

Arboricultural Impact Assessment

for planning purposes

The Hexagon Theatre
Queens Walk
Reading
RG1 7QF

November 2023

230374-PD-11

Project Reference	230374-PD-11 – Hexbox, Reading
Report Type	Arboriculture (Planning)
Author	Lee Davies
Checked by	Chris Wright
Date Checked	03 Nov 2023
Original Issue Date	01 Nov 2023
Most Recent Version	

The contents of this report are copyright of Tim Moya Associates and may not be altered or amended without the author's permission. Tim Moya Associates Standard Limitations of Service apply to this report, and all associated work relating to this site.

CONTENTS PAGE

1	EXECUTIVE SUMMARY.....	4
2	INTRODUCTION.....	5
	INSTRUCTION.....	5
	AUTHOR.....	5
	PROPOSED DEVELOPMENT.....	5
	SCOPE.....	5
	SITE SURVEY.....	5
	REPORT PREPARATION.....	6
	DEFINITION OF TERMS.....	7
3	SITE INFORMATION.....	9
	CURRENT SITE USE.....	9
	GEOTECHNICAL INFORMATION.....	10
4	TECHNICAL ARBORICULTURAL DETAILS.....	12
	LANDSCAPE DETAILS.....	12
	BS5837 DETAILS.....	12
	STATUTORY PROTECTIONS.....	13
5	PLANNING POLICY AND GUIDANCE.....	14
	NATIONAL.....	14
	LOCAL.....	14
6	ARBORICULTURAL IMPACT ASSESSMENT.....	16
	REMOVALS.....	16
	MITIGATION GREENING.....	16
	PRUNING.....	16
	RETAINED TREE JUXTAPOSITIONS.....	17
	ARBORICULTURAL OVERSIGHT DURING WORKS.....	17
	CONSTRUCTION WORKS.....	18
	LANDSCAPING WORKS.....	21
	SERVICES AND UTILITIES.....	21
	PLANNING POLICY CONSIDERATIONS.....	22
7	CONCLUSIONS.....	23
8	APPENDICES CONTENTS.....	24

1 EXECUTIVE SUMMARY

- 1.1 This *Arboricultural Impact Assessment* ('the Report') has been instructed by *Haworth Tompkins* ('the Client').
- 1.2 The proposed development at *The Hexagon Theatre* ('the Site') is for the construction of a new studio theatre adjacent to the existing Hexagon Theatre ('the Proposed Development'), within the area administrated by *Reading Borough Council* ('the LPA').
- 1.3 The Site was visited, and the trees and other vegetation surveyed, referring to the recommendations of BS5837, on the 31st of August 2023 by the Author. The details of this survey are found within the Report appendices.
- 1.4 The Proposed Development does not require the removal of any trees to facilitate its implementation.
- 1.5 The Proposed Development requires the pruning of 2no. trees (T2 & T3) and 1no. shrub group (S6) to provide clearance for high sided vehicles that will use the existing access road for deliveries during development. It is considered that the pruning required is relatively minor and is unlikely to have a significant negative impact on the long-term health of the affected trees and shrubs.
- 1.6 Built development is proposed within the RPA of T1. It is considered that the impact to the long-term health of this tree will be low, so long as the works are undertaken under observation of the arboriculturist and in accordance with the measures detailed within this Report.

2 INTRODUCTION

Instruction

- 2.1 This *Arboricultural Impact Assessment* ('the Report') has been instructed by *Haworth Tompkins* ('the Client').

Author

- 2.2 This Report was written by Lee Davies ('the Author'). Lee is an arboricultural consultant dealing with trees in relation to all forms of human activity including built development and with around 17 years industry experience. He is a *Professional Member* of the *Arboricultural Association* and an *Associate Member* of the *Institute of Chartered Foresters*. He holds the *Level 6 Diploma in Arboriculture (ABC)*, the *Professional Tree Inspection* certificate (LANTRA) and *Quantified Tree Risk Assessment Certificate (QTRA)*.

Proposed development

- 2.3 The proposed development at *The Hexagon Theatre* ('the Site' - see *Figure 1* below) is for the construction of a new studio theatre adjacent to the existing Hexagon Theatre ('the Proposed Development'), within the area administrated by *Reading Borough Council* ('the LPA').

Scope

- 2.4 This Report has been provided to assist all parties involved in the planning process, in accordance with *British Standard 5837:2012 - Trees in relation to design demolition and construction - Recommendations* ('BS5837').

Site survey

Survey date

- 2.5 The Site was visited, and the trees and other vegetation surveyed, referring to the recommendations of BS5837, on the 31st of August 2023 by the Author. The details of this survey are found within the Report appendices.

Health and safety

- 2.6 The survey was not an assessment of the health and safety of the trees (i.e., the survey was not a thorough investigation of the condition of all of the trees). In this instance, no particular works in this context have been specified to any of the surveyed trees.



Figure 1: Showing the area discussed in this Report within the indicative line and sourced from Google Earth (note: this is not the red line plan of the Proposed Development).

Report preparation

External documents

2.7 This Report has been prepared, with reference to the following supplied documents and information:

- *Topographical Survey - RT2230021P0001-0006;*
- *34141-11010_Rev4 - Proposed GA Floor Plans - Level 0;*
- *34141-11011_Rev4 - Proposed GA Floor Plan - Level 1;*
- *34141-11012_Rev4 - Proposed GA Floor Plan - Level 2;*
- *34141-11013_Rev4 - Proposed GA Floor Plan - Level 3;*
- *34141-11014_Rev1 - Proposed Roof Plan - Level 4; and*
- *Landscape Plan HX201-JCLA-SK-L-7012.*

Appendices

2.8 The appendices of this Report include:

- Appendix A (plans); and
- Appendix B (schedules).

Tree works

- 2.9 For any tree works specified within this Report (i.e., removal and/or pruning), these works must be considered alongside any additional specifications provided for ecological and *Biodiversity Net Gain* matters, where any such work specifications may apply. Tree works included as part of this Report, unless otherwise stated, have been prepared exclusively by the arboriculturist.

Definition of terms

General definitions

- 2.10 The following terms and abbreviations may be used within this Report. These terms are defined by BS5837 as follows, unless provided without quotation marks:

- **Arboricultural Method Statement ('AMS')** - *"methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained"*.
- **Local Planning Authority ('LPA')** - the planning department of the borough, district, or metropolitan council.
- **Root Protection Area ('RPA')** - *"layout design tool indicating the minimum area around a 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"*.
- **Service(s)** - *"any above- or below-ground structure or apparatus required for utility provision"* that may for example include *"drainage, gas supplies, ground source heat pumps, CCTV and satellite communications"*.
- **Tree Protection Plan ('TPP')** - *"scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures"*.

Arboricultural impact definitions

- 2.11 With regard to arboricultural impacts to retained trees, where this Report makes reference to any degree of impact, the following definitions apply unless it is otherwise stated:

- **Low impact** - The form and/or condition of the affected tree (or tree group, etc.) is considered unlikely to be affected to any particular degree, and by extension its visual qualities and life expectancy will not be undermined and its BS5837 categorisation is consequently unlikely to change.

- **Moderate impact** - The form and/or condition of the affected tree (or tree group, etc.) may be affected to such a degree that its visual qualities and life expectancy could be undermined and its BS5837 categorisation consequently may be subject to change.
- **High impact** - The form and/or condition of the affected tree (or tree group, etc.) is considered likely to be affected to such a degree that its visual qualities and life expectancy will likely be undermined and its BS5837 categorisation is consequently likely to change.

3 SITE INFORMATION

Current Site use

- 3.1 The Site (i.e., the area within the red line boundary) comprises the existing Hexagon Theatre building and the landscaped areas immediately surrounding it (see Figure 2 below).



Figure 2: Red line boundary of the Proposed Development

- 3.2 The wider site includes an abandoned community garden (the site of the previously demolished civic centre) to the south (see Figure 3 below), and a podium level landscaped area further east. The Site is located in the centre of Reading between Broad Street Mall and the A326.



Figure 3: Looking northwest, showing the existing Hexagon Theatre with trees T2-G12 left of the building and T13 just visible to the left.

Geotechnical information

British Geological Survey

- 3.3 The *British Geological Survey* ('BGS') provides on-line information, regarding the general soil properties of an area, including the underlying bedrock and any superficial deposits that overlay the bedrock. This information indicates that the Site is situated upon a bedrock of *Seaford Chalk Formation* (comprised of chalk), over which the recorded superficial deposits are *Taplow Gravel Member* (comprised of sand and gravel).
- 3.4 There are publicly available borehole logs within or adjacent to the Site (including SU77SW691) that confirm the presence of *chalk* overlain by *chalk with flints*, *flints with brown clay*, and *brown sandy stony clay*.

Root morphology

- 3.5 Soils where the clay content is significant will tend to encourage tree root growth at shallower depths - often, within the upper 600mm of soil¹. Where other soil components are present to greater extents, root morphology may differ, though impermeable layers of heavy compacted clay may restrict penetrative root growth, which may influence how far roots radiate from the stem of the tree to acquire nutrients.

1 - Forestry Commission. (2005) Information Note FCN078 - The influence of soils and species on tree root depth.

4 TECHNICAL ARBORICULTURAL DETAILS

Landscape details

Distribution

- 4.1 The tree survey recorded details of 12no. trees, 4no. tree groups and 2no. shrub groups (which are included in the tree schedule at Appendix A).
- 4.2 The most notable trees in relation to the Proposed Development are 3no. London planes (T1-T3).

Visibility

- 4.3 Owing to their position within the public realm, all of the trees surveyed offer moderate to high levels of amenity value, commensurate with their sizes.

BS5837 details

Survey criteria

- 4.4 The surveyed trees and other vegetation items have been generally categorised, in terms of the arboricultural and landscape criteria as defined in BS5837. These criteria consider the arboricultural merits of individual trees, in addition to the wider value afforded in contributing to the character of the landscape.

BS5837 categorisation

- 4.5 In BS5837 terms, the surveyed trees and other forms of vegetation comprise:
 - *Category A* (i.e., high-quality): 1no. tree group;
 - *Category B* (i.e., moderate-quality): 10 no. trees and 1no. tree group;
 - *Category C* (i.e., low-quality): 2no. trees, 1no. tree group, and 2no. shrub groups; and
 - *Category U* (i.e., poor-quality): 1no. tree group.

Root Protection Areas

- 4.6 Based on the ground conditions of the Site that includes the known or foreseeable presence of buried structures, in addition to the context within which the surveyed trees and other vegetation items are growing, the standardised circular RPAs have not been amended.

Statutory protections

Conservation Areas

- 4.7 The LPA publishes details of its *Conservation Areas* ('CAs') online. According to this information, the Site and any surveyed trees adjacent to the Site are not within a CA.

Tree Preservation Orders

- 4.8 The LPA publishes details of its *Tree Preservation Orders* ('TPOs') online. According to this information, no TPOs apply to any of the surveyed trees. However, this information is indicative and should not therefore be relied upon as definitive.

5 PLANNING POLICY AND GUIDANCE

National

Background information

- 5.1 Planning policy at national level is set out in the government's *National Planning Policy Framework* ('the NPPF')², published in September 2023.
- 5.2 At this level, policy addresses the key principles of development. At its core, there is a presumption in favour of sustainable development incorporating good and durable design, by combining economic, social, and environmental strands in a balanced manner. Trees comprise an element of green infrastructure, which is one aspect of the environmental strand of sustainability.

National Planning Policy Framework 2023

- 5.3 In the context of the Proposed Development, the NPPF provides the following guidance that is relevant in terms of the surveyed trees:
- **Paragraph 131** - *"Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users."*
 - **Paragraph 174** - *"Planning policies and decisions should contribute to and enhance the natural and local environment by: ... 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 ... trees and woodland"*.

Local

Background information

- 5.4 Planning policy at the local level is currently set out in the LPA's *Reading Borough Local Plan* (the 'LDP'), adopted in 2019.

Local Plan 2019

5.5 In the context of the Proposed Development, the current LDP provides the following guidance that is relevant in terms of the surveyed trees:

- **CC3: Adaptation To Climate Change** - *All developments will demonstrate how they have been designed to incorporate measures to adapt to climate change. The following measures shall be incorporated into development: Use of trees and other planting, where appropriate as part of a landscape scheme, to provide shading of amenity areas, buildings and streets and to help to connect habitat, designed with native plants that are carefully selected, managed and adaptable to meet the predicted changed climatic conditions.*
- **EN14: Trees, Hedges and Woodlands** - *Individual trees, groups of trees, hedges and woodlands will be protected from damage or removal where they are of importance, and Reading's vegetation cover will be extended. The quality of waterside vegetation will be maintained or enhanced. New development shall make provision for tree retention and planting within the application site, particularly on the street frontage, or off-site in appropriate situations, to improve the level of tree coverage within the Borough, to maintain and enhance the character and appearance of the area in which a site is located, to provide for biodiversity and to contribute to measures to reduce carbon and adapt to climate change. Measures must be in place to ensure that these trees are adequately maintained.*

6 ARBORICULTURAL IMPACT ASSESSMENT

Removals

Numerical data

- 6.1 The Proposed Development does not require the removal of any trees to facilitate its implementation.

Mitigation greening

- 6.2 At this stage of the planning process, the Proposed Development has not provided details regarding the planting of new trees and other forms of vegetation. However, as the development has such limited impact on trees and vegetation this is not considered a strict requirement of the application. It is considered that there is sufficient capacity for new planting located within the Site should this be required.

Pruning

Numerical data

- 6.3 The Proposed Development requires the pruning of 2no. trees (T2 & T3) and 1no. shrub group (S6), which in BS5837 terms comprises:
- *Category B* (i.e., moderate-quality): 2no. trees; and
 - *Category C* (i.e., low-quality): 1no. shrub group.

Specifications of pruning

- 6.4 The required pruning comprises crown-lifting the northeast sides of 2no. London plane trees (T1 & T2) to a height of 5.5m above ground level (where crowns overhang the access road), and minor trimming of cotoneaster shrubs (S6) back to the edge of the access road.

Reasons for pruning

- 6.5 The specified pruning is required to provide clearance for high sided vehicles that will be required to use the existing access road for deliveries during development.

Impacts of pruning

- 6.6 It is considered that the pruning required is relatively minor (see *Figure 4* below) and is unlikely to have a significant negative impact on the long-term health of the affected trees and shrubs.



Figure 4: Looking southeast towards the existing access road that will be utilised during development. Pruning of T2, T3 and S6 is required to provide adequate clearance, as can be seen in this image.

Retained tree juxtapositions

- 6.7 In relation to the retained trees and vegetation (including any outside of the Site), the Proposed Development does not place any increased pressure upon these items that may result in inappropriate management (e.g., major branch removal or heavy pruning). The Proposed Development is therefore considered to be acceptable, regarding its juxtaposition to the retained trees and vegetation.

Arboricultural oversight during works

- 6.8 The implementation of the Proposed Development is considered to require a continued presence of the arboriculturist, to provide arboricultural advice to the design team and to ensure that the principles of protection as are outlined in this Report are adhered to (that are discussed from the following sub-section within this Report).
- 6.9 In order to ensure that the risk of significant harm that may occur to any of the retained trees is as low a probability as possible, it is considered that a Site visit by the arboriculturist will occur at least at the following points, with the findings of each visit being summarised in written format and issued to at least the Client, main contractor,

and LPA tree officer (noting that a finalised list ought to be provided as part of a detailed AMS prepared in response to a planning condition as per the recommendations of *Table B.1* of BS5837):

- a pre-commencement meeting at Site with at least the main appointed contractor to discuss the details of tree protection and works;
- to sign-off the tree protection measures prior to the commencement of any works to implement the Proposed Development (except in the case of specified tree works that can occur prior to this point);
- to oversee the removal of existing hard surfacing and kerb within the RPA of T1;
- to oversee excavation required to install a new kerb within the RPA of T1;
- to oversee excavation for a new service run within the RPA of T1, should this be required; and
- upon the completion of works to implement the Proposed Development.

Construction works

General protection details

- 6.10 The indicative TPP at Appendix A sets out the specifications for tree protection that are associated with the implementation of the Proposed Development, based on the details that are currently available. This TPP includes an outline AMS (i.e., indicative of the basic principles of works - a specific AMS ought to be prepared for a planning condition as per the recommendation of *Table B.1* of BS5837), which provides some baseline information relating to the installation, implementation, and management of the specified tree protection measures.
- 6.11 The measures specified includes ground protection and stem box protection (see *Figure 5* below) to protect T1, and tree protection barriers to protect the rooting area of the remaining trees where there is a potential risk of harm.



Figure 5: Example of stem box protection that is specified for T1.

- 6.12 Built development is proposed within the RPA of T1. In order to avoid unacceptable physiological or structural harm to this tree, special construction methods are proposed which will allow for the retention of important roots and the protection of the soil environment in which they are growing. It is considered that the impact to the long-term health of this tree will be low, so long as the works are undertaken under observation of the arboriculturist and in accordance with the measures detailed within this Report. Details of the measures proposed are included in the TPP at Appendix A and described in more detail below.

Removal of existing hard surfaces

- 6.13 The existing road surface and paved area shall be removed in a manner that ensures that roots present directly below the existing surface will not be harmed. This will be achieved by observing the following principals:
- The existing surface will be removed from RPAs using hand tools, and where permitted by the arboriculturist a non-toothed bucket attached to a rubber-tracked excavator not exceeding 3t.
 - Where an excavator may be used, it will at all times be positioned on the suspended public highway or on areas of footpath that remain covered by the existing hard surface layer.
 - Where roots are present close to the surface, the upper layer of subbase material will be manually removed (where this is strictly required), taking care not to damage the roots. Where possible, the existing sub-base will be retained and new surfacing installed above, to reduce the risk of root disturbance.

- Small fibrous roots may be pruned under guidance from the arboriculturist where this is required to excavate to formation level between larger retained roots.
- Once the existing surface has been removed, the area will only be used by pedestrian traffic - no plant will be permitted, until the new surface has been laid.
- Where roots are exposed during the removal of the existing sub-base (where this is required), these shall be retained and wrapped/covered in an appropriate material that prevents frost and desiccation, until the new finished surface is installed.
- Larger areas of exposed soil will be covered overnight with an appropriate insulation product that prevents frost from forming, and during the day to prevent soil and root desiccation.

New surfacing

- 6.14 The new asphalt surface will be installed upon the sub-base to the contractor's specification.
- 6.15 Where the new surface material will be applied directly above retained roots, a buffer of sand (to 50mm depth where possible) shall be laid between the asphalt and the roots to provide a level of thermal protection.

Removing existing kerb

- 6.16 In order to lift and remove the existing kerb stones, excavation may be required on the pavement side of the kerbs to provide access for a clamp or other device. Where this is necessary:
- excavation shall be undertaken using hand tools;
 - roots below 25mm diameter shall be pruned where necessary to provide access for the clamp; and
 - roots over 25mm diameter shall be retained and worked around.

Kerb installation

- 6.17 Where new concrete kerbs are to be installed within the RPA of T1:
- excavation to the required depths shall be undertaken using compressed air and/or hand tools under observation of the arboriculturist;
 - roots over 25mm in diameter shall be retained unharmed (and wrapped with damp hessian if they will be exposed for longer than 1-hour);
 - kerbs will be modified where required to enable retained roots to be bridged and retained; and

- where wet cement is used to set new kerbs in place, impermeable liners shall be utilised to prevent leachate from cement contaminating the soil (i.e., locally raising the soil pH).



Figure 6: Looking south towards T1.

Landscaping works

- 6.18 Landscaping operations will typically take place at the end of the construction period. These works will normally require the removal of tree protection measures, to facilitate the required access for works. There is a risk that plant and machinery may damage the soil structure within which tree roots are growing.
- 6.19 These risks can be managed, by maintaining good professional standards of work and by working in accordance with an AMS. The principle of avoiding soil disturbance or changes in levels within the RPAs of retained trees must be followed, unless otherwise confirmed by the arboriculturist.

Services and utilities

- 6.20 At this stage of the planning process, the exact details pertaining to the location of new service runs and any required access to existing runs are not established. In this

context, it is not possible to determine the level of impact of this element of the designs to the retained trees.

- 6.21 It is understood that an existing BT cover will be removed from within the RPA of T1 and installed elsewhere. Where these works will involve excavation within the RPA of T1, this shall be overseen by the arboriculturist. The impact to this tree can be managed by following the recommendations of BS5837 (i.e., by working in accordance with an AMS and through the use of appropriate methods of work - a specific AMS ought to be prepared for a planning condition as per the recommendation of *Table B.1* of BS5837), which includes as a normative reference the *National Joint Utilities Guidance*³.

Planning policy considerations

National policies

- 6.22 With regard to the relevant planning policies at this spatial scale (as per paragraph 5.3), the Proposed Development is considered to respond to these policies in the following manners:
- **Paragraph 131** - All existing trees will be retained, and it is considered that they can be adequately protected from harm so long as the measures specified in this Report are adhered to.
 - **Paragraph 174** - It is considered that the Proposed Development will not enhance or detract from the local environment.

Local policies

- 6.23 With regard to the relevant planning policies at this spatial scale (as per paragraph 5.5), the Proposed Development is considered to respond to these policies in the following manners:
- **CC3: Adaptation To Climate Change** - Details of new planting have not been provided. However, this is not considered to be a strict requirement of the Proposed Development due to its limited impact on trees and vegetation.
 - **EN14: Trees, Hedges and Woodlands** - All existing trees will be retained, and it is considered that they can be adequately protected from harm so long as the measures specified in this Report are adhered to. It is considered that the Proposed Development will not enhance or detract from the local environment.

7 CONCLUSIONS

- 7.1 The Proposed Development does not require the removal of any trees to facilitate its implementation.
- 7.2 The Proposed Development requires the pruning of 2no. trees (T2 & T3) and 1no. shrub group (S6) to provide clearance for high sided vehicles that will use the existing access road for deliveries during development. It is considered that the pruning required is relatively minor and is unlikely to have a significant negative impact on the long-term health of the trees and shrubs.
- 7.3 Built development is proposed within the RPA of T1. It is considered that the impact to the long-term health of this tree will be low, so long as the works are undertaken under observation of the arboriculturist and in accordance with the measures detailed within this Report.

8 APPENDICES CONTENTS

APPENDIX A

- 230374-P-10.01 Tree Survey Plan
- 230374-P-10.02 Tree Survey Plan
- 230374-P-11.01 Tree Protection Plan
- 230374-P-11.02 Tree Protection Plan

APPENDIX B

- 230374-PD-10 Tree Schedule

APPENDIX A

- 230374-P-10.01 Tree Survey Plan
- 230374-P-10.02 Tree Survey Plan
- 230374-P-11.01 Tree Protection Plan
- 230374-P-11.02 Tree Protection Plan



BS 5837:2012 TREE RETENTION CATEGORIES

T1

Canopy spread (m)

G2

Tree Stem

Unique tree identification number

Root Protection Area (RPA)

Group canopy extents shown in their retrospective retention category.

Unique group identification number

Root Protection Area (RPA)

Category A

Trees and groups of high quality with an estimated remaining life expectancy of at least 40 years.

Category B

Trees and groups of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category C

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

Category U

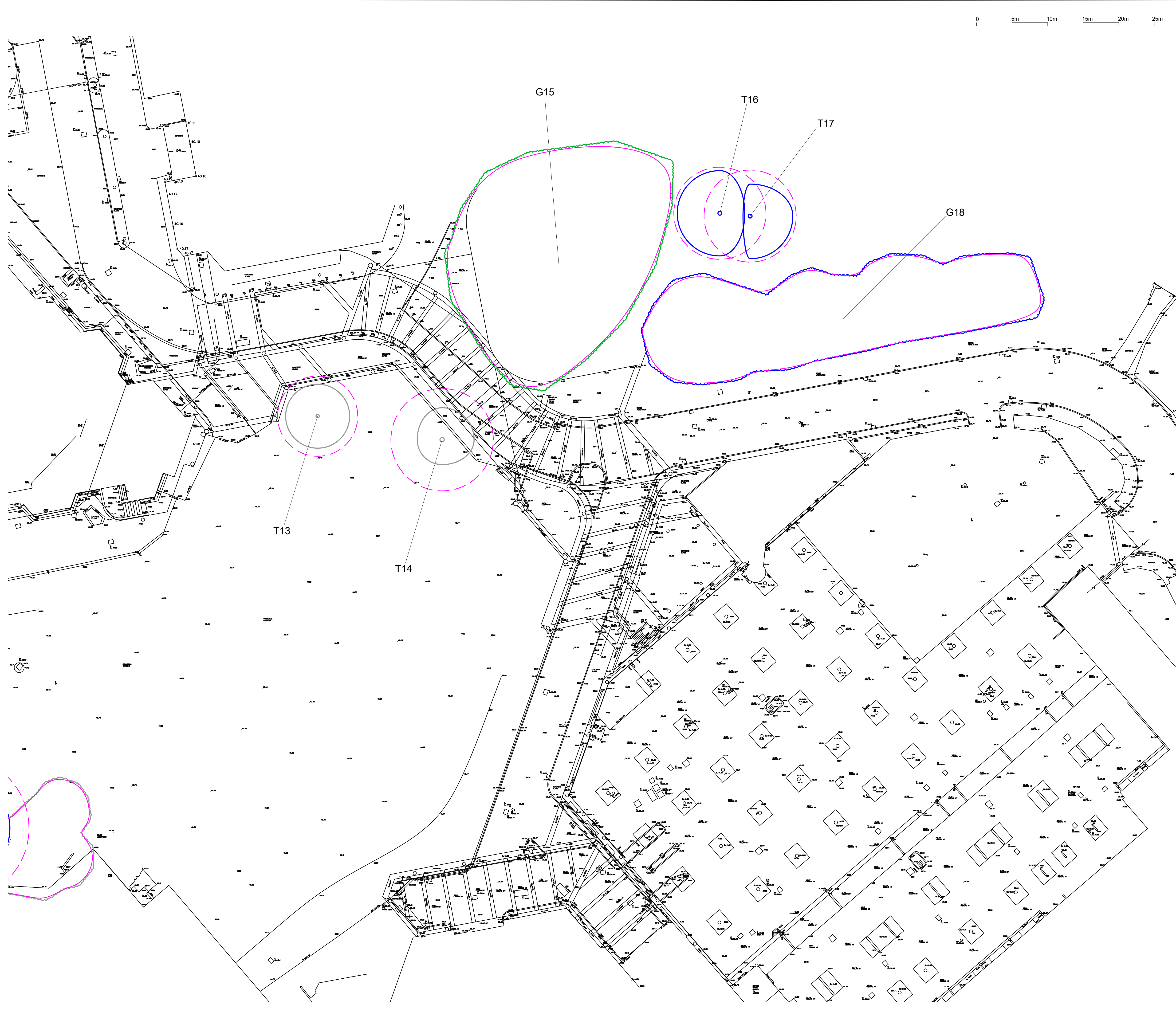
Those in such a condition that the tree cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

BS5837 Root Protection Areas

Precautionary areas within which tree roots and soil structure must be protected. All works within these areas will require special methods of work.

NORTH

rev	date	description	drawn by
Base Drawing:RT2230021P0001-0006			
Title			
BS 5837 Tree Survey Plan			
Client			
Haworth Tompkins			
Project			
The Hexagon Theatre			
Date	Drawn by	Authorised	Scale
01/09/2023	LJ	LD	1:250@A1
Drawing No			Rev
230374-P-10.1			-



BS 5837:2012 TREE RETENTION CATEGORIES

- Canopy spread (m)
Tree Stem
Unique tree identification number
Root Protection Area (RPA)
- Group canopy extents shown in their retrospective retention category.
Unique group identification number
Root Protection Area (RPA)
- Category A**
Trees and groups of high quality with an estimated remaining life expectancy of at least 40 years.
- Category B**
Trees and groups of moderate quality with an estimated remaining life expectancy of at least 20 years.
- Category C**
Trees and groups of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm.
- Category U**
Those in such a condition that the tree cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
- BS5837 Root Protection Areas**
Precautionary areas within which tree roots and soil structure must be protected. All works within these areas will require special methods of work.

rev	date	description	drawn by
		Base Drawing:RT2230021P0001-0006	

Title
BS 5837 Tree Survey Plan

Client
Haworth Tompkins

Project
The Hexagon Theatre

Date	Drawn by	Authorised	Scale
01/09/2023	LJ	LD	1:250@A1

Drawing No	Rev
230374-P-10.2	-



The Barn, FelthamRoad, Chalk Lane,Harlow, Essex CM17 0PF

0845 094 3268 | info@tma-consultants.co.uk

www.timmoassociates.co.uk

arboriculture ecology landscape innovation



BS 5837:2012 TREE RETENTION CATEGORIES

Canopy spread (m)

T1

Tree Stem

Unique tree identification number

Root Protection Area (RPA)

Group canopy extents shown in their retrospective retention category.

Unique group identification number

Root Protection Area (RPA)

Category A

Trees and groups of high quality with an estimated remaining life expectancy of at least 40 years.

Category B

Trees and groups of moderate quality with an estimated remaining life expectancy of at least 20 years.

Category C

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

Category U

Those in such a condition that the tree cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

BS5837 Root Protection Areas

Precautionary areas within which tree roots and soil structure must be protected. All works within these areas will require special methods of work.

Installation of protective tree barriers to form CEZs prior to construction works commencing on Site.

Temporary ground protection required to protect exposed soil within the RPA of T1. The exact specification is to be agreed with the arboriculturist prior to commencement of development works.

Existing paving and subbase to be removed under observation of the arboriculturist. This area will be backfilled with topsoil and used for new planting. Refer to the main report for further details.

Replacement of the existing hard surfacing to be undertaken under observation of the arboriculturist. Refer to the main report for further details.

Removal of existing kerb and paving to be undertaken under observation of the arboriculturist. New tarmac hard surfacing will be installed in this area. Refer to the main report for further details.

New kerb to be installed within the RPA of T1. The required excavation is to be undertaken under observation of the arboriculturist. Significant roots over 25mm in diameter are to be retained unharmed. Refer to main report for further details.

Utilities to be rerouted in accordance with NJUG guidelines.

Trees to be crown-lifted to 5.5m and cotoneaster shrubs to be trimmed back to the edge of the access road. To provide temporary access for delivery vehicles.

rev	date	description	drawn by
		Base Drawing:HX201-JCLA-Landscape plan_D02_231026	
Title			
Tree Protection Plan			
Client			
Haworth Tompkins			
Project			
The Hexagon Theatre			
Date	Drawn by	Authorised	Scale
01/11/2023	LJ	LD	1:250@A1
Drawing No			Rev
230374-P-11.01			-

tma

The Barn, FeltimoresPark, Chalk Lane,Harlow, Essex CM17 0PF

0845 094 3268 | info@tma-consultants.co.uk

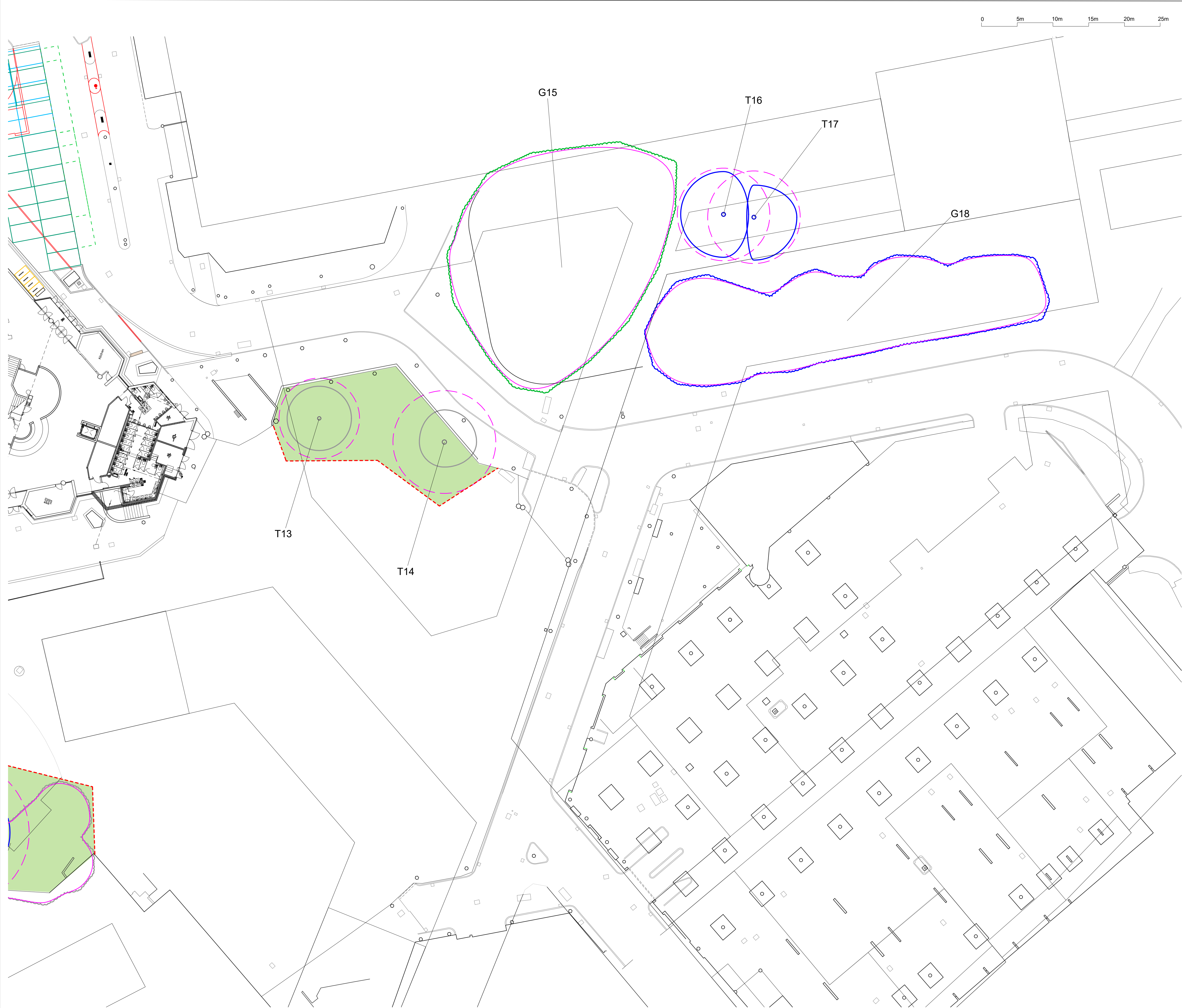
www.timmoayaassociates.co.uk

arboriculture

ecology

landscape

innovation



BS 5837:2012 TREE RETENTION CATEGORIES

- Canopy spread (m)
- Tree Stem
- Unique tree identification number
- Root Protection Area (RPA)
- Group canopy extents shown in their retrospective retention category.
- Unique group identification number
- Root Protection Area (RPA)
- Category A
Trees and groups of high quality with an estimated remaining life expectancy of at least 40 years.
- Category B
Trees and groups of moderate quality with an estimated remaining life expectancy of at least 20 years.
- Category C
Trees and groups of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm.
- Category U
Those in such a condition that the tree cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
- BS5837 Root Protection Areas
Precautionary areas within which tree roots and soil structure must be protected. All works within these areas will require special methods of work.
- Installation of protective tree barriers to form CEZs prior to construction works commencing on Site.

rev	date	description	drawn by
		Base Drawing: HX201-JCLA-Landscape plan_D02_231026	

Title
Tree Protection Plan

Client
Haworth Tompkins

Project
The Hexagon Theatre

Date	Drawn by	Authorised	Scale
01/11/2023	LJ	LD	1:250@A1

Drawing No	Rev
230374-P-11.02	-



The Barn, Feltham Park, Chalk Lane, Harlow, Essex CM17 0PF

0845 094 3268 | info@tma-consultants.co.uk

www.timmoayaassociates.co.uk

arboriculture ecology landscape innovation

APPENDIX B

- 230374-PD-10 Tree Schedule

230374-PD-10-Tree Schedule (BS5837)

Z230374 - The Hexagon Theatre ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Tree T1	1 Platanus x hispanica (London Plane)	12.0	60	1	4.5		3.5		4.5		4.5		3.0		Mature	Structural condition Good. Physiological condition Good. Access to inspect base - Restricted / obscured. Ivy or climbing plant. Pollard - Regrown. Scheduled to be repollarded as part of continued maintenance.	31/08/2023	162.9	7.2	40+	B1/B2
Tree T2	1 Platanus x hispanica (London Plane)	14.0	55	1	7.0		7.0		6.0		7.0		3.0		Mature	Structural condition Good. Physiological condition Fair. Form - Spreading crown. Ivy or climbing plant.	31/08/2023	136.8	6.6	40+	B1/B2
Tree T3	1 Platanus x hispanica (London Plane)	14.0	40	1	4.0		6.0		6.0		6.0		3.0		Mature	Structural condition Good. Physiological condition Fair. Tree not inspected due to presence of rough sleepers.	31/08/2023	72.4	4.8	40+	B1/B2
Tree T4	1 Platanus x hispanica (London Plane)	14.0	40	1	5.0		5.0		5.0		5.0		3.0		Mature	Structural condition Good. Physiological condition Fair. Tree not inspected due to presence of rough sleepers.	31/08/2023	72.4	4.8	40+	B1/B2
Tree T5	1 Quercus robur (English Oak)	12.0	26	1	4.0		6.0		4.0		4.0		4.0		Semi Mature	Structural condition Good. Physiological condition Good.	31/08/2023	30.6	3.1	40+	B1
Shrub S6	15 Cotoneaster sp. (Tree Cotoneaster)	5.0	5 AVE	3									0.0		Mature	Structural condition Good. Physiological condition Good. Dense shrub group.	31/08/2023	-	1.0	10-20	C2
Group G7	3 Acer negundo (Box Elder (Ash - Leaved) Maple)	10.0	15 AVE	1									0.0		Semi Mature	Structural condition Fair. Physiological condition Poor. 3no. declining trees and 1no. dead tree surrounding T5	31/08/2023	-	1.8	0-10	U
	1 other (Other)																				

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Generated By

Z230374 - The Hexagon Theatre ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
N	NE	E	SE	S	SW	W	NW														
Tree T8	1 Platanus x hispanica (London Plane)	14.0	40	1	4.0		4.0		4.0		4.0		3.0		Mature	Physiological condition Fair. Tree not inspected due to inaccessibility and presence of rough sleepers.	31/08/2023	72.4	4.8	40+	B1/B2
Tree T9	1 Platanus x hispanica (London Plane)	14.0	40	1	4.0		4.0		4.0		4.0		3.0		Mature	Physiological condition Fair. Tree not inspected due to inaccessibility and presence of rough sleepers.	31/08/2023	72.4	4.8	40+	B1/B2
Shrub S10	5 Buddleja sp. (Buddleja)	3.0	5 AVE	3									0.0		Semi Mature	Structural condition Fair. Physiological condition Fair. Dense shrub group and small ivy covered trees. Trees not inspected individually.	31/08/2023	-	1.0	10-20	C2
	5 Cotoneaster sp. (Tree Cotoneaster)																				
	1 Crataegus monogyna (Common Hawthorn/Quick/May)																				
	1 Sorbus aucuparia (Rowan/Mountain Ash)																				
Tree T11	1 Cedrus deodara (Deodar)	20.0	84 COM	2	7.5		7.5		7.5		7.5		2.0		Mature	Structural condition Fair. Physiological condition Good. Fork - Suspected structurally sound. Stems - Co-dominant.	31/08/2023	325.7	10.2	20-40	B1
Group G12	3 Acer negundo (Box Elder (Ash - Leaved) Maple)	10.0	30 AVE	1									0.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Base / stems obscured - Vegetation. Ivy or climbing plant. Dense group of ivy smothered trees. Trees not inspected individually.	31/08/2023	-	3.6	10-20	C2
	5 Sorbus aria (Whitebeam)																				

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Generated By

MyTREES
tree management software

Z230374 - The Hexagon Theatre ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Tree T13	1 Acer saccharinum (Silver Maple)	12.0	47	1	4.5		4.5		4.5		4.5		0.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Restricted / obscured. Base / stems obscured - Vegetation. Die-back - Upper crown. Epicormic growth - Base.	31/08/2023	99.9	5.6	10-20	C1
Tree T14	1 Acer saccharinum (Silver Maple)	17.0	60	1	4.5		4.5		3.5		3.5		0.0		Mature	Structural condition Fair. Physiological condition Fair. Access to inspect base - Not possible. Base / stems obscured - Vegetation. Die-back - Upper crown. Epicormic growth - Base.	31/08/2023	162.9	7.2	10-20	C1
Group G15	8 Platanus x hispanica (London Plane)	20.0	45 AVE	1									4.0		Mature	Structural condition Good. Physiological condition Good. Group growing within raised planter on upper level, above access road to Hexagon building. Dimensions - Largest stem diameter within group - 72cm. Location estimated - not plotted on topographical survey	31/08/2023	-	5.4	40+	A2
Tree T16	1 Acer platanoides (Norway Maple)	18.0	54	1	6.0		3.5		6.0		6.0		4.0		Mature	Structural condition Fair. Physiological condition Fair. Crown reduction - Historic. Pruning wounds - Historic. Root damage - Mower. Raised surface roots. Location estimated - not plotted on Topographical Survey.	31/08/2023	131.9	6.5	20-40	B1
Tree T17	1 Acer platanoides (Norway Maple)	18.0	54	1	4.5		6.0		6.0		1.0		4.0		Mature	Structural condition Fair. Physiological condition Fair. Crack - Longitudinal / shear crack. Fork - Suspected structurally sound. Pruning wounds - Historic. Root damage - Mower. Raised surface roots. Stems - Co-dominant. Location estimated - not plotted on Topographical Survey.	31/08/2023	131.9	6.5	20-40	B1

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Generated By

MyTREES
tree management software

Z230374 - The Hexagon Theatre ARB

Tree ID	No. Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m)								Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m ²)	RPR (m)	Life expectancy (yrs)	BS Category
					N	NE	E	SE	S	SW	W	NW									
Group G18	9 Acer pseudoplatanus (Sycamore)	12.0	30 AVE	1									4.0		Early Mature	Structural condition Good. Physiological condition Good. Group growing on or at top of steep bank adjacent to access road to Hexagon building. Dimensions - Largest stem diameter within group approx. 40cm. Location estimated - not plotted on topographical survey. Unable to inspect closely - Sloped terrain and dense ivy/climbing plant/undergrowth.	31/08/2023	-	3.6	40+	B2
	1 Betula pendula (Silver Birch)																				

Stem **green** Estimated value

Stem **AVE** Average stem diameter for tree groups

Stem **COM** Combined stem diameter in accordance with BS5837

L.B. Height of lowest branch attachment (m) - where relevant

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Summary table with retention category

	Group	Shrub	Tree	Total
A2	1	0	0	1
B1	0	0	4	4
B1/B2	0	0	6	6
B2	1	0	0	1
C1	0	0	2	2
C2	1	2	0	3
U	1	0	0	1
Total	4	2	12	18

Summary table with life stage

	Group	Shrub	Tree	Total
Early Mature	1	0	0	1
Mature	2	1	11	14
Semi Mature	1	1	1	3
Total	4	2	12	18

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see note)				
Category U Those 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, irremediable, 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 health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7			RED
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Tree that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).	GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	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 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.	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural value.	BLUE
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 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	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/transient landscape benefits.	Trees with no material conservation or other cultural value.	GREY



TIM MOYA ASSOCIATES

arboriculture ecology landscape innovation

The Barn, Feltimores Park, Chalk Lane, Harlow, Essex CM17 0PF

0845 094 3268 | info@tma-consultants.co.uk | www.timmoyaassociates.co.uk

Tim Moya Associates is a trading name of Tim Moya Tree Services Ltd. Company Reg No. 3028475