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22th February 2024

PEMBROKE COLLEGE, ST. ALDATE'S
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FELLOWS' GARDEN,
CHAPEL, OLD & NORTH QUAD CABLING PROJECT

ARBORICULTURAL REPORT FOR PLANNING
INCORPORATING
BS5837:2012 TREE SURVEY
&
TREE PROTECTION PLAN

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CONTENTS

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PLANS

172-TSC-01	BS5837 - 2012 – Existing Trees
172-TSC-02	BS5837 - 2012 – Proposals: Tree Removals and RPA Encroachment
172-TSC-03	BS5837 - 2012 – Proposals: Tree Works and Protective Fencing

APPENDICES

Appendix 1 – Tree Survey
Table 1 – Lear Associates Limited Tree Survey

Appendix 2 – Former Planning Applications
Plans from planning applications 19/00611/FUL - 19/00465/LBC

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1.0 SUMMARY

1.1 Outline of Proposals

The proposed works involve the installation of air source heat pumps (ASHP) with associated cabling. The proposed cabling will access the site from the electrical substation building, located on St Ebbe's Street. Due to the uncertainty of the size of the existing ducting in this area, two options are provided. Option 1 is for the cables to be placed in the existing cable ducting, which travels south from the substation, between the existing street trees, before entering the Fellows' Garden under the College Wall, to the east of an Asian Apple (T15). Option 2 is for the cables to be laid in a new cable duct, which will travel south adjacent to the existing duct, before bending west into the highway around T15. The new duct will enter into the Fellows' Garden under the College wall to the south of T15. Once in the Fellows' Garden, a new duct will follow adjacent to the existing cable duct across the grass and through the gated access into the Chapel Quad. The proposed cables will continue to follow adjacent to the same existing cable duct, located central to the southern path of the Chapel Quad before terminating at a new Submain at Staircase 6 in Broadgates Hall. A second cable duct, from Staircase 6 will follow an existing duct northward along the Chapel Quad path, parallel to Broadgates Hall. Outside the Robert Stevens Building the proposed cabling will turn east through the gated access and follow the path northwards into the North Quad, where it will service new Air Source Heat Pumps. In addition, there will be a third cable duct from the Air Source Heat Pumps, which will follow the same alignment as the second cable duct, deviating from this alignment via an existing path into the basement of Broadgates Hall, at Staircase 7.

1.2 The Site

Pembroke College is located on St Aldate's, Oxford, south of the main city centre. The area for the new cabling is confined to three main areas of the College.

- The Fellows' Garden (located to the south and west of The Hall) is bound to the west by a wall adjacent to St Ebbe's Street and to the south by a wall adjacent to Brewer Street.
- Chapel Quad is to the east of the Fellows' Garden. Both are connected via a small, gated access at the southeastern corner of The Hall.
- North Quad is to the north of the Chapel Quad. Both are connected via a small, gated access between the Robert Stevens Building and Broadgates Hall.

A total of 19 trees were surveyed on 15th December 2023, however, only 15 of these had girths over 75mm in diameter and have been included within the BS 5837: 2012 survey (Table 1). Blue Tyvek temporary reference labels were attached at the time of the survey.

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The BS5837:2012 categories are listed below.

BS5837:2012 Categories		Numbers of trees	% of Total
A	1		
	2	6	40%
	3		
B	1		
	2	6	40%
	3		
C	1		
	2	3	20%
	3		
U	-		
Total		15	100%

1.3 Tree Removals

Of the 15 trees surveyed it is proposed to remove 1 tree.

BS5837:2012 categories		Number of trees removed	Tree Ref (T) Number
A	1		
	2		
	3		
B	1		
	2		
	3		
C	1		
	2	1	T14 – Strawberry tree
	3		
U			
Total		**1 Removal**	

BS5837:2012 – C category trees

The majority of Tree T14 (strawberry Tree) has already been removed. Only one small element of regrowth remains. Therefore, the removal of this tree, to accommodate the development of the area with an Air Source Heat Pump enclosure, is not considered to be of any significance.

1.4 Tree Works within the RPA

Of the 14 retained trees, 2 trees have new trenches for cables encroaching into their RPAs.

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Tree No.	Species	Total RPA (sqm)	Area Encroached (sqm)	% of RPA Affected	Reason for encroachment
T6	Common lime	59.9	5.6	9.3	Location of a new trench
T8	Common laburnum	1.9	0.4	21.0	Location of a new trench

Although the Laburnum's RPA has 21% of its RPA affected by the new cable trench to the south, the area of RPA is already compromised by the location of the pathway between the Fellows' Garden and the Chapel Quad. The impact of this change is therefore not considered to be detrimental to the growth of the climber.

1.5 Tree Canopy Works

Before the cabling works commence it is proposed to carry out the following tree canopy pruning works to prevent damage to the tree canopies.

Tree No.	Common Name	Total Canopy area (sqm)	Area of tree works (sqm)	% of canopy affected	Reason for works
T10	Tassel tree	12.4	6.3	50.8%	To provide room for the excavation of the service trench
T11	Common Holly	9.4	4.7	50.0%	To provide room for the excavation of the service trench
T12	Glory bush	26.4	19.7	74.6%	To provide room for the excavation of the service trench

Although this work decreases the canopy sizes of the trees extensively, this is only a temporary measure, as the trees will be allowed to re-grow following the completion of the works.

1.6 Conclusion

Of the 14 trees retained it can be concluded that the proposed new cabling will have a limited effect on the tree RPA's, due to locating the majority of the trenches within existing areas of hard standing and through existing ducts. Of the two trees where the trenches compromise the RPAs, only T8, a Common laburnum, has approximately 21% of its RPA reduced. However, this reduction is located to the south where the tree's growth is already restricted by walls and pavements.

A Strawberry tree (T14) will be lost to the proposals. The main element of the tree T14 has already been felled, with only one small stem of regrowth remaining. The loss of this tree is not considered to be significant.

Three trees will require their canopies to be reduced, however, this is a temporary measure as they will be allowed to re-grow following the completion of the works.

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2.0 INTRODUCTION

2.1 Tree Survey and Scope of the Report

Lear Associates Limited were commissioned by Metis Projects on behalf of Pembroke College, University of Oxford, in November 2023, to carry out a tree survey to review the existing tree locations within the College grounds and their relation to the proposed new cabling associated with the installation of new Air Source Heat Pumps (ASHP). Using the results of the tree survey, Lear Associates Limited have prepared a tree protection plan.

The location and the condition of the existing trees are to be noted within the confines of the site boundary. No invasive investigations or climbing inspections were done to confirm any visual or audible signs of defect.

This report has been prepared in accordance with BS 5837:2012 – Trees in relation to design, demolition and construction – Recommendations.

All the data gathered has been used to identify any constraints the trees will have on the proposed works and those that the works will have on the trees.

2.2 Documents Supplied

An analysis of the site, features, constraints, and proposed construction methods were drawn from the following documents.

- 2313-DD-0001A-RA: Site Location Plan – Walters & Cohen Architects (dated 17.10.2023)
- 25278A/1: Utility & Drainage – On Centre Surveys Ltd. (dated 02/2018)
- 2313-DD-1000: Proposed Site Plan – Walters & Cohen Architects (dated 04.09.2023)
- J7411-30000-P01: Site Services Layout – Max Fordham (dated 15/02/2024)

2.3 Survey methodology

In accordance with BS 5837:2012 – Trees in relation to design, demolition, and construction – Recommendations, the survey includes all trees within the site with a stem diameter of 75mm or more, measured at 1.5m above the highest adjacent ground level (or where physically possible).
The following data was re-recorded and updated:

- Tree tag number (including existing tag numbers).
- Species.
- Height.
- Stem diameter (mm) at 1.5m – unless indicated.
- Crown spread (in meters taken at four cardinal points) or the overall extent of the canopy.
- Crown clearance (in meters taken at four cardinal points).
- Estimated planting date.
- Useful life span remaining.
- Health of the tree (crown, stem, basal and physical condition).
- General notes relating to the tree's condition, hazards around the tree and the tree's general habit.
- Management recommendations.

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2.4 Tree Categorisations

The purpose of tree categorization is to identify the quality and value of the trees within the site. It allows an informed decision to be made on which trees should be retained in connection with the location of the new cabling. The site's trees have been evaluated and classified into one of the four BS5837:2012 categories. Their definitions are listed in the table below (*ref: Table 1, pg. 9, BS5837:2012*).

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 to be considered for retention	
Category A	**Trees of high quality** with an estimated remaining life expectancy of at least 40 years
Category B	**Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years
Category C	**Trees of low quality** with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm

Under the categories A, B and C are three criteria subcategories relating to the tree's arboricultural (1), landscape (2) and cultural values (3), respectively. These subcategories have equal weight in determining their value for retention. Only one set of criteria relates to category U which determines the reason for removal.

2.5 Recommendations

Recommendations in this report are to maximise the retained trees life expectancy based on the current situation. Any tree works specifically relating to the laying of service cables are based on the proposals known at the time of the survey. Subsequent changes relating to the development or site could invalidate the recommendations given in the report.

2.6 Limitations

The report, comments and recommendations are based on the factors observed at the time of the survey. As trees are dynamic structures their safety can never be assumed as being 100% safe.

The objective of the survey is to evaluate the tree data relevant to the proposed new cabling at Pembroke College. To then categorise trees in accordance with their condition, quality, and future potential. This is not a Duty of Care survey or a Tree Risk Assessment and should not be construed as such. Detailed inspection of individual trees with respect to decay, defects and hazards is not included. Inspections will be carried out from the ground.

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Due to the changing nature of trees and other site circumstances, this report, and any recommendations made are limited and valid for a 1-year period, from December 2023. Any alterations to the proposals during construction could change the current circumstances and may invalidate this report and any recommendations made. Should this be the case, this report will be required to be updated.

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3.0 BACKGROUND AND SITE INFORMATION

3.1 The Report

The findings of each tree surveyed are contained at the rear of this report within Table 1 - Tree Survey located in Appendix 1. The individual locations and categories are shown on Plans 172-TSC-01 at the rear of this report.

All measurements are metric and indicated where approximate.

3.2 The Site

Pembroke College is located on St Aldate's, Oxford, south of the main city centre. The area for the new ASHPs and cabling is confined to three main areas of the College.

- The Fellows' Garden (located to the south and west of The Hall) is bound to the west by a wall adjacent to St Ebbe's Street and to the south by a wall adjacent to Brewer Street.
- Chapel Quad is to the east of the Fellows' Garden. Both are connected via a small, gated access at the southeastern corner of The Hall.
- North Quad is to the north of the Chapel Quad. Both are connected via a small, gated access between the Robert Stevens Building and Broadgates Hall.

A total of 19 trees were surveyed on 15th December 2023, however, only 15 of these had girths over 75mm in diameter and have been included within the BS 5837: 2012 survey. The 15 trees are shown on plan 172-TSC-01 and listed in Table 1 (Appendix 1). The remaining 4 tree locations are shown on plan 172-TSC-01 but are not included in Table 1.

3.3 Planning Designations

Pembroke College is a series of both Grade I and Grade II listed buildings located within Oxford City Council's Central Conservation Area. Trees here are subject to provisions of the Town and Country Planning Act 1990, Section 211, which is administered by Oxford City Council. None of the trees surveyed are thought to have a Tree Preservation Order.

3.4 Former Planning Applications

Two former planning applications have had an impact on the trees currently located in the Fellows' Garden and Chapel Quad. These are listed below, along with the former impacts on the trees relevant to this.

Planning Application Ref.	Description of Works relevant	Former Impact
09/00553/FUL	Construction of a new pedestrian bridge over Brewer Street to link new student accommodation and residential facilities to Pembroke College. Ground floor retail unit on corner of Littlegate/ Brewer Street and new substation.	Trees located at the eastern end of the Fellows' Garden would have had their roots affected by the footings of the new bridge and disabled access which opened in April 2013.

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Planning Application Ref.	Description of Works relevant	Former Impact
19/00611/FUL 19/00465/LBC	Upgrade of the existing LV distribution cabling running from the St. Ebbes Street switch room, through Chapel Quad, Old Quad and on to the Almshouse & Master's Lodgings.	Trees located along the length of the new cable trenches within the Fellows' Garden and Chapel Quad would have had their roots affected. (plans located in Appendix 2)

3.5 Consultations

Consultations to date have been between the design team and the client to ensure that the location of the new trenches limits the works within the existing tree's Root Protection Areas. To date, there have been no consultations with the local authority by Lear Associates.

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4.0 TREE SURVEY RESULTS

4.1 Species

The 15 trees included in the BS5837:2012 survey comprise 14 different species. The majority (13) were recorded as individual specimens; only 1 species surveyed (*Prunus* cv.) occurred twice.

4.2 Health and Condition

The external health and condition of the trees were noted during the site visit. Visual checks were made on the condition of the trees by looking at four key areas. The tree's **Crown** - including the presence of dead wood, die back and overall opacity of the canopy; the tree's **Stem** - noting the location of the main fork, any fungal presence, visible defects to the bark and the results of ring tests; the **Basal** section of the tree – noting any root compaction or physical barriers to root growth; and the physical condition of the tree – noting the overall growing conditions and any physical defects such as leaning. The conditions of the four key areas are classified into four categories as listed below.

- Good
- Fair
- Poor
- Dead

The reasoning for these results possibly relates to several factors. The close proximity of some of the trees and the resultant competition for light and nutrients; the possibility of root compaction due to the location of hard-standing areas, and paths; the location of physical barriers to the trees including the existing walls and buildings; and potential mower damage during the cutting of grass.

4.3 Estimated Life Span

The individual trees have been assessed according to their age, condition and situation and the estimated life span is set out in Table 1 (Appendix 1).

4.4 BS5837:2012 Tree Categories

The table below indicates the number of trees surveyed on-site within each of the BS5837:2012 categories (Table 1). Blue Tyvek temporary reference labels were attached at the time of the survey (see Photo 1 below).

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BS5837:2012 Categories		Numbers of trees	% of Total
A	1		
	2	6	40%
	3		
B	1		
	2	6	40%
	3		
C	1		
	2	3	20%
	3		
U	-		
Total		15	100%

Photo 1: Blue Tyvek temporary reference label.

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5.0 ARBORICULTURAL ASSESSMENT

5.1 Description of the proposals (see latest version of plan - J7411-30000-P01: Site Services Layout – Max Fordham (dated 15/02/2024))

The proposed works involve the installation of air source heat pumps (ASHP) with associated cabling. The proposed cabling will access the site from the electrical substation building, located on St Ebbe's Street. Due to the uncertainty of the size of the existing ducting in this area, two options are provided. Option 1 is for the cables to be placed in the existing cable ducting, which travels south from the substation, between the existing street trees, before entering the Fellows' Garden under the College Wall, to the east of an Asian Apple (T15). Option 2 is for the cables to be laid in a new cable duct, which will travel south adjacent to the existing duct, before bending west into the highway around T15. The new duct will enter into the Fellows' Garden under the College wall to the south of T15. Once in the Fellows' Garden, a new duct will follow adjacent to the existing cable duct across the grass and through the gated access into the Chapel Quad. The proposed cables will continue to follow adjacent to the same existing cable duct, located central to the southern path of the Chapel Quad before terminating at a new Submain at Staircase 6 in Broadgates Hall. A second cable duct, from Staircase 6 will follow an existing duct northward along the Chapel Quad path, parallel to Broadgates Hall. Outside the Robert Stevens Building the proposed cabling will turn east through the gated access and follow the path northwards into the North Quad, where it will service new Air Source Heat Pumps. In addition, there will be a third cable duct from the Air Source Heat Pumps, which will follow the same alignment as the second cable duct, deviating from this alignment via an existing path into the basement of Broadgates Hall, at Staircase 7.

5.2 Effect of Proposals on Trees

The proposed cabling generally follows existing ducting which was laid in 2019. The location of which formed part of the planning application (19/00465/LBC). Where new cables are to be laid, these are generally to be located along existing paths in a central location where no existing trees are located. Where new trenches occur adjacent to existing trees their location has been carefully considered to minimise the impacts on the RPA and to minimise the tree losses.

It should be noted that the Common lime tree (T6), located in the Fellows' Garden has already been subjected to change as a result of the bridge construction completed in April 2013.

Summary of Proposed actions to trees

Tree Ref no.	Name	BS Cat	Prescription	Notes (as pertaining to planning application)
T1	*Pyracantha coccinea* **Pyracanth / Firethorn**	C2	Retain	No requirements
T2	*Syringa vulgaris* cv. **Hybrid lilac**	B2	Retain	No requirements
T3	*Prunus* cv. **Cherry**	A2	Retain	No requirements
T4	*Cotoneaster frigidus* **Cotoneaster**	B2	Retain	No requirements

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Tree Ref no.	Name	BS Cat	Prescription	Notes (as pertaining to planning application)
T5	*Magnolia grandiflora* **Evergreen Magnolia / Bullbay**	A2	Retain	No requirements
T6	*Tilia* x *euroaea Common* **Common lime**	A2	Retain	No requirements
T7	*Prunus* cv. **Cherry**	A2	Retain	No requirements
T8	*Laburnum anagyroides* **Common laburnum**	B2	Retain	No requirements
T9	*Prunus subhirtella* cv. Autumnalis **Winter cherry**	A2	Retain	No requirements
T10	*Garrya elliptica* **Tassel tree**	B2	Retain	Possible pruning of the canopy to allow for construction.
T11	*Ilex aquifolium* **Common holly**	A2	Retain	Possible pruning of the canopy to allow for construction.
T12	*Clerodendrum trichotomum* **Glory bush**	B2	Retain	Possible pruning of the canopy to allow for construction.
T13	*Pittosporum tenuifolium* cv.Silver Queen **Variegated Pittosporum**	C2	Retain	No requirements
T14	*Arbutus undeo* **Strawberry tree**	C2	Remove	The remains of the stump and element of regrowth are to be removed to accommodate the development of the area with an Air Source Heat Pump enclosure.
T15	*Malus tschonoskii?* **Asian apple**	B2	Retain	No requirements
Total			14 Retained 1 removal	

5.3 Proposed Tree Retentions

The table below summarises the number of trees proposed to be retained within each of the BS5837:2012 categories and indicates which trees require additional work for their retention. The retained trees, in the context of the proposed new cabling, are shown on plan 172-TSC-02.

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Summary of Tree Retentions

BS5837:2012 categories		Number of trees retained	Tree Ref (T) Number	Additional work required
A	1			
	2	6	T3 – Cherry T5 – Evergreen Magnolia / Bullbay T6 – Common lime T7 – Cherry T9 – Winter Cherry T11 – Common Holly	N N N N N Y
	3			
B	1			
	2	6	T2 – Hybrid Lilac T4 – Cotoneaster T8 – Common laburnum T10 – Tassel tree T12 – Glory bush T15 – Asian apple	N N N Y Y Y
	3			
C	1			
	2	2	T1 – Pyracantha / Firethorn T13 – Variegated Pittosporum	N N
	3			
U		0		
Total		**14 Retentions**		

It should be noted that the two cable locations around T15 will not impact the tree's RPA. However, option 2, will result in the tree being encompassed by an existing cable duct to the north and east and a new cable duct to the west and south. To date, no investigations have taken place to ascertain if the tree pit contains root barriers.

5.4 Proposed Tree Removals

The table below summarises the number of trees proposed to be removed within each of the BS5837:2012 categories. The trees to be removed are shown on plan 172-TSC-02.

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Summary of Tree Removals

BS5837:2012 categories		Number of trees removed	Tree Ref (T) Number
A	1		
	2		
	3		
B	1		
	2		
	3		
C	1		
	2	1	T14 – Strawberry tree
	3		
U			
Total		**1 Removal**	

5.5 Impact of Removals:

BS5837:2012 – C category trees

The majority of tree T14 (Strawberry tree) has already been removed. Only one small element of regrowth remains. Therefore, the removal of this tree, to accommodate the development of the area with an Air Source Heat Pump enclosure, is not considered to be of any significance.

5.6 Root Protection Areas (RPA's)

The root protection areas (RPA's) have been calculated in accordance with the guidance in BS5837:2012. The RPAs for the trees to be retained in connection with the proposed new cabling are shown on plan 172-TSC-02.

Of the 14 retained trees, 2 trees have the new trenches for the cables encroaching into their RPAs. The extent of these encroachments is within the table below and shown on plan 172-TSC-02.

Tree No.	Species	Total RPA (sqm)	Area Encroached (sqm)	% of RPA Affected	Reason for encroachment
T6	Common lime	59.9	5.6	9.3	Location of a new trench
T8	Common laburnum	1.9	0.4	21.0	Location of a new trench

Although the Common laburnum's RPA has 21% of its RPA is affected by the new cable trench to the south, the area of RPA is already compromised by the location of the pathway between the Fellows' Garden and the Chapel Quad. The impact of this change is therefore not considered to be detrimental to the growth of the climber.

5.7 Tree Protection

Any works related to the proposed new cabling should not be permitted within the retained tree Root Protection Areas (RPA) unless agreed. Tree protection measures in the form of Protective Fencing should be erected before the works commence - as shown on plan 172-TSC-03 and kept in place for the duration of works until practical completion.

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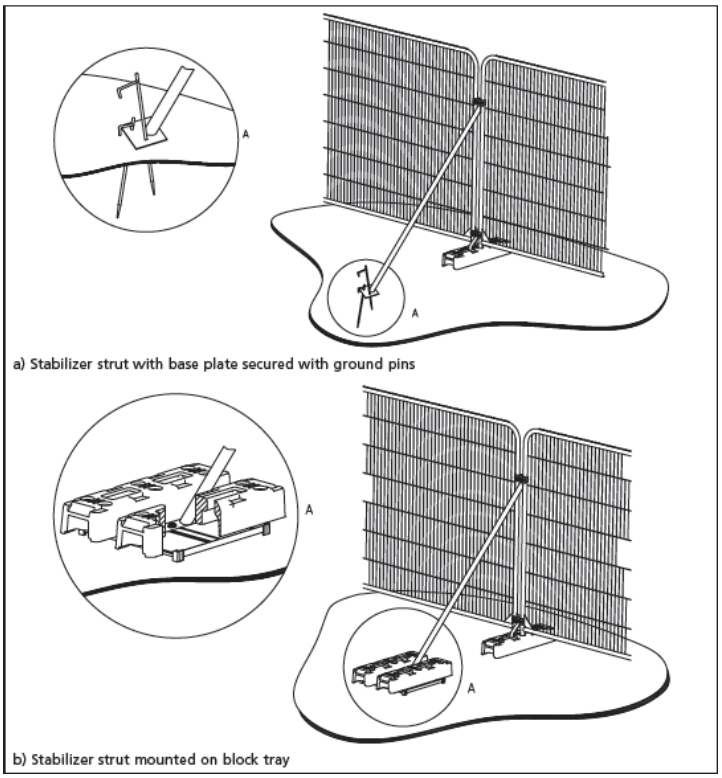
Temporary Protective Fencing: (Plan 172-TSC-03)

During the excavation of the service trenches the tree RPA's need to be protected, however, the areas do not require the standard default level of protection. Once fenced these areas will require all-weather signage to inform site workers of the restrictions in the area. Paragraph 6.2.2.3 of the standard advises that the protection fencing should be constructed from the following:

> *" 2m tall welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 3a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b)."*

Figure 3 **Examples of above-ground stabilizing systems**



5.8 Tree Canopy Works

Before the cabling works commence it is proposed to carry out the following tree canopy pruning works to prevent damage to the tree canopies. The extent of the works is described in the table below and shown on Plan 172-TSC-03. However, it should be noted that the extent of the canopy pruning, is shown as the worst-case scenario. This is due to the current uncertainty of the location of the new cable trench, protective fencing and the size of machinery to be used, which will affect the amount of room required to carry out the excavation works.

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Tree No.	Common Name	Total Canopy area (sqm)	Area of tree works (sqm)	% of canopy affected	Reason for works
T10	Tassel tree	12.4	6.3	50.8%	To provide room for the excavation of the service trench
T11	Common Holly	9.4	4.7	50.0%	To provide room for the excavation of the service trench
T12	Glory bush	26.4	19.7	74.6%	To provide room for the excavation of the service trench

Although this work decreases the canopy sizes of the trees extensively, this is only a temporary measure, as the trees will be allowed to re-grow following the completion of the works.

5.9 Landscape Improvements and Tree Planting

As the only tree loss associated with the new cabling is the removal of an existing 'C' category stump with one small stem of regrowth it is not deemed necessary to assess any landscape improvements or new tree planting.

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6.0 CONCLUSIONS

Of the 14 trees retained it can be concluded that the proposed new cabling will have a limited effect on the tree RPA's, due to locating the majority of the trenches within existing areas of hard standing and through existing ducts. Of the two trees where the trenches compromise the RPAs, only T8, a Common laburnum, has approximately 21% of its RPA reduced. However, this reduction is located to the south where the tree's growth is already restricted by walls and pavements.

A Strawberry tree will be lost to the proposals. The main element of the tree T14 has already been felled, with only one small stem of regrowth remaining. The loss of this tree is not considered to be significant.

Three trees will require their canopies to be reduced, however, this is a temporary measure as they will be allowed to re-grow following the completion of the works.

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PLANS

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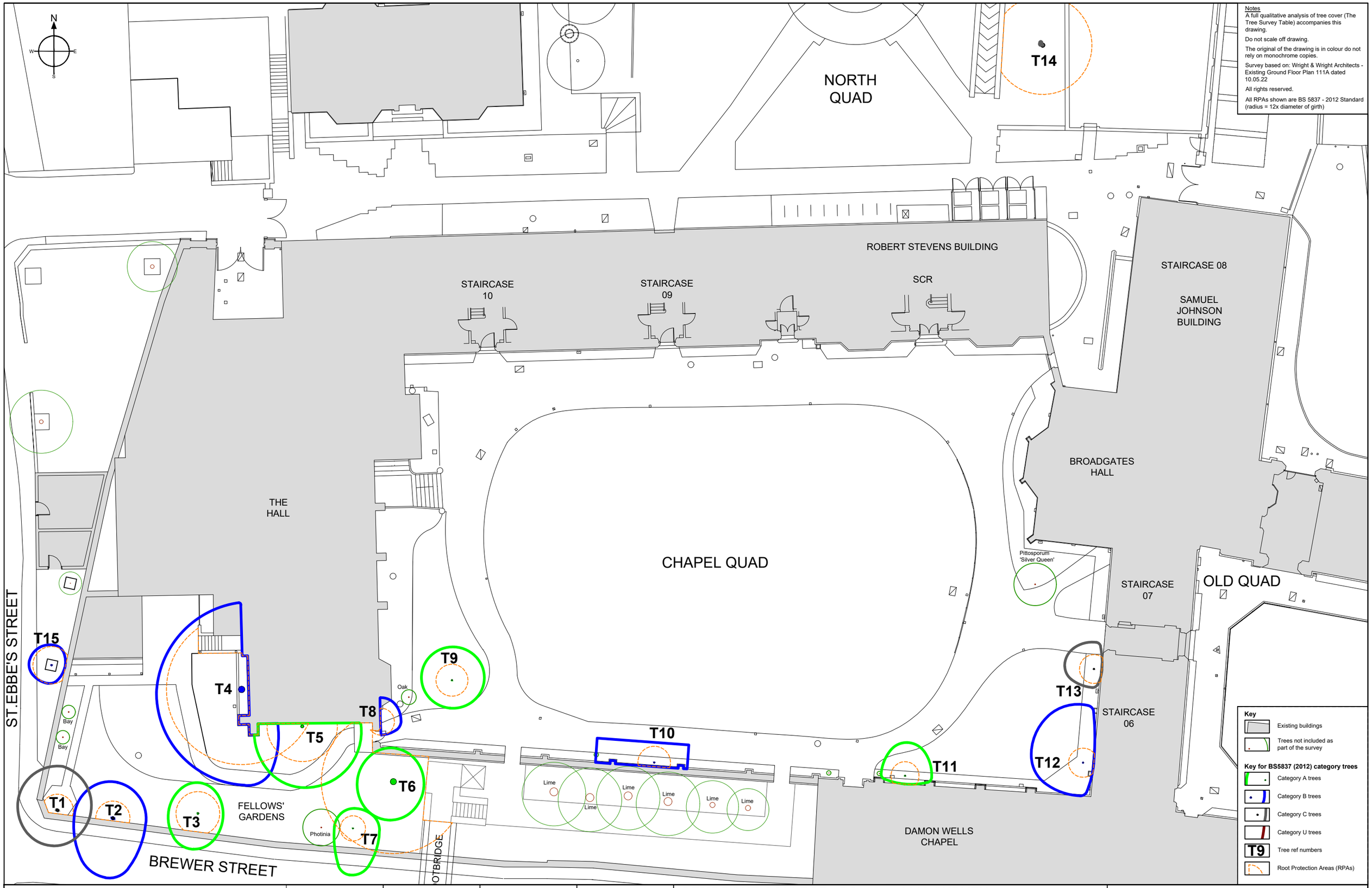
172-TSC-02	BS5837 - 2012 – Proposals: Tree Removals and RPA Encroachment
172-TSC-03	BS5837 - 2012 – Proposals: Tree Works and Protective Fencing



Notes

A full qualitative analysis of tree cover (The Tree Survey Table) accompanies this drawing.

Do not scale off drawing.

The original of the drawing is in colour do not rely on monochrome copies.

Survey based on: Wright & Wright Architects - Existing Ground Floor Plan 111A dated 10.05.22

All RPAs shown are BS 5837 - 2012 Standard (radius = 12x diameter of girth)

0m 5m 10m 20m

Drawing number: 172.TSC.01	Revision: 1.00	Drawn by: FP Checked by: ML	Scale: A3 1:250 Date: 20/02/2024

 office@learassociates.co.uk

PEMBROKE COLLEGE - BS5837 - 2012 SURVEY:
EXISTING TREES

LEAR ASSOCIATES
Lear Associates Ltd, 8 East Street, Oxford OX2 0AU
Tel: 01865 725046 Mob: 07711 668382

N
W
E
S

NORTH QUAD

T14

ROBERT STEVENS BUILDING

STAIRCASE 10

STAIRCASE 09

SCR

STAIRCASE 08

SAMUEL JOHNSON BUILDING

THE HALL

CHAPEL QUAD

BROADGATES HALL

Pittosporum 'Silver Queen'

STAIRCASE 07

OLD QUAD

ST.EBBE'S STREET

T15

T4

T9

Oak

T8

T5

T10

T13

STAIRCASE 06

Bay

Bay

T1

T2

T3

FELLOWS' GARDENS

T6

Photinia

T7

Lime

Lime

Lime

Lime

Lime

Lime

T11

T12

DAMON WELLS CHAPEL

BREWER STREET

OTBRIDGE

Notes

Do not scale off drawing.

The original of the drawing is in colour do not rely on monochrome copies.

Survey based on: Walters & Cohen Architects - Site Location Plan: 2313-DD-0001A-RA (dated 17.10.2023)

Proposals based on: Max Fordham - Site Services Layout: J7411-30000-P01 (dated 15.02.2024)

All RPAs shown are BS 5837 - 2012 Standard (radius = 12x diameter of girth)

RPA Encroachments

Tree No.	Common Name	Total RPA (sqm)	Area Encroached (sqm)	% of RPA Affected
T6	Common lime	59.9	5.6	9.3
T8	Common laburnum	1.9	0.4	21.0

Tree Removals

Tree No.	Common Name
T14	Strawberry tree

Key

- Existing buildings
- Trees not included as part of the survey
- Cable trench alignments
- St Ebbe's Street - Option 1: Existing cable trench alignment
- St Ebbe's Street - Option 2: New cable trench alignment
- Location of Air Source Heat Pumps (ASHP)

Key for BS5837 (2012) category trees

- Category A trees
- Category B trees
- Category C trees
- Category U trees
- T9 Tree ref numbers
- Root Protection Areas (RPAs)
- Tree Removals (T14)
- RPA Encroachment Areas (see table)

0m 5m 10m 20m

Drawing number: 172.TSC.02

Revision: 2.00

Drawn by: FP
Checked by: ML

Scale: A3 1:250
Date: 20/02/2024

office@learassociates.co.uk

PEMBROKE COLLEGE - BS5837 - 2012 SURVEY:
PROPOSALS: TREE REMOVALS AND RPA ENCROACHMENT

LEAR ASSOCIATES
Lear Associates Ltd, 8 East Street, Oxford OX2 0AU
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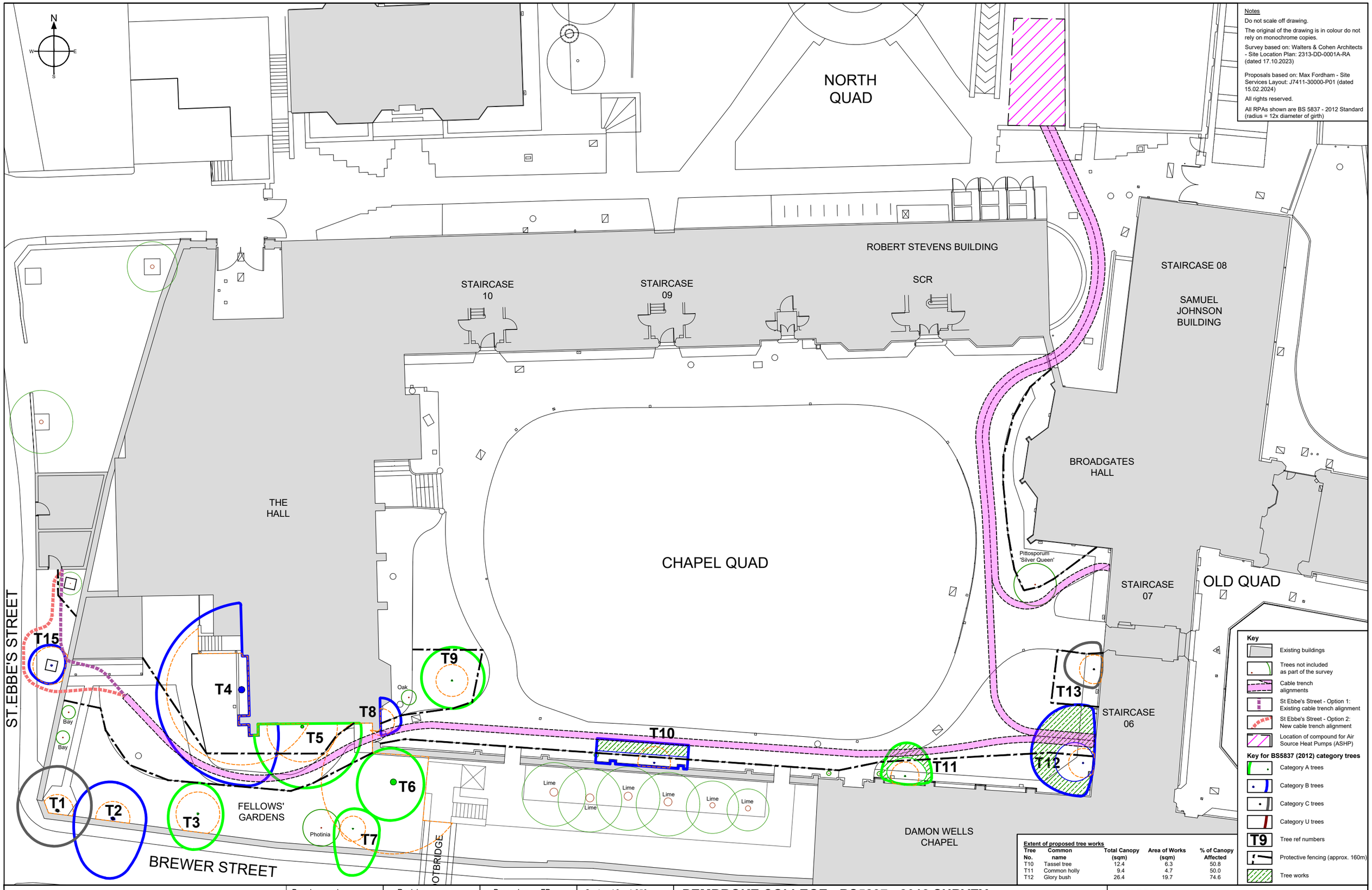

Notes

Do not scale off drawing.

The original of the drawing is in colour do not rely on monochrome copies.

Survey based on: Walters & Cohen Architects - Site Location Plan: 2313-DD-0001A-RA (dated 17.10.2023)

Proposals based on: Max Fordham - Site Services Layout: J7411-30000-P01 (dated 15.02.2024)

All RPAs shown are BS 5837 - 2012 Standard (radius = 12x diameter of girth)

Key

- Existing buildings
- Trees not included as part of the survey
- Cable trench alignments
- St Ebbe's Street - Option 1: Existing cable trench alignment
- St Ebbe's Street - Option 2: New cable trench alignment
- Location of compound for Air Source Heat Pumps (ASHP)

Key for BS5837 (2012) category trees

- Category A trees
- Category B trees
- Category C trees
- Category U trees
- T9 Tree ref numbers
- Protective fencing (approx. 160m)
- Tree works

Extent of proposed tree works

Tree No.	Common name	Total Canopy (sqm)	Area of Works (sqm)	% of Canopy Affected
T10	Tassel tree	12.4	6.3	50.8
T11	Common holly	9.4	4.7	50.0
T12	Glory bush	26.4	19.7	74.6

0m 5m 10m 20m

Drawing number: 172.TSC.03

Revision: 2.00

Drawn by: FP
Checked by: ML

Scale: A3 1:250
Date: 20/02/2024

office@learassociates.co.uk

PEMBROKE COLLEGE - BS5837 - 2012 SURVEY:
PROPOSALS: TREE WORKS AND PROTECTIVE FENCING

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APPENDIX 1 – Tree Survey

Table 1 – Lear Associates Limited Tree Survey

TABLE 1: LEAR ASSOCIATES LTD TREE SURVEY 8 EAST ST, OXFORD, OX2 0AU office@learassociates.co.uk Tel: 01865 725046 Mob: 07711 668382

Surveyor: Michael Lear BSc (For), MSc (Arb), MArborA. **Inclusion scope**: BS5837: 2012

Site: Pembroke College; Oxford; OX1 1DW **Planning designation of site:** CA

Client: Pembroke College **Date:** 15th December 2023

REF NO	NAME	Ht (m)	DIAMETER (mm) @ 1.5m Unless indicated	CROWN SPREAD (m)				GROUND CLEARANCE (m)				Pld/ est AGE	USEFUL LIFE	HEALTH (Good, fair, poor, dead)				NOTES/HAZARDS/ HABITATS/COMMENTS	BS Cat[1]	RPA AREA m²
				N	S	E	W	N	S	E	W			Crown	Stem	Basal	Phys Con			
T1	*Pyracantha coccinea* **Pyracanth / Firethorn**	5.2	100	3.3	2.7	2.5	3.0	1.0	1.0	1.0	1.0	1975	>20	G	G	G	G	Multi Stem +10 stems; Overall condition is good; Overhangs; Red berries	C2	2.6
T2	*Syringa vulgaris* cv. **Hybrid lilac**	4.4	107	2.7	4.5	2.5	2.9	0.5	0.5	0.5	0.5	1920	>20	G	G	G	G	Multi Stem +10 stems	B2	3.1
T3	*Prunus* cv. **Cherry**	3.6	137	2.3	2.7	1.9	2.2	1.5	1.5	1.5	1.5	2013	>40	G	G	G	G	Double Pink Flower.	A2	8.2
T4	*Cotoneaster frigidus* **Cotoneaster**	8.7	470 @ 1.3m	6.5	7.2	0.4 2.6	6.4	2.0	2.0	4.0	2.0	1950	>20	G	F	G	G	The eastern canopy wraps around the building by 2.6m; Lower trunk leans to the south 10° away from the building; Branches at 1.5m into four.	B2	54.3
T5	*Magnolia grandiflora* **Evergreen Magnolia / Bullbay**	8.6	220	0.5	4.6	4.4	3.6	4.0	2.0	1.0	0.5	1950	>40	G	F	G	G	Main stem leans 5° south away from the building.	A2	12.2
T6	*Tilia* x *euroaea Common* **Common lime**	8.6	450	2.5	2.9	2.3	2.7	2.0	2.0	2.0	2.0	1900	>40	G	G	G	G	Epicormic growth has been removed up to 1.8m. Tree previously high pollard and canopy is small for stem diameter. Main junction is at 2.7m; No visible defects. Roots potentially would have been affected by the footings of the new bridge and disabled access which opened in April 2013. Eastern canopy overhangs the new bridge.	A2	59.9
T7	*Prunus* cv. **Cherry**	4.3	79	1.5	3.5	2.0	1.4	2.0	7.0	2.0	2.0	2013	>40	G	G	G	G		A2	2.8

[1] Retention Categories based on BS 5837 (2012) *Trees in relation to construction – recommendations* Table 1

A = High quality and value (>40yrs life, (this can include trees with major impact, wildlife importance, notable specimens). Light Green on plans

B = Moderate quality and value (>20yrs life). Mid Blue on plans

C = Low quality and value or temporary landscape value or other cultural value and will not usually be retained where they impose a significant constraint on development or young trees less than 15cm and could be considered for relocation (>10yrs life) . Grey on plans.

U = Trees for removal and not for consideration in planning process (dead, dying or diseased trees (<10 years life), likely to have low public amenity now/in future in Conservation Areas or should be removed for reasons of sound arboricultural management. Dark Red on plans.

Subcategory (A, B & C only) = 1 Mainly arboricultural qualities 2 Mainly landscape qualities 3Mainly cultural values, including conservation

TABLE 1: LEAR ASSOCIATES LTD TREE SURVEY 8 EAST ST, OXFORD, OX2 0AU office@learassociates.co.uk Tel: 01865 725046 Mob: 07711 668382

Surveyor: Michael Lear BSc (For), MSc (Arb), MArborA. **Inclusion scope**: BS5837: 2012

Site: Pembroke College; Oxford; OX1 1DW **Planning designation of site:** CA

Client: Pembroke College **Date:** 15th December 2023

REF NO	NAME	Ht (m)	DIAMETER (mm) @ 1.5m Unless indicated	CROWN SPREAD (m)				GROUND CLEARANCE (m)				Pld/ est AGE	USEFUL LIFE	HEALTH (Good, fair, poor, dead)				NOTES/HAZARDS/ HABITATS/COMMENTS	BS Cat[1]	RPA AREA m²
				N	S	E	W	N	S	E	W			Crown	Stem	Basal	Phys Con			
T8	*Laburnum anagyroides* **Common laburnum**	6.6	84	1.8	1.0	1.5	0.2	3.0	3.0	3.0	3.0	2000	>20	G	G	G	G	Retained self-sown seedling against a wall; branches out at 1.8m	B2	1.9
T9	*Prunus subhirtella* cv. Autumnalis **Winter cherry**	4.2	100	2.5	2.1	2.4	2.3	2.0	2.0	2.0	2.0	2003	>40	G	G	G	G	Graft height at 1.8m	A2	4.5
T10	*Garrya elliptica* **Tassel tree**	4.9	102	1.5	0.0	2.5	4.4	0	0	0	0	1930	>20	G	G	G	G	6+ stems; Clipped shrub, 1.5m wide off wall;	B2	3.1
T11	*Ilex aquifolium* **Common holly**	5.9	88	2.5	0.1	2.0	1.8	0	0	0	0	1995	>40	G	G	G	G	2 stems from 0.3m; against the wall of Damon Wells Chapel	A2	3.0
T12	*Clerodendrum trichotomum* **Glory bush**	5.1	91	4.3			3.9	2	2	2	2	1995	>20	F	G	G	G	Characteristically misshapen	B2	3.5
T13	*Pittosporum tenuifolium* cv.Silver Queen **Variegated Pittosporum**	6.3	90	2.0	1.4		2.2	1.5	1.5	1	1	1995	>10	F	F	G	F	Dead portion at the base but not affecting its stability	C2	3.1
T14	*Arbutus undeo* **Strawberry tree**	1.5	Main stem 308 @ 0.4m Regrowth 23 @ 1.5m	0.2	0.2	0.2	0.2	1	1	1	1	1950	>10	F	F	F	F	It was originally a twin-stem tree; recently felled and left with a small element of re-growth; mainly a stump remains	C2	40.9
T15	*Malus tschonoskii?* **Asian apple**	9.0	117	1.5	1.4	1.0	1.7	4	4	2	4	2010	>20	G	F	G	G	Tree adjacent to the public pavement and road in St Ebbes. Upright growing tree set in a square planting pit in an area of hard standing; bark wounds were noted at the time of visit.	B2	5.7

[1] Retention Categories based on BS 5837 (2012) *Trees in relation to construction – recommendations* Table 1

A = High quality and value (>40yrs life, (this can include trees with major impact, wildlife importance, notable specimens). Light Green on plans

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U = Trees for removal and not for consideration in planning process (dead, dying or diseased trees (<10 years life), likely to have low public amenity now/in future in Conservation Areas or should be removed for reasons of sound arboricultural management. Dark Red on plans.

Subcategory (A, B & C only) = 1 Mainly arboricultural qualities 2 Mainly landscape qualities 3Mainly cultural values, including conservation

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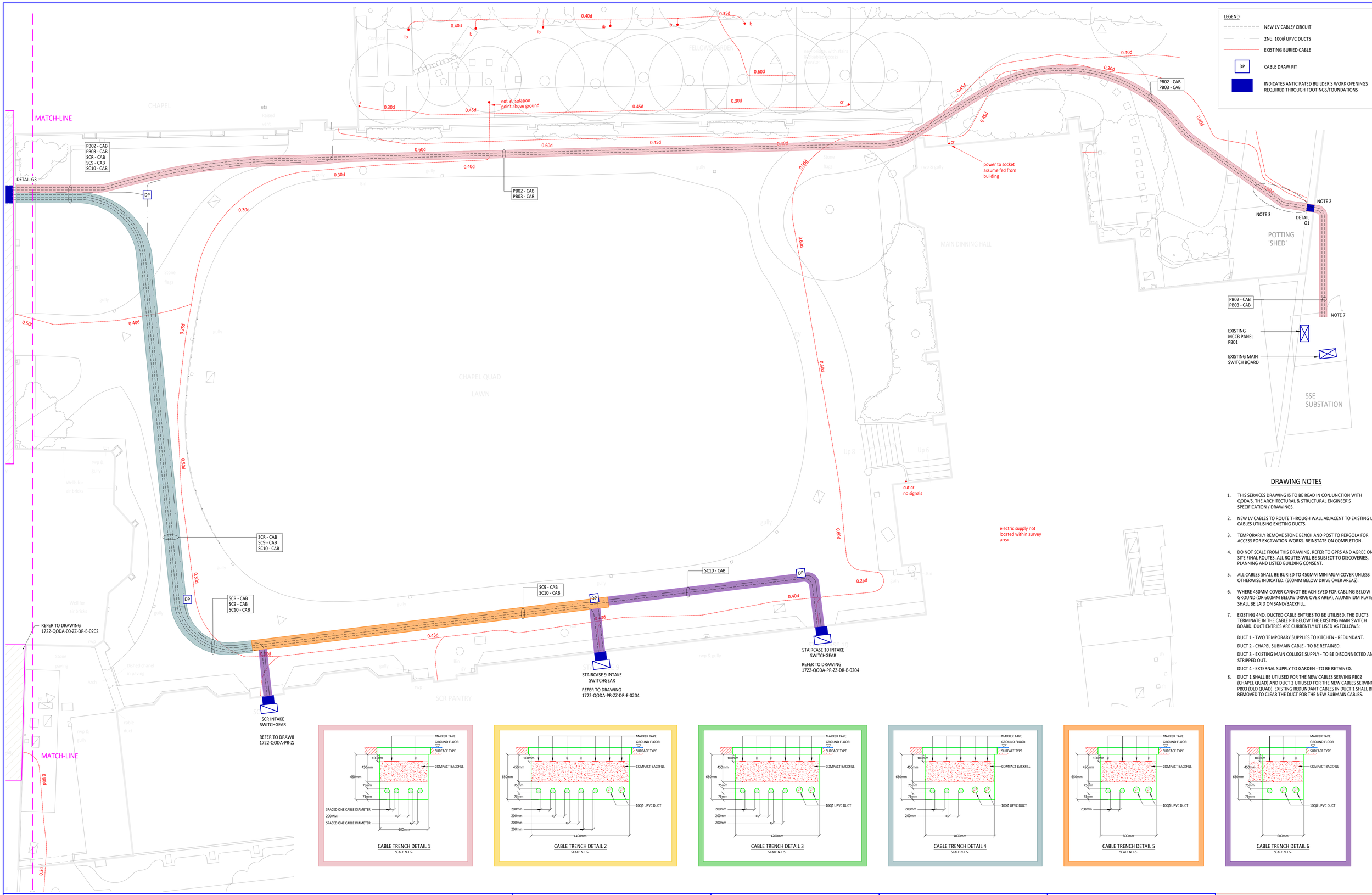
APPENDIX 2 – Former Planning Applications

Plans from planning applications 19/00611/FUL - 19/00465/LBC



LEGEND

- NEW LV CABLE/ CIRCUIT
- 2No. 100Ø UPVC DUCTS
- EXISTING BURIED CABLE
- DP — CABLE DRAW PIT
- INDICATES ANTICIPATED BUILDER'S WORK OPENINGS REQUIRED THROUGH FOOTINGS/FOUNDATIONS

DRAWING NOTES

1. THIS SERVICES DRAWING IS TO BE READ IN CONJUNCTION WITH QODA'S, THE ARCHITECTURAL & STRUCTURAL ENGINEER'S SPECIFICATION / DRAWINGS.
2. NEW LV CABLES TO ROUTE THROUGH WALL ADJACENT TO EXISTING LV CABLES UTILISING EXISTING DUCTS.
3. TEMPORARILY REMOVE STONE BENCH AND POST TO PERGOLA FOR ACCESS FOR EXCAVATION WORKS. REINSTATE ON COMPLETION.
4. DO NOT SCALE FROM THIS DRAWING. REFER TO GPRS AND AGREE ON SITE FINAL ROUTES. ALL ROUTES WILL BE SUBJECT TO DISCOVERIES, PLANNING AND LISTED BUILDING CONSENT.
5. ALL CABLES SHALL BE BURIED TO 450MM MINIMUM COVER UNLESS OTHERWISE INDICATED. (600MM BELOW DRIVE OVER AREAS).
6. WHERE 450MM COVER CANNOT BE ACHIEVED FOR CABLING BELOW GROUND (OR 600MM BELOW DRIVE OVER AREA), ALUMINIUM PLATES SHALL BE LAID ON SAND/BACKFILL.
7. EXISTING 4NO. DUCTED CABLE ENTRIES TO BE UTILISED. THE DUCTS TERMINATE IN THE CABLE PIT BELOW THE EXISTING MAIN SWITCH BOARD. DUCT ENTRIES ARE CURRENTLY UTILISED AS FOLLOWS:

   DUCT 1 - TWO TEMPORARY SUPPLIES TO KITCHEN - REDUNDANT.

   DUCT 2 - CHAPEL SUBMAIN CABLE - TO BE RETAINED.

   DUCT 3 - EXISTING MAIN COLLEGE SUPPLY - TO BE DISCONNECTED AND STRIPPED OUT.

   DUCT 4 - EXTERNAL SUPPLY TO GARDEN - TO BE RETAINED.
8. DUCT 1 SHALL BE UTILISED FOR THE NEW CABLES SERVING PB02 (CHAPEL QUAD) AND DUCT 3 UTILISED FOR THE NEW CABLES SERVING PB03 (OLD QUAD). EXISTING REDUNDANT CABLES IN DUCT 1 SHALL BE REMOVED TO CLEAR THE DUCT FOR THE NEW SUBMAIN CABLES.

CABLE TRENCH DETAIL 1
SCALE N.T.S.

CABLE TRENCH DETAIL 2
SCALE N.T.S.

CABLE TRENCH DETAIL 3
SCALE N.T.S.

CABLE TRENCH DETAIL 4
SCALE N.T.S.

CABLE TRENCH DETAIL 5
SCALE N.T.S.

CABLE TRENCH DETAIL 6
SCALE N.T.S.


LOCATION PLAN
(N.T.S.)

QODA — LONDON BIRMINGHAM OXFORD

Client: PEMBROKE COLLEGE OXFORD

Project:
LV DISTRIBUTION UPGRADES
PEMBROKE COLLEGE
OXFORD
OX1 1DW

Drawing Title:
ELECTRICAL SERVICES
SITE - PROPOSED LV DISTRIBUTION LAYOUT (2 OF 2)

DO NOT SCALE

Rev.	Description:	Date:	Engr:	Check:
T1	REVISED TENDER ISSUE	04.19	SP	MT
T	TENDER ISSUE	02.19	SP	MT

Drawing Number:	Rev.	Scale:	Paper Size:
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0mm 50mm 100mm

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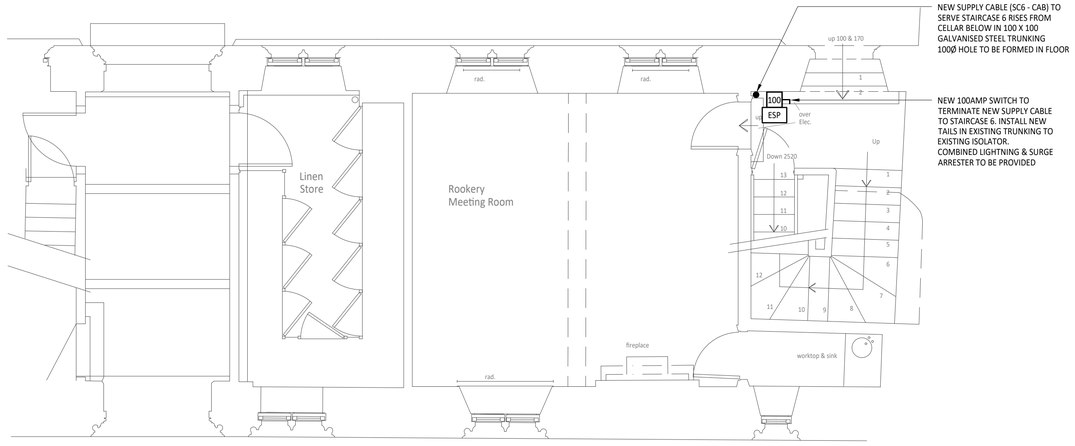
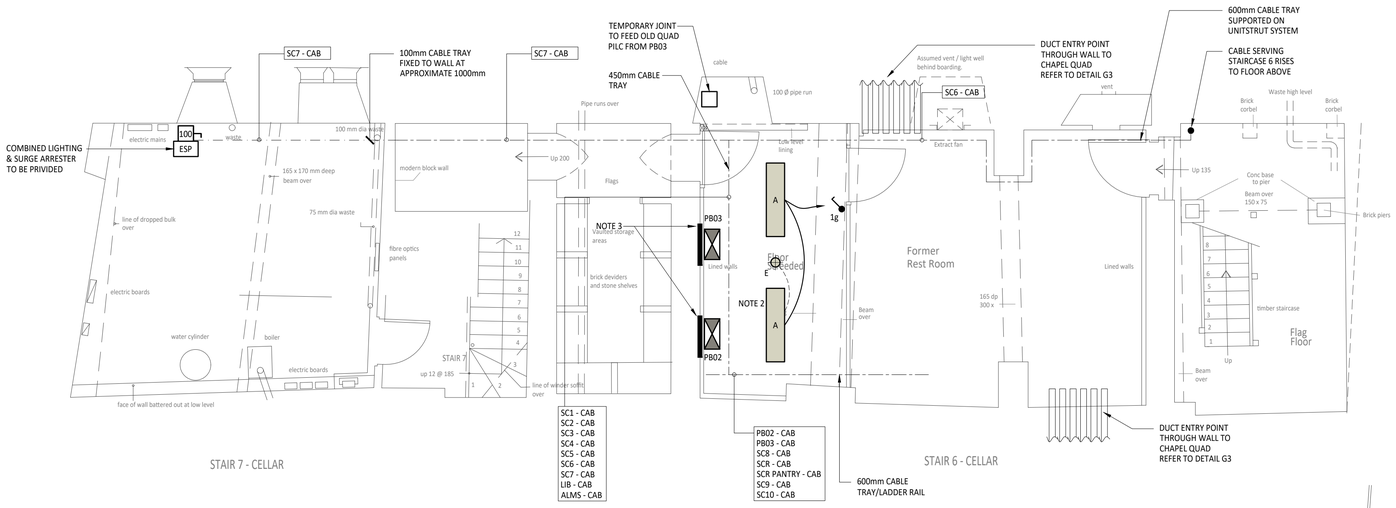
DRAWING NOTES

1. THIS SERVICES DRAWING IS TO BE READ IN CONJUNCTION WITH QODA'S, THE ARCHITECTURAL & STRUCTURAL ENGINEER'S SPECIFICATION / DRAWINGS.
2. NEW LIGHTING & EMERGENCY LIGHTING TO SERVE NEW SWITCH ROOM. EXISTING LIGHTING CIRCUIT TO BE ADAPTED LOCALLY TO SERVE NEW LIGHTING.
3. COLLEGE TO INSTALL ADDITIONAL TIMBER ON LINED WALL FOR MOUNTING OF NEW PANEL BOARDS.



STAIR 6 - GROUND FLOOR



QODA
LONDON
BIRMINGHAM
OXFORD

Client: PEMBROKE COLLEGE OXFORD

Project:
LV DISTRIBUTION UPGRADES
PEMBROKE COLLEGE
OXFORD
OX1 1DW

Drawing Title:
ELECTRICAL SERVICES
LV DISTRIBUTION LAYOUT
STAIRCASE 6 & 7

DO NOT SCALE

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0mm 50mm 100mm

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