







Arborclimb  
Consultants

## Arboricultural Impact Assessment and Method Statement

**BS 5837:2012** Trees in relation to design,  
demolition and construction- Recommendations

**Project:** 100 & 88 Gray's Inn Road / 127 Clerkenwell Road  
**Report:** P30jrSept22FVo2\_AIA\_AMS  
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## 100 & 88 Gray's Inn Road / 127 Clerkenwell Road – Arboricultural Impact Assessment and Method Statement

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## 1.0 EXECUTIVE SUMMARY

- 1.1 Arborclimb Consultants were commissioned by Lawnmist Limited to undertake a tree survey and prepare an Arboricultural Impact Assessment and Arboricultural Method Statement at the site known as 100 & 88 Gray's Inn Road / 127 Clerkenwell Road, within London Borough of Camden, to the *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations* methodology<sup>1</sup>.
- 1.2 This document presents the findings of the tree survey and has been produced to support a planning application for full planning permission for a new building at 100 Gray's Inn Road & 127 Clerkenwell Road and refurbishment & extension of 88 Gray's Inn Road.
- 1.3 A visit was made to the site on 16 Sept 2022 to survey trees, hedges and vegetation following guidance in BS5837. The crowns and stems were inspected from the ground using the 'Visual Tree Assessment' (VTA) method; no invasive techniques were used at this stage.
- 1.4 The Tree Schedule (Appendix 2) contains details of all surveyed trees falling within the scope of this report, with a summary of the BS5837 tree categories given in Table 1.1.

**Table 1.1 BS5837 Tree survey categories**

Category	Individual Trees	Tree Group/Hedge	Total
A	0	0	0
B	8	0	8
C	0	1	1
U	1	0	1
<b>Total</b>	<b>9</b>	<b>1</b>	<b>10</b>

- 1.5 An assessment of the potential below and above ground impacts of the proposed development and recommendations to help avoid, minimise or compensate for these impacts are outlined within this report.
- 1.6 Through this assessment it has been confirmed that all existing site trees other than G1, are proposed to be retained as part of the site redevelopment, with G1 then removed as a result of direct conflict with proposed new building elements.
- 1.7 It was though noted that T1, (off site to the southeast) is in very poor physiological and structural condition and should be removed irrespective of any development works either on or off site. In line with arboricultural due diligence and best practice, the landowners (London Borough of Camden), have therefore been notified of its condition.
- 1.8 Finally, an Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP) have been produced to ensure all retained trees are adequately managed and protected throughout the construction phase.

## **2.0 INTRODUCTION**

### **OVERVIEW**

- 2.1 Arborclimb Consultants were commissioned by Lawnmist Limited to undertake a tree survey and prepare an Arboricultural Impact Assessment and Method Statement at the site known as 100 & 88 Gray's Inn Road / 127 Clerkenwell Road, within London Borough of Camden.
- 2.2 This document presents the findings of the tree survey and has been produced to support a planning application for full planning permission for a new building at 100 Gray's Inn Road & 127 Clerkenwell Road and refurbishment & extension of 88 Gray's Inn Road.
- 2.3 A site visit was made by Arborclimb Consultants on 16 Sept 2022 to survey all trees within and adjacent to the site following the approach set out in BS5837.
- 2.4 As required by the British Standard, an Arboricultural Impact Assessment has been undertaken to evaluate the constraints to the development from the existing trees both on and adjacent to the site using information gained from the BS5837 Tree Survey.
- 2.5 The methodology followed to complete the survey and prepare this report is provided in Appendix 1. Full details of the surveyed trees can be found in the Tree Schedule (Appendix 2). The Tree Constraints Plan (Appendix 3) presents the locations, crown spreads, root protection areas (RPAs) and BS5837 Categories of the surveyed trees against proposed layout.

### **THE DEVELOPMENT PROPOSALS**

- 2.6 The proposal involves the demolition (basement retained) of the existing 8 storey + 7 storey buildings (100 Gray's Inn Road and 127 Clerkenwell Road, respectively) and the erection of a 9 storey building to provide office and retail floorspace; roof-level amenity spaces; refuse and recycling storage facilities; cycle parking; servicing, plant and back of house areas; landscaping; highway improvements and other associated works.
- 2.7 The proposal also includes the refurbishment and extension of a 3 storey building (88 Gray's Inn Road).

### **THE EXISTING SITE**

- 2.8 The existing site contains 100 Gray's Inn Road & 127 Clerkenwell Road, 7 storey and 8 storey buildings, respectively, comprising of commercial office floorspace and ground floor retail. A service courtyard is located behind the building with a ramp leading to a basement carpark accessed via an entrance on Gray's Inn Road.
- 2.9 In the back courtyard of the site (adjacent to the Bourne Estate) includes 88 Gray's Inn Road a 4 storey commercial office building.

## **3.0 TREE SURVEY METHODOLOGY**

### **TREE LEGAL PROTECTION**

- 3.1 Trees within London Borough of Camden may be protected under the Town & Country Planning Act by a Tree Preservation Order (TPO) or by virtue of being within a Conservation Area.
- 3.2 A TPO makes it an offence to wilfully damage or destroy a protected tree and written permission from the Council must be obtained prior to undertaking any works to the tree. Similarly, if any stem on any tree in a Conservation Area is larger than 75mm diameter when measured at 1.5 metres above ground level it is automatically protected and required by law to notify the Council of any proposed works.
- 3.3 To determine whether any of the trees are protected by TPOs a search of the readily available data on London Borough of Camden website was undertaken. Additionally, the website map was reviewed to identify any local Conservation Areas that would add additional protection to the trees.

### **GEOLOGICAL CONDITIONS**

- 3.4 A review of the readily available Geology of Britain interactive map by the British Geological Society was undertaken to identify the bedrock geology and superficial deposits at the site.

### **SITE VISIT**

- 3.5 A site survey was undertaken on 16 Sept 2022 to survey trees, hedges and vegetation following guidance in the British Standard. The crowns and stems were inspected from the ground using the 'Visual Tree Assessment (VTA)' method; no invasive techniques were used at this stage.
- 3.6 The survey followed the methodology outlined in BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.
- 3.7 The site visit was undertaken in dry and sunny weather conditions with trees in full leaf. Full details on the methodology can be found at Appendix 1.

### **LIMITATIONS**

- 3.8 This report includes information on only the trees that were inspected and the condition they were observed in at the time of survey. The condition of trees can change, and as such any findings from this report should be held valid to inform for purposes of development for no longer than 12 months from the survey date. No guarantee can be given for the structural integrity of any trees on site as a full hazard assessment has not been made.

- 3.9 There were no significant constraints to the assessment, with all trees being fully accessible to survey. The survey was completed at a suitable time of year for species identification and condition assessment.

## **4.0 RESULTS OF SURVEY**

### **TREE LEGAL PROTECTION**

- 4.1 A review of the London Borough of Camden Council's Tree Preservation Order data has confirmed that whilst the council does not present a TPO dataset that can be viewed online, the proposed development site does fall within the Hatton Garden Conservation Area.
- 4.2 This Conservation area status then affording all trees included within the survey the same protection as seen for TPO's prior to any subsequent planning permission being granted.

### **GEOLOGICAL CONDITIONS**

- 4.3 The BGS interactive map indicates the underlying geology to be London Clay Formation - clay and silt, with superficial deposits of Lynch Hill Gravel Member - sand and gravel.
- 4.4 It is recommended that a geotechnical specialist / structural engineer undertake a detailed soil investigation to determine the actual underlying geology and Plasticity Index which may then inform foundation design. The design of any new planting and landscape proposals should be based upon a soil analysis which considers the pH and nutrient composition of localised conditions.

### **SITE VISIT**

- 4.1 In line with the BS5837 guidelines, nine trees and one tree group were identified either within or directly adjacent to the proposed development site. The following section should be read as a summary description of the onsite trees with full details given in the Arboricultural Data Tables (Appendix 2), together with their respective BS category ratings.
- 4.2 Surveyed trees within and directly adjacent to the site boundary included a mix of species, life stages and condition, with BS5837 Categories including B, C and U.
- 4.3 With most trees then located to and beyond the site perimeter, the only central group is G1 located within a raised soft planting area, abutted by a tall retaining wall to the south and east, with a lower retaining wall to the northwest that then forms the outer wall of the basement parking access road.
- 4.4 Trees to the north and west then form linear planting of London planes within pavement planting pits.
- 4.5 A mix of early mature to mature trees, all shown as Category B (BS5837) and have all formed a distinctive phototropic lean away from the existing building facades, and whilst a natural growth response for trees in such locations, this is particularly pronounced for



T6 to T9, which have been noted as structurally poor as a result- albeit are seemingly securely rooted.

- 4.6 As is again typical for urban trees growing in such locations, all trees along both Clerkenwell Road and Grays Inn Road show heavily asymmetrical crown structures both in terms of the aforementioned crown development away from the existing building facades as well as from close proximity to each other. This asymmetrical form has then been further exacerbated by both target pruning and minor upper crown reductions to maintain building facade separation.
- 4.7 It is though key to note, that despite their heavily asymmetrical (albeit naturally formed) structures, they are in all-round good physiological condition and provide significant landscape and visual amenity value in this location.
- 4.8 The final trees included within the survey are three offsite False acacia trees to the south within the grounds of London Borough of Camden's housing block. Of these, T2 and T3 are in good all-round condition with no notable defects, however T1 (which is shown as a Category U tree) is in very poor condition both physiologically and structurally as a result of active decay of the roots from Honey fungus (*Armillaria*) and a second fungal fruiting body which was too decayed to identify.
- 4.9 This decay has then resulted in heavily dysfunctional wood within sections of the lower stem that has left large areas of dying and flaking bark, soft heartwood and significant dieback in the upper crown. Furthermore, the tree has a heavy natural lean to the north with several residential garden benches underneath that would then be a target should the tree fail.
- 4.10 In terms of the development, there is also the potential for this tree to fail in the direction of the southernmost on site block just to the northwest of the leaning tree structure. Therefore, with consideration to both high target areas and the noted condition of the tree in general, it is strongly advised that T1 be removed as soon as possible, of which London Borough of Camden have been advised.

## 5.0 ARBORICULTURAL IMPACT ASSESSMENT

### INTRODUCTION

- 5.1 The purpose of the Arboricultural Impact Assessment (AIA) is to assess the proposals for any tree removals as well as to review the potential below and above ground impacts to the retained trees from the proposed development.

### SITE LAYOUT

- 5.2 Proposals and existing drawings provided for the assessment of the potential constraints that exist include:
- Existing layout/ topographical survey (drawing ref. 28643-Topographical Survey); and
  - Proposed layout (drawing ref. 13636-A-ZZ-L00-03-101).

### TREE REMOVALS

- 5.3 Through this assessment it has been confirmed that all existing site trees other than G1 (Image 5.1), are proposed to be retained as part of the site redevelopment, with G1 then removed as a result of direct conflict with proposed new building elements.
- 5.4 The loss of G1 is though not considered to be of notable arboricultural significance.
- 5.5 Further to the removal of G1, it was noted that T1, off site to the southeast, is in very poor physiological and structural condition and should be removed irrespective of any development works either on or off site. In line with arboricultural due diligence and best practice, the landowners (London Borough of Camden), have therefore been notified of its condition.

**Image 5.1 G1**



### **DEVELOPMENT FACILITATION PRUNING**

- 5.6 As shown on the existing and proposed layouts, there are minor conflicts with the building facing crowns of T2, T3, T5 and T9.
- 5.7 It is though considered that a moderate reduction of the facade facing crown of 2 m for T2 and T3 and 1 m for T5 and T9 would be sufficient to remove this constraint and not result in a significant impact of any of the trees. This reduction then required to provide sufficient building separation space to facilitate the construction/development works within this area of the site.
- 5.8 Arboricultural best practice as set out in *BS:3998 Tree work – Recommendations<sup>2</sup>*, must be adhered to for any tree work.
- 5.9 As shown from both the existing (Appendix 3) and proposed (Appendix 4) site layouts and building footprints, additional pruning to any other site trees is not required given the building separation space has been historically maintained

### **DEVELOPMENT WITHIN ROOT PROTECTION AREAS (RPA'S)**

- 5.10 The provisional root protection areas for all site trees have been calculated via the methodology set out in BS5837 and are shown in the Tree Constraints Plan (Appendix 3).
- 5.11 In terms of providing constraints information for any future development, providing an accurate root zone is of great significance, as this defines the area that cannot be generally constructed over or disturbed without bespoke foundation and/or site design considerations.
- 5.12 Where it is considered that existing buildings or subterranean structures are likely to have formed a barrier to root spread, the calculated RPA as shown on the Tree Constraints Plans can be modified to show this, whilst maintaining a similar total rooting area away from the obstacles.
- 5.13 With consideration to this, given the building foundations and basement areas of the existing site, modified RPA's have been presented within the Tree Constraints Plan and Tree Protection Plan.
- 5.14 Following on, as the development proposals will retain the current extent of both basement and building façade lines, no significant impacts on the RPA's of retained trees are anticipated.

### **INSTALLATION OF SUBTERRANEAN UTILITIES**

- 5.15 Given the destructive impacts that trench excavation can have on tree roots and the subsequent physiological and structural health of trees, all subterranean utility lines across the site are to be routed through existing run spaces. Where new trenches and insertions are required, they will be done so in line with the NJUG best practice Guidelines<sup>3</sup>

- 5.16 The need for any minor root pruning and backfilling (as required by utility works), will be undertaken as set out in Section 6.

#### **SITE LAYOUT AND LANDSCAPE PROPOSALS**

- 5.17 As shown on the ground floor landscaping plan (given at Appendix 6), the only proposed landscape changes within the RPA's or retained trees are to T6 to T9 to the north of the site. These changes then being to modify a small section of the existing paved area around the stems of all four trees and replace with a section of self-binding gravel.
- 5.18 Despite the often-limited permeability of self-binding gravel, this section is relatively small in terms of the tree RPA's, with any rainwater run off then still able to easily find its way down to the roots. This change is therefore not considered to result in any significant impacts on the future health of these trees.
- 5.19 The proposals also include the construction of a Sheffield bike stand between T7 and T8, however this can be constructed by installing a single steel sub frame buried within the gravel build-up (to avoid digging concrete footings within the RPA), or selectively located foundation anchors placed away from or in between significant tree roots that must be maintained.

## 6.0 ARBORICULTURAL METHOD STATEMENT

- 6.1 The Arboricultural Method Statement (AMS) and Tree Protection Plan sets out how site works will be carried out near trees to avoid accidental damage. In doing so, the statement details all recommendations for pre-development and best practice tree protection works, as well as those special construction elements as heightened within the AIA, Section 5.

### WORKS PHASING

- 6.2 This method statement makes a number of recommendations for the proposed development. In order to ensure successful tree retention and development, it is imperative that all of these recommendations are carried out in accordance with the structure outlined.

### TREE REMOVALS

- 6.3 All tree removals are as described in Section 5 and as shown on the Tree Protection Plan (Appendix 4).

### FACILITATION PRUNING

- 6.4 It is considered that once the agreed pruning as set out in Section 5 has been undertaken, no further pruning will be required to facilitate the construction phase.
- 6.5 It is essential that arboricultural best practice as set out in *BS:3998 Tree work – Recommendations*, is adhered to for any required tree work.

### WORKS WITHIN ROOT PROTECTION AREA'S

- 6.6 As set out within Section 5, the proposed works with the RPA's of T6 to T9 include the introduction of a new surface layer section of self-binding gravel and the construction of the Sheffield bike stand. To ensure these are constructed and laid whilst avoiding significant impact to the roots and associated soils, all works including the lifting of existing paving slabs and subbase preparations excavations must be undertaken by with hand tools.
- 6.7 Any tree roots exposed during this phase must be managed in line with the best practice guidance as set out within this report.

### Root pruning

- 6.8 Should root pruning be required in line with the RPA ground works as set out in this report, smaller roots may be pruned back, making a clean cut with a suitable sharp tool (secateurs or pruning saw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability.
- 6.9 Should roots be exposed that are not to be pruned back (during such works as the exploratory dig or the foundation construction), they should immediately be wrapped or

covered with a wet hessian sack (or similar), to prevent desiccation. Any wrapping should be removed prior to backfilling, which should take place as soon as possible.

- 6.10 Retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its toxic high salt content), or other loose inert granular fill, before soil is replaced.

### **TREE PROTECTION**

- 6.11 Prior to any demolition or construction works taking place, all relevant tree protection measures will be in place around all retained trees within the construction vicinity of the site.
- 6.12 These protective measures ensure suitable protection of trees and associated soils, with the key method of tree protection being through the use of tree fencing (with ground protection not required).

### **Tree protection fencing and best practice**

- 6.13 Given the close proximity of the retained trees (T1 to T9) to the building footprint, and that much of the trees RPA's are within existing hard surfaced areas, standard specification tree protection fencing (1.8m Heras fencing around the whole of the RPA), will not be practical or effective. The key method of tree protection during the construction phase, will then be through stem box protection, to a height of 1.8 m.
- 6.14 The specification of this protective fencing is illustrated on the Tree Protection Plan (Appendix 4).
- 6.15 With the use of the stem boxes over standard RPA fencing, careful consideration must be given when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banks person to ensure that adequate clearance from trees is maintained at all times.
- 6.16 There will be clear and visible signs (Appendix 5) attached to the protective fencing with the wording, "Tree Protection Fencing". These signs will be checked prior to the commencement of work by the Site Manger and throughout the course of development.
- 6.17 Material that will contaminate the soil such as concrete mixing, diesel oil and vehicle washing should not be discharged within 10m of the tree stems. Furthermore, no fire shall be lit or liquids disposed of within 10m of an area designated as being fenced off or otherwise protected in the scheme.
- 6.18 The specification and location of this protective fencing is illustrated on the Tree Protection Plan (Appendix 4).
- 6.19 At the start of the landscaping phase within the RPA's of T6 to T9, the stem box fencing can be removed. All relevant best practice for proposed works within the RPAs of retained trees once the fencing has been removed are as set in this report.

**SITE OFFICE, DELIVERIES & TEMPORARY SITE STORAGE**

- 6.20 Site accommodation during the works will be in 88 Grays Inn Road with direct access through to the main building and to switch to the main new building retail unit.
- 6.21 The plans at Appendix 7 then show the preferred pit lane and crane locations, both of which take account of the existing tress.

## 8.0 SUMMARY AND CONCLUSIONS

- 8.1 Arborclimb was commissioned by Lawnmist Limited to undertake a BS5837 tree survey and prepare a report relating to the arboricultural impact of the proposed development.
- 8.2 This document presents the findings of the tree survey and has been produced to support a planning application for full planning permission for a new building at 100 Gray's Inn Road & 127 Clerkenwell Road and refurbishment & extension of 88 Gray's Inn Road.
- 8.3 A site visit was undertaken on 16 Sept 2022 to survey the trees on and adjacent to the site. The survey identified 8 Category B trees, 1 Category C tree group and 1 Category U tree.
- 8.4 Through the subsequent Arboricultural Impact Assessment, it has been confirmed that all existing site trees other than G1, are proposed to be retained as part of the site redevelopment, with G1 then removed as a result of direct conflict with proposed new building elements.
- 8.5 With the loss of G1 then not considered to be of notable arboricultural significance.
- 8.6 It was though noted that T1, off site to the southeast, is in very poor physiological and structure condition and should be removed irrespective of any development works either on or off site. In line with arboricultural due diligence and best practice, the landowners (London Borough of Camden), have therefore been notified of its condition.
- 8.7 Finally, an Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP) have been produced to ensure all retained trees are adequately managed and protected throughout the construction phase.
- 8.1 If the recommendations in this report are adhered to, all retained trees will be suitably protected throughout the development to form a key part of the post development landscape.

### References

1. BS 5837:2012 Trees in relation to design, demolition and construction – Recommendation. (<https://shop.bsigroup.com/ProductDetail/?pid=00000000030213642>).
2. BS:3998 Tree work – Recommendations. (<https://shop.bsigroup.com/ProductDetail/?pid=00000000030089960>).
3. NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. (<http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf>)



## APPENDIX 1: TREE SURVEY METHODOLOGY

Trees, tree groups and woodlands have been considered following evaluation into one of four categories (U, A, B, C) based on tree quality as outlined in British Standard 5837 (2012) which has been followed. Categorisation of trees, following the British Standard, gives an indication as to the trees' importance in relation to the site and the local landscape and also, the overall value and quality of the existing tree stock on site. This allows for informed decisions to be made concerning which trees should be removed or retained, should development occur.

For a tree to qualify under any given category it should fall within the scope of that category's definition. In the categories A, B, C which collectively deal with trees that should be a material consideration in the development process, there are three sub-categories which are intended to reflect arboricultural, landscape and cultural values respectively. Category U trees are those which would be lost in the short-term for reasons connected with their poor physiological or structural condition. They are, for this reason, not usually considered in the planning process.

In assigning trees to the A, B or C categories the presence of any serious disease or tree related hazards are taken into account. If the disease is considered fatal and / or irremediable, or likely to require sanitation for the protection of other trees it may be categorised as U, even if they are otherwise of considerable value.

Category (A) – trees whose retention is most desirable and is of high quality and value. These trees are considered to be in such a condition as to be able to make a lasting contribution (a minimum of 40 years) and may comprise:

- Trees which are particularly good examples of their species especially rare or unusual, or 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 which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups); and
- Trees or groups or woodlands of significant conservation, historical, commemorative or other value (e.g. Veteran or wood-pasture trees).

Category (B) – are trees whose retention is considered desirable and are of moderate quality and value. These trees are considered to be in such a condition as to make a significant contribution (a minimum of 20 years) and may comprise:

- Trees that might be included in the high category but because of their numbers or slightly impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage), are downgraded in favour of the best individuals;
- Trees present in numbers such that they form distinct landscape features and attract a higher collective rating than they would as individuals. Individually these

trees are not essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the site and have little visual impact beyond the site; and

- Trees with clearly identifiable conservation or other cultural benefits.

Category (C) – are trees that could be retained and are considered to be of low quality and value. These trees are in an adequate condition to remain until new planting could be established (a minimum of ten years) or are young trees with a stem diameter below 150mm and may comprise:

- Trees not qualifying 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 screening benefit; and
- Trees with very limited conservation or other cultural benefits.

Category (U) – trees for removal are those trees in such a condition that any existing value would be lost within 10 years and which should in the current context be removed for reasons of sound arboricultural management. Trees within this category are:

- 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;
- Trees that are dead or are showing signs of significant, immediate or irreversible overall decline; and
- Trees infected with pathogens of significance to the health and or/safety of other trees nearby trees or very low quality trees suppressing adjacent trees of better quality.

Species has been recorded by common name and recorded as such in the Tree Schedule. Height has been estimated in metre and stem diameters have been measured at 1.5 metres above ground level and recorded in millimetres (unless otherwise stated). Crown spreads have been measured in half metres and taken to the point of greatest spread unless the crown has presented a pronounced asymmetrical form and therefore measurements have been taken for the four cardinal points. The measurements have always been considered in the following sequence, North, East, South, and West, and therefore appear as such within the Tree Schedule.

In the assessment particular consideration has been given to the following when deciding the most appropriate British Standard Category and Sub-Category allocation:

- a. the health, vigour and condition of each tree;
- b. the presence of any structural defects in each tree and its life expectancy;
- c. the size and form of each tree and its suitability within the context of the proposed scheme; and

- d. the location of each tree relative to existing site features, e.g. its value as a screen or as a skyline feature.

Age class is assessed according to the age class categories referred to in BS 5837.

- Y: Young trees up to five years of age;
- SM: Semi-mature, trees less than 1/3 life expectancy;
- EM: Early mature, trees 1/3 – 2/3 life expectancy;
- M: Mature trees over 2/3 life expectancy;
- OM: Over mature – declining or moribund trees of low vigour; and
- V: Veteran - characteristics have been noted where a tree exhibits certain characteristic features of veteran trees.

The overall condition of the tree, or group of trees, has been referred to as one of the following. A more detailed description of condition has been noted in the Tree Schedule and discussed in the main text of the report.

- Good: A sound tree, trees, needing little, if any, attention;
- Fair: A tree, trees, with minor but rectifiable defects or in the early stages of stress, from which it may recover;
- Poor: A tree, trees, with major structural and physiological defects or stressed such that it would be expensive and inappropriate to retain; and
- Dead: A tree, trees, no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover, or are / have become dangerous.

Major defects or diseases and relevant observations have also been recorded under Structural Condition. The assessment for structural condition has included inspection of the following defects:

- The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay;
- Soil cracks and any heaving of the soil around the base indicating possible root plate movement;
- Any abrupt bends in branches and limbs resulting from past pruning, as it may be an indication of internal weakness and decay;
- Tight or weak 'V' shaped unions and co-dominant stems;
- Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994);
- Cavities as a result of limb losses or previous pruning;
- Broken branches;

- Storm damage;
- Canker formations;
- Loose bark;
- Damage to roots;
- Basal, stem or branch / limb cavities;
- Crown die-back;
- Abnormal foliage size and colour;
- Any changes to the timing of normal leaf flush and leaf fall patterns; and
- Other pathological diseases affecting any part of the tree.
- Major defects or diseases and relevant observations have also been recorded. Dead wood has been defined as the following:
  - Twigs and small branch material up to 5cm in diameter;
  - Minor dead wood 5cm to 10cm in diameter; and
  - Major dead wood 10cm in diameter and above.

The survey was completed from ground level only, aerial inspection of trees was not undertaken. Investigations as to the internal condition of a tree have not been undertaken. Further investigations of this type can be made and have been recommended where it has been considered necessary, within the report although these investigations are beyond the scope of this report.

Evaluation of the trees condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

The individual positions of trees and groups of trees recorded in the Tree Schedule have been shown on the Tree Constraints Plan. The positions of trees are based on a topographical / land survey supplied by the client in dwg. format for the purpose of plotting the trees.

The Root Protection Areas (RPA) to be required by the individual and groups of trees are indicated by the Tree Constraints element of the above plans. The Root Protection Areas are formulated as described below.

Below ground constraints to future development is represented by the area surrounding the tree that contains sufficient rooting volume to ensure survival of the tree, which need protecting in order for the tree to be incorporated into any future scheme, without adverse harm to the tree or structural integrity of buildings. This is referred to as the RPA and is shown as a circle of a given radius.

The circle may be modified in shape to maintain a similar total area depending on the presence of surrounding obstacles. Where groups of trees have been assessed, the RPA has been shown based on the maximum sized tree in any one group and so would automatically exceed the RPA's

---

required for many of the individual specimens within the group. The RPA is equivalent to a circle with a radius 12x the stem diameter for single stem trees and 10x the basal diameter for trees with more than one stem arising less than 1.5 meters above ground level.

## **APPENDIX 2: TREE SCHEDULE**

a

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Crown Clearance	1st Branch Height	1st Branch Direction	Age Class	Condition		General Notes	Estimated years remaining	Grade Category
				N	E	S	W					P	S			
T1	False acacia	14	510	9	5	4	5	5.5	5	N & S	M	P	P	Very poor condition both physiologically and structurally as a result of active decay of the roots from Honey fungus (Armillaria). Decay has resulted in heavily dysfunctional wood with large areas of dying and flaking bark, soft heartwood and significant dieback in the upper crown. Has a heavy natural lean to the north with several resident's garden benches underneath that would then be a target should the tree fail.	<10	U
T2	False acacia	15	470	5	5	6	4	5	6	Multi directional	M	G	G	Will structured tall specimen growing to the south out the site with close buildings all around. Asymmetrical crown as a result of adjacent trees and buildings with no significant defects.	>20	B2
T3	False acacia	15	460	4	5	4	6	5	5	Multi directional	M	G	G	Will structured tall specimen growing to the south out the site with close buildings all around. Asymmetrical crown as a result of adjacent trees and buildings with no significant defects.	>20	B2
T4	London plane	21	590	6	1.5	9	8	7	8	N	EM	G	F	Shows distinctive phototropic lean away from the existing building, with heavily asymmetrical crown form from proximity of building and adjacent trees. Shows target pruning and minor upper crown reductions to maintain building facade separation. Important landscape feature along with adjacent trees.	>20	B2
T5	London plane	18	790	9	2.5	5	9.5	4	4	W	M	G	F	Shows distinctive phototropic lean away from the existing building, with heavily asymmetrical crown form from proximity of building and adjacent trees. Shows target pruning and minor upper crown reductions to maintain building facade separation. Important landscape feature along with adjacent trees.	>20	B2

Project: 100 & 88 Gray's Inn Road / 127 Clerkenwell Road  
Client: Global Holdings Management Group UK  
Project Number: P30  
Arborclimb Consultants

**G:** Good  
**F:** Fair  
**P:** Poor  
**SM:** Semi mature  
**EM:** Early mature

b

Tree No	Species	Height (m)	Stem Diameter (mm)	Crown Spread				Crown Clearance	1st Branch Height	1st Branch Direction	Age Class	Condition		General Notes	Estimated years remaining	Grade Category
				N	E	S	W					P	S			
T6	London plane	18	630	10	6	1	9	4	6	N	EM	G	P	Shows distinctive heavy phototropic lean away from the existing building, with heavily asymmetrical crown form from proximity of building and adjacent trees. Shows target pruning and minor upper crown reductions to maintain building facade separation. Important landscape feature along with adjacent trees.	>20	B2
T7	London plane	18	470	12	6.6	1	3	4	6	N	SM	G	P	Shows distinctive heavy phototropic lean away from the existing building, with heavily asymmetrical crown form from proximity of building and adjacent trees. Shows target pruning and minor upper crown reductions to maintain building facade separation. Important landscape feature along with adjacent trees.	>20	B2
T8	London plane	18	410	12	4	1	3.5	4	2	N	SM	G	P	Shows distinctive heavy phototropic lean away from the existing building, with heavily asymmetrical crown form from proximity of building and adjacent trees. Shows target pruning and minor upper crown reductions to maintain building facade separation. Important landscape feature along with adjacent trees.	>20	B2
T9	London plane	18	650	13	13	2	4	4	2	Multi directional	SM	G	F	Shows distinctive phototropic lean away from the existing building, with heavily asymmetrical crown form from proximity of building and adjacent trees. Shows target pruning and minor upper crown reductions to maintain building facade separation. Important landscape feature along with adjacent trees.	>20	B2
G1	Cherry, Laurel and shrub mix	5	150	See Tree Constraints Plan				1.5	0.5	Multi directional	SM	G	G	Growing within a raised soft planting area, above the outer wall of the basement parking access road.	>10	C2

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Client: Global Holdings Management Group UK  
Project Number: P30  
Arborclimb Consultants

**G:** Good  
**F:** Fair  
**P:** Poor  
**SM:** Semi mature  
**EM:** Early mature



## **APPENDIX 3: TREE CONSTRAINTS PLAN (EXISTING LAYOUT)**

# Tree Constraints Plan shown against BS5837:2012 tree categories & Root Protection Areas

**BS5837 Categories**  
Canopy and stem colour denotes BS5837 category. Pink denotes Root Protection Area.

- Category A (Green)
- Category B (Blue)
- Category C (Grey)
- Category U (Dark Red)

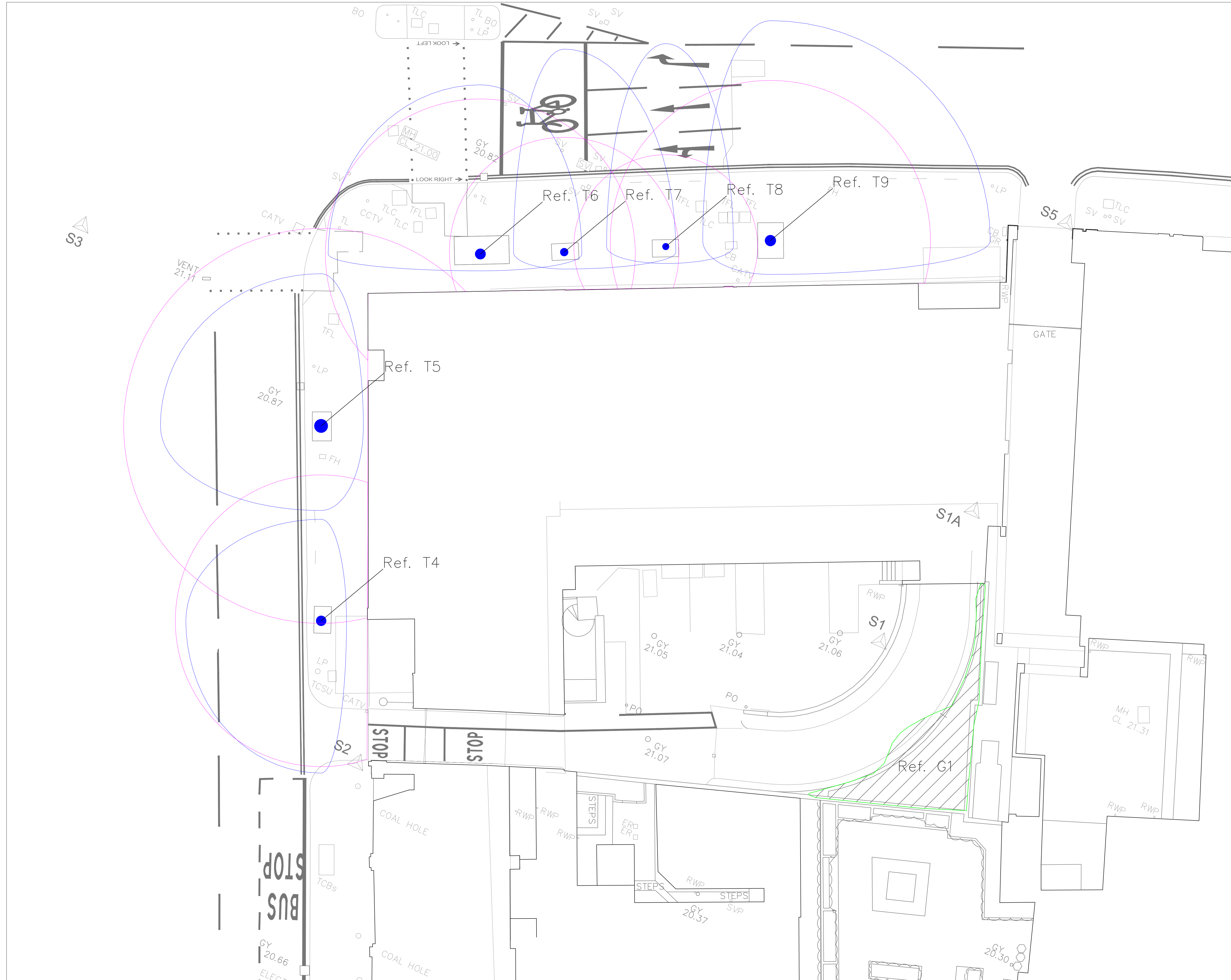
**Category A**  
Trees of high quality with an estimated remaining life expectancy of at least 40 years.

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

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

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

**Tree Group**  
Tree group with BS5837 category indicated by hatch colour.



1	P30rSept22DV01_TCP_ex.dwg	22/09/22
No.	Revision/Issue	Date



**Arborclimb Consultants**  
6 Charlesfield Road, RH6 8BL  
Tel: 07533 793587

**Project Name and Address**  
100 & 88 Gray's Inn Road / 127 Clerkenwell Road

<b>Project</b> Global Holdings Management Group UK	<b>Sheet</b> 1 of 2 (north)
<b>Date</b> 22/09/2022	
<b>Scale</b> 1 to 100 at A0	

# Tree Constraints Plan shown against BS5837:2012 tree categories & Root Protection Areas

**BS5837 Categories**  
Canopy and stem colour denotes BS5837 category. Pink denotes Root Protection Area.

- Category A (Green)
- Category B (Blue)
- Category C (Grey)
- Category U (Dark Red)

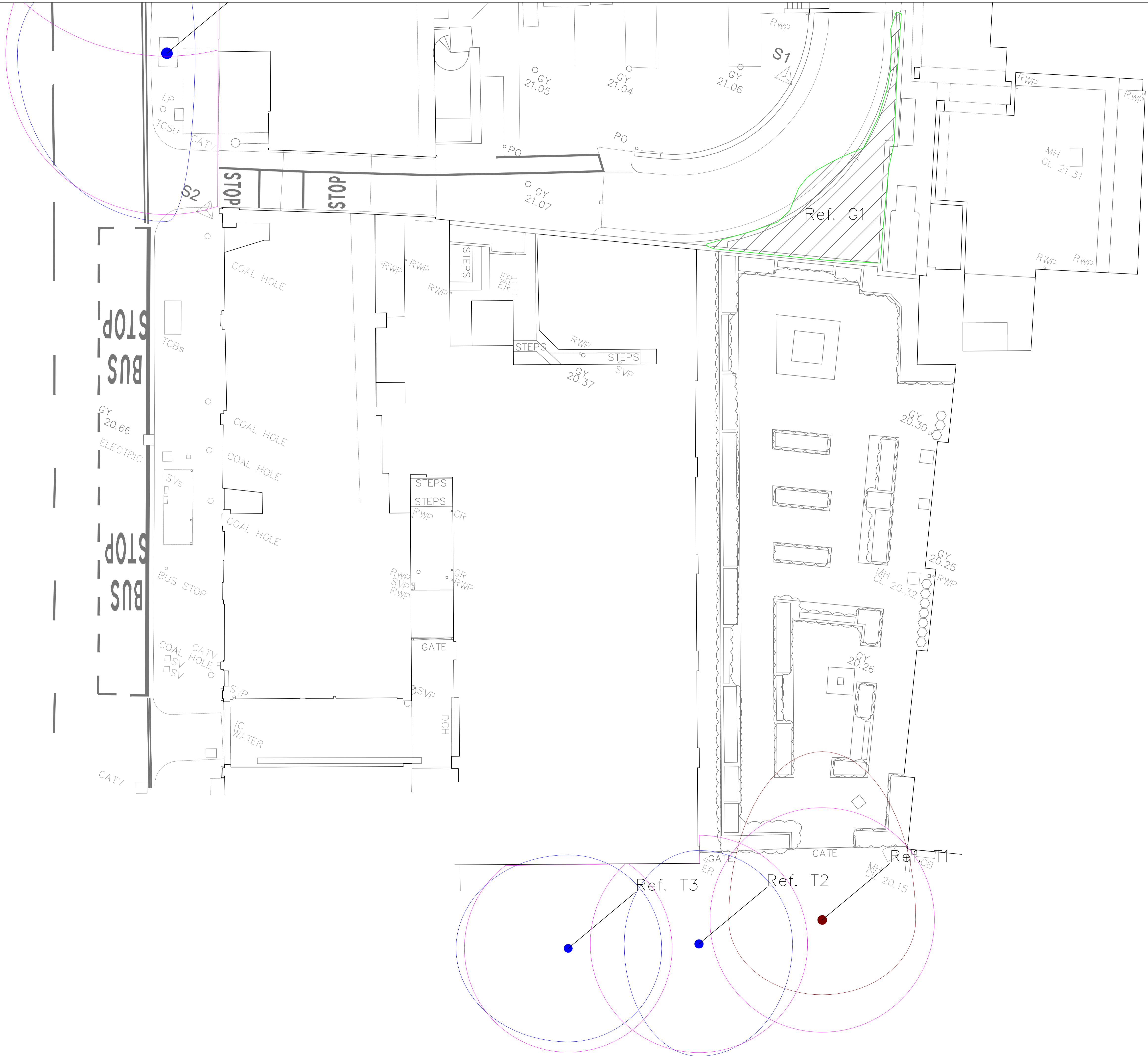
**Category A**  
Trees of high quality with an estimated remaining life expectancy of at least 40 years.

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

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

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

**Tree Group**  
Tree group with BS5837 category indicated by hatch colour.



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**Arborclimb Consultants**  
6 Charlesfield Road, RH6 8BL  
Tel: 07533 793587

**Project Name and Address**  
100 & 88 Gray's Inn Road / 127 Clerkenwell Road

<b>Project</b> Global Holdings Management Group UK	<b>Sheet</b> 2 of 2 (south)
<b>Date</b> 22/09/2022	
<b>Scale</b> 1 to 100 at A0	

## **APPENDIX 4: TREE PROTECTION PLAN (PROPOSED LAYOUT)**

# Arboricultural Method Statement

(to be read in conjunction with details contained within the main report P30JrSept22FV1\_AIA\_AMS)

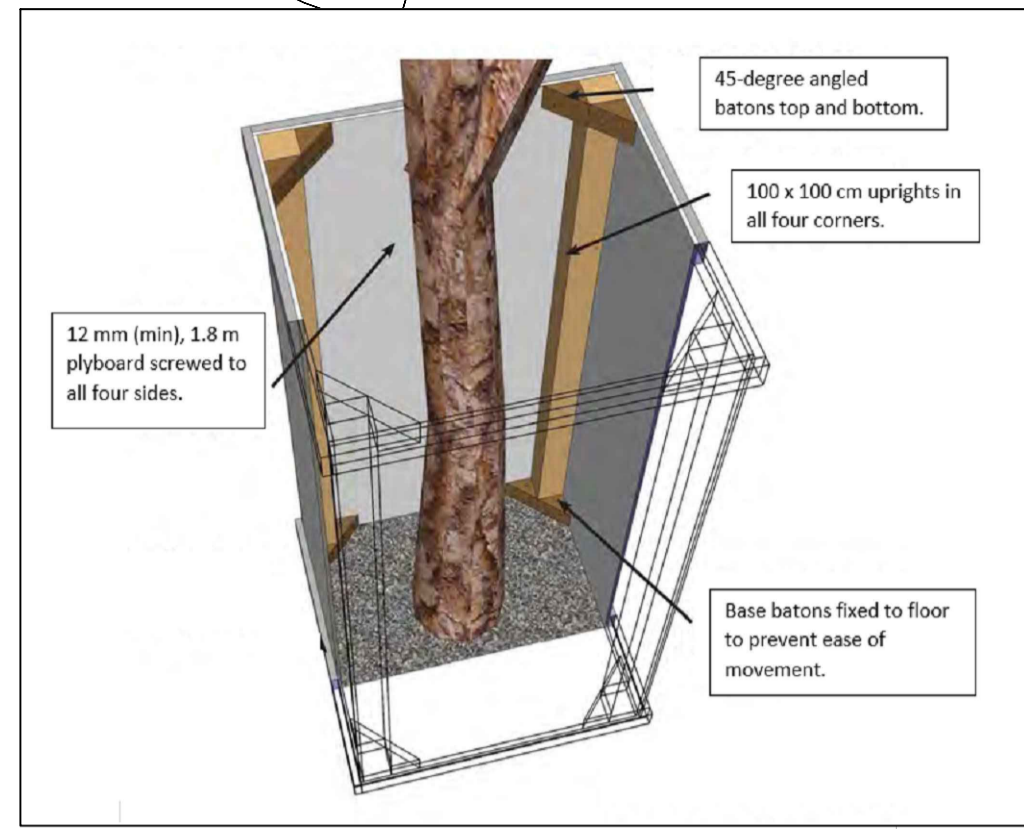
**Tree Removals.** Only G1 is proposed for removal to facilitate the development, as indicated on this plan

**Tree Pruning-** Only minor crown pruning is proposed to the building facing crowns of T2, T3, T5 and T9, to then provide sufficient construction and build separation space. It is essential that arboricultural best practice as set out in BS:3998 Tree work - Recommendations, is adhered to for any required tree work.

**Tree Protection-** Prior to any site enabling or construction works taking place, all tree protection stem boxes (Fig 1) will be in place around all retained trees within the construction vicinity of the site, as shown on this plan.

**RPA Soft Digging-** The proposed works within the RPA's of T6 to T9 include the introduction of a new surface layer section of self-binding gravel and the construction of the Sheffield bike stand. To ensure these are constructed and laid whilst avoiding significant impact to the roots and associated soils, all works including the lifting of existing paving slabs and subbase preparations must be undertaken by hand tools.

**Fig.1 Stem Box Protection**



# Arboricultural Method Statement (cont.)

**Root Pruning-** Should root pruning be required in line with the RPA ground works as set out in this report, smaller roots may be pruned back, making a clean cut with a suitable sharp tool (secateurs or pruning saw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability. Should roots be exposed that are not to be pruned back (during such works as the exploratory dig or the foundation construction), they should immediately be wrapped or covered with a wet hessian cask (or similar), to prevent desiccation. Any wrapping should be removed prior to backfilling, which should take place as soon as possible. Retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its toxic high salt content), or other loose inert granular fill, before soil is replaced.

# Tree Protection Plan shown against BS5837:2012 tree categories & Root Protection Areas

**BS5837 Categories**  
Canopy and stem colour denotes BS5837 category. Pink denotes Root Protection Area.

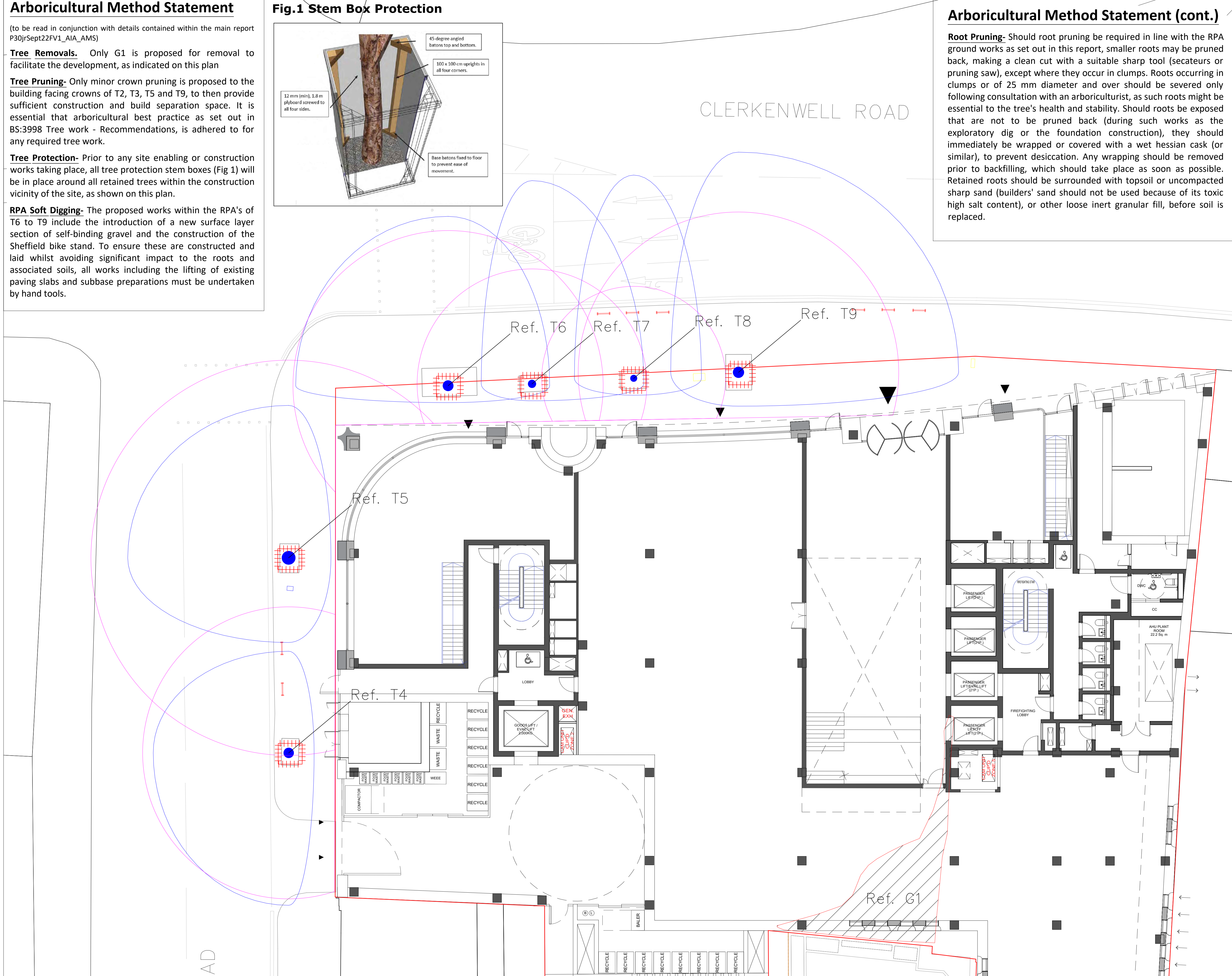
- Category A (Green)
- Category B (Blue)
- Category C (Grey)
- Category U (Dark Red)

- 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 expectancy of at least 20 years.
- Category C** Trees of low quality with an estimated remaining life expectancy of at least 10 years, or a stem diameter below 150mm.
- Category U** Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

**Tree Group**  
Tree group with BS5837 category indicated by hatch colour.

**Tree Group- Removal**

**Tree Protection Stem Box Fencing**



1	P30JrSept22DV01_TPP.dwg	22/09/22
No.	Revision/Issue	Date



6 Charlesfield Road, RH6 8BL  
Tel: 07533 793587

**Project Name and Address**  
100 & 88 Gray's Inn Road / 127 Clerkenwell Road

Project	Global Holdings Management Group UK	Sheet	1 of 2 (north)
Date	22/09/2022		
Scale	1 to 100 at A0		

# Arboricultural Method Statement

(to be read in conjunction with details contained within the main report P30JrSept22FV1\_AIA\_AMS)

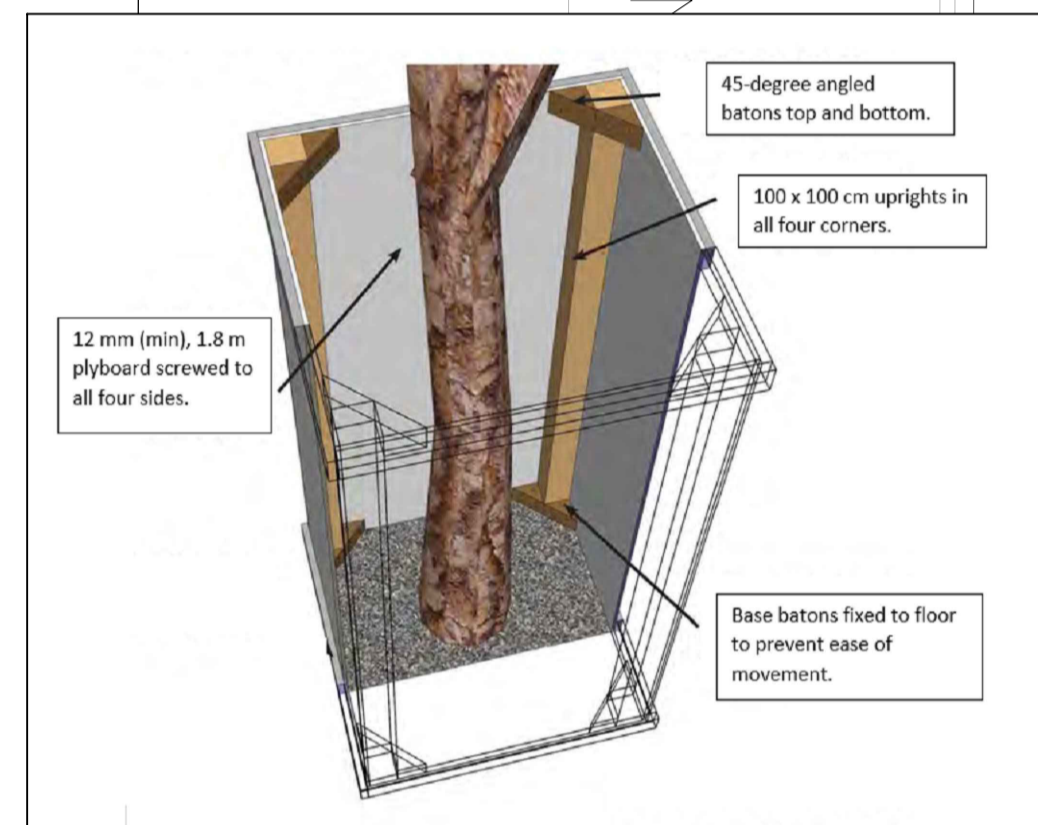
**Tree Removals.** Only G1 is proposed for removal to facilitate the development, as indicated on this plan

**Tree Pruning-** Only minor crown pruning is proposed to the building facing crowns of T2, T3, T5 and T9, to then provide sufficient construction and build separation space. It is essential that arboricultural best practice as set out in BS:3998 Tree work - Recommendations, is adhered to for any required tree work.

**Tree Protection-** Prior to any site enabling or construction works taking place, all tree protection stem boxes (Fig 1) will be in place around all retained trees within the construction vicinity of the site, as shown on this plan.

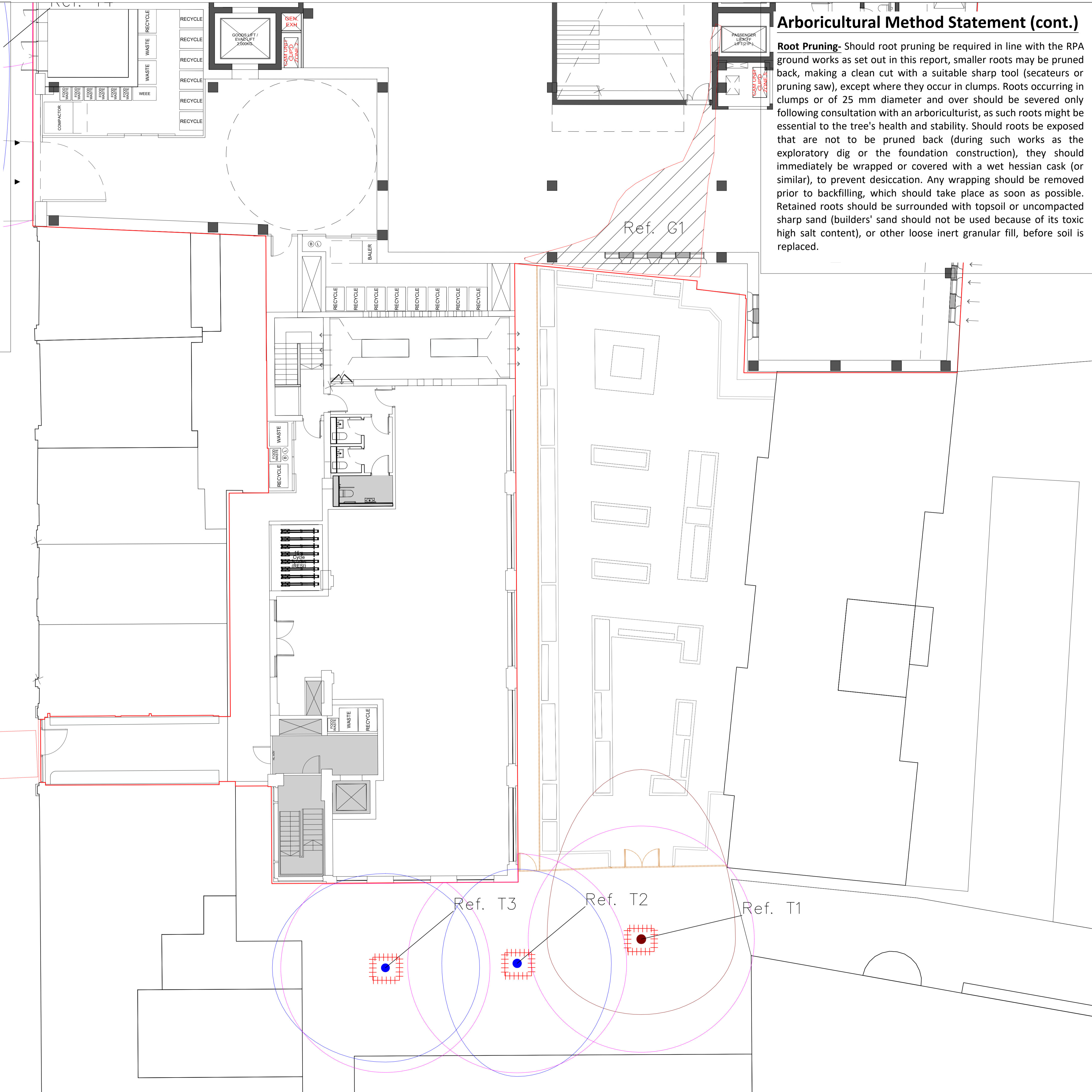
**RPA Soft Digging-** The proposed works within the RPA's of T6 to T9 include the introduction of a new surface layer section of self-binding gravel and the construction of the Sheffield bike stand. To ensure these are constructed and laid whilst avoiding significant impact to the roots and associated soils, all works including the lifting of existing paving slabs and subbase preparations must be undertaken by hand tools.

**Fig.1 Stem Box Protection**



# Arboricultural Method Statement (cont.)

**Root Pruning-** Should root pruning be required in line with the RPA ground works as set out in this report, smaller roots may be pruned back, making a clean cut with a suitable sharp tool (secateurs or pruning saw), except where they occur in clumps. Roots occurring in clumps or of 25 mm diameter and over should be severed only following consultation with an arboriculturist, as such roots might be essential to the tree's health and stability. Should roots be exposed that are not to be pruned back (during such works as the exploratory dig or the foundation construction), they should immediately be wrapped or covered with a wet hessian cask (or similar), to prevent desiccation. Any wrapping should be removed prior to backfilling, which should take place as soon as possible. Retained roots should be surrounded with topsoil or uncompacted sharp sand (builders' sand should not be used because of its toxic high salt content), or other loose inert granular fill, before soil is replaced.



# Tree Protection Plan shown against BS5837:2012 tree categories & Root Protection Areas

**BS5837 Categories**  
Canopy and stem colour denotes BS5837 category. Pink denotes Root Protection Area.

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Trees of low quality with an estimated remaining life expectancy of at least 10 years, or a stem diameter below 150mm.
- Category U**  
Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

**Tree Group**  
Tree group with BS5837 category indicated by hatch colour.

**Tree Group- Removal**

**Tree Protection Stem Box Fencing**

1	P30JrSept22DV01_TPP.dwg	22/09/22
No.	Revision/Issue	Date

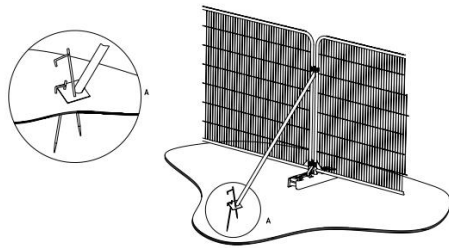


6 Charlesfield Road, RH6 8BL  
Tel: 07533 793587

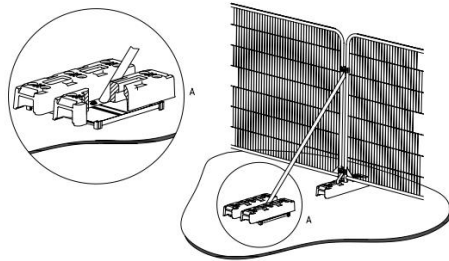
**Project Name and Address**  
100 & 88 Gray's Inn Road / 127 Clerkenwell Road

<b>Project</b> Global Holdings Management Group UK	<b>Sheet</b> 2 of 2 (south)
<b>Date</b> 22/09/2022	
<b>Scale</b> 1 to 100 at A0	

## APPENDIX 5: TREE PROTECTION FENCING AND SIGNAGE



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

**TREE PROTECTION AREA**

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND ARE SUBJECTS OF A TREE PRESERVATION ORDER (TOWN & COUNTRY PLANNING ACT 1990)

CONTRAVENTION OF TREE PRESERVATION ORDERS MAY LEAD TO CRIMINAL PROSECUTION

THE FOLLOWING **MUST** BE OBSERVED BY ALL PERSONS:-

- THE PROTECTIVE FENCING MUST NOT BE REMOVED
- NO PERSON SHALL ENTER THE PROTECTED AREA
- NO MACHINE OR PLANT SHALL ENTER THE PROTECTED AREA
- NO MATERIALS SHALL BE STORED IN THE PROTECTED AREA
- NO SPOIL SHALL BE DEPOSITED IN THE PROTECTED AREA
- NO EXCAVATION SHALL OCCUR IN THE PROTECTED AREA

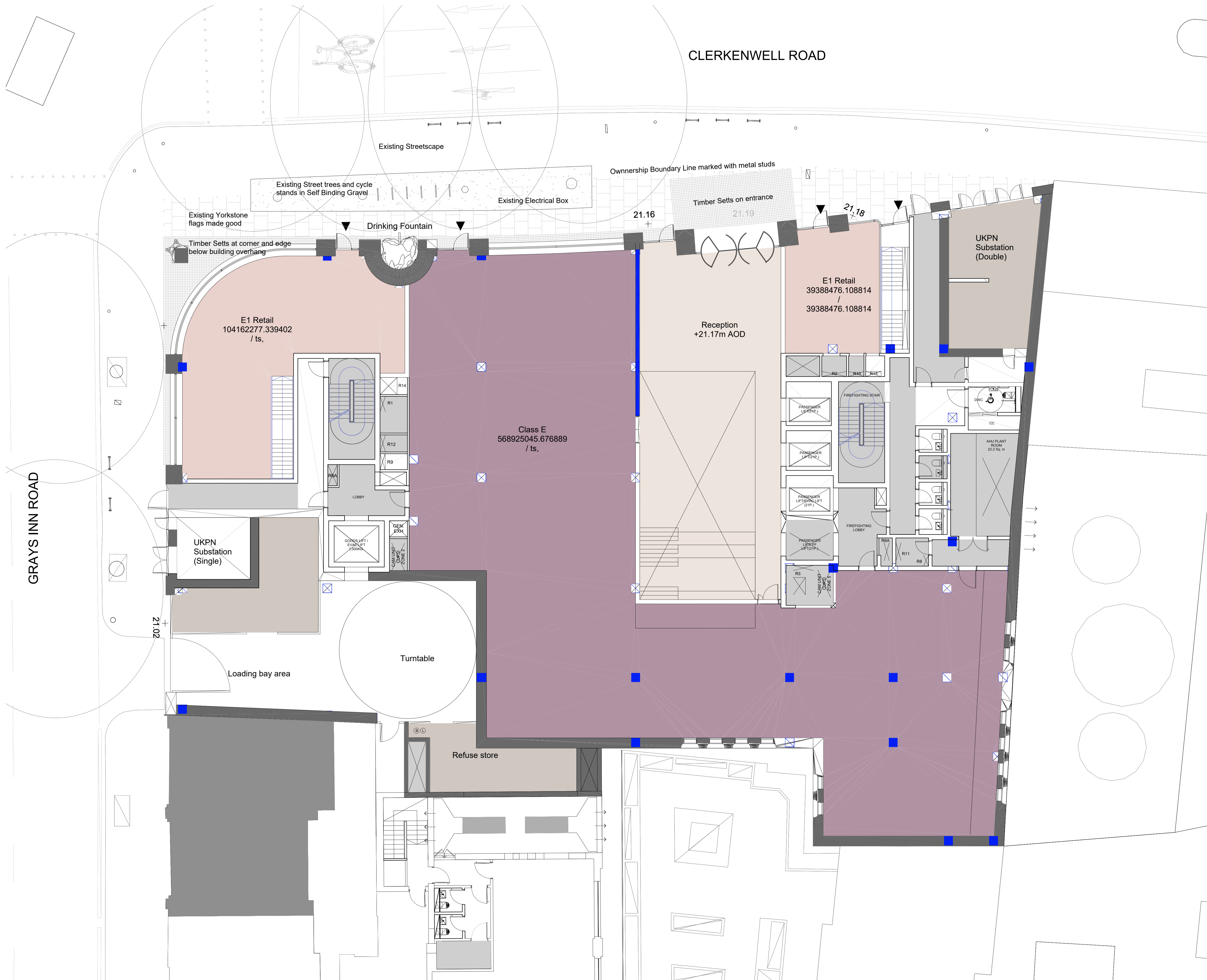
ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

KEEP OUT!



## **APPENDIX 6: LANDSCAPING PLAN SUMMARY (GROUND FLOOR)**

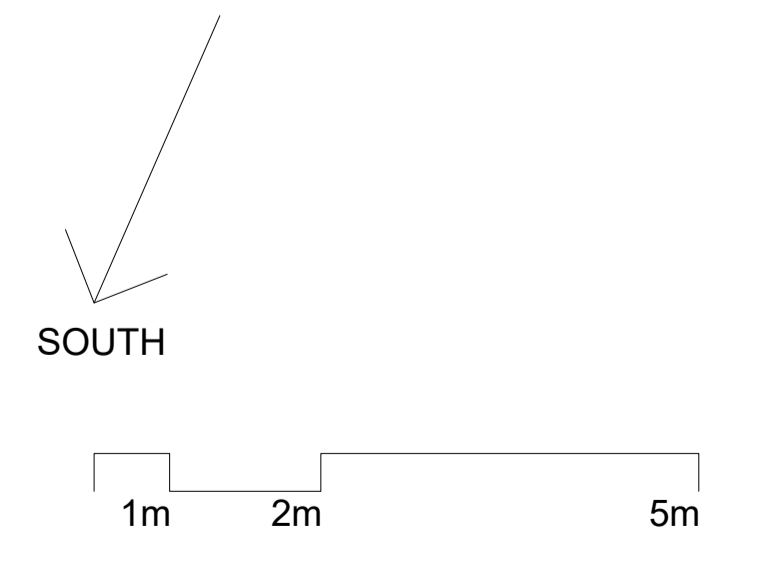




-  Yorkstone Flags (existing stone made good)
-  Timber Sets
-  Self Binding Gravel
-  Brass Boundary Marker Studs
-  Drinking Fountain

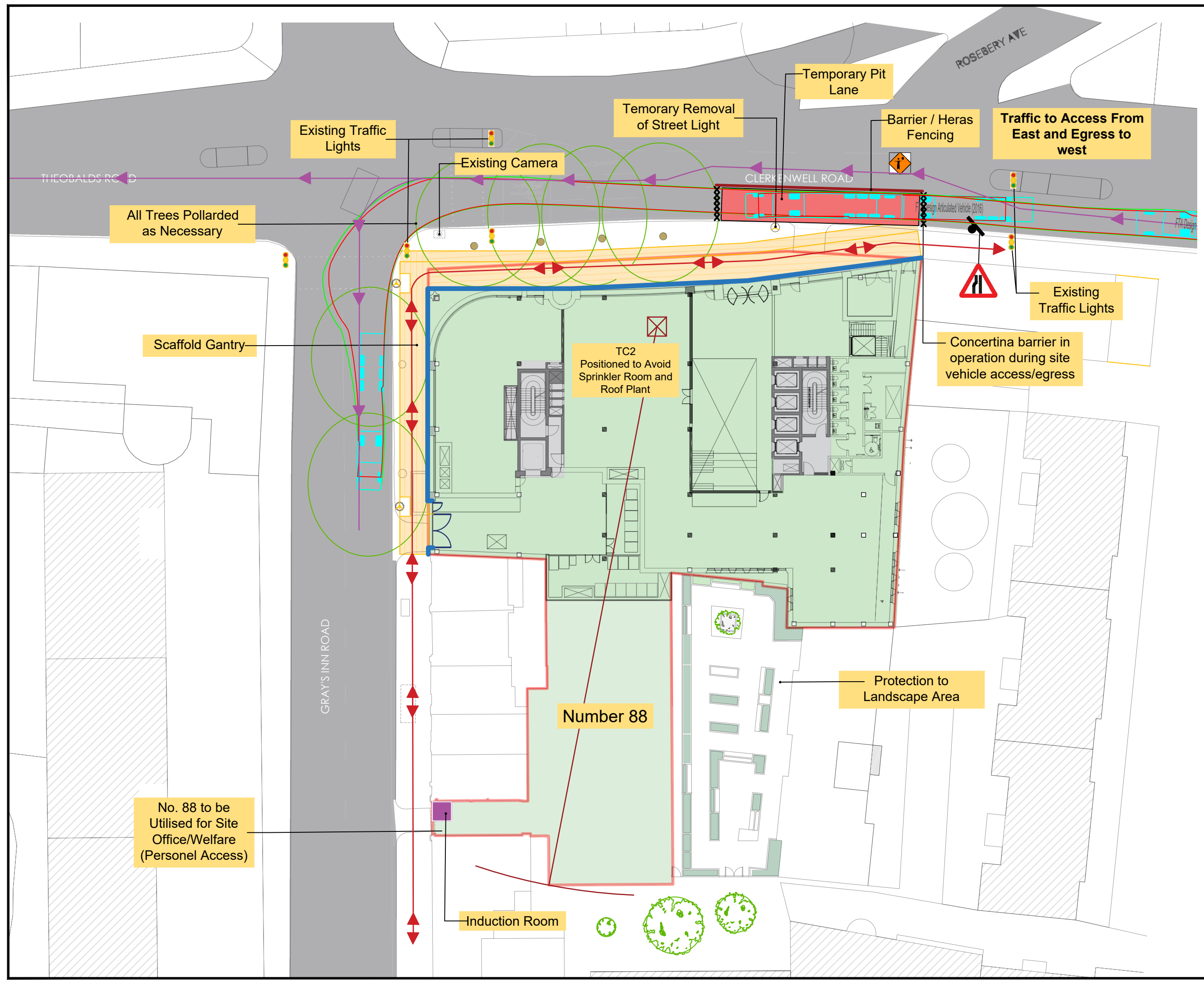
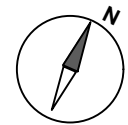
100 Gray's Inn Road  
 Landscape Plan  
 For Planning  
 02.09.22  
 Drawing No. 156.001  
**GROUND FLOOR ARRANGEMENT**  
 1:100@A1 / 1:200@A3

FFLO Landscape Architects  
 www.FFLO.co.uk / T. (01892) 512669



## **APPENDIX 7: PIT LANE AND CRANE LOCATIONS**

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- Boundary Line
- Proposed Hoarding
- Scaffold / Gantry
- Traffic Manager
- Tower Crane (TC2)
- Vehicle Circulation
- ↔ Pedestrian walkway
- Induction Room
- Existing Street Light Retained



Galliford Try Building  
 London & South East Commercial  
 Cowley Business Park  
 Uxbridge  
 Middlesex UB8 2AD  
<http://www.gallifordtry.co.uk>  
 Tel: 01895 855000

Title:  
**Gray's Inn Road**  
**Indicative Site Logistics**  
**Superstructure Stage**

Drwg Status: Tender	
Date: 08-09-2022	
Drawn by: NS	Drawn for: JB
Scale: NTS	
Drwg No: GR-SL001	Rev:

No. 88 to be Utilised for Site Office/Welfare (Personel Access)

Number 88

Induction Room

Protection to Landscape Area

Traffic to Access From East and Egress to west

Temporary Removal of Street Light

Temporary Pit Lane

Barrier / Heras Fencing

Existing Traffic Lights

Existing Camera

All Trees Pollarded as Necessary

Scaffold Gantry

TC2 Positioned to Avoid Sprinkler Room and Roof Plant

Existing Traffic Lights

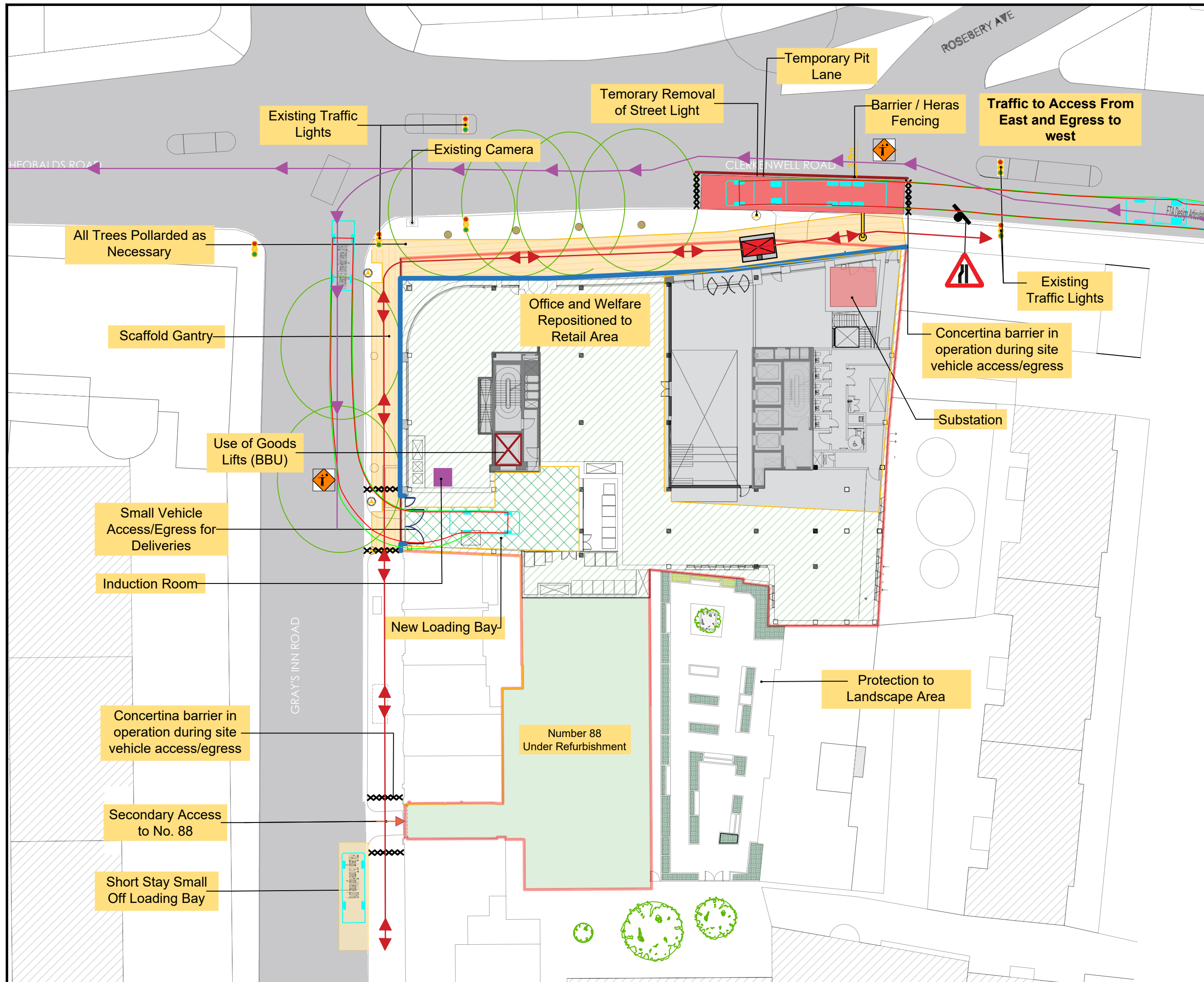
Concertina barrier in operation during site vehicle access/egress

GRAY'S INN ROAD

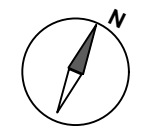
ROSEBERY AVE

THEOBALDS ROAD

CLERKENWELL ROAD



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- Boundary Line
- Proposed Hoarding
- Scaffold / Gantry
- Office and Welfare area
- i Traffic Manager
- Vehicle Circulation
- ⇄ Pedestrian walkway
- Access to Number 88
- Induction Room
- Beam Hoist on Gantry
- X Hoist To Serve All Levels.
- ⦿ Existing Street Light Retained



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 Cowley Business Park  
 Uxbridge  
 Middlesex UB8 2AD  
<http://www.gallifordtry.co.uk>  
 Tel: 01895 855000

Title:  
**Gray's Inn Road**  
**Indicative Site Logistics**  
**Finishing Stage**

Drwg Status: Tender	
Date: 08-09-2022	
Drawn by: NS	Drawn for: JB
Scale: NTS	
Drwg No: GR-SL002	Rev: