

Arboricultural Implications Report
Proposed re-development at
Riverside Industrial Estate
Bridge Rd
Littlehampton



December 2020

Ref. SJA air 20194-02

SUMMARY

S1. On the basis of our assessment, we conclude that the arboricultural impact of this scheme is of negligible magnitude, as defined according to the categories set out in **Table 1** of this report.

S2. Our assessment of the impacts of the proposals on the existing trees concludes that no trees are to be removed. As such, none of the main arboricultural features of the site are to be altered and there will be no impact on the arboricultural character and appearance of the local landscape.

S3. As no trees are to be pruned, and the proposed building will be beyond 10m of the extents of the canopies of trees to be retained, there will be adequate working space for construction close to trees, and a reasonable margin of clearance for future growth.

S4. As no parts of the proposed building is within the RPAs of any of the trees to be retained, subject to the implementation of protective measures specified below and on the TPP, their construction will not cause unacceptable damage to roots or rooting environments as a result of root severance or damage, or compaction or pollution of the soil.

S5. As the proposed development will retain all trees, including all trees subject to TPO, and all trees that contribute to local amenity, and the retained trees are afforded adequate protection through the development process and appropriate management for the future, it complies with Policy ENV DM4 of the adopted Arun Local Plan 2011-2031 (July 2018).

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1. INTRODUCTION AND BACKGROUND INFORMATION

1.1. Instructions

1.1.1. SJAtrees has been instructed by Pegasus Group to visit Riverside Industrial Estate and to survey the trees growing on or immediately adjacent to this site.

1.1.2. We are further asked to identify which trees are worthy of retention within a proposed re-development of the site; to assess the implications of the development proposals on these specimens, and to advise how they should be protected from unacceptable damage during construction.

1.2. Scope of report

1.2.1. This report and its appendices reflect the scope of our instructions, as set out above. It is intended to accompany a planning application to be submitted to Arun District Council (the LPA), and complies with local validation requirements, and with the recommendations of British Standard BS 5837:2012, *Trees in relation to design, demolition and construction – Recommendations* ('BS 5837').

1.2.2. The proposed development comprises the erection of a total of 522.5 sqm of industrial space (including 10% mezzanine level), with allocated parking and landscaping for unit 1 and the existing part open and part closed culvert runs along the northwest of the site and is to be re-directed to accommodate this potential development.

1.2.3. This report summarises and sets out the main conclusions of the baseline data collected during the tree survey and identifies those trees or groups of trees whose removal could result in a significant adverse impact on the character or appearance of the local area (Section 3). It then details and assesses the impacts of the proposed development on individual trees and groups of trees, including those to be removed (Section 4), those to be pruned (Section 5) and those which might incur root damage that might threaten their viability (Section 6). A summary and conclusions, with regard to local planning policy, are presented in Section 7.

1.3. Site inspection

1.3.1. A site visit and tree inspection were undertaken by Finn Cullerne of SJAtrees on 4th December 2020. Weather conditions at the time were overcast but dry. Deciduous trees were not in leaf.

1.4. Site description

1.4.1. The site is 0.23ha in size and is located on the south side of Bridge Road (B2187), as shown at **Figure 1** below. The east and south boundaries adjoin the wider riverside industrial estate. The west boundary abuts Bridge Road (A259) with the River Arun beyond. The north boundary adjoins Bridge Road (B2187) with further industrial buildings beyond.



Figure 1: Site location shown on Google Earth image

1.4.2. It is on flat ground and currently comprises of spaces for casual unallocated car parking with an access road from within Riverside Industrial estate.

1.5. Soil type

1.5.1. The British Geological Survey Solid and Drift Geology map of the area indicates the site lies on superficial deposits of Raised Marine Deposits (clay, silt, sand, and gravel) above a bedrock of chalk.

1.5.2. Whilst no site investigation or soil analysis has been undertaken, the British Geological Survey map suggests that the soil is unlikely to be particularly susceptible to compaction.

1.6. Statutory controls

1.6.1. One of these trees is covered by a tree preservation order (TPO). This is TPO no.LU/1/92 made by Arun District Council. The trees protected by this TPO is identified within our tree survey schedule at **Appendix 2** and on the accompanying tree protection plan.

1.6.2. The site is not within a conservation area, and therefore there are no constraints relating to existing trees in this regard.

1.7. Non-statutory designations

1.7.1. There are no woodlands within or abutting the site that are classified as 'Ancient'. Ancient woodland is defined as "any area that's been wooded continuously since at least 1600 AD" and is considered an important and irreplaceable habitat.

1.7.2. There are no trees within or abutting the site that can be classified as 'Ancient' or 'Veteran'. Ancient and veteran trees are also considered to be irreplaceable habitats, and contribute to a site's biodiversity, cultural and heritage value, and the National Planning Policy Framework (see below) states that development resulting in the loss or deterioration of ancient or veteran trees should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.

2. METHODOLOGY

2.1. National policy context

2.1.1. Under Section 197 of the Town and Country Planning Act 1990, local authorities have a statutory duty to consider the protection and planting of trees when considering planning applications. The effects of proposed development on trees are therefore a material consideration, and this is normally reflected in local planning policies.

2.1.2. The National Planning Policy Framework (NPPF) (June 2019), sets out the Government's planning policies for England and how these should be applied in both plan and decision-making. Paragraph 2 makes it clear that the NPPF is itself a material consideration in the determination of planning application. Paragraph 11 states that **"Plans and decisions should apply a presumption in favour of sustainable development."**

2.1.3. In paragraph 127, within Section 12 "Achieving well-designed places" the NPPF states: **"Planning policies and decisions should ensure that developments:**

- a) will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;**
- b) are visually attractive as a result of good architecture, layout, and appropriate and effective landscaping;**
- c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);**
- d) establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming, and distinctive places to live, work and visit;**
- e) optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and**

f) create places that are safe, inclusive and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.”

2.1.4. In paragraph 170, within Section 15 “Conserving and enhancing the natural environment” the NPPF states: **“Planning policies and decisions should contribute to and enhance the natural and local environment by:**

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland...”

2.1.5. In paragraph 175 the NPPF states: **“When determining planning applications, local planning authorities should apply the following principles:**

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists....”

2.2. Local policy context

2.2.1. Local planning policies are contained in the adopted Arun Local Plan 2011-2031 (July 2018).

2.2.2. Policy DM4 of the core strategy states:

“ Development will be permitted where it can be demonstrated that trees protected by a Tree Preservation Order(s), (TPO) identified as Ancient Woodland, in a Conservation Area or contributing to local amenity, will not be damaged or destroyed now and as they reach maturity, unless development:

a. Would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall be guided by BS 5837 (2012). Details

of any advice received having regard to BS 5837 (2012) shall be submitted, in writing, as part of a planning application; or

- b. Would enhance the survival and growth prospects of other protected trees;
- c. The benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland.

Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature without causing future nuisance or damage shall be provided. The planting of new trees shall form an integral part of the design of any development scheme.

Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a planning application in accordance with BS 5837 (2012) in order to ensure that trees are adequately protected during development and appropriately maintained in the future. Conditions for the continued protection of trees on sites shall be included in any planning permission given.

Where there are existing trees on or adjacent to a development site, developers shall be required to provide:

- d. Land and tree surveys
- e. A tree constraints plan
- f. An arboricultural impact assessment to include a tree protection plan and arboricultural method statement These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees.”

2.3. Neighbourhood policy context

2.3.1. The neighbourhood planning policies are contained in The Littlehampton Neighbourhood Development Plan (2014-2029), however, none of the listed policies relate to the site, trees, biodiversity, or amenity.

2.4. Tree survey and baseline information

2.4.1. We surveyed individual trees with trunk diameters of 75mm and above¹, trees with trunk diameters of 150mm and above growing in groups or woodlands, and shrub masses, hedges, and hedgerows² growing within or immediately adjacent to the site; and recorded their locations, species, dimensions, ages, condition, and visual importance in accordance with BS 5837 recommendations.

2.4.2. The baseline information collected during the site survey was recorded on site using a hand-held digital device. This information was then imported into an Excel spreadsheet and used to produce the tree survey schedule at **Appendix 2**. The numbers assigned to the trees in the tree survey schedule correspond with those shown on the appended tree protection plan.

2.4.3. We surveyed trees as groups where they have grown together to form cohesive arboricultural features, either aerodynamically (trees that provide companion shelter), visually (e.g. avenues or screens) or culturally³. However, where it might be necessary to differentiate between specific trees within these groups, we also surveyed these individually.

2.4.4. We inspected the trees from the ground only, aided by binoculars as appropriate, but did not climb them. We took no samples of wood, roots, or fungi. We did not undertake a full hazard or risk assessment of the trees, and therefore can give no guarantee, either expressed or implied, of their safety or stability.

2.4.5. We have categorised the trees in accordance with BS 5837, and details of the criteria used for this process can be found in the notes that accompany the tree survey schedule.

2.4.6. We have applied this methodology in line with the NPPF's presumption in favour of sustainable development, giving greater weighting to the contribution of a tree to the character and appearance of the local landscape, to amenity, or to

¹ BS 5837, paragraph 4.2.4 b), recommends that all trees over 75mm stem diameter should be included in a pre-planning land and tree survey.

² Ibid, 4.4.2.7

³ Ibid, 4.4.2.3

biodiversity, where its removal might have a significant adverse impact on these factors.

2.5. Tree constraints

2.5.1. In line with the NPPF's presumption in favour of sustainable development, we have assessed whether any trees should be retained in the context of a proposed re-development. To do this, we identified the main arboricultural features within or immediately adjacent to the site, whose removal we considered could have an adverse impact on the character and appearance of the local landscape, on amenity or on biodiversity.

2.5.2. Whilst BS 5837 states that trees in categories 'A', 'B' and 'C' are all a material consideration in the development process, the retention of category 'C' trees, being of low quality or of only limited or short-term potential, will not normally be considered necessary should they impose a significant constraint on development.

2.5.3. Furthermore, BS 5837 makes it clear that young trees, even those of good form and vitality, which have the potential to develop into quality specimens when mature **"need not necessarily be a significant constraint on the site's potential"**⁴.

2.5.4. Moreover, BS 5837 states that **".... care should be taken to avoid misplaced tree retention; attempts to retain too many or unsuitable trees on a site can result in excessive pressure on the trees during demolition or construction work, or post-completion demands for their removal"**⁵.

2.5.5. The 'Root Protection Areas' (RPAs)⁶ of the trees identified for retention were calculated in accordance with Section 4.6 of BS 5837; and were assessed taking account of factors such as the likely tolerance of a tree to root disturbance or damage, the morphology and disposition of roots as influenced by existing site conditions (including the presence of existing roads or structures), as well as soil type,

⁴ Ibid. 4.5.10.

⁵ Ibid. 5.1.1.

⁶ The minimum area around a retained tree "deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority." BS 5837, paragraph 3.7.

topography and drainage. Where considered appropriate, the shapes of the RPAs (although not their areas) were modified based on these considerations, so that they reflect more accurately the likely root distribution of the relevant trees.

2.5.6. To assess whether the trees identified for retention would be in a sustainable relationship with the proposed development (without casting excessive shade or otherwise unreasonably interfering with incoming residents' prospects of enjoying their properties, and thereby leading inevitably to requests for consents to fell), we plotted a segment or "shading arc" from each trunk, with a radius equal to the current height of the tree concerned, from due north-west to due east. This gave an indication of potential direct obstruction of sunlight and the shadow pattern cast through the main part of the day⁷.

2.5.7. Based on these principles and recommendations, the tree survey and assessment of suitability for retention informed the production of a tree constraints plan (TCP) which indicates the most suitable trees for retention, and their associated below-ground and above-ground constraints.

2.5.8. As a design tool, the TCP also indicates how close to those trees selected for retention the proposed development could be positioned, in terms of three key criteria:

- a). avoidance of unacceptable root damage; and
- b). avoidance of the necessity for unacceptable pruning works

2.6. Arboricultural impact assessment and tree protection plan

2.6.1. Once finalised, we assessed the arboricultural impacts of the proposed layout, by overlaying it onto the TCP, and produced the tree protection plan (TPP) presented at **Appendix 3**. This is based on the proposed site layout by gdm architects, drawing no. 4076/p002d.

2.6.2. The TPP identifies the trees which will be removed to accommodate the proposed development, either because they are situated within the footprints of proposed structures or surfaces, or because in our judgment they are too close to

⁷ BS 5837, paragraph 5.2.2 Note 1.

these structures or surfaces to enable them to be retained. These are shown by means of **red crosses** on the TPP.

2.6.3. The TPP also shows how trees to be retained will be protected from damage during demolition and construction, and the measures identified are set out and described at **Appendix 1** to this report. The implementation of, and adherence to, these measures can readily be secured by the imposition of appropriate planning conditions.

2.6.4. For the trees shown to be retained, all measurements for pruning specifications, percentage estimates of RPA incursions and shading issues have been calculated using AutoCAD software.

2.6.5. Details of the impacts identified within these categories, and our assessment of their respective significance, are analysed in Sections 4 to 6 below.

2.6.6. Based on these findings, we have assessed the magnitude of the overall arboricultural impact of the proposals according to the categories defined in Table 1 below.

Category	Description
High	Total loss of or major alteration to main elements/ features/ characteristics of the baseline, post-development situation fundamentally different
Medium	Partial loss of or alteration to main elements/ features/ characteristics of the baseline, post-development situation will be partially changed
Low	Minor loss of or alteration to main elements/ features/ characteristics of the baseline, post-development changes will be discernible, but the underlying situation will remain similar to the baseline
Negligible	Very minor loss of or alteration to main elements/ features/ characteristics of the baseline, post-development changes will be barely discernible, approximating to the 'no change' situation

Table 1: Magnitude of impacts⁸

⁸ Determination of magnitude based on DETR (2000) Guidance on the Methodology for Multi-Modal Studies, as modified, and extended.

3. THE TREES

3.1. Survey findings

3.1.1. We surveyed a total of twenty-three individual trees, and two groups of trees growing within or immediately adjacent to the site. Their details can be found in the tree survey schedule at **Appendix 2**.

3.1.2. The trees are all growing to the north and west of the site and form a group of trees growing around the periphery of Riverside Industrial Estate comprised entirely of broadleaved species as a mix of semi-naturalised and native specimens. The trees are a mix of mature and semi-mature and are growing in high density. The trees are consistent with the surrounding arboricultural character of the area.

3.2. Assessment of suitability for retention

3.2.1. As noted above in Section 2.3, local planning policies require the retention of trees that are “**protected trees and those contributing to local amenity.**” The individuals and groups of trees within or adjacent to the site, whose attributes we consider meet these criteria, is as follows:

- the group of trees growing adjacent to the north boundary of the site, readily visible in views from Bridge Road

3.2.2. None of the individual trees have been assessed as category 'U'.

3.2.3. There are no category 'A' trees and thirteen category 'B' specimens. The remaining ten trees are assessed as category 'C' trees, being either of low quality, very limited merit, only low landscape benefits, no material cultural or conservation value, or only limited or short-term potential; or young trees with trunk diameters below 150mm; or a combination of these.

3.2.4. The two groups of trees (G1 & G2) have been assessed as category 'B'.

4. TREES TO BE REMOVED

4.1. Details

4.1.1. None of the existing trees are to be removed to accommodate the proposed development.

4.2. Assessment

4.2.1. All those trees or groups of trees that constitute the main arboricultural features of the site and which make the greatest contribution to the character and appearance of the local landscape, to amenity or to biodiversity (see paragraph 3.2.1), will be retained.

4.2.2. As no trees are to be removed, there will be no alteration to the main arboricultural features of the site, or to the character or appearance of the local area.

5. TREES TO BE PRUNED

5.1. Details

5.1.1. None of the existing trees are to be pruned to facilitate the proposed development.

5.2. Assessment

5.2.1. As no trees are to be pruned, and the proposed building will be beyond 10m of the extents of the canopies of trees to be retained, there will be adequate working space for construction close to trees, and a reasonable margin of clearance for future growth.

6. ROOT PROTECTION AREA INCURSIONS

6.1. Details

6.1.1. No parts of any proposed buildings or associated hard surfacing are within the RPAs of any of the trees to be retained.

6.2. Assessment

6.2.1. As no parts of the proposed building is within the RPAs of any of the trees to be retained, subject to the implementation of protective measures specified below and on the TPP, their construction will not cause unacceptable damage to roots or rooting environments as a result of root severance or damage, or compaction or pollution of the soil.

7. CONCLUSIONS

7.1. Summary

7.1.1. Our assessment of the impacts of the proposals on the existing trees concludes that no trees are to be removed. As such, none of the main arboricultural features of the site are to be altered and there will be no impact on the arboricultural character and appearance of the local landscape.

7.1.2. As no trees are to be pruned, and the proposed building will be beyond 10m of the extents of the canopies of trees to be retained, there will be adequate working space for construction close to trees, and a reasonable margin of clearance for future growth.

7.1.3. As no parts of the proposed building is within the RPAs of any of the trees to be retained, subject to the implementation of protective measures specified below and on the TPP, their construction will not cause unacceptable damage to roots or rooting environments as a result of root severance or damage, or compaction or pollution of the soil.

7.2. Compliance with national planning policy

7.2.1. As the proposals will retain all the main arboricultural features of the site, its arboricultural attractiveness, history and landscape character and setting will be maintained, thereby complying with Paragraph 127 of the National Planning Policy Framework.

7.2.2. As the proposals will not result in the loss or deterioration of any ancient woodland or any ancient or veteran trees, they comply with paragraph 175 of the NPPF.

7.3. Compliance with local planning policy

7.3.1. As the proposed development will retain all existing trees, including all trees subject to TPO, and all trees that contribute to local amenity, and the retained trees are afforded adequate protection through the development process and appropriate

management for the future, it complies with Policy ENV DM4 of the adopted Arun Local Plan 2011-2031 (July 2018).

7.4. Conclusion

7.4.1. On the basis of our assessment, we conclude that the arboricultural impact of this scheme is of negligible magnitude, as defined according to the categories set out in **Table 1** of this report.

APPENDIX 1

Outline Arboricultural Method Statement

Outline arboricultural method statement

A1.1. Tree Protection Plan

A1.1.1. The TPP at **Appendix 3** shows the general and specific provisions to be taken during construction of the proposed development, to ensure that no unacceptable damage is caused to the root systems, trunks or crowns of the trees identified for retention. These measures are indicated by coloured notations in areas where construction activities are to occur either within, or in proximity to, retained trees, as described in the relevant panels on the drawing.

A1.2. Pre-start meeting

A1.2.1. Prior to the commencement of any construction works the developer will convene a pre-start site meeting. This shall be attended by the developer's contract manager or site manager, the fencing/boarding contractor, the groundwork contractor(s) and the arboricultural consultant. The LPA tree officer will be invited to attend. If appropriate, the tree felling/surgery contractor should also attend. At that meeting contact numbers will be exchanged, and the methods of tree protection shall be fully discussed, so that all aspects of their implementation and sequencing are made clear to all parties. Any clarifications or modifications to the TPP required as a result of the meeting shall be circulated to all attendees.

A1.3. Protective fencing

A1.3.1. Construction exclusion zones (CEZs) will be formed by erecting protective fencing around the RPAs of all on-site trees to the specification recommended in BS 5837, Section 6.2, prior to the commencement of construction. This will consist of a scaffold framework comprising a vertical and horizontal framework, well braced to resist impacts, with vertical tubes spaced at maximum intervals of 3.5m. Onto this, welded mesh panels should be securely fixed with wire or scaffold clamps, as shown in **Figure 2** of that document. "**TREE PROTECTION ZONE - KEEP OUT**" or similar notices will be attached with cable ties to every third panel.

A1.3.2. The RPAs of the off-site trees will also be enforced by the erection of protective fencing to the same specification, prior to the commencement of construction, thereby

safeguarding them from incursions by plant or machinery, storage and mixing of materials, or other construction-related activities which could have a detrimental effect on their root systems.

A1.3.3. The recommended positions of the protective fencing are shown by **bold blue lines** on the TPP. The precise positioning of the fencing around the trees will be considered in conjunction with any other protective hoarding/fencing which may be required around the site boundary.

A1.3.4. Within the CEZs safeguarded by the protective fencing, there will be no changes in ground levels, **no soil stripping**, and no plant, equipment, or materials will be stored. Oil, bitumen, diesel, and cement will not be stored or discharged within 10m of any trees. Areas for the storage or mixing of such materials will be agreed in advance and be clearly marked. No notice boards, or power or telephone cables, will be attached to any of the trees. No fires will be lit within 10m of any part of any tree.

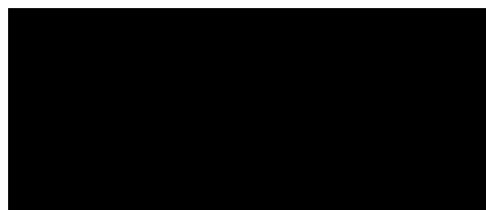
APPENDIX 2

Tree survey schedule



ARBORICULTURAL PLANNING CONSULTANTS

17 CROSS ROAD
TADWORTH
SURREY KT20 5ST



Preliminary Tree Survey Schedule

Littlehampton Industrial Estate, Littlehampton

December 2020

Tree Survey Schedule: Explanatory Notes

Littlehampton Industrial Estate, Littlehampton

This schedule is based on a tree inspection undertaken by Finn Cullerne of SJAtrees (the trading name of Simon Jones Associates Ltd.), on Friday 4th December 2020. Weather conditions at the time were overcast but dry. Deciduous trees were not in leaf.

The information contained in this schedule covers only those trees that were examined, and reflects the condition of these specimens at the time of inspection. We did not have access to the trees from any adjacent properties; observations are thus confined to what was visible from within the site and from surrounding public areas.

The trees were inspected from the ground only and were not climbed, and no samples of wood, roots or fungi were taken. A full hazard or risk assessment of the trees was not undertaken, and therefore no guarantee, either expressed or implied, of their safety or stability can be given.

Trees are dynamic organisms and are subject to continual growth and change; therefore the dimensions and assessments presented in this schedule should not be relied upon in relation to any development of the site for more than twelve months from the survey date.

1. Tree no.

Given in sequential order, commencing at "1".

2. TPO no.

Number assigned to tree in the Arun District Council Tree Preservation Order no. LU/1/92, as shown in the TPO schedule and plan.

3. Species

'Common names' are given, taken from MITCHELL, A. (1978) A Field Guide to the Trees of Britain and Northern Europe.

4. Height.

Estimated with the aid of a hypsometer, given in metres.

5. Trunk diameter.

Trunk diameter measured at approx. 1.5m above ground level; or where the trunk forks into separate stems between ground level and 1.5m, measured at the narrowest point beneath the fork. Given in millimetres.

6. Radial crown spread.

The linear extent of branches from the base of the trunk to the main cardinal points, rounded up to the closest half metre, unless shown otherwise. For small trees with reasonably symmetrical crowns, a single averaged figure is quoted.

7. Crown break.

Height above ground and direction of growth of first significant live branch.

8. Crown clearance.

Distance from adjacent ground level to lowest part of lowest branch, in metres.

9. Age class.

Young: Seedling, sapling or recently planted tree; not yet producing flowers or seeds; strong apical dominance.

Semi-mature: Trunk often still smooth-barked; producing flowers and/or seeds; strong apical dominance, not yet achieved ultimate height.

Mature: Apical dominance lost, tree close to ultimate height.

Over-mature: Mature, but in decline, no crown retrenchment

Veteran: Mature, with a large trunk diameter for species; but showing signs of veteranisation, irrespective of actual age, with decay or hollowing, and a crown showing retrenchment and a structure characteristic of the latter stages of life.

Ancient: Beyond the typical age range and with a very large trunk diameter for species; with extensive decay or hollowing; and a crown that has undergone retrenchment and has a structure characteristic of the latter stages of life.

10. Physiology.

Health, condition and function of the tree, in comparison to a normal specimen of its species and age.

11. Structure.

Structural condition of the tree – based on both the structure of its roots, trunk and major stems and branches, and on the presence of any structural defects or decay.

Good: No significant morphological or structural defects, and an upright and reasonably symmetrical structure.

Moderate: No significant pathological defects, but a slightly impaired morphological structure; however, not to the extent that the tree is at immediate or early risk of collapse.

Indifferent: Significant morphological or pathological defects; but these are either remediable or do not put the tree at immediate or early risk of collapse.

Poor: Significant and irreparable morphological or pathological defects, such that there may be a risk of failure or collapse.

Hazardous: Significant and irreparable morphological or pathological defects, with a risk of imminent collapse.

12. Comments.

Where appropriate comments have been made relating to:

- Health and condition
- Safety, particularly close to areas of public access
- Structure and form
- Estimated life expectancy or potential
- Visibility and impact in the local landscape

13. Category.

Based on the British Standard "Trees in relation to design, demolition and construction - Recommendations", BS 5837: 2012, Table 1, adjusted to give a greater weighting to trees that contribute to the character and appearance of the local landscape, to amenity, or to biodiversity.

Category U: Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

- Trees that have a serious, irreparable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category 'U' trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).
- Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.
- Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality.

Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years.

- (1) Trees that are particularly good examples of their species, especially if rare or unusual.
- (2) Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.
- (3) Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

- (1) Trees that might be included in category 'A', but are downgraded because of impaired condition (e.g. presence of significant though remediable defects including unsympathetic past management and minor storm damage) such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category 'A' designation.
- (2) Trees present in numbers, usually growing as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals; or trees present in numbers but situated so as to make little visual contribution to the wider locality.
- (3) Trees with material conservation or other cultural value.

Category C: Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

- (1) Unremarkable trees of very limited merit or of such impaired condition that they do not qualify in higher categories.
- (2) Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary landscape benefits.
- (3) Trees with no material limited conservation or other cultural value.

TREE SURVEY SCHEDULE

Littlehampton Industrial Estate, Littlehampton

No.	TPO no.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clearance	Age class	Physio -logy	Structure	Comments	Category
1		Ash	18m	430mm 315mm all ivy	N 7m E 3.4m S 2.5m W 4m	0.5m	10m	Semi-mature	Average	Indifferent	Off-site tree; dense ivy impeding full inspection; twin-stemmed from 0.5m with stable 'cup' union; tall, slender woodland grown specimen; visible from Bridge Road; significant component of group in which it stands.	B (2)
2	TPO-92	Sycamore	14m	205mm 330mm ivy 220mm	N 4.8m E 1.5m S 8.3m W 2.6m	0.5m	2m	Semi-mature	Average	Indifferent	Off-site tree; triple-stemmed from 0.5m with dense ivy cover on E stem; suppressed understorey specimen; of limited quality and value; inessential component of group in which it stands.	C (3)
3	TPO-92	Norway maple	18m	480mm	N 8m E 4m S 3.3m W 3m	1.5m	7m	Mature	Average	Indifferent	Off-site tree; diameter measured at 1m, below union bulge; twin-stemmed at 1.5m with tight compression union and evidence of branch bark inclusion; above average deadwood; tear wound on E stem at 3.5m, 0.6m long and 250mm wide, with woundwood response; of low quality but visible from Bridge Road; ; significant component of group in which it stands.	C (23)
4	TPO-92	Ash	12m	240mm	N 2m E 3m S 4.5m W 3m	4m	3m	Semi-mature	Average	Moderate	Off-site tree; small semi-mature ash; heavily suppressed; of moderate quality but limited value due to lack of visibility and size; inessential component of group in which it stands.	C (1)
5	TPO-92	Norway maple	12m	370mm	N 3m E 4.5m S 5.3m W 5m	1.5m	2.5m	Semi-mature	Average	Indifferent	Off-site tree; diameter measured at 1m, below union bulge; girdling root of 80mm diameter at W tree base; triple-stemmed from 1.5m; of low quality; visible in glimpses from Bridge Road; contributes to the screening of the planted group of trees G2.	C (2)
6-9		Sycamore	18m	#T6 300mm #T7 380mm #T8 535mm #T9 420mm all ivy	N 6m E 4m S 2.5m W 4m	3m	3m	Semi-mature	Average	Moderate	Off-site trees; row of trees growing on bank to N of site; historically suppressed from S, recently released; significant components of G1; of moderate quality; readily visible from Bridge Road.	B (12)

No.	TPO no.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clearance	Age class	Physio - logy	Structure	Comments	Category
10		Ash	18m	245mm 250mm	N 7m E 3m S 1m W 2m	1m	5m	Semi-mature	Average	Indifferent	Off-site tree; twin-stemmed from 1m, with union obscured by ivy but appears to be a weak compression fork with evidence of branch bark inclusion; low quality specimen; significant component of group in which it stands.	C (23)
11		Sycamore	18m	350mm ivy	N 7.5m E 3m S 3m W 4m	3m	4m	Semi-mature	Average	Moderate	Off-site tree; tall, slender specimen; canopy suppressed to the S; of no more than moderate quality; readily visible from Bridge Road; significant component of group in which it stands.	B (2)
12-14		Sycamore	18m	#T12 310mm #T13 300mm #T14 330mm ivy	N 6.8m E 3m S 3m W 3m	4m	5m	Semi-mature	Average	Moderate	Off-site trees growing on bank to N of site; historically suppressed from S, recently released; significant components of G1; of moderate quality; readily visible from Bridge Road.	B (2)
15		Hybrid black poplar	20m	540mm 510mm	N 7.5m E 7m S 10.3m W 6m	0m	6m	Mature	Below average	Indifferent	Off-site tree; twin-stemmed from base with a tight but strong union; heavily ivy-covered; above average deadwood in crown; sparsely foliated; extended lateral limbs at increased risk of failure.	C (2)
16		Hybrid black poplar	4m	90mm ivy	NE 1m SE 4m SW 1m NW 0m	1.5m	0.5m	Young	Average	Poor	Small young poplar with heavy ivy-cover and a trunk lean.	C (3)
17		Hawthorn	5m	210mm	2.5m	1.5m	1m	Semi-mature	Average	Moderate	Of moderate quality, but currently of low value due to small size; heavily ivy-covered, impeding full inspection; three tight stem intertwined.	C (1)
18	TPO-92	Hybrid black poplar	23m	850mm	8m	5m	5m	Mature	Average	Moderate	Off-site tree; of no more than moderate quality; significant component of group in which it stands; readily visible from Bridge Road and upper canopy visible above warehouses from industrial estate.	B (12)
19		Sycamore	18m	265mm	NE3.5m SE2.5m SW1m NW3.5m	2m	2m	Semi-mature	Average	Moderate	ivy-covered; small suppressed specimen; of no more than moderate quality but of limited visual impact due to small size.	C (1)
20		Ash	6m	165mm ivy 190mm st.	2.5m	1m	3m	Young	Average	Moderate	Of moderate quality, but currently of low value due to small size.	C (1)
21-22		Ash	18m	#T21 280mm #T22 315mm	N 6m E 3m S 2m W 3m	4m	4m	Semi-mature	Average	Moderate	Off-site trees; off-site trees; row of trees growing on bank to N of site; historically suppressed from S, recently released; significant components of G1; of moderate quality; readily visible from Bridge Road.	B (2)

No.	TPO no.	Species	Height	Trunk diameter	Radial crown spread	Crown break	Crown clearance	Age class	Physio -logy	Structure	Comments	Category
23		Sycamore	17m	350mm ivy	N 9m NE 6m E 3m S 0m W 2m NW 6m	2m	2m	Semi-mature	Average	Indifferent	Off-site tree; growing on the bank of dry ditch adjacent to boundary chain link fence; ivy-covered leaning stem; trunk corrects 3m offset from centre; readily visible from Bridge Road; significant component of group in which it stands.	B (2)
G1		Various	Min 8m Max 20m Avg 16m	Min 50mm Max 850mm Avg 500mm	6m	2m	2m	Various	Average	Indifferent	Off-site group of trees; narrow belt of trees growing adjacent to the estate fence, beyond the carpark; comprised of predominantly sycamore and ash with sparse understorey of hawthorn with ash, poplar and acer regeneration with ground cover of dense ivy and bramble; individuals generally poor quality but together form a significant sylvan feature of the site; of ecological potential.	B (23)
G2		Various	14m	Min 340mm Max 490mm Avg 400mm	5m	1.5m	2m	Semi-mature	Average	Moderate	Off-site group of trees planted in two uniform rows designed to form a landscaped screen; comprised of Norway maple; sycamore; Corsican pine and white beam; of moderate quality and value.	B (12)

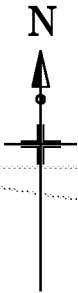
Root Protection Areas (RPAs)

Root Protection Areas have been calculated in accordance with paragraph 4.6.1 of the British Standard 'Trees in relation to design, demolition and construction – Recommendations', BS 5837:2012. This is the minimum area which should be left undisturbed around each retained tree. RPAs are portrayed initially as a circle of a fixed radius from the centre of the trunk; but where there appear to be restrictions to root growth the circle is modified to reflect more accurately the likely distribution of roots.

Tree No.	Species	RPA	RPA Radius
1	Ash	128.5m ²	6.4m
2	Sycamore	90.2m ²	5.4m
3	Norway maple	104.2m ²	5.8m
4	Ash	26.1m ²	2.9m
5	Norway maple	61.9m ²	4.4m
6-9	Sycamore	40.7m ²	3.6m
		65.3m ²	4.6m
		129.5m ²	6.4m
		79.8m ²	5.0m
10	Ash	55.4m ²	4.2m
11	Sycamore	55.4m ²	4.2m
12-14	Sycamore	43.5m ²	3.7m
		40.7m ²	3.6m
		49.3m ²	4.0m
15	Hybrid black poplar	249.6m ²	8.9m
16	Hybrid black poplar	3.7m ²	1.1m
17	Hawthorn	20.0m ²	2.5m
18	Hybrid black poplar	326.9m ²	10.2m
19	Sycamore	31.8m ²	3.2m
20	Ash	28.6m ²	3.0m
21-22	Ash	35.5m ²	3.4m
		44.9m ²	3.8m
23	Sycamore	55.4m ²	4.2m
G1	Various	326.9m ²	10.2m
G2	Various	108.6m ²	5.9m

APPENDIX 3 TREE PROTECTION PLAN

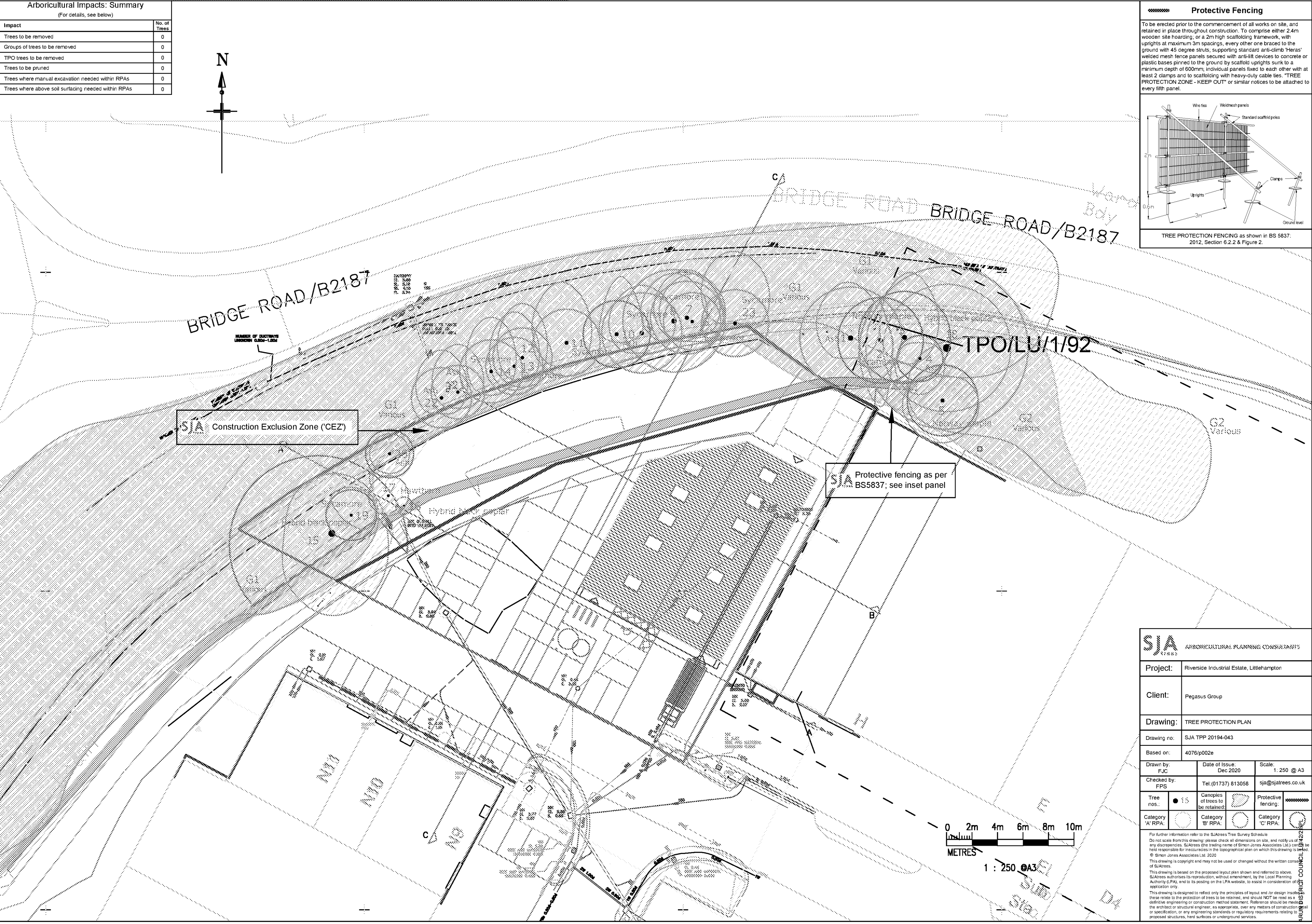
Arboricultural Impacts: Summary	
(For details, see below)	
Impact	No. of Trees
Trees to be removed	0
Groups of trees to be removed	0
TPO trees to be removed	0
Trees to be pruned	0
Trees where manual excavation needed within RPAs	0
Trees where above soil surfacing needed within RPAs	0



Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction. To comprise either 2.4m wooden site hoarding, or a 2m high scaffolding framework, with uprights at maximum 3m spacings, every other one braced to the ground with 45 degree struts, supporting standard anti-climb 'heras' welded mesh fence panels secured with anti-lift devices to concrete or plastic bases pinned to the ground by scaffold uprights sunk to a minimum depth of 600mm, individual panels fixed to each other with at least 2 clamps and to scaffolding with heavy-duty cable ties. "TREE PROTECTION ZONE - KEEP OUT" or similar notices to be attached to every fifth panel.

TREE PROTECTION FENCING as shown in BS 5837: 2012, Section 6.2.2 & Figure 2.



SJA ARBORICULTURAL PLANNING CONSULTANTS

Project: Riverside Industrial Estate, Littlehampton

Client: Pegasus Group

Drawing: TREE PROTECTION PLAN

Drawing no: SJA TPP 20194-043

Based on: 4076/p002e

Drawn by: FJC	Date of Issue: Dec 2020	Scale: 1: 250 @ A3
Checked by: FPS	Tel: (01737) 613058	sjatrees.co.uk

Tree nos. ● 15	Canopies of trees to be retained: [Symbol]	Protective fencing: [Symbol]
Category 'A' RPA: [Symbol]	Category 'B' RPA: [Symbol]	Category 'C' RPA: [Symbol]

For further information refer to the SJATrees Tree Survey Schedule. Do not scale from this drawing; please check all dimensions on site, and notify us of any discrepancies. SJATrees (the trading name of Simon Jones Associates Ltd.) can be held responsible for inaccuracies in the topographical plan on which this drawing is based. © Simon Jones Associates Ltd. 2020. This drawing is copyright and may not be used or changed without the written consent of SJATrees. This drawing is based on the proposed layout plan shown and referred to above. SJATrees authorises its reproduction, without amendment, by the Local Planning Authority (LPA), and its posting on the LPA website, to assist in consideration of application only. This drawing is designed to reflect only the principles of layout and/or design insofar as these relate to the protection of trees to be retained, and should NOT be read as a definitive engineering or construction method statement. References should be made to the architect or structural engineer, as appropriate, over any matters of construction or specification, or any engineering standards or regulatory requirements relating to proposed structures, hard surfaces or underground services.