

BS 5837 Arboricultural Impacts Assessment

CLIENT: Nicoll

SITE: Hoys House, Wixoe CO10 8UD

OUR REF: 01774AIA/CJO/2406

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EXECUTIVE SUMMARY

This report comprises an arboricultural impacts assessment to assist a planning application at Hoys House, in Wixoe. The site is level and the proposed works takes place on soft ground to the west of Hoys House. Seven trees are noted. The A grade oak T7 in the north east corner of the site is the finest tree noted and is an important asset to the site. The three mature B grade trees T2-T4 grow in the north west corner of the site and provide a natural framework to the site. T2 is off-site and subject to a TPO. A new dwelling and detached garage are proposed. The scheme does not require any tree removals nor facilitation pruning. Other than a peripheral and minor encroachment of the drive upon the RPA of T1, no RPA encroachments are anticipated. Protection of the sections of RPAs of A and B grade trees that extend within the site will be achieved through the erection of exclusion zones or, where access is required, ground protection. An arboricultural protection strategy can be conditioned with any consent to address these issues.

1.0 INTRODUCTION

1.1 Brief

We are instructed to provide an arboricultural impacts assessment to assist a planning application at 9 Hoys House, Wixoe.

This report incorporates an arboricultural impact assessment and tree impacts plan demonstrating how trees in the immediate vicinity of the scheme may be affected by the proposed development and how trees may impact on the development.

It should be noted that the assessment is based on the impacts of the proposed development on trees and is based on the premise that all trees that can be realistically retained will be shown as retained.

Opinions expressed in this report in relation to the physical or aesthetic quality and value of trees are made on an impartial and non-prejudicial basis, based on observations made during the site survey.

Recommendations are consistent with the most recently revised version of the British Standard on this subject, "Trees in relation to design, demolition and construction - Recommendations", BS 5837 (2012).

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1.2 Background, planning proposal and documents

This report is based on drawings supplied by Michael Sale Architectural Surveyors Ltd. It has been commissioned to support a submission for a new dwelling with detached garage on the western side of the grounds belonging to Hoys House.

1.3 Site Description

Hoys House is located to the South of Wixoe within a rural setting.

The site comprises a detached house located within the north east corner of large grounds that extend down to the river Stour. This delineates its southern boundary. Residential properties are located to either side and Church Terrace forms the northern boundary.

The gardens are well established and multiple trees are noted throughout the site.



Figure 1 - Site extents (Google Earth aerial image)

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2.0 TREES

2.1 Trees data

Dimensions relating to height, crown spread (at four cardinal points), girth at 1.5m as well as age class, structural and physiological condition and BS 5837 (2012) category are noted.

The inspection assesses the height of the crown and suitability to develop near to it.

This survey does not include a detailed assessment of the health of the trees, but clear faults are factored into structural and physiological categories.

2.2 Trees and the law

It is understood that trees located in the property to the west are subject of a Tree Preservation Order. The site is not located within a Conservation Area.

Please note that no works to, or around trees should be carried out without the approval of the Local Planning Authority since it is likely to incur large fines, or unless planning permission has been granted that indisputably necessitates the removal or pruning of any of the trees included within this report.

Section 197 of the Town & Country Planning Act 1990 states that it shall be the duty of the local planning authority to ensure whenever it is appropriate, that in granting planning permission, "adequate provision is made, by the imposition of conditions, for the preservation or planting of trees". Even when no specific legal protection exists, it may be necessary to obtain a felling license from the Forestry Commission if the volume of timber removed exceeds felling license quotas.

Section 15 of the National Planning Policy Framework adopted in July 2019 states that, "Planning policies and decisions should contribute to and enhance the natural and local environment" and Section 12 states that, "Planning policies and decisions should ensure that developments are....visually attractive" and "sympathetic to the local landscape".

The Council's Local Plan also contains policies relating to the protection and retention of trees and landscape.

2.3 Tree schedule and summary of trees

Details of trees are provided in the tabulated information at Appendix A.

Seven trees of relevance are noted and one group G1. Of these, T7 is an A grade tree, T2-T4 B grade trees and T5-T6 & G1 are C grade.

The oak T7 is a fine, shapely specimen oak prominently located to the front of the site. It is in good condition and greatly enhances the proposed scheme by providing it with a setting and softening the proposal.

T1-T3 are mature, B grade trees on the western boundary to the north of site. All are prominent and in good health and provide a natural backdrop to the site.

Other than the B grade off-site cypress T4, all other trees noted are undistinguished C grade trees of no material planning significance but, nonetheless, contribute to the natural setting of the site.

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3.0 TREE RELATED SITE CONSTRAINTS – GENERAL

3.1 Constraints to development posed by tree crowns/canopies

Where crown/canopies of trees to be retained overhang a development site, careful assessment of the implications must be made.

The existing tree population poses no constraints to development.

3.2 Longer term implications of retained trees on quality of life

New structures and parking spaces close to trees may give rise to some long-term resentment of the trees through a variety of causes, some real and some perceived, resulting on pressure to remove the trees. These can include loss of ambient light or sunlight, leaf/needle litter and other debris from trees accumulating in gutters and gardens, sticky residues (honeydew) on surfaces and cars, provision of perches for birds - particularly pigeons - and consequent bird droppings and anxiety stemming from the presence of large trees close dwellings.

No excessive longer term problems associated with retained trees are anticipated.

3.3 Indirect damage (subsidence/heave)

All new buildings must be cognisant of the shrinkability of the ground and ensure foundations are designed in full compliance with Chapter 4.2 of the NHBC guidelines "Building near trees", 1992, to ensure future co-existence with trees and new buildings.

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4.0 ARBORICULTURAL IMPLICATIONS ASSESSMENT (AIA)

4.1 Effect of development on trees - General

The objective of the report is to identify and evaluate the extent of direct and indirect damage on existing trees that may arise as a result of the implementation of the proposed development without appropriate guidance. A tree may take a century to reach maturity, but it can be irretrievably damaged in a few minutes often because of a failure to appreciate the vulnerability of trees and particularly the root systems. Irreparable damage is frequently done to existing trees in the first few days of a contractor's occupation of a site. It is important to be aware that the effects of tree damage may not be apparent for some time.

There are a multitude of activities that can kill or damage trees on construction sites and there is a need to be mindful of these activities and why they may be so harmful to trees. These are briefly summarized below.

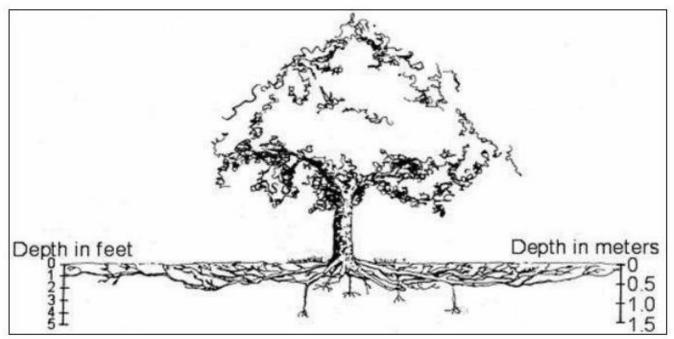


Figure 1 Typical root distribution of tree roots

4.1.1 Direct mechanical damage (Referred to as D-1 in this report)

Direct damage to the crown or stem is unlikely to kill a tree unless it is significant but may disfigure it and result in long-term decay setting in. This often occurs as a result of construction activities taking place too close to trees without protection or appropriate pre-construction tree surgery.

4.1.2 Ground compaction (Referred to as D-2 in this report)

This is likely to be the most common cause of tree death or decline on a building site. The vast majority of tree roots are located in the upper soil horizons where soil conditions are most favourable for root growth. It is these upper horizons that are most vulnerable to ground compaction. Compaction destroys soil structure, and this prevents soil moisture absorption into the ground and loss of natural aeration. This process deprives tree roots of moisture as well as giving rise to root asphyxiation and is often fatal to trees.

4.1.3 Changes in ground level (Referred to as D-3 in this report)

The majority of a tree's root systems are generally located in the upper 0.6m of the ground and the bulk of these roots happen to be very small, delicate and essential feeder roots. Reductions in ground level such as soil stripping can be catastrophic for a tree's health. Conversely increases in ground level can result in root asphyxiation.

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4.1.4 Severance of roots by ground works (Referred to as D-4 in this report)

Excavation of ground to remove old foundations and hard standing, construction of conventional concrete footings, new hard standing or the installation of services such as water/sewerage pipes, gas/electricity cables, TV/telephone cables using open trenching within the drip-lines of trees severs any roots present, potentially leading to destabilization, decline or death of trees. It May also have implications for local soil hydrology.

4.1.5 Contamination of ground (Referred to as D-5 in this report)

Spillage of petrol, diesel, paint removers, wood preservatives and many other toxic liquids regularly used on building sites can kill roots.

4.1.6 Change in ground surface (Referred to as D-6 in this report)

Covering surfaces with impermeable materials — especially areas that were previously open ground can prove fatal for tree roots. Trees derive moisture from regular moisture recharge of the ground and nutrients generated by the nutrient cycle from decomposing leaf litter. Impervious surfaces can also prevent gaseous interchange between the ground and the atmosphere creating a build-up of toxic waste gases such as carbon dioxide and a deprivation of oxygen.

4.2 Effect of development on trees specific to this site

4.2.1 Tree Work

No tree removal nor facilitation pruning is necessitated by the scheme.

4.2.2 RPA Encroachment

An RPA is defined in BS 5837 (2012) as "the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree". The 2012 British Standard formula for calculating the RPA has been used in conjunction with prevailing existing site conditions that can affect root morphology and dispositions such as the presence and type of hardstanding, structures and underground apparatus; topography and drainage; tree health and vitality; species type of root severed; disposition of incursion and the soil type and structure to determine likely RPAs.

The British Standard states that incursion "should not exceed 20% of any existing unsurfaced ground within the RPA". This is guidance; though encroachment upon the RPA should be avoided, it can be acceptable in certain conditions that involves assessment of the tolerance levels of the tree based on a variety of factors.

All encroachments upon RPAs of retained trees as a result of the proposed scheme have been identified and shown on the tree constraints plan.

The drive entrance marginally and peripherally encroaches upon the RPA of T1. This is low, (less than 5%) and well below the threshold detailed in BS 5837. No adverse impact on health or stability is anticipated on T1.

No other RPA incursions are noted.

Please refer to section 4.2.3 for further implications of RPA incursions.

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4.2.3 General construction activity within RPAs – including site clearance and demolition

Construction activity associated with the proposed works can be severely damaging to trees. These can include intense pedestrian and plant movements, site levelling; mixing of cementitious substances; fires and storage of materials etc.

In view of sections of RPAs of T1-T3 & T7 that extend into areas that will become subject to relatively intensive construction activity, potential impacts may arise, particularly as a consequence of ground compaction (see section 4.1.2).

Construction activity can, however, be avoided in the RPAs of T1-T3 & T7 relatively easily by Construction Exclusion Zones (CEZ) and can be detailed in an arboricultural method statement.

4.2.4 RPA incursion of underground services

No new services will be laid within the identified RPAs.

Where plans are subsequently changed and a need arises to place underground services within the RPA of any A or B grade tree, this will be assessed and an appropriate methodology written if deemed necessary. This will be submitted to the LPA as further details during determination or as an amendment to approved details if following determination.

4.3 Issues to be addressed by an AMS:

- Protection of trees and root zones through protective fencing and ground protection
- Arboricultural monitoring

5.0 CONCLUSION

The scheme does not require any tree removals nor facilitation pruning.

No RPA encroachments other than a very minor, peripheral encroachment of the drive entrance on that of T1 are noted.

Protection of the sections of RPAs of A and B grade trees that extend within the site will be achieved through the erection of exclusion zones or, where access is required, ground protection.

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Appendix A Tree survey schedule

Arboricultural impacts assessment

ID	Species	Age Class	Dia. At 1.5m (mm)	Height (m)	Crown Height	1 st branch	Crc wn Rad ius		SULE	Condition Physiological	Condition	RPA Radius (m)	Quality Category (BS:5837)	Tree- Work	Site: Hoys House, Wixoe CO10 8UD OMC Associates www: omc-associates.co.uk		
							N	S	E	w							Comments
T1	Quercus robur Oak	М	840	16	3.3	4.2-W	9.7	11.5	8.5	9.7	>40	Good	Good	10.08	B2	N	Prominent, frontage tree on NW corner; good health; some asymmetry; provides a setting to the site; nice symmetry to T7 on opposite corner of site
T2	Acer pseudoplatanus Sycamore	М	660	16.8	2.4	4-N	8	8.2	9.2	7	>40	Good	Fair	7.92	B2	N	Off-site; subject to TPO; some asymmetry due to proximity to T1 and perhaps historic tree works; prominent
Т3	Fraxinus excelsior Ash	М	590	17.5	4.6	-	5.8	6.4	8.3	10.7	>40	Good	Good	7.08	B2	N	On western boundary set back from front boundary but still prominent; shapely; good health and vitality
Т4	Chamaecyparis lawsoniana Lawson Cypress	М	290	9.8	-	54	3	3	3	3	>40	Good	Good	3.48	В2	N	Off site; good health and form
T5	Fagus sylvatica Beech	М	310	9.6	-	-	6.7	7.2	2	6.5	>40	Fair	Good	3.72	C2	N	Northern most stem of a linear group likely to have originally been planted as a hedge; acute asymmetry; etiolated but screening value
Т6	Fagus sylvatica Purpurea Purple beech	EM	310	9.6	87	-	6.8	3.1	6.9	5	>40	Fair	Good	3.72	C2		Acute asymmetry due to recent removal of dominant red oak to east;
Т7	Quercus robur Oak	М	650	17	3.5	2.6-N	14	11.5	12	12.9	>40	Good	Good	7.8	A1/2		Fine; shapely specimen on north east corner of site; highly prominent; fine specimen, asset to the site, providing a setting for the site
G1	Fagus sylvatica Beech	М	M/S	9	N.E.	.		12m	wide		>40	Fair	Fair	2.1	C2		Off-site; linear group of highly etiolated trees likely to have been planted originally as a hedge but left to develop into trees.

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Appendix B - Key for Tree Schedule and Cascade chart explaining tree quality assessment

KEY TO TREE SCHEDULE REFERENCES

Prefix: T – Tree S – Shrub/Climber TG/SG – Group/Hedge of Trees or Shrubs Dia.: N/A - Tree less than 100mm (for shrubs: young, semi-mature or mature)

* Estimated

Age Class: Young: Generally less than 10 years old and high life expectancy

Semi-mature: Within first 30% of life expectancy and significant growth to be expected

Early-mature: Typically 30-60% of life expectancy, full size almost reached

Mature: Typically 60% or more of life expectancy, full size reached with very gradual, slight further increases in size

Veteran A stage of development where intervention/management may be required to ensure the tree remains safe

Over-mature: Where a tree is so senescent that management is not worthwhile

Life Expectancy: How many years before tree is likely to need removing (subject to human intervention) Crown Radius: If crown is symmetrical, one dimension is given for the radius followed by "S"

B.S. Category: See Appendix 2

L

RA

Physiological Good: Healthy tree with no symptoms of significant disease Structural Good: No significant structural defects

Condition: Condition: Condition: Condition: Condition: Eair: Defects noted but not sufficient to warrant

Fair: Some disease noted and/or vitality is below what would be expected Condition: Fair: Defects noted but not sufficient to warrant immediate work

Poor: Significant disease noted and/or very low vitality Poor: Significant defects. Monitoring and/or remedial works required

Very Poor: Tree is in severe decline Very Poor: Significant defects requiring immediate work or tree removal

Space Below Crown: A useful indicator to determine the practicality of developing below the crown. Rather than a measurement which can be misleading and open to interpretation.

Y Potential to develop below the dripline with either no treework or removal of limbs that will not adversely affect the health and appearance of the tree

N No scope to develop below the dripline of the tree

No urgent work required but would benefit from some intervention

N/A Tree to be removed

Treework: This is general since the report is not a tree-work specification. It indicates:

B.S. Category: A - Those of high quality and value i.e. make a substantial contribution;

H High priority. For trees to be retained and where work required to make safe

B - Those of good/moderate quality and value, might be Cat. "A" but slightly impaired

young trees with a stem diameter less than 150mm at 1.5m height

C - Those of low quality i.e. adequate to remain until new planting is established or

No treework identified as necessary in the foreseeable future U - Those of such poor condition that any existing value would be lost within 10 years

P Facilitation tree surgery advised 1 - Mainly Arboricultural value 2 - Mainly Landscape value 3 - Mainly Ecological value

R Remove – tree identified to be removed because "U" category tree

WA Treework to accommodate development

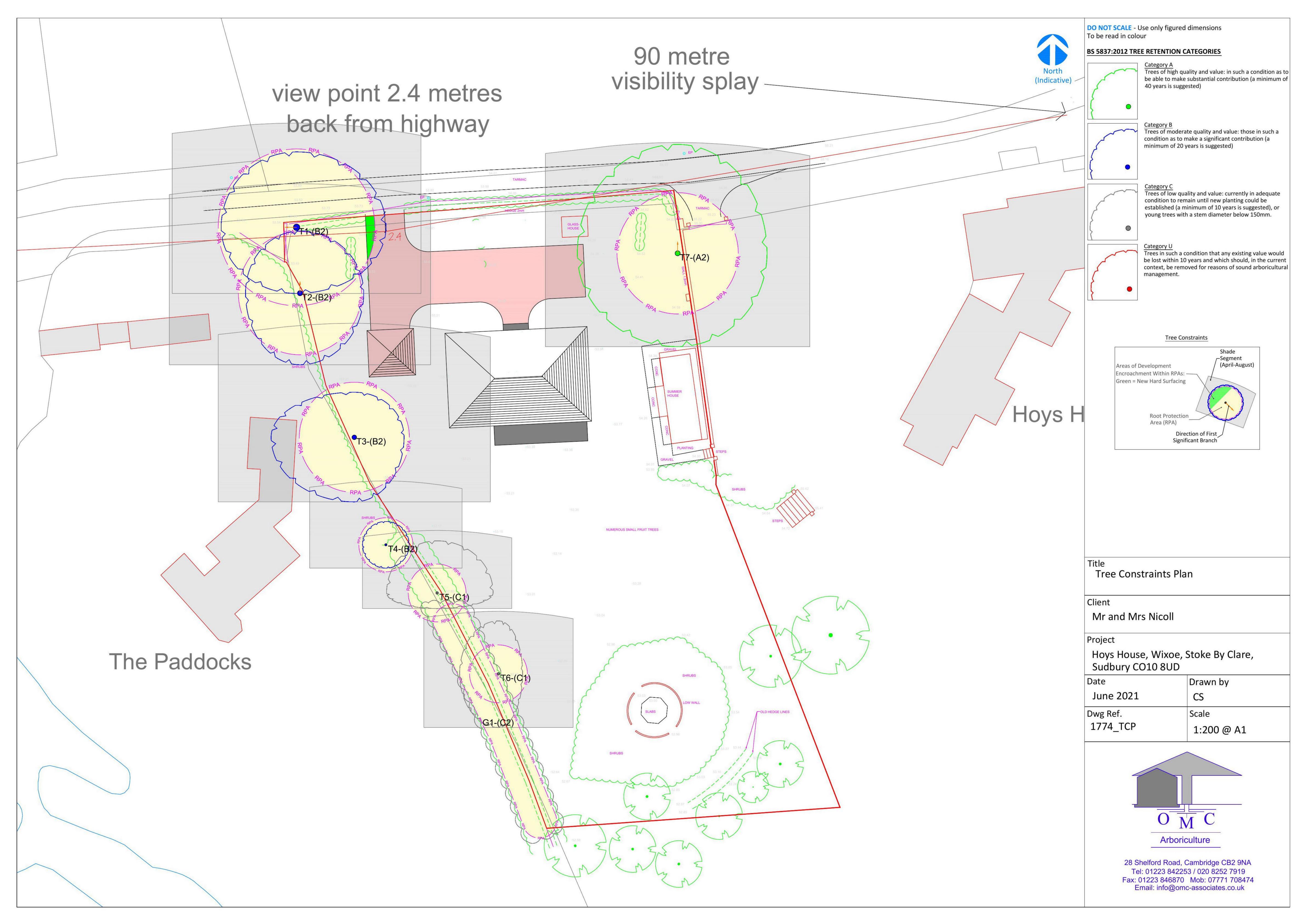
Tree removed to accommodate development

IV Sever and remove ivy

Category and definition	Criteria (including subcategories where appropriate)						
Trees unsuitable for retention							
Category U Those in such 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 to collapse, including those that will become unviable after removal of other U category trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) 						
use for longer than 10 years.	Trees that are dead or are showing sign	s of significant, immediate, and irreversible overall o	decline				
	• Trees infected with pathogens of significance to the health and/or stability of other nearby trees (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality.						
	NOTE: Category U trees can have existing	g or potential conservation value which it might be o	desirable to preserve.				
	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	Trees that are of particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups, or of 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 woodpasture)	Light Green			
Category B Trees of moderate quality with an estimated contribution of at least 20 years	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	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	MID BLUE			
Category C Frees of low quality with an estimated contribution of at east 10 years, or young trees with a stem diameter below 150mm	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 landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY			



Appendix C - Tree Constraints Plan



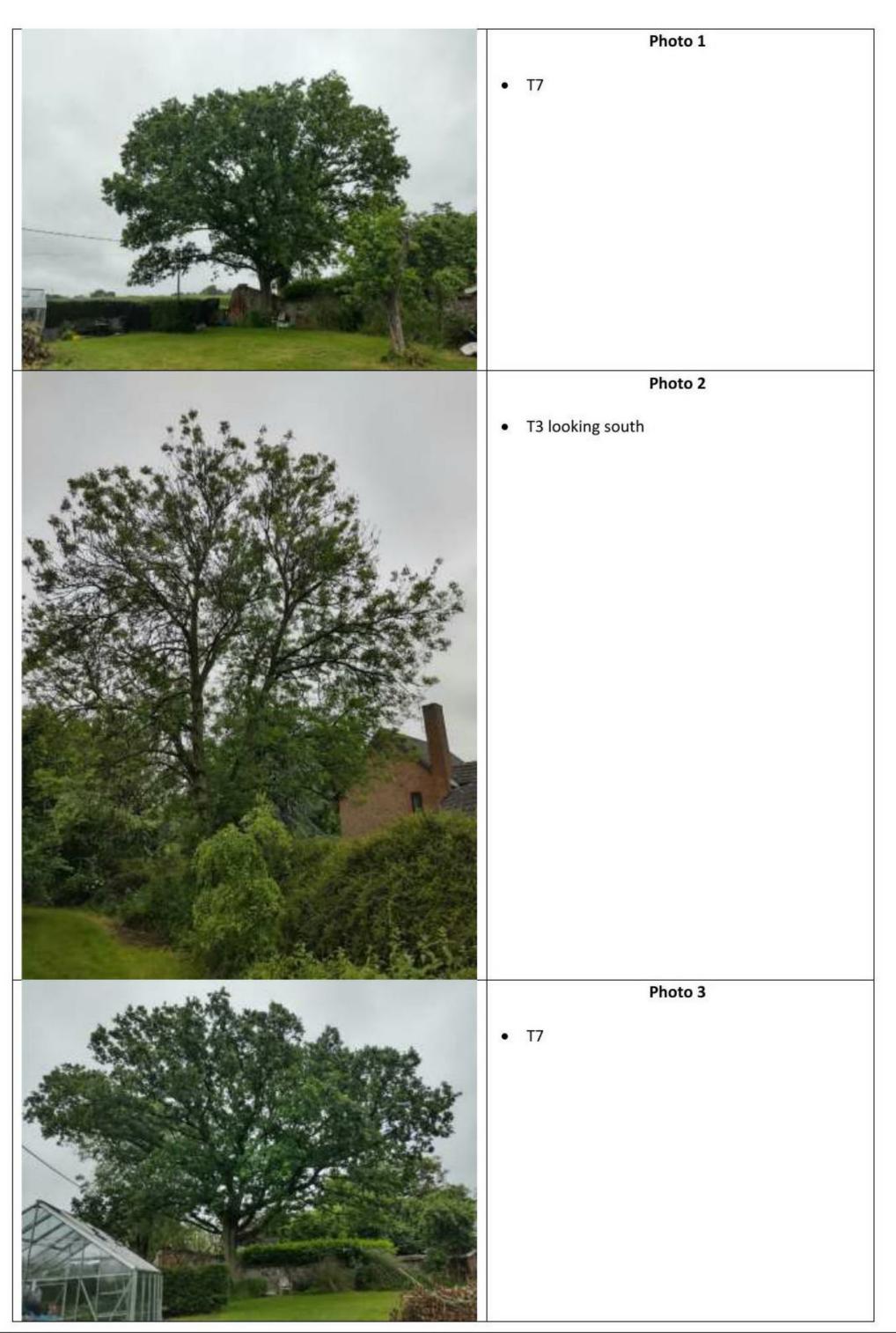


Appendix D - Tree Survey Plan



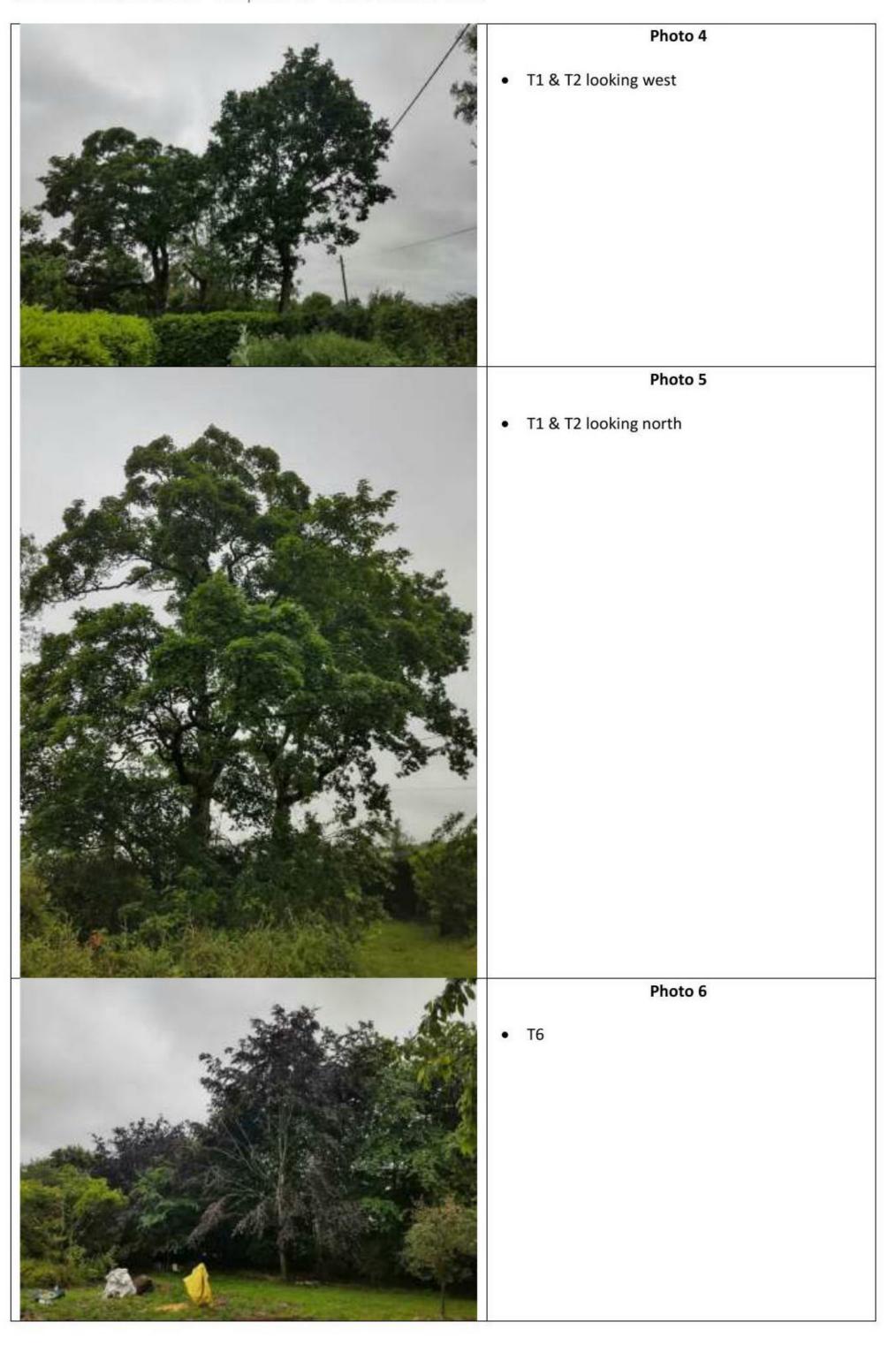


Appendix E – Photographs



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Appendix F – Summary of arboricultural impacts

ID	SPECIES	CAUSE OF IMPACT	CONSEQUENCE OF IMPACT
T1	Quercus robur Oak	Potential building activity within the RPA	Protection of CEZ
T2	Acer pseudoplatanus Sycamore	Potential building activity within the RPA	Protection of CEZ
Т3	Fraxinus excelsior Ash	Potential building activity within the RPA	Protection of CEZ
T4	Chamaecyparis lawsonian	<u> </u>	-
T5	Fagus sylvatica Beech	-	-
Т6	Fagus sylvatica Purpurea Purple beech	=8	-
T7	Quercus robur Oak	Potential building activity within the RPA	Protection of CEZ
G1	Fagus sylvatica Beech - Row	-	-

Facilitation pruning of canopy and/or root pruning/protection
Removal
Some protection required

^{*} Removal suggested for arboricultural/landscape enhancement reasons

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