Gatwick Airport Northern Runway Project

Environmental Statement
Appendix 8.10.1 – Tree Survey Report and Arboricultural Impact Assessment – Part 6 – Tracked Version

Book 5

VERSION: 3.0

DATE: JUNE 2024

Application Document Ref: 5.3

PINS Reference Number: TR020005

APFP Regulations 5(2)(a) **Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

Small sections of hedge will require removal to allow for construction of new footpath bridge. Exact location and number of trees to be removed will be assessed location and use path of least resistance.

5.6: A1)

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below. # = Tree details estimate (inaccessible tree) * = Tree in off site location
- G1 — Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS837:2012 tree quality category as shown below.
- G1 — Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 — Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 — Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (T1) — Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan

DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 3 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	738	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\sou-lh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

59

LONDON GATWICK

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below. # = Tree details estimate (inaccessible tree) * = Tree in off site location
- G1 Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

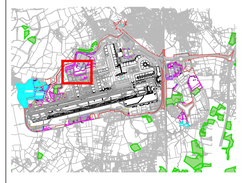
- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan



DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 4 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	739	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\sou-lh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below. # = Tree details estimate (inaccessible tree) * = Tree in off site location
- G1 — Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS837:2012 tree quality category as shown below.
- G1 — Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 — Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 — Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

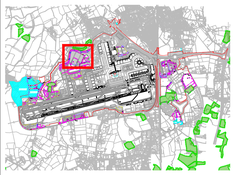
- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) — Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan



DOCUMENT

Environmental Statement

DRAWING TITLE

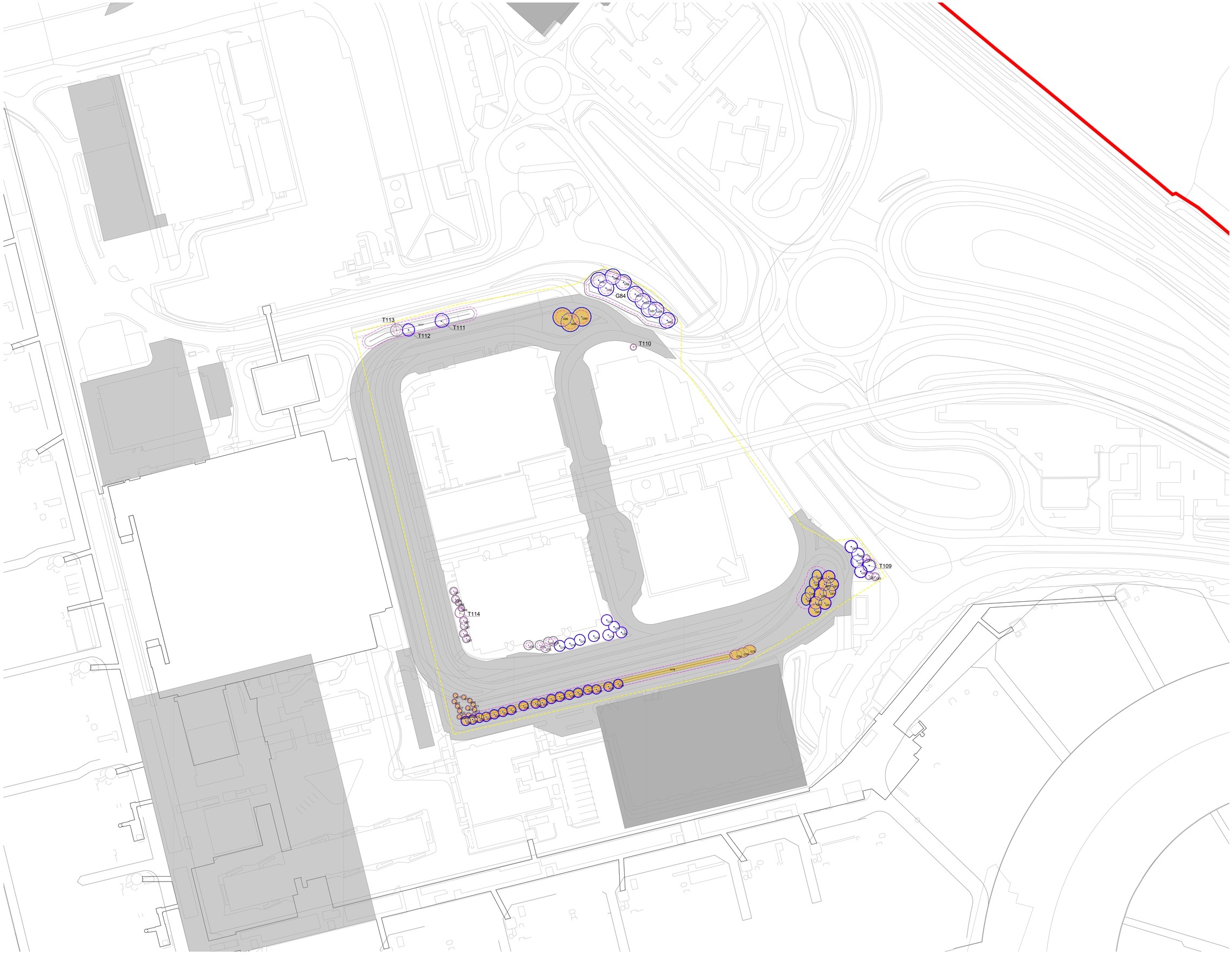
Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 5 of 13

DATE		
June 2024		
ORIENTATION	DRAWING NO.	REVISION
N	740	For ES Issue
	DRAWN BY	PM / CHECKED BY
	RC	DC

SCALE @ A0

0m 25m 50m

\\sou-lh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg



LONDON GATWICK

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below. # = Tree details estimate (inaccessible tree) * = Tree in off site location
- G1 — Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 — Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 — Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 — Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

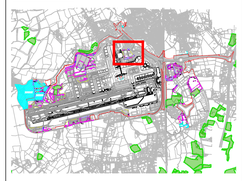
- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) — Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan



DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 6 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	741	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\sou-lh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

LONDON GATWICK

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.
  - # = Tree details estimate (inaccessible tree)
  - * = Tree in off site location
- G1 — Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 — Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 — Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 — Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

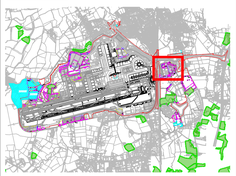
- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) — Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan



DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 7 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	742	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\scu-fh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

T203 T202 T201 T199 T197 G134 T198 T200 T204 T196 T195 T205 T206 T207 T208 T209 T210 T211 T212 T213 T192 T193 T191 G133 T194 G138 G136 G137 W10 G145 T224 T223 T222 T221 G144 G139 G140 G141 G142

A section of H32 approximately 12m long will require removal to enable access for soil deposition at Pentagon Field. Trees and shrubs will be planted to reinstate the hedgerow. Exact location of vegetation removal required will be assessed during detail design.

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below. # = Tree details estimate (inaccessible tree) * = Tree in off site location
- G1 Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

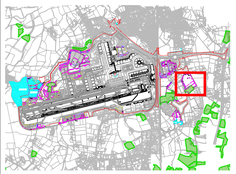
- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan



DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 8 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	743	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\sou-lh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

T155
T160
T161
W8
W8
W8
W9
W10
G137
T214
T216
T215
G141
T217
T220
T219
T218
G143

LONDON GATWICK

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below. # = Tree details estimate (inaccessible tree) * = Tree in off site location
- G1 Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan

DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 9 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	744	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\sou-lh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

LONDON GATWICK

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.
  - # = Tree details estimate (inaccessible tree)
  - * = Tree in off site location
- G1 — Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 — Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 — Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 — Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

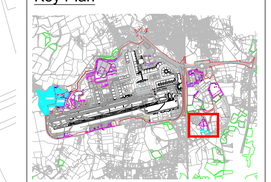
- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) — Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan



DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 10 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	745	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\sou-lh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

T272
T274
T273
T275
T277
T276

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.
  - # = Tree details estimate (inaccessible tree)
  - * = Tree in off site location
- G1 — Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 — Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 — Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 — Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) — Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan

DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 11 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	746	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\sou-lh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

T259
T260
T268
T269
T267
T270
T265
T271
G175
T261
T264
T266
T262
T263
G172
T258
T256
T257
T255
G170
G173
T252
T251
T253
T250
T254
T249
G165
G164
T248
G167
G163
G162
G161
A section of vegetation approximately 24m long (comprising part of G163, G172 and G173) will require removal to improve the existing access point and archive required visibility splays either side of existing access road. Trees and shrubs will be planted behind the visibility splays to reinstate the character of the vegetated road corridor and the visual screen it provides. Exact location of vegetation removal required will be assessed during detail design.

LONDON GATWICK

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below. # = Tree details estimate (inaccessible tree) * = Tree in off site location
- G1 Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan

DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 12 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	747	For ES Issue
	DRAWN BY: RC	PM / CHECKED BY: DC

SCALE @ A0

0m 25m 50m

\\scu-fh-fs-01\projects\3200 Series\JSL3287 - Gatwick Genesis (794-PLN-ESH-00016)\Tech\Acad\Current\Appendix I - AIA TRP.dwg

LONDON GATWICK

Key

- Site boundary.
- Survey boundary.
- Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below. # = Tree details estimate (inaccessible tree) * = Tree in off site location
- G1 — Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 — Tree or Vegetation group with numbered reference.Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 — Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 — Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Veteran tree buffer (15 x stem Ø) (as per standing advice produced by Forestry England and Natural England)
- (G1) — Tree protected by Tree Preservation Order. Bracketed number relates to the TPO reference.
- Designated Ancient Woodland (as per Natural England ancient woodland inventory, via open data publication)
- Ancient Woodland tree buffer (15m offset) (as per standing advice produced by Forestry England and Natural England)
- Projected tree loss required for construction of the Project (worst case scenario)
- Indicative Scheme Layout

NOTES:

- Refer to ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Survey based upon Aerial Photography and trees located by eye.

Key Plan

DOCUMENT

Environmental Statement

DRAWING TITLE

Airport Preliminary Tree Removal Plans
Appendix 8.10.1
Sheet 13 of 13

DATE

June 2024

ORIENTATION	DRAWING NO.	REVISION
N	748	For ES Issue
	DRAWN BY	PM / CHECKED BY
	RC	DC

SCALE @ A0

0m 25m 50m

Appendix J

Tree Loss and Replanting Calculation Methodology

TECHNICAL NOTE:
Tree Loss and Replanting Calculation Methodology

1 Introduction

1.1 Purpose of this note

1.1.1 This technical note provides a summary of how tree loss and replanting figures for the part of the Gatwick ~~NRP~~Airport's Northern Runway Project (the 'Project') which lies within Crawley Borough ~~Council~~Council's administrative area were calculated in accordance with Crawley Borough ~~Council~~ Local Plan 2015-2030 (December 2015) Policy CH6: "Tree Planting and Replacement Standards".

1.1.2 The technical elements, taken from ES Appendix 8.10.1, which contribute to this note are: ~~–~~

- ~~JSL3287_700-715 -~~Appendix D: M23 ~~&~~and A23 Tree ~~Survey Plans~~Removal Schedule
- ~~JSL3287_720-733 -~~Appendix E: Airport Tree ~~Constraints Plans~~Removal Schedule
- ~~JSL3287_750 -~~Appendix H: M23 & A23 Preliminary Tree ~~Survey Schedule~~Removal Plans
- ~~JSL3287_751 -~~Appendix I: Airport Preliminary Tree ~~Survey Schedule~~Removal Plans
- ~~JSL3287_755 -~~Appendix J: Annex 1 - Crawley Replanting Calculation Tables
- Appendix J: Annex 2 - Project Wide Replanting Calculation Tables

1.1.3 This technical note has been updated to reflect the updated Tree Survey Report and Arboricultural Impact Assessment (contained in **ES Appendix 8.10.1**) (Doc Ref. 5.3). In response to comments from the JLAs and the subsequent discussions, the Applicant has brought forward work to provide additional detail on the tree loss and replanting which will occur as a result of the Project as follows:

1) A walkover survey to collate more detailed information about the existing trees across the side as reported in the updated AIA.

~~1)~~2) Further internal discussions with the design and construction teams about tree removal required along the surface access improvement corridor have confirmed

that the absolute worst-case scenario that is assumed in the EIA is not realistic and not all those trees will be required to be removed. Whilst still taking a conservative approach, the tree removal along the surface access corridor has been reduced as shown on the Preliminary Tree Removal and Protection Plans which are secured by DCO Requirement 28.

3) Developing the planting specifications for the Museum Field Environmental Mitigation Area and detailed discussions with the safeguarding team at the airport has confirmed that a large number of trees can be planted in this area. This planting has been included in an updated version of the Outline Landscape and Ecology Management Plan (Doc Ref. 5.3) submitted at Deadline 6 and secured by DCO Requirement 8.

1.2 Policy CH6: Tree Replanting Standards

~~1.1.3~~1.2.1 Crawley Borough Council has a specific local policy about the planting and replacement of trees within its borough. This is Local Policy CH6"Tree Planting and Replacement Standards" which states:

"Where development proposals would result in the loss of trees, applicants must identify which trees are to be removed and replaced in order to mitigate for the visual impact resulting from the loss of the tree canopies. Proposals must demonstrate that the number of replacements accords with the following requirements:

Trunk diameter of each tree (measured in cms at 1.5m above ground level) to be removed, and number of replacement trees:

- *Less than 19.9cm = 1 replacement tree*
- *20-29.9cm = 2 replacement trees*
- *30-39.9cm = 3 replacement trees*
- *40-49.9cm = 4 replacement trees*
- *50-59.9cm = 5 replacement trees*
- *60-69.9cm = 6 replacement trees*
- *70-79.9cm = 7 replacement trees*
- *80 plus cm = 8 replacement trees"*

~~1 Survey Data Collection~~

~~1.1 Between May 2023 and January 2024 RPS have carried out two tree surveys to BS5837:2012 Standards for the Gatwick Genesis project. One for the Airport and one for its approach roads (mainly the M23 & A23). The information collected during these surveys is summarised in Appendix A.~~

~~1.2 As part of the BS5837:2012 survey methodology, the number and diameter at breast height (DBH) of individual trees has been recorded. However, due to the scope and extent of the survey a large number of the trees surveyed have been recorded as "Groups" in line with BS5837:2012:~~

1.2.2 The surveys that were initially carried out by the Applicant were in accordance with BS5837:2012 Standards. Policy CH6 requires a specific number of trees to be known; the results of a survey in accordance with the BS do not produce that. Instead the BS allows for averages to be used.

1.2.3 Following the BS, for larger groups or those with a mixed range of sizes within the group, the average DBH is recorded but the specific number of trees is not recorded:

"4.4.2.3 Trees growing as groups or woodland should be identified and assessed as such where the arboriculturist determines that this is appropriate. However, an assessment of individuals within any group should still be undertaken if there is a need to differentiate between them, e.g. in order to highlight significant variation in attributes (including physiological or structural condition).

NOTE The term "group" is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally, including for biodiversity (e.g. parkland or wood pasture), in respect of each of the three subcategories (see 4.5)."

~~1.3 Trees within these groups that have~~ Under the ~~most common (mean) DBH of the group are recorded, but the exact DBH of each tree and the number of trees in each group are not always recorded.~~

~~1.4 Trees in smaller groups, where trees are all of a similar size, are sometimes plotted as individual trees, and an average DBH recorded. Where this is the case, we have counted how many trees in the group are to be removed and used the groups average DBH for each tree within our calculations.~~

~~1.1.4~~1.2.4 ~~However, for larger groups or those with a mixed range of sizes within the group, the average DBH is recorded but the number of trees is not recorded. Instead,~~BS the approximate canopy area is plotted on plans~~. For this reason the following methodology has been applied to calculate the approximate number of trees in these groups to inform tree removal and replacement calculations.~~ rather than each individual tree.

1.2.5 In response to a request from Crawley Borough Council to provide an assessment against Policy CH6; an additional survey which does not follow the BS was required. This has now been carried out and is reported in Annex 1 to this document.

2 Replanting Calculation Methodology to Inform Compliance with Policy CH6

2.1.1 This section sets out how the tree removal and replacement calculations have been carried out to identify the number of trees that would be required to be replanted for the Project in order for the Project to be compliant with Policy CH6.

2.2 Tree Removal Calculation Methodology

~~2.1.1~~2.2.1 To calculate the number of trees to be removed in each group, in ~~an approximate but~~ a proportionate and fair way to inform the Policy CH6 calculation, the following method has been applied:

A. Assumptions

- That the density of each group is uniform.
- That 50% of trees within each group will be within the average size range (stem diameter) of trees within the group.
- That 25% of trees will have a smaller stem diameter than the average tree in the group and that 25% will be larger.

B. Additional Data Collection

~~2.1.2~~2.2.2 To calculate the range of tree sizes within each group an additional walkover survey was carried out to collect the following data for each group, or part of group, to be removed:

- Approximate size of smallest trees within group, ignoring outliers (Lowest DBH).
- The most common size of tree within each group (Mode DBH).
- Approximate size of largest trees within group, ignoring outliers (Highest DBH).
- Approximate spacing of trees within each group (Centres)

~~2.1.3~~2.2.3 Additionally, the canopy area of groups, or the parts of groups, to be removed was measured in AutoCAD and recorded.

~~Tree Removal Calculations~~

C. Calculation

~~2.1.4~~2.2.4 To estimate the approximate number of trees being removed within each group the following calculation was applied, and the result recorded:

$$\text{Tree Number} = \underline{\text{Area of Group}}$$

Centres[2]

2.3 ~~This~~Tree Replacement Calculation Methodology

~~2.1.5~~2.3.1 The tree removal figure for each group was then divided up into three, with the following calculations, in order to approximate numbers of trees within each size category within a group:

- Upper 25% (Small Trees) = (Tree number/100) x25
- Middle 50% (Average Trees) = (Tree number/100) x50
- Lower 25% (Larger Trees) = (Tree number/100) x25

A. Average Size Calculations

~~2.1.6~~2.3.2 To estimate the approximate average DBH for each of the above three tree size categories within each removed group, the following calculations were made:

- Upper 25% Average= (Lowest DBH + Middle 50% Average) / 2
- Middle 50% Average= (Lowest DBH + Highest DBH + Mode DBH2) / 4
- Lower 25% Average= (Highest DBH + Middle 50% Average) / 2

B. Replanting ~~Figures~~Calculations

~~2.1.7~~2.3.3 When the average DBH had been calculated for the three categories within each group they were compared to the DBH listed in the Crawley BC Local Plan Policy CH6 replanting requirement (see section 1.2). This identifies how many trees are needed to replace each of those within each size range ~~:~~

Example:

Lower 25% Average= 150mm, Policy CH6 States: Less than 19.9cm = 1 replacement tree
Middle 50% Average= 300mm, Policy CH6 States: 30-39.9cm = 3 replacement trees
Higher 25% Average= 450mm, Policy CH6 States: 30-39.9cm = 40-49.9cm = 4 replacement trees

~~2.1.8~~2.3.4 These numbers are then multiplied by the tree ~~removal number~~replacement multiplier for each size category and added together to give a total replanting figure for the group:

Example:

Lower 25% Tree Number = 10 x 1 replacement trees = 10 Trees
Middle 50% Tree Number = 20 x 3 replacement trees = 60 Trees
Higher 25% Tree Number = 10 x 4 replacement trees = 40 Trees

Total Replacement Figure for Group = 110 Trees

~~3 Replanting Requirement Figures~~

3 ~~The data in this report has been collated in the~~ Replanting Calculation ~~Tables that form part of Appendix J within Appendix 8.10.1 of the Environmental Statement (ES)~~for the Project to Inform Compliance with Policy CH6

3.1 Tree Removal Calculation

~~2.1.9~~3.1.1 When totalled, and ~~used to calculate tree replanting figures using this methodology. The total estimated~~added to the individual tree removal ~~and replanting figures for trees~~ figures, these removal calculations show that there are a maximum of approximately 9,410 trees to be removed within Crawley Borough ~~Council are as follows;~~Council's administrative area:

Trees Removed within Crawley Boroug (Estimated)
9,410

~~4 Comparison With Current Replanting figures~~

3.2 Required Replacement Trees under CH6 Policy

3.2.1 The table below shows the total number of trees required to be replanted to comply with CH6 Policy on the basis of the size category for all trees proposed for removal within Crawley Borough, including individual trees:

Crawley Borough Replanting Numbers			
Estimated Tree Removal	**DBH (mm)**	**Replacement Tree Multiplier**	**Replanting Total**
1783	<199	1	1783
2850	200-299	2	5700
1759	300-399	3	5276
886	400-499	4	3542
1049	500-599	5	5246
555	600-699	6	3330
41	700-799	7	287
488	>800	8	3902
9410	**Total trees**	**Total Replacement Trees**	**29066**

3.2.2 ~~proposed replanting figures,~~The detail of the calculations is provided in Annex 1 to this technical note.

4 The Project's Compliance with Policy CH6 within Crawley Borough ~~Council, based upon data from~~

4.1.1 In order to calculate how many trees are being proposed for planting, the following has been assumed:

- All plants within Scrub mixes will be whips planted at 1m centres;
- All plants within Woodland mixes will whips planted at 1.5m centres;
- All Individual trees will be standards planted at 5m centres.

4.1.2 Variations in plant spacing will occur during detailed design to reflect specific woodland and scrub mixes. Consequently, some areas may be planted more densely, while others may have wider spacing however, these figures represent reasonable average spacing for each planting type, for use in the replanting calculations.

4.1.3 ES Appendix 8.8.1: Outline Landscape and Ecology Management Plan includes a landscape and ecological strategy for the Project. The proposals include extensive native woodland, scrub and grassland communities which offer usable amenity space for the public, diverse ecological habitats and linkages between urban and rural spaces.

~~2.1.10~~4.1.4 The table below shows proposed replanting figures for the Project, within Crawley Borough, based upon replanting areas taken from Annex 1 of the Biodiversity Net Gain Statement that forms Appendix 9.9.2 of the Environmental Statement:

Proposed Planting within Crawley Borough				
Type	**(Ha)**	**Centres**	**Plants Per Ha**	**Total Trees/ Shrubs**
Scrub	8.96	1.00	10,000	89,614
Woodland	8.35	1.50	4,444	37,091
Individual trees	0.41	5.00	400	166
Totals	17.72	-	-	126,870

~~2.1.11~~4.1.5 Current landscape replanting figures show that new Woodland/ Individual trees amount to ~~28,056~~37,256 trees currently proposed, within Crawley Borough. This is a net gain of ~~17,174~~27,846 trees~~; however, it~~, and is ~~still 5,073~~8,169 trees ~~short~~over of the calculated required tree replanting. This is summarised in the table below:

Estimated Tree Removal	Proposed trees	Net Gain	Crawley Tree Requirement	Difference
9,410	37,256	27,846	29,087	8,169
(Groups + Individual)	(Woodland + Individual)	(Net Gain)		(Trees over target)

~~4.1 Current landscape replanting figures show that 92,794~~In addition 89,614 new plants are proposed within Crawley Borough in new areas of scrub. ~~If only 5.5% of these are tree species, which they will be, then the target of 33,129 replanted trees will be meet~~

~~2.1.12~~4.1.6 Typical planting schedules in annex 3 of the oLEMP include a native scrub mix of which 30% are tree species~~.~~ that, even within scrub areas, would grow to a size large enough to be included in a future count of tree stock numbers. These have not been included in the above calculations and would be in addition to the 37,256 proposed trees referenced above.

~~2.1.13~~4.1.7 Therefore, the mitigation replanting proposed will be sufficient to meet the requirements laid out in Crawley Local Plan Policy CH6: “Tree Planting and Replacement Standards”.

5 Project-wide Replanting Calculation for the Project against CBC Policy CH6

5.1.1 Whilst CBC Policy CH6 is not applicable outside of Crawley Borough, a calculation has been undertaken applying the approach of CBC Policy CH6 to the whole Project site to provide a helpful guide for Interested Parties in understanding the level of tree replanting proposed by the Project against the levels of tree loss estimated on a worst case basis.

5.1.2 CBC Policy CH6 has therefore been applied to Project-wide tree loss to identify the replacement that would be required if all the relevant local planning authorities had adopted an equivalent local policy. This is based on a worst case scenario so demonstrates a maximum potential tree loss figure.

5.2 Project-wide Tree Removal Calculation

5.2.1 There are up to 11,902 trees to be removed Project wide, including individual trees and trees within groups:

Project wide Tree Removal (Estimated)
11,902

5.3 Project-wide Replanting Calculation

5.3.1 The table below shows the total replanting numbers by size across the Project that would be required under Policy CH6, including individual tree and groups:

Project wide Tree Replanting Requirement			
Estimated Tree Removal	**DBH (mm)**	**Replacement Tree Multiplier**	**Total**
1877	<199	1	1877
3520	200-299	2	7039
2430	300-399	3	7291
1556	400-499	4	6223
1102	500-599	5	5509
844	600-699	6	5066
73	700-799	7	508
501	>800	8	4010
11902	**Total trees**	**Total Replacement Trees**	**37521**

5.3.2 A further breakdown of the data used to calculate Project wide tree replanting in this report has been collated in the Replanting Calculation Tables that form Annex 2 to this technical note.

6 Project-wide compliance with Policy CH6

6.1.1 The table below shows proposed sitewide replanting figures, based upon data from the Biodiversity Net Gain Statement that forms ES Appendix 9.9.2 (Doc Ref. 5.3):

Proposed Project-wide Planting				
Type	**(Ha)**	**Centres**	**Trees Per Ha**	**Total Trees**
Scrub	9.39	1.00	10,000	93,930
Woodland	9.66	1.50	4,444	42,951
Individual trees	0.50	5.00	400	201
Totals	19.56	-	-	137,082

6.1.2 These figures show that new Woodland/ Individual trees amount to 43,152 trees currently proposed. This is a net gain of 31,250 trees and is 5,621 trees over the calculated required tree replanting. This is summarised in the table below:

Estimated Tree Removal	Proposed trees	Net Gain	CH6 Tree Requirement	Difference
11,902	43,152	31,250	37,531	5,621
(Groups + Individual)	(Woodland + Individual)	(Net Gain)		(Trees over target)

~~Appendix 1: Tree characteristics recorded during survey~~

6.1.3 In addition 93,930 new plants are proposed Project wide in new areas of scrub. Typical planting schedules in Annex 3 of the oLEMP include a native scrub mix of which 30% are tree species that, even within scrub areas, would grow to a size large enough to be included in a future count of tree stock numbers. These have not been included in the above calculations and would be in addition to the 43,152 proposed trees referenced above.

6.1.4 Therefore, the Project's proposed replanting would exceed CBC Policy CH6 requirements if applying the Policy at a Project wide level.

7 Conclusion

7.1.1 The project replanting calculations demonstrate compliance with Crawley Borough Council's Policy CH6 for tree planting and replacement exceeding the required replanting within Crawley Borough Council by 8,169 trees.

7.2 Tree Removal and Replanting for the Project site within Crawley Borough:

- A total of 9,410 trees are estimated to be removed in Crawley Borough.
- Following the requirements of Policy CH6, this necessitates a total replanting requirement of 29,087 trees within Crawley Borough based on diameter at breast height (DBH) categories.
- The proposed replanting provision in Crawley Borough comprises 37,256 trees, resulting in a net gain of 27,846 trees, which exceeds the required number under Policy CH6 by 8,169 trees.
- Additionally, 89,614 plants are proposed in new scrub areas, with typical mixed consisting of 30% tree species. This would be 26,884 additional trees bringing the total proposed tree replanting within Crawley Borough to 64,140 trees.

7.3 Project-wide Tree Removal and Replanting:

- A total of 11,902 trees are estimated to be removed Project wide.
- Following Policy CH6 requirements for the whole Project site, this would require 37,531 replacement trees.
- The proposed Project wide replanting comprises 43,152 trees, resulting in a net gain of 31,250 trees, which exceeds Policy CH6's requirement by 5,621 trees (if it were applicable to the whole Project site).
- Additionally, 93,930 plants are proposed in new scrub areas, with typical mixed consisting of 30% tree species. This would be 28,179 additional trees bringing the total proposed project-wide tree replanting to 71,331 trees.

7.3.1 Impacts on townscape and ecological receptors have been mitigated and compensated for within the Project through the provision of a well-designed highway planting scheme incorporating public footpaths and extensive areas of connected and nearby replacement open space. The mitigation measures would, on balance, provide an improvement in the value and attractiveness of the area, a greater sense of place and accessibility, an increase in biodiversity and opportunities to improve the health and wellbeing of the local community.

7.3.2 In summary, the Project's proposed replanting strategy not only meets but significantly exceeds the replanting requirements outlined in Crawley Borough Council's Policy CH6, ensuring a substantial net gain in tree numbers in both the Borough and Project wide. This commitment to replanting underlines the Project's dedication to maintaining and enhancing the local and sitewide tree stock.

Annex 1

Replanting Calculation Tables for Crawley Borough Council

~~Annex 1~~Annex 2
Project-wide Replanting Calculation Tables

Appendix K

Veteran Tree Identification Methodology

Appendix K:
Veteran Tree Identification Methodology

1 Introduction

1.1 This technical note has been prepared following a request from the Joint Local Authorities (JLAs), within the Principal Areas of Disagreement Summary Statement (PADSS) – Version 2 **[REP3-151],** for additional information about the methodology that was used for to identify veteran trees on the Project site.

1.2 Section 3 of **ES Appendix 8.10.1: Tree Survey Report and Arboricultural Impact Assessment** explains the surveys have been carried out both to inform the DCO application, as submitted, and subsequently to provide the JLAs with additional information. Surveyed trees were assessed in accordance with the requirements set out in BS 5837:2012 "Trees in Relation to Design, Demolition and Construction – Recommendations", by a fully qualified and experienced Arboriculturist.

1.3 The tree survey involved a visual inspection from the ground of individual specimens and groups of trees in order to record their amenity value, management recommendations and dimensions. Where observed, the general condition of all the trees has been noted.

1.4 During the survey, all information was digitally captured on site, using a tablet running Axciscape 4.07 software. This is a program specifically designed for arboricultural surveying, which allows trees to be located directly onto a digital copy of a sites topographical survey.

1.5 The survey assesses individual trees and groups of trees for quality and benefits within the context of proposed development. The quality of each tree or group of trees has been recorded by allocating it to one of four categories in general accordance with the requirements set out in BS 5837:2012:

- **A:** Trees of high quality and value
- **B:** Trees of moderate quality and value
- **C:** Trees of low quality and value
- **U:** Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years

1.6 When assessing any tree's potential category, it's possible status as a veteran tree was also considered and they were recorded as individual trees. This is done following guidance from the Ancient Tree Forum and Natural England namely:

- 'Ancient and Other Veteran Trees: further guidance on management' Published by The Ancient Tree Forum and edited by David Lonsdale in 2013.
- 'Veteran Trees: A guide to good management (IN13)' published by Natural England on 1 February 2000.
- 'Ancient woodland, ancient trees and veteran trees: advice for making planning decisions' Published by Natural England and the Forestry Commission on 14 January 2022

1.7 Each of these guides has its own definition of what constitutes a "veteran tree". As there is **not** a clearly defined, universally accepted, measurable definition of what a "veteran tree" is, all guidance generally accepts that they are considered to be both large in girth and of a condition that indicates they are in decline.

1.8 It is important to identify Veteran trees, as they are usually of a high biodiversity, aesthetic or cultural interest and as such will require sensitive management and additional protection from any surrounding development.

1.9 In planning terms applicable to the Project, the National Networks National Policy Statement[1] (NNNPS) (March 2024) recognises the value of veteran trees in that it states:

'5.62 Ancient woodland and ancient and veteran trees are irreplaceable habitats. England's ancient woodlands and ancient and veteran trees support high levels of biodiversity. They are home to a quarter of England's priority species for conservation and once lost they cannot be recreated. They also deliver many ecosystem services including clean water and healthy soils, carbon storage, support for people's wellbeing and their long-standing cultural values. The Keepers of Time published in 2022 updates the government's policy to recognise the value of England's ancient and native woodlands and ancient and veteran trees. It restates the government's commitment to evaluate the threats facing these habitats and sets out updated principles and objectives to protect and improve these habitats for future generations.

5.63 The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats

[1] https://assets.publishing.service.gov.uk/media/65e9c5ac62ff48001a87b373/national-networks-national-policy-statement-web.pdf

including ancient woodland and ancient and veteran trees unless there are wholly exceptional reasons (for example, where the public benefit would clearly outweigh the loss or deterioration of habitat) and a suitable compensation strategy exists.'

1.10 Further to this, the Airports National Policy Statement[2] (ANPS) (June 2018) states the following in respect of veteran trees:

'5.103Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost, it cannot be recreated. The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss. Aged or veteran trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided.176 Where such trees would be affected by development proposals, the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons for this.'

1.11 Natural England and the Forestry Commission's guidance (January 2022) on ancient woodland, ancient trees and veteran trees recommends the use of buffer zones to protect veteran trees:

'For ancient or veteran trees (including those on the woodland boundary), the buffer zone should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5 metres from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter. This will create a minimum root protection area.'[3]

2 Methodology for Veteran Tree Identification

2.1 When surveying potential Veteran trees, the two key features used to identify them are a large **Girth** & a declining **Condition** that rases there ecological value. These two attributes must both be present before it is classed as Veteran.

Girth

2.2 When considering a tree for veteran status we first look at the girth of the tree, as a large girth is the most obvious and measurable indicator of a tree being advanced in age.

[2] https://assets.publishing.service.gov.uk/media/5e2054fc40f0b65dbed71467/airports-nps-new-runway-capacity-and-infrastructure-at-airports-in-the-south-east-of-england-web-version.pdf
[3] https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences#use-of-buffer-zones

2.3 Where possible, the girth of a tree is also compared to the "Ancient Tree Size Criteria Table" (Lonsdale, ATF 2013, fig 1.3) (shown on **Figure 1** below) and which is recognised as the most universally adopted measurable way of identified a veteran tree:

Figure 1: Ancient Tree Size Criteria Table (Lonsdale, ATF 2013, Figure 1.3)

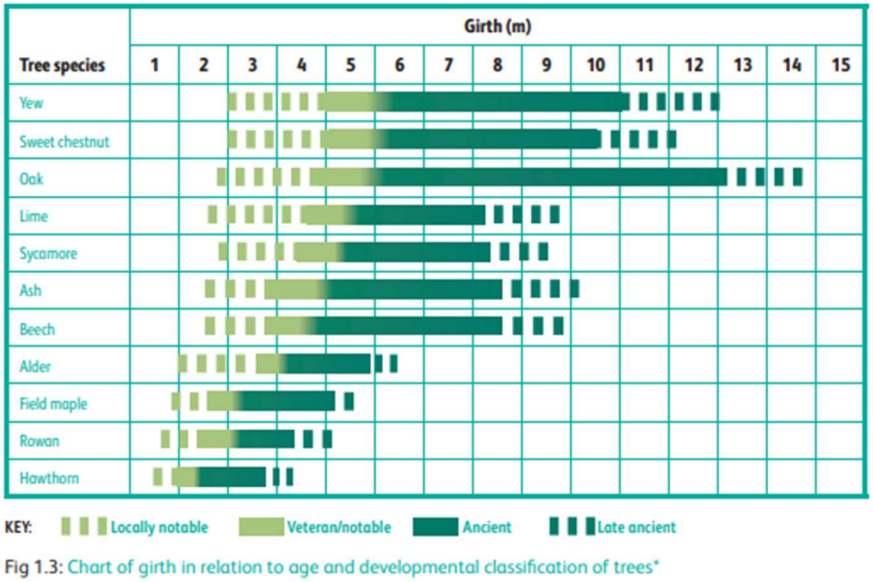


Fig 1.3: Chart of girth in relation to age and developmental classification of trees*

2.4 If the girth of a tree is considered large enough that the tree may be notable, then the condition of the tree is assessed to confirm whether or not the tree will be classed as a Veteran.

Condition

2.5 The main determining factor in whether or not a tree can be classed as a Veteran tree or not, is its physical condition. In 'Ancient and Other Veteran Trees: further guidance on management' David Lonsdale states that:

'In order to qualify as a veteran, the tree should show crown retrenchment and signs of decay in the trunk, branches or roots, such as exposed dead wood or fungal fruit bodies.' (Lonsdale, ATF 2013)

2.6 This makes the two most significant indicators of Veteran status:

- **Retrenchment:** The progressive deterioration of the outer crown of a tree through dieback and limb loss that reduces the overall height/ spread of the tree and increasing stability.
- **Decay:** When wood rots and decomposes; usually caused by a parasitic fungus or bacteria.

2.7 Both of these defects create good habitat, for things such as invertebrates or birds, raising its ecological value and giving a clear indicator of Veteran tree status.

2.8 A tree may still be considered for Veteran status even if it does not possess one or both of these features, if it still has a number of defects that would also be considered Veteran features, such as, but not limited to:

- A large quantity of deadwood in the crown
- Hollows/ Cracks without signs of decay
- Bark Loss
- Saprophytic Fungi
- Habitat spaces (such as woodpecker holes)
- Storm Damage

3 Conclusion

3.1 To summarise, the Applicant's approach to Veteran Tree identification can be summed up as a two-step process:

1) Identify potential Veteran trees by their size.
2) Note if they have retrenchment & decay **or** enough other significant defects to make them ecologically important.

3.2 If a tree meets both criteria then it would be assigned Veteran Status, if not its defects would still be noted, and its size may be mentioned as "Locally Notable".

3.3 While "Locally Notable" trees are not given the extra RPA buffer zone that a Veteran Tree is given, it will still normally be given Category A status and should be retained wherever possible.

3.4 This process follows the guidance, listed in section 1.5, to make our method as consistent as possible, but due to the individual nature of all trees this process still relies on the professional opinion of each surveyor and is not infallible, as recognised within the Ancient Tree Forum guidance:

'On the basis of the above general criteria, it is unlikely that all the participants in a survey would, without prompting or instruction, fully agree which trees should qualify for inclusion' (Lonsdale, ATF 2013)

Appendix L
Arboricultural Glossary

Age-class - A general classification of the tree into either - young, semi-mature, early mature, mature, over-mature, or veteran.

Apical Bud/Shoot – The apical bud, also known as the leading shoot, is responsible for shoot extension and is dominant.

Apical Dominance – A singular, leading shoot remains dominant.

Arboreal - In connection with, or in relation to, trees.

Arboriculturist – Person who has, through relevant education, training and experience, gained recognised qualifications and expertise in the field of trees in relation to construction.

Arboricultural Implications Assessment (AIA) – Study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Arboricultural Method Statement (AMS) – Methodology for the implementation of any aspect of development that has the potential to result in the loss of or damage to a tree. Note The AMS is likely to include details of an on-site tree protection monitoring regime.

Asymmetric crown- Crowns that have a morphological bias in a particular direction. This can give the tree an aesthetically unfavourable appearance but can also subject the tree to uneven wind- loading forces and potentially result in failure.

Basal – Referring to the bottom part of a tree's stem.

Basifugal mortality – A natural process seen in trees in an advanced life stage whereby the trees extremities die back, and the inner crown expresses new growth, in order to conserve energy reserves.

Bifurcated - A growth characteristic, where two stems of similar size grow from the same point. Can create an inherent weakness.

Branch union/junction - The point at which a branch joins a larger stem. Can be a point of weakness, especially in certain species.

Brown Rot- Decay caused by certain species of fungus which results in the affected wood becoming brittle and liable to suddenly 'break out', especially if in key structural areas.

Buttress flares – Extensions of the basal stem of a tree that provide additional structural support. See reaction wood.

Bifurcated- A growth characteristic, where two or more stems of similar size grow from the same point. Can create an inherent weakness.

Cable braces – Cable braces used to support the crown of a tree, reduce impacts caused by wind- throw oscillation.

Canker – A clearly defined area of dead and sunken or malformed bark, caused by bacteria or fungi. Can have a bearing on structural integrity of infected limb(s) depending on size and location.

Central leader- See apical dominance.

Chalara ash dieback- A disease affecting ash trees caused by the fungus *Hymenoscyphus fraxineus*. Usually fatal, the disease causes leaf loss and crown dieback in infected trees. It was first confirmed in Britain in 2012.

Chlorosis- yellowing of leaves which can be caused by a range of factors, often an indicator of nutrient deficiency.

Compaction - The compressing & hardening of soil around tree root systems, due to vehicular/pedestrian use etc. Loss of pore space between soil granules limits water movement and gaseous exchange and inhibits root growth.

Companion shelter- Shelter provided by neighbouring trees in groups to one another, factors such as wind throw are reduced due to supporting branches and interlocking root systems. Removing individual trees on the peripheries of such groups can expose neighbouring trees to environmental factors they have not previously been subjected to and can lead to individual failure.

Competent person – Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached

Note 1 A competent person understands the hazards and the methods to be implemented to eliminate or reduce the risks that can arise. For example, when on site, a competent person is able to recognise at all times whether it is safe to proceed.

Note 2 A competent person is able to advise on the best means by which the recommendations of this British Standard may be implemented.

Condition – Assessment based on a visual and professional view giving consideration to many factors such as tree health, structural integrity and suitability of its position.

Conservation dead- wooding- Removal of deadwood using 'coronet cuts' that mimic the way a branch would naturally break off, maximising deadwood habitat availability for invertebrates.

Coppice - The method of managing trees by cutting the stems at between 1.0 inch and 1.0 foot from the ground level on a regular cycle, the cut stumps of the trees or shrubs are allowed to re-grow many new stems.

Crown spread - Gives distances between extreme limits of the crown and the stem, usually along the four compass points. Helps to show crown symmetry.

Crown Reduction – The removal of branch ends to reduce the extreme limits of a tree's branch spread and height.

Crown Thin – The removal of selected branches within the crown to thin the internal branch structure.

D.B.H. - 'Diameter at Breast Height', an industry standard to gauge tree stem size and development. Within arboriculture, breast height is taken to be 1.5m above ground level.

Dieback - The reduction in crown vigour and extension growth progressing to death of distal parts; often associated with decline.

Epicormic growth - New growth from dormant buds that can often form tenuous attachments. Although some species readily form such shoots, it can be an indication of stress.

Form - A general assessment of the shape and position of the tree within its environment.

Hanger – Term used to describe a branch that has become detached and is being supported by other branches. Can be a hazard to persons and property below.

Hazard Beam – After the loss of a distal part, a limb concentrates growth upwards creating adverse end weights that can render the limb susceptible to failure.

Included bark – Growth characteristic usually caused when two or more stems/branches growing in close proximity 'fuse' together entrapping the bark from when the parts were separate in the middle, creating a structural weakness.

Invertebrate tower – Pollarding of a (usually dead) tree to a safe height that leaves part of the main stem as a deadwood habitat for invertebrate species.

Occlusion/Occluded – Normally used to describe the overgrowth of a wound. Also, immoveable foreign objects in contact with a tree part can become encased or 'occluded' by the tree as it grows incrementally.

Pathogen - An agent that causes disease, especially a living microorganism such as a bacterium or fungus.

Phototropic growth – Growth responding to a light stimulus i.e. the sun. This can influence the form of a tree, particularly where other factors e.g. buildings or other trees, affect the amount/ direction light is received.

Pollard – The removal and subsequent regular re-removal of the crown of a tree above animal browsing height. Can be an effective method of controlling the size of trees in urban areas. This is ideally begun in the trees early stages and maintained throughout its life.

Reaction wood - Essentially additional wood laid down by the tree to compensate for structural defects such as cavities.

Rhizosphere - The rhizosphere is the narrow region of soil that is directly influenced by root secretions and associated soil microorganisms. In particular, mycorrhizal fungi form a symbiotic relationship with trees and assist in the assimilation of phosphates essential to the tree's health.

Ring barking/Girdling – the removal of bark around the entire circumference of a stem or branch, causing the death of all distal parts.

Root Protection Area (RPA) – Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m².

Scaffold limbs - The main structural branches within the crown.

Tree Removal & Protection Plan – scale drawing prepared by an arboriculturist showing the finalised layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

U.L.E – 'Useful Life Expectancy' is an estimate based on currently known factors of the possible remaining life of the tree as an asset. AKA 'Estimated remaining contribution'.

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

Vigour - A general classification, as to the present and future potential growth and development of a tree. A comment regarding the health status of the tree specific to its species.

White Rot - A type of decay caused by certain species of fungi which results in the affected wood becoming flexible with little compressive strength.