

Shorne Common Car Park Remediation Works

Trees assessment for works within a Conservation Area

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Description of Works

Shorne Village Playground Car Park is depicted in the map below. The proposal of works is to replace existing hard standing car parking surface with up to 300mm of Type-1 material to level out the parking area. This is in response to the car parking area having become degraded over time, with enhancements deemed necessary due to health and safety concerns for the continued use of the common.

Map 1: Shorne Common Playground Carpark – Works Extent



The resurfacing works will involve a new cambered surface drainage system to be incorporated with the new parking surface, and for the surface water to run off into a lower level of ground to the South of the car park. All placed material will be lined with a permeable membrane to avoid attenuation and so that the natural functionality of the water can pass through the surface. Excess water will run off down the cambered gradient and disperse by harnessing the porosity of the of the surrounding woodland edge. Allowing the discharge to leachate into the ground without causing detriment to the surrounding habitat, evenly and safely so that puddling/rutting of the new parking surface is avoided.

A 5tn excavator will be used to strip the upper most layer of grass and soil to grade any excess surface material to the levels given by the BB engineer so that runoff gradients are ensured. All waste material will then be taken away via grab wagon. New material will be brought to site via grab and new material will be placed to one side. Once the new material has been laid and rolled then a levels check will be complete to make sure that adequate drainage is ensured.

A tree assessment was undertaken including a tree report to identify and categorise the surrounding trees of concern around the working area. The mitigation hierarchy approach was implemented and the design of the re surfacing works adapted, at first instance to avoid impact to the trees by reducing the works extent and then to mitigate further through sympathetic design reducing impacts below ground to the root systems.

Preparation Works: Vegetation Clearance/ Soil strip

The works site is situated within a Conservation Area with trees of concern identified around the South and West regions of the car park. An arboricultural assessment was undertaken by Dominic Wallace (Site Ecologist - Balfour Beatty) and Sam Bower (Ecology and Arboriculture Technical Specialist – Balfour Beatty) to identify, map and categorise the quality of concern in accordance with the British Standard - BS 5837:2012: Trees in relation to design, demolition, and construction – Recommendations.

A potential for the clearance of small amount (maximum 10m x 1.5m) of encroaching grass and bramble vegetation present around the Western and Southern boundary of the works extent. To be cleared by hand tools to tidy up the car park extent in order to demarcate the working boundary. The resurfacing site boundary will be marked by a BB Engineer to inform the potential required extent of the clearance works. As part of the resurfacing works, soil stripping at the upper most extent of the soil horizon will be required, stripping sparse patches of grass encroachment no more than 5m x1m to prevent build-up of anaerobic conditions from decomposition of plant matter.

A main focus of the resurfacing works is to address appropriate drainage run off, of the car park area. This will be addressed by implementing an evenly cambered profile to the re-surfaced car parking area, so that excess rainfall water evenly runs off into the surrounding area, avoiding any pooling. An evenly sloped camber will spread out dispersion water runoff to the surrounding landcover. Harnessing the porosity of the surrounding soil to leachate the runoff, spreading the waters load, and avoiding pooling elsewhere so not to cause detriment to the surrounding areas. Furthermore, a pours membrane will be laid down before resurfacing type 1 material is laid down, acting as a subbase to maintain flow of gases and moisture exchanges between soils and atmosphere.

The site has a total of 7 trees present in close proximity to the Western and Southern boundary of the proposed works area. We feel that sufficient root protection measures have been adopted to mitigate impact, via reductions of the works extent and mitigation measure adapted in the design (see Figure 1 for RPA encroachments). These works will be coordinated and liaised with the Site Ecologist and the methodology briefed to all workforce prior to commencing any works. Once the vegetation clearance works are complete, the site boundary will be clearly demarcated with exclusion barriers to separate the working site from the adjacent wooded areas, disallowing any unauthorized access, eliminating risk to the wider conservation area.

Removal of vegetation Works:

Vegetation and soil cleared will be securely stockpiled next to the car park gate. Using a grab wagon from the roadside adjacent to the wooden entrance gate, the vegetation will be loaded into the grab wagon and safely taken away from site. Outrigger pads will be used in order to avoid any potential damage to the tarmac surface. With the Supervisor to ensure that the materials are not mixed under any circumstances within the grab lorry during their removal from site. For instance, the removed/ discarded vegetation needs to be taken separately and not mixed with the wet spoil/ slurry which needs to be scrapped off as part of the car park remedial procedure.

Tree Cutting Works: Tree number 5

The oak tree identified T5 (see below tables 1-3) has a secondary co-dominant stem, off of the main dead limb. Light competition from adjacent trees to the west has caused strong phototropic lean, reduced lateral structural development, and has prevented uniform growth resulting with severe lean to the east over the car park. As the deformed growth is overhanging the car park, this is proposed to be pollarded back to the main stem where the initial dead primary stem will remain.

Justification of the removal of the limb is also to facilitate plant machinery to undertake the resurfacing works. The limb has a health and safety risk of falling onto the car park and potential users during remedial works as well as in the future.

This secondary leader is proposed to be pollard back to the main stem, where the initial main stem and dead primary stem will remain.

Site: Shorne Conservation Area

The targeted trees within the conservation area were assessed by Dominic Wallace GradCIEEM Site Ecologist (Balfour Beatty) and Sam Bower CEnv CIEEM MArborA, Ecology and Arboriculture Technical Specialist (Balfour Beatty) on several occasions over 25/10/2021, 01/11/2021, 03/11/2021, 08/11/2021 and 10/11/2021.

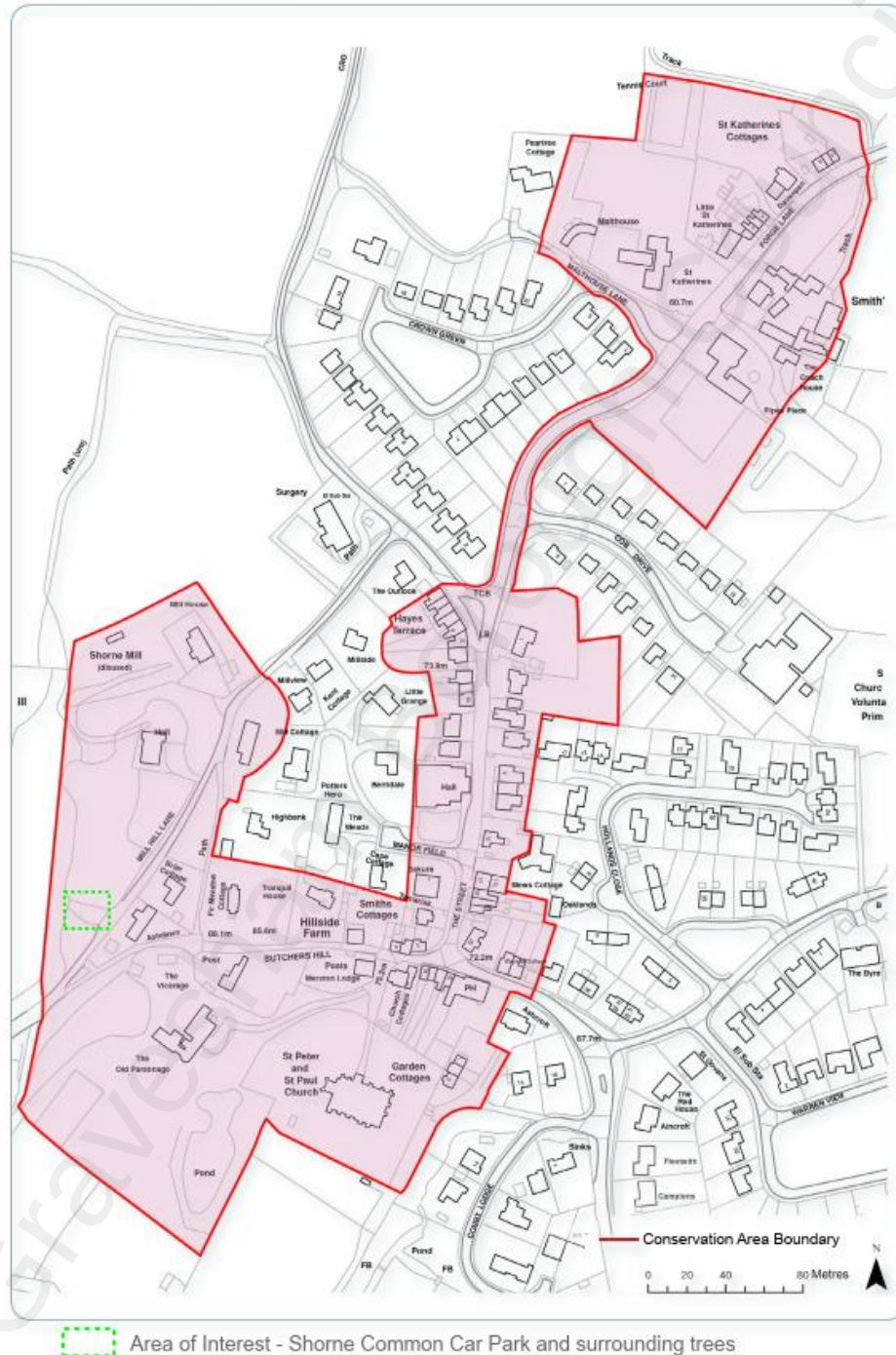


Figure 1: Shorne Conservation Area Boundary – Area of concern indicated in green.

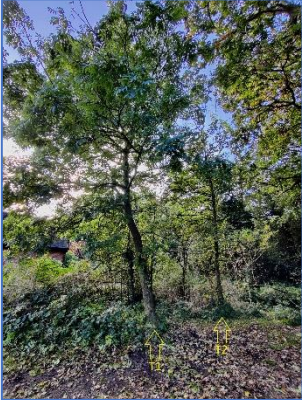
The location of each tree was plotted with mensuration and tree condition data collected in accordance with The British Standard BS5837:2012. The results of the survey is shown in Tables 1-3.

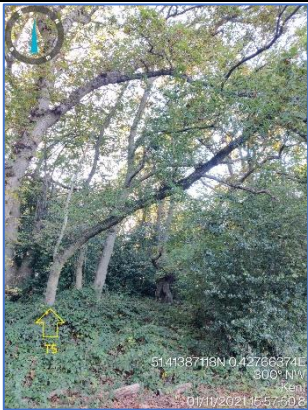
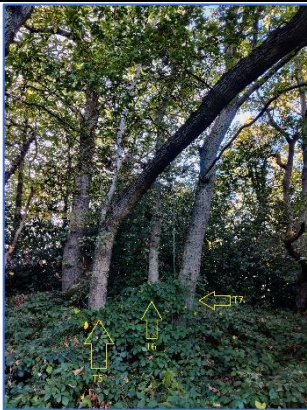
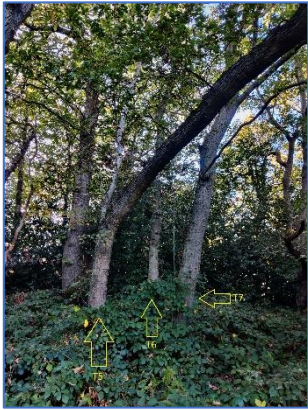
Table 1: Details of Trees of Concern

Tree ID:	Tree Species	Condition	Tree Stem Diameters	Root Protection Area (m)	Tree Location
Tree 1 (T1)	Ash (<i>Fraxinus excelsior</i>)	B	24cm	2.88m	what3words: ///unity.split.broom Grid Ref: TQ 68922 71107
Tree 2 (T2)	Elm (<i>Ulmus procera</i>)	U	14cm	1.68m	what3words: ///post.export.caller Grid Ref: TQ 68916 71107
Tree 3 (T3)	Oak (<i>Quercus Robur</i>)	B	46cm	5.52m	what3words: ///pitch.thus.storm Grid Ref: TQ 68910 71110
Tree 4 (T4)	Oak (<i>Quercus Robur</i>)	A	53cm 55cm	7.68m	what3words: Grid Ref: TQ 68907 71113
Tree 5 (T5)	Oak (<i>Quercus Robur</i>)	C	33cm	3.96m	what3words: ///doll.pace.vibes Grid Ref: TQ 68906 71122
Tree 6 (T6)	Oak (<i>Quercus Robur</i>)	C	21cm	2.52m	what3words: ///doll.pace.vibes Grid Ref: TQ 68906 71122
Tree 7 (T7)	Oak (<i>Quercus Robur</i>)	B	39cm	4.68m	what3words: ///doll.pace.vibes Grid Ref: TQ 68906 71122

Table 2: Photographs of Trees of Concern

Tree ID:	Photograph
Tree 1 (T1)	

Tree 2 (T2)	
Tree 3 (T3)	
Tree 4 (T4)	

Tree 5 (T5)	
Tree 6 (T6)	
Tree 7 (T7)	

Car Park Overview	
Current condition of Car Park	Photo as of 01/11/2021 

Description of trees

Tree 1 –

A semi mature aged ash located on the south easterly fringe of the car park. No positive attributes noted. Ash die back is prevalent in the local area and this tree is showing possible signs. Life expectancy due to location (immediately adjacent playground car park with lean towards the road) combined with probable future ill health (dieback of lower limbs) is low. The encroachment into the calculated root protection area is minimal based on the final design, in terms of the soil strip and re-surfacing that are minimal (see figure 2).

Tree 2 –

A young elm located on the south easterly fringe of the car park in relatively poor condition with the top third of the tree dying. No positive attributes noted. Showing obvious lack of canopy cover and leaf foliage toward the top of the tree. The encroachment into the calculated root protection area is minimal based on the final design, in terms of the soil strip and re-surfacing are minimal (see figure 2).

Tree 3 –

A young oak in good condition. The tree has strong phototropic lean to the south west. Light competition from adjacent trees to the west causing notable lean, reduced lateral structural development, and preventing uniform growth. Value reduction factor attributed. The encroachment into the calculated root protection area is minimal based on the final design, in terms of the soil strip and re-surfacing are minimal (see figure 2).

Tree 4 –

A mature aged tree in good condition with dual stem. The tree is situated to the West on the bottom of the bank. The risk towards causing adverse effects to the tree is low, with minimal incursion into the root protection area. Taking into consideration that there may be limited spread eastwards to the car park area with the combined anaerobic conditions, semi permeable cover that has pooling of water. Under the current conditions of the hardstanding car park surface landcover. Along with only minimal profiling of this location being required as it is a high point of the carpark area. The encroachment into the calculated root protection area is minimal based on the final design, in terms of the soil strip and re-surfacing are minimal (see figure 2).

Tree 5 –

A mature oak situated a third of the way up the bank with one dominant limb in moderately good condition. The tree has a secondary co-dominant stem, off of the main dead limb. Light competition from adjacent trees to the west causing strong phototropic lean, reduced lateral structural development, and preventing uniform growth. Severe lean to the east over the car park.

As the deformed growth is overhanging the car park, this is proposed to be pollard. Back to the main stem where the initial dead primary stem will remain. Justification of the removal of the limb is to facilitate plant machinery to undertake the resurfacing works. The limb also has a health and safety risk of falling onto the car park and potential users in the future. The longevity of the tree is limited due to the deformed phototropic growth and it succumbing to fall under the weight of the arching limb. The works proposed will have no encroachment within the calculated root protection area of this tree.

Tree 6 –

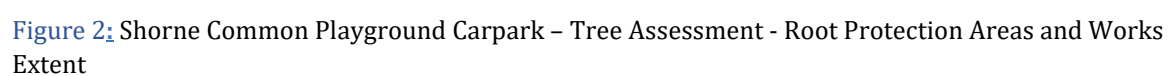
A semi mature oak situated a third of the way up the Wester bank in moderately good condition. Light competition from adjacent trees to the West causing prominent phototropic lean, reduced lateral structural development, and preventing uniform growth. The works proposed will not encroach into the calculated root protection area of these tree.

Tree 7 –

A semi mature oak situated a third of the way up the bank in good condition. Light competition from adjacent trees to the west causing prominent phototropic lean, reduced lateral structural development, and preventing uniform growth. The works proposed will not encroach into the calculated root protection area of these tree.

Table 3: Tree Assessment data collected in accordance with The British Standard BS5837:2012.

Conservation Area Tree Survey - Shorne Common Car Park										Balfour Beatty Ecologist - Dominic 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Summary:

The tree assessment to identify and categorise the surrounding trees of concern around the working area has appropriately informed the design to mitigate impacts to trees of concern within the conservation area. Through implementation of carefully considered design and by following the mitigation hierarchy approach. Adapting the design at first instance to avoid impact to the trees by reducing the works extent and then mitigating further through sympathetic design also reducing impacts below ground to root systems by changing the water run off camber design and meeting permeable membranes. The tree assessment RPA calculations and mapping have indicated that the re-surfacing works will encroach minimally into the RPA of just the trees identified as T1,2,3,4. For which sympathetic design has been adapted and best practice working methodology will be implemented to ensure the normal functionality and least detriment to the trees of concern and surrounding habitat is adhered to.

Due to this detailed assessment and adapted design, it is deemed that the proposed resurfacing works will not have significant detrimental impact to the trees within the conservation area.