General

This illustrative plan provides information in respect of planning permission 14/12144/FUL (Royal Borough of Kingston) and planning permission 14/04451/FUL (London Borough of Richmond Upon Thames). This illustrative plan is intended to inform the location of protective barriers, other relevant physical protection and highlight precautionary areas for retained trees. This plan should be incorporated into subsequent drawings and contractors method statements and issued for use on site, to ensure that all parties are fully aware of the areas in which access and works may and may not take place.

Site Boundary
- Indicative boundary

Site Hoarding
- Line of site hoarding within RPA

Statutory Designations (trees)
- Ham Common Conservation Area
- Tree Preservation Order (RBK and LBRT)

Demolition
- Structure (building)
- Structure (security fence or wall)

Tree Protection Measures
- Preliminary root protection area
- Tree Protection Barriers Type 1 (To be erected prior to enabling works)
- Tree Protection Barriers Type 2 (To be erected immediately following demolition of security fence or wall within RPA)
- Tree Protection Barriers Type 1 (sequential removal and installation of temporary ground protection required prior to demolition of wall)
- Tree Protection Barriers Type 2 (sequential erection prior to demolition of boundary wall adjacent woodland)
- Temporary Ground Protection (To be installed within RPA of T99 prior to demolition of security fence or wall)
- Route of access during demolition
- Exclusion zone (Demolition) Area where enablement or demolition operations are prohibited.

Arboricultural Method Statement

The primary purpose of this plan is to aid the preservation of retained trees through setting out the appropriate working practices, demolition techniques and tree protection measures that are to be adopted when demolition works are undertaken in the proximity of trees. The methodology of this Tree Protection Strategy follows a logical sequence of events. Variations to the sequence could significantly reduce the efficiency of the tree protection measures.

This plan should be incorporated into subsequent drawings and method statements used for design purposes or issued for use on site, to ensure that all parties are fully aware of the areas in which access and works may and may not take place.

A summary of tree protection will be provided to all personnel through the site induction. This summarises the key precautionary measures and responsibilities of all site personnel to ensure an awareness of trees during site works and that they are successfully protected throughout the demolition and site enablement works. Demolition Contractor - It is the responsibility of the Demolition Contractor to ensure that the Tree Protection Plan is implemented on site, maintained during the development process and understood by all site personnel and contractors prior to commencement of works.

Pre-commencement meeting - A pre-commencement meeting shall be held on site prior to commencement of enabling or demolition works . This shall be attended by the Client's Representative, Demolition Contractor and Project Arboriculturist. The Local Authority Tree Officer will be notified and invited to attend. The methods of tree protection outlined within this statement and revisions for the particular phases shall be fully discussed at the meeting, so that all aspects of their implementation and sequencing are made clear to all parties. Any clarifications or modifications to this statement shall be recorded and circulated to all parties in writing.

In brief, key work stages for the site enablement and demolition phase will be as follows;

Stage 1	Pre-commencement meeting and identify trees for removal as identified within Tree Retention & Removal Plan [TF913s1/TRR/302]
Stage 2	Execute agreed tree removal and facilitative tree works
Stage 3	Installation of tree protection prior commencement of site enablement and demolition
Stage 4	Carry out site enablement and demolition - Note: existing security fencing and wall to be retained during demolition of main site to exclude trees to south of fence
Stage 5	Following practical completion of demolition of main site - existing security fencing and wall to be dismantled and temporary tree protection barriers to be erected
Stage 6	Review tree protection to accord with Tree Protection and Arboricultural Method Statement - Construction [TF913s1/TRR/302] prior to commencement of Construction Phase

Tree Roots - The majority of tree roots are typically concentrated within the top 600mm of soil. Repeat trading by vehicles, excavation or cement (including crush) over soft ground near trees is likely to cause root damage. This may have an adverse impact on the trees health and stability. Any tree roots exposed during operations should be treated at once. Exposed roots smaller than 25mm diameter may be pruned back, preferably to a side branch, using proprietary cutting tools. In the event that roots are required to be pruned, sharp cutting tools are to be used to ensure the minimum damage is caused. Clean cuts can result in the redevelopment of live roots. Poor untidy cuts can, however, result in root die back and decay. No roots greater than diameters of 25mm are to be pruned without prior agreement with the Project Arboriculturist.

Tree Protection Barriers - All Type 1 Barriers (see below) are to be erected prior to commencement of any external works on site (including site enablement) and are to be retained throughout the demolition process. All Type 2 Barriers (see below) are to be erected immediately following demolition of any section of the existing security fence or wall to exclude access to the Exclusion Zone and are to be retained throughout the demolition process. All barriers are to be fit for purpose. The area between the tree and the protection barriers forms the Construction Exclusion Zone. The construction exclusion zone is to remain sacrosanct with storage of materials, machinery or equipment prohibited. No excavation or changes to land levels are to occur within this area unless agreed in writing by the Local Planning Authority. All damage to protective barriers or accidental damage to trees must be reported to the Client's Representative immediately. Works occurring within the vicinity will cease immediately until adequate tree protection measures are rectified. Where appropriate the protection barriers will be aligned with the site hoarding.

Type 1 Barriers - should consist of a scaffold framework comprising of a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at a maximum of 3m and driven into the ground. Onto this, weldmesh panels should be securely fixed with wire or scaffold clamps unless similar fencing is agreed with the Local Planning Authority. See Tree Protection Barriers - Type 1 (extract of Fig.2 BS5837 2012 - Default specification for protective barrier).

Type 2 Barriers - should consist of weldmesh panels on rubber or concrete feet and secured with tec anti-tamper couplers installed so that they can only be removed from inside the fence . The panels should be supported on the inner side by stabilizer struts secured with ground pins unless similar fencing is agreed with the Local Planning Authority see Default specification for protective barrier (extract of Fig.3 BS5837 2012).

Once the barriers have been properly installed and erected in position, the fenced area is to be considered sacrosanct and must not to be removed or altered in any way without prior approval from the Project Arboriculturist.

All Weather tree protection notices are to be fixed to the outside of all tree protection barriers. See Example - Tree Protection Signage.

Installation of Site Hoarding within the RPA - Temporary site hoarding will be located within the RPA of retained trees. Temporary site hoarding shall be formed of post and rail at 3m centres affixed to pre-cast concrete footings with a 2.4m high ply face and erected as specified by the Engineer. Footings shall be above ground level and formed of pre-cast concrete blocks lifted into place. Where the hoarding is located directly adjacent or within the RPA of a retained tree the stabilisation of existing ground for the block shall be carried out using hand held tools to provide a level surface. Casting of concrete blocks in-situ will be prohibited within retained areas of soft ground. Where stabilisation of concrete blocks is required, the method of stabilisation will be discussed and agreed with the Project Arboriculturist prior to commencement.

Temporary Ground Protection - Immediately following dismantling of Type 1 Barriers and prior to commencement of demolition of the existing security fence or wall within the RPA, temporary ground protection to minimise compaction or root disturbance will be installed prior to commencement of works (hatch brown sand). Immediately following completion of demolition Type 2 Barriers will be erected as specified and ground protection removed.

Ground protection for pedestrian movements only within the RPA and wooded area will be constructed in the form of a single thickness of scaffold boards placed on top of a driven scaffold frame, so as to suspend the walkway.

For pedestrian operated plant upto a gross weight of 2t, protekty interlinked ground protection boards placed onlap of a compression resistant layer laid onto a geotextile membrane.

Ground Protection for Vehicular movements will be formed by a temporary load bearing surface such as Eurotrakway (www.eurotrakway.co.uk). Any hollows within the existing ground surface will be filled to provide a flat surface. A geotextile material will then be laid within the position shown. The track way will then be laid and secured in place in accordance with manufacturer's instructions.

Demolition of security fencing or walls - Existing security fencing or wall will remain in place to provide tree protection to trees to the south of the site during demolition of the main site.

All plant and vehicles engaged in demolition work must operate outside of the RPA unless existing hard standing or ground protection (see above) is present. All plant and vehicles will be appropriate to the demolition in hand and site constraints in order to minimise damage/disturbance to trees. Precautionary measures must be observed to avoid contact with the crown of any retained trees from tall loads, plant with booms, plant & counterweights.

Protection and precautionary measures shall be considered by the Demolition Contractor and provision made within the contractor's Method Statement for tree protection and physical impact to trees from demolition material.

Demolition will be carried out sequentially. Following demolition of each section, Type 2 Barriers will be installed before commencement of the next section. No section shall remain incomplete without Type 2 Barriers erected. All vehicles are prohibited from tracking within the Exclusion Zone (Demolition).

Demolition of standing structures shall be carried out using a 'top down and pulled back' methodology . Demolition material shall be pulled tangentially away from the tree's RPA.

Removal of the foundation bases must be carefully carried out in order not to disturb tree roots that may be present directly adjacent to them. Appropriate machinery under arboricultural monitoring will be used to break-up and remove the existing surface and sub-base ensuring that excavation does not encroach within the soft ground directly adjacent. All foundations shall be pulled tangentially away from the RPA's. Any tree roots exposed by such operations should be treated at once. Roots smaller than 25mm diameter may be pruned back, preferably to a side branch, using proprietary cutting tools. Roots over 25mm diameter to be recorded and pruned by the Project Arboriculturist ensuring that cut roots are ripped or torn.

Storage of materials - All materials for demolition purposes should be carefully stored outside the Demolition Exclusion Zone.

Utilities and drainage runs - All redundant utility or drainage runs within the RPA will be disconnected and capped-off outside of the RPA and are to remain in-situ. In the event that excavation is required within the RPA, as part of agreed utility and drainage plans, hand tools only must be used in accordance with National Joint Utility Guidelines Vol. 4 issue 2 Nov' 07.

Arboricultural Monitoring & Recording

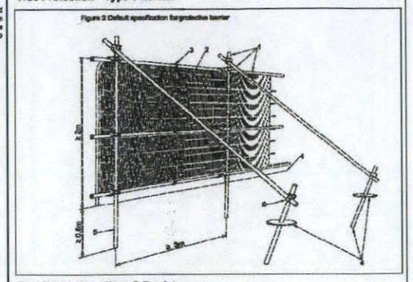
It is the responsibility of the demolition contractor to inform the Project Arboriculturist of works within the RPA atleast 48hrs prior to commencement.

Work stage and scope of arboricultural monitoring

Work Stage	Scope of watching brief
Pre-commencement meeting, tree removal & facilitative works	Attend site, discuss and agree method statement and tree protection strategy with Site Manager. Circulate written minutes of meeting including any modifications or clarifications.
Tree Protection Barriers and Ground Protection	On installation of tree protection barriers inspect identifying any outstanding works or action required. On completion of any outstanding actions sign off on completion. Report breaches to Site Manager for action.
Demolition of existing security fence or wall	Attend site, discuss and agree method statement and provide arboricultural monitoring during demolition
Tree Protection (temporary)	Attend site, inspect identifying any outstanding works On completion of any outstanding actions sign off on completion. Report breaches to Site Manager for action.

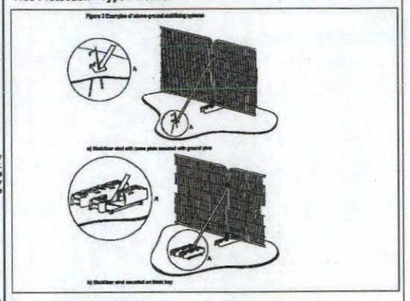
Tree Protection - Type 1 Barrier

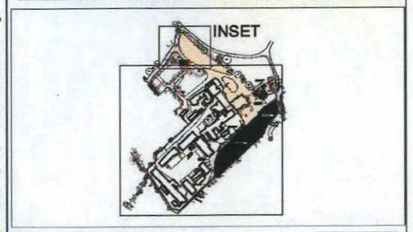
Figure 2 Default specification for protective barrier



Tree Protection - Type 2 Barrier

Figure 3 Examples of above-ground stabilising systems





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Project
LATCHMERE HOUSE
RICHMOND

Drawing
TREE PROTECTION & ARBORICULTURAL METHOD STATEMENT - DEMOLITION

Scale	Date	Drawn
1:500	AUG '15	AR

Drawing No.	Revision
tf 913s1/TPP/301	B

- [ ] Preliminary
- [x] Issued for Planning Approval
- [ ] Issued for Construction
- [ ] Issued for Design/Information
- [ ] Issued for Tender
- [ ] As Built

Drawing sheet size - A1
m 0 5 10 15 20 25 30 35 40 45 50
Scale 1:500