.3m from the trees stem. As such, the excavations required will have little, if any, adverse effect.
2. Installation of the concrete block footings for the Jumbrellas **ORANGE** (T2). One, possibly two of these concrete blocks are close enough to directly conflict with the trees root system. However, the areas to be excavated are relatively small and widely spaced, limiting disturbance.
3. Installation of the raised decking area (T2). Excavations should if possible be avoided. Instead, it is anticipated this facility could be installed simply and securely with minimal excavation by using pre-cast Deck Blocks www.silvatimber.co.uk (image 2), or constructing a frame of hardwood sleepers fixed with 600mm steel re-bars.

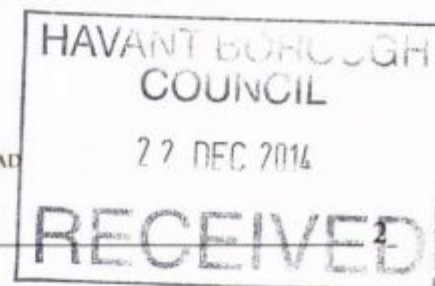


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4. Removal of the existing brick store (T3). The structure should be carefully dismantled piecemeal by hand. Excavations undertaken in accordance with the guidance below will ensure root disturbance is minimised.
5. New surfacing arrangements for the current bare soil seating areas (T1, T2 & T3). Due to surface roots, and poor durability, reinstatement of the majority of these heavily trafficked areas to grass is not a practical or viable option. Instead a new surface of either woodchip or preferentially 20mm loose aggregate (image 3), laid to a settled depth of 50mm over a layer of permeable and air-diffuse Treetex T300 geo-textile www.geosyn.co.uk, will provide an attractive, durable and easily maintained surface solution.

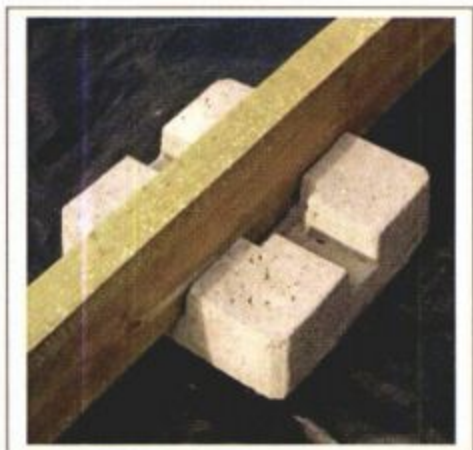


Image 2: Using pre-cast concrete Deck Block should more or less negate the need for excavations.

Available from www.silvatimber.co.uk



To limit the potential for adverse effects, it is reiterated that the use of self-propelled plant and machinery **must** be prohibited. All excavations associated with these works **must** be undertaken in accordance with the following procedures, which are based on section 7.2 of BS 5827:2012.

- Under the direct supervision of the project arboriculturalist, works should proceed on the basis of retaining as many roots as possible. All excavations **must** be undertaken using hand tools only.
- The footprint and positions of the foundation blocks and fence postholes **must** be marked out and agreed prior to excavation. The holes will then be carefully excavated using hand tools only.
- Exposed roots **must** be assessed as they are encountered. All those of less than 25mm Ø may, if necessary, be cleanly cut cleanly back to a suitable point with sharp secateurs and removed. In the event that roots of a greater size are encountered these **must** be retained and carefully worked around. Their condition, likely origin and the significance of their removal will be assessed by the project arboriculturalist, who will decide on an appropriate course of action.
- Once excavations are complete, the holes **must** be lined with heavy-duty plastic *prior* to pouring of cement.
- Hard areas or foundations that are to be removed should be *carefully* broken up by pickaxe and/or hand-held pneumatic breaker. All arisings **must** be *carefully* removed using hand tools only.



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Image 3: Showing effective use of 20mm angular stone as surfacing for an outdoor seating area

To avoid any *indirect* harm arising from day-to-day construction activities, the parts of the site within RPAs, and where surface roots are visible will require the installation of some basic protection measures. For the avoidance of doubt, these measures **must** be installed *prior* to commencement and retained for the *entire* duration of the associated works.

To ensure the appointed contractors comply, it is strongly advised that full implementation of the details contained in this report and appendices are made a condition of the construction contract.

Tree protection

Numerous construction related activities have the potential to cause damage to trees on development sites. However, the compaction and pollution of soil within tree RPAs represent the principal causes of avoidable long-term harm.

To emphasise the importance of the protection of trees, a drawing showing the main ways in which trees can be damaged on or close to construction sites is attached as appendix 3.

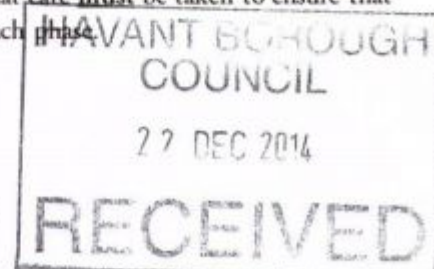
Turning to plan SW2, the **LIGHT GREEN** shaded areas form Tree Protection Zones (TPZ), into which all access for construction works **must** be strictly prohibited. Protection measures to guard these are straightforward and are judged proportionate to the potential risk of harm and scope of this project. It is reiterated that **care must** be taken to ensure that the **correct** layout is installed *prior* to the commencement of any site operations for each phase.



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Those for the most sensitive areas close to the work sites, extend to the erection of the specified sections of protective barrier (thick **DARK RED** broken lines) consisting of ski netting supported by road pins, as depicted by the inset image on plan SW2.

In addition to allow for working space within RPAs, there is a requirement for the introduction of some simple temporary ground protection measures comprising of side-abutted scaffold boards or ground boards (**GOLD** shading SW2).

Fuels, chemicals, and cementitious materials are extremely toxic to tree root systems and spillage from mixing or transporting these materials across a site can cause long-term contamination of underlying soil, poison roots and impede the growth of grass, trees, and shrubs.

It is anticipated that the relatively small amount of concrete required will be mixed on site. With regards to the mixing and storage of cementitious materials [and fuels and chemicals], it is important to restrict such activities to areas of existing hard surfaces or ground which is as far as practicable away from RPAs/TPZs. A suggested location is shown by the **DARK BLUE** rectangle on plan SW2. This can be finalised and agreed at the pre-commencement site meeting.

It is reiterated that the specified protective measures must be maintained *in-situ* and fit for their intended purpose throughout the *entire* duration of the works. They are only to be removed as a final site task and with the *prior* written agreement of the project arboriculturalist or LPA tree officer.

A copy of this report must be given to the appointed contractors, and it is recommended that full compliance with its contents be made a condition of their contract.

Supervision

In order produce an evidential test of compliance, it is a normal expectation for the inspection and certification of the specified tree protection measures *prior* to commencement, as well as monitoring of progress throughout the project to be undertaken by an arboriculturalist.

A pre-commencement site meeting must be held between all interested parties, including (as appropriate) the client, project manager, project arboriculturalist and/or LPA arboricultural officer and construction contractors. Relevant responsibilities should be defined and established. The phasing and timing of site activities where these will have an impact on trees should be discussed in detail and agreed. Details of this meeting and all other site visits should be documented along with relevant images, and submitted as an 'evidential test' of compliance to discharge planning conditions relating to the protection of site trees.

Professional supervision/advice is needed at the following points:

- Pre-commencement site meeting
- Supervision of tree works
- Certification of tree protection measures



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- Excavations and removal of existing structures & installation of concrete bin store base, fence post holes Jumbrella foundations and decking
- Random compliance visits throughout the duration of the works.

A copy of this report must be dedicated to the project and kept on site and be freely available as a reference to all those involved at all times.

From a tree protection perspective the excavation and construction activities associated with this proposed garden improvement scheme are, although perhaps a little less than straightforward, none-the-less feasible and achievable. If the guidance and recommendations given in this report and appendices are followed and carefully implemented, the trees to which it relates, can as far as practicable, be appropriately protected throughout all phases of the proposed construction activities within the site, and a sustainable tree-development relationship is a realistic and achievable expectation.

This information should prove sufficient for the purposes of determining the planning application; however, you are advised that the LPA are likely to condition the full implementation of the details and recommendations for tree protection and supervision contained in this document.

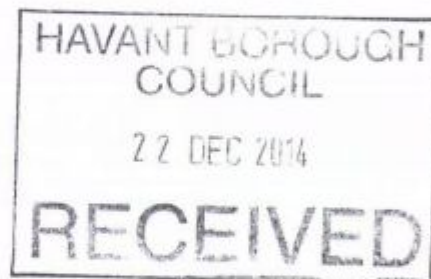
Yours sincerely



Marc-John Eldridge M.ArborA

Appendices

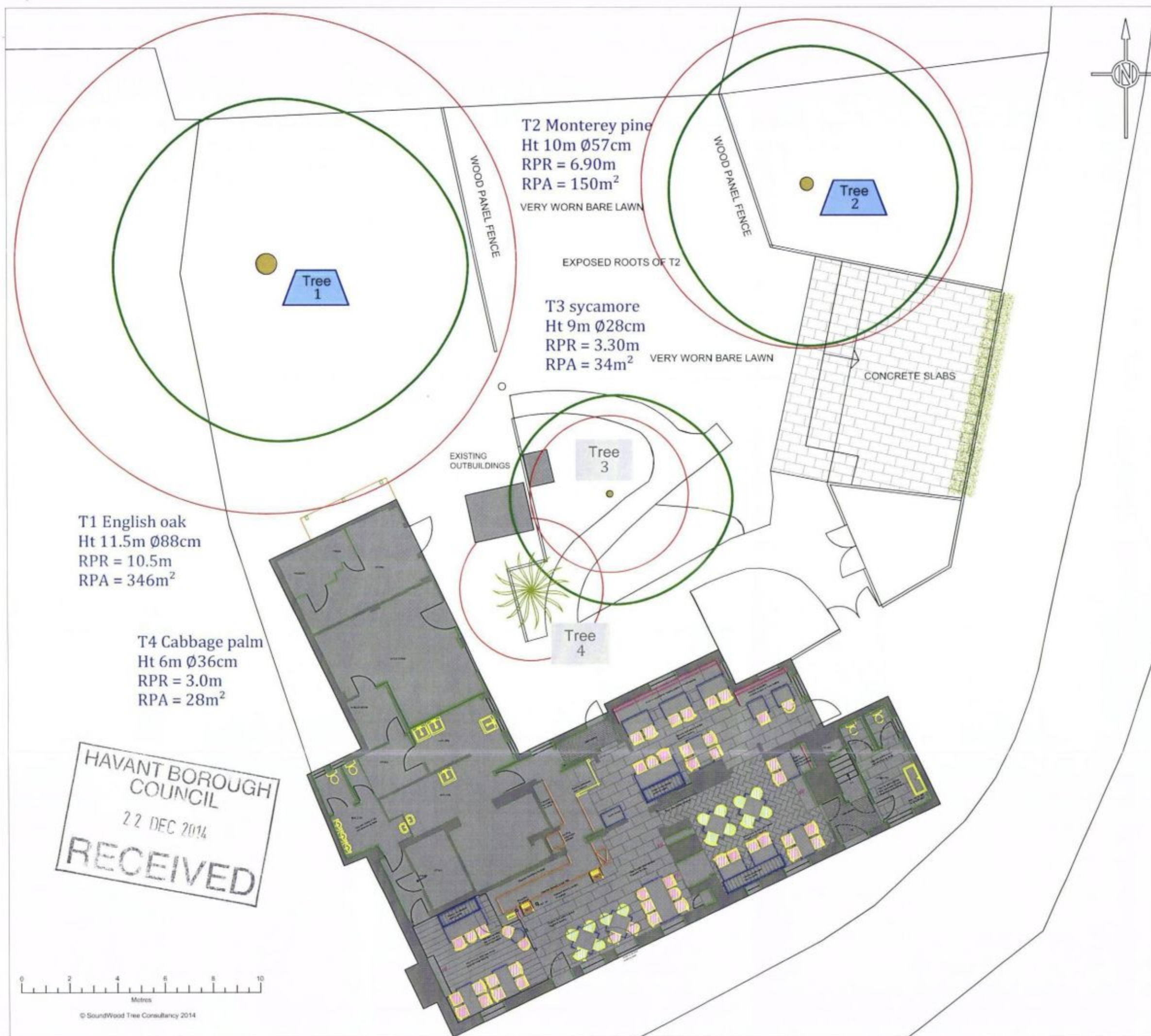
- 1a. SW1 Tree constraints plan
- 1b. SW2 Tree protection plan
- 1c. SW3 Final landscaped layout
2. Tree survey schedule
3. Tree damage information drawing
4. Cement mixing bund



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TREE CONSTRAINTS

PLAN SW 1

Appendix 1a to report SW/AMS/259/14

The Royal Oak, 19 Langstone

High St, Havant PO9 1RY

Friday, 28th November 2014

It is understood that the site is located within a designated conservation area, but is not subject to a tree preservation order [TPO]. No trees require removal for management or to facilitate the proposed changes (SW2). However, a range of minor tree management works, which will not adversely affect either tree health or amenity are listed at appendix 2.

Canopy spreads of A & B category trees are shown by the GREEN lines plotted in the directions of the four cardinal (and where appropriate additional inter-cardinal) points of the compass; whilst those of category C are shown in GREY. Their respective [theoretical] root protection areas are expressed in RED as a radius from the centre of each tree stem (RPR).

BS 5837:2012 Tree Quality Categories

Category	Shape	Colour
A	Triangle	Green
B	Trapezium	Blue
C	Rectangle	Grey
U	Circle	Red & Black

A category trees are high quality examples or groups of significant trees of value to landscape, conservation or culture with a life expectancy of at least 40 years.

B category trees are of impaired condition but are still considered of good or moderate quality with a minimum life expectancy of 20 years. Trees in both higher categories are judged (after any specified remedial works) to pose little or no risk and in almost all cases should be retained.

C category trees are of low quality with a minimum life expectancy of 10 years. They should be considered for retention in circumstances where they do not pose any constraint to proposed development and/or until new planting is established.

U category trees are identified as those with a life expectancy of less than 10 years and/or which should be removed for reasons of sound arboricultural/risk management.

This A3 1:150 plan has been adapted from the site layout drawings provided and produced in colour. All measurements must be checked with the original documents, and a monochrome copy should not be relied upon. © SoundWood Tree Consultancy 2014.

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TREE PROTECTION PROPOSED LAYOUT SW2

Appendix 1b to report SW/AMS/259/14

The Royal Oak, 19 Langstone

High St, Havant PO9 1RY

Thursday, 11th December 2014

The footprint of proposed changes is shown shaded **ORANGE**. The 1m³ concrete footing blocks for securing the new Jumbrellas are shown shaded **ORANGE**. In order for the retained trees to be accommodated within the context of the proposed changes with minimal impact the works **must** be undertaken as follows:

1. The use of any plant or self-propelled machinery is prohibited.
2. Due to the presence of large surface roots from T2, there can be no changes in existing site levels.
3. All related excavations within KPAs **must** be undertaken using hand tools only in accordance with the guidance at page 3.
4. The new decking should be installed using no-dig methods, supported on pre-cast concrete Deck Blocks.
5. Any Geo-textile underlay must be Tree-Tex T300 available from www.geosyn.co.uk. See SW3 for final layout.

The **LIGHT GREEN** shaded areas show the Tree Protection Zones [TPZ] into which all construction access is **strictly prohibited**. The following basic tree protection measures which are appropriate to the duration & scope of the works **must** be installed as a primary site task & approved by the project arboriculturalist/LPA tree officer **prior** to the commencement of any excavation or construction activities. Protective fencing, 26.2m barrier of ski-netting supported by road pins (inset) **must** be erected in the locations/dimensions depicted by the **DARK RED** thick broken lines.

Temporary ground protection. The **GOLD** shading shows the two areas of high activity (42m²) where side-abutted scaffold planks are needed to protect exposed surface roots & soil structure.

Storage & mixing. A suggested location of the storage & mixing area for cementitious materials is shown by the **BLUE** rectangle, which in order to prevent run-off **must** be bunded in accordance with appendix 4. The above protection measures **must** be maintained & remain fit for their intended purpose throughout the **entire** duration of the works. They are only to be removed upon full completion of all external activities & with the written agreement of the LPA tree officer.

BS 5837:2012 Tree Quality Categories

Category	Shape	Colour
 A	Triangle	Green
 B	Trapezium	Blue
 C	Rectangle	Grey

This A3 1:150 plan has been adapted from the topographical plans and site layout drawings provided. All measurements must be checked with the original documents © SoundWood Tree Consultancy 2014

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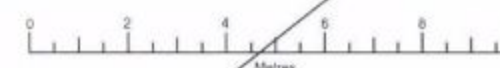
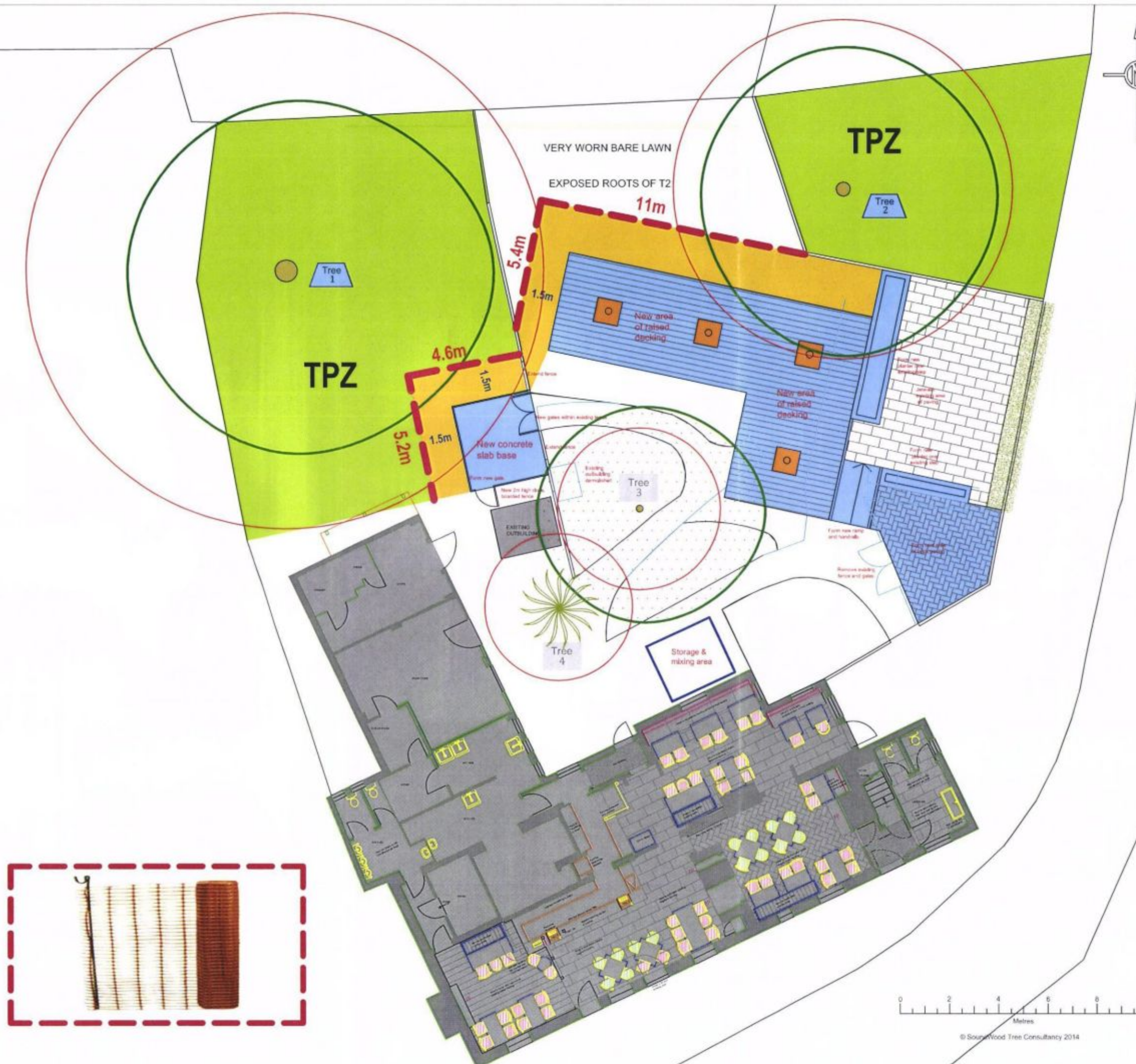
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FINAL LANDSCAPED LAYOUT SW3

Appendix 1c to report SW/AMS/259/14

The Royal Oak, 19 Langstone

High St, Havant PO9 1RY

Friday, 12th December 2014

This drawing shows the garden layout following completion of the works. As evidenced by the current condition of the lawns, grass is not a practical, durable or attractive surfacing option for the seating areas. Due to the presence of surface roots from T2, there can be no changes to existing site levels where these are found. However, a suitable no-dig solution will be to spread a minimum 50mm settled depth of either clean woodchip or a 20mm loose aggregate onto an underlay of fully porous and air-diffuse Tree-Tex T300 geo-textile available from www.geosyn.co.uk



BS 5837:2012 Tree Quality Categories

Category	Shape	Colour
A	Triangle	Green
B	Trapezium	Blue
C	Rectangle	Grey

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Tree No	Species & BS Category	Ht (m)	Dia (cm)	Crown Spread	Crown Height	Age Class	Condition		RPR RPA	ARE (years)	Defects/Comments/Recommendations
							P	S			
T1	English oak B	11.5	88 (below fork at ~40cm AGL)	N 6.5 E 8.0 S 7.0 W 6.0	1.3	Early mature	Good	Fair	10.5m 346m ²	20+	Located in the north-western corner of the pub garden in an area that is fenced off and currently only used by staff. Healthy specimen that is to be considered as a material constraint within the proposal. No significant visual defects observed during site visit that gave cause for imminent concern. Small accumulation of building debris at base on southern aspect. Forks below 1.5m above ground level (AGL), unions sound. Ivy clad lower stem. Old pruning wounds on main stem with minor exudation evident, however not significant. Low, broad spreading crown that has historically been tipped back on western aspect as it overhangs the neighbouring structure. Old branch stubs, deadwood and small broken hanging limbs evident in crown. Management works: i) Sever and remove ivy from main stem. ii) Clear detritus around base of tree. iii) Remove deadwood, hanging limbs and branch stubs. iv) Crown lift to 2.5m AGL by the removal of secondary and tertiary branches only. v) Tip back crown on western aspect to create a clearance not exceeding 2.5m from the neighbouring structure, ensuring that a flowing branch line is maintained.



The site is not subject to any TPOs, but is located within a designated conservation area (Havant Borough Council)

BS 5837:2012 Categories – A =light green; B=mid blue; C = grey; U=red. ! Indicates concerns for the immediate safety of defective trees in high risk areas

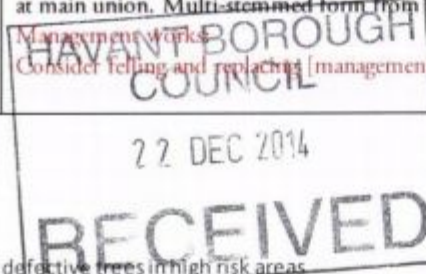
Condition: P = Physiological; S= Structural. Please see main key for full definitions. Ash are now listed as cat C due to *Chalara fraxinea* spreading throughout UK.

Tree No	Species & BS Category	Ht (m)	Dia (cm)	Crown Spread	Crown Height	Age Class	Condition		RPR RPA	ARE (years)	Defects/Comments/Recommendations
							P	S			
T2	Monterey pine B	10	57	N 5.5 E 6.0 S 6.5 W 5.5	1.5	Early mature	Good	Fair	6.9m 150m ²	20+	Located in the north-eastern corner of the pub garden in an area that is fenced off and unused. Healthy and vigorous specimen that is to be considered as a material constraint within the proposal. No significant visual defects observed that gave cause for imminent concern during the site visit. Raised patio located within RPA in addition to numerous outdoor seating areas / tables. Significant root compaction in root zone. Numerous exposed surface roots. Moderate damage evident to roots, however no evidence of noteworthy decay. Multiple pruning wounds on lower stem with minor resin exudation. Low crown. BT wires running through eastern aspect of crown. Possibly topped but hard to ascertain due to dense foliage. Provides screening of PH to adjacent property. Management works: Remove 1st branch ascending south over garden. Crown lift to 4m AGL by the removal of secondary & tertiary branches only to clear new Jumbrellas.
T3	Sycamore C	9	28	N 4.0 E 5.0 S 4.5 W 4.0	1.8	Semi-mature	Fair	Poor	3.3m 34m ²	10-20	Located in the pub garden. A specimen of little arboricultural merit that should not be considered as a material constraint within the proposal. Paved walkway located within RPA. Well compacted root zone. Exposed and damaged surface roots, however damage not significant. Minor root girdling. No significant visual defects on main stem. Previously crown reduced at ~4m AGL. Poor occlusion of wounds with minor decay evident at some of the reduction points. Management works: Prune back to suitable pruning points above previous reduction
T4	Cabbage palm C	6	36	N 1.0 E 1.0 S 1.0 W 1.0	1.8	Mature	Fair	Poor	4.2m 55m ²	10+	Located in the pub garden. Small specimen of little arboricultural merit that should not be considered as a material constraint within the development. Paved walkway and hard surface located within RPA. Well compacted root zone. Forks into two co-dominant stems at ~2m AGL. Bark inclusion evident at main union. Multi-stemmed form from ~2.5m AGL. Management works: Consider felling and replacing (management)

The site is not subject to any TPOs, but is located within a designated conservation area (Havant Borough Council)

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Condition: P = Physiological; S= Structural. Please see main key for full definitions. Ash are now listed as cat C due to *Chalara fraxinea* spreading throughout UK.



Key

- **Ht** = Height measured to the nearest half-metre with a laser range finder.
- **Dia** = Diameter measured in centimetres at 1.5m above ground level using a rounded-down diameter tape.
- **o.i** = measurement taken over ivy.
- **b** = basal, **e** = estimated
- **Crown Spread** is measured with a laser range finder & expressed in metres in the direction of the four cardinal (& if appropriate inter-cardinal) points of the compass.
- **C Ht** = Crown height above ground level estimated in metres
- **Structural Condition S** indicates the effect of structural defects on the health and stability of the tree; whilst **Physiological Condition P** indicates the general health & vitality.
Both are assessed as:
 - Excellent High vitality, excellent condition, significant long-term amenity contribution
 - Good Healthy full crown. No significant defects, long life expectancy
 - Fair Generally healthy, some defects, limited life expectancy
 - Poor Lacking vitality, significant defects, short life expectancy
 - Dead No leaves or signs of life.

- **Age Class** is selected from the following categories;
 - Young Tree only recently established
 - Semi-mature Established tree, still young and relatively small
 - Early mature Tree in central third of its life cycle
 - Mature Tree in the last third of its life cycle
 - Late mature Tree nearing the end of its life cycle
- **BS Cat** refers to British Standard 5837:2012 'Trees in relation to design, demolition & construction' which categorises trees on development sites into one of four quality categories – A, B, C or U: A being very good and U meaning that management felling is appropriate regardless of any proposals. The suffix 1, 2 or 3 refers to a sub-category relating to tree, landscape or cultural values.
- **RPR** = root protection radius
- **AGL** = Above ground level.
- **ARE** = Anticipated retainable existence (in years)
- **TPO** = Tree Preservation Order
- **Con/A** = Conservation Area
- **NABD** = Not Affected by Development

Tree Names

Common	Scientific
Cabbage palm	<i>Cordyline australis</i>
English oak	<i>Quercus robur</i>
Monterey pine	<i>Pinus radiata</i>
Sycamore	<i>Acer pseudoplatanus</i>



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Condition: P = Physiological; S= Structural. Please see main key for full definitions. Ash are now listed as cat C due to *Chalara fraxinea* spreading throughout UK.

Common causes of tree damage on development sites

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27 DEC 2014

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The use & parking of heavy vehicles
cars & plant within RPAs causes
compaction and oil contamination

Fires must not be lit in the vicinity
of trees. Burning by flames causes
dieback and disease.



Lowering ground levels close to
trees severs roots leading to
crown dieback.

**Robust & properly positioned protective
fencing prevents damage to trees**

Attachment of signs, fences, cables
and winches to a tree causes direct
damage and promotes decay.

Protective fencing must be erected at the
recommended distance & maintained
throughout the construction phase



Storage of materials within RPAs
causes compaction and root
suffocation.

Spilling of diesel oil, chemicals and
cement close to RPAs cause root
death.

Trenches or footings dug close to
trees sever roots, causing instability
and crown dieback.

Damage to trunks & major limbs
must be avoided; wounds create
entry points for disease

Raising ground levels even for only
a few weeks can suffocate roots,
causing crown dieback.



Appendix 4: Containment of run-off from the mixing of cement & mortars

To be set out as per **BLUE** rectangle shown on plan SW2

Cementitious materials are extremely toxic to tree root systems and spillage from mixing or transporting these materials across a site can cause long-term contamination of underlying soil, poison roots and impede the growth of grass, trees and shrubs. As such it is important to restrict such activities to established hard surfaces or areas outwith tree RPAs.

Where there is a high risk of soil contamination from mixing run-off draining into RPAs, heavy-duty plastic sheeting and sandbag walls **must** be used to form a bund to contain spillages - similar to the example drawing below.

Good site husbandry is extremely important and surplus cement **must** be removed at the end of each working day, and any such material dropped onto the ground **must** be immediately collected up and removed and the area thoroughly washed down with clean fresh water. A 25kg sack of cat litter should be kept available to quickly smother and contain accidental fuel or chemical spillages.



Cement, builder's sand and other chemicals used in cement mixing must all be stored on non-permeable surfaces to insure soil beneath is not contaminated.

