



Arboricultural Impact Assessment

St Margaret's Business Park, Twickenham

 Tyler Grange

2nd September 2020

Report No:	Date	Revision	Author	Checked
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Executive Summary

- S.1. This Arboricultural Impact Assessment has been prepared by Tyler Grange Group Limited on behalf of Godstone Developments Ltd to accompany a full planning application for new development at St Margaret's Business Park in Twickenham.
- S.2. This report provides details of a tree survey and assessment of arboricultural impact for the proposed development. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'.
- S.3. No trees of high arboricultural value, veteran or ancient trees are present to be affected by the proposed development. The survey identified 11no. trees on the site the one tree located off-site adjacent to the development area. The trees comprise an even mix of low and moderate arboricultural value classifications. They include established amenity plantings which are predominantly early mature since establishment as part of the existing car park's soft-landscaping scheme.
- S.4. A provisional Tree Preservation Order was administered to all trees within the site boundary in October 2019. It is understood that the Order may have expired given its six-month provisional basis, unless it has been confirmed within that period. The site is not located within a Conservation Area.
- S.5. 10no. trees located within the site boundary require removal to accommodate the proposed scheme of 4no. residential dwellings with associated car parking and landscaping. A single tree located on-site can be retained however its replacement is considered appropriate due to its poor health. An off-site tree will be retained and protected as part of the development.
- S.6. There are opportunities for replacement tree planting at the site boundaries subject to agreement of a new soft-landscaping scheme. It is anticipated that the required tree losses will exceed the number of new on-site tree planting and therefore financial contributions for off-site tree planting may be required in line with local planning policy.

Section 1: Introduction

Purpose

- 1.1. This Arboricultural Impact Assessment report has been prepared by Tyler Grange Group Limited on behalf of Godstone Developments Ltd to accompany a full planning application for new development at St Margaret's Business Park in Twickenham.
- 1.2. Full planning permission is sought for development of four residential dwellings (Class C3) with associated parking, access, and landscaping. The proposals will include the removal of the existing car park and clearance of the surrounding trees. The proposed scheme is shown at **Appendix 1**.
- 1.3. The application is to be submitted to the London Borough of Richmond upon Thames (LBRT). LBRT's local planning policy and national planning policy pertinent to trees is set out at **Appendix 2**. Arboricultural matters were discussed with LBRT Officers given the required impacts on trees to accommodate the proposed development. No formal pre-application comments have been received ahead of the planning submission, however, discussions at the pre-application meeting noted that the majority of trees will need to be removed, and therefore a replacement strategy must be agreed in line with item 3 of local policy LP 16. This involves a monetary valuation of the trees to be removed to agree a financial contribution for new off-site planting via a Section 106.
- 1.4. This report provides details of a tree survey of the site and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (hereafter referred to as BS5837).

Section 2: Baseline Information

Site Description

- 2.1 The application site boundary is demarcated by the red line as illustrated on the Tree Constraints Plan (TCP) located at the rear of this report (**See Plan 1**). The site comprises an area of car parking which is bound by trees and soft landscaping to the north, east and west.

Tree Survey Summary

- 2.2 The tree survey was undertaken by a suitably qualified tree consultant on the 9th August 2020. The survey was completed in accordance with BS5837 and the methodology as detailed at **Appendix 3**. A measured topographical survey (supplied by others) was used to inform the location of trees and their surrounding context.
- 2.3 The distribution of the trees surveyed is illustrated on the **TCP** together with details of their constraints to new development in accordance with BS5837, including:
- Tree Quality Gradings;¹
 - Root Protection Areas (RPA's);²
 - Tree canopy spreads;³
 - Tree Shading.⁴
- 2.4 Findings for each of the trees surveyed are detailed in the Tree Survey Schedule (**See Appendix 5**). This provides a tabulated record of the trees surveyed, including reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.
- 2.5 The survey identified a total of 12no. individual trees (trees T1 – T12). 10no. trees are located within the application site (T1 – T11) and a single tree is located outside the application site (T12).
- 2.6 The trees include predominantly early mature amenity plantings, which have established as part of the car park's boundary soft landscaping scheme. Tree T12 is located within a pavement adjoining Winchester Road.
- 2.7 The trees were observed to be in fair to good condition overall, with no major structural or physiological defects. Tree T7 was noted in poor condition as a result of unsympathetic canopy management and defects to its main stem.
- 2.8 The trees surveyed have been categorised using the 'cascade chart for tree quality assessment' (see **Appendix 3**) recommended by the BS5837. Grading subcategories (1, 2 and 3) are intended to reflect the arboricultural, landscape and cultural values, respectively.

¹ The value of arboricultural features surveyed in accordance with the methodology set-out in Appendix 3.

² A 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. See further explanation at Appendix 3.

³ Dimensions of the trees crown spread and clearance from ground level. See further explanation at Appendix 3.

⁴ Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development. See further explanation at Appendix 3.

- 2.9 The grading system allows informed decisions to be made concerning the design and impact of potential development in relation to the arboricultural value of the trees surveyed. The category gradings for each survey entry is detailed in **Table 1** below.

	Category U	Category A	Category B	Category C
Individual Trees	T7	None	T1, T2, T3, T5 and T6	T4, T6, T8, T9, T10 and T12
Groups of Trees	None	None	None	None
Hedgerows	None	None	None	None
Woodlands	None	None	None	None

Table 1: Category Grading of Arboricultural Features.

- 2.10 No trees were identified as veteran or ancient in terms of age class, nor are any considered to be of high (Category A) arboriculture value.
- 2.11 Trees of moderate arboricultural value (Category B) are denoted by a 'Blue' tree canopy outline as illustrated on the TCP. They include those with a degree of maturity and those with limited to no defects. They provide a moderate degree of visual amenity to the site and its locale, albeit remain as unremarkable specimens.
- 2.12 Trees of low arboricultural value (Category C) trees are denoted by a 'Grey' tree canopy outline as illustrated on the TCP. They include those with limited longevity due to defects noted and those that provide a limited contribution to visual amenity.
- 2.13 Tree T7 (Category U) is denoted by a 'Red' tree canopy outline as illustrated on the TCP. The tree is recommended for replacement due to its conditions irrespective of the proposed development.

Tree-related Designations

- 2.14 Following a desktop search of available mapping and correspondence with RBRT, tree-related designations pertinent to trees and new development is provided in the **Table 2** below.

Designation Type	TG Tree Reference Number(s)
Tree Preservation Order ⁵	Trees T1 – T10 are included within TPO ref. T1049. It is noted that the order took effect on a provisional basis on the 18 th October 2019. It was to continue in force, on a provisional basis, for 6 months or until the Order was confirmed by the council, whichever came first. It is understood that the order has now expired, unless the council have confirmed the Order before the 6 months lapsed.
Conservation Area ⁶	None
Ancient Woodland ⁷	None
Woodland Habitat ⁸	None

Table 2: Tree-related Designations.

⁵ A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the any works and damage to trees (with some exceptions) without the local planning authority's written consent. More information can be found online

<https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>

⁶ Trees in a conservation area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. More information can be found online

<https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>

⁷ Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for ancient woodland on or adjacent to a site.

⁸ Spatial data of woodlands identified under the Priority Habitat Inventory (England) Published by Natural England. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for woodland on or adjacent to a site.

Section 3: Arboricultural Impact Assessment

- 3.1. The arboricultural impact assessment is informed by a composite overlay of the proposed site plan and the TCP. The overlay is illustrated on the Tree Retention and Removal Plan (TRRP) located at the rear of this report (**See Plan 2**).

Tree Retention and Removal

- 3.2. The TRRP identifies existing trees to be retained or removed as part of the proposed development.
- 3.3. Trees to be retained include tree T12 located off-site within the pavement of Winchester Road. Tree T7 can be retained as part of the development however its replacement is recommended due to its poor condition. Trees to T1, T2, T3, T4, T5, T6, T8, T9, T10 and T11 require removal to facilitate the development, either due to direct conflicts with proposed built form or due to the close proximity of the development to the trees.

Recommendations for Tree Replacement

- 3.4. A replacement tree planting strategy will need to be secured as part of the proposed development in line with item 3 of local planning policy LP 16.
- 3.5. Through the application process and formal consultation with LBRT offices, it is recommended that a detailed soft-landscaping plan is agreed to include new tree planting where space permits on the site. There is potential for new tree planting along the eastern boundary along Winchester Road and Godstone Road, which will require careful thought as to appropriate species selection and underground constraints. Given the proximity of the development, fastigate formed trees are likely to be most appropriate in providing new tree cover whilst avoiding future conflicts with the new residential properties. A new 'focal point' tree can be provided to replace tree T12.
- 3.6. Once the extent of new on-site tree planting has been determined, financial contributions for additional tree planting required off-site will need to be agreed with LBRT as part of a Section 106 agreement. A Capital Asset Valuation of Amenity Trees (CAVAT) of trees to be removed will be required to determine the level of financial contribution, whilst taking into account any tree planting delivered on-site.

Retained Trees and Construction Mitigation

- 3.7. The edge of the RPA of retained tree T12 extends into the proposed development area and requires protection from harm during the demolition and construction stages.
- 3.8. A new pedestrian access will be formed from the pavement of Winchester Road adjacent to tree T12. This will include the removal of the existing low-level retaining wall and creation of a new block paved surface over the soft landscaped strip at the edge of the tree's RPA. The removal of the retained structure must be undertaken sensitively, and the footpath constructed above-soil to avoid damage to the tree's rooting environment.
- 3.9. It is recommended that an Arboricultural Method Statement (AMS) is prepared to set out the tree protection measures for tree T12 should consent be granted. The AMS can be secured by way of a suitable worded planning condition and agreed with LBRT ahead of works commencing on-site.
- 3.10. It is recommended that the AMS includes the following key items in accordance with BS5837:
- A schedule and specification of tree removal;

- Specifications for tree protection barriers and ground protection for tree T12;
- Procedures for sensitive working within the RPA of T12 (during demolition and construction);
- Arboricultural site monitoring (where required); and
- A detailed Tree Protection Plan.

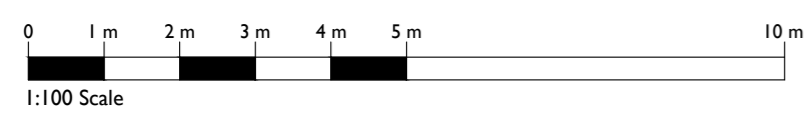
Conclusion

- 3.11. The removal of all trees located on-site is proposed to accommodate the development. This includes five moderate value trees and five low value trees. One tree located off-site within the adjoining pavement will be retained and another tree in poor condition is recommended for replacement irrespective of the proposed development.
- 3.12. The trees to be removed offer a low to moderate degree of visual amenity to the site and its locale and therefore a replacement tree planting will be necessary to demonstrate proportionate compensation in accordance with local planning policy.
- 3.13. It is recommended that a soft-landscaping plan is prepared by planning condition to include new tree planting on the site where space permits. Due to the limited space for new tree planting within the application area, financial contributions for off-site tree planting is likely to be required. The amount of contribution will need to be agreed once the proposed soft-landscaping plans are finalised and a CAVAT assessment of trees to be removed is completed. It is recommended that these elements are agreed with LBRT as part of the planning application process and secured by a Section 106 agreement.
- 3.14. Retained tree T12 will require protection during the demolition and construction stages of the development. This report identifies where sensitive working will be required near to the tree together with recommendations for how this can be undertaken without adverse harm to its root protection area. Should consent be granted, it is recommended that an Arboricultural Method Statement is prepared for contractor use during the demolition and construction stage of the development.

Appendix 1: Proposed Site Plans



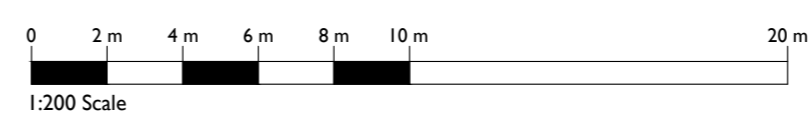
Ground Floor Layouts



1:100 @ A1P



Site/Block Plan

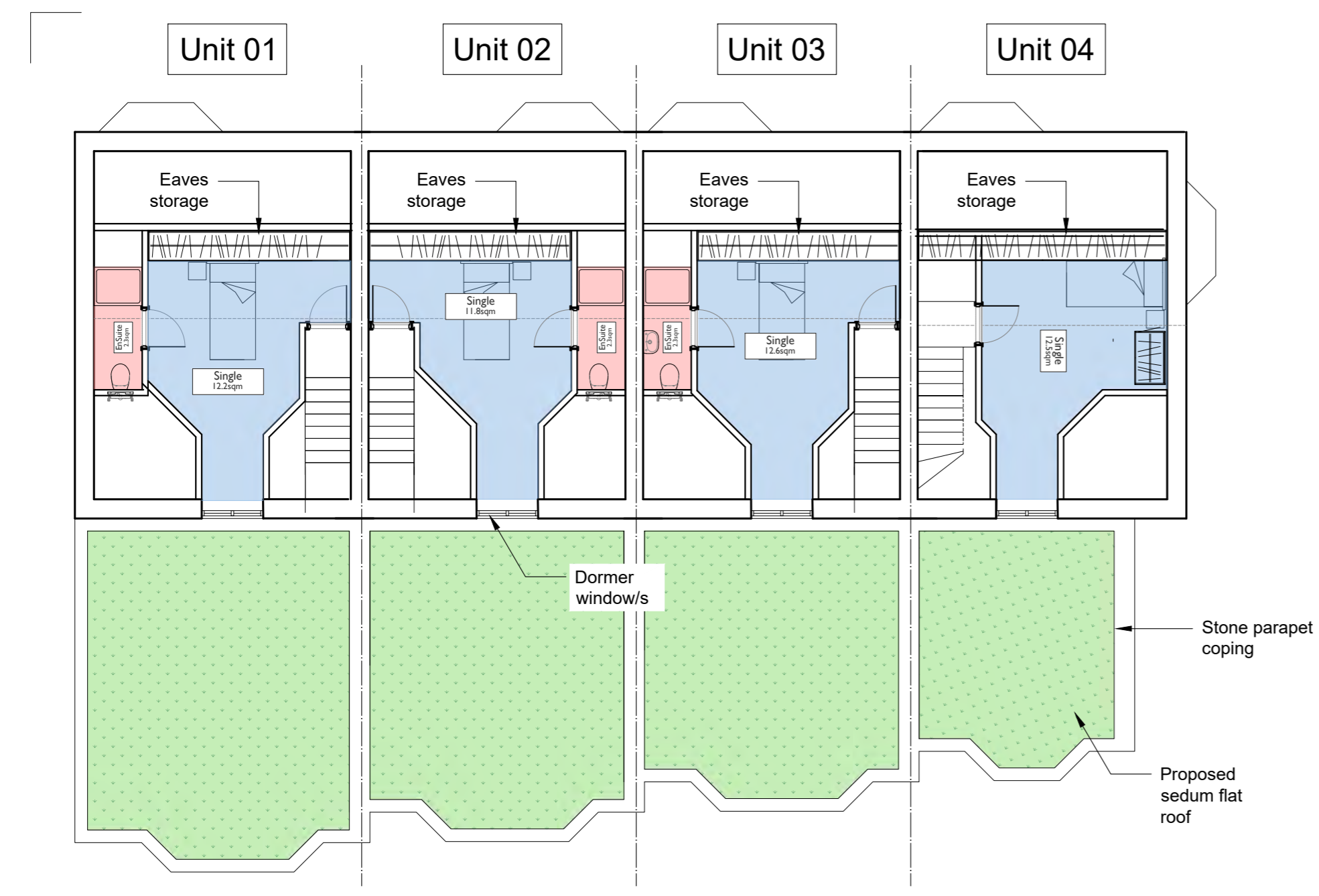


1:200 @ A1P



First Floor Layouts

1:100 @ A1P



Second Floor Layouts

1:100 @ A1P



Proposed 1800x840x1090mm Bike Store

ISSUED FOR PLANNING

TITLE
ST MARGARET'S BUSINESS CENTRE

CLIENT
SHEEN LANE DEVELOPMENTS LTD

DESCRIPTION
Proposed Layouts

date: AUG 2020	scale: 1:100 @ A1P	project:	drawing: P-001	revision: B
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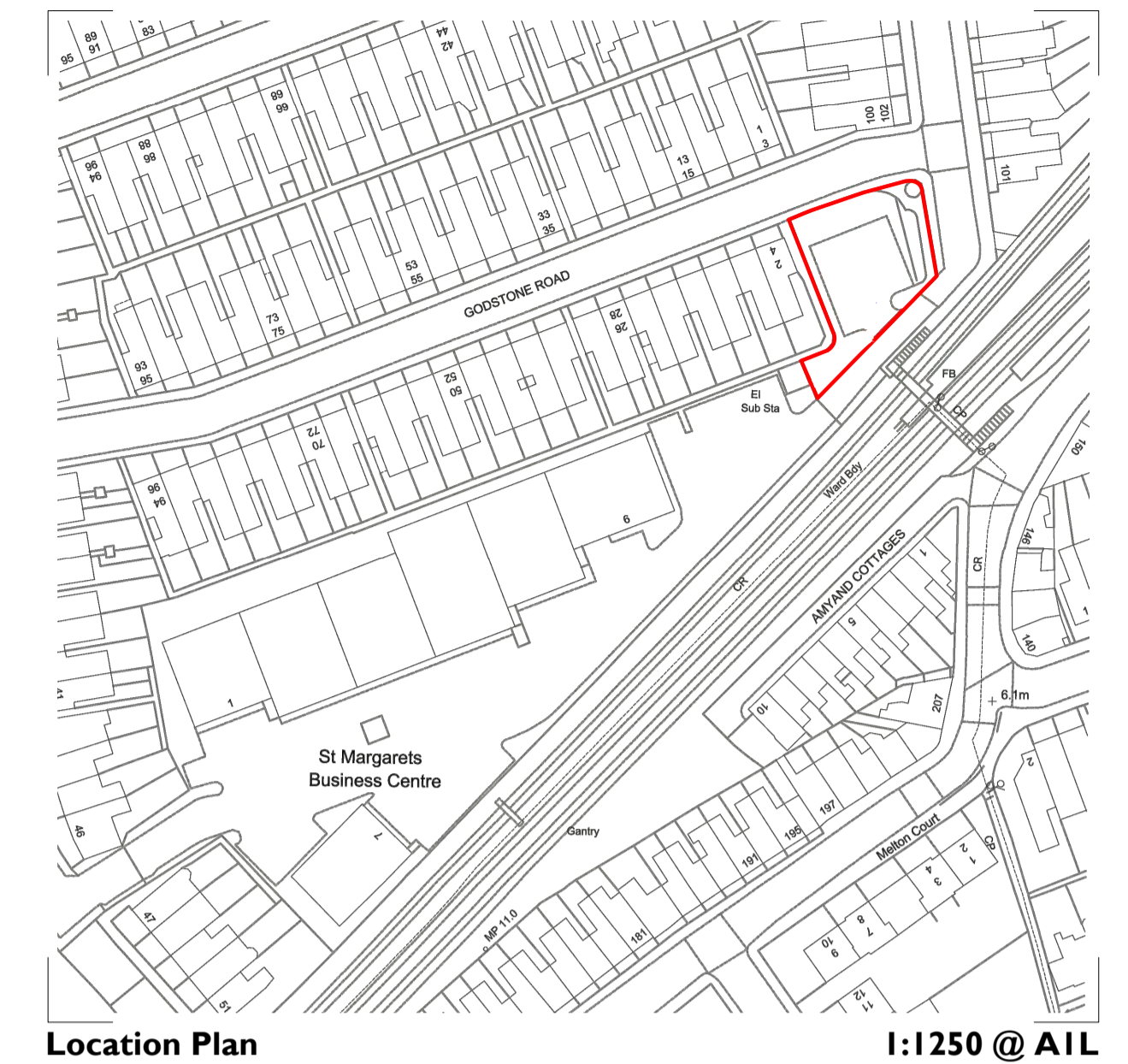
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Proposed Godstone Road (North-Facing) Elevation

Paneled timber front doors with glazed toplight over

1:50 @ A1L



Location Plan

1:1250 @ A1L



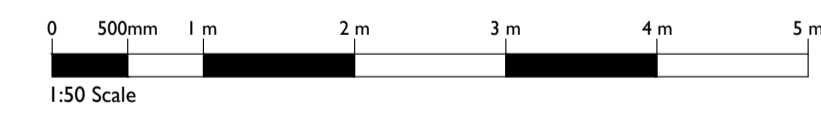
Proposed Drummond Place (South-Facing) Elevation

1:50 @ A1L



Site Plan

1:200 @ A1L



Proposed Godstone Road (North-Facing) Elevation

(Render)



Proposed Drummond Place (South-Facing) Elevation

(Render)

ISSUED FOR PLANNING

TITLE
ST MARGARET'S BUSINESS CENTRE

CLIENT
SHEEN LANE DEVELOPMENTS LTD

DESCRIPTION
Proposed Front & Rear Elevations

date:	scale:	project:	drawing:	revision:
AUG 2020	1:50 @A1L		P-002	A

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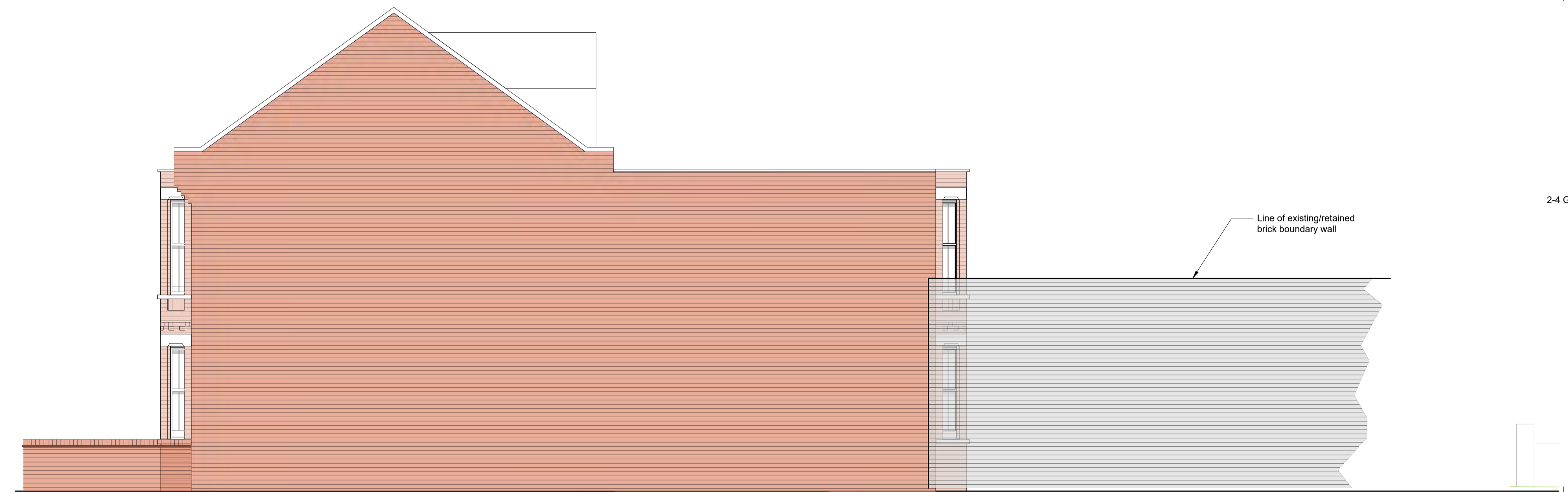
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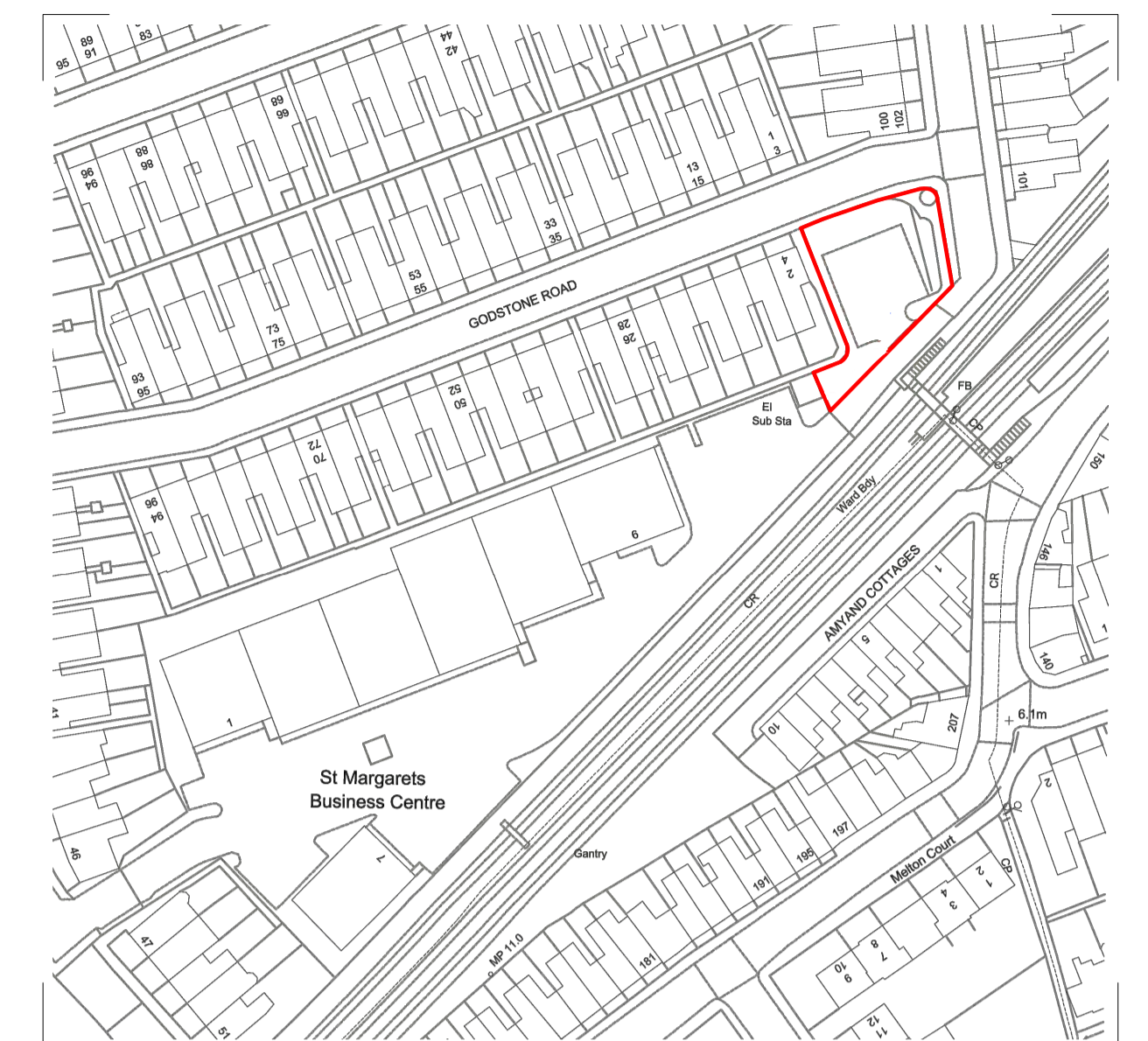
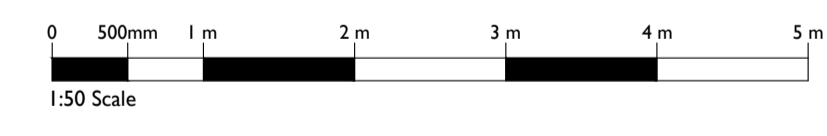
Proposed Winchester Road (East-Facing) Elevation

1:50 @ A1P



Proposed Alleyway/Flank (West-Facing) Elevation

1:50 @ A1P



Location Plan

1:1250 @ A1P



Site Plan

1:200 @ A1L



ISSUED FOR PLANNING

TITLE
ST MARGARET'S BUSINESS CENTRE

CLIENT
SHEEN LANE DEVELOPMENTS LTD

DESCRIPTION
Proposed Side Elevations

date:	scale:	project:	drawing:	revision:
AUG 2020	1:50 @A1L		P-003	A

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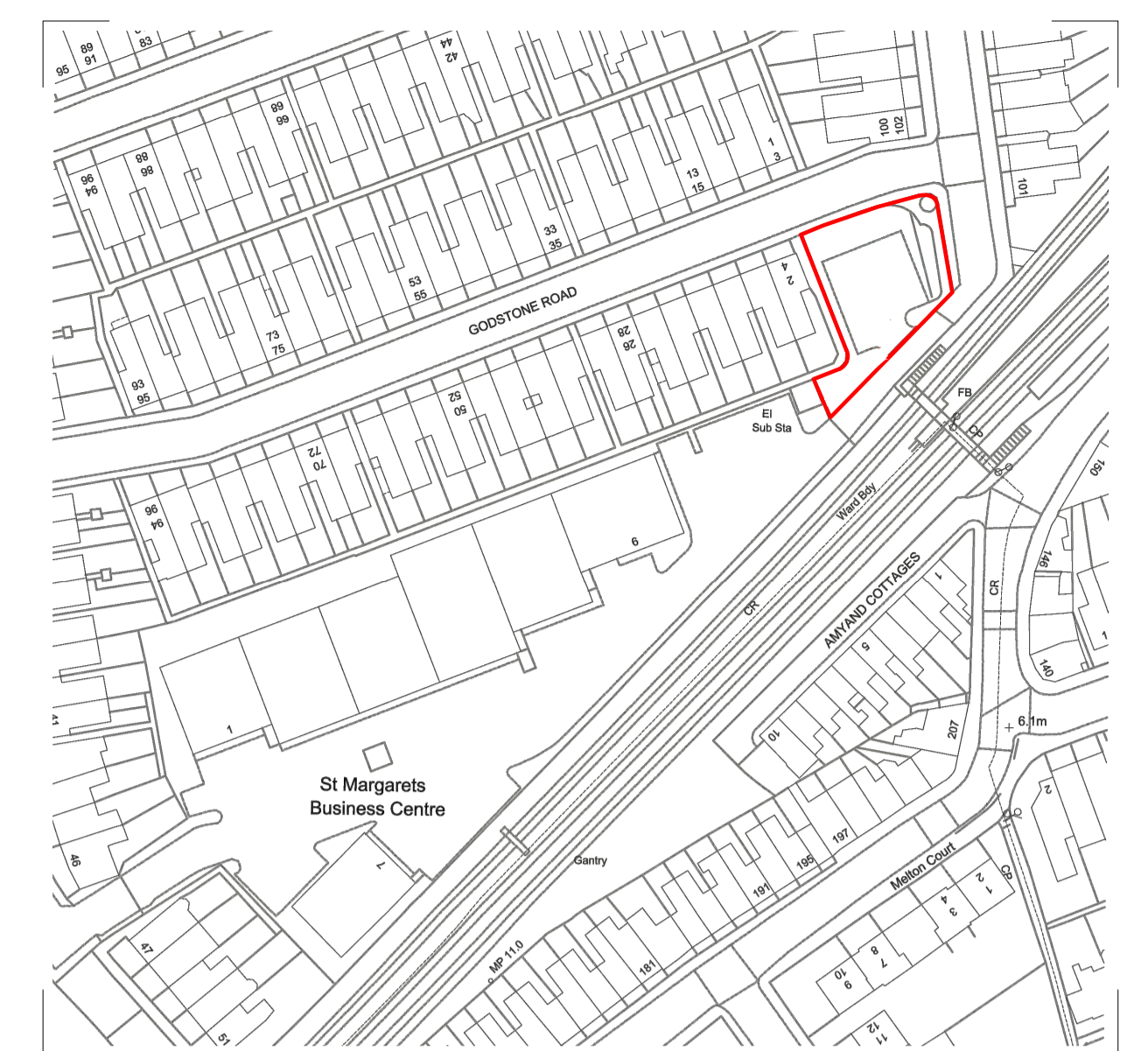
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Proposed Godstone Road (North-Facing) Context Elevation

1:100 @ A1L



Location Plan

1:1250 @ A1L



Proposed Drummond Place (South-Facing) Context Elevation

1:50 @ A1P



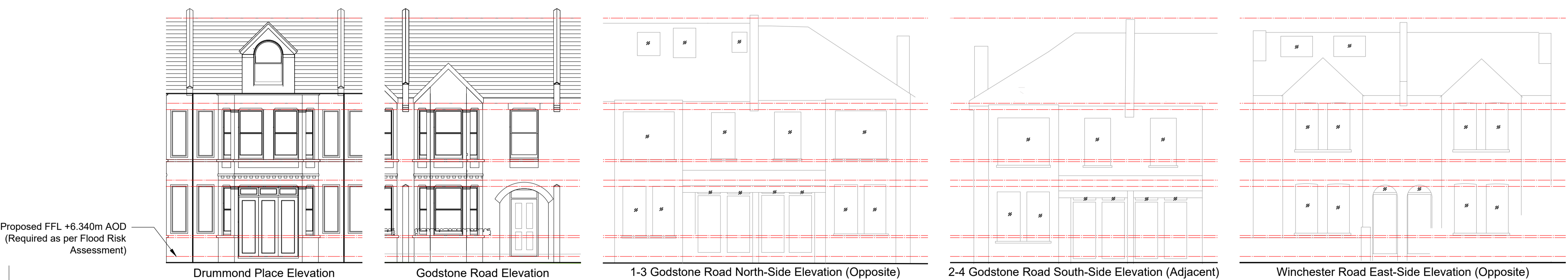
Proposed Winchester Road (East-Facing) Context Elevation

1:100 @ A1L



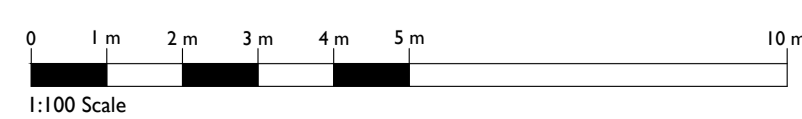
Site Plan

1:200 @ A1L



Levels Comparison (Proposed Development/Surrounding Properties)

1:100 @ A1L



ISSUED FOR PLANNING

TITLE
ST MARGARET'S BUSINESS CENTRE

CLIENT
SHEEN LANE DEVELOPMENTS LTD

DESCRIPTION
Proposed Context Elevations

date:	scale:	project:	drawing:	revision:
AUG 2020	1:100 @ A1L		P-004	A

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Appendix 2: Planning Policy Context

Appendix 2: Planning Policy Context

- A2.1. Under the Town and Country Planning Act 1990 (as amended) the requirement to consider trees as part of development is a material planning consideration and will be taken into account in the determination of planning applications. Applicable arboricultural planning policy that relates to the site is set out below at a National and Local level.

National Planning Policy

- A2.2. The National Planning Policy Framework (NPPF) is a material consideration in planning decisions and outlines the Government's planning policies for England, setting out how these are expected to be applied. The consideration for existing trees and woodlands in the context of planning and new development is set out within Section 15 'Conservation and Enhancing the Natural Environment'.
- A2.3. Paragraph 170 provides a series of prerequisites to inform how planning policies and decisions should contribute to and enhance the natural and local environment. This includes "*protecting and enhancing valued landscapes*" and "*recognising the intrinsic character and beauty of the countryside*". The value of ecosystem services is also noted, including the "*economic and other benefits of the best and most versatile agricultural land, and of trees and woodland*".
- A2.4. Paragraph 170 also recognises the consideration for "*minimising impacts on and providing net gains for biodiversity*". This includes the need to establish cohesive ecological networks that are "*more resilient to current and future pressures*".
- A2.5. Paragraph 171 addresses the need to take a "*strategic approach to maintaining and enhancing networks of habitats and green infrastructure*" adding that plans should be made for the "*enhancement of natural capital at the catchment or landscape scale across local authority boundaries*".
- A2.6. Paragraph 174 includes ways in which biodiversity should be protected and enhanced, such as plans that "*identify, map and safeguard components of local wildlife-rich habitats*", as well as "*wildlife corridors and stepping stones that connect them*".
- A2.7. Paragraph 175 highlights a series of principles that local planning authorities should apply when determining planning applications, stating that "*if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused*".
- A2.8. Paragraph 175 also adds that "*development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensatory strategy exists*".
- A2.9. At a national level, the consideration for trees is recognised in the context of their contribution to green infrastructure and biodiversity networks, and also in terms of their contribution in landscape terms to the local setting and character. Great weight is also applied to the importance of conserving existing aged trees, including ancient woodland and trees and trees considered to be 'veterans'. No ancient woodland, ancient trees or veteran trees were identified within influence of

the application site and therefore para 175 is not considered applicable to the application as it relates to these features.

London Plan (2016)

A2.10. Policy 7.21 Trees and Woodlands of the London Plan reads:

“Strategic

A Trees and woodlands should be protected, maintained, and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor has produced supplementary guidance on Tree Strategies to guide each borough’s production of a Tree Strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to a green infrastructure strategy.

Planning decisions

B Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of ‘right place, right tree’. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.

LDF preparation

C Boroughs should follow the advice of paragraph 118 of the NPPF to protect ‘veteran’ trees and ancient woodland where these are not already part of a protected site. D Boroughs should develop appropriate policies to implement their borough tree strategy.”

Local Plan (2018)

A2.11. Policy LP16 ‘Trees, Woodlands and Landscape’ of the adopted Local Plan for LBRT (2018) reads:

“A. The Council will require the protection of existing trees and the provision of new trees, shrubs and other vegetation of landscape significance that complement existing, or create new, high quality green areas, which deliver amenity and biodiversity benefits.

B. To ensure development protects, respects, contributes to and enhances trees and landscapes, the Council, when assessing development proposals, will:

Trees and Woodlands

1. resist the loss of trees, including aged or veteran trees, unless the tree is dead, dying or dangerous; or the tree is causing significant damage to adjacent structures; or the tree has little or no amenity value; or felling is for reasons of good arboricultural practice; resist development that would result in the loss or deterioration of irreplaceable habitat such as ancient woodland;

2. resist development which results in the damage or loss of trees that are considered to be of townscape or amenity value; the Council will require that site design or layout ensures a harmonious relationship between trees and their surroundings and will resist development which will be likely to result in pressure to significantly prune or remove trees;

3. require, where practicable, an appropriate replacement for any tree that is felled; a financial contribution to the provision for an off-site tree in line with the monetary value of the existing tree to be felled will be required in line with the 'Capital Asset Value for Amenity Trees' (CAVAT);

4. require new trees to be of a suitable species for the location in terms of height and root spread, taking account of space required for trees to mature; the use of native species is encouraged where appropriate;

5. require that trees are adequately protected throughout the course of development, in accordance with British Standard 5837 (Trees in relation to design, demolition and construction – Recommendations).

The Council may serve Tree Preservation Orders or attach planning conditions to protect trees considered to be of value to the townscape and amenity and which are threatened by development.
Landscape

1. require the retention of important existing landscape features where practicable;

2. require landscape design and materials to be of high quality and compatible with the surrounding landscape and character; and

3. encourage planting, including new trees, shrubs and other significant vegetation where appropriate.”

Appendix 3: Tree Survey Methodology, Constraints, Mapping and Limitations

Appendix 3: Tree Survey Methodology, Constraints, Mapping and Limitations

Field Work

- A3.1 In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (1.5m).
- A3.2 Measured topographical survey data (supplied by others) was used to inform tree locations their surrounding context. Any trees not identified on the topographical survey are prefixed with (*) and their locations have been approximated using measurements during the tree survey and further informed by aerial photography where required.
- A3.3 The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. For further clarification please refer to the tree survey explanatory notes in below.

Tree Numbers

'T' prefixes have been used to identify individual trees and commence with 'T1'.

'G' prefixes have been used to identify groups of trees.

'H' prefixes have been used to identify hedgerows.

'W' prefixes have been used to identify woodlands.

Species

- A3.4 Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

- A3.5 The stem diameter is measured at 1.5m above ground level and given in millimetres (mm). Tree heights are measured in metres (m) using a clinometer where access and land topography allowed. In instances where access to tree's stem and height measurements were not possible, the dimensions have been estimated by eye.

Crown Spread and Height of Crown Clearance

- A3.6 Radial crown spread is measured in metres and is listed for each of the four cardinal points where access has been possible to obtain a measurement. Where access was not possible to measure the spread of the canopy, such distances have been estimated by eye or informed by aerial photography.
- A3.7 The measured canopy shapes have been plotted on the **Tree Constraints Plan** at the four cardinal points. For groups of trees, the extent of the canopy has been measured as an average across the group and plotted using the topographical survey mapping. In some instances, Tyler Grange will use aerial photography to inform the canopy spread of larger tree groups and woodlands where topographical data is limited for such features.
- A3.8 The distance between the ground level and the first significant branch or radial tree crown, whichever is the lower, has been measured in metres.

Age Class

A3.9 The age of each tree is defined as follows:

Young - within the first third of reaching full maturity;

Semi-Mature - within the second third of reaching full maturity;

Early-Mature - within the last third of reaching full maturity;

Mature - specimen at full maturity; and

Veteran – tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Physiological and Structural Condition

A3.10 The physiological or structural condition of each tree is defined as either; good, fair, poor or dead. For each tree, where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc.

A3.11 An assessment of a tree's physiological condition is defined as:

Good – fully functioning biological system showing expectant vitality for the species i.e. normal bud growth, leaf size, crown density and wound closure.

Fair – fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure.

Poor – a biological system with limited functionality showing clear physiological decline, disease or significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure.

Dead – tree observed to fully dead with no living parts.

A3.12 An assessment of a tree's structural condition is defined as:

Good – no significant structural defects.

Fair – structural defects which could be alleviated through remedial tree surgery or arboricultural management practices

Poor – structural defects which cannot be alleviated through tree surgery or arboricultural management practices.

Tree Quality Gradings

A3.13 The value of trees has been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See **Appendix 4**). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values, respectively.

Root Protection Areas

- A3.14 The **Tree Constraints Plan** shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been plotted and calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the tree stem diameter dimensions obtained during the site visit.
- A3.15 Plotted RPAs serve as a 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.
- A3.16 Where pre-existing site conditions or other factors indicate that rooting may occur asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution observed on-site. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:
- a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);
 - b) topography and drainage;
 - c) the soil type and structure; and
 - d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.
- A3.17 The plotted RPAs have therefore informed the design of the proposed development where possible. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading

- A3.18 The distribution of tree canopy cover on and within influence of the site is illustrated on the **TCP**. Canopies have been plotted at cardinal points for individual and groups of trees. The Tree Survey Schedule included at **Appendix 5** to the rear of this report lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.
- A3.19 The principal tree shadow constraints are shown on the **TCP** and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.
- A3.20 Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Limitations

- A3.21 The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.
- A3.22 No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

- A3.23 Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- A3.24 The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.
- A3.25 A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.

Appendix 4: BS 5837:2012 Cascade Chart for Tree Quality Assessment



Appendix 4: BS 5837:2012 Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL				
Category and Definition	Criteria			Identification on Plan
<p>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</p>	<p>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 (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. Trees infected with pathogens of significance to the health and/or safety of other trees nearby or very low-quality trees suppressing adjacent trees of better quality. (NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve)</p>			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	Criteria - Subcategories			Identification on Plan
	1. Mainly Arboricultural Values	2. Mainly Landscape Values	3. Mainly Cultural Values, including Conservation	
<p>Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	<p>Trees 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)</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</p>	LIGHT GREEN

TREES TO BE CONSIDERED FOR RETENTION				
<p>Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	<p>Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial 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.</p>	<p>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</p>	<p>Trees with material conservation or other cultural benefits.</p>	<p>MID BLUE</p>
<p>Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm</p>	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.</p>	<p>Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or temporary/transient landscape benefit.</p>	<p>Trees with no material conservation or other cultural value.</p>	<p>GREY</p>

Appendix 5: Tree Survey Schedule (13340/TSS01)

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m ²)
				N	E	S	W								
T1	Lime	9m	500	2.50	4.00	3.00	3.00	1.00	Mature	Fair - Good	Fair - Good	B.2	Lapsed pollard, heavy ivy cladding. Hard standing and retaining structure (0.5m drop) to west of stem, car park to east. Conflicts with building to west - suggest crown reduction.	6.0	113
T2	Lime	12m	370	2.50	5.00	4.00	3.50	0.50	Mature	Fair - Good	Fair	B.2	Formerly pollarded with compacted crown owing to stem density at the car park edge.	4.4	62
T3	Lime	10m	450	4.00	3.50	2.00	3.50	1.00	Mature	Fair - Good	Fair - Good	B.2	Roadside planting. Hardstanding to immediate north west of stem. Occluded wounds, formerly pollarded. Canopy conflicts owing to stem density along the car park edge.	5.4	92
T4	Hornbeam	8m	200	3.00	2.00	3.00	2.00	2.00	Semi-mature	Fair - Good	Fair	C.2	Car park edge shrub bed planting. Compacted crown with minor ivy cladding, otherwise typical form with no significant defects, suppressed by adjacent trees.	2.4	18
T5	Hornbeam	9m	270	4.00	4.50	4.00	2.00	1.80	Early Mature	Fair - Good	Good	B.2	Rounded clear stem form. Shrubby understorey with canopy conflicts to west (T4) otherwise good vigour and well-balanced with no significant defects.	3.2	33
T6	Hornbeam	7m	200, 100, 100	2.50	3.50	3.00	4.00	1.80	Semi-mature	Fair - Good	Fair	C.2	Car park edge shrub bed planting. Compacted crown with minor ivy cladding, otherwise typical form with no significant defects, included bark union at 1m.	3.6	41
T7	Cherry	5m	250	3.50	2.50	2.50	2.00	2.00	Mature	Fair	Poor	U	Off-site roadside cherry within dedicated brick planting bed. Past pruning wounds across lower canopy which has been lifted, large wound on trunk with exposed heartwood and decay, canopy previously topped. Limited future potential.	3.0	28
T8	Hornbeam	8m	200	3.00	3.00	2.00	2.00	3.00	Early Mature	Fair	Poor - Fair	C.2	Prominent stem wound to west face of stem with heartwood exposed. Dieback and hanging deadwood, historic fire damage.	2.4	18
T9	Ash	10m	200, 190, 200	6.00	6.00	5.00	4.00	3.00	Early Mature	Fair - Good	Fair	C.2	Multi-stemmed north leaning Ash with 3 principle leaders. Contained to north by brick planting bed structure. Dominant over adjacent cherry to north east, failed branch union with branch hung-up in canopy. Remove failed branch.	4.1	53

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T10	Hornbeam	8m	250	3.00	3.50	2.50	4.00	1.50	Early Mature	Fair	Poor - Fair	C.2	Minor ivy cladding. Canopy biased to west. Occluded wounds across lower crown with heartwood exposed, stubs and dieback, historic fire damage.	3.0	28
T11	Hornbeam	9m	320	4.00	4.00	5.00	4.00	1.80	Early Mature	Fair - Good	Fair	B.2	Crown lifted over car park bays. Dense and rounded canopy, girdling root, included union with competing twin leader.	3.8	46
T12	Cherry	6m	230	5.00	4.00	4.50	2.00	2.00	Early Mature	Fair	Fair	C.2	Street tree; excessively crown lifted; resin bleeds on lower trunk; suppressed as overtopped by adjacent tree.	2.8	24

Plans

13340/P01b: Tree Constraints Plan

13340/P03b: Tree Retention and Removal Plan



- Site Boundary
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees in Poor Condition
- Root Protection Areas
- Tree Shading Constraints

B	Update Site Boundary	02.09.2020
A	Update Site Boundary	27.08.2020
Rev	Description	Date



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Project title
St Margaret's Business Centre

Drawing title
Tree Constraints Plan

PLAN TO BE PRINTED IN COLOUR

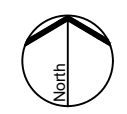
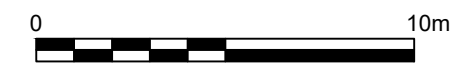
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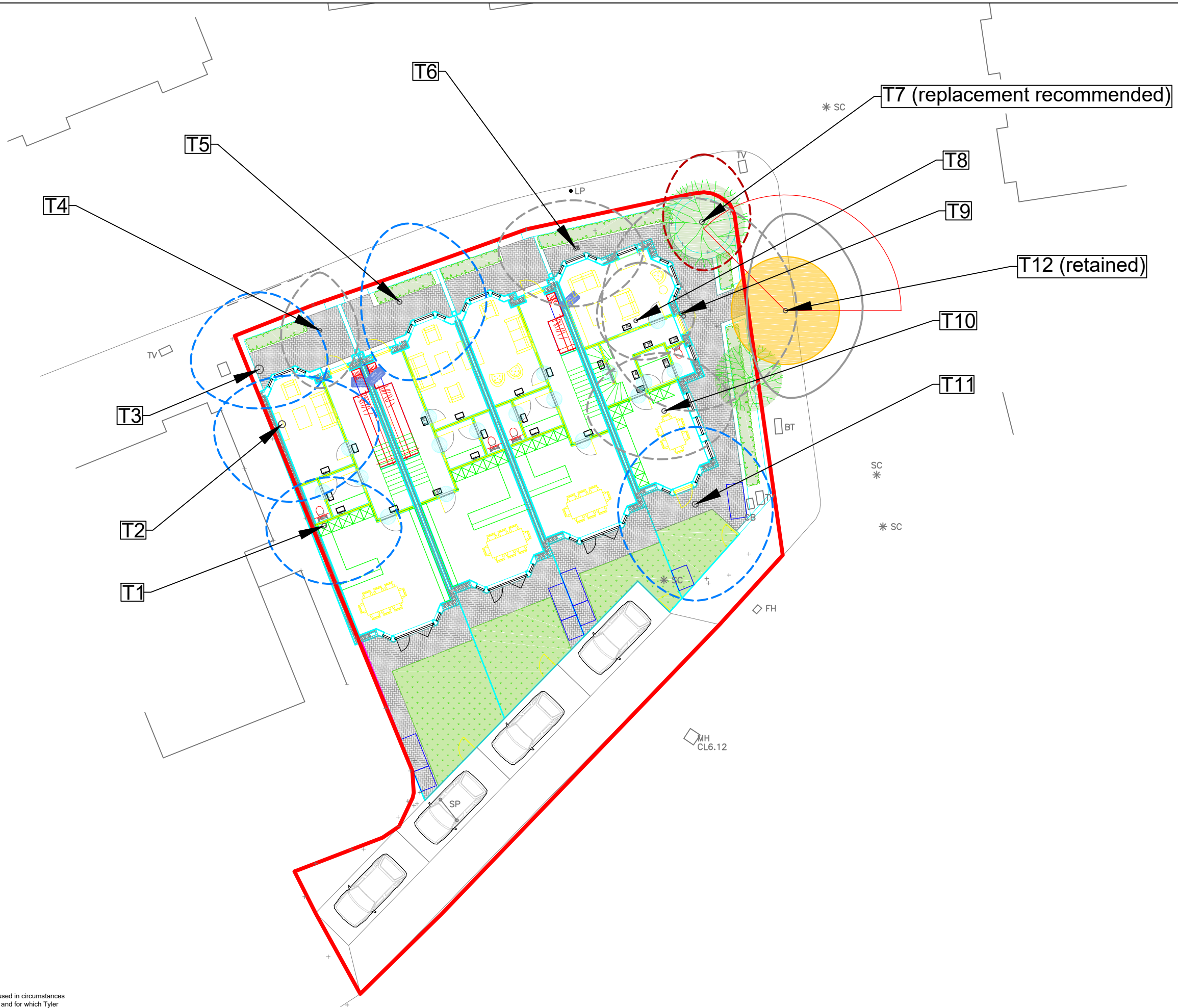
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- Site Boundary
- Category C Tree Retained
- Category B Trees to be Removed
- Category C Trees to be Removed
- Category U - Trees in Poor Condition
- Root Protection Areas
- Tree Shading Constraints

B	Update site boundary	02.09.2020
A	Update site boundary	27.08.2020
Rev	Description	Date



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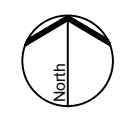
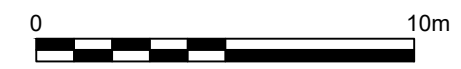
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