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February 2023

London Luton Airport Expansion

Planning Inspectorate Scheme Ref: TR020001

Volume 5 Environmental Statement and Related Documents

5.02 Appendix 14.2 Tree Survey

Application Document Ref: TR020001/APP/5.02
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The Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

London Luton Airport Expansion Development Consent Order 202x

5.02 ENVIRONMENTAL STATEMENT APPENDIX 14.2 TREE SURVEY

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Pell Frischmann

excellence through innovation

New Luton Airport Perimeter Road

Arboricultural Survey

May 2016

RE30131V002/B

Submitted by Pell Frischmann

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CONTENTS

1. INTRODUCTION

Pell Frischmann have been commissioned by Luton Borough Council to undertake an Arboricultural Assessment at Percival Way and Wigmore Park near Luton Airport. This report aims to inform the proposed design scheme with regard to impacts on trees. The first issue of this report also considered two other options for the transport route. These routes are no longer under consideration.

1.1 OBJECTIVES AND SCOPE

The objectives of this Arboricultural Assessment are to evaluate the overall condition of the trees on and adjacent to the footprint of the proposed development, and to highlight potential arboricultural constraints that will need to be considered when developing the preferred development plan.

An initial assessment of potential arboricultural impacts has been undertaken using the development plans as attached in Appendix A. This assessment can be updated once a finalised development plan has been issued.

The arboricultural survey aims to assess the following:

- the suitability of trees for retention as categorised in accordance with BS 5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations'* ;
- the constraints presented by the trees;
- impacts of the scheme development in relation to any retained trees;
- the arboricultural impacts of the proposed scheme; and
- the requirements for tree management where appropriate.

British Standard (BS) 5837: 2012 *'Trees in relation to design, demolition and construction – Recommendations'* requires that information on the constraints associated with retained trees be sent to the project designers. This information is detailed in a Tree Constraints Plan. The constraints, which are covered by BS 5837, are associated with issues relating to retained trees both above and below ground, and the necessary measures to ensure their safe retention.

The purpose of the Tree Constraints Plan will be to inform the design process. A Tree Protection Plan can be produced once a detailed construction and service layout has been produced.

1.2 SITE LOCATION

The site is located in Luton, Bedfordshire. The site is centred at National Grid Reference TL 114 215 as shown below in figure1. The site survey area is shown below is figure 2.

This site is located within Borough of Luton Council's administrative boundary and is occupied by a business park including hotels and warehouses. The site is located adjacent to London Luton Airport to the south, residential properties to the north, the A505 Vauxhall Way to the west and arable land to the east.

Figure 1: Site Location

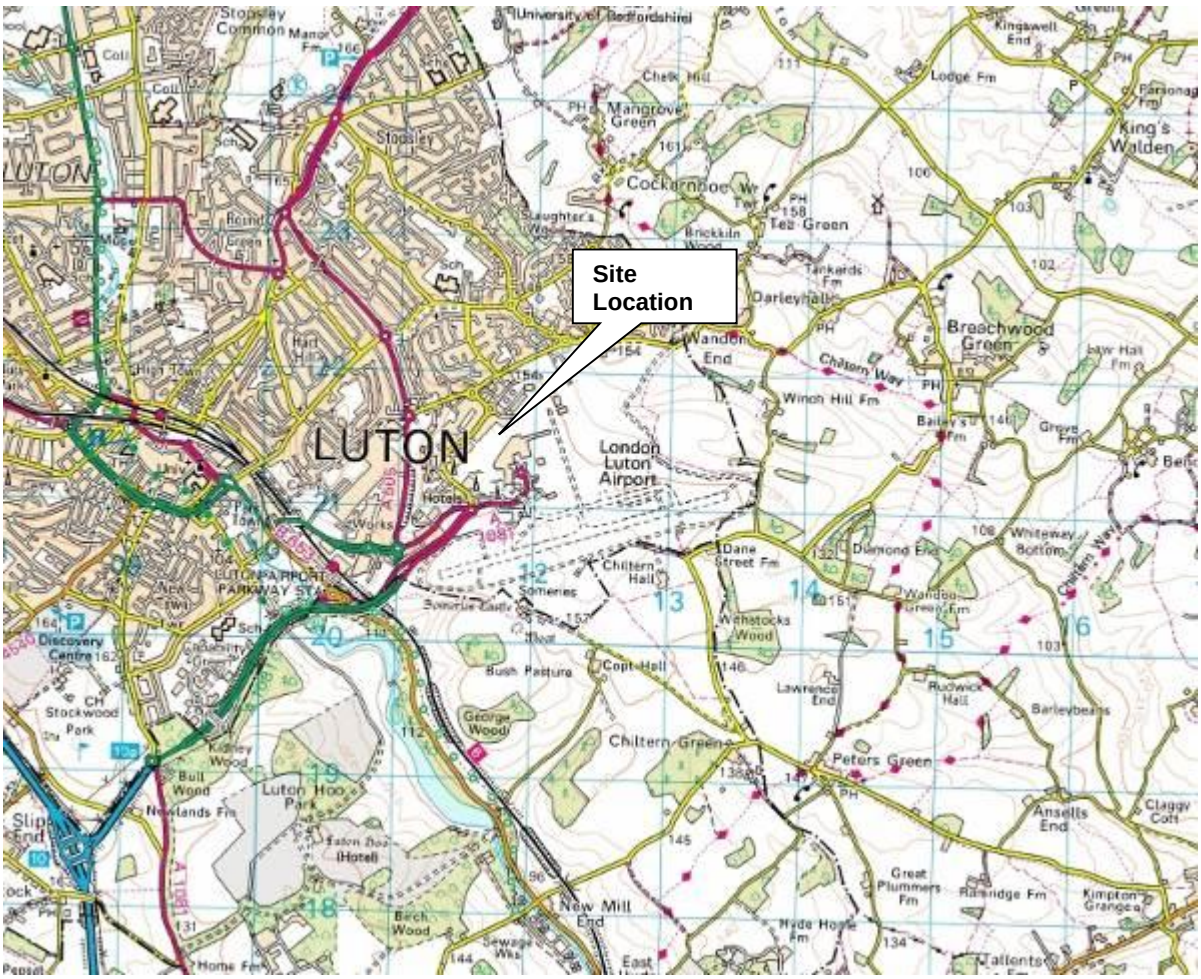


Figure 2: Site survey area

1.3 PROPOSED DEVELOPMENT

It is intended to develop a dual carriageway to extend the road from Airport Way, through land adjacent to the west of Percival Way, and continuing beyond in the President Way corridor on the northern perimeter of the existing airport terminal. The road will extend into Wigmore Park where it will join with a potential new development.

The road option for the tie in road leading from Airport Way to converge at Frank Lester Way before continuing along President Way and into Wigmore Park is attached in Appendix A. The Phase 1 Habitat Survey covers the area shown in Figure 2 above. This defines the Ecological Zone of Influence for the scheme.

2. NATIONAL POLICY AND LEGISLATION

Tree work or tree removal will give rise to ecological impacts which may be constrained by current legislation including: The Conservation Regulations (2010), the Wildlife and Countryside Act (1981), the NERC act (2006) and the Countryside and Rights of Way Act (2000). Further specialist surveys may be required if works are likely to impact trees of ecological importance.

Information provided by the Luton Borough Council indicates that the site is not located within any conservation areas or covered by any Tree Preservation Orders (TPOs). This information can be found online at:
http://www.luton.gov.uk/Environment/Planning/Conservation,%20design%20and%20trees/Pages/default.aspx

3. METHODOLOGY

The arboricultural survey was undertaken by S Humphreys MSc CEnv MCIEEM from Pell Frischmann on the 7th and 8th March 2016. The weather was fine and visibility was good.

Trees were photographed and measured for height, crown spread, and stem diameter. The physical and structural condition of each tree, or group of trees, was noted and recommendations made for tree work or on-going maintenance requirements are detailed in the Tree Survey Schedule presented as Appendix B.

3.1 PRINCIPAL TREES: AGE CLASSIFICATION

The following classification has been employed:

1. Young: Saplings and young trees under 10 years of age.

2. Middle Aged: Trees older than 10 years but less than one third of the life expectancy of their species, normally making substantial extension growth.

3. Mature: Trees between one third and two thirds of the life expectancy of their species. Approximately full height and girth, increasing only slowly over time.

4. Over mature: Trees beyond two thirds of the life expectancy of their species. No significant extension growth. Crown starting to break up and decrease in size.

5. Veteran Trees are beyond the over mature stage but because of their size and age are significant features within the landscape and which can be rejuvenated and conserved by appropriate management.

3.2 TREE SURVEY AND TREE CONDITION

The surveyor assessed the individual condition of the trees identified within the area. The assessment of condition is based on a visual inspection only.

Each tree was assessed by consideration of the following:

a) any visible structural defects,

b) the size and form and the suitability of its position,

c) the location with regard to the position of other relevant features.

3.3 CATEGORIES FOR TREE CONSTRAINTS PLAN

Individual trees are assessed and then placed into one of four categories as detailed below. For tree numbers please refer to the appended Tree Constraints Plan.

- **Category A** (marked Green on the Tree Constraints Plan). Trees which are significant and which must be retained, wherever possible, within the layout. Category A trees which are particularly good examples of their species, or are essential components of a group (e.g. the dominant and/or principal trees within an avenue)

- **Category B** (marked Mid Blue on the Tree Constraints Plan). These trees should be retained, wherever possible, within any development proposals. These trees have been downgraded due to impaired condition, such that they are unlikely to be suitable for retention beyond 40 years.

- **Category C** (marked in Grey on the Tree Constraints Plan). Trees which do not have sufficient arboricultural merit to constrain development proposals.

- **Category U** (marked in Red on Tree Constraints Plan). Trees which will not remain safe features beyond the short term and should be removed as part of any development proposals.

BS5837 requires that trees are further identified according to any particular merits defined as:

- Arboricultural specimens – sub division 1
- Trees of landscape importance – sub division 2
- Trees with ecological, historical or cultural significance – sub division 3

A Preliminary Ecological Survey has been undertaken for this site which has outlined the habitats of the site, including trees (see PF RE13018V001/B).

The design layout should allow for the retention of Category A and B trees where possible. Category C trees should only be retained in locations where they will not over constrain development proposals or present additional amenity issues.

Mitigation will be required for the loss of any trees, or groups of trees, which have been classified as Category A or B.

3.4 ROOT PROTECTION AREA

BS5837 defines the Root Protection Area (RPA) 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"

For each tree the RPA has been calculated. For single stems trees, the RPA is calculated as an area equivalent to a circle with a radius 12 times the stem diameter. For trees with more than one stem, the RPA has been calculated using the Helliwell Method with each stem being measures at 1.5m above ground level in order to calculate the basal area in m^2. The shape and position of the RPA may be adjusted by the arboriculturalist to take into consideration site factors such as soil type and depth, prevailing wind, slope and drainage or built structures such as roads or footings. The overall size of the RPA cannot be changed.

3.5 KEY FOR TREE SURVEY SCHEDULE

Table 1: Key for Tree Survey Schedule (Appendix B)

Species	Latin Genus and Species + common name
Height	Measured with clinometer in metres
Stem diameter	Diameter measured at 1.5 m from ground level with tape in mm
Spread area (N,S,E,W)	Crown spread measured in metres at the points on the compass
Height of Crown Clearance	In metres to inform on ground clearance, shading and crown to stem ratio.
Age Class	Y-Young, MA- Middle Aged, M-Mature, OM- Over mature, V-Veteran
Physiological Condition	Good, Fair, Poor, Dead
Structural Condition	Visual evidence of the presence of decay or danger of collapse
Category Grading	A-good, B-Moderate, C-Poor, U-Dead or dangerous

4. SITE SURVEY RESULTS

The survey results are shown in the Tree Survey Schedule presented in Appendix B. The layout and root protection areas are shown in the Tree Constraints Plan presented in Appendix C.

4.1 RECORDED TREES

19 individual trees were identified and 56 groups were identified. 33 species of tree were recorded, including:

- Holly *Ilex aquifolium*
- English oak *Quercus robur*
- Elder *Sambucus nigra*
- Ash *Fraxinus excelsior*
- Field Maple *Acer campestre*
- Hawthorn *Crataegus monogyna*
- Scots pine *Pinus sylvestris*
- Wild cherry *Prunus avium*
- Blackthorn *Prunus spinosa*
- Hazel *Corylus avellana*
- Dog rose *Rosa canina*
- Horse chestnut *Aesculus hippocastanum*
- Red oak *Quercus rubra*
- Beech *Fagus sylvatica*
- Whitebeam *Sorbus aria*
- Corsican pine *Pinus nigra*
- Silver birch *Betula pendula*
- Goat willow *Salix caprea*
- Leyland cypress *Cupressoyparis x leylandii*
- Common lime *Tilia europea*
- Sycamore *Acer pseudoplatanus*
- Cockspur thorn *Crataegus crus-galli*
- Norway maple *Acer platanoides*
- Alder *Alnus glutinosa*
- Black poplar *Populus x canadenis*
- White poplar *Populus alba*
- Monterey cypress *Cupressus macrocarpa*
- Laurel *Laurus nobilis*
- Hornbeam *Carpinus betulus*
- Flowering cherry *Prunus "accolade"*
- Rowan *Sorbus aucuparia*
- Himalayan birch *Betula utilis*
- Blue spruce *Picea pungens*

Of the individual trees, 1 has been placed in Category A, 10 in Category B, 7 in Category C and 1 in Category U. Of the Groups, 2 have been placed in Category A, 30 in Category B, 22 in Category C and in 2 Category U.

4.2 INDIVIDUAL TREES

4.2.1 Category A

One sycamore (T61) has been placed in Category A. This is an important tree due to its landscape and ecological value. This tree should be retained where possible as significant mitigation will be required if this tree is impacted upon by the development.

4.2.2 Category B

10 individual trees were recorded as category B. These trees are prominent within the landscape and provide ecological habitats for breeding birds. Impacts on these trees should be avoided where possible and must be mitigated for if these impacts cannot be avoided.

Plate 1: Category B Horse chestnut (T54)

4.2.3 Category C

7 individual trees were placed in category C due their poor physical or structural condition.

Plate 2: Category C Hybrid Black Poplar (T38)

4.2.4 Category U

A large sycamore adjacent to the Ibis Hotel has been placed in Category U. This tree is in poor structural condition with deadwood in the crown. This tree should be considered for replacement.

4.3 GROUPS

The term ‘Groups’ is intended to identify any trees that for cohesive arboricultural features, either aerodynamically, visually or culturally (including for biodiversity).

4.3.1 Category A

Two groups have been categorised as Category A. these groups are of importance and must be retained during development. G2 at the eastern edge of Wigmore Park is a former overgrown hedge with mature oak pollards with ecological, historical or cultural significance. G62 is a row of 5 mature lime trees and a cherry which provide important screening between the Ibis Hotel and fuel tanks.

Plate 3: Category A Group (G62) providing landscape screening

4.3.2 Category B

28 Category B Groups were recorded throughout the site. These groups create a prominent feature and within the vicinity of Percival Way, provide screening between buildings and industrial airport areas. These groups also provide important ecological habitats for breeding birds and foraging bats.

Plate 4: Wigmore Park Group B Trees (G6 to the east and G4 to the west)

4.3.3 Category C

30 trees have been placed into this Category. Steps should be taken to minimise impacts to all trees, including those in this category.

4.3.4 Category U

There are 2 groups placed in Category U. G8 is a group of 12 horse chestnuts in Wigmore Park. Several of these trees have symptoms of bleeding canker (*Pseudomonas syringae pv. Aesculi*) and many have basal wounds from a gang mower. G49 is a group of overgrown Leyland cypress around a sub-station. It is recommended that these trees should be removed and replaced with shrub planting before structural damage occurs.

5. LIKELY IMPACTS

The arboricultural survey has identified trees and groups of trees of both ecological and landscape importance. Potential impacts on these features have been assessed for the proposed road option attached in appendix A.

5.1 ARBORICULTURAL IMPACTS

Trees and groups of trees recorded on site are shown on the Tree Constraints Plan in Appendix C. These trees represent the baseline for the arboricultural assessment.

The route eastwards from the junction with Frank Lester Way will be the same for all three options. These impacts are as follows:

5.1.1 Frank Lester Way

A total of 1 tree and 6 groups of trees will need to be removed in order to facilitate construction. These include:

G43	Category B
G44	Category B
G45	Category B
G46	Category C
G47	Category C
T48	Category B
G49	Category U

Sections of the following group will also be impacted:

G19	Category B

Widening the existing road along Presidents Way will require the removal of landscape trees and shrub planting. Some of these groups of trees were assessed as being in Category B due to their condition and their importance in screening large buildings set back from the road and providing a green corridor for road travellers.

All of the road options will require Presidents Way to be widened which will also result in the demolition of buildings along the south side of the road. The layout for the replacement buildings should take into consideration the need for the replacement of groups G43, G44 and G45 (Category B) which contain approximately 30 trees.

5.1.2 Eastern Access Road (Wigmore Park)

A total of 1 tree and 2 groups of trees will need to be removed in order to facilitate construction. These include:

G7	Category C
G8	Category U
T17	Category C

Sections of the following groups will also be impacted:

G4	Category B
G6	Category B
G9	Category C
G10	Category B

The road route through Wigmore Park will impact on trees along the eastern and western boundaries. Some of these groups of trees provide effective screening and have been placed in Category B. Efforts will need to be taken to minimise the impacts to these trees and to ensure that retained trees are adequately protected.

Particular care should be taken to minimise the width of the construction zone as it passes through G4, G6, G7, G8, G9, and G19 in order to restrict the visual impact of the scheme. Consideration should be given to retaining tree T5 (oak) on the eastern boundary of Wigmore Park. The current route proposal passes just to the south of this tree.

5.1.3 Route Option through the west of the site

A total of 4 trees and 4 groups of trees will need to be removed in order to facilitate construction. These include:

G24	Category C
G25	Category C
T26	Category C
T31	Category B
T38	Category C
G39	Category C
T52	Category B
G66	Category C

Sections of the following groups will also be impacted:

G32	Category B
G34	Category B
G51	Category C
G76	Category B

This route will remove prominent trees which currently screen buildings close to Dairyborn Scarp. A number of category B trees and a category B group will need to be replaced. Approximately seven mature trees will be lost from G34.

It is recommended that steps are taken to minimise the impacts to these trees and that an arboricultural method statement is produced to ensure that retained trees are adequately protected during construction works.

5.2 ECOLOGICAL IMPACTS IN RELATION TO TREES

The road route will cut through Groups G4 and G6 on the eastern boundary of Wigmore Park. This forms part of the County Wildlife Site and is an important habitat for breeding birds. Further surveys are currently proposed for reptiles and bat activity in this area, and further ecological mitigation measures may need to be adopted. It is likely that ecological constraints will further limit the working width of the construction zone at this point.

There is potential to impact on large areas of scrub, introduced shrubs and young trees which are likely to support a range of breeding bird species.

Dairyborn Scarp is a District Wildlife Site (DWS) and the top of the escarpment will be affected by all three route options. The scheme may require the removal of scrub and young trees which are colonising former areas of chalk grassland. The status and condition of the DWS may restrict the areas available for replanting or screening the new road. A detailed vegetation survey is planned for 2016 which will enable a more accurate ecological impact assessment to be made.

5.3 LANDSCAPE IMPACTS

The route will impact the outside edge of Dairyborn Scarp escarpment (Group G76). The current designs will require a range of retaining structures to be built along the top of the slope. These structures and the road excavation are likely to be visible from parts of Luton town centre.

Areas of birch, and sycamore woodland, scattered sycamore and scrub will be removed for option 6. Scattered trees and scrub will be lost for the other routes. Mitigation for these losses should take into consideration the landscape and visual impacts of the individual route options.

6. RECOMMENDATIONS

6.1 MITIGATION MEASURES

6.1.1 Mitigation requirements

Table 2 below summarises the approximate number of trees which are likely to be removed for the different sections of the route. Mitigation will be required for the loss of any trees, or groups of trees, which have been classified as Category B (there are no Category A trees being impacted). The number of individual trees affected have been estimated as the exact working width of the construction impact zone is not currently known.

Table 2: Impact summary and Mitigation Requirement

Route	Trees likely to be removed	Category	Mitigation
East of Frank Lester Way	G43	Category B	Replace up to 8 broadleaf trees
	G44	Category B	Replace up to 7 broadleaf trees
	G45	Category B	Replace up to 8 broadleaf trees
	G46	Category C	
	G47	Category C	
	T48	Category B	Replace a single s/m tree
	G49	Category U	
	G19	Category B	Replace up to 25 broadleaf & conifers
Eastern Access Road	G7	Category C	
	G8	Category U	
	T17	Category C	
	G4	Category B	Replace up to 40 broadleaf trees
	G6	Category B	Replace up to 30 broadleaf trees
	G9	Category C	
	G10	Category B	Replace up to 15 broadleaf & conifers
	T15	Category B	Ensure tree has specific protection
Tie in road from Airport Way	G24	Category C	
	G25	Category C	
	T26	Category C	
	T31	Category B	Replace single broadleaf tree
	T38	Category C	
	G39	Category C	
	T52	Category B	Replace single broadleaf tree
	G66	Category C	
	G32	Category B	Replace 3 broadleaf trees
	G34	Category B	Replace 8 broadleaf trees
	G51	Category C	
	G76	Category B	Replace up to 25 broadleaf trees

Additional mitigation may be required following completion of further ecological surveys and the Landscape and Visual Impact Assessment (if required).

Due to the removal of a significant number of trees from two non-statutory designated sites, it is recommended that a project arborist is appointed to ensure that the tree protection and mitigation measures are fully complied with (see section 7.5).

6.1.2 Tree removal

Trees and vegetation will need to be removed in order to facilitate the development. All trees due for removal should be clearly marked with paint and should be checked by the project arborist. Luton Borough Council may wish to undertake additional checks at this stage.

The route is likely to impact on G76 (a group of sycamore trees along the top of Dairyborn Scarp). Currently a retaining structure is planned for the edge of the road at this point. This is likely to affect a number of trees on, or close to the steep escarpment. Due to the gradient of the slope and the presence of buildings at the base of the escarpment, it is recommended that if possible, the retaining wall avoids all of the trees within G76.

If impacts cannot be avoided, steps should be taken to minimise the removal of trees. It is recommended that a specific arboricultural method statement is prepared with the road design team. The stability of individual retained trees will need to be assessed and additional measures may need to be taken to ensure their retention. Alternatively consideration should be given to coppicing existing trees and allowing them to regrow, thus maintaining their root-plate in situ.

Notable trees further north along Dairyborn Scarp will not be affected by the scheme.

Woodland areas in Wigmore Park will be retained wherever possible and consideration must be given to tree protection along the entire route.

This work should be completed outside of the breeding bird season (March - September).

Protection of individual trees and groups of trees is discussed in Section 7.

6.1.3 Tree Planting

The number of trees required for planting in mitigation of the arboricultural impacts for the chosen route should be a minimum of 172 trees. This is to mitigate for the loss of Category B trees and groups of trees. Additional mitigation should be considered for the loss of Category C trees and Category C groups of trees.

Roadside planting will be possible along Dairyborn Scarp and through Wigmore Park. Currently it is not known if the verge width along Percival Way and Presidents Way will be sufficiently wide to accommodate significant areas of tree planting.

Due to the steep slope and thin soil on Dairyborn Scarp it is recommended that smaller transplants trees, whips and cell grown trees are used for replanting as these are more likely to establish themselves successfully on such an exposed site. Tree species will also need to be fully tolerant of alkaline conditions.

Larger trees can be specified for planting within the Wigmore Park area. Replacement planting should aim to cushion the visual impact to important Groups of trees such as G4, G6 G10 and G19.

It is understood that land will be made available for a new country park to the east of the Wigmore Park site. This will provide opportunities for additional tree planting and screening.

Tree planting will also need to mitigate for the loss of breeding habitat for birds and foraging habitat for bats. This will include a wide range of native tree and shrub species suitable for calcareous conditions. Dense shrub planting will create suitable breeding habitat within 3.5 years. All tree planting requirements will be included within the landscape plan for the scheme.

All tree work must be undertaken to standards detailed in BS 3998: 2010 ‘Tree Work - Recommendations’.

6.1.4 Ecological Mitigation

Woodlands, scattered trees, scrub and introduced shrub all have the potential to support breeding birds. Any construction or clearance works impacting on these areas should be completed outside of the breeding bird season (March-September).

If this is not possible then the works will require an ecological brief to ensure that the structures are clear of nests. If any active nests are located then works will be required to stop until a 5m radius around the nest has been screened off from construction. Any works within this area will only be permitted to continue after the chicks have fledged.

It is recommended that native species are specified for replacement planting as far as possible. It is recognised that sycamore is well established along Dairyborn scarp and that Scots and Corsican pine grow successfully throughout Wigmore Park, and may form part of suitable planting mixtures.

For full details see the stand alone Preliminary Ecological Appraisal report (RE30131V001/B)

7. TREE PROTECTION MEASURES

BS 5837 specifies that a Tree Protection Plan (TPP) should be prepared to show the impact of the proposed development on existing trees at the site. A draft TPP will be prepared when the option route has been decided and an accurate Construction Exclusion Zone (CEZ) can be calculated.

The draft TPP must show the location of protective fencing (see section 7.2) and other protection measures.

The final TPP will be prepared when the design layout has been finalised. Other areas of land; where soil will need to be protected from compaction or contamination, will also be identified.

Information from the TPP should be incorporated into subsequent drawings and method statements to ensure that all interested parties are fully aware of the areas in which access and works may and may not take place. The final TPP will be produced following the completion of detailed designs for the site.

The following protection measures have been recommended for all construction works where excavation other activities could impact on retained trees.

7.1 CONSTRUCTION EXCLUSION ZONE (CEZ)

During construction, care must be taken to ensure that the existing ground levels around trees are maintained as trees are sensitive to any changes in water level or factors which alter the aeration of the root system.

As a general guide, the full root protection area (RPA) should be observed, and BS 5837 adhered to (see the Tree Constraints Plan in Appendix C).

BS 5837 states that all retained trees or groups of trees should be protected by RPAs marked by the erection of a protective barrier. The Tree Constraints Plan and the Tree Survey Schedule shows the RPA for each tree or group of trees.

BS 5837 specifies the minimum RPA in square metres rather than a radial distance; the final barrier position will be shown on the Tree Protection Plan, which will be produced once the development layout has been finalised.

BS 5837 enables the professional arborist to make small changes to the shape (but not the area) of the RPA to fit with local conditions. These alterations should be incorporated into the final Tree Protection Plan to ensure that retained trees are adequately protected.

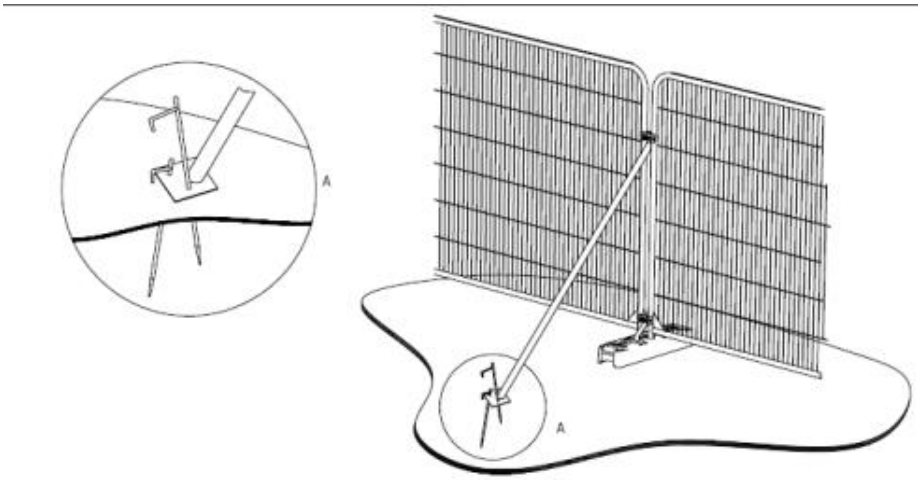
The final Tree Protection Plan should also detail routes for services and site facilities.

7.2 PROTECTION MEASURES FOR RETAINED TREES

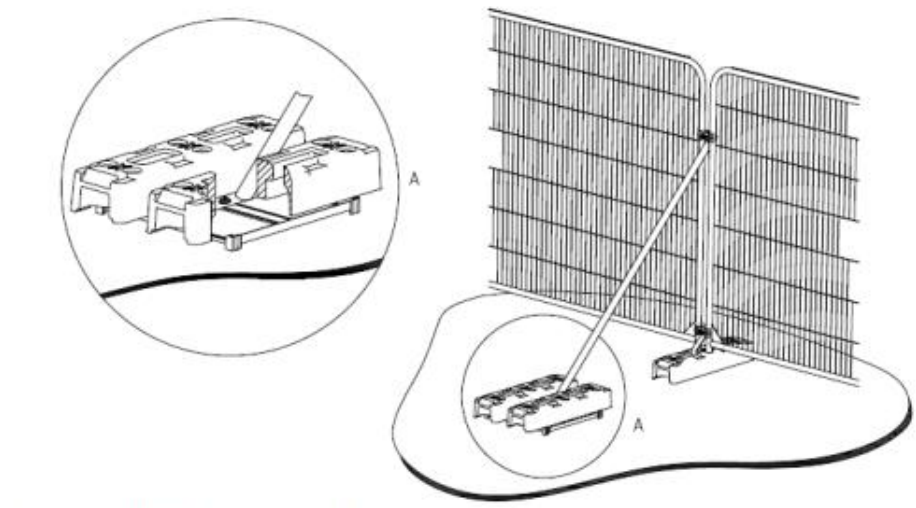
Retained trees will require ground protection around their Root Protection Area (RPA) using a combination of barriers and ground protection.

All barriers should conform to the standard specified in BS 5837:2012 and are shown in Figure 3 below.

Figure 3: Protective Barrier



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

The protective barriers should comprise a scaffold frame from which “heras” type fencing (or similar) should be firmly attached. The barrier must be strong enough to protect the trees from the expected level of construction activity and should be constructed so that it cannot be easily moved.

Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence. All weather notices must be erected on the barriers stating “Construction Exclusion Zone KEEP OUT”. It is recommended that

the protective fencing is erected under the supervision of an arborist to ensure that adequate protection is provided.

The location of protective barriers will need to be shown on the TPP. Once the protective fencing is in place it should be inspected by the project arborist, who should then inform the local authority tree officer that the erection work has been completed.

Particular care must be taken to protect trees in Wigmore Park and along Dairyborn Scarp. Trees within Groups G4, G6, G10 and G19 will be close to the CEZ and the project arborist must ensure that roots of the retained trees are fully protected. Protective fencing must also be erected along the entire length of G10, G12, G13, G14, G74 and G75.

Specific protection measures may be required for Group G76 which are discussed in section 6.1.2

7.3 OTHER PROTECTION MEASURES

Material which will contaminate the soil, such as concrete mixings, diesel and vehicle washings, should not be discharged within 10 metres of the tree stem.

Notice boards, telephone cables or other services should not be attached to any part of the tree.

Fires should not be lit within 5 metres of any tree trunk, branch or foliage.

No materials or rubbish should be left within the CEZ.

If services need to pass through the CEZ, directional drilling or thrust boring techniques must be employed at a suitable depth (≥ 1 metre) under the trees. This will minimise damage to tree roots. Any works which need to take place within the CEZ must be notified to the project arborist in advance. The project arborist should produce a suitable arboricultural method statement for the works and may recommend that the work is undertaken under a professional watching brief.

7.4 MEASURES TO PROTECT ROOTS OF RETAINED TREES

It may be possible to incorporate walkways alongside existing trees by using “no-dig” construction techniques such as cellular confinement systems. It is possible for these systems to occupy up to 20% of the total area of a Root Protection Area of a retained tree.

Paving and other permanent surfaces should be laid onto a flexible base to allow movement and to facilitate re-laying if distortion becomes excessive. Cellular containment systems such as “Cellweb” or similar aggregate retaining products allow for root plate movement. These should be laid under the guidance of an experienced arborist to ensure that roots are fully protected. Cellular confinement

systems are laid over the existing ground surface and no prior excavation should be undertaken. These techniques may enable some trees to be retained along Presidents Way.

It is essential that the block paving or other surfaces which are proposed are fully porous to allow water and air to reach the roots of retained trees.

Full arboricultural method statements should be produced for this type of activity and a suitably experienced arborist should be on site to supervise key operations.

7.5 APPOINTMENT OF PROJECT ARBORICULTURALIST

Due to the potential impact of the scheme on a large number of trees, it is recommended that a suitably experienced Arboriculturalist is appointed. Their roles would include the following duties:

- Overseeing of tree removal to ensure no retained trees are removed or damaged.
- Inspection of tree protection measures including the location of protective fencing.
- Monitoring of tree protection measures during the construction period.
- Direct supervision of all Arboricultural Method Statements with contractors
- Checking landscape works to ensure tree planting meets required specifications
- Reporting of any variations, non-compliance or other issues with the contractor
- Progress reporting and notice of variation with the Luton Borough Council Tree Officer.

Some roles may be combined with that of the ecological clerk of works for the scheme and close co-operation will be required with the scheme landscape architect.

8. SUMMARY

The survey results are shown in the Tree Survey Schedule in Appendix B. The layout and root protection areas are shown in the Tree Constraints Plan in Appendix C.

19 individual trees were identified and 56 groups were identified.

Of the individual trees, 1 has been placed in Category A, 10 in Category B, 7 in Category C and 1 in Category U. Of the Groups, 2 have been placed in Category A, 30 in Category B, 22 in Category C and in 2 Category U.

A Tree Constraints Plan has been produced for all three route options.

An assessment has been made of potential arboricultural impacts. The development will require trees to be removed including trees which are located within two non-statutory protected areas. Recommendations have been made to minimise the impacts to trees along Dairyborn Scarp and through Wigmore Park.

Replacement tree planting will be required for the loss of Category B trees and Category B groups of trees. At this stage, the working width of the construction zone has been estimated and a calculation has been made of the likely number of notable trees that will be lost. A total of 172 Category B trees and Category B groups will need to be replaced.

Options for replacement planting have been considered.

Following agreement for the working width for construction, a draft Tree Protection Plan will need to be produced. This will show all trees that need to be removed and will identify the location of all tree protection measures.

9. ARBORICULTURAL REPORT LIMITATIONS

The information reported is based only on the interpretation of data collected during the survey undertaken on site. The condition and size of the trees is likely to change with time.

This report has been prepared by Pell Frischmann with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client.

This report does not seek to address the specific area of subsidence risk. Any discussion of soil characteristics are included only where they may affect tree or root growth. Queries regarding subsidence will require a separate specialist report to be commissioned.

This report has been prepared solely for the use of Luton Borough Council and may not be relied upon by other parties without written consent from Pell Frischmann. In addition, it must be understood that this report does not constitute legal advice.

Pell Frischmann disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

10. REFERENCES

BS 5837: 20012 ‘Trees in relation to design, demolition and construction – Recommendations’

BS 3998: 2010 ‘Tree Work - Recommendations’

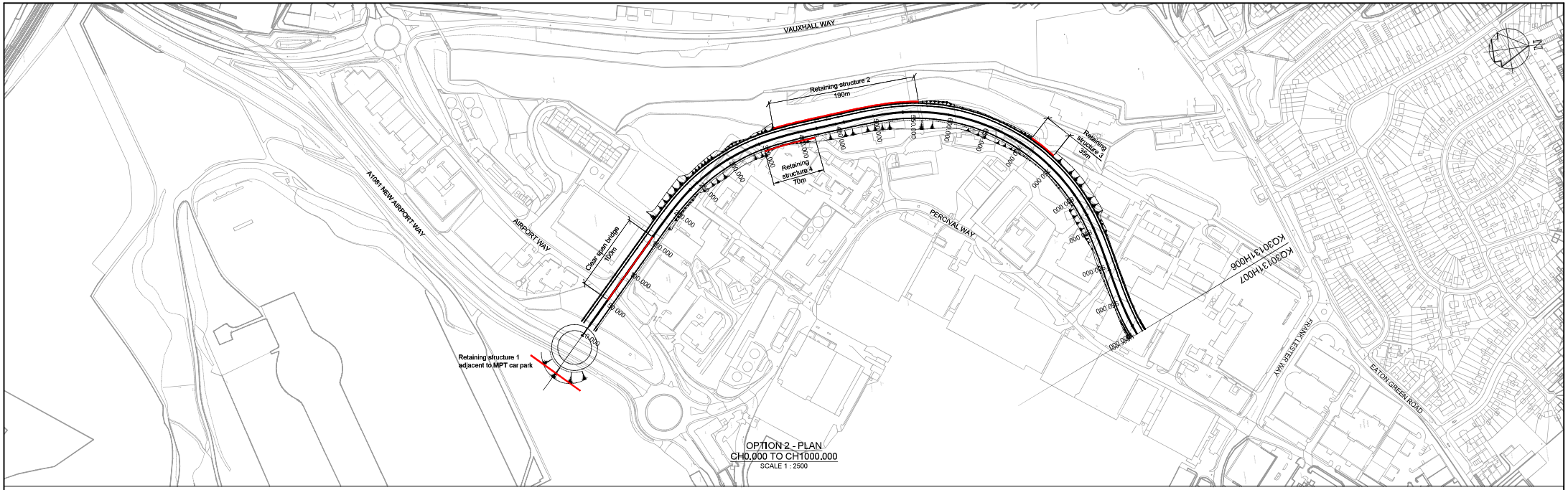
Luton Borough Council, Tree Preservation Orders. Available online: http://www.luton.gov.uk/Environment/Planning/Conservation,%20design%20and%20trees/Pages/default.aspx

National Joint Utilities Group (NJUG) *Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees*. Volume 4, issue 2. London:

Lonsdale D. Principles of Tree Hazard Assessment and Management. TSO London 1999

APPENDIX A

DEVELOPMENT OPTION



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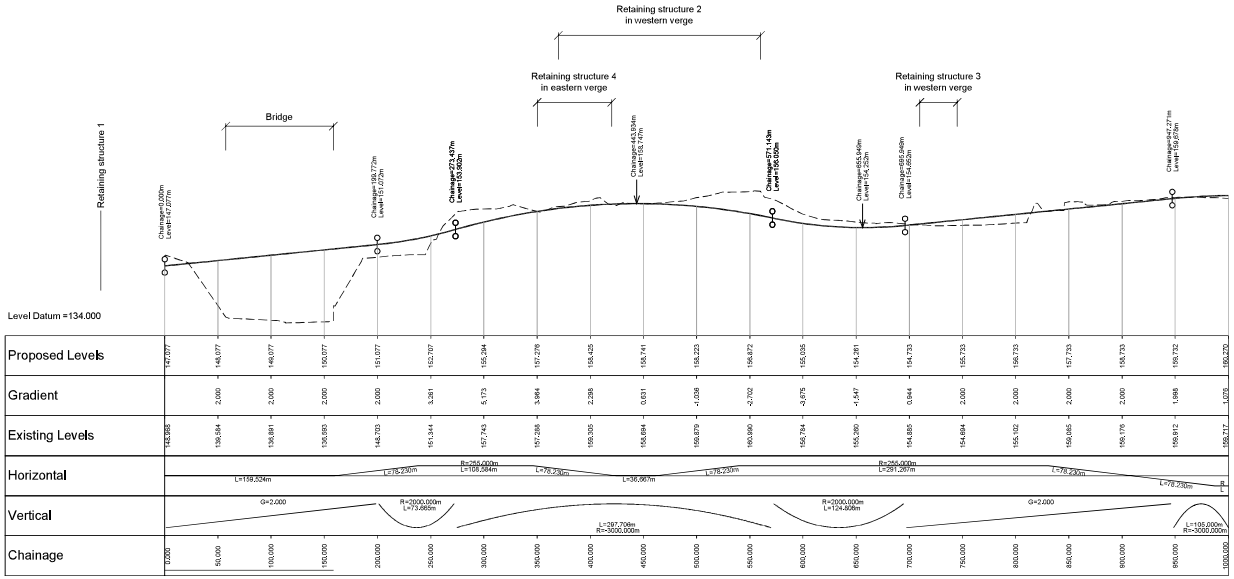

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NOTES

1. Do not scale from this drawing.
2. All dimensions are in metres (m) unless otherwise stated.

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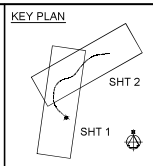
KEY PLAN



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	Name	Date
Drawn	MRC	11-01-16
Designed	MB	11-01-16
Checked	SA	11-01-16
Approved	AO	11-01-16
Drawing Status	FOR INFORMATION	

Project: NEW LUTON AIRPORT PERIMETER ROAD

File No.: Q30131

Scale: AS SHOWN @ A1

Drawing Title: OPTION 2 HIGHWAY LAYOUT & LONG SECTION SHEET 1 OF 2

Drawing No.: KQ30131H006

Revision: 0

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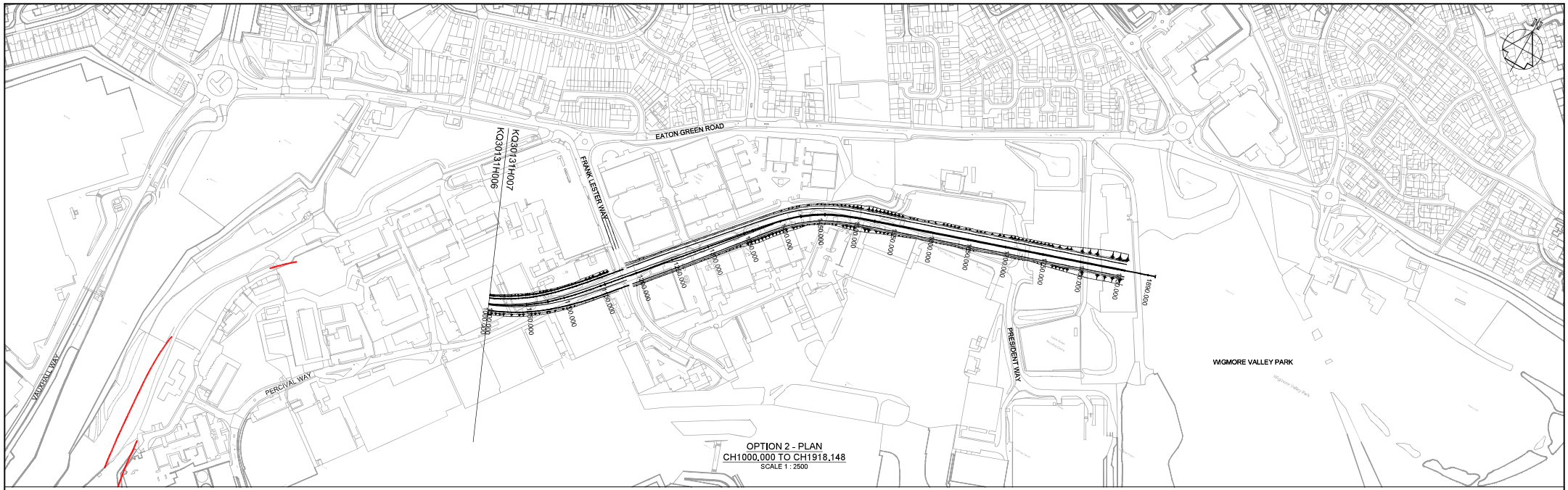

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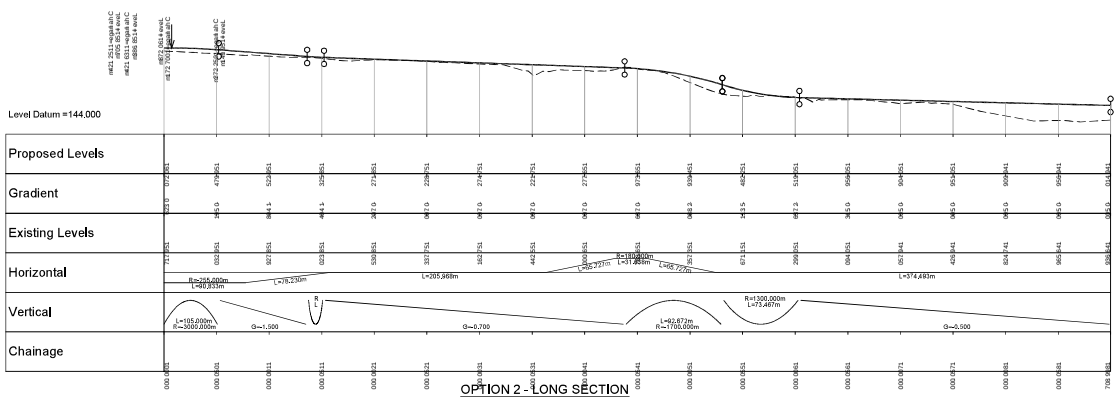

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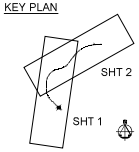

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	Name	Date
Drawn	MRC	11-01-16
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Checked	SA	11-01-16
Approved	AD	11-01-16
Drawing Status	FOR INFORMATION	

Project: NEW LUTON AIRPORT PERIMETER ROAD

Drawing Title: OPTION 2 HIGHWAY LAYOUT & LONG SECTION SHEET 2 OF 2

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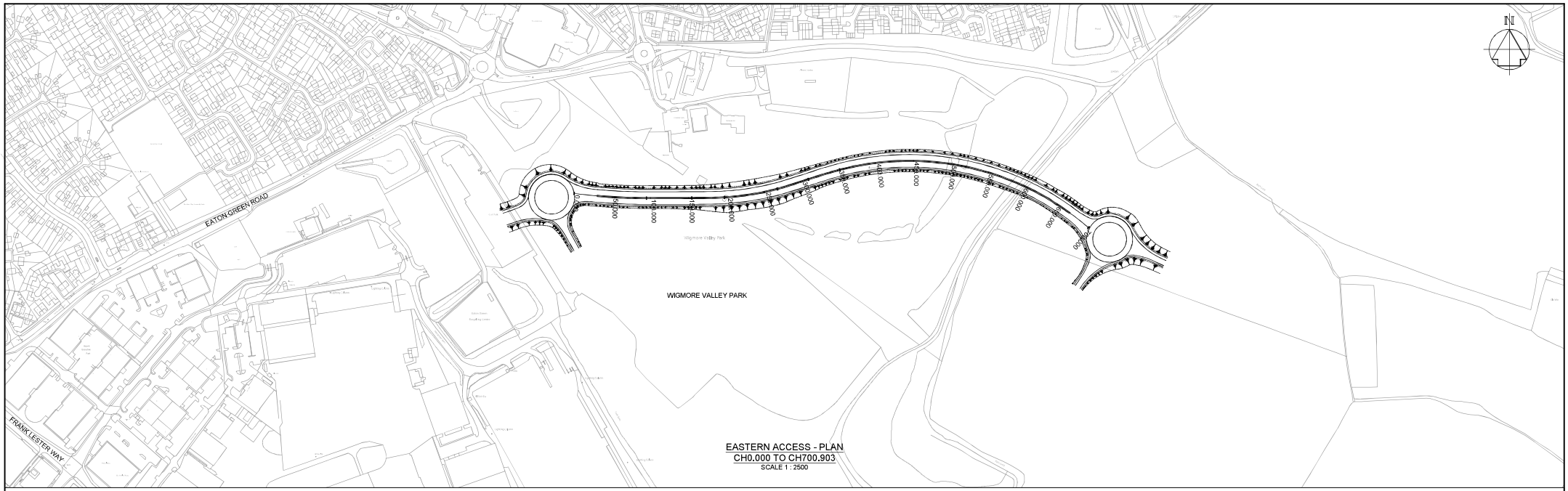

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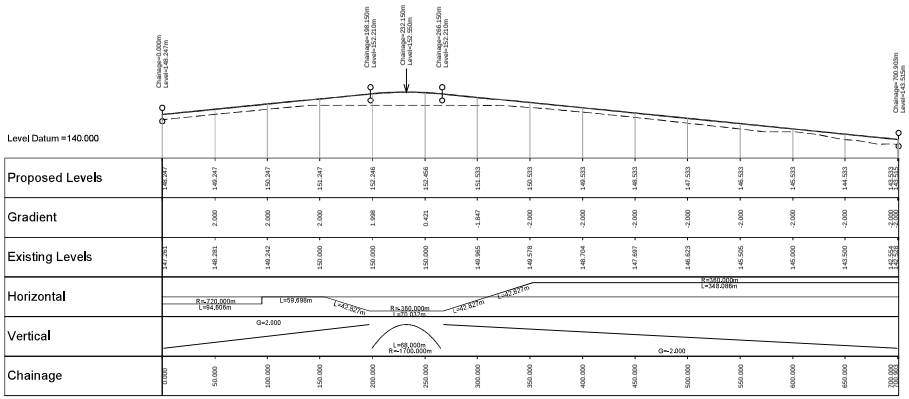

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NOTES

1. Do not scale from this drawing.
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Drawing Status: FOR INFORMATION

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Drawing Title: EASTERN ACCESS

File No.: Q30131

Scale: AS SHOWN @ A1

Drawing No.: KQ30131H038

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APPENDIX B

TREE SCHEDULE

			Tree Survey Schedule															
Class	No	Species	*Botanical*	Ex Ht	C S: N	C S: E	C S: S	C S: W	Age	Stem Dia	SS/MS	RPA	Phis Cond	Struc Cond	Notes & Hab	Cat	Tree work	Ref
G	1	Holly	*Illex aquifolium*	8					mature	to 300	ms	as shown on plan	Fair	Fair	Small group of mature holly on corner of woodland. Prominent visual location	B2		G1
G	2	Oak, elder, ash, field maple, hawthorn	*Quercus robur, Sambucus nigra, Fraxinus excelsior, Acer campestre, Crataegus monogyna*						mature			as shown on plan	good	good	Former overgrown hedgerow with mature oak pollards (from 3.5m)	A3		G2
G	3	Oak, Scots pine, wild cherry , blackthorn	*Quercus robur, Pinus sylvestris, Prunus avium, Prunus spinosa*						semi-mature			as shown on plan			area of woodland planted along the west side of G2	B2		G3
G	4	Oak, hazel, holly, dog rose, elder, blackthorn	*Quercus robur, Corylus avellana, Ilex aquifolium, Rosa canina, Sambucus nigra, Prunus spinosa*						semi-mature			as shown on plan			North end of G2 with only 1 mature oak.	B2		G4
T	5	Oak	*Quercus robur*	15	5	6.5	6	6.5	mature	680	ss	65	good	good	single oak pollard set within younger hedge and broadleaf planting	B2		T5
G	6	Oak, Scots pine, Horse Chestnut, Red Oak, Hawthorn, dog rose	*Quercus robur, Pinus sylvestris, Aesculus hippocastanum, Quercus rubra, Crataegus monogyna, Rosa canina*	11					semi-mature			as shown on plan	good	good	linear mixed conifer. broadleaf woodland along raised bank	B2		G6
G	7	Beech, whitebeam, Horse Chestnut	*Fagus sylvatica, Sorbus aria, Aesculus hippocastanum*	6					semi-mature	120 - 160		as shown on plan	Fair	fair	Group of five trees	C	thin out to favour beech for long term retention	G7
G	8	Horse Chestnut	*Aesculus hippocastanum*	8					semi-mature			as shown on plan	poor	poor	Group of 12 trees several with symptoms of *Pseudomonas syringae* . Others with basal or bark damage from gang mower	U	Remove and replace within 5 years	G8
G	9	Field maple, ash	*Acer campestre, Fraxinus excelsior*	12					semi-mature	120-220		as shown on plan	fair	fair	Group of even aged ash and field maple	C	Required thinning to favour dominant trees	G9
G	10	Ash, field maple, scots pine (10%) corsican pine (20%) Horse chestnut, beech, wild cherry	*Fraxinus excelsior, Acer campestre, Pinus sylvestris, Pinus nigra, Aesculus hippocastanum, Fagus sylvatica, Prunus avium*	10					semi-mature			as shown on plan	Fair	Fair	Linear even aged group. Prominent in open landscape Majority of horse chestnut with signs of *Pseudomonas syringae* infection.	B2	Remove h. chestnut in thinning.	G10
G	11	Corsican pine, scots pine wild cherry, beech	*Pinus nigra, Pinus sylvestris, Prunus avium, Fagus sylvatica*	7					semi-mature			as shown on plan	poor	poor	Smaller group to the west of G10 which appear to be more exposed or on poorer soil. Cherry is in poor condition	C		G11
G	12	Corsican pine, wild cherry, whitebam, silver birch, hawthorn	*Pinus nigra, Prunus avium, Sorbus aria, Betula pendula, Crataegus monogyna*	16					mature	300mm +		as shown on plan	good	good	Linear group of trees screening parkland from allotments and roadway. High breeding bird count	B2/3	Thin carefully to favour dominant trees	G12
G	13	Field maple, ash, goat willow, hawthorn	*Acer campestre, Fraxinus excelsior, Salix caprea, Crataegus monogyna*	8					semi-mature			as shown on plan	good	good	Overgorwn hedgerow with single prominent mwture willow	B2/3		G13
G	14	Leyland cypress, scots pine, field maple	*Cupressoyparis x leylandii, Pinus sylvestris, Acer campestre*	18					mature			as shown on plan	good	good	mature woodland with no shrub or ground layer. High breeding bird count	B2/3	Thin carefully to favour dominant trees	G14
G	15	Common lime	*Tilia x europea*	5					young			as shown on plan	poor	poor	circle of young lime trees	C	Trees require further management to ensure successful establishment	G15
T	16	Oak	*Quercus robur*	8.5	6	6	6	6	young	290	ss	38	good	good	single isolated tree alongside playground	C	Formative pruning required	T16
T	17	Hawthorn	*Crataegus monogyna*	6	3	3	3	3	semi-mature		ms	as shown on plan	good	good	single hawthorn on edge of landfill	C		T17
G	18	Goat willow, Sycamore, Elder, Blackthorn	*Salix caprea, Acer pseudoplatanus, Sambucus nigra, Prunus spinosa*	10					semi-mature		ss	as shown on plan	Fair	Fair	Group of sycamore screening car park with self seeded shrub species	C		G18
G	19	Corsican Pine	*Pinus nigra*	10					semi-mature		ss	as shown on plan	Fair	Fair	group of pine on bank screening car park from public open space	B		G19
G	20	Elder, Hawthorn, Goat Willow	*Sambucus nigra, Crataegus monogyna, Salix caprea*	5					semi-mature			as shown on plan	poor	poor	Scattered area of scrub and trees on made up ground beween car park and waste recylcing depot	C	Trees may have long term stability issues on made up ground. Review in 5 years	G20

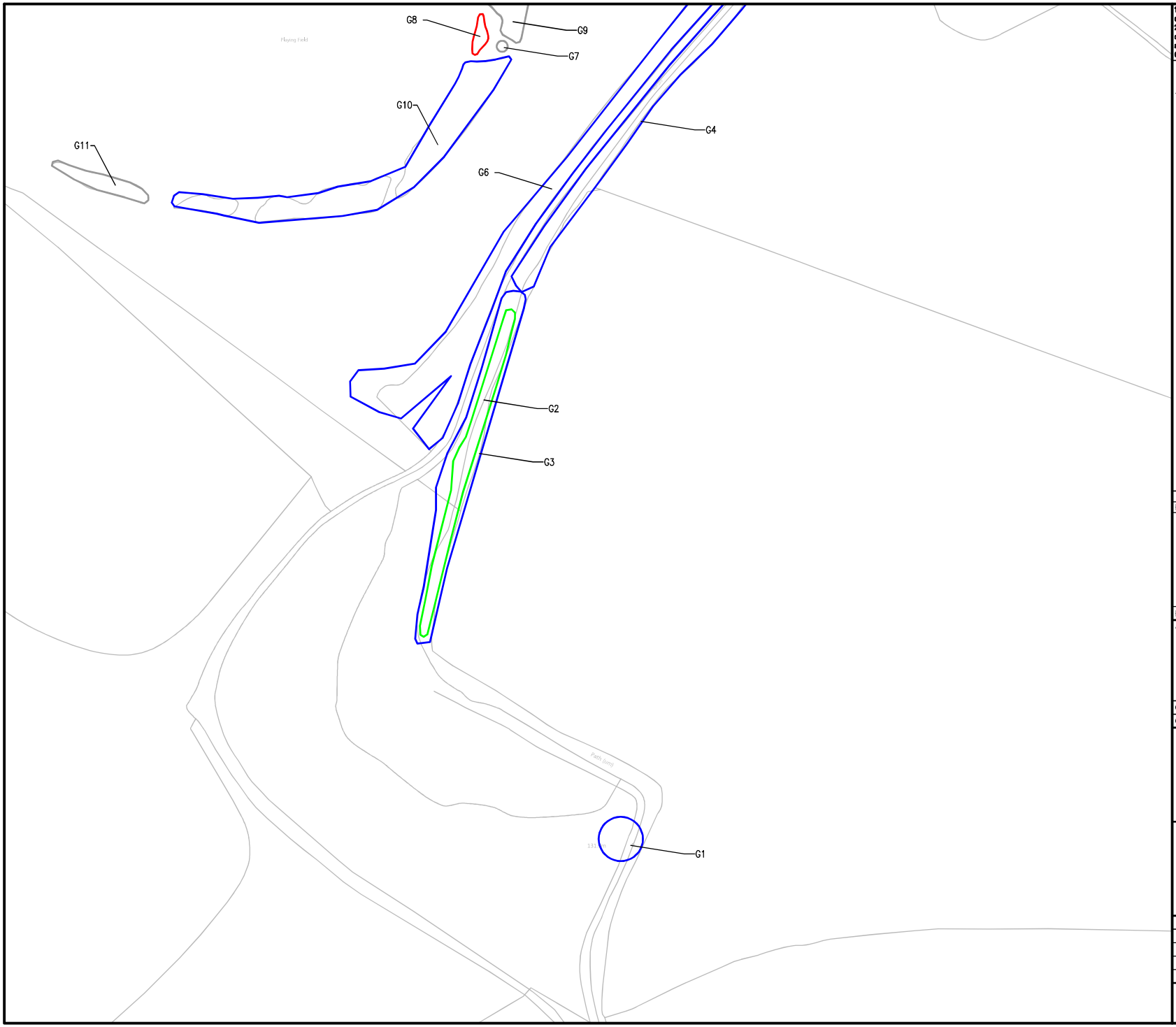
			Tree Survey Schedule															
Class	No	Species	*Botanical*	Ex Ht	C S: N	C S: E	C S: S	C S: W	Age	Stem Dia	SS/MS	RPA	Phis Cond	Struc Cond	Notes & Hab	Cat	Tree work	Ref
G	21	Sycamore	*Acer pseudoplatanus*	12					semi-mature		ms	as shown on plan	Fair	poor	Group of sycamore alongside car park. Some sever rabbit damage to root collar. Prominent in landscape	B2	Retain if possible due to landscape feature	G21
G	22	Silver Birch	*Betula pendula*	8					young			as shown on plan	Fair	Fair	Young birch regeneration with extensive surface rooting. Likely to be on poor substrate	C	Trees likely to have long term stability problems. Consider removal within 10 yrs	G22
G	23	Silver Birch (with buddleja)	*Betula pendula (Buddleja)*	8					young			as shown on plan	Fair	Fair	Scattered birch with buddleja scrub. Surface rooting as G22	C	Likely to be short lived due to ground conditions	G23
G	24	Buddleja hedge with scattered sycamore and Hawthorn	*Buddleja, Acer pseudoplatanus, Crataegus monogyna*	8					semi-mature		ms	as shown on plan	poor	poor	Provides limitedscreening of industrial units	C		G24
G	25	Sycamore	*Acer pseudoplatanus*	8					semi-mature		ms	as shown on plan	poor	poor	Small group of 3 self seeded sycamore with poor form	C		G25
T	26	Goat willow	*Salix caprea*	7	3.5	3.5	3	3.5	mature		ms		Fair	Fair	Prominent mature tree	C	Short life expectancy	T26
G	27	Whitebeam, ash and cockspur thorn	*Sorbus aria, Fraxinus excelsior, Crataegus crus-galli*	7					mature		ms	as shown on plan	Fair	Fair	group of landscape trees close to building	C		G27
T	28	Whitbeam	*Sorbus aria*	4					young				Fair	Fair	Single landscape tree	C		T28
G	29	Norway maple	*Acer platanoides*	4.5					semi-mature			as shown on plan	good	good	Group of trees in car park	B	Retain if possible	G29
T	30	Whitebeam, ash and cockspur thorn	*Sorbus aria*									as shown on plan	Fair	Fair		C		T30
T	31	Goat Willow	*Salix caprea*	14	7	7	7	7	mature	380	ss	65	fair	fair	Prominent tree providing screening	B	Unlikely to have long life expectancy but replace in long term	T31
G	32	Alder and Scots Pine	*Alnus glutinosa Pinus sylvestris*	16	4.5	4.5	4	4.5	mature	to 480		as shown on plan	Fair	Fair	Car park trees providing screening	B	Retain or replace	G32
T	33	Alder	*Alnus glutinosa*	11	2.5	2.5	3	2.5	semi mature	400	ss	72	good	good	Single tree with good landscape value	B		T33
G	34	Alder, corsican Pine, Scots Pine, White Poplar & cherry spp.	*Alnus glutinosa, Pinus nigra, Populus alba, Prunus spp.*	16					mature		ss	as shown on plan	Fair	Fair	Landscape group providing screening for buildings and parking areas.	B	Poplar in need of formative pruning	G34
G	35	Goat Willow	*Salix caprea*	9			G	35	mature		ms	as shown on plan	poor	poor	Six scattered mature goat willow on bank (note small group of Pine and willow at east end of car park in good condition)	B	Proved excellent screening	G35
T	36	Silver birch	*Betula pendula*	6	1	1	1	1	young		ss		good	good	Located on edge of car park	C	Likely to become troublesome as it matures	T36
T	38	Black Poplar	*Populus x canadenis*	16	5	5	5	5	mature	500	ss	113	poor	poor	Large poplar on edge of car park with poor form	C		T38
G	39	Goat Willow, Wild cherry, Whitebeam	*Salix caprea, Prunus avium, Sorbus alia*	8					mature		ms	as shown on plan	poor	poor	Large cherry in poor condition with suckers	C	Consider replacing within 5 years	G39
G	40	Hawthorn, buddleja	*Crataegus monogyna, Buddleja*	2.5					young			as shown on plan	Fair	Fair	unmanaged hawthorn hedge providing screening	C		G40
G	41	Sycamore	*Acer pseudoplatanus*	*					semi mature		ss	as shown on plan	good	good	Sycamore on bank providing screening between buildings	B	Crown lift to improve form and extend useful lifespan	G41
G	42	Monterey cypress	*Cupressus macrocarpa*	11					mature		ms	as shown on plan	good	good	Overgorwn hedge on edge of escarpment	C		G42
G	43	Field maple, cherry spp, Whitbeam	*Acer campestre, Prunus spp. Sorbus aria.*	6					mature		ss	as shown on plan	good	good	row of landscape trees separating units from the road	B		G43
G	44	Field maple, cherry spp, Whitbeam	*Acer campestre, Prunus spp. Sorbus aria.*	6					mature		ss	as shown on plan	good	good	Row of landscape trees separating units from the road. Continuation of G43	B		G44

			Tree Survey Schedule															
Class	No	Species	*Botanical*	Ex Ht	C S: N	C S: E	C S: S	C S: W	Age	Stem Dia	SS/MS	RPA	Phis Cond	Struc Cond	Notes & Hab	Cat	Tree work	Ref
G	45	Scots Pine, Norway maple, Cockspur thorn	*Pinus sylvestris, Acer platanoides, Crataegus crus-galli*	7					semi mature		ss	as shown on plan	Fair	Fair	Continued linear planting alongside Presidents way providing screening	B		G45
G	46	Laurel, Field maple, buddleja	*Laurus nobilis, Acer campestre, Buddleja*	6					semi mature		ms	as shown on plan	good	good	Continued linear planting alongside Presidents way providing screening	C		G46
G	47	Silver Birch, hornbeam	*Betula pendula, Carpinus betulus*	4					young		ss	as shown on plan			two birch and 1 hornbeam within dense shrub planting	C		G47
T	48	Norway Maple	*Acer platanoides*	9	3	3	3	3	semi mature	290	ss	38	good	good	Well located tree likely to provide many years of amenity and screening	B		T48
G	49	Leyland cypress	*Cupressocyparis x leylandii*	5					semi mature		ms	as shown on plan	good	good	overgrown hedge around sub station	U	Remove and replace with shrub planting	G49
G	50	Silver birch	*Betula pendula*	4.5					young			as shown on plan	good	good	group of 4 young birch trees on road side	C		G50
G	51	Hawthorn, sycamore, buddleja	*Crataegus monogyna, Acer pseudoplatanus, Buddleja*	5					semi mature			as shown on plan	poor	poor	poor quality landscape group	C		G51
T	52	Goat Willow	*Salix caprea*	9	5	5	5	5	mature				Fair	Fair	Mature willow with landscape value	B	Review within 5 years and consider replacment	G52
T	53	Silver Birch	*Betula pendula*	15	3.5	3.5	4	3.5	mature	540	ss	132	Fair	Fair	Non occluded wound on N side @ 2m elevation. Some dead wood in crown	B	Retain and review in 3 yrs	T53
T	54	Horse Chestnut,	*Aesculus hippocastanum*	12	6.5	6	6	6.5	mature	900		367	Fair	Fair	Several non occluded pruning wounds and branch stubs	B	Retain and review in 3 yrs	T54
G	55	Sycamore	*Acer pseudoplatanus*	11					semi mature		ms	as shown on plan	Fair	Fair	Group of 10 MS sycamore	B	Consider partial ivy control	G55
G	56	Sycamore	*Acer pseudoplatanus*	9	5	5	5	5	mature		ms	as shown on plan	Fair	Fair	Group of 4 sycamore	B	Consider formative pruning to improve shape	G56
G	57	Sycamore , Hawthorn	*Acer pseudoplatanus, Crataegus monogyna*	7					semi mature		ss	as shown on plan	good	good	Group of 7 trees screening car parks	C		G57
G	58	Flowering cherry	*Prunus "accolade"*	5					semi mature		ss	as shown on plan	good	good	Group of 2 early flowering cherries	B		G58
T	59	flowering cherry	*Prunus "accolade"*	5					semi mature		ss		good	good	single cherry	B		T59
T	60	Sycamore	*acer pseudoplatanus*						mature	560	ss	142	poor	poor	large sycamore with deadwood in crown	U	Consider replacment	T60
T	61	Sycamore	*acer pseudoplatanus*	20	9	9	9	9	mature	1100	ss	548	good	good	large mature sycamore	A	Retain if possible	T61
G	62	Common Lime, wild cherry	*Tilia europea, Prunus avium*	18					mature		ss	as shown on plan	good	good	Row of 5 mature lime and 1 cherry alongside car park	A	Important screening trees	G62
T	63	Horse Chestnut	*Aesculus hippocastanum*	15	8	8	8	8	mature	880	ss	350	fair	fair	single tree on top of steep bank Heavy ivy infestation	B	Reduce ivy growth Assess stability within 3 - 5 years	T63
G	64	Sycamore, Leyland cypress	*Acer pseudoplatanus, Cupressocyparis x leylandii*	15					semi mature		ss	as shown on plan	Fair	Fair	group of 45 trees on steep bank	B	Assess stability within 3 - 5 years	G64
G	65	Rowan	*Sorbus aucuparia*	3					young		ss	as shown on plan	good	good	Group of three young Sorbus at entrance to Hotel	C		G65
G	66	Goat Willow	*Salix caprea*	4					young			as shown on plan	Fair	Fair	Young self seeded willow	C		G66
G	67	Ash & Scots Pine	*Fraxinus excelsior, Pinus sylvestris*	8					semi mature			as shown on plan	good	good	Provide screening on south side of road	B		G67

			Tree Survey Schedule															
Class	No	Species	*Botanical*	Ex Ht	C S: N	C S: E	C S: S	C S: W	Age	Stem Dia	SS/MS	RPA	Phis Cond	Struc Cond	Notes & Habi	Cat	Tree work	Ref
G	68	Common Lime, Horse Chestnut	*Tilia europea, Aesculus hippocastanum*	12					mature	up to 700mm		as shown on plan	Fair	Fair	Group of mature trees on bank with younger trees alongside the road	B		G68
G	69	Corisican Pine, Scots Pine	*Pinus nigra, Pinus sylvestris*	9.5					semi mature			as shown on plan	good	good	well established conifers screening roundabout and airport approach	B	will require thinning within 5 years	G69
T	70	Sycamore	*Acer pseudoplatanus*	8	6	6	6	6	semi mature	300 400 280	ms	103	poor	fair	prominent tree with spoil dumped alongside	B	Review in 3 years as spoil may affect health	G70
G	71	Sycamore wild cherry	*Acer pseudoplatanus, Prunus avium*	3					young		ss	as shown on plan	Fair	Fair	Group of young self seeded sycamore and cherry suckers which have grown from a mature tree now removed	C		G71
G	72	Himalayan Birch, Blue spruce	*Betula utilis, Picea pungens*						young		ss	as shown on plan	good	good	Young trees on roundabout	B	Growth may reduce visibility over time	G72
G	73	Sycamore, Hawthorn	*Acer pseudoplatanus, Crataegus monogyna*	10					semi mature		ss	as shown on plan	good	good	Overgorwn hedge on side of road	B		G73
G	74	Ash, blackthorn, whitebeam, hazel	*Fraxinus excelsior, Prunus spinosa, Sorbus area, Corylus avellana*	7					semi mature		ms	as shown on plan	good	good	Overgrown hedge which screens park from buildings and car parking areas	B		G74
G	75	Norway Maple, whitebeam, Sycamore	*Acer platanoides Acer pseudoplatanus Sorbus aria*	10					semi mature		ss	as shown on plan	good	good	Well maintained group of broadleaf trees along the nrothern edge of the parks	B	Ensure screen is maintained if possible	G75
G	76	Sycamore & Elder	*Acer pseudoplatanus Smabucus nigra*	12					semi		ms	as shown on plan	fiar	fair	Area of woodland on steep slope. Not surveyed due to lack of access Important visual screen .	B	Difficult to manage due to access and property below slope.	G76

APPENDIX C

TREE CONSTRAINTS PLAN



KEY:

- SITE BOUNDARY
- T8 CATERGORY A
- T1 CATERGORY B
- T9 CATERGORY C
- T3 CATERGORY U

T = SINGLE TREE
G = GROUP OF TREES
X = TREE REMOVED

REV	DESCRIPTION	DRN	DES	CHK	APP	DATE
A	FOR INFORMATION	MM	CMG	STH	CMG	15.04.16

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NEW LUTON AIRPORT PERIMETER ROAD

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TREE CONSTRAINTS PLAN SHEET 1 OF 6

	Name	Date
Drawn	MM	15.04.16
Designed	CMG	15.04.16
Checked	STH	15.04.16
Approved	CMG	15.04.16

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File No. DE3013VABV007-V012.dwg

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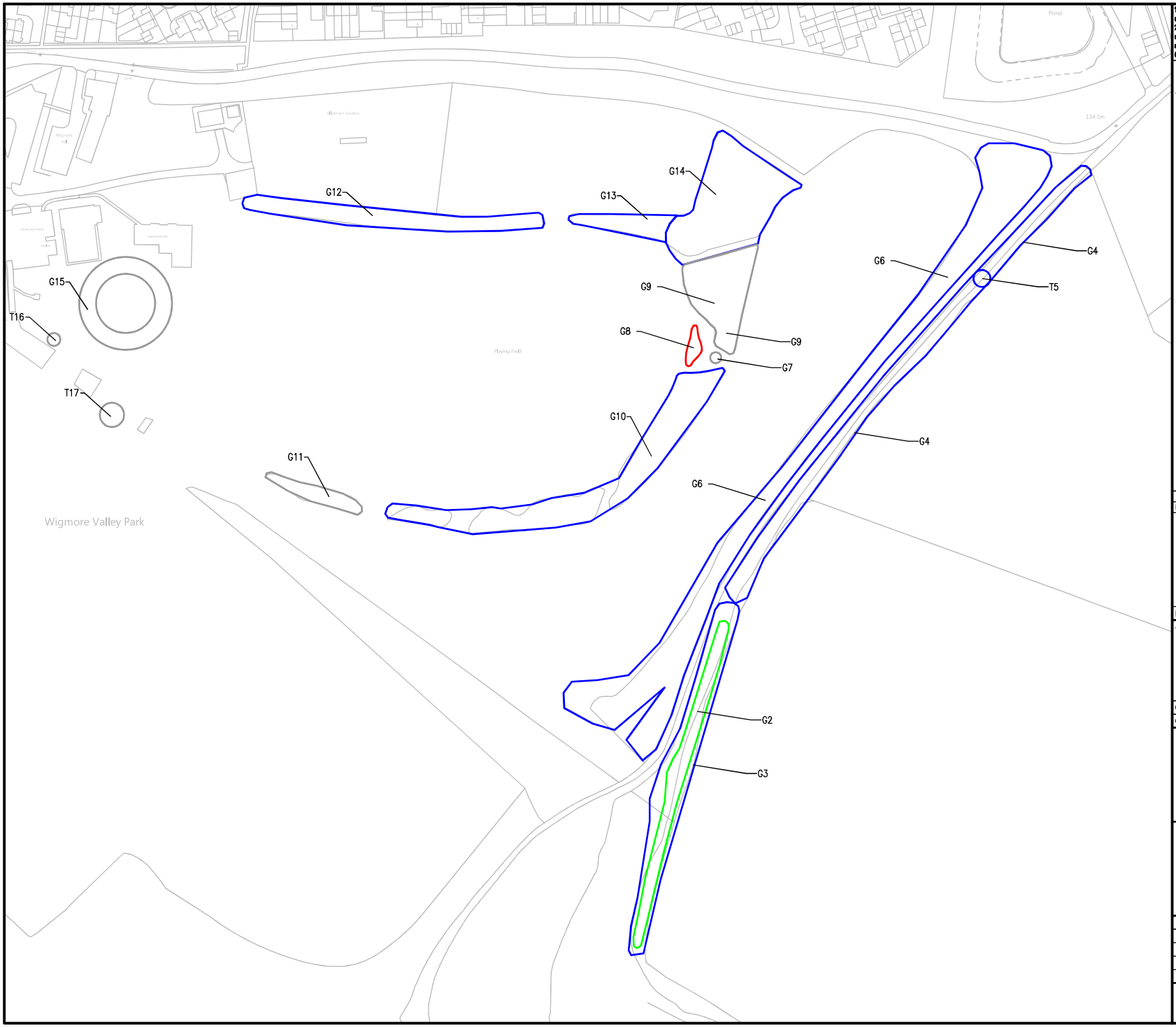
Drawing No. DE30131VABV007

Revision A



KEY:

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- T9 CATERGORY C
- T3 CATERGORY U

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TREE CONSTRAINTS PLAN SHEET 2 OF 6

	Name	Date
Drawn	MM	15.04.16
Designed	CMG	15.04.16
Checked	STH	15.04.16
Approved	CMG	15.04.16

Scale 1:2000 | Size A3
File No. DE3013VABV007-V012.dwg
Drawing Status FOR INFORMATION

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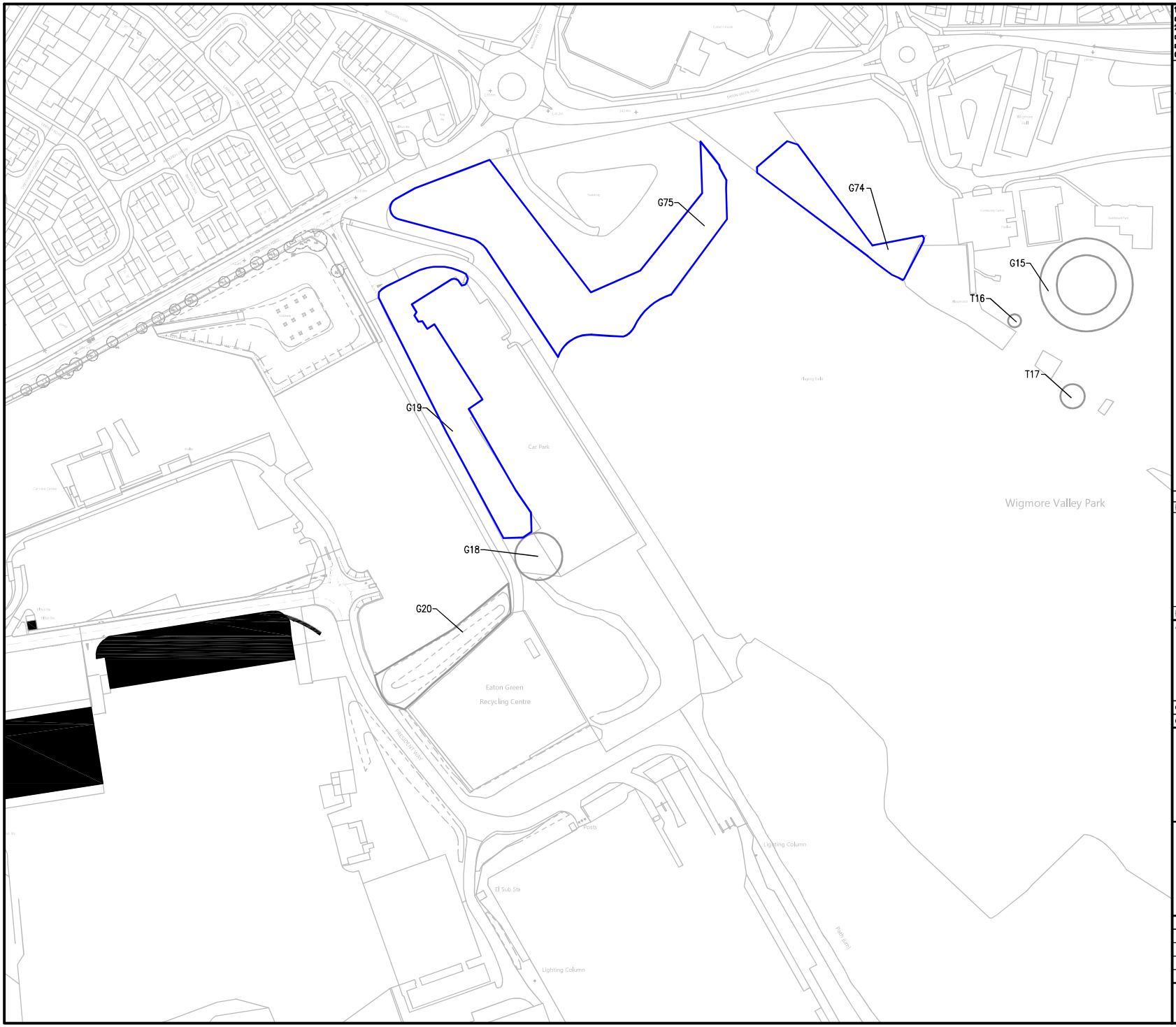

KEY:

- SITE BOUNDARY
- T8 CATERGORY A
- T1 CATERGORY B
- T9 CATERGORY C
- T3 CATERGORY U

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REV	DESCRIPTION	DRN	DES	CHK	APP	DATE
A	FOR INFORMATION	MM	CMG	STH	CMG	15.04.16

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Drawing Title

TREE CONSTRAINTS PLAN SHEET 3 of 6

	Name	Date
Drawn	MM	15.04.16
Designed	CMG	15.04.16
Checked	STH	15.04.16
Approved	CMG	15.04.16

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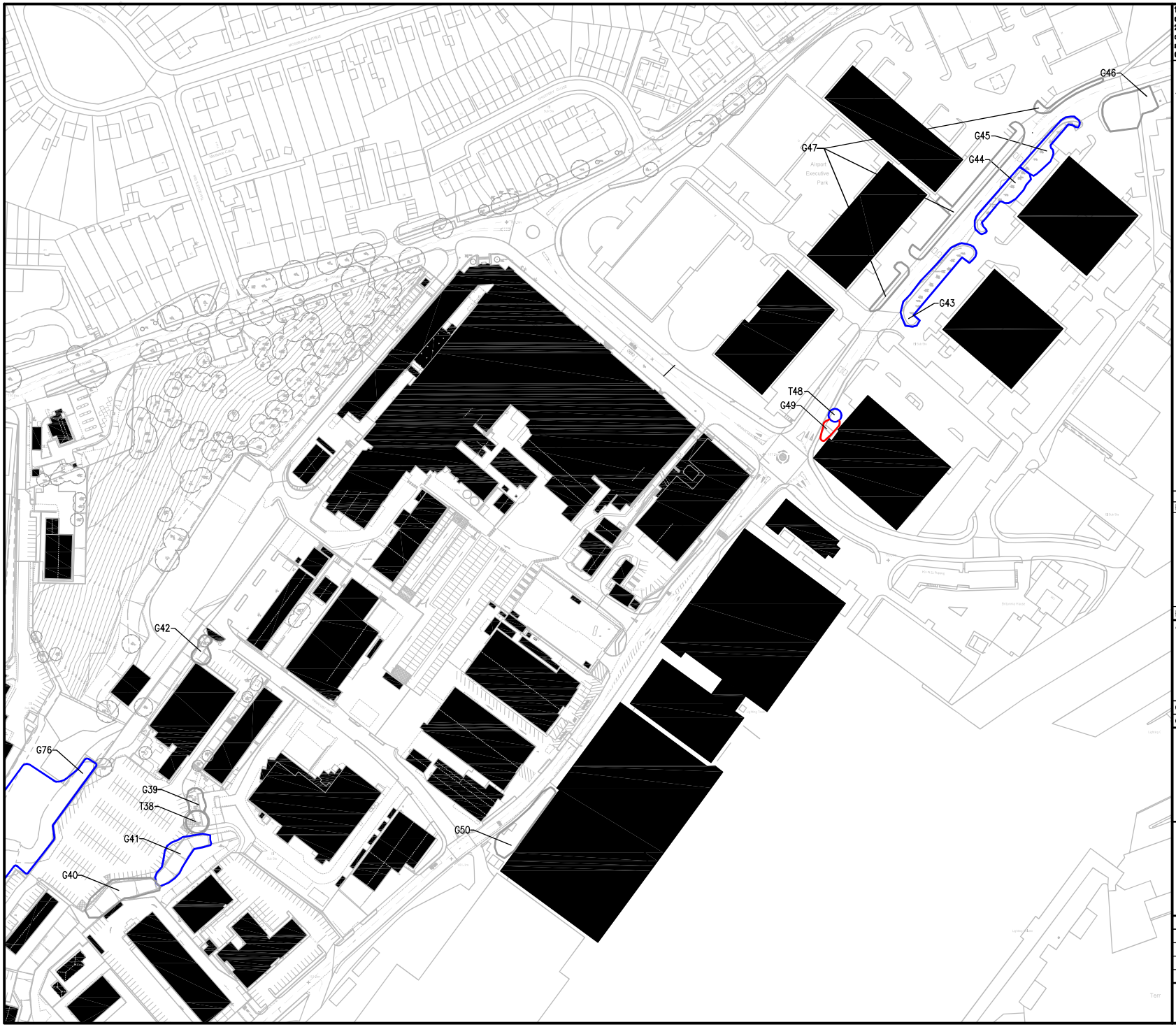
File No. DE3013VABV007–V012.dwg

Drawing Status FOR INFORMATION

Drawing No. DE30131VABV009

Revision A



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KEY:

- SITE BOUNDARY
- (T8) CATERGORY A
- (T1) CATERGORY B
- (T9) CATERGORY C
- (T3) CATERGORY U

T = SINGLE TREE
G = GROUP OF TREES
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REV	DESCRIPTION	DRN	DES	CHK	APP	DATE
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NEW LUTON AIRPORT PERIMETER ROAD

Drawing Title

TREE CONSTRAINTS PLAN SHEET 4 of 6

	Name	Date
Drawn	MM	15.04.16
Designed	CMG	15.04.16
Checked	STH	15.04.16
Approved	CMG	15.04.16

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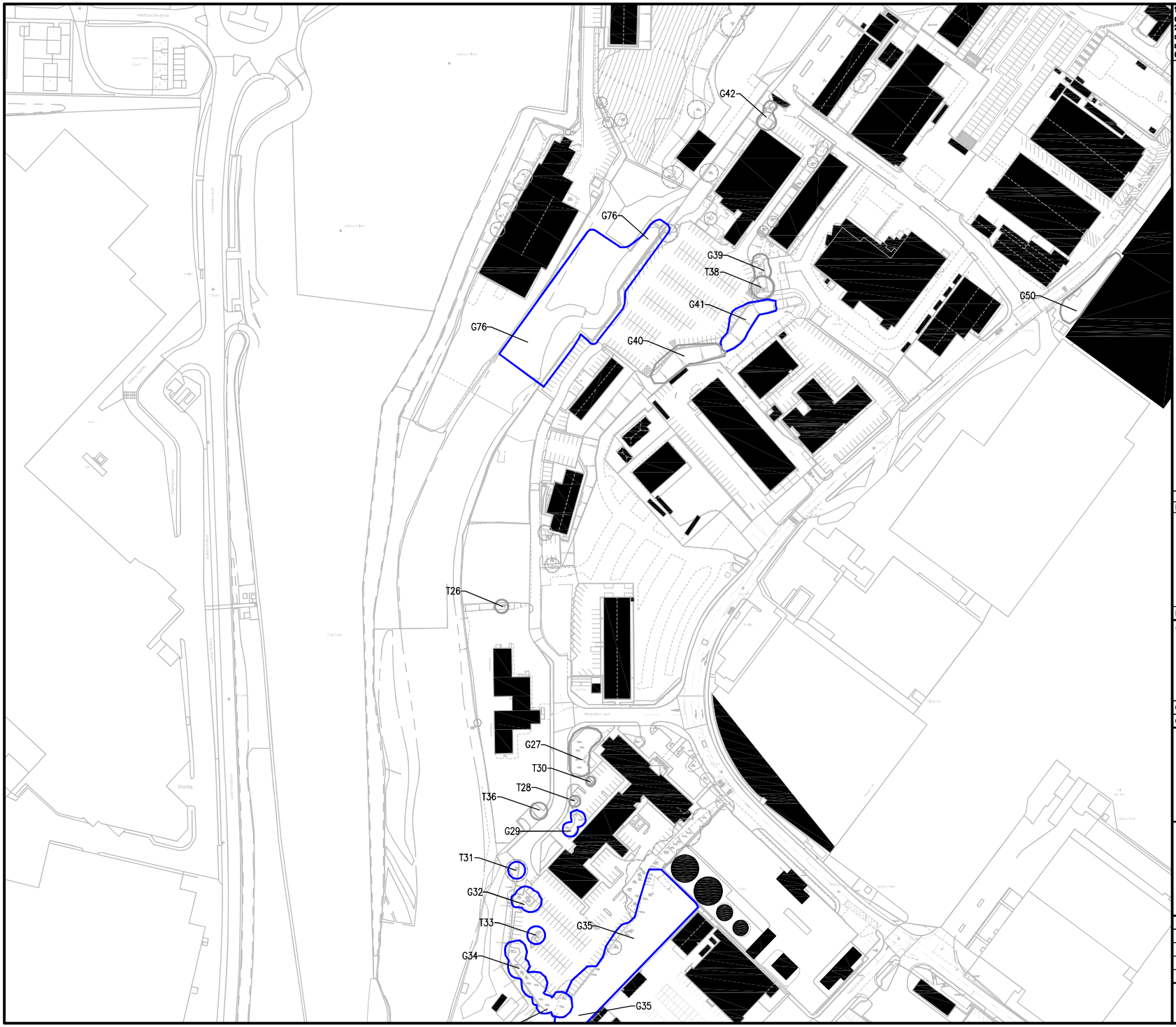
Revision A



KEY:

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- T1 CATERGORY B
- T9 CATERGORY C
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REV	DESCRIPTION	DRN	DES	CHK	APP	DATE
A	FOR INFORMATION	MM	CMG	STH	CMG	15.04.16

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Client Project Title:

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Drawing Title

TREE CONSTRAINTS PLAN SHEET 5 of 6

	Name	Date
Drawn	MM	15.04.16
Designed	CMG	15.04.16
Checked	STH	15.04.16
Approved	CMG	15.04.16

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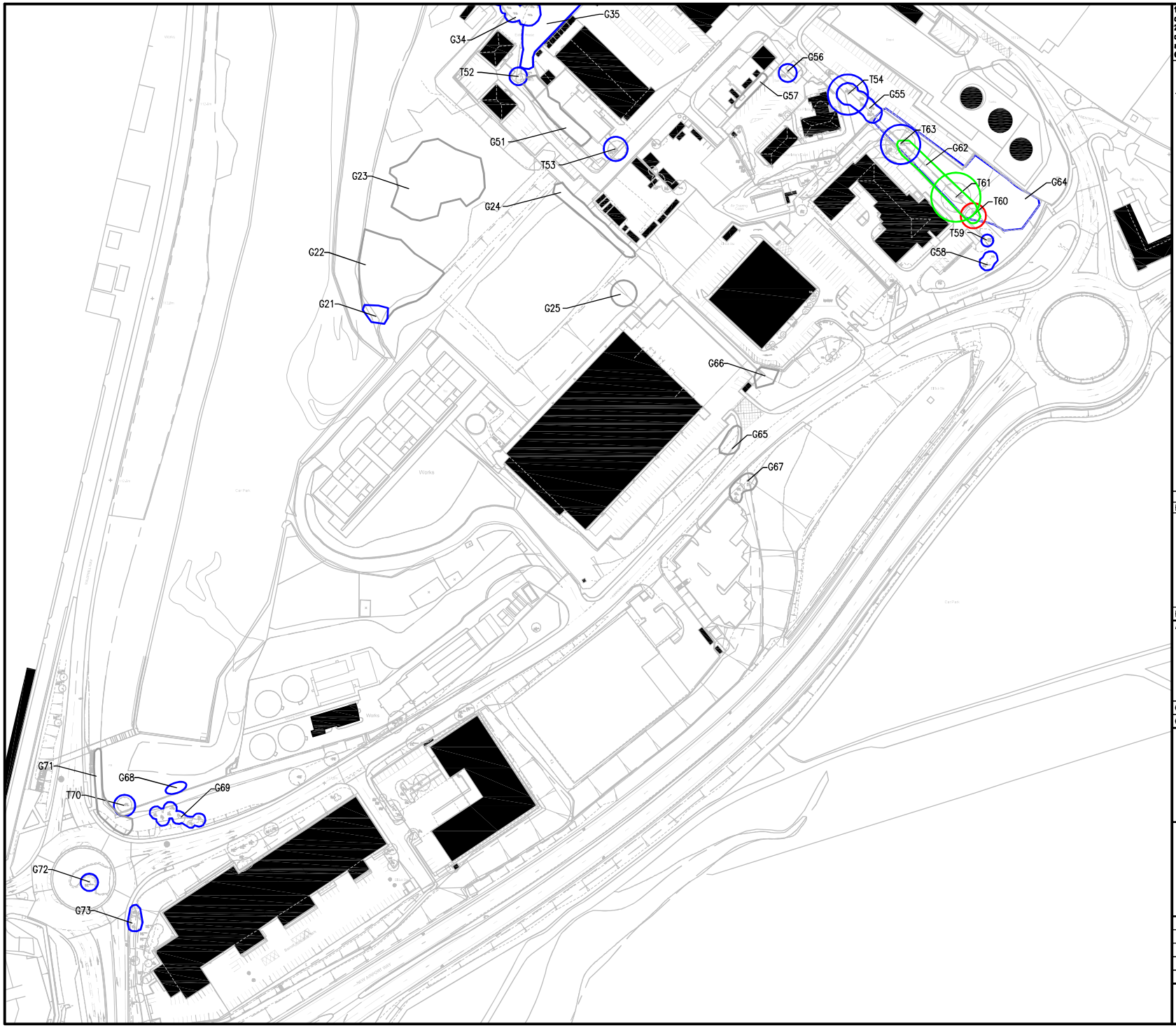

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Drawing Title

TREE CONSTRAINTS PLAN SHEET 6 of 6

	Name	Date
Drawn	MM	15.04.16
Designed	CMG	15.04.16
Checked	STH	15.04.16
Approved	CMG	15.04.16

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Revision A

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