SURFACE LEVEL DATA

NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR
1	-13.00	-12.00	
2	-12.00	-11.00	
3	-11.00	-10.00	
4	-10.00	-9.00	
5	-9.00	-8.00	
6	-8.00	-7.00	
7	-7.00	-6.00	
8	-6.00	-5.00	
9	-5.00	-4.00	
10	-4.00	-3.00	
11	-3.00	-2.00	
12	-2.00	-1.00	
13	-1.00	0.00	
14	0.00	1.00	
15	1.00	2.00	
16	2.00	3.00	
17	3.00	4.00	
18	4.00	5.00	
19	5.00	6.00	
20	6.00	7.00	
21	7.00	8.00	
22	8.00	9.00	
23	9.00	10.00	
24	10.00	11.00	
25	11.00	14.00	

DO NOT SCALE

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. ALL ELEVATIONS ARE IN METRES ABOVE ORDNANCE DATUM UNLESS OTHERWISE STATED.
3. THIS BULK EARTHWORKS EXERCISE MUST NOT BE USED FOR ANY COSTING PURPOSE, AND IF IT IS THE CLIENT AND/OR USER OF THIS INFORMATION MUST HAVE IT VERIFIED BY A QUALIFIED COST CONSULTANT/QUANTITY SURVEYOR. WSP CANNOT BE HELD LIABLE FOR ANY COSTINGS INFORMATION PRODUCED FROM THIS DESIGN.
4. THIS PLAN SHOWS A CUT AND FILL VOLUME COMPARISON BETWEEN THE FOLLOWING TWO SURFACES: MKE TOPSOIL GROUND VS MKE PLOT LEVELS. 300MM TOPSOIL ALLOWANCE MADE.
5. NO REFERENCE HAS BEEN MADE TO AVAILABLE INTERPRETATIVE OR FACTUAL GROUND INVESTIGATION AND NO CONSIDERATION HAS BEEN MADE IN RELATION TO THE ACCEPTABILITY OF EXISTING EXCAVATED MATERIALS FOR REUSE IN FILL AREAS.
6. NO ALLOWANCE HAS BEEN MADE FOR PIT, TRENCHES ARISING OR BACKFILLING WITH SELECTED MATERIAL FOR RETAINING STRUCTURE CONSTRUCTION.
7. NO ALLOWANCE HAS BEEN MADE FOR REMOVAL OF HARD OR SOFT SPOT BELOW THE FORMATION PROFILE.
8. THIS IS A GEOMETRIC VOLUME ANALYSIS AND THEREFORE NO ALLOWANCE HAS BEEN MADE FOR BULKING OF ANY MATERIAL. CONTRACTOR TO CONSULT GROUND INVESTIGATION.
9. NO ALLOWANCE HAS BEEN MADE FOR FOUNDATION, PIT, TRENCH ARISINGS OR BACKFILLING WITH SELECTED MATERIALS FOR RETAINING STRUCTURE CONSTRUCTION.
10. THE PLAN CONTOURS REPRESENT THE ELEVATION DIFFERENCE BETWEEN THE TWO SURFACES, WITH POSITIVE AND NEGATIVE CONTOUR VALUES REPRESENTING AREAS OF FILL AND CUT RESPECTIVELY.

KEY

-0.598	CUT DEPTH
0.588	FILL DEPTH

WORK IN PROGRESS

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	26/02/2020	DE	PLOT BOUNDARIES AMENDED TO NEW MASTERPLAN	[X]	SP
P03	14/12/2020	DE	PLOTS AMENDED TO NOT CLASH WITH HEDGES	[X]	SP
P02	27/11/2020	DE	PLOT FALLS AMENDED	[X]	SP
P01	20/11/2020	DE	FIRST ISSUE	[X]	SP

DRAWING STATUS:
S0 - WORK IN PROGRESS

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The Mailbox, Level 2, 100 Wharfside Street, Birmingham, B1 1RT, UK
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wsp.com

CLIENT:
BERKLEY ST JAMES

ARCHITECT:
JTP / STEPHEN GEORGE AND PARTNERS

SITE/PROJECT:
MILTON KEYNES EAST

TITLE:
PRELIMINARY EARTHWORKS STRATEGY
CUT AND FILL ISOPACHYTE

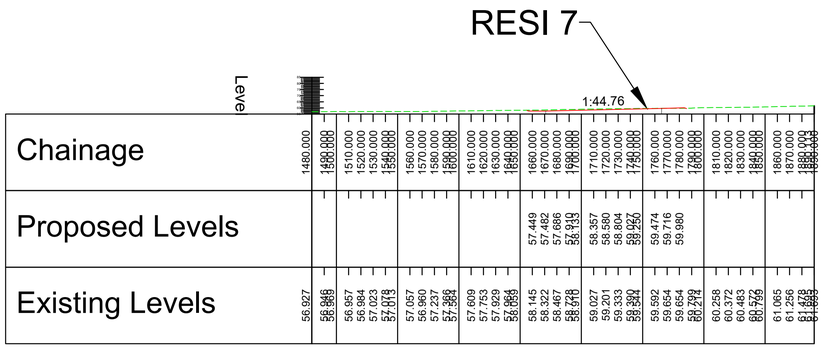
SCALE @ A1:	CHECKED:	APPROVED:
1:5000	BU	SP

PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70057521	DE	DE	February 21

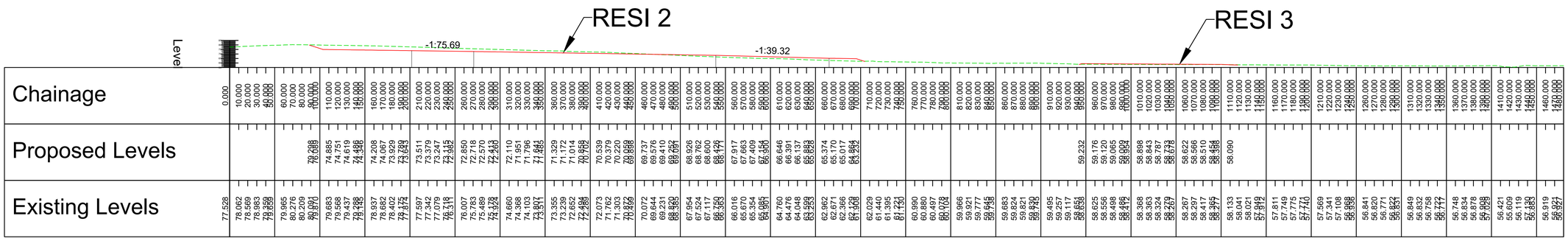
DRAWING No: MKE-WSP-ZZ-ZZ-C-SK-0601 REV: P04

DO NOT SCALE

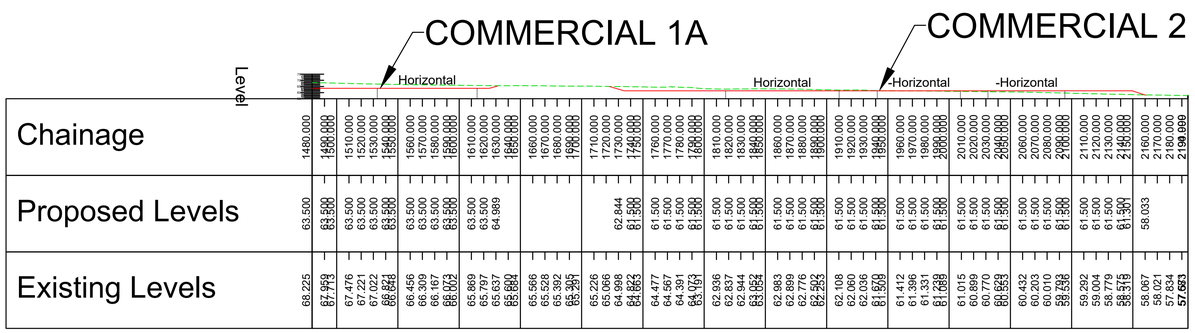
B-B CH1480 TO 1890.113 - LONGSECTION
SCALE: H 1:5000,V 1:5000. DATUM: 55.000



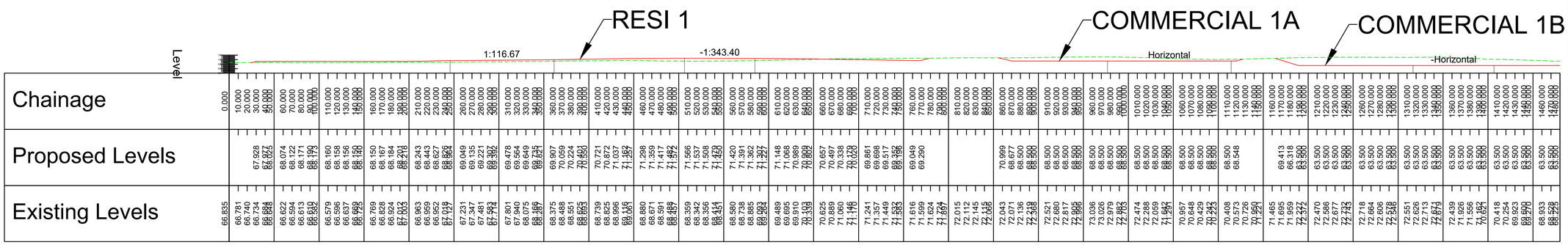
B-B CH 0.000 TO 1480.000 - LONGSECTION
SCALE: H 1:5000,V 1:5000. DATUM: 55.000



A-A CH1480.000 TO 2194.999 - LONGSECTION
SCALE: H 1:5000,V 1:5000. DATUM: 55.000



A-A CH0.000 TO 1480.000 - LONGSECTION
SCALE: H 1:5000,V 1:5000. DATUM: 55.000



KEY

PR PLOT
EXISTING SENSAT SURVEY

WORK IN PROGRESS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	26/02/2020	DE	PLOT LEVELS AMENDED TO SUIT SUDS	[X]	SP
P03	14/12/2020	DE	PLOTS AMENDED TO NOT CLASH WITH HEDGES	[X]	SP
P02	27/11/2020	DE	PLOT FALLS AMENDED	[X]	SP
P01	20/11/2020	DE	FIRST ISSUE	[X]	SP

DRAWING STATUS: S0 - WORK IN PROGRESS

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wsp.com

CLIENT: BERKLEY ST JAMES

ARCHITECT: JTP / STEPHEN GEORGE AND PARTNERS

SITE/PROJECT: MILTON KEYNES EAST

TITLE: PRELIMINARY EARTHWORKS STRATEGY
A-A & B-B - LONGSECTION

SCALE @ A1:	CHECKED:	APPROVED:
1:2500	BU	SP

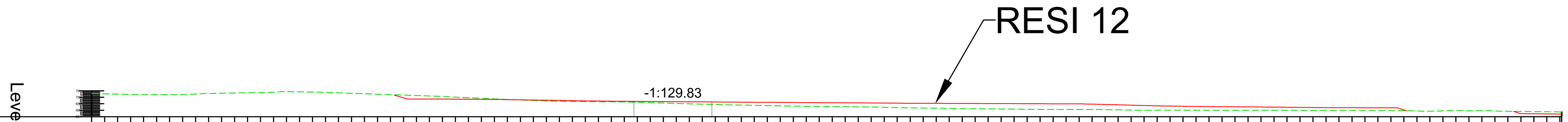
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70057521	DE	DE	February 21

DRAWING No: MKE-WSP-ZZ-ZZ-C-SK-0602 REV: P04

File name: \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\70057530\70057521 - MKE - PLANNING APPLICATION\03 WIP\DV CIVIL ENGINEERING\03 DRAWINGS\MKE-WSP-ZZ-ZZ-C-SK-0602.DWG, printed on 26 February 2021 18:11:54, by Edwards, Dan

E-E - LONGSECTION

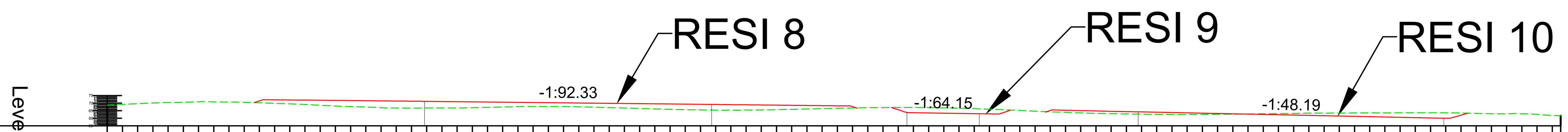
SCALE: H 1:5000,V 1:5000. DATUM: 55.000



Chainage	Existing Levels	Proposed Levels
0.000	72.909	
10.000	72.664	
20.000	72.406	
30.000	72.174	
40.000	72.005	
50.000	71.970	
60.000	72.008	
70.000	72.164	
80.000	72.501	
90.000	72.990	
100.000	73.151	
110.000	73.330	
120.000	73.505	
130.000	73.641	
140.000	73.874	
150.000	74.294	
160.000	74.202	
170.000	74.076	
180.000	73.814	
190.000	73.461	
200.000	73.061	
210.000	72.710	
220.000	72.364	
230.000	72.035	
240.000	71.697	69.556
250.000	71.361	68.608
260.000	71.008	68.610
270.000	70.626	68.582
280.000	70.131	68.530
290.000	69.680	68.495
300.000	69.231	68.440
310.000	68.722	68.320
320.000	68.289	68.174
330.000	67.884	68.030
340.000	67.503	67.887
350.000	67.179	67.715
360.000	66.931	67.571
370.000	66.765	67.406
380.000	66.669	67.230
390.000	66.591	67.108
400.000	66.507	67.001
410.000	66.376	66.896
420.000	66.142	66.802
430.000	65.838	66.725
440.000	65.553	66.648
450.000	65.262	66.571
460.000	64.935	66.494
470.000	64.664	66.417
480.000	64.406	66.351
490.000	64.161	66.280
500.000	63.942	66.212
510.000	63.760	66.141
520.000	63.573	66.072
530.000	63.356	66.006
540.000	63.174	65.951
550.000	63.033	65.872
560.000	62.946	65.817
570.000	62.744	65.748
580.000	62.687	65.693
590.000	62.594	65.624
600.000	62.449	65.555
610.000	62.218	65.486
620.000	61.986	65.417
630.000	61.840	65.376
640.000	61.697	65.343
650.000	61.538	65.304
660.000	61.388	65.265
670.000	61.241	65.231
680.000	61.125	65.193
690.000	61.032	65.157
700.000	60.936	65.121
710.000	60.826	65.083
720.000	60.713	65.045
730.000	60.631	65.006
740.000	60.615	64.965
750.000	60.577	64.922
760.000	60.602	64.878
770.000	60.626	64.679
780.000	60.477	64.413
790.000	60.291	64.160
800.000	60.102	63.906
810.000	59.961	63.656
820.000	60.009	63.380
830.000	60.036	63.187
840.000	60.009	63.060
850.000	59.995	62.916
860.000	59.994	62.795
870.000	59.963	62.710
880.000	59.924	62.649
890.000	59.915	62.588
900.000	59.941	62.512
910.000	59.957	62.397
920.000	59.932	62.300
930.000	59.908	62.183
940.000	59.888	62.083
950.000	59.898	61.997
960.000	59.883	61.948
970.000	59.879	61.917
980.000	59.853	61.885
990.000	59.821	61.852
1000.000	59.781	61.822
1010.000	59.656	60.212
1020.000	59.414	
1030.000	59.233	
1040.000	59.505	
1050.000	59.880	
1060.000	59.566	
1070.000	59.640	
1080.000	59.427	
1090.000	59.181	
1100.000	59.039	57.378
1110.000	58.934	57.259
1120.000	58.841	57.140
1130.000	58.572	57.005
1131.353	58.539	57.021

D-D - LONGSECTION

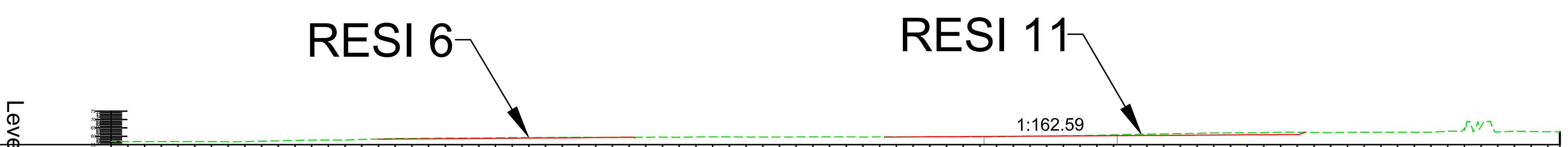
SCALE: H 1:5000,V 1:5000. DATUM: 55.000



Chainage	Existing Levels	Proposed Levels
0.000	68.586	
10.000	69.095	
20.000	69.642	
30.000	70.063	
40.000	70.338	
50.000	70.578	
60.000	70.834	
70.000	70.803	
80.000	70.696	
90.000	70.515	
100.000	70.208	71.481
110.000	69.870	72.168
120.000	69.513	72.071
130.000	69.088	71.981
140.000	68.581	71.884
150.000	68.080	71.786
160.000	67.691	71.687
170.000	67.370	71.584
180.000	66.997	71.480
190.000	66.740	71.375
200.000	66.711	71.269
210.000	66.773	71.163
220.000	66.771	71.055
230.000	66.812	70.946
240.000	66.941	70.838
250.000	67.157	70.730
260.000	67.408	70.621
270.000	67.631	70.513
280.000	67.750	70.405
290.000	67.762	70.297
300.000	67.702	70.188
310.000	67.548	70.080
320.000	67.290	69.972
330.000	67.030	69.863
340.000	66.760	69.755
350.000	66.441	69.647
360.000	66.143	69.538
370.000	65.868	69.430
380.000	65.635	69.322
390.000	65.475	69.214
400.000	65.369	69.105
410.000	65.347	68.994
420.000	65.395	68.883
430.000	65.500	68.772
440.000	65.668	68.662
450.000	65.890	68.551
460.000	66.099	68.441
470.000	66.339	68.331
480.000	66.586	68.221
490.000	66.784	67.596
500.000	66.966	
510.000	67.053	
520.000	67.103	65.610
530.000	67.095	63.643
540.000	67.018	63.487
550.000	66.878	63.331
560.000	66.645	63.175
570.000	66.333	63.019
580.000	66.002	62.864
590.000	65.620	64.026
600.000	65.170	
610.000	64.684	
620.000	64.262	65.146
630.000	63.880	65.282
640.000	63.558	65.040
650.000	63.272	64.821
660.000	63.057	64.606
670.000	62.886	64.391
680.000	62.715	64.183
690.000	62.583	63.975
700.000	62.530	63.768
710.000	62.470	63.560
720.000	62.519	63.353
730.000	62.606	63.145
740.000	62.705	62.938
750.000	62.825	62.730
760.000	62.962	62.522
770.000	63.054	62.315
780.000	63.177	62.107
790.000	63.376	61.900
800.000	63.412	61.692
810.000	63.420	61.485
820.000	63.495	61.277
830.000	63.532	61.070
840.000	63.547	60.862
850.000	63.580	60.655
860.000	63.582	60.447
870.000	63.613	60.240
880.000	63.572	60.033
890.000	63.451	62.071
900.000	63.253	
910.000	63.001	
920.000	62.957	
930.000	62.932	
940.000	62.560	
950.000	61.844	
955.566	61.689	

C-C CH1480.000 TO 2347.148 - LONGSECTION

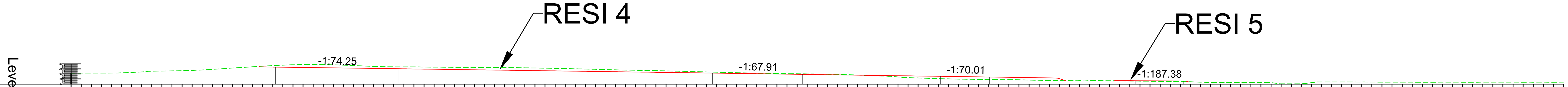
SCALE: H 1:5000,V 1:5000. DATUM: 55.000



Chainage	Existing Levels	Proposed Levels
1480.000	56.858	
1490.000	56.809	
1500.000	56.734	
1510.000	56.794	
1520.000	56.809	
1530.000	56.750	
1540.000	56.798	
1550.000	56.691	
1560.000	56.799	
1570.000	57.046	
1580.000	57.191	
1590.000	57.487	
1600.000	57.681	
1610.000	57.763	
1620.000	57.789	
1630.000	58.077	
1640.000	58.380	58.324
1650.000	58.629	58.337
1660.000	58.715	58.399
1670.000	58.820	58.468
1680.000	58.892	58.538
1690.000	58.903	58.607
1700.000	58.927	58.679
1710.000	59.056	58.751
1720.000	59.191	58.824
1730.000	59.207	58.889
1740.000	59.245	58.956
1750.000	59.291	59.033
1760.000	59.338	59.134
1770.000	59.364	59.236
1780.000	59.334	59.336
1790.000	59.370	59.386
1800.000	59.435	
1810.000	59.477	
1820.000	59.426	
1830.000	59.558	
1840.000	59.630	
1850.000	59.608	
1860.000	59.546	
1870.000	59.528	
1880.000	59.546	
1890.000	59.589	
1900.000	59.615	
1910.000	59.601	
1920.000	59.590	
1930.000	59.575	
1940.000	59.598	
1950.000	59.654	59.581
1960.000	59.653	59.638
1970.000	59.620	59.695
1980.000	59.608	59.750
1990.000	59.627	59.801
2000.000	59.670	59.852
2010.000	59.743	59.911
2020.000	59.912	59.972
2030.000	60.028	60.034
2040.000	60.125	60.095
2050.000	60.259	60.157
2060.000	60.361	60.218
2070.000	60.546	60.280
2080.000	60.850	60.341
2090.000	61.092	60.405
2100.000	61.226	60.463
2110.000	61.377	60.523
2120.000	61.547	60.586
2130.000	61.746	60.654
2140.000	61.947	60.709
2150.000	62.023	60.771
2160.000	62.106	60.833
2170.000	62.222	60.899
2180.000	62.345	60.969
2190.000	62.395	61.022
2200.000	62.324	
2210.000	62.301	
2220.000	62.351	
2230.000	62.431	
2240.000	62.422	
2250.000	62.420	
2260.000	62.390	
2270.000	62.503	
2280.000	62.944	
2290.000	64.883	
2300.000	65.988	
2310.000	62.583	
2320.000	63.019	
2330.000	62.803	
2340.000	62.718	
2347.148	62.619	

C-C CH0.000 TO 1480.000 - LONGSECTION

SCALE: H 1:5000,V 1:5000. DATUM: 55.000



Chainage	Existing Levels	Proposed Levels
0.000	65.852	
10.000	65.860	
20.000	65.829	
30.000	65.838	
40.000	65.918	
50.000	66.141	
60.000	66.542	
70.000	67.027	
80.000	67.746	
90.000	67.933	
100.000	68.079	
110.000	68.258	
120.000	68.565	
130.000	68.995	
140.000	69.562	
150.000	70.210	
160.000	70.876	
170.000	71.506	
180.000	72.138	
190.000	72.739	72.005
200.000	73.293	71.854
210.000	73.772	71.715
220.000	74.127	71.581
230.000	74.310	71.446
240.000	74.319	71.311
250.000	74.249	71.177
260.000	74.048	71.042
270.000	73.741	70.907
280.000	73.320	70.773
290.000	72.928	70.638
300.000	72.456	70.503
310.000	72.200	70.369
320.000	72.061	70.234
330.000	72.019	70.097
340.000	72.017	69.959
350.000	71.905	69.821
360.000	71.774	69.684
370.000	71.735	69.548
380.000	71.633	69.410
390.000	71.600	69.272
400.000	71.546	69.135
410.000	71.480	68.999
420.000	71.412	68.862
430.000	71.340	68.726
440.000	71.239	68.590
450.000	71.103	68.453
460.000	70.954	68.316
470.000	70.769	68.180
480.000	70.546	68.043
490.000	70.356	67.907
500.000	70.119	67.770
510.000	69.867	67.633
520.000	69.618	67.496
530.000	69.349	67.359
540.000	69.084	67.223
550.000	68.883	67.086
560.000	68.674	66.948
570.000	68.454	66.811
580.000	68.316	66.673
590.000	68.034	66.537
600.000	67.797	66.398
610.000	67.550	66.260
620.000	67.258	66.120
630.000	66.999	65.980
640.000	66.757	65.837
650.000	66.496	65.690
660.000	66.235	65.542
670.000	65.983	65.395
680.000	65.768	65.248
690.000	65.584	65.101
700.000	65.410	64.954
710.000	65.299	64.806
720.000	65.170	64.659
730.000	65.079	64.514
740.000	64.927	64.366
750.000	64.772	64.220
760.000	64.549	64.081
770.000	64.268	63.941
780.000	63.913	63.801
790.000	63.430	63.663
800.000	63.046	63.524
810.000	62.756	63.386
820.000	61.985	63.247
830.000	61.392	63.108
840.000	61.016	62.970
850.000	60.666	62.831
860.000	60.355	62.692
870.000	60.081	62.550
880.000	59.883	62.407
890.000	59.738	62.264
900.000	59.588	62.122
910.000	59.446	61.979
920.000	59.356	61.835
930.000	59.307	61.680
940.000	59.195	61.525
950.000	58.962	61.372
960.000	58.736	61.210
970.000	58.569	61.069
980.000	58.462	60.386
990.000	58.407	
1000.000	58.409	
1010.000	58.641	
1020.000	58.436	
1030.000	58.212	
1040.000	58.151	58.361
1050.000	57.975	58.304
1060.000	57.878	58.249
1070.000	57.779	58.195
1080.000	57.659	58.142
1090.000	57.602	58.089
1100.000	57.493	58.035
1110.000	57.256	
1120.000	56.879	
1130.000	56.609	
1140.000	56.563	
1150.000	56.562	
1160.000	56.525	
1170.000	56.584	
1180.000	56.685	
1190.000	56.486	
1200.000	56.178	
1210.000	55.161	
1220.000	55.320	
1230.000	56.342	
1240.000	57.121	
1250.000	57.090	
1260.000	57.088	
1270.000	57.076	
1280.000	57.037	
1290.000	56.972	
1300.000	56.907	
1310.000	56.888	
1320.000	56.853	
1330.000	56.821	
1340.000	56.809	
1350.000	56.791	
1360.000	56.846	
1370.000	56.856	
1380.000	56.816	
1390.000	56.794	
1400.000	56.833	
1410.000	56.859	
1420.000	56.880	
1430.000	56.857	
1440.000	56.813	
1450.000	56.809	
1460.000	56.840	
1470.000	56.800	
1480.000	56.858	

DO NOT SCALE

KEY

PR PLOT

EXISTING SENSAT SURVEY

WORK IN PROGRESS

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	26/02/2020	DE	PLOT LEVELS AMENDED TO SUIT SUDS	BU	SP
P03	14/12/2020	DE	PLOTS AMENDED TO NOT CLASH WITH HEDGES	BU	SP
P02	27/11/2020	DE	PLOT FALLS AMENDED	BU	SP
P01	20/11/2020	DE	FIRST ISSUE	BU	SP

DRAWING STATUS: S0 - WORK IN PROGRESS

The Mailbox, Level 2, 100 Wharfside Street, Birmingham, B1 1RT, UK
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wsp.com

CLIENT: BERKLEY ST JAMES

ARCHITECT: JTP / STEPHEN GEORGE AND PARTNERS

SITE/PROJECT: MILTON KEYNES EAST

TITLE: PRELIMINARY EARTHWORKS STRATEGY C-C, D-D & E-E - LONGSECTION

SCALE @ A1: 1:2500	CHECKED: BU		APPROVED: SP
PROJECT NO: 70057521	DESIGNED: DE	DRAWN: DE	DATE: February 21

DRAWING No: MKE-WSP-ZZ-ZZ-C-SK-0603 — REV: P04

File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\700575XX\70057521 - MKE - PLANNING APPLICATION\03 WIP\CV CIVIL ENGINEERING\03 DRAWINGS\MKE-WSP-ZZ-ZZ-C-SK-0603.DWG, printed on 26 February 2021 18:20:28, by Edwards, Dan

DO NOT SCALE

G-G CH1480.000 TO 1839.831 - LONGSECTION
SCALE: H 1:5000,V 1:5000. DATUM: 60.000

RESI 12

Level | -1:41.33 | -1:41.98

Chainage	Existing Levels	Proposed Levels
1480.000	66.137	68.831
1490.000	66.211	68.589
1500.000	66.285	68.347
1510.000	66.288	68.106
1520.000	66.322	67.867
1530.000	66.318	67.629
1540.000	66.225	67.391
1550.000	66.124	67.153
1560.000	65.956	66.915
1570.000	65.737	66.676
1580.000	65.564	66.438
1590.000	65.329	66.200
1600.000	65.129	65.962
1610.000	64.961	65.724
1620.000	64.805	65.485
1630.000	64.627	65.247
1640.000	64.460	65.009
1650.000	64.301	64.771
1660.000	64.149	64.533
1670.000	63.938	64.294
1680.000	63.757	64.056
1690.000	63.588	63.818
1700.000	63.413	63.580
1710.000	63.286	63.342
1720.000	63.123	63.103
1730.000	62.975	62.811
1740.000	62.837	62.495
1750.000	62.678	62.178
1760.000	62.503	
1770.000	62.346	
1780.000	62.204	
1790.000	62.058	
1800.000	61.928	
1810.000	61.718	
1820.000	61.731	
1830.000	61.640	
1839.831	61.452	

G-G CH0.000 TO 1480.000- LONGSECTION
SCALE: H 1:5000,V 1:5000. DATUM: 60.000

RESI 2 | RESI 4 | RESI 8 | RESI 12

Level | 1:392.18 | 1:3171.35 | 1:3125.01 | -1:335.74 | -1:202.19 | -1:259.25

Chainage	Existing Levels	Proposed Levels
0.000	76.188	
10.000	76.275	
20.000	76.408	
30.000	76.444	
40.000	76.505	
50.000	76.599	
60.000	76.726	
70.000	76.630	75.858
80.000	76.613	72.525
90.000	76.595	72.474
100.000	76.497	72.499
110.000	76.430	72.525
120.000	76.380	72.550
130.000	76.301	72.576
140.000	76.185	72.601
150.000	76.091	72.627
160.000	75.916	72.652
170.000	75.664	72.678
180.000	75.422	72.703
190.000	75.309	72.729
200.000	75.321	72.754
210.000	75.335	72.780
220.000	75.499	72.805
230.000	75.727	72.831
240.000	75.953	72.856
250.000	76.087	72.882
260.000	76.189	72.907
270.000	76.268	72.933
280.000	76.333	72.958
290.000	76.494	72.984
300.000	76.648	73.009
310.000	76.712	73.035
320.000	76.787	73.060
330.000	76.820	73.086
340.000	76.853	73.111
350.000	76.918	73.137
360.000	76.837	73.162
370.000	76.755	73.201
380.000	76.729	73.280
390.000	76.566	
400.000	76.120	
410.000	76.018	
420.000	75.698	
430.000	75.333	72.381
440.000	75.004	69.049
450.000	74.677	68.668
460.000	74.341	68.671
470.000	74.052	68.674
480.000	73.802	68.677
490.000	73.650	68.681
500.000	73.564	68.684
510.000	73.427	68.687
520.000	73.324	68.690
530.000	73.330	68.693
540.000	73.302	68.696
550.000	73.231	68.700
560.000	73.106	68.703
570.000	72.963	68.706
580.000	72.853	68.709
590.000	72.662	68.712
600.000	72.437	68.715
610.000	72.207	68.718
620.000	72.004	68.722
630.000	71.690	68.725
640.000	71.402	68.728
650.000	71.081	68.731
660.000	70.771	68.734
670.000	70.528	68.738
680.000	70.159	68.741
690.000	69.653	68.744
700.000	69.044	68.747
710.000	68.486	68.750
720.000	67.985	68.754
730.000	67.452	68.757
740.000	66.918	68.760
750.000	66.394	68.763
760.000	65.847	68.766
770.000	65.298	68.770
780.000	64.805	67.902
790.000	64.388	64.567
800.000	64.104	
810.000	63.909	
820.000	63.742	
830.000	63.582	
840.000	63.213	
850.000	63.269	64.783
860.000	63.581	68.090
870.000	63.814	69.763
880.000	63.924	69.737
890.000	64.120	69.710
900.000	64.405	69.684
910.000	64.780	69.657
920.000	65.156	69.630
930.000	65.452	69.603
940.000	65.716	69.573
950.000	65.920	69.543
960.000	66.128	69.513
970.000	66.310	69.483
980.000	66.491	69.454
990.000	66.776	69.424
1000.000	67.087	69.394
1010.000	67.615	69.364
1020.000	68.057	69.335
1030.000	68.338	69.305
1040.000	68.571	69.275
1050.000	68.863	69.245
1060.000	69.283	69.225
1070.000	69.696	69.205
1080.000	70.168	69.184
1090.000	70.558	69.152
1100.000	70.916	69.102
1110.000	71.249	69.053
1120.000	71.570	69.003
1130.000	71.855	68.954
1140.000	72.058	68.905
1150.000	72.191	68.855
1160.000	72.300	68.806
1170.000	72.335	68.756
1180.000	72.337	68.707
1190.000	72.273	68.657
1200.000	72.038	68.608
1210.000	71.603	68.558
1220.000	71.140	68.509
1230.000	70.746	68.459
1240.000	70.344	68.410
1250.000	69.952	68.360
1260.000	69.506	68.311
1270.000	69.100	68.262
1280.000	68.828	68.212
1290.000	68.501	68.163
1300.000	68.052	68.119
1310.000	67.553	68.076
1320.000	67.151	68.037
1330.000	67.022	67.998
1340.000	66.987	67.959
1350.000	66.955	67.921
1360.000	66.898	67.882
1370.000	66.669	67.844
1380.000	66.363	67.810
1390.000	66.061	67.775
1400.000	65.893	67.740
1410.000	65.915	66.862
1420.000	65.856	
1430.000	65.587	
1440.000	65.661	
1450.000	65.852	
1460.000	66.006	67.652
1470.000	66.103	69.073
1480.000	66.137	68.831

KEY

PR PLOT
EXISTING SENSAT SURVEY

WORK IN PROGRESS

F-F CH1480.000 TO 2553.399 - LONGSECTION
SCALE: H 1:5000,V 1:5000. DATUM: 55.000

RESI 4 | RESI 9 | RESI 10 | RESI 12

Level | 1:386.11 | -1:198.55 | -1:62.64 | -1:403.14

Chainage	Existing Levels	Proposed Levels
1480.000	59.852	62.367
1490.000	59.822	62.367
1500.000	59.800	62.367
1510.000	59.744	62.366
1520.000	59.727	62.367
1530.000	59.750	61.220
1540.000	59.734	
1550.000	59.656	
1560.000	59.549	
1570.000	59.306	
1580.000	59.087	
1590.000	58.889	
1600.000	58.995	
1610.000	59.065	59.514
1620.000	59.173	60.191
1630.000	59.359	60.230
1640.000	59.571	60.255
1650.000	59.836	60.281
1660.000	60.093	60.307
1670.000	60.443	60.333
1680.000	60.711	60.356
1690.000	60.971	60.379
1700.000	61.298	
1710.000	61.621	
1720.000	61.858	61.859
1730.000	62.146	62.034
1740.000	62.409	61.975
1750.000	62.627	61.916
1760.000	62.948	61.856
1770.000	63.181	61.797
1780.000	63.296	61.738
1790.000	63.350	61.686
1800.000	63.392	61.635
1810.000	63.414	61.585
1820.000	63.337	61.535
1830.000	63.227	61.484
1840.000	63.155	61.431
1850.000	63.079	61.372
1860.000	62.752	61.313
1870.000	61.492	61.254
1880.000	60.688	61.195
1890.000	60.545	61.135
1900.000	60.881	61.075
1910.000	61.015	61.028
1920.000	61.122	60.986
1930.000	61.120	60.933
1940.000	61.102	60.880
1950.000	61.109	60.830
1960.000	61.173	60.786
1970.000	61.436	60.739
1980.000	61.876	60.692
1990.000	62.157	60.651
2000.000	62.256	60.535
2010.000	62.341	60.375
2020.000	62.437	60.216
2030.000	62.529	60.056
2040.000	62.579	59.896
2050.000	62.543	59.737
2060.000	62.442	59.623
2070.000	62.295	59.599
2080.000	62.062	59.574
2090.000	61.803	59.549
2100.000	61.518	59.524
2110.000	61.211	59.499
2120.000	60.934	59.474
2130.000	60.742	59.450
2140.000	60.600	59.425
2150.000	60.351	59.400
2160.000	59.978	59.375
2170.000	59.753	59.379
2180.000	59.628	
2190.000	59.311	
2200.000	59.338	
2210.000	59.375	
2220.000	59.578	
2230.000	59.759	
2240.000	59.769	61.799
2250.000	59.841	62.887
2260.000	59.918	62.878
2270.000	59.972	62.872
2280.000	60.005	62.875
2290.000	60.051	62.854
2300.000	60.106	62.849
2310.000	60.157	62.812
2320.000	60.202	62.772
2330.000	60.350	62.717
2340.000	60.487	62.636
2350.000	60.576	62.555
2360.000	60.623	62.474
2370.000	60.668	62.393
2380.000	60.738	62.312
2390.000	60.767	62.231
2400.000	60.775	62.150
2410.000	60.549	
2420.000	60.450	
2430.000	60.752	
2440.000	60.577	
2450.000	60.261	
2460.000	60.320	
2470.000	60.400	
2480.000	60.472	
2490.000	60.598	
2500.000	60.833	
2510.000	61.159	
2520.000	61.800	
2530.000	61.757	
2540.000		
2550.000		
2553.399		

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK.

REV	DATE	BY	DESCRIPTION	CHK	APP
P04	26/02/2020	DE	PLOT LEVELS AMENDED TO SUIT SUDS	BU	SP
P03	14/12/2020	DE	PLOTS AMENDED TO NOT CLASH WITH HEDGES	BU	SP
P02	27/11/2020	DE	PLOT FALLS AMENDED	BU	SP
P01	20/11/2020	DE	FIRST ISSUE	BU	SP

DRAWING STATUS: S0 - WORK IN PROGRESS

F-F CH0.000 TO 1480.000 - LONGSECTION
SCALE: H 1:5000,V 1:5000. DATUM: 55.000

COMMERCIAL 1 | RESI 2 | RESI 4

Level | Horizontal | -Horizontal | Horizontal | -1:163.90 | -1:253371.40

Chainage	Existing Levels	Proposed Levels
0.000	63.718	
10.000	63.558	
20.000	63.808	
30.000	64.591	
40.000	64.552	
50.000	64.304	
60.000	64.148	65.268
70.000	63.948	67.690
80.000	63.772	68.500
90.000	63.654	68.500
100.000	63.547	66.403
110.000	63.303	64.039
120.000	63.873	
130.000	64.773	
140.000	65.475	64.864
150.000	66.137	63.500
160.000	66.772	63.500
170.000	67.309	63.500
180.000	67.709	63.500
190.000	67.901	63.500
200.000	67.931	63.500
210.000	67.953	63.500
220.000	67.927	63.500
230.000	67.857	63.500
240.000	67.742	63.500
250.000	67.539	63.500
260.000	67.357	63.500
270.000	67.443	63.500
280.000	67.598	63.500
290.000	67.816	63.500
300.000	68.372	63.500
310.000	68.305	63.500
320.000	68.393	63.500
330.000	68.676	63.500
340.000	68.955	63.500
350.000	69.092	63.500
360.000	69.253	63.500
370.000	69.406	63.500
380.000	69.530	63.500
390.000	69.658	63.500
400.000	69.815	63.500
410.000	69.921	63.500
420.000	70.045	63.500
430.000	70.189	63.500
440.000	70.266	63.500
450.000	70.260	63.500
460.000	70.298	63.500
470.000	70.325	63.500
480.000	70.281	63.500
490.000	70.286	63.500
500.000	70.252	63.500
510.000	70.274	63.500
520.000	70.358	63.500
530.000	70.939	63.500
540.000	70.920	63.500
550.000	69.781	63.500
560.000	69.251	63.500
570.000	69.070	63.500
580.000	68.733	63.500
590.000	68.433	63.500
600.000	68.083	63.500
610.000	67.708	63.500
620.000	67.363	63.500
630.000	67.025	63.500
640.000	66.702	63.500
650.000	66.335	63.500
660.000	66.013	63.500
670.000	65.771	63.500
680.000	65.569	63.500
690.000	65.397	63.517
700.000	65.242	
710.000	65.148	
720.000	65.000	
730.000	64.864	
740.000	64.751	
750.000	64.599	
760.000	64.319	
770.000	64.104	
780.000	63.981	
790.000	63.872	
800.000	63.750	
810.000	63.610	
820.000	63.617	
830.000	63.710	
840.000	63.737	
850.000	63.636	65.428
860.000	63.621	65.378
870.000	63.597	65.317
880.000	63.554	65.256
890.000	63.465	65.195
900.000	63.378	65.134
910.000	63.249	65.073
920.000	63.152	65.012
930.000	62.996	64.951
940.000	62.907	64.891
950.000	62.899	64.831
960.000	62.859	64.772
970.000	62.840	64.706
980.000	62.826	64.639
990.000	62.804	64.578
1000.000	62.667	64.510
1010.000	62.480	64.440
1020.000	62.464	64.378
1030.000	62.337	64.311
1040.000	62.230	64.241
1050.000	62.107	64.171
1060.000	62.002	64.105
1070.000	61.879	64.033
1080.000	61.791	63.961
1090.000	61.711	63.890
1100.000	61.666	63.818
1110.000	61.592	62.879
1120.000	61.418	
1130.000	61.351	
1140.000	61.294	
1150.000	61.122	
1160.000	61.068	
1170.000	60.650	
1180.000	60.789	
1190.000	60.869	
1200.000	60.707	
1210.000	60.683	
1220.000	60.492	
1230.000	60.459	
1240.000	60.362	61.273
1250.000	60.333	62.372
1260.000	60.248	62.368
1270.000	60.193	62.368
1280.000	60.124	62.368
1290.000	60.072	62.367
1300.000	60.067	62.367
1310.000	60.028	62.367
1320.000	59.974	62.367
1330.000	59.915	62.367
1340.000	59.874	62.367
1350.000	59.859	62.367
1360.000	59.902	62.367
1370.000	59.954	62.367
1380.000	59.966	62.367
1390.000	59.967	62.367
1400.000	59.950	62.367
1410.000	59.952	62.367
1420.000	59.950	62.367
1430.000	59.956	62.367
1440.000	59.974	62.367
1450.000	59.968	62.367
1460.000	59.943	62.367
1470.000	59.910	62.367
1480.000	59.852	62.367

wsp

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CLIENT: BERKLEY ST JAMES

ARCHITECT: JTP / STEPHEN GEORGE AND PARTNERS

SITE/PROJECT: MILTON KEYNES EAST

TITLE: PRELIMINARY EARTHWORKS STRATEGY F-F & G-G - LONGSECTION

SCALE @ A1: 1:2500	CHECKED: BU		APPROVED: SP
PROJECT NO: 70057521	DESIGNED: DE	DRAWN: DE	DATE: February 21

DRAWING No: MKE-WSP-ZZ-ZZ-C-SK-0604 | REV: P04

File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\700575XX\70057521 - MKE - PLANNING APPLICATION\03 WIP\CV CIVIL ENGINEERING\03 DRAWINGS\MKE-WSP-ZZ-ZZ-C-SK-0604.DWG, printed on 26 February 2021 18:21:59, by Edwards, Dan

Appendix C5
Lighting Assessment

Berkeley St James

MILTON KEYNES EAST

Lighting Assessment Report

70057521-WSP-MKE-XX-RP-LI-0001
MARCH 2021

PUBLIC

Berkeley St James

MILTON KEYNES EAST

Lighting Assessment Report

PUBLIC

PROJECT NO. 70057521

OUR REF. NO. 70057521-WSP-MKE-XX-RP-LI-0001

DATE: MARCH 2021

WSP

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WSP.com

QUALITY CONTROL

Issue/revision	P01	P02		
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1 INTRODUCTION

1.1 BACKGROUND

This document is provided regarding the submission of a hybrid planning application on behalf of Berkeley St James for the Milton Keynes East (MKE) development on the land to the east of Milton Keynes and the M1 motorway and south of Newport Pagnell in Buckinghamshire as shown in **Figure 1-1**, herby referred to as 'the Site'.

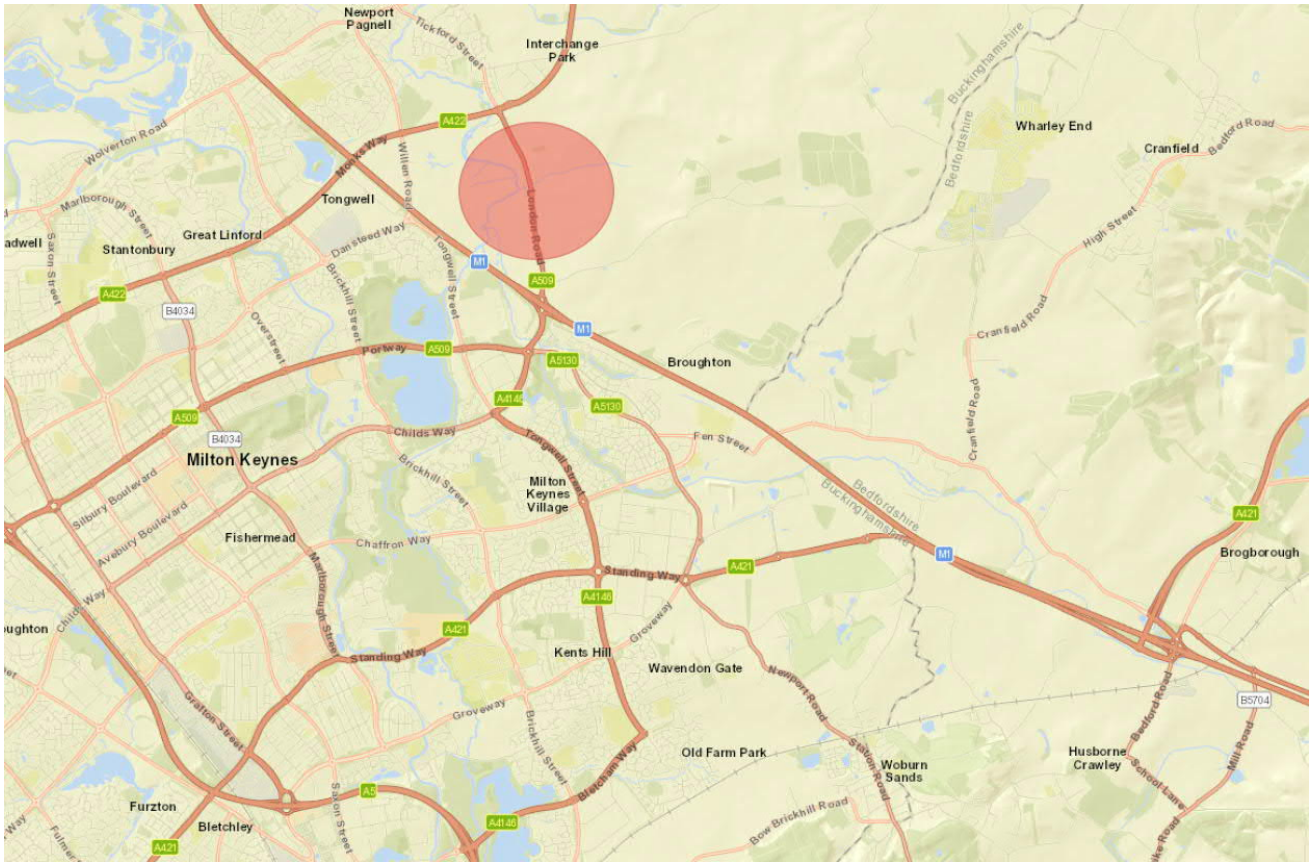


Figure 1-1 – Location of Proposed Development

1.2 THE SITE AND SURROUNDINGS

The Site is located immediately north-east of Junction 14 of the M1 motorway, circa (c.) 3.5km north-east of central Milton Keynes and c. 4.5km west of the village of Cranfield covering an area of c. 440 hectares.

Much of the Site consists of agricultural fields with hedgerow and treeline boundary features along with larger wooded areas. Running north to south through the Site is the River Ouzel; the topography of the Site is mainly flat.

There are residential dwellings within the Site, but these are intermittent. There are settlements surrounding the site including the village of Moulsoe to the east and the built-up suburban areas of Milton Keynes are present with Willen to the west and Boughton to the south which are both

separated from the Site by the M1 motorway. To the north-west the outer suburban areas of Newport Pagnell are separated from the Site by the A509 and A422 A-roads.

There are no other formal designations covering the Site which falls within the planning authority of Milton Keynes Council (MKC).

1.3 PROPOSED DEVELOPMENT

The assessment of the Proposed Development will include the following:

- Outline element (with all matters reserved) for a large-scale mixed-use urban extension (creating a new community) comprising: residential development; employment including business, general industry and storage/distribution uses; a secondary school and primary schools; a community hub containing a range of commercial and community uses; a new linear park along the River Ouzel corridor; open space and linked amenities; new redways, access roads and associated highways improvements; associated infrastructure works; demolition of existing structures.

- Detailed element for strategic highway and multi-modal transport infrastructure, including: new road and redway extensions; a new bridge over the M1 motorway; a new bridge over the River Ouzel; works to the Tongwell Street corridor between Tongwell roundabout and Pineham roundabout including new bridge over the River Ouzel; alignment alterations to A509 and Newport Road; and associated utilities, earthworks and drainage works.

Construction is currently anticipated to take approximately 26 years with a possible start of construction in 2022 and concluding in 2048.

1.4 AIM OF THIS DOCUMENT

This document outlines:

- Legislation, planning policies and guidance applicable to the type and location of the Proposed Development.
- The existing lighting conditions within and surrounding the Site.
- The background to artificial light pollution and associated guidance.
- Environmental limitations that may be placed on the proposed lighting of the development, in accordance with current standards and guidance.
- Expected levels of illumination for the activities proposed for the development.
- Equipment performance requirements that are likely to achieve compliance with both lighting and environmental guidance.
- The assessment of potential effects of lighting on the wider environment.

2 IMPACT OF ARTIFICIAL LIGHTING

2.1 POTENTIAL NEGATIVE EFFECTS

A well-designed lighting installation may transform a space after dark, allowing it to be used safely, effectively and for uses that may not be otherwise possible. While road lighting tends to be the dominant type of lighting in a residential development, there may also be public amenity lighting in core spaces, lighting at sports facilities and decorative features.

There is a general correlation between the complexity of a task, or how hazardous that task is, and the level of illumination required to safely undertake the task. Owners with more complex and hazardous spaces will generally provide greater levels of illumination, in-line with national, international and industry standards and guidance.

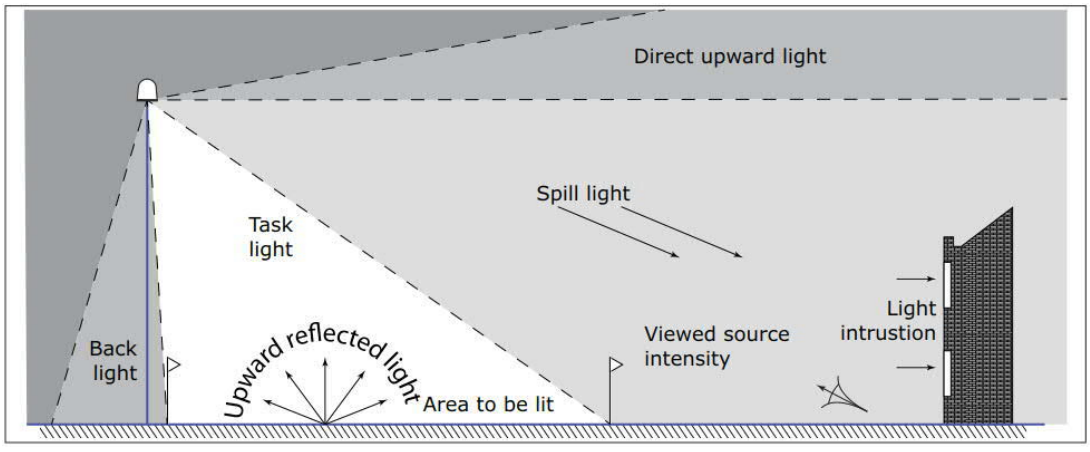
The correct level of lighting must be carefully selected to suit the task being undertaken, while ensuring that only the light necessary for the task is brought to bear. Excessive lighting is not only energy inefficient but can also negatively impact the local environment and ecology. In extreme cases poor lighting may make the task it is provided for more difficult to accomplish.

The incorrect application of lighting can have a negative effect on the local environment, in the form of pollution and nuisance. Light pollution is defined as emitted light that is serving no useful purpose as it falls outside of the area required to be illuminated. This can take the form of spill light outside the extents of a site, building or event, but also includes ‘sky glow’ which is the emission of light into the atmosphere as a result of poor control. The cumulative effects of sky glow are most noticeable above urban areas, where a variety of poorly controlled sources combine to create a brightening of the horizon and night sky. In addition to poorly controlled light, a component of sky glow will be formed from upward reflected light.

Nuisance lighting may take the form of localised spill light or glare. Glare occurs where the light source itself proves a distraction or disability to normal vision. Poorly orientated lighting units may exhibit glare and, while the disabling effects of glare diminish with distance, lighting may still provide a nuisance over several hundred metres.

A graphical representation of types of light nuisance is provided in **Figure 2-1**.

Figure 2-1 - Types of light nuisance



GN01 (ILP, 2020)

2.2 STATUTORY REQUIREMENTS AND POLICIES

Details of pertinent statutory requirements and polices relevant to the Proposed Development are included within this section. These requirements and policies are considered further in **Section 3.0,** which details the existing lighting scenario and lists limitations appropriate for the Site of the Proposed Development, and **Section 4.0** which provides high level lighting proposals and mitigation measures which aim to limit the effects of lighting to the immediate and wider environment.

The requirements, policies, applicable standards and guidance referenced in this report are current at the time of writing however should be verified as current and revalued prior to undertaking further assessment or design work.

The following information is not exhaustive and further statutory requirements and polices may be applicable.

LEGISLATION

The Clean Neighbourhoods and Environment Act 2005 (the 'CNEA') gives local authorities powers to deal with artificial lighting by classifying artificial light emitted from defined premises as a statutory nuisance. The CNEA amends Section 79 of the Environmental Protection Act 1990 to extend the statutory nuisance regime to include light spill and glare (emitted from certain premises) defined as, 'artificial light emitted from premises so as to be prejudicial to health or a nuisance.' Several defined types of premises are exempt from this provision, including premises where higher levels of light are to be expected for the purposes of safety, such as airports and lighthouses.

Guidance produced on Sections 101 to 103 of the CNEA by the Department of Environment, Food and Rural Affairs (DEFRA) extends the duty on local authorities to ensure their areas are checked periodically for existing and potential sources of statutory nuisances, including situations where a nuisance arises from the use of artificial lighting. It should be noted that a highway is not deemed to be a premise under the CNEA, therefore light emitted from a highway lighting installation cannot be deemed a nuisance.

NATIONAL POLICIES

The Ministry of Housing, Communities and Local Government, National Planning Policy Framework (NPPF), February 2019 states that, 'Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.' (NPPF, Paragraph 180, 2018)

The Ministry of Housing, Communities and Local Government provides guidance on light pollution on the gov.uk website (https://www.gov.uk/guidance/light-pollution) and details the following:

- What light pollution consideration does planning need to address?

- What factors can be considered when assessing whether a development proposal might have implications for light pollution?
- What factors are relevant when considering where light shines?
- What factors are relevant when considering when light shines?
- What factors are relevant when considering how much the light shines?
- What factors are relevant when considering possible ecological impacts of lighting?
- What other information is available that could inform approaches to lighting and help reduce light pollution? (gov.uk, 1 November 2019)

LOCAL POLICIES

The local planning authority, MKC have planning policies relating to lighting as detailed in the Milton Keynes Council, Plan:MK 2016 – 2031, Adopted March 2019.

The local plan recognises the safety and security benefits of artificial lighting but identifies light spillage as having the potential to be detrimental to people, wildlife and to the tranquillity and dark skies within rural areas. Recognition of the importance of carefully sited and designed lighting is noted and in certain cases assessment should be made on the impacts of sky glow, light spill and glare. The policies pertinent to this commentary are:

Policy NE6 Environmental Pollution

When considering development proposals, the Council will adopt the approach set out below to ensure that pollution will not have an unacceptable impact on human health, groundwater, general amenity, biodiversity or the wider natural environment.

Light pollution

Proposals that include external lighting schemes, including floodlighting, will be approved where it can be demonstrated through a Lighting Assessment that all of the following criteria can be satisfied:

- *The lighting scheme is the minimum required for security and operational purposes.*
- *Glare and light spillage are minimised.*
- *The amenity of residential areas is not adversely affected.*
- *There would be no unacceptable adverse impact on the character and beauty, openness, tranquillity, dark landscapes or enjoyment of the night sky of the countryside.*
- *The visual character of historic buildings and conservation areas are not adversely affected.*
- *There would be no dazzling or distraction of drivers using nearby roads.*
- *There would be no unacceptable adverse effects on species, habitats or the wider natural environment.*

Policy NE5 Conserving and Enhancing Landscape Character

Development proposals will need to demonstrate that the following aspects of landscape character have been conserved and where possible enhanced through sensitive design, landscape mitigation and enhancement measures:

- *Item 4 - Tranquillity and the need to protect against intrusion from light pollution, noise, and motion.*

2.3 GUIDANCE FOR IMPLEMENTATION

Applicable guidance for lighting designers on the subject of obtrusive light is predominantly covered by the following international documents:

- CIE 150:2017 Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations (International Commission on Illumination, 2017)
- CIE 126:1997 Guidelines for Minimizing Sky Glow (International Commission on Illumination, 1997)

National guidance is produced by the Institution of Lighting Professionals (ILP) in the following documents:

- Professional Lighting Guide 04, Guidance on Undertaking Environmental Lighting Impact Assessments (PLG04) (ILP, 2013)
- Guidance Note 01/20 Guidance Notes for the Reduction of Obtrusive Light (GN01) (ILP, 2020)
- Bat Guidance Note 08/18 Bats and artificial lighting in the UK (GN08) (ILP, 2018)
- Professional Lighting Guide 05, The Brightness of Illuminated Advertisements (PLG05) (ILP, 2014)

3 ASSESSMENT METHODOLOGY

3.1 METHODOLOGY

An assessment of the Site has been prepared in order to examine the existing baseline lighting conditions affecting the site and the immediate surrounds, to provide a datum for future design of the Proposed Development and identify site specific sensitivities.

Applicable guidance for the undertaking of an assessment of this type includes:

- Professional Lighting Guide 04, Guidance on Undertaking Environmental Lighting Impact Assessments (PLG04) (ILP, 2013)

PLG 04 provides guidance and methodology for the undertaking and reporting of lighting environmental impact assessments and has been closely adhered to as part of this assessment.

Baseline data collection has been undertaken by way of an on-site survey. The survey was conducted on Thursday 22 October 2020 by lighting specialists from WSP.

3.2 SITE CLASSIFICATION

The criteria used to provide a baseline for the impact of lighting on the surrounding environment are drawn from GN01, based on the derived Environmental Zone. The five potential zones are as follows.

Table 3-1 – Environmental Zones

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

GN01 (ILP, 2020)

An initial desk study of the Site has been carried out to assign an appropriate Environmental Zone.

The character of the Site is rural with much of the site contained within agricultural fields or woodland. There will be existing artificial lighting within the suburban areas of Milton Keynes and Newport Pagnell, but these will not diminish the feel of the rural dark setting. It is our recommendation to classify the site as **Environmental Zone E2**, indicative of a rural low district brightness surrounding.

3.3 SITE-SPECIFIC SENSITIVITIES

A number of site-specific or representative sensitive locations, which have the potential to be adversely affected by lighting, have been identified as part of an initial desk study of the Site. These are shown on Lighting Assessment Viewpoint Location Plan MKE-WSP-ZZ-ZZ-C-SK-1301, a copy of which is included in **Appendix A**.

Table 3-2 – Summary of sensitive locations

Viewpoint number	Location	Sensitivities
L1	Public Right of Way (PRoW) – West of Tickford Lodge Farm	Landscape view
L2	PRoW – South-west of Tickford Park Farm	Landscape view
L3	Track (agricultural field boundary) – East of A509	Ecological
L4	PRoW – North of Moulsoe	Landscape view
L5	Newport Road, Moulsoe	Landscape view
L6	PRoW – South-east of St Mary's church, Moulsoe	Landscape view
L7	Track (agricultural field boundary) – South of Newport Road	Ecological
L8	Agricultural field – South of Hermitage Farm	Ecological
L9	Nature Reserve – South-west of M1 Junction 14	Ecological
L10	Agricultural field boundary – adjacent to M1	Ecological
L11	Track (agricultural field boundary) – South-east of Holiday Inn (A509)	Ecological
L12	M1 overbridge – North-east of Tongwell Street	Landscape view
L13	Agricultural field boundary – East of and adjacent to River Ouzel	Ecological
L14	Agricultural field boundary – North of Holiday Inn (A509)	Ecological
L15	Agricultural field boundary – South of Moat Cottage	Landscape view

Viewpoint number	Location	Sensitivities
L16	Agricultural barn - East of residential properties 27 / 29 on A509	Ecological
L17	Track (agricultural field boundary) – South-east of Newport Stables	Ecological
L18	Track (agricultural field boundary) - Small wooded area c. 450m east of viewpoint L17	Ecological
L19	PRoW (agricultural field boundary) – East of A509	Ecological
L20	North Crawley Road (A509 Overbridge)	Landscape view

3.4 SITE LIMITATIONS

The limitations imposed on exterior lighting for Environmental Zone E2 are as follows (from GN01). Further guidance on limitations and how these are calculated are provided in CIE 150:2017.

Where a curfew is included, this refers to the time after which stricter requirements for the control of obtrusive light will apply, as stipulated by the local planning authority. If not otherwise stated, 23:00 to 05:00 hours are suggested.

Table 3-3 – Obtrusive light limitations for E2 zone

Sky Glow ULR (Max %)	Light intrusion (into windows) Ev (lux)	
	Pre-curfew	Post-curfew
2.5	5.0	1.0

GN01 (ILP, 2020)

Notes

1. Upward Light Ratio (ULR) is the maximum permitted percentage of luminaire flux that goes directly into the sky.
2. Ev = vertical illuminance in lux, measured flat on the glazing at the centre of the window.

Table 3-4 – Limits for luminous intensity for E2 zone

Luminaire projected area Ap in m²						
	0<Ap≤0.002	0.002<Ap≤0.01	0.01<Ap≤0.03	0.03<Ap≤0.13	0.13<Ap≤0.5	Ap>0.5
Pre-curfew (maximum cd)	0.57 d	1.3 d	2.5 d	5.0 d	10 d	7,500
Post-curfew (maximum cd)	0.29 d	0.63 d	1.3 d	2.5 d	5.1 d	500
Aid to gauging Ap	2 to 5cm	5 to 10cm	10 to 20cm	20 to 40cm	40 to 80cm	>80cm

Luminaire projected area Ap in m²						
	0<Ap≤0.002	0.002<Ap≤0.01	0.01<Ap≤0.03	0.03<Ap≤0.13	0.13<Ap≤0.5	Ap>0.5
Geometric mean of diameter (cm)	3.2cm	7.1cm	14.1cm	26.3cm	56.6cm	>80cm
Corresponding Ap representative area (m²)	0.0008	0.004	0.016	0.063	0.251	>0.5

GN01 (ILP, 2020)

Notes

1. d is the distance between the observer and the luminaire in metres.
2. Ap is the apparent surface of the light source seen from the observer position
3. Cd = Candela

Table 3-5 – Limits for road users

	Road classification			
	No road lighting	M6/M5	M4/M3	M2/M1
Veiling luminance (Lv)	0.037 cd/m²	0.23 cd/m²	0.40 cd/m²	0.84 cd/m²
Threshold increment (TI)	15% based on adaption luminance of 0.1 cd/m²	15% based on adaption luminance of 1.0 cd/m²	15% based on adaption luminance of 2.0 cd/m²	15% based on adaption luminance of 5.0 cd/m²

GN01 (ILP, 2020)

Notes

1. Refer to BS 5489-1:2020 and BS EN 13201 for road classifications.

Where specified as part of the Proposed Development, further guidance and limitations for lit building facades and lit advertisements or business signs can be sought from GN01 and PLG05.

ECOLOGY

Ecological guidance for the Site has identified sensitive areas or representative examples, as detailed in **Section 3.3**. Artificial lighting may affect sensitive fauna at these types of habitats, including impacting roosts, commuting routes and established and created dark corridors. It is useful in most situations to establish primary mitigation by assessing the impact of lighting proposals on bats and if a lighting scheme can be developed that is sensitive to bats, then it is likely not doing additional harm to other species.

The ILP Bat Guidance Note 08/18 *Bats and artificial lighting in the UK* (ILP, 2018) suggests limitations to the amount of spill light onto sensitive features being used by bats as **0.2 lux on the horizontal plane** (e.g. at ground level) and **0.4 lux on the vertical plane** (e.g. along the sides of hedgerow or treelines, calculated at an equivalent bat flying height). It is not always possible to completely remove levels of spill light onto nearby sensitive features near to artificial lighting installations as low levels of spill light can be present at significant distances from the installation.

3.5 CONSULTATIONS

Consultation with MKC has been initiated on 13 October 2020 to agree:

- Baseline and assessment methodology.
- Locations of viewpoints which will be used as the basis for the lighting assessment.
- Environmental zone classification E2.

At the time of writing, a response from MKC has not been provided.

3.6 ASSESSEMENT METHODOLOGY

The proposed development will impact on the surrounding environment in ways that may be measured by magnitude and significance, as described by PLG 04 and presented in **Table 3-6**.

The Proposed Development will either be presented in the form of a series of parameter plans with the main access roads designed in detail. For both elements, developed lighting proposals are not available at the time of this assessment and a general indication of the magnitude and temporal impact of the proposed development is made in this document. A detailed and comprehensive assessment should be made during the design of the scheme.

The assessment is therefore qualitative in nature and is based on professional judgement and predicted levels of obtrusive light. **Section 4** of this report details the type and levels of light typically used for developments of this nature and will be used to evaluate the effects on identified sensitive areas based on the following factors:

- Existing lighting conditions and Environmental Zone
- Anticipated future sources of lighting, including type, purpose, location and orientation
- Distance from receptor to light source(s)
- Screening (both existing and proposed) between light source(s) and receptor(s)

The assessment of changes in the night-time scene has considered the above factors alongside:

- The anticipated sources of lighting (temporary and permanent) viewed alongside existing sources of lighting
- The extent or absence of lighting within the overall field of view and the degree to which this would change
- The main focus of views from the receptors that contribute toward the night-time scene

Table 3-6 – Evaluation Table

Nature	Ref	Level	Descriptions	Remedial needs
Positive	1	Major/substantial beneficial effects	Significant improvement in night environment and/or reductions in glare, spill light and sky glow etc	None
	2	Moderate beneficial effects	Noticeable improvement in night environment and/or reductions in glare, spill light and sky glow etc	
	3	Minor beneficial effects	Slight improvement in night environment and/or reductions in glare, spill light and sky glow	
Neutral	4	None/negligible	No significant effect or overall effects balancing out	None
Negative	5	Minor adverse effects	Slight increase in visibility of site, glare, and sky glow etc	Develop appropriate levels and type of mitigation
	6	Moderate adverse effects	Noticeable increase in visibility of site, glare and sky glow etc	

Nature	Ref	Level	Descriptions	Remedial needs
	7	Major adverse effects	Significant problems with increase in visibility of site, glare and sky glow etc	

PLG04 (ILP, 2013)

3.7 SITE SURVEY DESCRIPTIONS

WSP lighting specialists attended the area of study on Thursday 22 October 2020. A daylight survey was conducted between 12:10 and 16:30, followed by a dark survey between 19:10 and 23:00 to take ambient light measurements and record the lighting conditions at nine of the identified viewpoints. Atmospheric conditions were mainly overcast throughout the survey with dry and sunny conditions during the day. During the evening survey there were intermittent views of the moon behind light could. The survey was carried out during the first quarter lunar phase.

Readings of illuminance enable baseline lighting condition values to be determined for the Proposed Development and its surrounds. Such readings were taken:

- Vertically in each compass direction at a height of 1.5m
- Horizontally at ground level

Illuminance readings were taken using a Minolta T-10 light meter. To provide perspective, for a clear sky with full moon, light measurements would range between 0.25 and 1 lux. For a typical moon lit cloudy sky, light measurements would likely be 0.01 to 0.1 lux (source ILP GN08 and IPCCTV specialists use-IP Ltd).

Photographs from each sample site, in the predetermined direction of interest, were taken in daylight and again after dark. A Canon EOS R full frame camera was used, adjusted to provide as accurate a depiction of lit conditions as possible.

Commentary on each surveyed viewpoint is provided in **Table 3-7**, together with day and night-time imagery. Where viewpoints could not be surveyed, experience and judgement has been used to anticipate existing baseline lighting conditions based on the information obtained during the survey. Where baseline data could not be obtained, it is recommended that during the detailed design stage, baseline data should be collected from areas where the addition of artificial lighting could have a significant negative effect.

BASELINE SUMMARY

In most instances, due to the rural nature of the Site, viewpoints near to the Site boundary appeared generally dark with only minor instances of nearby artificial lighting. Road lighting was present along Newport Road within the village of Moulsoe but only appeared intermittent in nature. The major roads adjacent to and within the Site were unlit including North Crawley Road, the A509 and the mainline of the M1.

Significant levels of lighting are present surrounding the Site, including Junction 14 of the M1 and associated slip roads and lighting within the urban areas of Milton Keynes and Newport Pagnell.

Due to natural screening, in the form of deciduous vegetation, and the topography of the land, distant views of this lighting are intermittent and only affecting the viewpoints in the form of sky glow.

Not all viewpoints could be surveyed but those that were provide sufficient baseline data to inform the assessment and where lit conditions are predicted to be similar to surveyed areas, these have been noted in **Table 3-7**.

The results of the baseline survey support the classification of the area as Environmental Zone E2.

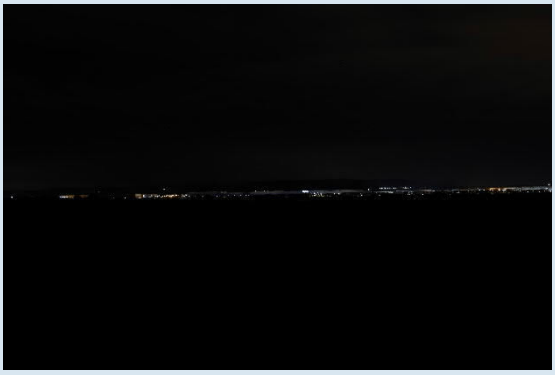
Table 3-7 – Baseline Descriptions

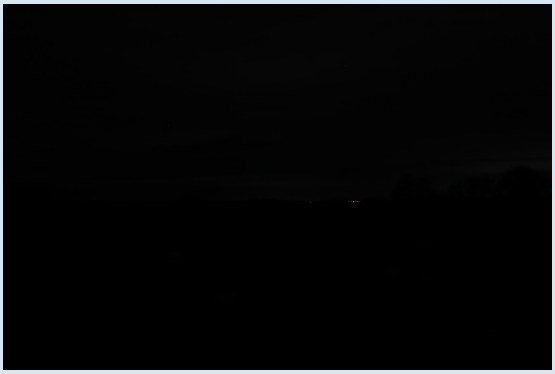
Site Reference	Commentary
L1 and L2	Viewpoint L1 is located on a PRoW c. 250m west of Tickford Lodge Farm looking south-south-west and L2 located on a PRoW c.150m south-west of Tickford Park Farm looking west-south-west. Both viewpoints are located on the boundary of agricultural fields with the baseline descriptions used to inform the Landscape and Visual Impact Assessment (LVIA). The viewpoints have not been surveyed however it is predicted that there will be views across open agricultural fields with distant views screened by deciduous lines of trees and hedges. Artificial lighting is unlikely to be present near to the viewpoints which will appear dark during the night. Background views will also appear dark with only intermittent views of distant artificial light sources, it is unlikely that lighting from the urban areas of Milton Keynes will be visible from the viewpoints due to natural screening features and the distance both towns are from the viewpoints. Sky glow will however be visible in these directions. Viewpoints L3, L4 and L20 have been surveyed, are located within similar areas and will provide additional baseline details.
L3	The viewpoint is located on the edge of an agricultural field c. 750m east of the A509 and surveyed to record the baseline conditions to support the ecological assessment. Views were recorded looking towards the west in the direction of the A509 and further afield towards the M1 motorway and eastern outskirts of Milton Keynes. Immediately to the south of the viewpoint there is a dense line of deciduous hedgerow and trees which continues to the west screening views to the south and south-west. Initial views to the west are of a large undulating agricultural field and behind the brow of the field, vehicles using the A509, which sits lower than the viewpoint, are visible. Behind the A509 the ground rises, and large industrial buildings can be seen interspersed between lines of dense deciduous trees. The first-floor windows of a residential property can be seen along with a large bank of deciduous trees bounding the field to the north-west. There are no sources of artificial lighting visible during the day. During the night the viewpoint appeared dark. The distant landscape appeared mainly dark but for intermittent lighting visible in the direction of the industrial buildings and residential property noted during the day. Sky glow appeared minimal and could be seen reflecting off the clouds above Milton Keynes to the west. Baseline lighting levels and views are predicted to be similar for viewpoints **L1** and **L2**.

Site Reference	Commentary
	Recorded Illuminance (in lux) **Ground** – 0.00 **North** – 0.00 **East** – 0.00 **South** – 0.00 **West** – 0.00
	Figure 3-1 - Daytime (west)  **Figure 3-2 - Night-time (west)** 
L4	The viewpoint is located along a PRoW within agricultural fields to the north of Moulsoe village and Newport Road and has been surveyed to inform the LVIA. Views are recorded looking west towards Milton Keynes. A large open agricultural field is visible which falls towards the west and is bounded by a thin line of deciduous hedgerow. Beyond the hedgerow the land rises with onward views screened by the landform and lines of deciduous trees and hedgerow. To the east of the viewpoint a line of deciduous hedges, c. 3m in height, provides screening to the east. There are no visible sources of artificial lighting noted during the day. During the night the viewpoint appeared dark with only infrequent distant sources of light being visible. Sky glow appeared minor and intensifying slightly towards Milton Keynes. Baseline lighting levels and views are predicted to be similar for viewpoint **L2**.
	Recorded Illuminance (in lux) **Ground** – 0.04 **North** – 0.01 **East** – 0.00 **South** – 0.03 **West** – 0.04

Site Reference	Commentary
	Figure 3-3 - Daytime (west)  **Figure 3-4 - Night-time (west)** 
L5	The viewpoint is located on Newport Road in the village of Moulsoe and has been surveyed to inform the LVIA. Views are recorded looking north-west towards Newport Pagnell. To the north-west there are views across open fields with deciduous hedgerow boundaries. The landform initially falls sharply with the viewpoint looking across from a highpoint and then gradually rises towards Milton Keynes. Distant views are mainly of dense deciduous vegetation with intermittent views of large industrial buildings visible above the vegetation. There are localised views to the north-west of the rear gardens of residential properties located on Newport Road with some decorative lighting visible within the garden. Further residential properties can be seen adjacent to the viewpoint to the north-east and south-east. Artificial lighting is visible along Newport Road, attached to utility poles. Luminaires with high pressure sodium light sources are mounted at approximate heights of 4m, with five-degree tilts. The spacing of the luminaires is intermittent however there is one luminaire located next to the residential property noted to the north-east of the viewpoint. During the night-time survey the viewpoint appeared dark as indicated by the levels of recorded illuminance. There are localised views of the lighting along Newport Road which appeared yellow in nature along with light spilling through some of the residential property windows to the north-west. There are distant views of artificial lighting visible above the dense vegetation noted during the day likely to be located near to the industrial buildings and suburban residential areas of Milton Keynes and Newport Pagnell. Lighting appeared mainly white in colour. Sky glow was apparent in the direction of the two towns, medium in intensity with white and orange appearance.
	Recorded Illuminance (in lux) **Ground** – 0.04 **North** – 0.02 **East** – 0.02 **South** – 0.06 **West** – 0.04

Site Reference	Commentary
	Figure 3-5 - Daytime (north-west)  **Figure 3-6 - Night-time (north-west)** 
L6	The viewpoint is located on a PRoW south-east of St Mary's Church, Moulsoe and has been surveyed to inform the LVIA. Views are recorded looking south-by-west in the direction of the M1 motorway and south-eastern outskirts of Milton Keynes. The viewpoint is located on top of a hill overlooking Milton Keynes. There are initial views in the foreground of large open agricultural fields bounded by deciduous hedges and tree lines where the land gradually slopes down. The open view is broken by dense deciduous vegetation lining the M1 motorway, there are breaks in the vegetation where larger vehicles using the M1 can be seen. A small cluster of two-storey residential properties and industrial farm buildings can be seen in front of the M1. Behind the M1 the urban sprawl of Milton Keyes can be seen with a mixture of large industrial warehouses and residential buildings visible across the entire vista. Behind these urban features the landform appears to rise, and large clusters of deciduous trees located on the higher ground can be seen forming a backdrop to the town. Artificial lighting installations were not visible during the day. During the night-time survey no artificial lighting was noted near to the viewpoint which appeared dark with initial views across dark open fields. A large expanse of artificial lighting is visible from the urban area of Milton Keynes providing views of a mixture of white and yellow street lighting along with lit business signage attached to the industrial warehouses. Sky glow is visible in the direction of Milton Keynes, mildly intense appearing white and orange.
	Recorded Illuminance (in lux) **Ground** – 0.05 **North** – 0.01 **East** – 0.02 **South** – 0.06 **West** – 0.04

Site Reference	Commentary
	Figure 3-7 - Daytime (south-by-west)  **Figure 3-8 - Night-time (south-by-west)** 
L7	The viewpoint is located on the edge of an agricultural field c. 500m south of the village of Moulsoe and surveyed to inform the ecological assessment. Views are recorded looking west-north-west. Daytime views are of an open agricultural field which rises to the west-north-west and is bounded by dense deciduous vegetation approximately 2m in height. Onward views are screened by the vegetation and there is no visible artificial lighting infrastructure. The viewpoint appeared dark during the night-time survey, artificial lighting is not visible to the west-north-west due to the screening and topography near to the viewpoint. Medium intensity distant sky glow, white and orange in appearance and likely to be emanating from the towns of Milton Keynes and Newport Pagnell can be seen. To the north of the viewpoint, four high-pressure sodium (yellow in appearance) street lighting luminaires, previously noted at viewpoint 5 can be seen in the distance.
	Recorded Illuminance (in lux) **Ground** – 0.02 **North** – 0.01 **East** – 0.01 **South** – 0.02 **West** – 0.02
	Figure 3-9 - Daytime (west-north-west)  **Figure 3-10–Night-time (west-north-west)** 

Site Reference	Commentary
L8	The viewpoint is located on the edge of an agricultural field adjacent to and south of Hermitage Farm and surveyed to inform the ecological assessment. Views have been recorded facing north-east c.125m north-west of the viewpoint location shown on drawing MKE-WSP-ZZ-ZZ-C-SK-1301 due to access restrictions. Views are initially of two agricultural fields separated by low deciduous hedgerow. Onward views are mainly screened by dense deciduous vegetation bounding the furthest field, the roofs of three agricultural barns and two residential properties can be seen above the vegetation. There is no visible nearby artificial lighting and the survey location appeared dark. Sky glow appeared bright towards the urban edge of Milton Keynes and headlights of vehicles using the M1 can be seen.
	Recorded Illuminance (in lux) **Ground** – 0.07 **North** – 0.02 **East** – 0.03 **South** – 0.06 **West** – 0.05
	Figure 3-11 - Daytime (north-east)  **Figure 3-12 – Night-time (north-east)** 
L9	The viewpoint is located within grassland between the sewage works and Milton Keynes Coachway, south of the M1 motorway and surveyed to inform the ecological assessment. Initial views looking north-east are of a flat grassed field bounded by a line of tall deciduous trees through which there are intermittent views of a short embankment and the M1. Although not clear during the day, road lighting located on the M1, Junction 14 slip road can be seen through the tree line during the night. The road lighting appeared yellow, indicative of high-pressure sodium lamps and light spilling onto the embankment and adjacent treeline was visible. Vehicle headlights were also visible. To the south-east of the viewpoint, white LED road lighting was visible, likely located on the A509. Although artificial lighting is visible, the viewpoint appeared dark as indicated by the recorded levels of illuminance. Sky glow was prominent in the direction of Milton Keynes, to the south of the viewpoint.
	Recorded Illuminance (in lux) **Ground** – 0.04 **North** – 0.02 **East** – 0.03 **South** – 0.05 **West** – 0.05

Site Reference	Commentary
	Figure 3-13 - Daytime (north-east)  **Figure 3-14 – Night-time (north-east)** 
L10, L12 and L13	Viewpoint L10 is located on an overbridge crossing the M1 motorway which provides access from Tongwell Street to agricultural land to the north of the M1. Viewpoints L12 and L13 are located within the agricultural land to the north of the M1, L12 is located adjacent to the M1 and west of the River Ouzel, L13 is c. 400m further north adjacent to the river. All three viewpoints have not been surveyed but the following predicted baseline conditions will be used to inform the LVIA (viewpoint L10 looking north-east) and ecology assessment (viewpoints L12 looking north-north-west and L13 looking north-east). The viewpoints will all have views across flat agricultural fields with deciduous boundary features. Due to its location on the M1 overbridge, and this being higher than nearby land, distant views from L10 will be more expansive than from L12 and L13. There is road lighting located on Tongwell Street, approximately 10m in height, which may spill light onto viewpoint L10. A mixture of evergreen and deciduous trees line Tongwell Street which will provide screening from some of the lighting. The nearby M1 motorway is not lit, there will however be views of vehicle headlights during the night. Views to the north-east will be generally dark looking across an expanse of fields but with intermittent views of distant light sources from singular dwellings and further afield towards Newport Pagnell. There are no artificial light sources near to L12 and L13 which will both appear dark. Distant views from L12 and L13 will be similar to L10 however these views are likely to be more restricted due the landform and nearby natural vegetative screening. Distant sky glow is likely to be visible above Newport Pagnell to the north and Milton Keynes to the south.
L11	Viewpoint L11 is located on an agricultural track between two fields, c. 250m south-east of the Holiday Inn off the A509 looking south. The viewpoint has not been surveyed and the following description will be used to inform the ecological assessment. There will be daytime views across flat open fields with low level deciduous hedgerow boundaries. Visible above these hedgerow boundaries, it is likely that there will be views of artificial lighting to the south-south-west in the form of road lighting at the A509 junction with Newport Road and Junction 14 of the M1. This road lighting consists of c. 10m mounting height columns with a mixture of white LED and yellow high-pressure sodium light sources. There is no artificial lighting near to the viewpoint which will appear dark. There will be distant views of previously described road lighting however due to its distance from the viewpoint it is unlikely that the viewpoint will be affected by spill light or glare. Further distant views of

Site Reference	Commentary
	artificial lighting on the outskirts of Milton Keynes are likely including views of sky glow above the town.
L14	The viewpoint is located on the edge of a grassed field to the east of the A509 and north of the Holiday Inn hotel and surveyed to inform the ecological assessment. Views to the north-east are of a flat field bounded by thin deciduous hedgerow with onward views limited to intermittent deciduous tree lines. To the east of the viewpoint there is a cluster of deciduous trees screening the A509. There is no visible artificial lighting during the night other than vehicle headlights from the adjacent A509 and the viewpoint appeared dark. Minor instances of sky glow were visible.
	Recorded Illuminance (in lux) **Ground** – 0.02 **North** – 0.00 **East** – 0.00 **South** – 0.00 **West** – 0.01
	Figure 3-15 - Daytime (north-east)  **Figure 3-16 – Night-time (north-east)** 
L15	Viewpoint L15 is located on the boundary of an agricultural field to the south of Moat Cottage looking south-south-east in the direction of viewpoints L12 and L13. The viewpoint has not been surveyed and the following description will be used to inform the LVIA. Much like viewpoints L12 and L13, there will be views across flat agricultural fields with deciduous boundary features. There are unlikely to be forms of artificial lighting near to the viewpoint other than that associated with the residential property to the north-west and the viewpoint will appear dark. Intermittent views of distant light sources from lighting present on the outskirts of Milton Keynes could be available but it is anticipated that the flat topography and deciduous boundary features will provide some distant screening. Sky glow is likely to be visible above Milton Keynes.
L16 and L17	Viewpoint L16 is located near to agricultural farm buildings to the east of the A509 (London Road) behind residential properties 27 and 29. L17 is located to the north of L16 on an agricultural track to the south-east of Newport Stables. Views from both viewpoints have been described principally looking south-east however neither viewpoint has been surveyed. The following descriptions will be used to inform the ecology assessment.

Site Reference	Commentary
	To the south and south-east of viewpoint L16 there is a line of deciduous trees behind which is a large open field. To the north there are agricultural barns and to the west are the two previously mentioned two-storey residential properties and the unlit A509. It is assumed that there is no artificial lighting near to the viewpoint however the viewpoint could be affected by minor levels of spill light and glare emanating from the two residential properties either from domestic security lighting or from light spilling through the windows of the properties. Views to the south-east from viewpoint L17 will be limited to open fields and boundary features. There is no artificial lighting near to L17 and the viewpoint will appear dark. Intermittent views of distant artificial lighting could be present in the direction of Moulsoe.
L18 and L19	Viewpoint L18 is located off an agricultural track within a small wooded area c. 450m east of viewpoint L17 looking south-west. L19 is located immediately south of L20 (A509 overbridge) along a PRoW between two agricultural fields looking south. Both viewpoint descriptions will be used to inform the ecological assessment. The viewpoints have not been surveyed however it is predicted that there will be views across open agricultural fields with distant views screened by deciduous lines of trees and hedges. Artificial lighting is unlikely to be present near to the viewpoints which will appear dark during the night. It is unlikely that lighting from the urban areas of Milton Keynes will be visible from the viewpoints due to natural screening features however sky glow will be visible above the town. Viewpoint L20 has been surveyed and is located within a similar area and will provide additional baseline details.
L20	The viewpoint is located on the North Crawley Road overbridge which crosses the A509 below looking south-south-east and surveyed to inform the LVIA. Initial views are of an agricultural field which has a gentle upward slope along with deciduous hedgerow and intermittent clusters of deciduous trees. Onward views are limited due to the landform which appears to decrease in height. There is no visible artificial lighting noted during the daytime with both North Crawley Road and the A509 being unlit. During the night-time survey the viewpoint appeared dark and there are no distant light sources visible in the direction of the Site. Headlights from vehicles passing beneath the A509 could be seen. Low intensity sky glow was visible to the south-south-east. Baseline lighting levels and views are predicted to be similar for viewpoints **L1** and **L18**, **L19**.
	Recorded Illuminance (in lux) **Ground** – 0.03 **North** – 0.07 **East** – 0.05 **South** – 0.02 **West** – 0.04

Site Reference	Commentary
	Figure 3-17 - Daytime (south-south-east)  **Figure 3-18 - (south-south-east)** 

4 LIGHTING PROPOSALS

4.1 ANTICIPATED LIGHTING SOLUTION

At this early stage of the Proposed Development, lighting designs including lighting methodologies, layouts and specifications have not been developed for the main land uses that will be submitted in outline, and which are otherwise supported by a series of parameters plans. These include areas such as residential, employment, schools and parks. This document outlines proposed lighting solutions based on experience and best practice in relation to the standards and guidance detailed, and aims to predict the likely artificial lighting design impact.

Although the main access roads to the site, otherwise known as Link Roads, will be designed in detail, only high-level lighting proposals have been developed to include for indicative lighting standards and levels, lighting specification for luminaires and column heights. Much like the details provided for the outline planning stage, this detail will be used to predict the likely artificial lighting impact.

The proposed details for both outline and detailed stages are subject to change and will be developed further through consultation with MKC as the highway adoption authority.

Lighting should be designed by competent designers and in accordance with publications listed in this document, as well as other industry and site-specific documents dealing with lighting. Pertinent standards and guidance include (in addition to those detailed in **Section 2.3**):

- BS 5489-1:2020 Design of road lighting Part 1: Lighting of roads and public amenity areas – Code of practice (BSI, 2020)
- BS EN 13201 (all parts) Road lighting (BSI, 2014-2015)
- Design Manual for Roads and Bridges, TD 501 Road lighting design (Highways England, 2020)
- BS EN 12464-2:2014 Light and lighting – Lighting of work places – Part 2: Outdoor work places (BSI, 2014)
- BS EN 12193:2018 Light and lighting – Sports lighting
- Milton Keynes Council Street Lighting Specification (June 2017 Revision 2)

As the Site of the Proposed Development is located within areas of low ambient lighting, lighting should only be provided within areas where safety or security is a concern. Where lighting is deemed necessary, areas should not be over-lit and specified in-line with the minimum requirements of the applicable lighting standards.

A range of national guidance documents for external lighting are available from the ILP and where applicable should be adhered to for the provision of artificial lighting.

Typical lighting levels are provided as a guide aligning with industry recommendations and best practice. Where lighting levels are quoted these as based on average levels of illuminance for the area being lit.

CONSTRUCTION

During the construction phase of the Proposed Development there may be the need to provide temporary lighting for construction tasks and security.

Lighting provided during construction would generally be standard fixings and equipment. Working areas may be surrounded by hoarding onto which lighting may be attached. Such lighting may perform directional and security tasks.

Construction works are likely to be limited to agreed working hours and these will generally take place between 08:00 and 17:30. During the early evenings of winter months, working could extend into the hours of darkness, there will however generally be no working throughout the night-time period.

Construction lighting may be assessed as part of a temporary lighting design, undertaken by a competent lighting professional. All such lighting should meet the constraints of the applicable Environmental Zone. Purely temporary task lighting may not be subject to a design process but should adhere to the same constraints during its operation.

Specifically, construction-related lighting would:

- Be required to provide the correct levels of lighting to ensure the safety of workers and general users of the site.
- Be designed such that, where practicable, all luminaires are installed internal to the site (such as on the inside of hoarding) and are directed towards the working area.
- Be operational only during construction works, except where lighting is required for out-of-hours security or safety reasons.
- Adhere to industry best practice, including guidance from industry bodies (such as the Construction Industry Research and Information Association, CIRIA). CIRIA guidance, for example, notes that lighting on construction sites is typically required for security and safety, while at the same time being required to minimise impact on the surrounding environment in accordance with current best practice.
- Be mindful of temporary impacts on sensitive flora and fauna, limit the intensity and duration of lighting to the minimum required and maintain a suitable buffer from retained sensitive receptors.

Lighting will be mounted either on lighting columns or attached to temporary buildings and likely to be limited to 8m mounting heights. The design of construction lighting should be carried out in accordance with BS EN 12464-2:2014 and any specific industry guidance.

The Construction Environmental Management Plan (CEMP) will include details of temporary lighting.

OPERATIONAL

As the development becomes operational, lighting will be required during hours of darkness to provide a safe and attractive environment for users to aid safe movement and provide a feeling of security and well-being.

Where areas within the Proposed Development will be adopted by the local highway authority, in this case MKC, lighting levels and equipment will need to be agreed and provided in line with the authority's requirements which may differ to the advice provided in this report.

With reference to the Land Use Plan, included at Appendix C2 of the Environmental Statement (ES) and Illustrative Plot Plan shown in Figure C3.2 of Chapter C of the ES, the Proposed Development will consist of the following area types:

- Residential
- Employment
- Community hub including shops and other services
- Secondary school
- Three primary schools
- Linear park
- Primary Street and Non-Grid Roads including pedestrian and cycle route
- Grid Roads

Residential areas

Lighting within residential areas will be provided for security and safe movement and will be located along footpaths, cycleways, parking areas, building perimeters and communal areas. Lighting will mainly take the form of street lighting and likely to be limited to 6m mounting heights.

Lighting levels for residential areas will be typically range from 2.0 to 7.5 lux along roads and parking areas and will be design to BS 5489-1:2020 increasing to 10 lux around building perimeters.

Employment, community and retail areas

Lighting for employment, community and retail areas will be used to provide workers and visitors with safe walking routes, parking for vehicles and bicycles and security to enhance the users experience. Retail areas will be accompanied with storage and vehicle unloading areas which may require a greater level of lighting in addition to lit signage and advertisements.

Column heights will typically be between 6m and 10m and based on the size and usage of each area but should be designed to be in keeping with the locality considering adjacent building types and heights and wider views of the area. Larger lit areas with greater usage will be lit using lighting column heights at the taller height range whereas remote walking routes could be lit using low level lit bollards.

Lighting levels will likely range from 5 to 20 lux for general vehicle and pedestrian areas rising to 50 lux for outside storage and unloading areas and designed to BS 5489-1:2020 or BS EN 12464-2:2014.

Educational areas

Educational areas will require lighting for safety and security and will be needed for walking routes, vehicle and bicycle parking, around the perimeter of buildings, storage areas and outdoor sporting activities such as Multi-Use Games Areas (MUGA) (should these be in use during the hours of darkness).

Lighting for general areas such as walking routes and parking areas will either be lit from lighting columns typically no greater than 8m in heights or from low level lit bollards with lighting levels ranging between 5 and 10 lux and designed in line with BS EN 12464-2:2014.

Where sports lighting is required this will be provided by floodlighting mounted to lighting columns ranging in height from 8m to 12m. Dependent on the level and type of sports activities being undertaken lighting levels will range from 75 lux to 200 lux designed in accordance with BS EN 12193:2018 and any sports specific governing body requirements.

Linear park (and other ecological features)

Lighting within the Linear park and similar areas will be limited to pedestrian walking and cycle routes. As these areas are likely to be within remote rural settings, only minimal levels of lighting would be required in the region of 3 lux and be either mounted on lighting columns no greater than 5m in height or from low level lit bollards. Existing dark areas should be maintained where possible and where there are nearby ecological sensitivities the provision of lighting should be reviewed.

In addition to sensitive lighting design in the vicinity of ecological receptors in the linear park, as discussed in **Section 4.2** below similar principles will be applied elsewhere across the site in the vicinity of retained and newly created habitats such as hedgerows, woodland edges, retained and replacement bat roosts and wetland habitats.

Primary Street and Non-Grid Roads including adjacent pedestrian and cycle routes

Lighting will be provided for security and safe movement and provided in the form of street lighting located adjacent to the carriageway, redways and footpaths. Street lighting column heights will likely range between 8m to 10m with typical lighting levels ranging from 5.0 to 10.0 lux.

Grid Roads

A number of access roads and roundabouts will be provided to link the Proposed Development to; Milton Keynes via a new bridge over the M1 motorway; Junction 14 of the M1; and Newport Pagnell via the existing A509. These road types will be adopted by MKC who have requested that lighting is provided to these areas.

Grid roads, along with Primary Street and Non-Grid Roads including pedestrian and cycle routes will be designed to BS 5489-1:2020 alongside Milton Keynes Council Street Lighting Specification.

Lighting will be tailored to the types and level of usage of each access road and roundabout with details provided on drawings MKE-WSP-ZZ-ZZ-C-SK-0101 to MKE-WSP-ZZ-ZZ-C-SK-0103 and summarised in **Table 4-1**.

Table 4-1 – Indicative lighting proposals for Grid Roads

Area	Lighting class	Target lighting levels	Column heights
▪ Link 101 ▪ Link 102 ▪ Link 106	Traffic route lighting class – M3 *(Equivalent to lighting class – C3)*	▪ L – 1.0 Cd/m² ▪ Uniformity 0.4 ▪ Lane uniformity 0.6 ▪ Threshold increment 15% ▪ Surround lighting – 0.3 *Equivalent to -* ▪ *Eav - 15 Lux* ▪ *Uniformity 0.4*	10m
▪ Link 103 ▪ Link 104 ▪ Link 107 ▪ Link 108 ▪ Link 109	Traffic route lighting class – M3 *(Equivalent to lighting class – C3)*	▪ L – 1.0 Cd/m² ▪ Uniformity 0.4 ▪ Lane uniformity 0.6 ▪ Threshold increment 15% ▪ Surround lighting – 0.3 *Equivalent to -* ▪ *Eav - 15 Lux* ▪ *Uniformity 0.4*	8m to 10m
▪ Link 105	Traffic route lighting class – M2 *(Equivalent to lighting class – C2)*	▪ L – 1.5 Cd/m² ▪ Uniformity 0.4 ▪ Lane uniformity 0.7 ▪ Threshold increment 10% ▪ Surround lighting – 0.35 *Equivalent to -* ▪ *Eav - 20 Lux* ▪ *Uniformity 0.4*	10m to 12m
▪ Link 110 ▪ Link 301 to 306 ▪ Link 501 to 510 ▪ Link 601	Traffic route lighting class – M4 *(Equivalent to lighting class – C4)*	▪ L – 0.75Cd/m² ▪ Uniformity 0.4 ▪ Lane uniformity 0.6 ▪ Threshold increment 15% ▪ Surround lighting – 0.3 *Equivalent to -* ▪ *Eav - 10 Lux* ▪ *Uniformity 0.4*	8m to 10m
▪ Carelton Gate Roundabout	Conflict area lighting class – C1	▪ Eav - 30 Lux ▪ Uniformity – 0.4	10m to 12m
▪ Eastern Link Roundabouts 1 to 4 ▪ A509 Roundabout 1 & 2	Conflict area lighting class – C2	▪ Eav - 20 Lux	10m to 12m

Area	Lighting class	Target lighting levels	Column heights
▪ Willen Link Roundabout		▪ Uniformity – 0.4	
▪ Cranfield Link Roundabout	Conflict area lighting class – C3	▪ Eav - 15 Lux ▪ Uniformity – 0.4	10m
▪ Redways – Remote from carriageway	Subsidiary road lighting class – P6	▪ Eav – 2.0 Lux ▪ Emin – 0.4	5m

Notes

1. Eav is the average horizontal illuminance, Emin is the minimum horizontal illuminance
2. L is the average road surface luminance
3. Uniformity is the ratio between minimum and average values
4. Threshold increment is the maximum percentage of contract increase needed to make an object visible as a consequence of disability glare.
5. Surround lighting is the ratio of lighting required for adjacent areas
6. Subsidiary road lighting classes are intended for pedestrian areas, footpaths and cycle tracks (BS 5489-1:2020, BSI 2020)

Lighting for the pedestrian underpasses and overbridges forming part of the Proposed Development will be designed in accordance with BS 5489-1:2020.

The lighting proposals provided in **Table 4-1** are subject to change following further design development considering sensitive environmental constraints and approval requirements of MKC.

To put the lighting levels mentioned previously into context, the comparable examples detailed in **Table 4-2** can be used.

Table 4-2 – Typical lighting levels

Lighting condition	Lighting level	Lighting condition	Lighting level
Bright moonlight	1 Lux	Candle	1 Candelas
Subsidiary roads with medium traffic flow	7.5 - 10 Lux	100W incandescent lamp	80 Candelas
Parking area for large shopping centre	20 Lux	Car head lamp	15,000 Candelas
City centre / family living room	50 Lux		
School circulation halls	100 Lux		
Railway waiting room	200 Lux		
Office reception areas	300 Lux		
Overcast day	1,000 Lux		

4.2 ENVIRONMENTAL PRINCIPLES

All lighting should be designed under the most efficient principles practicable. This means:

Right Light

Look to the correct application of the lighting standards, defining the required lighting levels dependent on the task being undertaken and the level of activity and risk. Right light refers to the correct selection of light source, with due consideration of the most energy efficient modern sources, such as LED. Balanced against these requirements is the need to consider the impact of lighting on local sensitive flora and fauna, especially bats.

Right Time

The lighting standards permit levels to be adjusted dependent on the use of an area, such as when traffic or pedestrian activity falls. Lowering levels to the minimum required for safety and security, or even full switch-off regimes, may be considered at certain times. Such an approach may be across the proposed development or suitably zoned.

Right Place

Ensure that only the areas required are illuminated. Reductions in spill and obtrusive light to at least the constraints imposed by the applicable Environmental Zone should be achieved, through the careful consideration of luminaires and how they are installed.

The most energy efficient lighting installations will require a suitable control system. Dependent on the operator and operating regime, a system that allows monitoring and control may be considered.

EQUIPMENT

The selection of equipment is critical to controlling light distribution and reducing the installation's impact on the surrounding environment. Good quality equipment should be proposed that restricts light to the areas required and does not contribute to excessive levels of spill, intensity or upward output.

For lighting to be adopted by MKC, the following measures may contradict with the requirements of the council as outlined in Milton Keynes Council Street Lighting Specification. Where areas have been identified with specific sensitivities, deviations to the Council's specification should be discussed and agreed to limit any associated impacts.

The following specific design requirements to mitigate the impact of lighting should be followed:

- The extent of lit sections should be constrained to the minimum required for safety.
- Selected lighting levels should be reduced to the minimum required for safety.
- LED luminaires should be specified so that light distribution is easily controllable to reduce spill light and other obtrusive parameters.
- Luminaires to be specified so that no light is emitted directly upward above the horizontal.
- Luminaires with a minimum luminous intensity class of G4 (refer to BS EN 13201-2:2015, Table A.1) should be utilised, to remove any light emission above the horizontal and to reduce source intensity over greater distances.
- Luminaires should be installed at 0° to the horizontal to preserve their luminous intensity class.
- Luminaires with maximum colour temperatures of 3000K should ideally be used, to minimise

the blue-light component and the proposed development's impact on fauna populations.

- A more limited range of spectral power distribution is used, with predominance in the longer wavelength end of the spectrum, to aid environmental mitigation.
- A system of control and operation should be considered that allows; dimming of lighting to a lower level during periods of low use or switch-off when areas are not in use. The use of detection-operated lighting should be considered where appropriate.
- Shield and baffles to be used where levels of obtrusive light cannot be limited through good design.
- The selection of luminaire mounting heights will need to be in keeping with the surrounding environment taking consideration of the daytime appearance of the installation along with night-time implications of light spill and luminaire intensity from bright light sources (resulting in disability or discomfort glare). Mounting luminaires on taller columns can provide options for lower luminaire aiming angles potentially reducing spill light and intensity.
- Remote walking and cycling routes should ideally not be lit.
- Residents should be made aware of the need to direct security light fittings so that light does not spill into neighbouring areas and is only lighting the associated property, does not spill light directly into the sky and is controlled via motion detection to limit the times of operation.

COLOUR TEMPERATURE

All light sources have an associated colour temperature which is a measure of how cool or warm the colour appears when viewed and is measured in Kelvin (K). Lighting which appears warm will have hints of red, orange or amber and have a lower colour temperature, usually around 1800K to 2000K. As the colour temperature increases to 3000K to 40000K, the light will appear more neutral and finally, light will begin to take on a blue tinge and appear cooler at colour temperatures in the region of 5000K and above.

Generally, with higher colour temperatures the amount of blue light (shorter wavelength) present in the distribution will increase. The amount of power emitted at each wavelength by a light source is known as the spectral power distribution and is discussed in more detail below.

It is generally preferable to use warmer light sources when trying to limit short wavelength ('blue') output, to create a more comfortable environment for humans and an acceptable installation for ecologically. While cooler sources have generally been more efficient, advances in technology continue to reduce the discrepancy.

ECOLOGY MITIGATION - SENSITIVE LIGHTING DESIGN

Artificial lighting may affect sensitive fauna, including impacting roosts, commuting routes and established and created dark corridors. It is useful in most situations to establish primary mitigation by assessing the impact of lighting proposals on bats. If a lighting scheme can be developed that is sensitive to bats, then it is likely that the proposed installation will not be presenting any additional harm to other species.

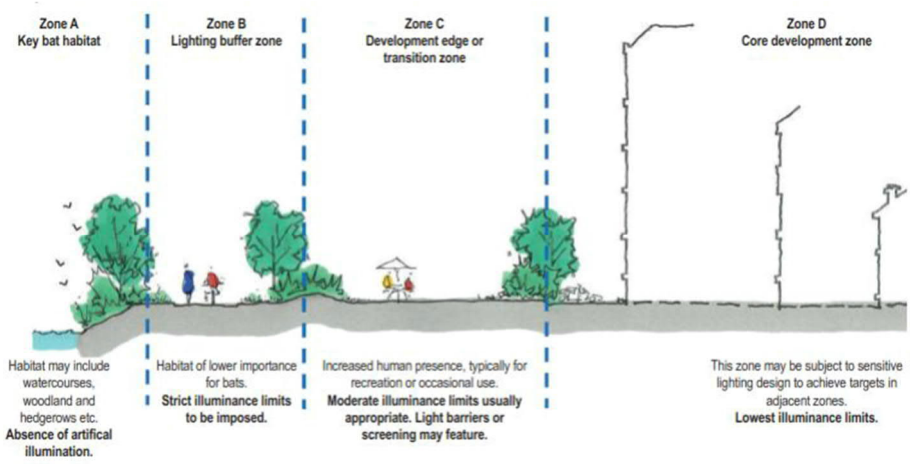
Different species of bat are affected by lighting in different ways. Reducing the spectral output of proposed units will limit the number of species that may be affected. In addition, shorter wavelength sources should be avoided as much as possible. Therefore, the use of warmer white LED sources,

which may inherently have a more limited spectral distribution and naturally limit shorter wavelength output, is recommended.

In addition to the equipment requirements detailed above, the presence of bat and other sensitive wildlife in the area would necessitate specific design requirements to mitigate the impact of lighting:

- Light spill onto confirmed, suspected or introduced roosts, boxes and the like is prohibited and should be avoided primarily through good design and secondarily by physical shields where necessary.
- Light spill onto trees and hedgerows should be minimised through good design, with physical shields installed where necessary.
- A 'buffer zone' of very low illuminance (if any) should be created adjacent to established or proposed key habitats, such as adjacent to treelines, hedgerows and wetlands. In accordance with GN08 a wider system of zoning may be employed to mitigate against artificial lighting (example shown in **Figure 4-1**).
- Landscaping measures in the form of shrubs and tree planting to further act as secondary mitigation to screen and soften the effects of installed artificial light sources should be considered.

Figure 4-1 – Buffer Zone



GN08 (ILP, 2019)

To minimise effects on foraging and commuting bats (and other nocturnal species) as a result of light spill, as elements of the Proposed Development are progressed to detailed design, lighting designs for each element should be prepared incorporating measures to reduce the effects of lighting on bats. This should be reviewed by a suitably qualified ecologist to ensure that effects on sensitive habitats are avoided.

Further advise on limiting the impact of lighting on bats is provided in Bat Conservation Trust and ILP Guidance Note 08/18 Bats and artificial lighting in the UK (ILP, 2018).

LIGHTING CONTROL

Lighting should be suitably controlled by way of photoelectric control units (PECUs) or other control systems. Lighting should only be provided during the hours of darkness and be dependent on safety and security requirements. Controls should allow temporal changes in lighting levels where appropriate, such as switch-off or dimming during periods of reduced usage.

As can be seen from the limitations detailed in **Section 3.4**, figures are given for both pre and post curfew. At this stage of the development application no indication has been given if a curfew will be applied to the lighting installations within the Proposed Development. Where a curfew is applied, switch off or dimming will be crucial in achieving the limitations set for an **E2 Environmental Zone**.

It should be noted that MKC may in the future utilise a Central Management System (CMS) to monitor and control lighting where it is maintained by the council.

The dimming regime to be applied to the operational lighting should be discussed with MKC at the detailed design stage, Milton Keynes Council Street Lighting Specification currently requests that lighting on residential roads is dimmed by 30% between 22:30 hours and 05:30 hours.

5 ANTICIPATED EFFECTS

The assessment of potential effects considers the site-specific sensitive areas described in **Section 3.3** and how these are impacted by the lighting proposals taking account of the recommended proposals and environmental principles outlined in **Section 4.1** and **Section 4.2**.

Where lighting is to be adopted by MKC and in areas identified with specific or representative sensitivities, deviations to the council's specification should be discussed and agreed to limit any associated impacts. It is however unknown whether the recommended environmental principles will be accepted by MKC and therefore the assessment of effects are presented as worst-case. Accepted environmental principles outlined in Milton Keynes Council Street Lighting Specification are considered in the assessment of effects.

While the matrix outlined in **Table 3-6** has been used, it is not prescriptive and professional judgement has been applied, where appropriate. It is recommended that these anticipated impacts are re-assessed once detailed lighting designs have been developed. Where assumptions regarding baseline conditions have been made these should be verified as accurate.

CONSTRUCTION

Adopting the principles outlined provides a methodology to ensure that lighting required for construction activities does not cause a nuisance and is not obtrusive to the surrounding environment. If the guidance is implemented appropriately then the residual effects of construction lighting are likely to be negligible to minor adverse during the construction period.

OPERATION

The assessment of operational lighting effects has been undertaken based on the Land Use Plan, Illustrative Plot Plan, the proximity of the development parcel to the viewpoint and prediction of likely lighting levels as detailed in **Table 5-1**.

In relation to the ILP obtrusive light limits and based on the high-level lighting specification detailed on drawings MKE-WSP-ZZ-ZZ-C-SK-0101 to MKE-WSP-ZZ-ZZ-C-SK-0103 and summarised in **Table 4-1**, direct horizontal spill light is anticipated to fall adjacent to lit highways to the following distances:

- 0.2 lux horizontal illuminance – up to 56m from the carriageway
- 1.0 lux horizontal illuminance – up to 42m from the carriageway
- 5.0 lux horizontal illuminance – up to 13m from the carriageway

Table 5-1 – Assessment Table (Landscape)

Viewpoint number / description	Baseline conditions / nearby development	Predicted impacts
L1 Public Right of Way (PRoW) – West of Tickford Lodge Farm	1. No nearby artificial lighting and viewpoint will appear dark. Existing views of dark landscape with intermittent views of distant light sources, sky glow will be visible above existing urban settlements. 2. Located outside redline boundary, c. 190m from nearest development (Grid Road). 3. Will have views across lit development parcels.	1. Due to distance from Proposed Development, will be within ILP GN01 obtrusive light limits. 2. It is anticipated that there will be a **moderate adverse lighting effect** (Noticeable increase in visibility of the site due to the introduction of new lighting within an existing dark area). 3. Landscaping is recommended to screen views of access road and wider development.
L2 PRoW – South-west of Tickford Park Farm	1. No nearby artificial lighting and viewpoint will appear dark. Existing views of dark landscape with intermittent views of distant light sources, sky glow will be visible above existing urban settlements. 2. Located outside redline boundary, c. 650m from nearest development (Grid Road). 3. Will have views across lit development parcels.	1. Due to distance from Proposed Development, will be within ILP GN01 obtrusive light limits. 2. It is anticipated that there will be a **moderate adverse lighting effect** (Noticeable increase in visibility of the site due to the introduction of new lighting within an existing dark area). 3. Landscaping is recommended to screen views of access road and wider development.
L4 PRoW – North of Moulsoe	1. No nearby artificial lighting and viewpoint will appear dark. Existing views of dark landscape with no views of distant light sources, sky glow will be visible above existing urban settlements. 2. Located outside redline boundary, nearest development, c. 250m to proposed tree planting and c. 280m to Grid Road. 3. Views across lit development parcels likely to be screened in summer months by proposed tree planting.	1. Due to distance from Proposed Development, will be within ILP GN01 obtrusive light limits. 2. With a consideration of the screening provided by the proposed deciduous tree planting, it is anticipated that there will be a **minor adverse lighting effect** (Slight increase in visibility of the site due to the introduction of new lighting within an existing dark area) during the summer months 3. During the period where landscaping is maturing and in winter months it is anticipated that there will be a **moderate adverse lighting effect** (Noticeable increase in visibility of the site due to the introduction of new lighting within an existing dark area).
L5 Newport Road, Moulsoe	1. Minor instances of artificial lighting nearby but viewpoint will appear dark. Existing views of dark landscape with views of distant light sources, sky glow	1. Due to distance from Proposed Development, will be within ILP GN01 obtrusive light limits.

Viewpoint number / description	Baseline conditions / nearby development	Predicted impacts
	will be visible above existing urban settlements. 2. Located outside redline boundary, nearest development, c. 330m to proposed tree planting and c. 450m to Grid Roads. 3. Views across lit development parcels likely to be screened in summer months by proposed tree planting.	2. With a consideration of the screening provided by the proposed deciduous tree planting, it is anticipated that there will be a **minor adverse lighting effect** (Slight increase in visibility of the site due to the introduction of new lighting within an existing dark area) during the summer months 3. During the period where landscaping is maturing and in winter months it is anticipated that there will be a **moderate adverse lighting effect** (Noticeable increase in visibility of the site due to the introduction of new lighting within an existing dark area).
L6 PRoW – South-east of St Mary's church, Moulsoe	1. No nearby artificial lighting and viewpoint will appear dark. Existing views of dark landscape with views of distant light sources, sky glow will be visible above existing urban settlements. 2. Located outside redline boundary, nearest development, c. 175m to proposed primary school. 3. Will have views across lit development parcels.	1. Due to distance from Proposed Development, will be within ILP GN01 obtrusive light limits. 2. With a consideration of the primary school only having a minimal level of artificial lighting, it is anticipated that there will be a **minor adverse lighting effect** (Slight increase in visibility of the site due to the introduction of new lighting within an existing dark area).
L12 M1 overbridge – North-east of Tongwell Street	1. Nearby artificial lighting likely visible in direction of Milton Keynes. Existing views of dark landscape with intermittent views of distant light sources, sky glow will be visible above existing urban settlements. 2. Located within redline boundary, adjacent to Grid Road. 3. Will have views across lit development parcels.	1. Although viewpoint is close to lit Grid Road, adhering to environmental lighting principles in **Section 4.2** will mean that viewpoint is likely to be within ILP GN01 obtrusive light limits. 2. It is anticipated that there will be a **moderate adverse lighting effect** (Noticeable increase in visibility of the site due to the introduction of new lighting within an existing dark area).
L15 South of Moat Cottage	1. No nearby artificial lighting and viewpoint will appear dark. Existing views of dark landscape with intermittent views of distant light sources, sky glow will be visible above existing urban settlements. 2. Located outside redline boundary, c. 250m from nearest development (Grid Road).	1. Due to distance from Proposed Development, will be within ILP GN01 obtrusive light limits. 2. It is anticipated that there will be a **moderate adverse lighting effect** (Noticeable increase in visibility of the site due to the introduction of new lighting within an existing dark area).

Viewpoint number / description	Baseline conditions / nearby development	Predicted impacts
	3. Will have views across lit development parcels.	3. Landscaping is recommended to screen views of access road and wider development.
L20 North Crawley Road (A509 Overbridge)	1. No nearby artificial lighting and viewpoint will appear dark. Existing views of dark landscape with no views of distant light sources, sky glow will be visible above existing urban settlements. 2. Located within redline boundary, near to proposed Grid Road. 3. Will have views across lit development parcels.	1. Due to distance from Proposed Development, will be within ILP GN01 obtrusive light limits. 2. It is anticipated that there will be a **moderate adverse lighting effect** (Noticeable increase in visibility of the site due to the introduction of new lighting within an existing dark area). 3. Landscaping is recommended to screen views of access road and wider development.

Sky Glow

Sky glow is the illumination of the night sky by artificial lighting. Limitations to control effects to sky glow consider the upward light ratio (ULR) of an installation and aim to limit the direct upward light emitted from luminaires.

Reflected light can also contribute to levels of sky glow but can be harder to control which is why lighting levels should be correctly specified in accordance with relevant guidance and standards and the design should aim to not exceed these specified levels.

Artificial light sources with a higher component of blue light, such as those with higher colour temperatures (Cool White ≥4000K) can have a greater impact to levels of sky glow than light sources with a warmer appearance (colour temperatures ≤3000K). The use of warmer colour temperatures has also been shown to have less of an effect to light sensitive ecology.

Incorporating the environmental principles outlined in **Section 4.2** and ensuring luminaires are not tilted in accordance with Milton Keynes Street Lighting Specification will ensure that proposed lighting will not exceed the ILP limitations detailed in GN01 and replicated in **Section 3.4.** Sky glow is present above existing urban settlements, mainly Milton Keynes and Newport Pagnell. The established environmental principles will greatly reduce the Proposed Development's contribution to existing sky glow, this contribution cannot be entirely eliminated where new lighting is provided. It is therefore anticipated that distant views will experience an increase in sky glow as a result of the Proposed Development resulting in **minor adverse lighting effects** (slight increase in visibility of the site).

Ecology

To support the ecology assessment, an assessment has been undertaken to predict whether there will be an increase in levels of artificial lighting from those recorded or predicted as part of the baseline survey. The limitations detailed within LP Bat Guidance Note 08/18 Bats and artificial lighting in the UK (GN08) (ILP, 2018) have been used as a basis for this assessment.

Table 5-2 – Assessment Table (Ecology)

Viewpoint number / description	Baseline conditions / nearby development	Predicted impacts
L3 Track (agricultural field boundary) – East of A509	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to development parcels (secondary school and residential) 3. Will be located adjacent to lit environment.	1. As the receptor is located adjacent to lit development, lighting levels could exceed ILP GN08 limitations. 2. Implementing a suitable unlit buffer and considering the location of luminaires in relation to sensitive features will reduce spill light.
L7 Track (agricultural field boundary) – South of Newport Road	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to proposed Grid Road and residential. 3. Will be located within a lit environment.	1. As the receptor is located adjacent to the lit system of grid type roads, lighting levels could exceed ILP GN08 limitations. 2. Implementing a suitable unlit buffer and considering the location of luminaires in relation to sensitive features will reduce spill light.
L8 Agricultural field – South of Hermitage Farm	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to employment development parcels. 3. Will be located within a lit environment.	1. As the receptor is located adjacent to lit development, lighting levels could exceed ILP GN08 limitations.
L9 Nature Reserve – South-west of M1 Junction 14	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located outside redline boundary, south of the M1. There are no planned development parcels near to viewpoint. 3. Will not be located within a lit environment.	1. It is anticipated that there will not be an increase to the recorded baseline lighting levels.
L10 Agricultural field boundary – adjacent to M1	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located inside redline boundary, within the River Ouzel Linear Park. 3. Will not be located within a lit environment.	1. It is anticipated that there will not be an increase to the recorded baseline lighting levels.

Viewpoint number / description	Baseline conditions / nearby development	Predicted impacts
L11 Track (agricultural field boundary) – South-east of Holiday Inn (A509)	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to residential development parcels and Grid Roads. 3. Will be located adjacent to a lit environment.	1. As the receptor is located adjacent to lit development, lighting levels could exceed ILP GN08 limitations. 2. Implementing a suitable unlit buffer and considering the location of luminaires in relation to sensitive features will reduce spill light.
L13 Agricultural field boundary – East of and adjacent to River Ouzel	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located inside redline boundary, within the River Ouzel Linear Park. 3. Will not be located within a lit environment.	1. It is anticipated that there will not be an increase to the recorded baseline lighting levels.
L14 Agricultural field boundary – North of Holiday Inn (A509)	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to residential development parcels. 3. Will be located adjacent to lit environment.	1. As the receptor is located adjacent to lit development, lighting levels could exceed ILP GN08 limitations. 2. Implementing a suitable unlit buffer and considering the location of luminaires in relation to sensitive features will reduce spill light.
L16 Agricultural barn - East of residential properties 27 / 29 on A509	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to proposed Grid Road and Primary School development parcel. 3. Will be located within a lit environment.	1. As the viewpoint is located adjacent to the lit Grid Road, lighting levels are expected to exceed ILP GN08 limitations.
L17 Track (agricultural field boundary) – South-east of Newport Stables	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to proposed Grid Road and Residential development parcels. 3. Will be located adjacent to lit environments.	1. As the receptor is located adjacent to lit development, lighting levels could exceed ILP GN08 limitations. 2. Implementing a suitable unlit buffer and considering the location of luminaires in relation to sensitive features will reduce spill light.
L18 Track (agricultural field boundary) - Small wooded	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to proposed Residential and Community Hub development parcels.	1. As the receptor is located adjacent to lit development, lighting levels could exceed ILP GN08 limitations.

Viewpoint number / description	Baseline conditions / nearby development	Predicted impacts
area c. 450m east of viewpoint L17	3. Will be located adjacent to lit environments.	2. Implementing a suitable unlit buffer and considering the location of luminaires in relation to sensitive features will reduce spill light.
L19 PRoW (agricultural field boundary) – East of A509	1. No nearby artificial lighting and viewpoint will appear dark. 2. Located within redline boundary, near to proposed Grid Road and Residential development parcels. 3. Will be located within a lit environment.	1. As the receptor is located adjacent to the lit Grid Road, lighting levels are expected to exceed ILP GN08 limitations.

6 SUMMARY

A lighting assessment has been prepared in support of the hybrid planning application on behalf of Berkeley St James for the Milton Keynes East development, encompassing both outline permission (with all matters reserved) for a large-scale mixed-use urban extension and detailed permission for strategic highway and multi-modal transport infrastructure.

The Site of the Proposed Development is located on the eastern rural edge of Milton Keynes, immediately north-east of Junction 14 of the M1 motorway. The Site and surrounding areas are rural in nature, and mainly dark, but with views of distant light sources from the urbanised outskirts of Milton Keynes and Newport Pagnell. The Site has been classified as **Environmental Zone E2**, indicative of areas of low district brightness.

Artificial lighting will be provided for construction activities and during normal operational, where needed for safety and security, during the hours of darkness. The principal sources will be located along access roads (e.g. Grid Roads) and within residential and employment areas.

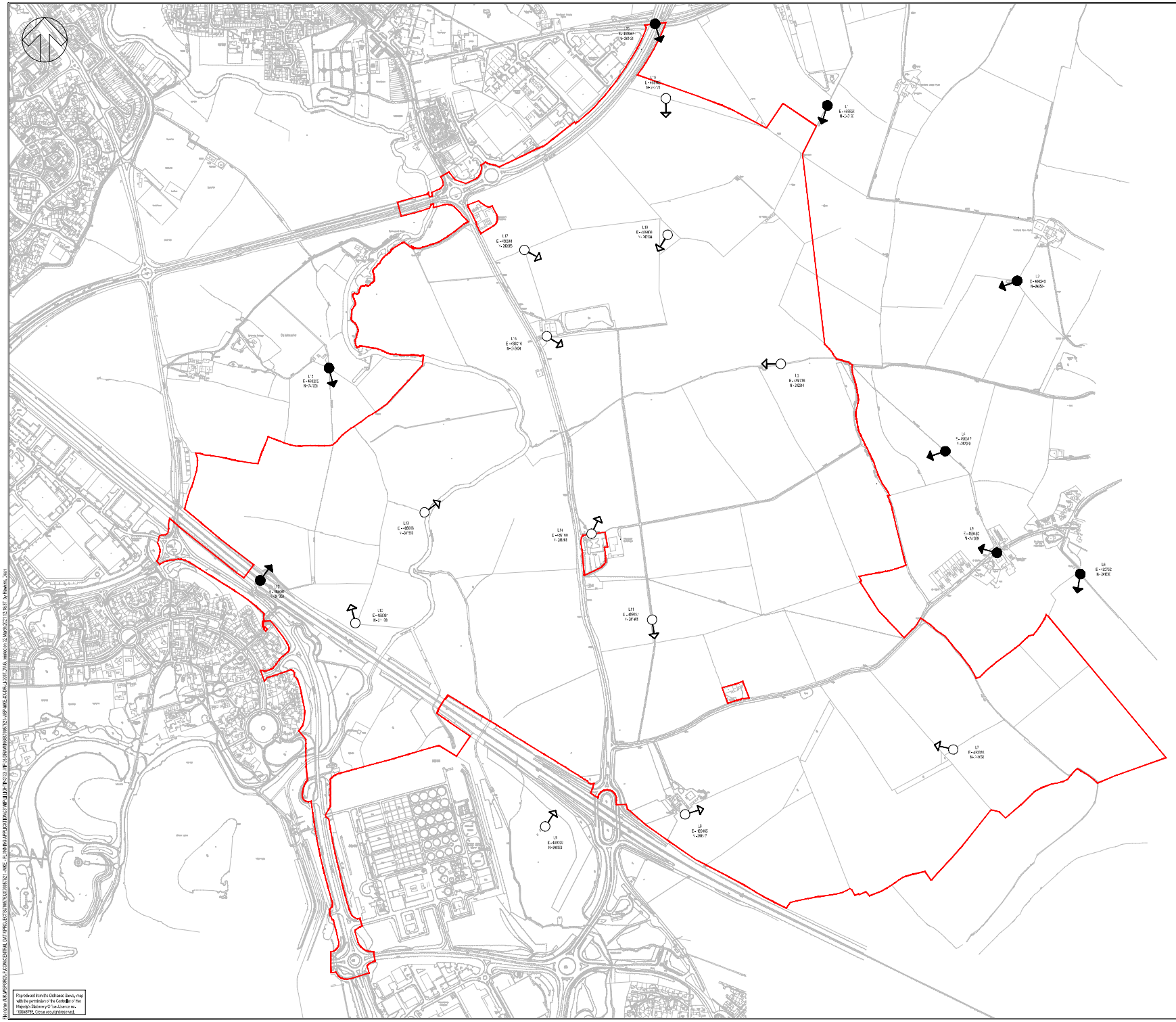
Identified specific and representative sensitivities will require deviations to the Council's specification and should be discussed and agreed to limit any associated impacts. It is unknown whether the recommended environmental principles will be accepted by MKC and the assessment of effects are presented as worst-case.

It is anticipated that the limitations set within the Institution of Lighting Professionals *Guidance Notes for the Reduction of Obtrusive Lighting* (GN01) will not be exceeded for the identified sensitive areas, following the application of mitigations laid out in this document. The results of the baseline survey have indicated that views within and surrounding the Site will be of mainly dark landscape and existing residential areas such as Moulsoe will experience increased visibility of the site due to the introduction of new lighting within an existing dark area. Areas identified as part of the ecology assessment, some of which are located adjacent to development parcels such as Grid Roads and residential areas, will experience an increase in lighting compared to that recorded during the baseline survey. These effects will be considered further as part of the landscape and ecological assessment.

As the Proposed Development progresses to detailed design, lighting calculations should be carried out along with further assessment of anticipated effects to ensure that lighting limitations are not exceeded and the environmental principles are implemented, so that long term environmental lighting impacts are minimised.

Appendix A

VIEWPOINT LOCATION PLAN



DO NOT SCALE

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. DO NOT SCALE. IF IN DOUBT CONTACT WSP UK LIMITED.

KEY:

LIGHTING VIEWPOINT (TO SUPPORT LVA), ARROW INDICATES DIRECTION OF SURVEY

LIGHTING VIEWPOINT (TO SUPPORT ECOLOGY ASSESSMENT), ARROW INDICATES DIRECTION OF SURVEY

REDLINE BOUNDARY

L• LIGHTING VIEWPOINT REFERENCE NUMBER
E• COORDINATE - EASTING
N• COORDINATE - NORTHING

REV	DATE	BY	DESCRIPTION	CHK	APP
P01	26/02/2021		FIRST ISSUE		

DRAWING STATUS:
S0 - WORK IN PROGRESS

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SITE/PROJECT:
MILTON KEYNES EAST

TITLE:
LIGHTING ASSESSMENT - VIEWPOINT LOCATION PLAN

SCALE @ A1:	CHECKED:	APPROVED:
NTS	KB	PB

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Appendix C6
Arboricultural Survey

Landscape Architecture
Masterplanning
Ecology

MILTON KEYNES EAST

TREE SURVEY REPORT and ARBORICULTURAL IMPACT ASSESSMENT

In accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'

Prepared for St James

by

Hankinson Duckett Associates

HDA ref: 2090.83
Issue: 01
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APPENDICES

A Tree Survey Constraints Plans

B Tree Data Schedule

C Explanation of Terms

D Tree Retention & Removal Plans (Highway Infrastructure)

E Tree Retention & Removal Plans (Illustrative Masterplan)

F Preliminary Tree Protection Plans (Highway Infrastructure)

1 INTRODUCTION

1.1 Background

1.1.1 This report describes the results of a Tree Survey and Arboricultural Impact Assessment undertaken in accordance with BS5837:2012 in relation to the proposed development of 437ha land at Milton Keynes East, hereinafter referred to as 'the site'. The extent of the survey area is shown on the Tree Survey Plan in *Appendix A*. The study was undertaken by Don Newling (ND Arb) TechArborA of Hankinson Duckett Associates (HDA) and commissioned by St James in April 2020.

1.2 Scope and purpose of report

1.2.1 The report is intended to inform the planning process in accordance with the guidelines set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations' (BSI, 2012). This standard provides recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees, including larger shrubs and hedgerows, with structures.

'This British Standard gives recommendations and guidance on the relationship between trees and design, demolition and construction processes. It sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures. The standard is applicable whether or not planning permission is required.' (BSI, 2012)

1.2.2 The guidance recommends a three-stage approach incorporating: (i) initial tree survey and report; (ii) Arboricultural Impact Assessment and (iii) Arboricultural Method Statement, which details the specific tree protection measures to be adopted in relation to construction activity across the site, and in particular in the vicinity of retained trees. This report fulfils the first two stages in this process.

1.3 Aims

1.3.1 Specifically, the aims of the study are:

- To conduct a ground-based visual survey of trees within or adjacent to the proposed development, along with any trees situated on adjacent third-party land that have the potential to be impacted upon by the proposals;
- To record the nature, extent and condition of the existing tree cover, and assign a retention category to each tree or group of trees, in accordance with BS5837:2012;
- To compile the survey results in a Tree Data Schedule (*Appendix B*) and produce an accompanying Tree Constraints Plan (*Appendix A*) which provides information on the retention category, crown spread, Root Protection Area (RPA) and location of each tree or group of trees; AND
- To assess the implications of the proposals in relation to existing trees.

1.4 Date of survey

1.4.1 The tree survey was carried out from ground-level by Don Newling (ND Arb) TechArborA assisted by Shannon Davies MSc BSC (Hons) and Anna Potter MSc BSC (Hons) between May 2020 and February 2021.

2 METHODOLOGY

2.1 Information recorded

2.1.1 All trees potentially affected by the proposed works were surveyed from ground-level using the *Visual Tree Assessment* (VTA) technique developed by Mattheck and Broeler (1994). Two approaches were employed, depending on whether the land is subject to the full planning application for key highways infrastructure or the outline planning application for the wider scheme (see *Section 5.1*).

2.1.2 The land subject to the full planning application for key highways infrastructure was subject to a full BS5837 Tree Survey in order to provide a sufficient level of information to inform detailed design. For those trees surveyed in accordance with BS5837:2012, the following data was gathered for each tree surveyed:

- Tree, group or hedge number (sequentially and separately for trees, groups, hedges and stumps)
- Tree species (English names follow Stace [2010] for higher plants)
- Life stage (expressed within a defined 'age-class' category)
- Tree height (in metres)
- Stem diameter (measured at 1.5m above uppermost ground-level)
- Observations on tree position, form, condition, and comments on any significant defects
- Recommendations for arboricultural works
- The physiological and structural condition of the tree(s)
- Estimated Remaining Contribution expressed within defined categories
- BS5837 retention category

2.1.3 The land subject to the outline planning application for the wider scheme was subject to a less detailed level of survey using the *Visual Tree Assessment* (VTA) technique. Whist this provides an appropriate level of information to inform this report, it is intended that the survey of these areas is updated and extended to comprises a full BS5837 survey in advance of any detailed design or reserved matters applications. The following data was gathered for each tree surveyed within these areas:

- Tree, group or hedge number (sequentially and separately for trees, groups, hedges and stumps)
- Tree species (English names follow Stace [2010] for higher plants)
- Life stage (expressed within a defined 'age-class' category)
- Stem diameter (measured at 1.5m above uppermost ground-level)

- The physiological and structural condition of the tree(s)
- Estimated Remaining Contribution expressed within defined categories
- BS5837 retention category

2.1.4 Category definitions in relation to the above are described fully in *Appendix C*.

2.2 Observed tree defects and recommendations

2.2.1 Where appropriate and with due regard to the methodologies outlined in *Section 2.1* above and limitations of this survey outlined in *Section 2.3.1* below, recommendations have been provided on arboricultural works which should be undertaken in the interests of safety or as part of sound management practice.

2.2.2 It should be noted that recommendations for tree works identified within the Tree Data Schedule and summarised in *Section 4* are provided in accordance with the guidance set out in BS5837:2012, and not in connection with the proposals. Under the Occupiers Liability Act (1957 and 1984), responsibility for ensuring the safety of individual trees in relation to the statutory 'duty of care' rests with the relevant owner/occupier. Specific details of any tree work which will be required to facilitate the proposals are included in *Section 5* of this report.

2.3 Limitations

2.3.1 This survey and the results contained within this report represent a preliminary assessment from ground-level. Observations have been made for the purposes of assessment in terms relevant to planning and development, and not tree safety. No climbed inspections, invasive or non-invasive decay detection devices have been used in assessing tree condition. As such, the survey conducted and results presented should not be used as a tree safety evaluation, which would require a *Tree Safety Survey*, designed to provide a more detailed appraisal of the risk and liability associated with specific individual trees or groups of trees.

2.3.2 Whilst efforts have been made to detect significant defects within inspected trees, no guarantee can be given as to the safety or otherwise of surveyed trees. Climatic conditions including storms, droughts, and temperature changes can and do cause failure in apparently healthy trees. In addition to these restrictions on access and the presence of dense undergrowth, ivy and other climbing plants can obscure defects from view. It should also be noted that the presence of tree pests and diseases can be affected by the time of year and climatic conditions.

2.3.3 All tree observations, and any recommendations, are based upon the site conditions, levels and patterns of usage observed at the time of survey only. Alterations in these

factors will affect any evaluations made and would require a re-assessment of both the trees and site.

2.3.4 The location of the majority of the surveyed trees is taken from the topographical survey provided by the client and is shown on the Tree Survey Plans in *Appendix A.*

2.3.5 Access to several of the trees was restricted due to dense vegetation. These trees were, however, assessed as far as site conditions would allow, to gather the necessary information. As access to the site itself was unrestricted this limitation is therefore not considered to be an overall constraint on the robustness of the survey or subsequent assessment. In accordance with BS5837, where appropriate trees have been surveyed as groups or hedgerows rather than individual trees where one or more of the following points apply:

- there was little discernable difference between individuals within the group;
- the trees have a collective value but would have little or no individual merit; and/or
- not all the trees were included in the topographical survey and lack of access prevented them being accurately plotted manually.

2.3.6 The land subject of the outline planning application has not yet been subject of a full BS5837 Tree Survey. Whist the level of survey carried out to date provides an appropriate level of information to inform this report, it is intended that the survey of these areas is updated and extended to comprises a full BS5837 survey in advance of any detailed design or reserved matters applications.

2.3.7 One field, located on the eastern bank of the River Ouzel in the north of the site was not subject to survey (see *Appendix A*). This is because there are no proposals for this area of the site other than informal open space, and it is understood that all existing trees and hedgerows will be retained and any works such as footpath creation or habitat creation within this area would maintain an appropriate stand-off.

2.3.8 A TPO and Conservation Area search was carried out as part of this report. Other legal restrictions relating to existing trees on the site such as historic planning conditions, restrictive covenants and lease clauses were not investigated. Before any recommended tree work is undertaken it should be ensured that all legal obligations are fully met.

3 LOCATION AND DESCRIPTION OF SURVEY AREA

3.1 Location

3.1.1 The site is located on the eastern edge of Milton Keynes to the south of Newport Pagnell and west of Moulsoe. The approximate grid reference for the centre of the site is SP 89283 41804.

3.2 Description of survey area

3.2.1 The survey area is shown on the Tree Survey Plan included in *Appendix A*. In general terms, the site is dominated by a series of arable fields bordered by hedgerows, treelines, ditches and fencing. Other habitats include grazed grassland fields, small areas of amenity grassland and small pockets of deciduous woodland. The River Ouzel and its tributary, the Broughton Brook, flow in a northerly direction through the western and central area of the site and, associated with these watercourses, the Pineham Nature Reserve in the south of the site supports a mosaic of scrub, rough grassland, tall ruderal vegetation and ponds. The M1 motorway crosses through the western area of the site, and Tongwell Street with its associated tree planting, forms the western site margin.

3.3 Topography

3.3.1 With the exception of watercourses, ditches and highway embankments the ground level across the site is relatively flat with a gradual rise from the south west to the north east.

3.4 Soils

3.4.1 The geological data identifies most of the site as lime-rich loamy and clayey soils with impeded drainage. Within the east of the site (either side of the A509) the soil is described as slightly acid lime-rich loamy and clayey soils with impeded drainage.

4 TREE SURVEY RESULTS

4.1 Trees within survey area

4.1.1 The majority of the surveyed trees are located along the field boundaries or within the groups of trees planted either side of Tongwell Street. The mature trees comprise predominantly of Ash and Oak within the arable land. A variety of tree species are found within the highway planting including Norway maple, Field maple, Ash, Silver maple, Silver birch but the planting is dominated by Corsican pine, Crack willow with Poplars[1] dominating the riverbanks and wetland area.

4.1.2 The hedgerows predominantly comprise mixed native species and some have become overgrown. Where regular hedgerow management has lapsed the features have been surveyed as groups.

4.1.3 Several of the copses/woods include some mature trees but generally they are dominated by semi-mature/early mature trees that although originally planted to create woodland have subsequently been neglected and receive little or no management.

4.1.4 Tree locations are shown on the Tree Survey Plan provided in *Appendix A* and a description of all trees located within the site is given in the Tree Data Schedule provided in *Appendix B*.

4.2 Tree quality assessment

4.2.1 Surveyed trees and tree groups have been graded in accordance with the retention categories described in BS5837:2012. *Table 1* provides an at-a-glance overview of the quality of tree cover within and adjacent to the site, with reference to BS5837 Retention Categories. An explanation of these categories is provided below:

- Category A: Trees of high quality, in such a condition as to make a substantial contribution. Retention is highly desirable.
- Category B: Trees of moderate quality, in such a condition as to make a significant contribution. Retention is desirable.
- Category C: Trees of low quality, currently in adequate condition to remain until new planting is established, or young trees with a stem diameter below 150mm.
- Category U: Trees in such condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

Table 1: Number of trees in each retention category*

Retention Category	Description	Number
A	**Trees of high quality and value, in such a condition as to make a substantial contribution. Retention is highly desirable.**	**4**
B	**Trees of moderate quality and value, in such a condition as to make a significant contribution. Retention is desirable.**	**430**
C	**Trees of low quality and value, in adequate condition to remain until new planting is established, or young trees.**	**88**
U	**Trees which cannot realistically be retained for longer than 10 years.**	**11**
Total		**533**

* Groups, hedgerows and woodland counted as one entity.

4.2.2 Four trees were classified within Retention Category A, representing approximately 1% of the surveyed trees. Retention of Category A trees is highly desirable.

[1] No native Black Poplar were recorded from within the site.

4.2.3 One hundred seventy-two trees, one hundred twenty-one groups, one hundred and six hedgerows and thirty-one woods were classified within Retention Category B, representing approximately 81% of the surveyed trees. Where possible, Category B trees should be retained and managed to improve their future value.

4.2.4 Forty-five trees, twenty-eight groups and fifteen hedgerows were classified as Category C, representing approximately 16% of the surveyed trees. These represent poor quality trees, low value specimens, or young trees, which could readily be replaced by new planting subject to ecological considerations.

4.2.5 Eleven trees were classified as Category U, representing approximately 2% of the surveyed trees. These represent trees in such condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

4.2.6 The Tree Data Schedule (*Appendix B*) provides further details of all the surveyed trees, tree groups, woodlands and hedgerows.

4.3 Tree protection status

4.3.1 A check of Milton Keynes Councils' online interactive map in March 2021 confirmed that two Tree Preservation Orders affect some trees on either side of Tongwell Street in the west of the site between Willen Road and the River Ouzel. Clarification of the extent of these TPO's has been requested but at the time of writing this report the information is not available.

4.3.2 The site is not within a Conservation Area but the eastern boundary of Willen Conservation Area does come very close to the western end of Carleton Gate.

4.4 Tree condition assessment and summary

4.4.1 With the exception of the hedgerows the majority of the surveyed trees have received little or no maintenance.

4.4.2 Although the condition of many of the planted trees has suffered as a result of the lack of maintenance this has not generally affected their collective visual amenity value.

4.4.3 A number of the trees have been noted as supporting veteran features and where several such features have been recorded on the same tree these have been identified as 'potential veterans'. In the absence of definitive guidance regarding the identification of veteran trees in the context of the 2019 National Planning Policy Guidance and standing

advice provided by Natural England and the Forestry Commission[2] which relates to irreplaceable habitats (not all veteran trees are irreplaceable), for the purpose of this assessment and design work to date, a cautious approach has been taken and all 'potential veteran' trees have been identified as having an extended buffer zone extending beyond the root protection area on the Tree Constraints Plans provided in *Appendix A*. It should be noted that most of these trees are Ash trees and ash die-back disease is prevalent in the area; the effects of this disease together with their structural condition means that their life expectancy is likely to be significantly reduced.

5 ARBORICULTURAL IMPACT ASSESSMENT

5.1 Overview of the proposals

5.1.1 The current application is a hybrid planning application encompassing:

i. Outline permission (with all matters reserved) for a large-scale mixed-use urban extension (creating a new community) comprising: residential development; employment including business, general industry and storage/distribution uses; a secondary school and primary schools; a community hub containing a range of commercial and community uses; a new linear park along the River Ouzel corridor; open space and linked amenities; new redways, access roads and associated highways improvements; associated infrastructure works; demolition of existing structures; and

ii. Detailed permission for strategic highway and multi-modal transport infrastructure, including: new road and redway extensions; a new bridge over the M1 motorway; a new bridge over the River Ouzel; works to the Tongwell Street corridor between Tongwell roundabout and Pineham roundabout including new bridge over the River Ouzel; alignment alterations to A509 and Newport Road; and associated utilities, earthworks and drainage works.

5.1.2 This Arboricultural Impact Assessment is therefore divided into two sections providing a detailed assessment of the implications of the main highway infrastructure that has been prepared by WSP and a separate assessment of the likely effects of the outline application including consideration of the development parameters and illustrative masterplan prepared by JTP.

5.1.3 Although some design elements of the highway infrastructure have not been finalised at this stage it is considered that the level of information provided allows an adequate assessment of the likely effects of the proposed development on existing trees. For the remainder of the site it is recommended that the Arboricultural Impact Assessment is reviewed against the final detailed layout to ensure constraints relating to trees have been

[2] https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences

avoided wherever possible (outline guidance in this regard is provided in Section 5.4 below).

5.1.4 Where impacts on retained trees are unavoidable this information can be used to identify appropriate mitigation and working practice. Where incursions into the root protection areas or buffer zones of retained trees and other woody vegetation are necessary it is likely that the Local Authority would require the submission of an Arboricultural Method Statement to demonstrate that any significant encroachment into the root protection area (RPA) of retained trees can be practically achieved.

5.2 Full Application for Highway Infrastructure

5.2.1 *Implications of tree removal*

5.2.1.1 Two Category A trees, twenty-one Category B trees, nine Category C trees and two Category U trees are to be removed to facilitate the proposals. Four of the Category B trees and one Category C tree have been identified as potential veterans (see *Section 4.5.3* above).

5.2.1.2 Twelve Category B groups and seven Category C groups are to be removed to facilitate the proposals. A further thirteen Category B groups and one Category C group would require partial removal.

5.2.1.3 Four Category B hedges and one Category C hedge are to be removed to facilitate the proposals. A further thirty-two Category B hedges and four Category C hedges would require partial removal.

5.2.1.4 Three Category B woodlands are to be removed to facilitate the proposals and a further six would require partial removal.

5.2.1.5 The feasibility of relocating the two Category A trees, six Category B trees, one Category B group and part of a Category B hedge is currently under investigation. This includes the four potential veteran trees.

5.2.1.6 The majority of the trees identified for removal are located alongside Tongwell Street and comprise early mature highways planting that can be replaced relatively easily with new planting.

5.2.1.7 A number of the trees to be removed are Ash which have a relatively short life expectancy due to the presence of ash die-back in the area and it is considered that landscaping will compensate for these losses. This is discussed further below.

5.2.2 *Implications of construction activity*

5.2.2.1 The RPAs of all the retained trees and hedgerows should be protected by tree protection fencing and, where appropriate, ground protection. All temporary tree protection should be approved by the relevant planning authority prior to any works taking place. This fencing would protect the construction exclusion zone (the rooting area of retained trees that is outside the footprint of the proposed development and working area required for its construction). Within the construction exclusion zone, the following rules should apply:

- No construction activity;
- No tree works without prior written consent from the Council;
- No excavation or alteration to ground levels or conditions (apart from those outlined for soft or hard landscape works and drainage works);
- No temporary structures;
- No storage of materials;
- No vehicles or machinery to be used or parked;
- No fixtures of any kind attached to trees; and
- No fires within 15m of the canopy edge of any tree or hedge.

5.2.2.2 Recommendations for the siting of the proposed tree protection fencing during the construction phase of the Highway Infrastructure are shown on the Preliminary Tree Protection Plan provided in *Appendix F*.

5.2.3 *Hazardous materials*

5.2.3.1 All hazardous materials (including cement and petrochemicals) would need to be appropriately stored, and their usage controlled, to ensure no detrimental impact on tree health, both in terms of existing trees and areas proposed for new landscape planting.

5.2.4 *Implications of tree pruning*

5.2.4.1 Pruning required to facilitate the proposed layout relating to the groups, hedgerows and woodlands that require partial removal should be undertaken to ensure the appearance and structural integrity of the remaining trees is appropriate for their setting.

5.3 Outline Application for Wider Site

5.3.1 The development parameters (JTP, 2021) identify land use across the site including those where development, infrastructure and green infrastructure will be provided. Although the development parameters reflect some of the existing tree, woodland and hedgerow resource of the site, as is often the case the development parameters are necessarily ‘high level’ and do not identify specific tree retention and loss. Assessment of the scheme against the parameters alone would therefore not provide a useful indication of the likely impact of the scheme on the tree, woodland and hedgerow resource of the site.

5.3.2 The development parameters have however been used to inform preparation of an Illustrative Masterplan (JTP, 2021) which identifies how the proposed development could be delivered within the defined parameters. Although by definition this is 'illustrative' it is considered that this provides a more useful initial indication of the likely effects of the proposed development on the tree, woodland and hedgerow resource of the site. An assessment of the effects of the outline development scheme on trees based on the Illustrative Masterplan is provided below. This includes identification of how effects on trees, woodlands and hedgerows identified on the Illustrative Masterplan can be further avoided at the detailed design stage.

5.3.3 *Implications of tree removal*

5.3.3.1 Thirty-seven Category B trees, twelve Category C trees and one Category U tree would be removed to facilitate illustrative layout. Five of the Category B trees and the Category U tree have been identified as potential veterans (see *Section 4.5.3* above).

5.3.3.2 Sixteen Category B groups and six Category C groups are to be removed to facilitate the proposals. A further eight Category B groups and two Category C groups would require partial removal.

5.3.3.3 Thirty-one Category B hedges and four Category C hedges are to be removed to facilitate the illustrative layout. A further thirty-six Category B hedges and one Category C hedge would require partial removal.

5.3.3.4 Six Category B woodlands are to be removed to facilitate the illustrative layout and a further three would require partial removal.

5.3.3.5 It should be noted that this assessment is based on an illustrative layout and that a more detailed assessment will be needed when a fixed layout is being considered. This should be informed by an updated and full BS5837 tree survey to identify the tree constraints applicable at that time.

5.3.3.6 As the layout shown on the masterplan is illustrative it should also be noted that there are a number of opportunities to increase the extent of existing tree and hedgerow retention to that currently shown which can be addressed when the detailed layouts are prepared. The following measures should therefore be considered during subsequent design stages:

- Minor adjustments to the position of hard surfaces, SuDS features, play areas and proposed landscaping will enable additional existing trees including potential veteran trees to be retained.

- Where proposed footpath/cycleways and roads are shown crossing hedgerows, these should be adjusted so that they cross at right angles and not diagonally in order to reduce hedgerow loss at crossing points.
- Repositioning some of the proposed planting will enable increased retention of existing trees and hedgerows.
- Where existing hedgerows are incorporated within larger proposed planting areas some of the existing vegetation can be retained within the new planting providing an increased diversity in the age range of the vegetation.
- Pollarding and coppicing of some of the existing trees will increase the amount of tree retention possible.
- Some of the existing trees could be lifted and relocated.

5.3.3.7 In addition, it is noted that some hedgerows and trees, for example those located in association with areas of open space around site boundaries, have not been depicted on the Illustrative Masterplan. Although loss has been assumed in the assessment given above, it is expected that these would be retained in the detailed design given the absence of proposals in their proximity that would otherwise necessitate loss.

5.3.4 *Implications of construction activity*

5.3.4.1 The RPAs of all the retained trees and hedgerows should be protected by tree protection fencing and, where appropriate, ground protection. All temporary tree protection should be approved by the relevant planning authority prior to any works taking place. This fencing would protect the construction exclusion zone (the rooting area of retained trees that is outside the footprint of the proposed development and working area required for its construction). Within the construction exclusion zone, the following rules should apply:

- No construction activity;
- No tree works without prior written consent from the Council;
- No excavation or alteration to ground levels or conditions (apart from those outlined for soft or hard landscape works and drainage works);
- No temporary structures;
- No storage of materials;
- No vehicles or machinery to be used or parked;
- No fixtures of any kind attached to trees; and
- No fires within 15m of the canopy edge of any tree or hedge.

5.3.5 *Hazardous materials*

5.3.5.1 All hazardous materials (including cement and petrochemicals) would need to be appropriately stored, and their usage controlled, to ensure no detrimental impact on tree health, both in terms of existing trees and areas proposed for new landscape planting.

5.3.6 *Implications of tree pruning*

5.3.6.1 Pruning required to facilitate the proposed layout relating to the groups, hedgerows and woodlands that require partial removal should be undertaken to ensure the appearance and structural integrity of the remaining trees is appropriate for their setting.

5.3.7 *Implications of ground level changes*

5.3.7.1 Details of changes in ground level in relation to the RPA of retained trees are not known at this stage. Should any unavoidable ground level changes within the RPA of a retained tree be identified during detailed design, suitable mitigation and/or working practices should be incorporated into the Arboricultural Method Statement.

5.3.8 *Implications of changes to ground surfacing*

5.3.8.1 Details of changes in ground surfacing in relation to the RPA of retained trees are not known at this stage. Should any unavoidable ground level changes within the RPA of a retained tree be identified during detailed design, suitable mitigation and/or working practices should be incorporated into the Arboricultural Method Statement.

5.3.8.2 The proposed houses and hard surfacing will result in an increase in ground water run-off, although, subject to suitable surface water drainage design, this is not expected to affect the retained trees. Soakaways should be located outside the RPA of retained trees.

5.3.9 *Implications of new foundations*

5.3.9.1 Details of dwelling foundation locations in relation to the RPA of retained trees are not known at this stage. Should any new foundation works within the RPA of a retained tree be identified during detailed design, suitable mitigation and/or working practices should be incorporated into the Arboricultural Method Statement.

5.3.10 *Implications of underground services and drainage*

5.10.1.1 In order to avoid impacts on existing trees, all new services required in connection with the proposed development should be located outside the RPA of any retained tree. Where essential service provision intrudes on the RPA of any retained tree, all works should be conducted in accordance with the *NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees* (NJUG, 2007), details of which would be finalised in the technical design stage and, where necessary, covered by an Arboricultural Method Statement.

5.3.11 *Implications of over ground services*

5.3.11.1 Any new over ground services required in connection with the proposed development should be located outside and a suitable distance away from the canopies of retained trees. Where new planting is to be established, consideration should be given to providing

adequate clearance from over ground services to allow for future growth without the need for regular pruning.

5.3.12 *Boundary treatment*

5.3.12.1 Design details of the boundary treatment for the proposed dwellings will be confirmed at the detailed design stage. It is therefore recommended that siting and a design that minimises the effect on retained trees are adopted, details of which should be agreed in the technical design stage and where necessary covered by an Arboricultural Method Statement.

5.3.13 *Implications of demolition*

5.3.13.1 Adequate precautions should be taken to protect the trees and hedgerows which are to be retained from physical damage and accumulation of dust during demolition, so that these works will not adversely affect the retained trees and hedgerows.

5.4 New planting

5.4.1 In addition to the retention of several of the woodland copses within the site, the development parameters secure the creation of community woodland and orchard within the scheme. This is expected to be substantially greater than tree cover to be lost.

5.4.2 Furthermore, the Illustrative Masterplan indicates opportunities for extensive new tree, woodland and hedgerow planting within the site, in addition to the opportunities for further tree, woodland and hedgerow retention identified in *Section 5.3.3.6* above. This would be provided in association with areas of open space, development areas and as part of the highway infrastructure. The Illustrative Masterplan currently shows:

- An increase of woodland and scrub cover;
- A substantial increase in the number of standard trees across the site; and
- An increase of hedgerows.

5.4.3 It is therefore considered that that the proposed development could result in a substantial increase in the tree and hedgerow resource of the site. This should be subject to ongoing review during the detailed design of the proposed development.

5.5 Issues to be addressed by Arboricultural Method Statement

5.5.1 Prior to any works in relation to the proposals that would affect the retained trees, an Arboricultural Method Statement should be prepared along with an updated Tree Protection Plan. The Arboricultural Method Statement should, where appropriate, contain the following information:

- Details of any proposed tree works;
- Installation of temporary ground protection and/or fencing;

- Construction methodologies for installation of new hard surfacing within the RPA of retained trees; and
- An auditable/audited system of arboricultural site monitoring, including a schedule of specific site events requiring input or supervision.

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Project Reference: 2090.83
Document Title: Tree Survey Report and AIA
Commissioning Party: St James

Issue	Description	Date of Issue	Signed
1	Tree Survey Report and AIA	March 2021	

	Personnel	Position
Author	Don Newling	Senior Arboriculturalist
Approved for issue	Adrian Meurer	Director

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APPENDIX A

Tree Survey Constraints Plans

T229
Fastigiate hornbeam
B2

T133
Silver birch
B2

G61
Ash
B2

G60
Ash
C2

W23
Mixed species
B2

G59
Mixed species
B2

T132
Dead Silver birch
U

G58
Ash
C2

W20
Mixed species
B2

Tree Preservation Order
PS/540/15/23

G57
Ash
C2

T131
London plane
C2

T130
Ash
C2

G56
Corsican pine
B2

G54
Corsican pine
B2

T129
Corsican pine
B2

G55
Crack willow
B2

G115
Mixed species
B2

T128
Corsican pine
U

T127
Corsican pine
U

G53
Crack willow
B2

G114
Mixed species
B2

G52
Silver birch
C2

G113
Mixed species
B2

G51
Ash
C2

G50
Mixed species
B2

G49
Mixed species
B2

T126
Ash
C2

G48
Norway maple
C3

G47
Silver maple
C3

G46
Horse Chestnut
B2

T125
Horse chestnut
C2

T124
Horse chestnut
B2

G45
Mixed species
B2

G44
Mixed species
B2

G43
Mixed species
B2

T123
Norway maple
B2

T122
Norway maple
C2

G121
Mixed species
B2

G120
Mixed species
B2

T225
Cherry
B2

G119
Mixed species
B2

G122
Mixed species
B2

G123
Mixed species
B2

G124
Mixed species
B2

T226
Cherry
B2

G125
Mixed species
B2

G126
Mixed species
B2

T224
Cherry
B2

G42
Mixed species
B2

G127
Laurel
C2

T121
Norway maple
B2

W24
Mixed species
B2

G66
Poplar sp.
B2

G135
Willow
B2

G134
Mixed species
B2

G130
Mixed species
B2

G129
Mixed species
B2

T136
Crack willow
B2

G128
Mixed species
B2

G116
Mixed species
B2

G65
Common lime
B2

G117
Mixed species
B2

G131
Mixed species
B2

G132
Mixed species
B2

T227
Crack willow
B3

G133
Mixed species
B2

G88
Crack willow
B2

H103
Mixed Species
B2

H120
Mixed Species
B2

G87
Mixed species
B2

G86
Mixed species
B2

G84
Ash
C2

G85
Mixed species
B2

G4
Mixed Speci
B2

G5
Mixed Species
B2

H14
Mixed Species
C2

H13
Mixed Species
B2

T13
Ash
B3

G6
Mix
B3

north

Scale - metres
0 20 60 120 200

north

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Approximate area included within a Tree Preservation Order
- Area not subject to survey due to absence of works potentially affecting trees

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

Note: Area of Tree Preservation Order taken from Milton Keynes Council 'Planning Constraints Map'

CLIENT:
St James

PROJECT:
Milton Keynes East - Trees

TITLE:
Tree Survey Constraints Plan
(Sheet 1 of 7)

SCALE AT A3:
1:2000

DATE:
March 2021

2090.83 / 25

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Landscape Architecture
Masterplanning
Ecology
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north

T153 Crack willow B2
T156 Ash B2
T154 Crack willow C2
T155 Ash B2
T151 Hybrid black poplar B2
T150 White willow B2
T152 Crack willow B2
G73 Crack willow B3
H89 Mixed Species B2
H87 Mixed B2
H88 Mixed Species B2
H85 Mixed species B2
T168 Ash B2
H114 Mixed Species B2
G74 Hawthorn B2
G72 Mixed species B2
G71 Crack willow B3
T149 Crack willow U
G70 Mixed species B3
T207 White Poplar B3
T193 Ash C3
T195 Ash B2
T147 Hybrid black poplar B2
T197 Ash B3
T148 Crack willow B2
T196 Ash C3
T146 Hybrid black poplar B2
T208 Crack willow B3
T145 Crack willow B2
H104 Mixed species C2
T144 Crack willow B3
H81 Hawthorn B2
G75 Pedunculate oak B2
T218 Oak B3
T159 English oak B3
T161 English oak B2
H81 Hawthorn C2
G76 Hawthorn B2
T165 Apple C2
T166 Field maple C2
T164 Apple C2
H113 Mixed B2
T160 English oak B2
H82 Mixed Species C2
H81 Hawthorn C2
T167 Field maple C2
T163 Hawthorn C2
T162 Elder C2
H7 Crack Willow B2
W29 Mixed species B2
T231 Hawthorn C2
H73 Bramble C2
G146 Blackthorn B2
G67 Goat willow B2
T214 Field Maple B2
H112 Mixed B2
T213 Ash B3
T215 Field Maple B3
T212 Crack Willow B3
H111 Mixed B2
T217 Crack Willow B2
G94 Crack Willow B2
T142 Crack willow B2
T143 Crack willow B2
H79 Mixed Species B2
G93 Crack Willow B2
H113 Mixed B2
T216 Crack Willow B2
T141 Crack willow C2
T140 Dead Crack willow U
H107 Mixed C2
H83 Mixed Spec B2
W28 Mixed species B2
G144 Mixed species B2
G145 Mixed species C2
W30 Mixed species B2
G142 Mixed species B2
G143 Ash B2
G64 Mixed species B2
G95 Crack Willow B2
T139 Crack willow B2
T209 Ash C3
G92 Poplar B3
H84 Hawthorn B2
T210 Crack Willow B3
W33 Mixed B2
G69 Crack willow B3
H74 Hawthorn B2
H110 Mixed B2
H109 Mixed B2
G141 Mixed species C2
G140 Mixed species C2
G147 Mixed species C2
H119 Mixed species C2
W31 Mixed species B2
G138 Mixed species C2
T232 Cherry C2
W22 Mixed species B2
G137 Mixed species C2
G139 Ash B2
T137 Cherry U
T211 Ash B3
H108 Mixed B2
T135 Ash C2
G63 Mixed species B2
T230 Silver birch B2
G62 Ash C2
G68 Cherry B2
T134 London plane B2
T138 Cherry B2
W21 Mixed species B2
G136 Mixed species B3
G89 Crack willow B2
G61 Ash B2
T133 Silver birch B2
T229 Fastigiate hornbeam

Tree Preservation Order PS/540/15/22

Tree Preservation Order PS/540/15/23

Scale - metres
0 20 60 120 200
north

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
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BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
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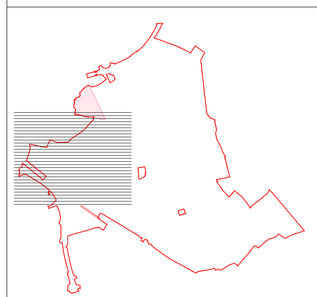
Note: Area of Tree Preservation Order taken from Milton Keynes Council 'Planning Constraints Map'



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north

W8
Mixed species
B2

T35
Ash
B2

G98
Mixed species
C2

G101
Mixed species
B2

H76
Mixed species
C2

G102
Fastigate hornbeam
B2

G103
Mixed species
B2

G104
Mixed species
C2

H77
Mixed species
C2

H75
Box
C2

G99
Mixed species
B2

G100
Mixed species
B2

T221
Scots pine
C2

T222
Scots pine
U

H98
Hawthorn
B2

G105
Mixed species
B2

T223
Fastigate hornbeam
B2

G106
Mixed species
B2

G108
Mixed species
B2

G109
Leyland cypress
C2

G110
Mixed species
B2

H97
Leylandii
C2

G111
Ash
C2

G112
Ash
C2

G107
Mixed species
B2

H80
Mixed Species
C2

G118
Mixed species
B2

H96
Mixed species
B2

H99
Mixed species
B2

T177
Ash
C2

T176
Ash
B2

T175
English
B3

T173
Ash
B2

T180
Ash
B2

T178
Oak
B3

T179
Oak
B3

H78
Hawthorn
B2

W25
Mixed species
B3

H93
Mixed species
B2

T203
Ash
B2

G148
Mixed species
B2

T172
English oak
B2

T171
Ash
B2

G91
Goat willow
B2

H95
Mixed species
B2

T204
English oak
B2

H94
Mixed species
B2

T219
Ash
B2

H92
Mixed species
B2

T205
English oak
B3

H93
Mixed species
B2

H79
Mixed Species
B2

T206
Ash
C2

W26
Mixed species
B2

G92
Cherry
B2

H90
Hawthorn
B2

H91
Mixed species
B2

H89
Mixed Species
B2

G149
Mixed species
B2

T153
Crack willow

T151

H87

H33
Mixed
B2

Scale - metres
0 20 60 120 200
north

KEY

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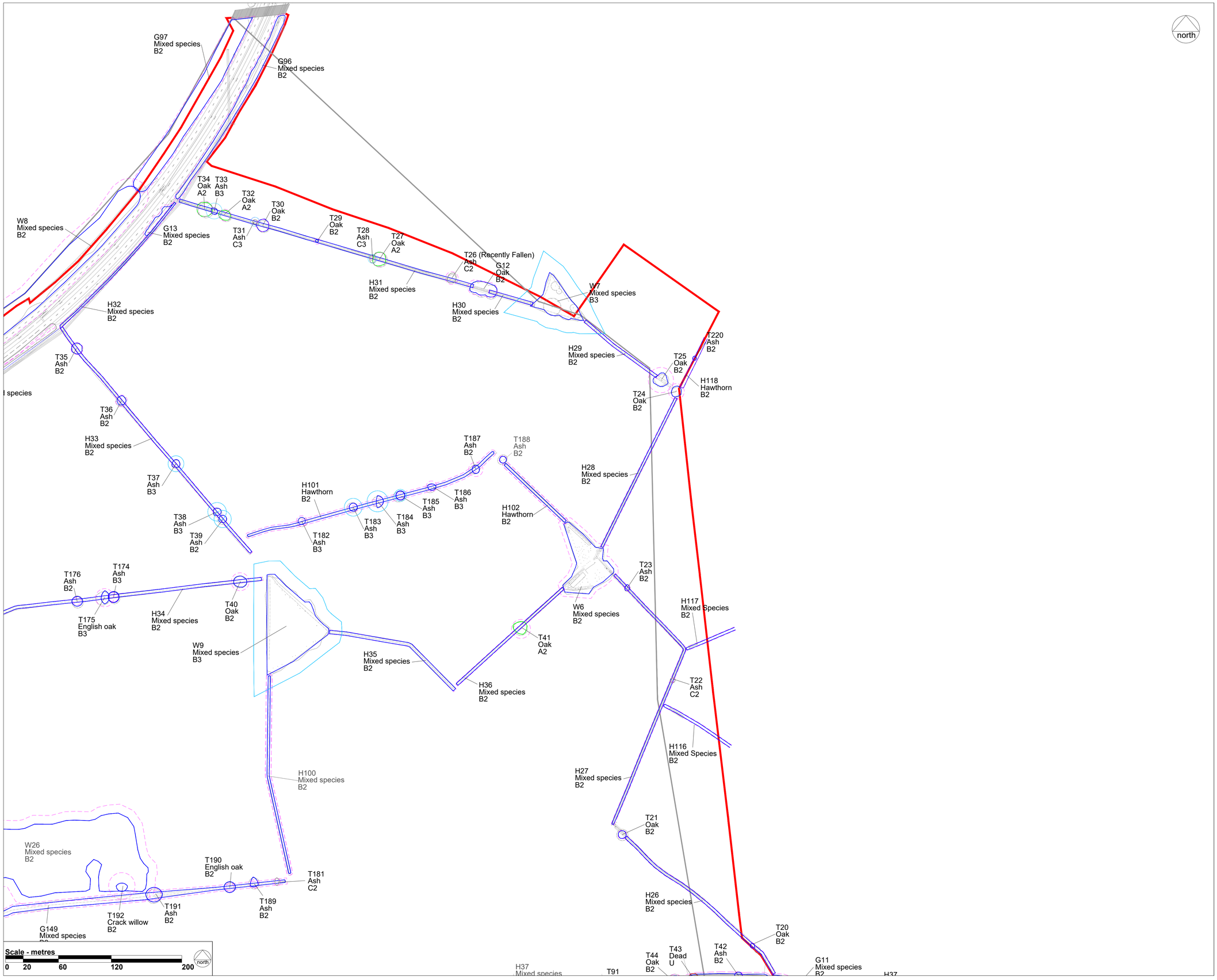

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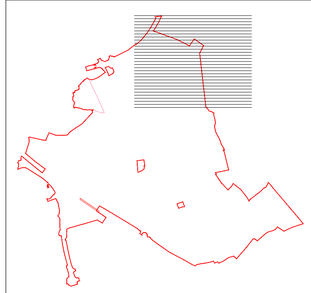

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north

Scale - metres
0 20 60 120 200

KEY

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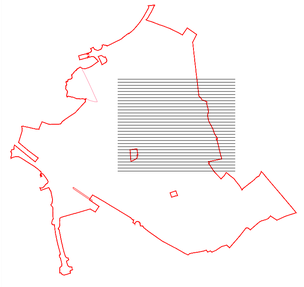

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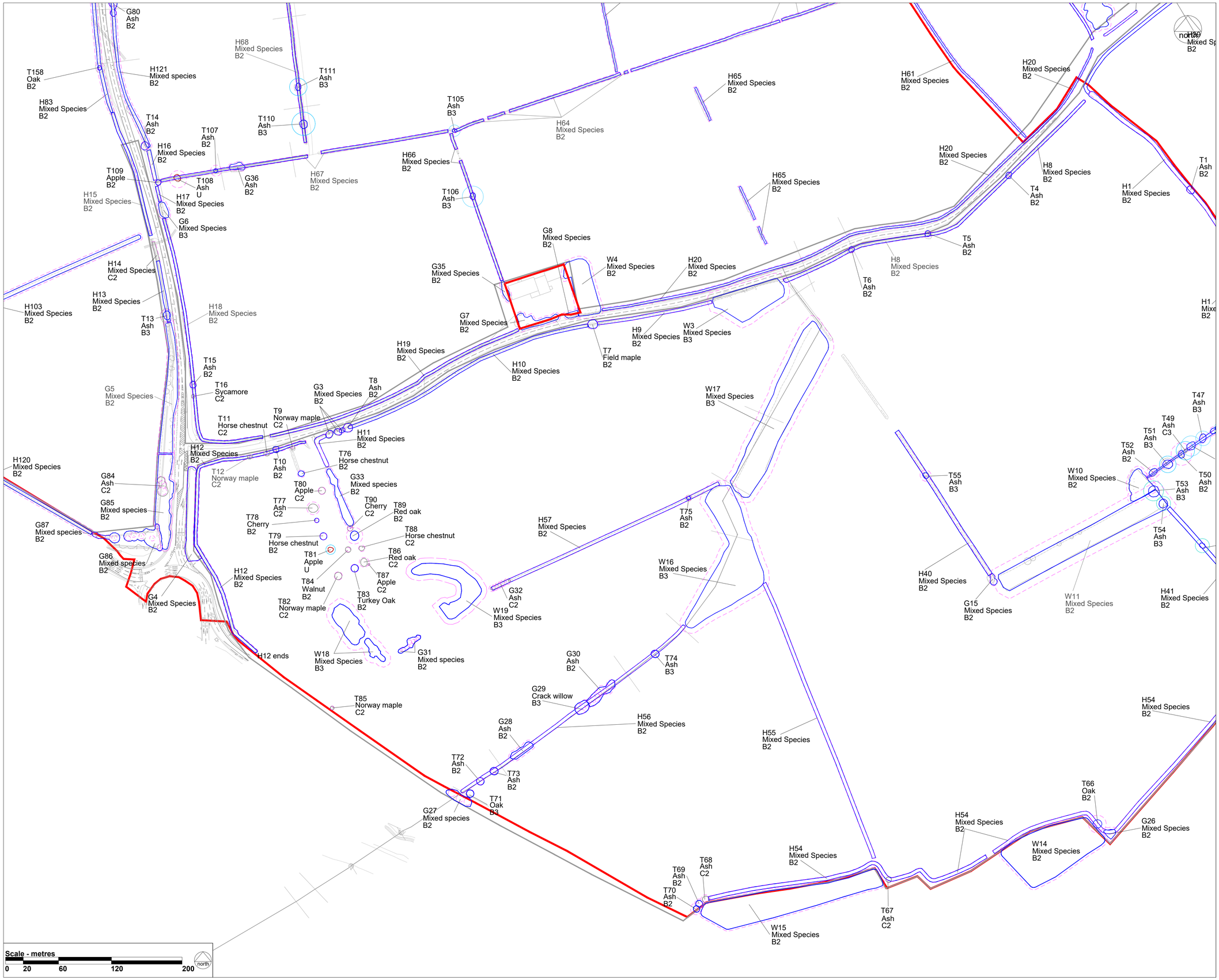

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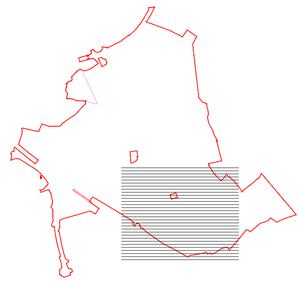

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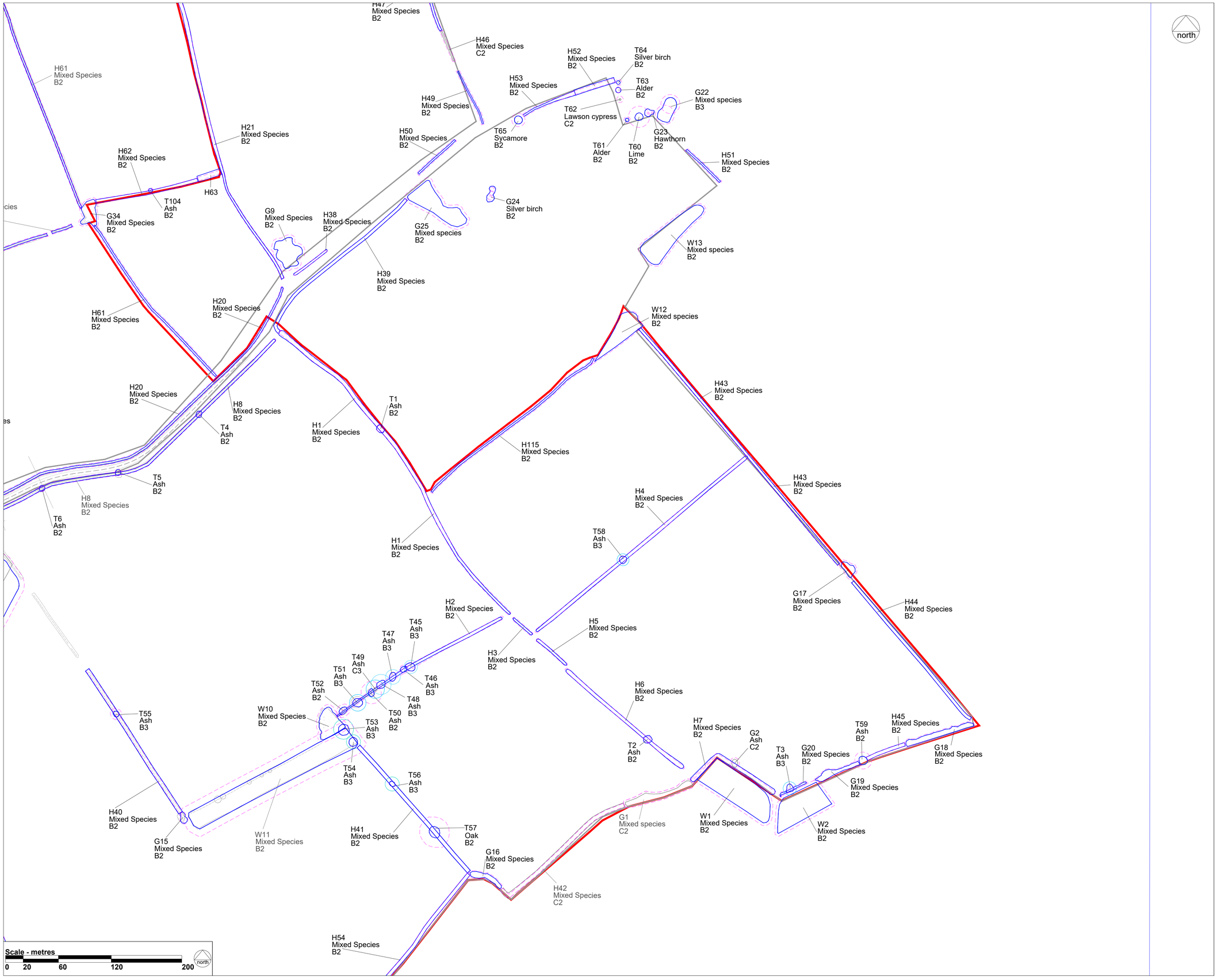

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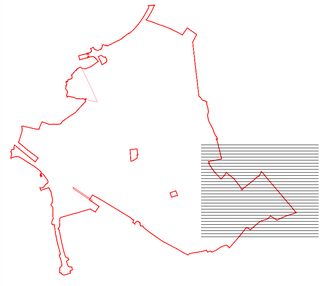

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APPENDIX B

Tree Data Schedule

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T1	EM **Ash** ***Fraxinus excelsior***	8	2	- -	350	4 4 5 5	Ditch west side, in hedgerow, old trunk wound, lichen	No immediate action required	Good Fair	20+	B2
T2	EM **Ash** ***Fraxinus excelsior***	9	2	3 W	300	6 6 5 5	Ditch west side, in hedgerow, basal suckers, trunk scars	No immediate action required	Good Fair	20+	B2
T3	M **Ash** ***Fraxinus excelsior***	9	2	- -	500	4 5 5 6	Ditch north side, in hedgerow, large trunk wound, hollow, upper trunk cavity, lichen, die-back, potential veteran	No immediate action required	Fair Poor	20+	B3
T4	EM **Ash** ***Fraxinus excelsior***	8	2	- -	180	- - - -	Ditch north side, in hedgerow, die-back	No immediate action required	Fair Fair	20+	B2
T5	M **Ash** ***Fraxinus excelsior***	7	2	2 W	300	6 4 2 3	Ditch north and east side, in hedgerow, stunted, partially suppressed, die-back	No immediate action required	Fair Fair	20+	B2
T6	EM **Ash** ***Fraxinus excelsior***	7	1.5	2 N	200	5 4 3 2	Ditch north side, in hedgerow, basal suckers, die-back	No immediate action required	Fair Fair	20+	B2
T7	M **Field maple** ***Acer campestre***	7	0	1.5 SW	400 280	8 8 8 6	Ditch north side, in hedgerow, twin stem	No immediate action required	Good Fair	40+	B2
T8	M **Ash** ***Fraxinus excelsior***	11	1.5	2.5 W	400	6 7 6 6	Ditch north side filled, in hedgerow, established basal suckers, old pollard at 2.5m, die-back	No immediate action required	Fair Fair	20+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T9	EM **Norway maple** ***Acer platanoides***	**6**	**-**	- -	**100**	N: - W: - E: - S: -	Partially suppressed	No immediate action required	Good Fair	20+	**C2**
T10	EM **Ash** ***Fraxinus excelsior***	**10**	**2**	- -	**200**	N: 5 W: 5 E: 5 S: 5	Ditch north side, in hedgerow, ivy, die-back	No immediate action required	Fair Fair	20+	**B2**
T11	EM **Horse chestnut** ***Aesculus hippocastanum***	**6**	**2**	- -	**100**	N: 2 W: 4 E: 2 S: 4	Ditch north side, in hedgerow, partially suppressed	No immediate action required	Fair Fair	20+	**C2**
T12	EM **Norway maple** ***Acer platanoides***	**5**	**2**	- -	**100**	N: 2 W: 3 E: 2 S: 2	Ditch north side, in hedgerow	No immediate action required	Fair Fair	20+	**C2**
T13	M **Ash** ***Fraxinus excelsior***	**12**	**2**	3 N	**600**	N: 8 W: 7 E: 7 S: 9	Ditch east side, in hedgerow, Daldinia concentrica fungal fruiting body on trunk, small upper trunk cavity, small branch cavity, crown lifted, bat roost potential	No immediate action required	Fair Fair	20+	**B3**
T14	EM **Ash** ***Fraxinus excelsior***	**8**	**0**	- -	**400**	N: 6 W: 6 E: 6 S: 6	Ditch east side, multi-stemmed, lichen, die-back	No immediate action required	Fair Fair	20+	**B2**
T15	EM **Ash** ***Fraxinus excelsior***	**9**	**2**	2 NW	**220** **160**	N: 5 W: 2 E: 4 S: 6	Ditch west side, in hedgerow, twin stem, canopy cut back west side to maintain clearance from road sign and street light, die-back	No immediate action required	Fair Fair	20+	**B2**
T16	SM **Sycamore** ***Acer pseudoplatanus***	**5**	**0**	1.5 N	**100**	N: 3 W: 2 E: 1 S: 2	Ditch west side, in hedgerow, established basal suckers	No immediate action required	Good Fair	20+	**C2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T17	M **Ash** ***Fraxinus excelsior***	8	1.5	2 SW	600	N 4 W 4 E 2 S 4	In hedgerow, trunk wound/cavity, hollowing, lost original leader	No immediate action required	Fair Poor	20+	B3
T18	EM **Oak** ***Quercus robur***	7	2	- -	320	N 4 W 4 E 4 S 4	Ditch south side, in hedgerow. Few broken branches and lichen present.	No immediate action required	Good Fair	40+	B2
T19	EM **Oak** ***Quercus robur***	7	2	- -	270	N 4 W 4 E 4 S 4	In hedgerow, ditch to the south. Few broken branches and branch tear marks. Lichen present.	No immediate action required	Good Fair	40+	B2
T20	EM **Oak** ***Quercus robur***	6	2	- -	270	N 4 W 4 E 4 S 4	Ditch east side, in hedgerow, crown lifted	No immediate action required	Good Fair	40+	B2
T21	M **Oak** ***Quercus robur***	9	-	- -	420	N 6 W 6 E 6 S 6	Ditch east side, in hedgerow, ivy clad, old pollard at 3m, split branch	No immediate action required	Good Fair	40+	B2
T22	EM **Ash** ***Fraxinus excelsior***	8	2	- -	200	N 2 W 2 E 3 S 2	Ditch north side, in hedgerow, die-back	No immediate action required	Fair Fair	10+	C2
T23	EM **Ash** ***Fraxinus excelsior***	10	2	- -	230 120	N 4 W 4 E 4 S 4	Ditch south side, in hedgerow, old coppice, die-back	No immediate action required	Fair Fair	20+	B2
T24	M **Oak** ***Quercus robur***	8	1	- -	750	N 6 W 5 E 6 S 8	Ditch ends south of trunk, end of hedgerow, trunk scars, epicormic growth	No immediate action required	Good Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T25	M **Oak** ***Quercus robur***	**12**	**2**	- -	**1200**	**9** **10** **8** **8**	In hedgerow, ivy clad, dead wood	No immediate action required	Good Fair	40+	**B2**
T26	M **Ash** ***Fraxinus excelsior***	**8**	**1**	2 S	**600**	**7** **3** **5** **2**	Ditch south side, in hedgerow, trunk cavity, hollow, fire damage, slight lean north-east, basal suckers, lost original leader, die-back	No immediate action required	Fair Poor	10+	**C3**
T27	M **Oak** ***Quercus robur***	**11**	**0.5**	3 E	**680**	**8** **8** **9** **9**	Ditch south side, epicormic growth	No immediate action required	Good Good	40+	**A2**
T28	M **Ash** ***Fraxinus excelsior***	**7**	**1.5**	3 S	**330**	**1.5** **5** **1** **7**	Ditch south side, in hedgerow, upper trunk cavities, woodpecker holes, partially suppressed	No immediate action required	Fair Poor	10+	**C3**
T29	EM **Oak** ***Quercus robur***	**5**	**1.5**	- -	**100**	**2** **2** **2** **2**	Ditch south side, in hedgerow, multi-stemmed	No immediate action required	Good Fair	40+	**B2**
T30	M **Oak** ***Quercus robur***	**10**	**1**	2 W	**580**	**9** **8** **6** **8**	Ditch north side, small cavity at pruning point (3m, south side), epicormic growth	No immediate action required	Good Fair	40+	**B2**
T31	M **Ash** ***Fraxinus excelsior***	**6**	**2**	2 SW	**340**	**1** **2** **2** **2**	Ditch south side, in hedgerow, lost original leader, exposed heartwood, partially suppressed	No immediate action required	Fair Fair	10+	**C3**
T32	M **Oak** ***Quercus robur***	**10**	**1**	2 E	**560**	**6** **6** **7** **7**	Ditch north side, epicormic growth	No immediate action required	Good Good	40+	**A2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T33	M **Ash** ***Fraxinus excelsior***	**7**	**2**	2 S	**600**	**5** **2** **4** **3**	Ditch south side, in hedgerow, basal cavity, trunk cavity, hollowing, exposed heartwood, branch cavity, dead wood	No immediate action required	Fair Poor	10+	**B3**
T34	M **Oak** ***Quercus robur***	**9**	**2**	2 NE	**730**	**9** **9** **10** **9**	Ditch north side	No immediate action required	Good Good	40+	**A2**
T35	M **Ash** ***Fraxinus excelsior***	**13**	**2**	2 W	**570**	**8** **4** **8** **6**	Ditch east side, in hedgerow, fungal fruiting body of Inonotus hispidus in crown, deadwood	No immediate action required	Fair Fair	20+	**B2**
T36	M **Ash** ***Fraxinus excelsior***	**12**	**1.5**	- -	**560**	**6** **6** **6** **6**	Ditch east side, in hedgerow, fungal fruiting body remnants of Inonotus hispidus in crown, deadwood	No immediate action required	Fair Fair	20+	**B2**
T37	M **Ash** ***Fraxinus excelsior***	**14**	**2**	- -	**600**	**6** **4** **6** **6**	Ditch east side, in hedgerow, trunk wound, branch cavity, woodpecker hole in branch, historic branch failure, deadwood, lichen, die-back potential veteran	No immediate action required	Fair Poor	20+	**B3**
T38	M **Ash** ***Fraxinus excelsior***	**10**	**1.5**	- -	**700**	**5** **5** **5** **5**	Ditch east side, in hedgerow, trunk wound/cavity, lost original leader, cavities, woodpecker hole, deadwood, die-back, potential veteran	No immediate action required	Fair Poor	20+	**B3**
T39	M **Ash** ***Fraxinus excelsior***	**12**	**1.5**	- -	**650**	**5** **5** **5** **5**	Ditch east side, in hedgerow, ivy clad, die-back	No immediate action required	Fair Fair	20+	**B2**
T40	M **Oak** ***Quercus robur***	**10**	**2**	- -	**850**	**8** **8** **8** **8**	Ditch to south, in hedgerow, minor stag heading, possible lightning damage	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T41	M **Oak** ***Quercus robur***	12	-	- -	900	7 / 7 / 7 / 7	Ditch to north, in hedgerow	No immediate action required	Good Fair	40+	A2
T42	M **Ash** ***Fraxinus excelsior***	9	2	- -	400	3 / 3 / 3 / 3	Ditch to north, in hedgerow.	No immediate action required	Fair Fair	20+	B2
T43	M **Dead** **-**	14	-	- -	350	- / - / - / -	In hedgerow, dead, splits and cavities. Trunk cavity, peeling bark and cracks in branches.	No immediate action required	Dead Dead	0	U
T44	M **Oak** ***Quercus robur***	15	-	- -	800	- / - / - / -	Ditch to north, in hedgerow. Trunk cavity and multiple dead and split branches.	No immediate action required	Good Fair	40+	B2
T45	M **Ash** ***Fraxinus excelsior***	9	2	- -	500	6 / 4 / 8 / 3	Ditch north side, in hedgerow, trunk wound/cavity, small holes in trunk, woodpecker hole, significant dead wood, die-back	No immediate action required	Fair Fair	20+	B3
T46	M **Ash** ***Fraxinus excelsior***	9	2	- -	400	4 / 4 / 2 / 4	Ditch north side, in hedgerow, established basal suckers, trunk wound/cavity, lost original leader	No immediate action required	Fair Fair	20+	B3
T47	M **Ash** ***Fraxinus excelsior***	8	1.5	- -	550	4 / 6 / 2 / 3	Ditch north side, in hedgerow, basal suckers, upper trunk wound/cavity, woodpecker holes, significant dead wood	No immediate action required	Fair Poor	20+	B3
T48	M **Ash** ***Fraxinus excelsior***	12	2	- -	760	4 / 5 / 4 / 6	Ditch north side, in hedgerow, basal suckers, trunk wound/cavity, hollow, twin leader, holes in trunk, die-back	No immediate action required	Fair Poor	10+	B3

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T49	M **Ash** ***Fraxinus excelsior***	10	1.5	- -	690	6 / 3 / 1.5 / 0	Ditch north side, in hedgerow, basal cavity, desiccated fungal fruiting body at base, established basal suckers, hollow, upper trunk wound/cavity, lost original leader, die-back	No immediate action required	Fair Poor	10+	C3
T50	M **Ash** ***Fraxinus excelsior***	10	1.5	- -	550	5 / 4 / 5 / 4	Ditch north side, in hedgerow, dead wood at top	No immediate action required	Fair Fair	20+	B2
T51	M **Ash** ***Fraxinus excelsior***	12	1.5	- -	780	7 / 5 / 8 / 7	Ditch north side, in hedgerow, woodpecker hole, significant dead wood, lost original leader	No immediate action required	Fair Fair	20+	B2
T52	M **Ash** ***Fraxinus excelsior***	10	1.5	- -	180 140 100 90	5 / 4 / 3 / 6	Ditch north side, in hedgerow, old coppice, established basal suckers	No immediate action required	Fair Fair	20+	B2
T53	M **Ash** ***Fraxinus excelsior***	16	0	- -	750	7 / 7 / 7 / 7	Ditch east & south side, edge of woodland, established basal suckers, trunk cavities, old pollard, woodpecker hole, branch cavities, significant dead wood, possible veteran	No immediate action required	Fair Fair	20+	B3
T54	M **Ash** ***Fraxinus excelsior***	15	0	- -	530	5 / 5 / 5 / 5	Ditch east side, edge of woodland, basal suckers, old pollard, branch cavities, die-back	No immediate action required	Fair Fair	20+	B2
T55	M **Ash** ***Fraxinus excelsior***	7	2	- -	250	3 / 3 / 3 / 3	Basal/trunk cavity, hollowing, established epicormic growth, dead wood	No immediate action required	Fair Fair	20+	B3
T56	M **Ash** ***Fraxinus excelsior***	13	2	- -	480	4 / 2 / 2 / 2	Ditch east side, in hedgerow, woodpecker hole, branch cavities, significant dead wood, die-back	No immediate action required	Fair Fair	20+	B3

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T57	M **Oak** ***Quercus robur***	13	2	2 W	900	N 8 W 8 E 6 S 7	Ditch east side, in hedgerow, significant dead wood	No immediate action required	Good Fair	40+	B2
T58	M **Ash** ***Fraxinus excelsior***	8	0.5	- -	450	N 5 W 5 E 5 S 5	Ditch north side, in hedgerow, established basal suckers, trunk wound/cavity, hollow, lost original leader	No immediate action required	Fair Fair	20+	B3
T59	M **Ash** ***Fraxinus excelsior***	12	2	- -	400	N 2 W 5 E 5 S 5	Ditch north side, in hedgerow, established basal suckers, partially suppressed, die-back	No immediate action required	Fair Fair	20+	B2
T60	M **Lime** ***Tilia sp***	17	1	- -	1000	N 5 W 4 E 5 S 4	Off-site, epicormic growth, significant dead wood, branch cavities, die-back	No immediate action required	Good Fair	40+	B2
T61	EM **Alder** ***Alnus sp***	12	2	- -	300	N 2 W 2 E 2 S 2	Off-site, ivy	No immediate action required	Good Fair	40+	B2
T62	EM **Lawson cypress** ***Chamaecyparis lawsoniana***	9	2	- -	300	N 1 W 1 E 1 S 1	Off-site, ivy	No immediate action required	Good Fair	40+	C2
T63	EM **Alder** ***Alnus sp***	10	0.5	- -	350	N 3 W 3 E 3 S 3	Off-site, ivy	No immediate action required	Good Fair	40+	B2
T64	EM **Silver birch** ***Betula pendula***	10	1	- -	250	N 2 W 2 E 3 S 2	Off-site	No immediate action required	Good Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) W N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T65	EM **Sycamore** ***Acer pseudoplatanus***	**9**	**2**	3 S	**300** **300**	W **4** N **4** S **4** E **4**	Twin stem, some dead wood	No immediate action required	Good Fair	40+	**B2**
T66	EM **Oak** ***Quercus robur***	**10**	**2**	2 E	**450**	W **5** N **4** S **5** E	Ditch east side, branch cavities, dead wood	No immediate action required	Good Fair	40+	**B2**
T67	EM **Ash** ***Fraxinus excelsior***	**8**	**2**	4 S	**200** **150** **150**	W **3** N **2** S **3** E **2**	Multi-stemmed, one stem dead/decaying/peeling bark and woodpecker hole, die-back	No immediate action required	Fair Poor	20+	**C3**
T68	M **Ash** ***Fraxinus excelsior***	**8**	**1**	3 W	**450**	W **4** N **2** S **4** E **4**	Restricted access, ditch, in hedgerow, multiple dead/decaying branches	No immediate action required	Fair Fair	10+	**C2**
T69	M **Ash** ***Fraxinus excelsior***	**9**	**2**	3 N	**450**	W **4** N **3** S **4** E **4**	Some dead wood	No immediate action required	Good Fair	20+	**B2**
T70	M **Ash** ***Fraxinus excelsior***	**10**	**1**	2 N	**560**	W **3** N **3** S **4** E **4**	Branch cavities, dead wood	No immediate action required	Good Fair	20+	**B2**
T71	EM **Oak** ***Quercus robur***	**11**	**0**	1 E	**390**	W **3** N **5** S **5** E **4**	Peeling bark, cavities, dead wood	No immediate action required	Good Fair	40+	**B2**
T72	EM **Ash** ***Fraxinus excelsior***	**13**	**3**	2 S	**340**	W **3** N **3** S **3** E **3**	Base of ditch, die-back	No immediate action required	Fair Fair	20+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T73	EM **Ash** ***Fraxinus excelsior***	**12**	**2**	- -	**300**	**4** **4** **4** **4**	Within ditch, dead branches, die-back	No immediate action required	Fair Fair	20+	**B2**
T74	EM **Ash** ***Fraxinus excelsior***	**9**	**1**	1 W	**200 200 150 150**	**3** **4** **3** **3**	Multi-stemmed, peeling bark, dead branches, die-back	No immediate action required	Fair Fair	20+	**B2**
T75	EM **Ash** ***Fraxinus excelsior***	**7**	**2**	3 N	**270**	**2** **2** **2** **2**	Ditch north side, dead branches	No immediate action required	Fair Fair	20+	**B2**
T76	EM **Horse chestnut** ***Aesculus hippocastanum***	**10**	**2**	1.5 N	**370**	**3** **4** **3** **4**	In hedgerow, lichen, some dead wood, leaf miner	No immediate action required	Fair Fair	40+	**B2**
T77	EM **Ash** ***Fraxinus excelsior***	**11**	**2**	3 S	**600**	**4** **5** **4** **5**	In hedgerow, ivy clad, dead wood, die-back	No immediate action required	Fair Fair	20+	**C2**
T78	EM **Cherry** ***Prunus sp***	**6**	**2**	1 S	**200**	**2.5** **2.5** **2.5** **2.5**	Ditch west side, in hedgerow, ivy, some dead wood	No immediate action required	Good Fair	40+	**B2**
T79	EM **Horse chestnut** ***Aesculus hippocastanum***	**9**	**2**	1 W	**320**	**3** **3** **3** **3**	Some dead wood, leaf miner	No immediate action required	Good Fair	40+	**B2**
T80	M **Apple** ***Malus sp***	**6**	**2**	1 E	**340**	**3** **3** **3** **3**	Basal/trunk cavity, one stem failed leaving tear, cavity in main branch going all the way through, decay in branch, bark stripping by livestock, lichen, dead wood	Protect from livestock	Good Fair	20+	**C3**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T81	M **Apple** ***Malus sp***	5	1.5	2 E	360	1.5 / 0 / 3 / 3	Hollow, lichen, bark stripping by livestock, dead wood	No immediate action required	Fair Poor	<10	U
T82	EM **Norway maple** ***Acer platanoides***	13	1	1 W	380	4 / 4 / 4 / 4	No access, crown lifted, some brown foliage	No immediate action required	Fair Fair	20+	C2
T83	EM **Turkey oak** ***Quercus cerris***	12	2	2 W	380	4 / 4 / 4 / 4	Old pollard, minor dead wood	No immediate action required	Good Good	40+	B2
T84	EM **Walnut** ***Juglans sp***	8	1	- -	210	2 / 3 / 3 / 3	Livestock damage, lichen	No immediate action required	Fair Fair	20+	B2
T85	SM **Norway maple** ***Acer platanoides***	8	4	- -	180	2 / 2 / 2 / 2	Dead snag	No immediate action required	Good Fair	40+	C2
T86	EM **Red oak** ***Quercus rubra***	12	1	- -	430	4 / 4 / 5 / 3	Trunk/branch cavities, dead wood, foliar discolouration indicating disease or nutrient deficiency	Investigate cause of foliar discolouration	Fair Fair	20+	C2
T87	SM **Apple** ***Malus sp***	4	0.5	- -	110	1 / 1 / 1 / 1	Trunk fissures, peeling bark, dead wood, suppressed	No immediate action required	Fair Fair	10+	C2
T88	EM **Horse chestnut** ***Aesculus hippocastanum***	9	0	- -	300	3 / 1 / 4 / 3	In hedgerow, twin leader, fungal fruiting bodies, peeling bark, one stem topped and decaying, partially suppressed	No immediate action required	Fair Poor	10+	C2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T89	M **Red oak** ***Quercus rubra***	13	0	- -	560 540	N 5 W 3 E 5 S 5	Animal burrow below tree, multi-stem (one removed exposed heartwood decaying, two remaining), burrs on trunk, dead wood, peeling bark	No immediate action required	Good Fair	40+	B2
T90	M **Cherry** ***Prunus sp***	6	1	- -	250	N 2 W 2 E 2 S 2	Basal cavity, hollow, twin leader, peeling bark and cavities	No immediate action required	Fair Poor	20+	C3
T91	EM **Ash** ***Fraxinus excelsior***	14	4	- -	350	N 3 W 3 E 3 S 3	Crack in trunk, die-back	No immediate action required	Fair Fair	20+	C2
T92	M **Oak** ***Quercus robur***	16	2	- -	940	N 4 W 8 E 3 S 5	Ditch north side, in hedgerow, possible lightening damage - large scar, exposed heartwood, large snag, splits/cracks, cavities, dead wood	No immediate action required	Good Fair	40+	B3
T93	M **Ash** ***Fraxinus excelsior***	12	3	- -	480	N 3 W 3 E 3 S 3	Ditch north side, in hedgerow	No immediate action required	Fair Fair	20+	B2
T94	M **Ash** ***Fraxinus excelsior***	12	3	- -	470	N 3 W 2 E 3 S 3	Lichen, dead wood	No immediate action required	Fair Fair	20+	B2
T95	M **Oak** ***Quercus robur***	9	3	- -	760	N 3 W 3 E 3 S 3	Ditch north side, in hedgerow, fungal fruiting bodies at base, hollow, trunk cavity, multiple woodpecker holes, dead wood	No immediate action required	Good Poor	40+	B3
T96	M **Ash** ***Fraxinus excelsior***	10	3	- -	350 200	N 2 W 4 E 4 S 4	Ditch north side, in hedgerow, twin stem	No immediate action required	Fair Fair	20+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) W / N / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T97	M **Ash** ***Fraxinus excelsior***	12	0	- -	400	W 2, N 2, E 4, S 2	Snag, cavities, fungal fruiting body (Inonotus hispidus), die-back	No immediate action required	Fair Fair	20+	B2
T98	M **Ash** ***Fraxinus excelsior***	14	0	- -	400	W 2, N 3, E 6, S 3	Basal cavity, bees nest, snags, dead wood	No immediate action required	Fair Fair	20+	B3
T99	M **Ash** ***Fraxinus excelsior***	15	0	- -	500	W 7, N 4, E 1, S 4	Cavities, dead wood	No immediate action required	Fair Fair	20+	B2
T100	EM **Ash** ***Fraxinus excelsior***	8	0	- -	300	W 1, N 0, E 1, S 5	Ditch south side, in hedgerow, die-back, partially suppressed	No immediate action required	Fair Fair	20+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T101	M **Ash** *Fraxinus excelsior*	**11**	**2**	- -	**500**	**4** / **4** / **4** / **5**	Cavities, multiple woodpecker holes, dead wood	No immediate action required	Fair Fair	20+	**B3**
T102	EM **Ash** *Fraxinus excelsior*	**8**	**3**	- -	**230** **160**	**2** / **2** / **2** / **2**	In hedgerow, twin stemmed, fused, dead wood, die-back	No immediate action required	Fair Fair	20+	**B2**
T103	EM **Ash** *Fraxinus excelsior*	**9**	**2**	- -	**190** **190** **140** **140**	**2** / **2** / **2** / **4**	In hedgerow, multi-stemmed, fused, dead wood, die-back	No immediate action required	Fair Fair	20+	**B2**
T104	EM **Ash** *Fraxinus excelsior*	**6**	**3**	- -	**250**	**2** / **2** / **2** / **2**	In ditch, hedgerow tree, stub, lichen, die-back	No immediate action required	Fair Fair	20+	**B2**
T105	M **Ash** *Fraxinus excelsior*	**8**	**2**	- -	**540**	**3** / **2** / **3.5** / **1**	Coppiced at 0.5m, basal cavities, branch cavities, sparse canopy, die-back, partially suppressed	No immediate action required	Fair Fair	20+	**B2**
T106	M **Ash** *Fraxinus excelsior*	**9**	**2**	- -	**790**	**4** / **3** / **3** / **3.5**	Ditch east side, basal/trunk cavity, hollowing, burrs, significant dead wood, woodpecker holes, snags	No immediate action required	Fair Fair	20+	**B3**
T107	M **Ash** *Fraxinus excelsior*	**7**	**0**	- -	**210 x 6**	**3** / **3** / **1** / **1**	Ditch south side, in hedge, coppiced, die-back, overhead cables	No immediate action required	Fair Fair	20+	**B2**
T108	M **Ash** *Fraxinus excelsior*	**8**	**1**	- -	**810**	**5** / **4** / **3** / **2**	Ditch north side, in hedge, basal cavity, fungal fruiting body, established basal suckers, exposed heartwood on trunk	No immediate action required	Fair Poor	<10	**U**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T109	M **Apple** *Malus sp*	**5**	**1**	- -	**180 160 130 110**	N **3** W **3** E **3** S **3**	Ditch west & north side, in hedge, exposed roots due to soil erosion, branch cavities,	No immediate action required	Fair Fair	20+	**B2**
T110	M **Ash** *Fraxinus excelsior*	**13**	**2**	- -	**880**	N **4** W **4** E **4** S **5**	Basal cavities, fungal fruiting bodies of Inonotus hispidus, hollow, trunk cavity, woodpecker hole on trunk, dead wood, snags	No immediate action required	Fair Fair	20+	**B3**
T111	M **Ash** *Fraxinus excelsior*	**10**	**3**	- -	**660**	N **4** W **3** E **3** S **4**	Basal cavities, fungal fruiting bodies, trunk cavity, hollow, dead wood, woodpecker holes	No immediate action required	Fair Poor	20+	**B3**
T112	M **Ash** *Fraxinus excelsior*	**14**	**2**	- -	**350 x 3**	N **6** W **4** E **5** S **3**	Multi-stemmed, lichen, branch cavities, dead wood, die-back	No immediate action required	Fair Fair	20+	**B2**
T113	M **Ash** *Fraxinus excelsior*	**15**	**2**	- -	**400 x 3**	N **7** W **6** E **7** S **5**	Multi-stemmed, lichen, branch cavities, dead wood, several branches removed	No immediate action required	Fair Fair	20+	**B2**
T114	M **Ash** *Fraxinus excelsior*	**4**	**1**	- -	**220 x 5**	N **2** W **3** E **4** S **2**	Coppiced at 0.5m, cavity at coppice point, lichen, dead wood	No immediate action required	Fair Fair	20+	**B2**
T115	SM **Sycamore** *Acer pseudoplatanus*	**4**	**2**	- -	**150**	N **1** W **1** E **1** S **1**	Ditch south side, in hedge	No immediate action required	Good Fair	40+	**B2**
T116	EM **Sycamore** *Acer pseudoplatanus*	**5**	**1**	- -	**200**	N **1** W **1** E **1** S **1**	Ditch south side, in hedge, lichen	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread W / N / (m) / S / E	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T117	EM **Oak** *Quercus robur*	**6**	**1**	- -	**270**	**3.5** / **1** / **1** / **2.5**	Ditch south side, in hedge, dead wood	No immediate action required	Good Fair	40+	**B2**
T118	EM **Oak** *Quercus robur*	**6**	**2**	- -	**300**	**2** / **2** / **2** / **3**	Ditch south side, in hedge, lichen, dead wood	No immediate action required	Good Fair	40+	**B2**
T119	EM **Oak** *Quercus robur*	**6**	**2**	- -	**300**	**2** / **2** / **1** / **3**	Ditch south side, in hedge, lichen, dead wood	No immediate action required	Good Fair	40+	**B2**
T120	EM **Dead** -	**10**	**-**	- -	**250**	**2** / **2** / **2** / **2**	Dead tree, possible lightning strike, lichen present	No immediate action required	Dead Dead	0	**U**
T121	SM **Norway maple** *Acer platanoides*	**8**	**1**	- -	**200**	**3** / **3** / **3** / **3**	Purple variety	No immediate action required	Fair Fair	20+	**B2**
T122	SM **Norway maple** *Acer platanoides*	**6**	**0.2**	- -	**180**	**2** / **2** / **2** / **5**	Multi-stemmed, purple variety largely reverted	No immediate action required	Fair Fair	20+	**C2**
T123	SM **Norway maple** *Acer platanoides*	**8**	**2**	- -	**200**	**4** / **5** / **5** / **5**	Purple variety	No immediate action required	Fair Fair	20+	**B2**
T124	EM **Horse Chestnut** *Aesculus hippocastanum*	**6**	**2**	- -	**300**	**2** / **3** / **2** / **3**	Early Mature Horse Chestnut, within park planting scheme.	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread W / N (m) / S / E	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T125	SM **Horse Chestnut** *Aesculus hippocastanum*	**6**	**2**	- -	**150**	**2** / **1** / **2** / **2**	Young Horse Chestnut, within park planting scheme.	No immediate action required	Fair Fair	40+	**C2**
T126	SM **Ash** *Fraxinus excelsior*	**4**	**-**	- -	**150**	**3** / **3** / **3** / **3**	Young Ash tree, within park planting scheme.	No immediate action required	Good Good	40+	**C2**
T127	EM **Corsican pine** *Pinus nigra*	**8**	**2**	- -	**300**	**1** / **5** / **1** / **4**	Dead Scots pine, over hanging path.	Remove	Dead Dead	0	**U**
T128	EM **Corsican pine** *Pinus nigra*	**9**	**3**	- -	**200**	**1** / **1** / **1** / **1**	Dead Scots pine within woodland, retain as standing dead wood	No immediate action required	Dead Dead	0	**U**
T129	EM **Corsican pine** *Pinus nigra*	**10**	**3**	- -	**410**	**3** / **3** / **3** / **3**	Scots pine, within park planting scheme.	No immediate action required	Fair Fair	20+	**B2**
T130	SM **Ash** *Fraxinus excelsior*	**5**	**2**	- -	**200**	**4** / **3** / **3** / **3**	Roadside planting scheme. Some evidence of Ash dieback	No immediate action required	Poor Fair	10+	**C2**
T131	Y **London Plane** *Platanus × hispanica*	**6**	**2**	- -	**100**	**3** / **2** / **4** / **3**	Roadside planting scheme. Dead leaves throughout canopy	No immediate action required	Poor Fair	20+	**C2**
T132	EM **Dead Sliver Birch** *Betula pendula*	**6**	**3**	- -	**320**	**1** / **1** / **2** / **2**	Dead tree within woodland area. Retain as standing dead wood	No immediate action required	Dead Dead	0	**U**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread W / N (m) / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T133	EM **Sliver Birch** *Betula pendula*	**7**	**1.5**	- -	**140**	**3** / **3** / **4** / **3**	Roadside planting scheme. Tree in good health	No immediate action required	Good Fair	40+	**B2**
T134	SM **London Plane** *Platanus × hispanica*	**7**	**2**	- -	**200**	**1** / **1** / **2** / **1**	Roadside planting scheme. Dead leaves throughout canopy	No immediate action required	Poor Fair	40+	**B2**
T135	EM **Ash** *Fraxinus excelsior*	**8**	**2**	- -	**350**	**4** / **5** / **4** / **5**	Planted in carparking scheme. Ash dieback present	No immediate action required	Poor Poor	10+	**C2**
T136	M **Crack willow** *Salix fragilis*	**17**	**1.5**	- -	**770**	**9** / **9** / **9** / **10**	Mature crack willow on river bank. One broken and split branch on western aspect.	No immediate action required	Fair Poor	40+	**B3**
T137	EM **Cherry** *Prunus avium*	**8**	**2**	- -	**400**	**3** / **2** / **3** / **3**	Dying tree in carpark planting scheme	No immediate action required	Poor Poor	<10	**U**
T138	EM **Cherry** *Prunus avium*	**8**	**2**	2 S	**250**	**5** / **6** / **6** / **6**	Occluded trunk wound, lifted	No immediate action required	Good Fair	40+	**B2**
T139	SM **Crack willow** *Salix fragilis*	**5**	**0.2**	- -	**150**	**4** / **4** / **4** / **5**	Self set willow, river on the eastern aspect.	No immediate action required	Fair Fair	40+	**B2**
T140	SM **Dead Crack Willow** *Salix fragilis*	**6**	**0.3**	- -	**200**	**5** / **3** / **4** / **4**	Dead self set willow, river on the eastern aspect.	No immediate action required	Dead Dead	0	**U**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread W / N (m) / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T141	SM **Crack willow** *Salix fragilis*	5	0.3	- -	250	3 / 2 / 3 / 3	Self set willow, river on the eastern aspect. Dead bottom limbs, northern side of crown dead.	No immediate action required	Poor Poor	20+	C2
T142	SM **Crack willow** *Salix fragilis*	8	0.2	- -	250	6 / 2 / 4 / 5	Self set willow, river on the eastern aspect.	No immediate action required	Good Fair	40+	B2
T143	SM **Crack willow** *Salix fragilis*	7	0.2	- -	230	4 / 3 / 4 / 5	Self set willow, river on the eastern aspect.	No immediate action required	Good Fair	40+	B2
T144	EM **Crack willow** *Salix fragilis*	7	2	- -	350 320	6 / 6 / 7 / 5	Double stem, spilt apparent in early growth stages. Leans into river.	No immediate action required	Fair Poor	20+	B3
T145	M **Crack willow** *Salix fragilis*	14	4	- -	up to 670	9 / 9 / 8 / 7	Multi-stemmed, leading over river on the eastern aspect.	No immediate action required	Good Fair	40+	B2
T146	M **Hybrid Black Poplar** *Populus canadensis*	15	3	- -	up to 780	8 / 9 / 10 / 9	Multi-stemmed, leading over river on the eastern aspect.	No immediate action required	Good Fair	40+	B2
T147	M **Hybrid Black Poplar** *Populus canadensis*	14	2	- -	up to 800	8 / 9 / 10 / 10	Dead branches present in south canopy	No immediate action required	Fair Fair	40+	B2
T148	EM **Crack willow** *Salix fragilis*	7	0.3	- -	up to 290	5 / 3 / 4 / 5	On southern side of the river, Multi-stemmed.	No immediate action required	Fair Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread W / N / (m) / S / E	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T149	M **Crack willow** *Salix fragilis*	**14**	**1**	- -	**up to 350**	**5** / **4** / **4** / **4**	Dead Crack Willow, on eastern side of the river.	No immediate action required	Dead Dead	0	**U**
T150	M **White Willow** *Salix alba*	**12**	**3**	- -	**up to 890**	**9** / **10** / **8** / **11**	Multi-stemmed. One trunk has split and fallen into the river, creating a large cavity on the southern aspect.	No immediate action required	Good Fair	40+	**B3**
T151	M **Hybrid Black Poplar** *Populus canadensis*	**14**	**4**	- -	**up to 870**	**9** / **9** / **10** / **10**	Multi-stemmed. River on southern side. Full canopy, occasional dead branches	No immediate action required	Good Fair	40+	**B2**
T152	EM **Crack willow** *Salix fragilis*	**5**	**0.5**	- -	**up to 200**	**2** / **2** / **3** / **3**	Multi-stemmed, on southern side of river bank	No immediate action required	Fair Fair	40+	**B2**
T153	EM **Crack willow** *Salix fragilis*	**7**	**0.2**	- -	**350**	**4** / **4** / **4** / **4**	Multi-stemmed. Within ditch	No immediate action required	Fair Fair	40+	**B2**
T154	EM **Crack willow** *Salix fragilis*	**2**	**0**	- -	**400**	**6** / **6** / **8** / **7**	Badly pollarded crack willow on north side of ditch.	No immediate action required	Fair Poor	20+	**C3**
T155	EM **Ash** *Fraxinus excelsior*	**12**	**4**	- -	**400**	**5** / **6** / **5** / **5**	Twin stemmed, east stem ivy clad. Western stem hangs over ditch	No immediate action required	Fair Fair	20+	**B2**
T156	EM **Ash** *Fraxinus excelsior*	**10**	**1.5**	- -	**300**	**3** / **3** / **3** / **2**	Some dead wood	No immediate action required	Fair Fair	20+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T157	M **Weeping Ash** *Fraxinus excelsior 'Pendula'*	8	2.5	- -	400	N 2 W 2 E 3 S 3	Canopy maintained to give 2.5m ground clearance	No immediate action required	Fair Fair	40+	B2
T158	EM **Oak** *Quercus sp*	6	1	- -	Up to 200	N 3 W 4 E 3 S 3	Ivy clad, lower canopy maintained as part of hedge	No immediate action required	Fair Fair	20+	B2
T159	M **English Oak** *Quercus robur*	15	3	- -	1180	N 5 W 4 E 4 S 9	Multiple dead & cracked branches in crown. Ditch on southside.	No immediate action required	Good Fair	40+	B3
T160	EM **English Oak** *Quercus robur*	5	1.5	- -	320	N 5 W 4 E 4 S 4	Ditch on south side.	No immediate action required	Good Fair	40+	B2
T161	M **English Oak** *Quercus robur*	16	4	- -	1000	N 6 W 7 E 8 S 8	Ditch to the south, within hedgerow, small desiccated fungal fruiting bodies on trunk, some branches on the southern aspect removed and occasional dead branch is present.	No immediate action required	Good Fair	40+	B2
T162	EM **Elder** *Sambucus nigra*	3	2	- -	Up to 100	N 1 W 0.5 E 2 S 0.5	Multi-stemmed. Fallen over on east side. Sparse growth, top heavy. Ditch on southside.	No immediate action required	Poor Poor	10+	C3
T163	EM **Hawthorn** *Crataegus monogyna*	4	2.5	- -	Up to 130	N 1 W 3 E 2 S 1	Multi-stemmed. Damaged from heavy flailing.	No immediate action required	Poor Poor	10+	C3
T164	EM **Apple** *Malus x domestica*	6	3	- -	up to 200	N 4 W 5 E 6 S 0.5	Damaged from vandalism. South side fire damage. North side of canopy remains intact. Ditch on south side.	No immediate action required	Poor Poor	20+	C3

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T165	EM **Apple** *Malus x domestica*	**8**	**4**	- -	**Up to 230**	N **3** / W **7** / E **6** / S **0**	Damaged from vandalism. South side fire damage. North side of canopy remains intact. Ditch on southside.	No immediate action required	Poor Poor	20+	**C3**
T166	EM **Field Maple** *Acer campestre*	**9**	**6**	- -	**Up to 300**	N **4** / W **2** / E **4** / S **3**	Fire damaged. Eastern aspect of canopy burnt and chard. Ditch on east side. Within hedgerow.	No immediate action required	Poor Poor	20+	**C2**
T167	EM **Field Maple** *Acer campestre*	**8**	**2**	- -	**Up to 250**	N **2** / W **4** / E **4** / S **3**	Fire damaged. Eastern aspect of canopy burnt and chard. Ditch on east side. Within hedgerow.	No immediate action required	Poor Fair	20+	**C2**
T168	EM **Ash** *Fraxinus excelsior*	**10**	**2**	- -	**400**	N **2** / W **3** / E **3** / S **4**	Within hedgerow, ditch on west side.	No immediate action required	Fair Fair	40+	**B2**
T169	EM **Ash** *Fraxinus excelsior*	**8**	**3**	- -	**350**	N **4** / W **3** / E **2** / S **3**	Significant evidence of Ash die back.	No immediate action required	Poor Poor	10+	**C2**
T170	M **Oak** *Quercus sp*	**13**	**0.5**	2 N	**710**	N **6** / W **8** / E **6** / S **8**	With hedgerow, ditch on west side, lifted, dead wood, topped in the past	No immediate action required	Good Fair	40+	**B2**
T171	EM **Ash** *Fraxinus excelsior*	**12**	**6**	- -	**450**	N **3** / W **4** / E **4** / S **5**	Multi-stemmed Ash in hedgerow. Ditch on east side.	No immediate action required	Fair Fair	20+	**B2**
T172	M **English Oak** *Quercus robur*	**16**	**6**	- -	**800**	N **9** / W **9** / E **10** / S **10**	Within hedgerow. Ivy covered good crown spread, some dead wood in northern side of crown.	No immediate action required	Good Fair	40+	**B3**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T173	EM **Ash** *Fraxinus excelsior*	14	10	- -	Up to 380	N 4 W 4 E 3 S 5	Within hedgerow, ditch on west side.	No immediate action required	Fair Fair	40+	B2
T174	EM **Ash** *Fraxinus excelsior*	14	4	- -	450	N 7 W 6 E 6 S 5	North facing limb missing, heart wood exposed. Ditch on south side.	No immediate action required	Fair Fair	20+	B3
T175	M **English Oak** *Quercus robur*	14	6	- -	860	N 8 W 4 E 5 S 7	Ditch on south side. Broken north facing limb, dead limb on eastern aspect.	No immediate action required	Fair Fair	40+	B3
T176	EM **Ash** *Fraxinus excelsior*	14	5	- -	380	N 5 W 6 E 6 S 5	Some dead wood within crown, peeling bark and sparse leaves. Ditch to the south.	No immediate action required	Poor Fair	40+	B2
T177	EM **Ash** *Fraxinus excelsior*	12	4	- -	Up to 530	N 4 W 4 E 5 S 1	Northern lower branches cut. Several snapped branches on south side.	No immediate action required	Poor Poor	20+	C2
T178	M **Oak** *Quercus sp*	18	5	- -	1200	N 10 W 8 E 7 S 8	Recently snapped large limb at trunk split. Multiple dead branches throughout.	No immediate action required	Fair Fair	40+	B3
T179	M **Oak** *Quercus sp*	17	5	- -	1000	N 6 W 7 E 9 S 4	Dead wood throughout tree, damage to bottom limbs, Split in lateral branch large cavity has formed	No immediate action required	Fair Fair	40+	B3
T180	M **Ash** *Fraxinus excelsior*	16	4	- -	400	N 8 W 8 E 8 S 8	Ivy clad, dead branches in northern canopy.	No immediate action required	Fair Fair	20+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) W / N / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T181	EM **Ash** *Fraxinus excelsior*	**8**	**3**	- -	**350**	W **2** N **5** E **3** S **4**	Manually plotted. Ash die back present. Slight northern lean. Ditch on south side.	No immediate action required	Poor Poor	10+	**C2**
T182	M **Ash** *Fraxinus excelsior*	**8**	**4**	- -	**550**	W **4** N **4** E **4** S **4**	Lead branch missing, large cavity in northside. Ditch on south side	No immediate action required	Fair Fair	20+	**B3**
T183	M **Ash** *Fraxinus excelsior*	**14**	**4**	- -	**670**	W **4** N **4** E **5** S **5**	Large cavity in split branch. South leaning Ditch on south side.	No immediate action required	Fair Fair	20+	**B3**
T184	M **Ash** *Fraxinus excelsior*	**14**	**6**	- -	**790**	W **1** N **6** E **7** S **7**	Lead branch missing large cavity to the northwest. Lower branch missing on east side	No immediate action required	Fair Fair	20+	**B3**
T185	M **Ash** *Fraxinus excelsior*	**8**	**6**	- -	**450**	W **5** N **0** E **5** S **5**	Lead branch missing, large cavity on north side. Ditch on south side.	No immediate action required	Fair Fair	20+	**B3**
T186	M **Ash** *Fraxinus excelsior*	**10**	**4**	- -	**500**	W **6** N **2** E **4** S **5**	Large branch scar in south east of trunk. Ditch south side	No immediate action required	Fair Fair	20+	**B3**
T187	EM **Ash** *Fraxinus excelsior*	**11**	**5**	- -	**up to 300**	W **4** N **5** E **4** S **5**	Multi-stemmed Ash in hedgerow. Ditch on south side.	No immediate action required	Fair Fair	20+	**B2**
T188	EM **Ash** *Fraxinus excelsior*	**17**	**4**	- -	**up to 360**	W **3** N **3** E **4** S **4**	Ditch on east side, leaning into ditch.	No immediate action required	Fair Fair	20+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T189	M **Ash** *Fraxinus excelsior*	**14**	**4**	- -	**420**	**9** / **3** / **6** / **2**	Leaning north, some dead wood in canopy	No immediate action required	Fair Fair	20+	**B2**
T190	M **English Oak** *Quercus robur*	**13**	**5**	- -	**400**	**6** / **6** / **7** / **6**	Dead wood throughout tree, western side particularly damaged	No immediate action required	Fair Fair	20+	**B2**
T191	M **Ash** *Fraxinus excelsior*	**15**	**6**	- -	**370**	**6** / **9** / **8** / **8**	Full canopy	No immediate action required	Good Fair	40+	**B2**
T192	M **Crack willow** *Salix fragilis*	**16**	**4**	- -	**1300**	**3** / **7** / **5** / **6**	Multiple woodpecker holes, cavity in southern aspect. Multiple dead limbs.	No immediate action required	Poor Poor	40+	**B3**
T193	M **Ash** *Fraxinus excelsior*	**8**	**2**	- -	**370**	**2** / **2** / **3** / **4**	Ivy clad. Missing lead branch, large cavity in trunk. Ditch north of tree	No immediate action required	Poor Poor	10+	**C3**
T194	M **Ash** *Fraxinus excelsior*	**12**	**8**	- -	**350**	**4** / **5** / **4** / **6**	Broken and missing branches in canopy. Areas of lifted bark. Ditch north of tree	No immediate action required	Poor Poor	20+	**B3**
T195	M **Ash** *Fraxinus excelsior*	**10**	**6**	- -	**420**	**6** / **7** / **5** / **7**	Ash die back present. Ditch on south side	No immediate action required	Fair Fair	20+	**B2**
T196	M **Ash** *Fraxinus excelsior*	**6**	**4**	- -	**900**	**5** / **6** / **3** / **4**	Missing lead trunk. Large cavity at bole, rot its present	No immediate action required	Poor Poor	10+	**C3**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W N (m) S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T197	M **Ash** *Fraxinus excelsior*	**12**	**5**	- -	**1080**	**6** **8** **7** **8**	Enlarged bole, grown into fence. Northwest side of tree dead.	No immediate action required	Poor Poor	10+	**B3**
T198	M **Ash** *Fraxinus excelsior*	**12**	**4**	- -	**380**	**2** **4** **5** **5**	Rot hole in bole. Dead wood in canopy. Ash die back present.	No immediate action required	Fair Fair	20+	**B2**
T199	M **Ash** *Fraxinus excelsior*	**11**	**5**	- -	**Up to 300**	**7** **2** **5** **3**	Woodpecker holes present. Ditch on northern aspect.	No immediate action required	Good Fair	20+	**B3**
T200	EM **Ash** *Fraxinus excelsior*	**12**	**6**	- -	**320**	**3** **4** **5** **3**	Within hedgerow, ditch on northside.	No immediate action required	Good Fair	20+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) / Dir	Stem Diameter (mm)	Branch Spread (m) N / W / E / S	Observations	Preliminary management recommendations	Physio Cond / Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T201	EM **Ash** ***Fraxinus excelsior***	10	5	- -	up to 250	5 3 6 4	Ditch on west side. Tree in hedgerow.	No immediate action required	Good Fair	20+	B2
T202	EM **Ash** ***Fraxinus excelsior***	9	4	- -	up to 200	5 3 4 3	Ditch on west side. Tree in hedgerow.	No immediate action required	Good Fair	20+	B2
T203	M **Ash** ***Fraxinus excelsior***	12	5	- -	780	6 7 7 7	Within hedgerow	No immediate action required	Fair Fair	20+	B2
T204	M **English Oak** ***Quercus robur***	13	6	- -	570	9 9 6 2	Southern branches have been removed.	No immediate action required	Fair Fair	40+	B2
T205	M **English Oak** ***Quercus robur***	13	4	- -	710	8 9 8 7	Top of crown dead, peeling bark, heart wood exposed.	No immediate action required	Fair Poor	20+	B3
T206	EM **Ash** ***Fraxinus excelsior***	6	3	- -	200	2 2 2 2	Within hedgerow, much of the tree is dead.	No immediate action required	Poor Poor	10+	C3
T207	M **Poplar** ***Populus sp***	15	2	- -	0 550 5	3 9 8 9	Multi-stemmed, overhangs river, moss, lichen, fungal fruiting bodies at base	No immediate action required	Fair Fair	40+	B3
T208	M **Crack willow** ***Salix fragilis***	5	4	- -	1300	0.5 0.5 0.5 0.5	Old pollard, hollowing	No immediate action required	Fair Fair	40+	B3

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T209	M **Ash** ***Fraxinus excelsior***	3	0	- -	1200	0.5 / 0.5 / 0.5 / 0.5	Old coppice, moss, lichen, hollow	No immediate action required	Fair Fair	20+	C3
T210	M **Crack willow** ***Salix fragilis***	7	0	- -	680	3 / 6 / 2 / 1	Partially fallen, cracked branches	No immediate action required	Fair Fair	40+	B3
T211	M **Ash** ***Fraxinus excelsior***	14	2	- -	1000	3 / 6 / 4 / 5	Basal/trunk cavities, Basal/trunk decay, fungal fruiting bodies in trunk cavity, lichen, moss, water pockets, ditch west side, insect bore holes, evidence of nesting birds and feeding remains of predatory bird, potential veteran tree	No immediate action required	Fair Fair	20+	B3
T212	M **Crack willow** ***Salix fragilis***	14	1	- -	900	4 / 8 / 5 / 8	Originally twin stemmed (one snapped and decaying), moss, lichen, significant dead wood	No immediate action required	Fair Fair	40+	B3
T213	M **Ash** ***Fraxinus excelsior***	8	0.5	- -	500	4 / 6 / 5 / 6	Old coppice, multi-stemmed, lichen, moss, dead wood	No immediate action required	Fair Fair	20+	B3
T214	M **Field maple** ***Acer campestre***	5	3	- -	450 370	5 / 3 / 5 / 3	Twin stemmed, moss, lichen, dead wood	No immediate action required	Fair Fair	40+	B2
T215	M **Field maple** ***Acer campestre***	6	4	- -	370 350	4 / 3 / 4 / 2	Multi-stemmed, moss, lichen, insect bore holes, water pockets, ditch east side, dead wood	No immediate action required	Fair Fair	40+	B3
T216	M **Crack willow** ***Salix fragilis***	14	3	- -	680	4 / 3 / 3 / 5	Moss, lichen, peeling bark, water pockets, dead wood	No immediate action required	Fair Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T217	M **Crack willow** ***Salix fragilis***	8	3	- -	530	5 5 5	Lichen, dead wood	No immediate action required	Fair Fair	40+	B2
T218	M **Oak** ***Quercus robur***	15	4	- -	910	3 3 4	Moss, lichen, water pockets, basal cavities, dead wood, woodpecker hole	No immediate action required	Good Fair	40+	B3
T219	M **Ash** ***Fraxinus excelsior***	9	0.5	3 SE	330	5 4 5 6	West side of ditch, lichen, ivy, stem leans slightly to the east, ash die-back present, small branch cavity	No immediate action required	Fair Fair	20+	B2
T220	EM **Ash** ***Fraxinus excelsior***	7	0.5	1 E	200	3 2 2.5 2	Ditch on west side, established basal suckers, lichen, ivy clad, twin leader, ash die-back present	No immediate action required	Fair Fair	20+	B2
T221	SM **Scots pine** ***Pinus sylvestris***	5	2	2 N	170	3 2 2 2	Lost original leader, dead wood, canopy slightly sparse	No immediate action required	Fair Fair	10+	C2
T222	SM **Scots pine** ***Pinus sylvestris***	-	-	- -	-	- - - -	Struck by vehicle, uprooted and broken	Remove	- -	-	U
T223	EM **Fastigiate hornbeam** ***Carpinus betulus 'Fastigiata'***	7	1	1 E	180	1.5 1 2.5 2	In grass area of car showroom forecourt, lifted	No immediate action required	Good Fair	20+	B2
T224	EM **Cherry** ***Prunus avium***	10	1	2 NW	370	5 5 6 6	Lifted, moss on branches, partially suppressed	No immediate action required	Good Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
T225	M **Cherry** ***Prunus avium***	**12**	**1**	2 W	**410**	N **6** W **5** E **7** S **7**	Lifted, moss on branches, street light within canopy	No immediate action required	Good Fair	40+	**B2**
T226	M **Cherry** ***Prunus avium***	**13**	**0.5**	2.5 SW	**310**	N **6** W **6** E **6** S **6**	On bank, lifted, slight lean east	No immediate action required	Good Fair	40+	**B2**
T227	M **Crack willow** ***Salix fragilis***	**13**	**0**	- -	**900**	N **9** W **9** E **9** S **9**	Moss, basal cavity, trunk cavities, split branches, dead wood	No immediate action required	Good Fair	40+	**B3**
T228	M **Crack willow** ***Salix fragilis***	**10**	**0.5**	0.5 W	**370**	N **3** W **8** E **8** S **10**	On river bank, leans south west	No immediate action required	Good Fair	40+	**B3**
T229	EM **Fastigiate hornbeam** ***Carpinus betulus 'Fastigiata'***	**10**	**2**	2 W	**270**	N **3** W **2** E **3** S **2**	Lichen, lifted	No immediate action required	Good Fair	40+	**B2**
T230	EM **Silver birch** ***Betula pendula***	**9**	**1**	1.8 NW	**220**	N **2.5** W **2** E **2.5** S **2**	Moss, twin leader	No immediate action required	Good Fair	40+	**B2**
T231	EM **Hawthorn** ***Crataegus monogyna***	**6**	**0**	- -	**250** **190**	N **3** W **3** E **3** S **3**	In ditch, twin stem, dead wood	No immediate action required	Fair Fair	20+	**C2**
T232	EM **Cherry** ***Prunus avium***	**10**	**0.5**	- -	**220** **220** **170**	N **6** W **4** E **5** S **2**	On bank adjacent bridge, cut back from bridge, twin leader	No immediate action required	Good Fair	20+	**C2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G1	EM **Mixed species** -	up to 7	0	- -	150	- - - -	Ditch north side, significant amount dead/dying Elm (Dutch elm disease present), some Hawthorn, overgrown hedge	Manage as a hedge, remove dead trees	Poor Fair	10+	C2
G2	EM **Ash** *Fraxinus excelsior*	7	2	- -	200	- - - -	Ditch east side, part of hedgerow, multi-stemmed, lichen, die-back	No immediate action required	Fair Fair	20+	C2
G3	EM **Mixed species** -	up to 9	2	- -	300	- - - -	Ditch north side, filled, 3 trees in hedgerow, partially suppressed Field maple nearest T8 and two Ash, die-back	No immediate action required	Fair Fair	20+	B2
G4	SM **Mixed species** -	up to 6	0	- -	150	- - - -	Planting on roadside embankment, unmanaged, denser towards motorway, includes Laburnum, Hawthorn, Dogwood, Purple plum, Broom, Hazel, spindle, Field maple, Cherry, Silver birch, Dog rose and self set Elm, Ash, Norway maple - die-back	No immediate action required	Good Fair	20+	B2
G5	EM **Mixed species** -	up to 10	0	- -	250	- - - -	Ditch east side, overgrown hedge includes Hawthorn, Elder, Goat willow, Blackthorn, Dog rose with sporadic Ash and Elm trees, Dutch elm disease present	No immediate action required	Good Fair	20+	B2
G6	M **Mixed species** -	up to 12	0	- -	450	- - - -	Ditch west side, filled, predominantly Willow, trunk cavities, hollow, old pollards at 1.5m with some Ash	No immediate action required	Good Fair	40+	B3
G7	EM **Mixed species** -	up to 8	0	- -	200	- - - -	Elder, Ash, Hawthorn, Blackthorn, Elm - unmanaged, Dutch elm disease present	No immediate action required	Good Fair	20+	B2
G8	EM **Mixed species** -	up to 10	0	- -	200	- - - -	Hawthorn, Elder, Elm - unmanaged	No immediate action required	Good Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G9	EM **Mixed species** -	**up to 14**	**1**	- -	**300**	- **-** **-** -	Oak, Norway maple, Cherry, Beech - unmanaged	No immediate action required	Good Fair	40+	**B2**
G10	EM **Mixed species** -	**up to 9**	**1**	- -	**350**	- **-** **-** -	Oak, Norway maple, Cherry, Hawthorn - unmanaged	No immediate action required	Good Fair	40+	**B2**
G11	EM **Mixed species** -	**up to 8**	**0**	- -	**250**	- **-** **-** -	Ditch north side, overgrown hedge, Hawthorn, Elm, Blackthorn, Plum, Dog rose	No immediate action required	Good Fair	40+	**B2**
G12	M **Oak** *Quercus robur*	**up to 11**	**0**	- -	**700**	- **-** **-** -	Ditch south side, 3 trees, middle tree largest and ivy clad, dead wood	No immediate action required	Good Fair	40+	**B2**
G13	EM **Mixed species** -	**up to 5**	**0**	- -	**250**	- **-** **-** -	Hawthorn, Oak - unmanaged	No immediate action required	Good Fair	40+	**B2**
G14	EM **Mixed species** -	**up to 8**	**0**	- -	**150**	- **-** **-** -	Ditch north side, Blackthorn, Hawthorn	No immediate action required	Good Fair	40+	**B2**
G15	EM **Mixed species** -	**up to 9**	**1**	- -	**380**	- **-** **-** -	2 trees, adjacent to hedgerow, one twin stemmed Oak and one partially suppressed Norway maple	No immediate action required	Good Fair	40+	**B2**
G16	EM **Mixed species** -	**up to 5**	**0**	- -	**200**	- **-** **-** -	Ditch east side, overgrown hedge, Hawthorn, Apple, Elder, Blackthorn, Goat willow, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G17	EM **Mixed species** -	**up to 9**	**0**	- -	**250**	- - W - - E S	Off site, predominantly Ash with Alder and Horse chestnut	No immediate action required	Good Fair	40+	**B2**
G18	EM **Mixed species** -	**up to 8**	**0**	- -	**150**	- - W - - E S	Ditch north side, Blackthorn, Hawthorn, Apple, Ash (die-back), Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**
G19	EM **Mixed species** -	**up to 7**	**0**	- -	**150**	- - W - - E S	Ditch north side, Blackthorn, Ash, Hawthorn, Dog rose, Elm (Dutch elm disease)	No immediate action required	Good Fair	40+	**B2**
G20	EM **Mixed species** -	**up to 7**	**0**	- -	**200**	- - W - - E S	Ditch north side, Hawthorn, Plum, Blackthorn, Dog rose	No immediate action required	Good Fair	40+	**B2**
G21	EM **Mixed species** -	**up to 7**	**0**	- -	**150**	- - W - - E S	Ditch west side, Blackthorn, Hawthorn, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**
G22	M **Horse chestnut** *Aesculus hippocastanum*	**up to 13**	**1**	- -	**900**	- - W - - E S	2 trees, off-site, basal cavity in one tree, ivy, reduced branches with cavities, dead wood, leaf miner	No immediate action required	Fair Fair	20+	**B3**
G23	Y **Hawthorn** *Craraegus monogyna*	**up to 5**	**0.5**	- -	**90**	- - W - - E S	2 trees	No immediate action required	Good Fair	20+	**B2**
G24	EM **Silver birch** *Betula pendula*	**up to 10**	**1**	- -	**200**	- - W - - E S	3 trees, off-site	No immediate action required	Good Fair	20+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G25	EM **Mixed species** -	**up to 9**	**0**	- -	**up to 300**	- - - -	No access, includes Hawthorn, Elder, Apple, Blackthorn, Horse chestnut (leaf miner), Leylandii, Dog rose - mainly scrubby but Horse chestnut larger	No immediate action required	Fair Fair	40+	**B2**
G26	EM **Mixed species** -	**4**	**0**	- -	**up to 200**	- - - -	Ditch north side, overgrown hedge, Hawthorn, Blackthorn, Dog rose	No immediate action required	Good Fair	40+	**B2**
G27	EM **Mixed species** -	**up to 8**	**0**	- -	**300**	- - - -	Ditch south side, 2 Ash, 1 Sycamore, dead wood, some cavities on Ash trunks	No immediate action required	Fair Fair	20+	**B2**
G28	EM **Ash** *Fraxinus excelsior*	**up to 12**	**2**	- -	**up to 350**	- - - -	Ditch north side, in hedgerow, 4 trees (2 multi-stemmed), peeling bark, branch cavities, dead wood, die-back	No immediate action required	Fair Fair	20+	**B2**
G29	M **Crack willow** *Salix fragilis*	**10**	**0**	- -	**400**	- - - -	2 trees, ditch south side, multi-stemmed, stem failures, severed stem, dead wood, galls	No immediate action required	Good Fair	40+	**B3**
G30	M **Ash** *Fraxinus excelsior*	**11**	**1**	- -	**350**	- - - -	6 trees, ditch south side, largest tree has branch cavity, all have dead wood and die-back	No immediate action required	Fair Fair	20+	**B2**
G31	EM **Mixed species** -	**8**	**0**	- -	**220**	- - - -	7 Oak, 1 Field maple, 1 Norway maple, lichen, snags	No immediate action required	Good Fair	40+	**B2**
G32	EM **Ash** *Fraxinus excelsior*	**7**	**0**	- -	**300**	- - - -	6 trees, multi-stemmed, dead wood and die-back	No immediate action required	Poor Fair	10+	**C2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G33	M **Mixed species** -	**12**	**0**	- -	**420**	- - - -	7 Horse chestnut (leaf miner), 3 Apple (cavities/dead branches), 1 Hazel (coppiced), 1 Currant bush	No immediate action required	Fair Fair	20+	**B2**
G34	EM **Mixed species** -	**up to 9**	**-**	- -	**up to 350**	- - - -	Field maple, Hawthorn, Elder, Blackthorn, Elm (Dutch elm disease present), unmanaged, bramble	No immediate action required	Fair Fair	40+	**B2**
G35	EM **Mixed species** -	**up to 15**	**2**	- -	**350**	- - - -	2 Ash, 1 Apple, in hedge, multi-stemmed, lichen	No immediate action required	Fair Fair	20+	**B2**
G36	EM **Ash** *Fraxinus excelsior*	**up to 9**	**2**	- -	**200**	- - - -	Ditch north side, in hedge, dead wood, die-back	No immediate action required	Fair Fair	20+	**B2**
G37	SM **Mixed species** -	**4**	**1**	- -	**160**	- - - -	Oak (w), Sycamore (e), ditch south side, in hedge, lichen	No immediate action required	Good Fair	20+	**B2**
G38	EM **Mixed species** -	**6**	**1**	- -	**240**	- - - -	Oak (e), Cherry (w), ditch south side, in hedge, lichen	No immediate action required	Good Fair	20+	**B2**
G39	M **Mixed species** -	**up to 11**	**1**	- -	**360**	- - - -	3 Oak, 3 Sycamore, 1 Cherry, 1 Elm, some branch cavities and dead wood	No immediate action required	Good Fair	20+	**B2**
G40	M **Leyland cypress** *X Cupressocyparis leylandii*	**15**	**0**	- -	**300**	- - - -	2 trees, off-site	No immediate action required	Good Fair	40+	**C2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G41	M **Sycamore** *Acer pseudoplatanus*	**10**	**1**	- -	**350**	- - -	Off-site, stubs/poorly pruned, branches resting on wall, lichen	No immediate action required	Good Fair	40+	**B2**
G42	EM **Mixed Species** *0*	**10**	**4**	- -	**up to 350**	- - -	Mixed species, Sycamore, Ash, Cherry. Managed for roadside screening purposes.	No Immediate action required	Fair Fair	40+	**B2**
G43	EM **Mixed Species** *0*	**up to 10**	**4**	- -	**up to 340**	- - -	Mixed species, Sycamore, Ash, Cherry, Horse Chestnut, Corsican pine, Dog rose, Cherry, Laurel.	No Immediate action required	Good Fair	40+	**B2**
G44	EM **Mixed Species** -	**up to 10**	**4**	- -	**up to 320**	- - -	Mixed species, Willow, Cherry, Dog rose, Sycamore, Sliver birch, Corsican pine.	No Immediate action required	Good Fair	40+	**B2**
G45	EM **Mixed Species** -	**up to 12**	**3**	- -	**up to 330**	- - -	Mixed species, Scots pine, Silver birch, Dog rose, Elder, Crack Willow, Cherry, Alder, Ash.	No Immediate action required	Good Fair	40+	**B2**
G46	SM **Horse Chestnut** *Aesculus hippocastanum*	**6**	**2**	- -	**150**	- - -	3 Young Horse Chestnut all of similar age and height.	No Immediate action required	Fair Fair	20+	**B2**
G47	SM **Silver maple** *Acer saccahrinum*	**4**	**2**	- -	**50**	- - -	5 trees, dead branches within canopy.	No Immediate action required	Poor Poor	10+	**C3**
G48	Y **Norway maple** *Acer platanoides*	**4**	**2**	- -	**up to 150**	- - -	2 trees, leaves lacking chlorophyll in leaves within crown. Dead branches within crown	No Immediate action required	Poor Poor	10+	**C3**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G49	EM **Mixed Species** -	up to 10	-	- -	up to 200	- - - -	Group of early mature mixed species, Corsican pine, Dog rose, Sliver Birch, Alder, Hazel.	No Immediate action required	Fair Fair	20+	B2
G50	EM **Mixed Species** -	up to 8	-	- -	up to 200	- - - -	Group of early mature mixed species, Corsican pine, Dog rose, Sliver Birch, Alder, Hazel.	No Immediate action required	Fair Fair	20+	B2
G51	SM **Ash** *Fraxinus excelsior*	5	2	- -	up to 140	- - - -	4 young Ash trees with some evidence of Ash dieback.	No Immediate action required	Poor Fair	10+	C2
G52	SM **Sliver birch** *Betula pendula*	10	3	- -	up to 190	- - - -	3 Young sliver birch, peeling bark on trunk, small patches of exposed heart wood.	No Immediate action required	Fair Poor	10+	C3
G53	EM **Crack Willow** *Salix fragilis*	16	4	- -	up to 450	- - - -	7 Early mature Crack Willows along river bank	No Immediate action required	Good Fair	40+	B3
G54	EM **Corsican Pine** *Pinus nigra*	8	3	- -	up to 400	- - - -	2 park planted Scots pine.	No Immediate action required	Fair Fair	40+	B2
G55	M **Crack Willow** *Salix fragilis*	16	3	- -	up to 680	- - - -	5 planted crack willows, dead branches throughout canopy.	No Immediate action required	Fair Poor	40+	B2
G56	EM **Corsican Pine** *Pinus nigra*	9	3	- -	up to 400	- - - -	2 Early mature planted Scots pine.	No Immediate action required	Fair Fair	20+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W N (m) S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G57	SM **Ash** *Fraxinus excelsior*	**7**	**2**	- -	**up to 130**	- - - -	2 Young planted Ash trees, some blackening of seed pods and new leaves. Evidence of ash dieback	No Immediate action required	Poor Fair	10+	**C2**
G58	Y **Ash** *Fraxinus excelsior*	**4**	**3**	- -	**up to 90**	- - - -	3 Young planted Ash trees. Heavily managed	No Immediate action required	Fair Fair	10+	**C2**
G59	EM **Mixed Species** -	**up to 8**	**4**	- -	**up to 370**	- - - -	Early Mature Field maple with Silver birch and standing dead wood. Managed understory of Laurel. High levels of litter within group.	No Immediate action required	Fair Fair	40+	**B2**
G60	Y **Ash** *Fraxinus excelsior*	**5**	**-**	- -	**up to 90**	- - - -	4 young planted Ash, heavily managed	No Immediate action required	Fair Fair	20+	**C2**
G61	Y **Ash** *Fraxinus excelsior*	**5**	**1.5**	- -	**up to 60**	- - - -	2 young planted Ash, heavily managed.	No Immediate action required	Fair Fair	20+	**C2**
G62	Y **Ash** *Fraxinus excelsior*	**5**	**1.5**	- -	**up to 100**	- - - -	4 young planted Ash, some evidence of Ash dieback	No Immediate action required	Poor Poor	10+	**C2**
G63	EM **Mixed Species** -	**9**	**-**	- -	**up to 250**	- - - -	Early Mature Field maple and Silver birch, with the occasional hazel. Some dead wood throughout	No Immediate action required	Fair Fair	20+	**B2**
G64	EM **Mixed species** -	**up to 14**	**0**	- -	**up to 400**	- - - -	Unmanaged, Norway maple, Sycamore, Hawthorn	No Immediate action required	Fair Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G65	M **Common Lime** *Tilia × europea*	**20**	**5**	- -	**up to 670**	- - - -	3 mature lime trees.	No Immediate action required	Good Fair	40+	**B2**
G66	M **Poplar species** *Populus sp*	**20**	**6**	- -	**up to 550**	- - - -	Mature poplar trees within woodland.	No Immediate action required	Good Fair	40+	**B2**
G67	EM **Goat Willow** *Salix caprea*	**7**	**2**	- -	**up to 200**	- - - -	Group of young Goat willow over ditch line.	No Immediate action required	Good Fair	40+	**B2**
G68	EM **Cherry** *Prunus avium*	**8**	**3**	- -	**up to 350**	- - - -	5 planted Cherry trees within carpark landscaping	No Immediate action required	Fair Fair	40+	**B2**
G69	M **Crack Willow** *Salix fragilis*	**16**	**2**	- -	**up to 2500**	- - - -	3 Mature Crack willow trees, occasional dead branch with in canopy. Ditch on northern aspect.	No Immediate action required	Fair Fair	40+	**B2**
G70	M **Mixed Species** *0*	**16**	**3**	- -	**up to 1000**	- - - -	Mature Crack willow and poplar sp river on southern aspect, trees leaning over rivers edge.	No Immediate action required	Good Fair	40+	**B2**
G71	M **Crack Willow** *Salix fragilis*	**10**	**1**	- -	**up to 2000**	- - - -	Group of 2 Crack willow on east side of the river, partial lean into river.	No Immediate action required	Fair Fair	40+	**B2**
G72	M **Mixed Species** -	**14**	**1**	- -	**up to 680**	- - - -	Group of Early mature Crack willow and Poplar species on east side of the river bank, with a partial lean in to river.	No Immediate action required	Fair Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G73	M **Crack Willow** *Salix fragilis*	**12**	**5**	- -	**up to 750**	- - - -	Group of Crack willow, splits in several branches in group	No Immediate action required	Fair Poor	40+	**B3**
G74	EM **Hawthorn** *Crataegus monogyna*	**4**	**2**	- -	**up to 200**	- - - -	Basal suckers. Ditch to the south of trees. Branches to the southern aspect have been removed	No Immediate action required	Poor Poor	10+	**B2**
G75	M **Pedunculate Oak** *Quercus robur*	**14**	**-**	- -	**up to 870**	- - - -	3 pedunculate oak trees dead branches throughout crowns on the southern aspect. Ditch to the south of trees.	No Immediate action required	Good Fair	40+	**B3**
G76	EM **Hawthorn** *Crataegus monogyna*	**6**	**1.5**	- -	**up to 100**	- - - -	Group of Early mature hawthorn on north side of ditch, basal suckers present. Southern branches removed	No Immediate action required	Fair Fair	20+	**B2**
G77	EM **Mixed Species** -	**8**	**4**	- -	**up to 360**	- - - -	Row of 7 early mature trees lining track. Species include Pedunculate oak, Elm, Sycamore, Cherry.	No Immediate action required	Good Fair	40+	**B2**
G78	M **Mixed Species** -	**14**	**-**	- -	**up to 340**	- - - -	Screen planting of leylandii trees with the occasional oak scattered throughout.	No Immediate action required	Fair Fair	40+	**C2**
G79	M **Leyland cypress** *Cupressus × leylandii*	**14**	**-**	- -	**up to 200**	- - - -	Screen planting of leylandii trees for hotel	No Immediate action required	Fair Fair	40+	**C2**
G80	EM **Ash** *Fraxinus excelsior*	**10**	**3**	- -	**up to 300**	- - - -	2 early mature ash trees within hedgerow.	No Immediate action required	Fair Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G81	EM **Mixed Species** -	**10**	**-**	- -	**up to 350**	- - - -	Mixed species early mature conifers and Horse Chestnut.	No Immediate action required	Fair Fair	20+	**C2**
G82	EM **Mixed Species** -	**13**	**-**	- -	**up to 350**	- - - -	Screen planting of mixed conifer species and one Ash tree.	No Immediate action required	Fair Fair	20+	**C2**
G83	EM **Mixed Species** -	**12**	**3**	- -	**up to 380**	- - - -	Screen planting of Cherry, Sliver Birch, Crack Willow and Conifer species.	No Immediate action required	Fair Fair	20+	**B2**
G84	EM **Ash** *Fraxinus excelsior*	**14**	**-**	- -	**up to 380**	- - - -	3 Ash trees within outgrown hedgerow. Some evidence of Ash dieback.	No Immediate action required	Poor Fair	20+	**C2**
G85	EM **Mixed Species** -	**6**	**-**	- -	**up to 200**	- - - -	Road screen planting, mixed species. Hawthorn, Ash, Beech, Elm occasional bramble throughout.	No Immediate action required	Good Fair	40+	**B2**
G86	EM **Mixed Species** -	**10**	**-**	- -	**up to 400**	- - - -	Road screen planting, mixed species. Beech, Ash, Elm, Hazel. Some deadwood throughout canopy of group.	No Immediate action required	Good Fair	40+	**B2**
G87	EM **Mixed Species** -	**14**	**-**	- -	**up to 420**	- - - -	Road screen planting, mixed species. 4 Elm trees, growth impaired due to proximity to other trees	No Immediate action required	Good Fair	40+	**B2**
G88	EM **Crack Willow** *Salix fragilis*	**8**	**-**	- -	**up to 200**	- - - -	Group of early mature crack willow, dead branches throughout canopy.	No Immediate action required	Fair Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G89	M **Crack Willow** *Salix fragilis*	**11**	**-**	- -	**up to 500**	- - - -	Group 2 crack willow on eastern side of river. Occasional dead branch in canopy. Good branch spread and growth.	No Immediate action required	Good Fair	40+	**B2**
G90	M **Mixed Species** -	**18**	**-**	- -	**up to 850**	- - - -	2 Ash and 2 Scots pine trees within hedgerow, ivy clad. Ditch to the west.	No Immediate action required	Fair Fair	40+	**B2**
G91	EM **Mixed Species** -	**12**	**-**	- -	**up to 550**	- - - -	Poplar, Ash, Oak, Elm ivy clad.	No Immediate action required	Fair Fair	40+	**B2**
G92	M **Poplar species** *Populus sp*	**18**	**-**	- -	**up to 600**	- - - -	Linear group of 11 Poplars	No immediate action required	Fair Fair	40+	**B2**
G93	M **Crack Willow** *Salix fragilis*	**16**	**-**	- -	**up to 680**	- - - -	3 trees	No immediate action required	Fair Fair	40+	**B2**
G94	M **Crack Willow** *Salix fragilis*	**16**	**-**	- -	**up to 700**	- - - -	4 trees	No immediate action required	Fair Fair	40+	**B2**
G95	M **Crack Willow** *Salix fragilis*	**16**	**-**	- -	**up to 800**	- - - -	4 trees, ditch to the east	No immediate action required	Fair Fair	40+	**B2**
G96	EM **Mixed species** -	**up to 5**	**0**	- -	**up to 200**	- - - -	Predominantly Hawthorn with Oak, Ash, Blackthorn, unmanaged but cut back field side	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G97	EM Mixed species -	up to 12	0	- -	up to 300	- - - -	Unmanaged Hazel, Willow, Blackthorn, Plum, Ash, Silver birch, Field maple, Dogwood, White poplar, Downy birch, Cherry, Norway maple, one standing dead Silver birch	No immediate action required	Good Fair	40+	B2
G98	EM Mixed species -	up to 5	0	- -	up to 250	- - - -	Unmanaged, sporadic shrubs including Hawthorn, Plum, Elder	No immediate action required	Fair Fair	20+	C2
G99	M Mixed species -	up to 11	2	- -	up to 550	- - - -	2 trees, Corsican pine (larger tree), Scots pine	No immediate action required	Good Fair	40+	B2
G100	EM Mixed species -	up to 7	0	- -	up to 250	- - - -	Unmanaged Field maple, Hawthorn, Blackthorn, Elder	No immediate action required	Fair Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G101	EM **Mixed species** -	**up to 14**	**0**	- -	**up to 300**	- - - -	Unmanaged includes Field maple, Ash, Elder, Blackthorn, Corsican pine, Norway maple, Cherry, Oak, Privet, Lime, Willow	No immediate action required	Good Fair	40+	**B2**
G102	EM **Fastigiate hornbeam** ***Carpinus betulus 'Fastigiata'***	**up to 8**	**-**	- -	**up to 200**	- - - -	Within car park and grassed area of car showroom, lifted	No immediate action required	Good Fair	20+	**B2**
G103	EM **Mixed species** -	**up to 10**	**0**	- -	**up to 250**	- - - -	Unmanaged Hazel, Field maple, Privet, Ash	No immediate action required	Good Fair	40+	**B2**
G104	M **Mixed species** -	**up to 13**	**-**	- -	**up to 500**	- - - -	Unmanaged apart from being cut back from footpath, southern most tree multi-stemmed mature Willow, other trees smaller early mature predominantly Ash with Apple	No immediate action required	Fair Fair	20+	**C2**
G105	EM **Mixed species** -	**up to 8**	**-**	- -	**up to 250**	- - - -	Unmanaged hedgerow, predominantly Hawthorn with Blackthorn, willow	No immediate action required	Fair Fair	40+	**B2**
G106	M **Mixed species** -	**up to 14**	**-**	- -	**up to 600**	- - - -	No access due to high river levels, predominantly Crack willow with Poplar, Ash	No immediate action required	Good Fair	40+	**B2**
G107	EM **Mixed species** -	**up to 9**	**0**	- -	**up to 200**	- - - -	Unmanaged, Hawthorn, Elder, Blackthorn, Ash, Elm	No immediate action required	Good Fair	40+	**B2**
G108	EM **Mixed species** -	**up to 11**	**-**	- -	**up to 250**	- - - -	Unmanaged, Silver birch, Hawthorn, Cherry, Dogwood, Viburnum	No immediate action required	Good Fair	20+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G109	EM Leyland cypress *X Cupressocyparis leylandii*	12	2	- -	up to 400	- - - -	Lifted, dead wood	No immediate action required	Fair Fair	40+	C2
G110	EM Mixed species -	up to 6	0	- -	up to 250	- - - -	Originally maintained as a 2m high hedge, predominantly Hawthorn with Laurel	No immediate action required	Good Fair	40+	B2
G111	EM Ash *Fraxinus excelsior*	9	-	- -	up to 180	- - - -	Lifted, ash die-back present	No immediate action required	Fair Fair	10+	C2
G112	EM Field maple *Acer campestre*	up to 6	0	- -	up to 180	- - - -	4 trees, redundant stakes	Remove stakes	Good Fair	40+	B2
G113	EM Mixed species -	up to 12	0	- -	up to 370	- - - -	Mixed planting with a dense understory. Species include, Horse chestnut, Corsican Pine, Silver birch, Dog Rose, Cherry, Elder and Dogwood.	No Immediate action required	Good Good	40+	B2
G114	EM Mixed species -	up to 16	0	- -	up to 400	- - - -	Mixed planting with little understory. Species include Wild Cherry, Dog Rose, Alder, Laurel, Silver Birch and Scots Pine.	No Immediate action required	Fair Fair	40+	B2
G115	M Mixed species -	up to 17	0	- -	up to 780	- - - -	Mixed planting species include Hazel, Alder, Field Maple, Elder, Dog Rose, Scots Pine.	No Immediate action required	Fair Fair	40+	B2
G116	EM Mixed species -	up to 12	0	- -	up to 450	- - - -	Mixed planting for screening, species include Sycamore, Field Maple, Scots Pine, Silver Birch. Lacks any understory.	No Immediate action required	Fair Poor	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W N (m) E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G117	EM **Mixed species** -	up to 12	0	- -	up to 380	- - - -	Ornamental roadside screening, species include Scots Pine, Cherry Laurel, Sycamore, Small Leaved Lime, Dog Rose, Wild Cherry with occasional bramble understory.	No Immediate action required	Fair Fair	40+	B2
G118	M **Mixed species** -	up to 18	0	- -	up to 700	- - - -	Predominantly Oak with some Corsican pine and sporadic Hawthorn and bramble understory, ivy, unmanaged.	No Immediate action required	Fair Fair	40+	B2
G119	EM **Mixed species** -	up to 12	-	- -	up to 350	- - - -	On bank, managed Norway maple, Cherry, Plum, Hornbeam	No immediate action required	Good Fair	20+	B2
G120	EM **Mixed species** -	up to 13	-	- -	up to 450	- - - -	Majority on a bank, unmanaged, includes Plum, Norway maple, Hornbeam, Oak, Field maple, Hazel, Cherry, Holly, Pyracantha	No immediate action required	Good Fair	40+	B2
G121	M **Mixed species** -	up to 16	-	- -	up to 600	- - - -	Unmanaged, predominantly multi-stemmed Crack willow with Plum and Field maple	No immediate action required	Good Fair	40+	B2
G122	EM **Mixed species** -	up to 18	-	- -	up to 340	- - - -	Unmanaged some on bank, includes Field maple, Alder, Ash, Hornbeam, Corsican pine, Dogwood, Elder, Pyracantha	No immediate action required	Fair Fair	40+	B2
G123	EM **Mixed species** -	up to 12	-	- -	up to 300	- - - -	Unmanaged, Field maple, Alder, Hornbeam, Hazel, Oak, Silver birch, Pyracantha	No immediate action required	Fair Fair	40+	B2
G124	EM **Mixed species** -	up to 12	-	- -	up to 300	- - - -	Unmanaged Alder, Field maple, Oak, Cherry, Horse chestnut, Dogwood	No immediate action required	Fair Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G125	EM **Mixed species** -	up to 14	-	- -	up to 420	- - - -	Partially managed Alder, Corsican pine, Elder, Cherry, Privet, Field maple, Dogwood, Hazel	No immediate action required	Good Fair	40+	B2
G126	EM **Mixed species** -	up to 9	-	- -	up to 350	- - - -	Oak, Silver birch and Pine, several of the Pine are dead/dying	No immediate action required	Fair Fair	20+	B2
G127	SM **Laurel** ***Prunus laurocerasous***	1	0	- -	<75	- - - -	Maintained	No immediate action required	Good Fair	40+	C2
G128	EM **Mixed species** -	up to 9	-	- -	up to 300	- - - -	Unmanaged, Silver birch, Scots pine, Cherry, Dogwood, Elder, Laurel	No immediate action required	Good Fair	20+	B2
G129	M **Mixed species** -	up to 13	0	- -	up to 700	- - - -	Predominantly multi-stemmed Crack willow but including some mature pollard specimens and occasional Elder, Ash	No immediate action required	Good Fair	40+	B2
G130	M **Willow** ***Salix sp***	up to 20	3	- -	up to 470	- - - -	Planted trees, ranging from young to mature, mainly in rows but large spacing/gaps between trees, high canopies but do not appear to have been lifted, category grading of individual trees would be C2 for most of the trees	No immediate action required	Fair Fair	40+	B2
G131	EM **Mixed species** -	up to 10	0	- -	up to 250	- - - -	Unmanaged, dense area includes Hawthorn and Willow	No immediate action required	Fair Fair	40+	B2
G132	EM **Willow** ***Salix sp***	up to 20	-	- -	up to 510	- - - -	Planted trees, some areas of bramble	No immediate action required	Fair Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G133	EM **Willow** ***Salix sp***	up to 18	-	- -	500	- - - -	Planted trees	No immediate action required	Fair Fair	40+	B2
G134	EM **Mixed** **-**	up to 8	-	- -	up to 250	- - - -	Unmanaged, predominantly Hawthorn with some Willow	No immediate action required	Fair Fair	40+	B2
G135	EM **Willow** ***Salix sp***	up to 14	2	- -	up to 360	- - - -	Planted, sporadic trees	No immediate action required	Fair Fair	40+	B2
G136	M **Mixed species** **-**	up to 20	-	- -	up to 900	- - - -	Unmanaged wetland area, Crack Willow, Poplar, Willow sp, Elder	No immediate action required	Fair Fair	40+	B3
G137	SM **Mixed species** **-**	6	-	- -	up to 180	- - - -	Predominantly Cherry includes one Silver birch and shrubs, lifted	No immediate action required	Fair Fair	20+	C2
G138	SM **Mixed species** **-**	8	-	- -	up to 150	- - - -	1 London plane, 2 Ash, partially suppressed	No immediate action required	Fair Fair	20+	C2
G139	EM **Ash** ***Fraxinus excelsior***	10	-	- -	up to 310	- - - -	2 early mature, 2 semi-mature, lichen, partially suppressed	No immediate action required	Fair Fair	20+	B2
G140	SM **Mixed species** **-**	9	-	- -	up to 90	- - - -	1 London plane, 2 Ash, partially suppressed	No immediate action required	Fair Fair	20+	C2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G141	SM **Mixed species** -	8	-	- -	up to 75	- - - -	1 London plane, 2 Ash, partially suppressed	No immediate action required	Fair Fair	10+	C2
G142	EM **Mixed species** -	up to 11	-	- -	up to 410	- - - -	16 Silver maples with coppiced Willow and Dogwood understorey	No immediate action required	Good Fair	20+	B2
G143	EM **Ash** ***Fraxinus excelsior***	9	-	- -	up to 280	- - - -	Linear group with Cotoneaster below	No immediate action required	Fair Fair	20+	B2
G144	EM **Mixed species** -	up to 11	-	- -	up to 300	- - - -	Unmanaged, predominantly Alder with Ash, Elder, Oak, Willow, standing dead trees	No immediate action required	Fair Fair	40+	B2
G145	EM **Mixed species** -	up to 9	0	- -	up to 280	- - - -	Unmanaged, predominantly multi-stemmed Elm with Blackthorn, Dutch elm disease present	No immediate action required	Fair Fair	10+	C2
G146	EM **Blackthorn** ***Prunus spinosa***	5	0	- -	up to 150	- - - -	Unmanaged, in ditch	No immediate action required	Good Fair	40+	B2
G147	EM **Mixed species** -	up to 12	-	- -	up to 350	- - - -	Unmanaged, Corsican pine, Cherry, Silver birch, Ash, Cotoneaster, Hawthorn, Field maple, standing dead trees	No immediate action required	Good Fair	20+	B2
G148	M **Mixed species** -	up to 16	-	- -	up to 850	- - - -	Unmanaged includes a Corsican pine and Ash	No immediate action required	Fair Fair	20+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W N (m) S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
G149	EM **Mixed species** -	up to 10	0	- -	up to 250	0 0 0 0	An out grown hedgerow, species present include Ash, Field maple and Willow.	No Immediate action required	Fair Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H1	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch west side, Blackthorn, Hawthorn, Plum, Field maple, Dogwood, Elm, Elder, Dog rose	No immediate action required	Good Fair	40+	**B2**
H2	EM **Mixed species** -	**1.5**	**0**	- -	**100**	- - - -	Ditch north side, Elm, Hawthorn, Blackthorn, Apple, Plum, Ash (die-back), Dog rose	No immediate action required	Good Fair	40+	**B2**
H3	EM **Mixed species** -	**2**	**0**	- -	**100**	- - - -	Ditch west side, Hawthorn, Plum, Elm	No immediate action required	Good Fair	40+	**B2**
H4	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch north side, Hawthorn, Blackthorn, Apple, Plum, Ash (die-back), Dog rose	No immediate action required	Good Fair	40+	**B2**
H5	EM **Mixed species** -	**1.5**	**0**	- -	**100**	- - - -	Ditch west side, Elder, Hawthorn, Elm, Blackthorn	No immediate action required	Good Fair	40+	**B2**
H6	EM **Mixed species** -	**1.5**	**0**	- -	**100**	- - - -	Ditch east side, Hawthorn, Blackthorn, Elder, Ash (die-back), Dog rose	No immediate action required	Good Fair	40+	**B2**
H7	EM **Mixed species** -	**up to 4**	**0**	- -	**150**	- - - -	Ditch north & east side, Hawthorn, Blackthorn, Plum, Elm (Dutch elm disease present)	No immediate action required	Fair Fair	20+	**B2**
H8	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch north side, Hawthorn, Blackthorn, Plum, Field maple, Elm, Apple, Dog rose, Ash (die-back)	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W N (m) E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H9	EM **Mixed species** -	**4**	**0**	- -	**150**	- - - -	Ditch north side, Elm, Hawthorn, Plum, Blackthorn, Dog rose, Ash (die-back)	No immediate action required	Good Fair	40+	**B2**
H10	EM **Mixed species** -	**4**	**0**	- -	**150**	- - - -	Ditch north side, Hawthorn, Ash, Plum, Elm, Dogwood, Dog rose	No immediate action required	Good Fair	40+	**B2**
H11	EM **Mixed species** -	**2**	**0**	- -	**100**	- - - -	Ditch north side (section filled), Hawthorn, Goat willow, Elm, Ash (die-back)	No immediate action required	Good Fair	40+	**B2**
H12	EM **Mixed species** -	**up to 3**	**0**	- -	**100**	- - - -	Ditch north side, Elm, Hawthorn, Plum, Blackthorn, Elder, Ash (die-back), one Oak sapling	No immediate action required	Good Fair	40+	**B2**
H13	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch east side, Hawthorn, Blackthorn, Elder, Ash, Elm, Dog rose, ivy	No immediate action required	Good Fair	40+	**B2**
H14	EM **Mixed species** -	**up to 2**	**0**	- -	**100**	- - - -	Ditch east side, gappy, Hawthorn, Blackthorn, Elm (some dead)	No immediate action required	Fair Fair	20+	**C2**
H15	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch east side, Hawthorn, Elm, Ash, Blackthorn, Dog rose, ivy	No immediate action required	Good Fair	40+	**B2**
H16	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch west side, Hawthorn, Blackthorn, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H17	EM **Mixed species** -	**up to 3**	**0**	- -	**150**	- - - -	Ditch west side, Hawthorn, Elm	No immediate action required	Good Fair	40+	**B2**
H18	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch west & south side, Hawthorn, Plum, Elder, Ash, Blackthorn, Dog rose, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**
H19	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch south side, Hawthorn, Blackthorn, Ash, Elder, Apple, Plum, Dog rose, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**
H20	EM **Mixed species** -	**2**	**0**	- -	**100**	- - - -	Ditch south side, Hawthorn, Blackthorn, Elm, Elder, Apple, Plum, Field maple, Goat willow, Dog rose, Ash (die-back)	No immediate action required	Good Fair	40+	**B2**
H21	EM **Mixed species** -	**up to 3**	**0**	- -	**200**	- - - -	Ditch east side, Hawthorn, Plum, Blackthorn, Field maple, Elder, Dog rose, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**
H22	EM **Mixed species** -	**up to 2**	**0**	- -	**150**	- - - -	Hawthorn, Plum, Dog rose	No immediate action required	Good Fair	40+	**B2**
H23	EM **Mixed species** -	**3**	**0**	- -	**150**	- - - -	Ditch west side, Hawthorn, Plum, Elm, Blackthorn, Goat willow, Dog rose	No immediate action required	Good Fair	40+	**B2**
H24	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Hawthorn, Cherry, Norway maple, Plum, Elder	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H25	EM **Mixed species** -	**1.5**	**0**	- -	**150**	- - - -	Ditch west side, Hawthorn, Elm, Blackthorn, Dog rose, along eastern edge sporadic Elm up to 2m in height, overall hedge up to 3m adjacent W5, Dutch elm disease present	No immediate action required	Good Fair	40+	**B2**
H26	EM **Mixed species** -	**up to 4**	**0**	- -	**150**	- - - -	Ditch east side, Hawthorn, Field maple, Blackthorn, Elder, Elm, Dog rose	No immediate action required	Good Fair	40+	**B2**
H27	EM **Mixed species** -	**up to 2.5**	**0**	- -	**150**	- - - -	Ditch north side, Hawthorn, Ash, Field maple, Elm, Apple, Elder, Dog rose, one layered Ash with fungal fruiting bodies of Inonotus hispidus	No immediate action required	Good Fair	40+	**B2**
H28	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch north side, Hawthorn, Elder, Elm, Blackthorn, Ash, Dog rose	No immediate action required	Good Fair	40+	**B2**
H29	EM **Mixed species** -	**up to 6**	**0**	- -	**200**	- - - -	Blackthorn, Hawthorn, Plum, Field maple, Wych elm, Dog rose, Oak (saplings), Ash (die-back), gaps	No immediate action required	Good Fair	40+	**B2**
H30	EM **Mixed species** -	**1.5**	**0**	- -	**150**	- - - -	Ditch south side, Blackthorn, Hawthorn, Elm, Dog rose	No immediate action required	Good Fair	40+	**B2**
H31	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch south side, Hawthorn, Ash, Grey poplar, Field maple, Blackthorn, Dog rose	No immediate action required	Good Fair	40+	**B2**
H32	EM **Hawthorn** ***Crataegus monogyna***	**1.5**	**0**	- -	**150**	- - - -	Hawthorn, maintained	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H33	EM **Mixed species** -	**up to 7**	**0**	- -	**150**	- - - -	Ditch east side, Hawthorn, Blackthorn, Plum, Dog rose, Apple (frequent), Ash (die-back)	No immediate action required	Good Fair	40+	**B2**
H34	EM **Mixed species** -	**up to 4**	**0**	- -	**200**	- - - -	Ditch to south, Hawthorn, Elm	No immediate action required	Good Fair	40+	**B2**
H35	EM **Mixed species** -	**1.5**	**0**	- -	**150**	- - - -	Ditch north side, Blackthorn, Hawthorn, Elm, Field maple, Plum, Elder, Dog rose, ivy	No immediate action required	Good Fair	40+	**B2**
H36	EM **Mixed species** -	**1.5**	**0**	- -	**150**	- - - -	Elder, Hawthorn	No immediate action required	Good Fair	40+	**B2**
H37	EM **Mixed species** -	**up to 6**	**0**	- -	**200**	- - - -	Ditch north side, Hawthorn, Elm, Blackthorn	No immediate action required	Good Fair	40+	**B2**
H38	EM **Mixed species** -	**up to 3**	**0**	- -	**150**	- - - -	Elm, Hawthorn, Ash, Blackthorn, Dog rose	No immediate action required	Good Fair	40+	**B2**
H39	EM **Mixed species** -	**up to 3**	**0**	- -	**150**	- - - -	Ditch north side, Hawthorn, Blackthorn, Elm, Privet, Ash, Dog rose	No immediate action required	Good Fair	40+	**B2**
H40	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Hawthorn, Blackthorn, Apple, Ash (die-back), Elm (Dutch elm disease present), Dogrose, gaps	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H41	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch east side, Hawthorn, Apple, Blackthorn, Ash (die-back), Elm (Dutch elm disease present), Dog rose	No immediate action required	Good Fair	40+	**B2**
H42	EM **Mixed species** -	**up to 3**	**0**	- -	**200**	- - - -	Ditch north & east side, Hawthorn, Blackthorn, Plum, Apple, Field maple, Elm (Dutch elm disease present), dead wood, side cut back very hard in places (ditch side)	No immediate action required	Fair Fair	20+	**C2**
H43	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch east side, Hawthorn, Blackthorn, Apple, Field maple, Elm, Dog rose	No immediate action required	Good Fair	40+	**B2**
H44	EM **Mixed species** -	**2**	**0**	- -	**150**	- - - -	Ditch east side, Hawthorn, Blackthorn, Apple, Elm (Dutch elm disease present), Dog rose	No immediate action required	Good Fair	40+	**B2**
H45	EM **Mixed species** -	**1.5**	**0**	- -	**150**	- - - -	Ditch north side, maintained but gaps, predominantly Hawthorn with Blackthorn, Ash (die-back)	No immediate action required	Good Fair	40+	**B2**
H46	Y **Mixed species** -	**up to 2**	**0**	- -	**<75**	- - - -	Predominantly Hawthorn with Plum, in grow tubes, gappy	No immediate action required	Good Fair	20+	**C2**
H47	EM **Mixed species** -	**2**	**0**	- -	**100**	- - - -	Ditch west side, dense/wide, Hawthorn, Blackthorn, Plum, Elder, Dog rose	No immediate action required	Good Fair	40+	**B2**
H48	EM **Mixed species** -	**up to 2**	**0**	- -	**150**	- - - -	Off-site, ditch west side, includes Hawthorn, Blackthorn	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H49	EM **Mixed species** **-**	**3**	**0**	- -	**200**	- - - -	Off-site, includes Hornbeam, Elm, Hawthorn, Field maple, Hazel, Wayfaring tree. Laurel and golden variety of Leyland cypress at southern end	No immediate action required	Good Fair	40+	**B2**
H50	EM **Hawthorn** ***Crataegus monogyna***	**2**	**0**	- -	**150**	- - - -	Overhangs footpath	Cut back from footpath	Good Fair	40+	**B2**
H51	EM **Mixed Species** ***0***	**2**	**0**	- -	**150**	- - - -	Road to the west, fence to the east. Hawthorn, Elder, Bramble, Elm, Ash, Dogwood, White Bryony. Thinning at base.	No immediate action required	Good Fair	40+	**B2**
H52	EM **Mixed Species** ***0***	**up to 7**	**0**	- -	**200**	- - - -	Outgrown hedgerow, Ash, Elm, Hawthorn, Blackthorn, Bramble, Dog rose, Cherry, Sessile Oak, dense understory. Fence to the south and road to the north.	No immediate action required	Good Fair	40+	**B2**
H53	EM **Mixed Species** ***0***	**1.5**	**0**	- -	**100**	- - - -	Managed. Dominated by Elm, occasional Elder present.	No immediate action required	Good Fair	40+	**B2**
H54	EM **Mixed Species** ***0***	**2**	**0**	- -	**30**	- - - -	Unfrequently managed, appears in good health. Elm (die back present), Dog Rose, Dogwood, Hawthorn, Blackthorn, Apple, Elder, Goat Willow and Bramble. Ditch to the north and east.	No immediate action required	Good Fair	40+	**B2**
H55	EM **Mixed Species** ***0***	**2**	**0**	- -	**30**	- - - -	Unfrequently managed, appears in good health. Elm (die back present), Dog Rose, Hawthorn, Blackthorn, Field Maple and Elder. Ditch to the north and east.	No immediate action required	Good Fair	40+	**B2**
H56	EM **Mixed Species** ***0***	**2.5**	**0**	- -	**100**	- - - -	Unfrequently managed, appears in good health. Fenced to the north and ditch to the south. Hawthorn, Elm(in poor health) Dog Rose Ash, Cherry, Apple. Mostly intact.	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H57	EM **Mixed Species** ***0***	**2**	**0**	- -	**100**	- - - -	Occasional management. Hawthorn, Blackthorn, Ash, Dog rose and Elm (in poor health) Ditch to the north.	No immediate action required	Good Fair	40+	**B2**
H58	EM **Mixed Species** ***0***	**2**	**0**	- -	**100**	- - - -	Occasional management, ditch to the east. Hawthorn, Blackthorn, Elder, Bramble, Elm (in poor health) Apple, Ash.	No immediate action required	Good Fair	40+	**B2**
H59	EM **Mixed Species** ***0***	**up to 5**	**0**	- -	**up to 150**	- - - -	Ditch to the south. Hawthorn, Apple, Elm, Blackthorn, Plum, Dog Rose and Bramble.	No immediate action required	Good Fair	40+	**B2**
H60	EM **Mixed Species** ***0***	**2**	**0**	- -	**up to 100**	- - - -	Evidence of occasional flail use. Mostly intact. Ditch to the east. Dog Rose, Elm (in poor health), Hawthorn, Ash, Blackthorn, Apple, Ivy, Elder and Cherry	No immediate action required	Good Fair	40+	**B2**
H61	EM **Mixed Species** ***0***	**3**	**0**	- -	**up to 100**	- - - -	Evidence of occasional flail use. Mostly intact. Ditch to the east. Dog Rose, Elm (in poor health), Hawthorn, Ash, Blackthorn, Apple, Ivy, Elder and Cherry	No immediate action required	Good Fair	40+	**B2**
H62	EM **Mixed Species** ***0***	**up to 3**	**0**	- -	**up to 150**	- - - -	Mostly intact. Ditch in centre of hedgerow. Hawthorn, Blackthorn, Ash, Bramble, Dog Rose, Plum.	No immediate action required	Good Fair	40+	**B2**
H63	EM **Mixed Species** ***0***	**up to 6**	**0**	- -	**up to 150**	- - - -	Mostly intact. Ditch in centre of hedgerow. Hawthorn, Blackthorn, Ash, Bramble, Dog Rose, Plum and Elm (In poor health).	No immediate action required	Good Fair	40+	**B2**
H64	EM **Mixed Species** ***0***	**2**	**0**	- -	**up to 120**	- - - -	Thick, mostly intact. Gaps to the west. Blackthorn, Hawthorn, Ash, Elder, Elm (in poor health) and Bramble.	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H65	EM **Mixed Species** ***0***	**2**	**0**	- -	**120**	- - - -	Defunct. Hawthorn, Elder. Ground flora present.	No immediate action required	Good Fair	40+	**B2**
H66	EM **Mixed Species** ***0***	**2**	**0**	- -	**120**	- - - -	Defunct. Hawthorn, Wild Privet, Dog Rose, Blackthorn, Ash, Apple and Elm (in poor health). Ditch to the east.	No immediate action required	Good Fair	40+	**B2**
H67	EM **Mixed Species** ***0***	**2**	**0**	- -	**up to 100**	- - - -	Ditch to the north. Mostly Intact. Hawthorn, Ash, Elm (in poor health), Dog Rose, Bramble, Apple and Blackthorn.	No immediate action required	Good Fair	40+	**B2**
H68	EM **Mixed Species** ***0***	**up to 3**	**0**	- -	**up to 100**	- - - -	Three metres in width, irregular management. Ditch to the west. Hawthorn, Blackthorn, Dog rose, Apple, Elm, Cherry. Mostly intact.	No immediate action required	Good Fair	40+	**B2**
H69	EM **Hawthorn** ***Crataegus monogyna***	**2**	**0**	- -	**up to100**	- - - -	Intact. Ditch to the south. Hawthorn dominant with occasional Blackthorn, Elder and Bramble.	No immediate action required	Good Fair	40+	**B2**
H70	EM **Mixed Species** **-**	**up to 3**	**0**	- -	**up to 100**	- - - -	Largely intact few gaps. Thin in places. Ditch to the east and south. Hawthorn, Dog Rose, Apple, Ash, Blackthorn and Elm (in poor health)	No immediate action required	Good Fair	40+	**B2**
H71	EM **Mixed Species** **-**	**2**	**0**	- -	**up to 100**	- - - -	Hawthorn, Blackthorn, Apple, Dog Rose, Ash, Sycamore and Elm (in poor health)	No immediate action required	Good Fair	40+	**B2**
H72	EM **Mixed Species** **-**	**2**	**0**	- -	**up to 100**	- - - -	Mostly intact occasional thinning in places. Hawthorn and Elm.	No immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H73	Y **Bramble** ***Rubus fruticosus***	2	0	- -	<75	- - - -	Bramble dominated hedgerow. Ditch on southside.	No Immediate action required	Fair Fair	20+	C2
H74	M **Hawthorn** ***Crataegus monogyna***	4	0	- -	300	- - - -	Mature outgrown hedgerow	No Immediate action required	Good Fair	20+	B2
H75	SM **Box** ***Buxus sempervirens***	0.5	0	- -	<75	- - - -	Maintained in the shape of an A	No Immediate action required	Good Fair	40+	C2
H76	SM **Mixed species** **-**	1.5	0	- -	<75	- - - -	Maintained, includes Berberis, Dogwood, Privet	No Immediate action required	Good Fair	20+	C2
H77	SM **Mixed species** **-**	1	0	- -	<75	- - - -	Maintained, includes Berberis, Dogwood	No Immediate action required	Good Fair	20+	C2
H78	EM **Hawthorn** ***Crataegus monogyna***	10	0	- -	170	- - - -	Outgrown unmanaged hedgerow, occasional self seeded ash present. Ivy covered.	No Immediate action required	Good Fair	40+	B2
H79	EM **Mixed species** **-**	4	0	- -	150	- - - -	Mixed species hedgerow with Blackthorn, elder, elm and hazel.	No Immediate action required	Good Fair	40+	B2
H80	EM **Mixed species** **-**	8	0	- -	300	- - - -	Mixed species hedgerow with Blackthorn, Hawthorn and Ash. Failed on the eastern side.	No Immediate action required	Poor Poor	20+	C2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H81	SM **Hawthorn** ***Crataegus monogyna***	**4**	**0**	- -	**150**	- - - -	Hawthorn dominated hedgerow with occasional blackthorn. Large percentage of canopy gaps present. Flailed	No Immediate action required	Poor Poor	20+	**C2**
H82	EM **Mixed species** **-**	**6**	**0**	- -	**150**	- - - -	Native species hedgerow species include Hawthorn, Elder and Blackthorn. Damage from fire.	No Immediate action required	Poor Poor	20+	**C2**
H83	EM **Mixed species** **-**	**4**	**0**	- -	**200**	- - - -	Intact, Hawthorn dominated hedgerow with occasional Blackthorn and self seeded Ash.	No Immediate action required	Good Fair	40+	**B2**
H84	EM **Hawthorn** ***Crataegus monogyna***	**4**	**0**	- -	**150**	- - - -	Fully intact Hawthorn hedgerow.	No Immediate action required	Good Fair	40+	**B2**
H85	EM **Mixed species** **-**	**4**	**0**	- -	**250**	- - - -	Flailed Hawthorn dominated hedgerow, Elder, Elm and Ash present.	No Immediate action required	Fair Fair	20+	**B2**
H86	EM **Mixed species** **-**	**5**	**0**	- -	**200**	- - - -	A partially out grown hedgerow species include hawthorn and elm. Evidence of Dutch elm disease.	No Immediate action required	Poor Poor	20+	**C2**
H87	EM **Mixed species** **-**	**5**	**0**	- -	**150**	- - - -	A partially out grown hedgerow species include hawthorn and elm. Evidence of Dutch elm disease. With a ditch on the eastern side.	No Immediate action required	Poor Fair	40+	**B2**
H88	EM **Mixed species** **-**	**5**	**0**	- -	**100**	- - - -	Elm dominated hedgerow with occasional hawthorn and blackthorn throughout. Some evidence of Dutch elm disease. A ditch is present on the eastern side and the western side has been recently managed with a flail.	No Immediate action required	Poor Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H89	EM **Mixed species** -	**4**	**0**	- -	**150**	- - - -	A Blackthorn dominated hedgerow with occasional hawthorn present. Ditch located on the eastern side and subject to flail management on the west	No Immediate action required	Good Fair	40+	**B2**
H90	EM **Hawthorn** ***Crataegus monogyna***	**4**	**0**	- -	**150**	- - - -	A hawthorn hedgerow, with a ditch to the east and subject to a flail on the western side.	No Immediate action required	Good Fair	40+	**B2**
H91	M **Mixed species** -	**4**	**0**	- -	**210**	- - - -	A partially outgrown mixed species hedgerow. Elm and Hawthorn present.	No Immediate action required	Fair Fair	40+	**B2**
H92	EM **Mixed species** -	**3**	**0**	- -	**120**	- - - -	A mixed species hedgerow with Hawthorn, Blackthorn, Elm, Ash and bramble throughout.	No Immediate action required	Fair Fair	40+	**B2**
H93	M **Mixed species** -	**3**	**0**	- -	**200**	- - - -	A partially outgrown hedgerow with a ditch on the eastern side. Species include Hawthorn, Hazel, Ash, Blackthorn and Elder.	No Immediate action required	Fair Fair	40+	**B2**
H94	M **Mixed species** -	**5**	**0**	- -	**200**	- - - -	Flailed mixed species hedgerow with a ditch on the southside. Species present Elder, Hawthorn, Ivy and Bramble throughout.	No Immediate action required	Fair Fair	40+	**B2**
H95	M **Mixed species** -	**4**	**0**	- -	**220**	- - - -	A partially out grown hedgerow, species include Ash, Elder, Hawthorn and Dog Rose.	No Immediate action required	Fair Fair	40+	**B2**
H96	M **Mixed species** -	**5**	**0**	- -	**250**	- - - -	A partially out grown hedgerow dominated by Blackthorn with the occasional Hawthorn present.	No Immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H97	M **Leylandii** ***X Cupressocparis leylandii***	**14**	**0**	- -	**270**	W: - N: - S: - E: -	Unmanaged Leylandii hedgerow, planted for hotel screening.	No Immediate action required	Fair Fair	40+	**C2**
H98	EM **Hawthorn** ***Crataegus monogyna***	**5**	**0**	- -	**200**	W: - N: - S: - E: -	Partially managed hedgerow.	No Immediate action required	Good Fair	40+	**B2**
H99	EM **Mixed species** **-**	**4**	**0**	- -	**200**	W: - N: - S: - E: -	Intact native species hedgerow, species include Ash, Elder, Hawthorn, Field maple and dog rose. Well managed second years growth present.	No Immediate action required	Good Fair	40+	**B2**
H100	EM **Mixed species** **-**	**4**	**0**	- -	**150**	W: - N: - S: - E: -	Intact native species hedgerow, species include Ash, Crab Apple, Hawthorn, Blackthorn and Dog Rose. Well managed second years growth present.	No Immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H101	EM **Hawthorn** ***Crataegus monogyna***	**3**	**0**	- -	**150**	**0** **0** **0** **0**	Hawthorn dominated hedgerow with the occasional self set Field maple throughout. Occasional gaps present in hedgerow.	No Immediate action required	Fair Fair	40+	**B2**
H102	EM **Hawthorn** ***Crataegus monogyna***	**3**	**0**	- -	**100**	**0** **0** **0** **0**	A heavily flailed Hawthorn dominated hedgerow. The occasional self set Ash is present	No Immediate action required	Poor Fair	40+	**B2**
H103	EM **Mixed species** **-**	**4**	**0**	- -	**250**	**0** **0** **0** **0**	Includes Hawthorn, Ash, Field maple	No Immediate action required	Fair Fair	40+	**B2**
H104	EM **Mixed species** **-**	**3**	**0**	- -	**150**	**0** **0** **0** **0**	An heavily flailed hedgerow, with large canopy gaps. Species include Hawthorn, Elder and Elm.	No Immediate action required	Poor Poor	10+	**C2**
H105	EM **Mixed species** **-**	**5**	**0**	- -	**200**	**0** **0** **0** **0**	A heavily flailed hedgerow, species include Hawthorn and Elm. occasional gaps within canopy. Ditch is present to the north side.	No Immediate action required	Fair Fair	20+	**B2**
H106	EM **Mixed species** **-**	**3**	**0**	- -	**150**	**-** **-** **-** **-**	Ditch east side, includes Hawthorn, Crab apple, Ash, Hazel, Blackthorn, Hornbeam, Elm, bramble, flailed, dense	No Immediate action required	Good Fair	40+	**B2**
H107	EM **Mixed species** **-**	**4**	**0**	- -	**180**	**-** **-** **-** **-**	Sporadic, includes Apple, Hawthorn, Elm	No Immediate action required	Fair Fair	20+	**C2**
H108	EM **Mixed species** **-**	**3**	**0**	- -	**150**	**-** **-** **-** **-**	Ditch in centre of hedge, includes Blackthorn, Hawthorn, Field maple, Elm, bramble	No Immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread N (m) W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H109	EM **Mixed species** -	**5**	**0**	- -	**200**	- - - -	Ditch in centre of hedge, includes Hawthorn, Field maple, Elm, bramble	No Immediate action required	Good Fair	40+	**B2**
H110	EM **Mixed species** -	**3**	**0**	- -	**150**	- - - -	Maintained, includes Hawthorn, Elm, Blackthorn, bramble	No Immediate action required	Good Fair	40+	**B2**
H111	EM **Mixed species** -	**4**	**0**	- -	**250**	- - - -	Includes Ash, Hazel, Blackthorn, Hawthorn, Field maple, Elm, Willow, bramble, occasional gap	No Immediate action required	Good Fair	40+	**B2**
H112	EM **Mixed species** -	**5**	**0**	- -	**160**	- - - -	Ditch south side, includes Hawthorn, Field maple, Ash, gappy	No Immediate action required	Fair Fair	20+	**B2**
H113	EM **Mixed species** -	**5**	**0**	- -	**170**	- - - -	Ditch east side, includes Hawthorn, Field maple, Ash, Hazel, Blackthorn, Elder, bramble, gappy	No Immediate action required	Fair Fair	20+	**B2**
H114	EM **Mixed species** -	**4**	**0**	- -	**180**	- - - -	Maintained but gaps, includes Hawthorn, Ash, Willow, Elder	No Immediate action required	Fair Fair	40+	**B2**
H115	EM **Mixed species** -	**1.8**	**0**	- -	**150**	- - - -	Ditch south side, maintained, includes Hawthorn, Field maple, Elm, Blackthorn, Elder	No Immediate action required	Good Fair	40+	**B2**
H116	EM **Mixed species** -	**1.5**	**0**	- -	**200**	- - - -	Ditch south side, maintained, includes Hawthorn, Elder but only part of hedgerow surveyed as majority off site	No Immediate action required	Good Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
H117	EM **Hawthorn** ***Crataegus monogyna***	**1.5**	**0**	- -	**200**	**-** **-** **-** **-**	Ditch north side, maintained, only part of hedgerow surveyed as majority off site	No Immediate action required	Good Fair	40+	**B2**
H118	EM **Hawthorn** ***Crataegus monogyna***	**1.5**	**0**	- -	**200**	**-** **-** **-** **-**	Ditch west side, maintained, only part of hedgerow surveyed as majority off site	No Immediate action required	Good Fair	40+	**B2**
H119	SM **Mixed species** ***0***	**up to 4**	**0**	- -	**<75**	**0** **0** **0** **0**	Partially maintained, western section Privet, eastern section Laurel	No Immediate action required	Good Fair	20+	**C2**
H120	EM **Mixed species** ***0***	**3**	**0**	- -	**up to 250**	**0** **0** **0** **0**	Predominantly Hawthorn with Field maple, Ash, Elder	No Immediate action required	Good Fair	40+	**B2**
H121	EM **Mixed species** ***0***	**up to 4**	**0**	- -	**up to 200**	**0** **0** **0** **0**	Ditch west side, includes Hawthorn, Field maple, Willow, Elder, Elm	No Immediate action required	Fair Fair	40+	**B2**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
W1	EM **Mixed species** -	up to 7	1	- -	200	- - - -	Off-site, no access, unmanaged includes Oak, Ash (die-back), several standing dead trees	No immediate action required	Good Fair	40+	B2
W2	EM **Mixed species** -	up to 10	0	- -	up to 250	- - - -	Off-site, planted but unmanaged includes Oak, Goat willow, Rowan, Hawthorn, Blackthorn, Dogwood, Ash (die-back), several standing dead trees	No immediate action required	Good Fair	40+	B2
W3	M **Mixed species** -	up to 14	0	- -	up to 500	- - - -	Ditch north side, unmanaged, includes large pond, Cherry, Oak, Ash, Crack willow, Blackthorn, Hawthorn, one dead Scots pine	No immediate action required	Good Fair	40+	B2
W4	EM **Mixed species** -	up to 14	0	- -	up to 250	- - - -	Unmanaged includes Hawthorn, Elm, Elder, Cherry, Field maple, Rowan	No immediate action required	Good Fair	40+	B2
W5	EM **Mixed species** -	up to 14	0	- -	up to 300	- - - -	Off-site, unmanaged includes Scots pine, Sycamore (purple), Field maple, Cherry, Sycamore, Lime, Norway maple, Red oak, standing dead trees, Laurel	No immediate action required	Good Fair	40+	B2
W6	M **Mixed species** -	up to 16	0	- -	up to 500	- - - -	Old coppice, unmanaged includes Norway maple, Ash, Hawthorn	No immediate action required	Good Fair	40+	B2
W7	M **Mixed species** -	up to 14	0	- -	up to 600	- - - -	Unmanaged includes Hawthorn, Ash, Lime, Oak, Horse chestnut, Field maple, Dog rose, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	B2
W8	M **Mixed species** -	up to 18	0	- -	up to 700	- - - -	Unmanaged includes Hawthorn, Horse chestnut, Cherry, Willow, Field maple, Plum, Grey poplar, Ash, Elder, Crab apple, Silver birch, Oak, some areas of dumped rubbish	Remove rubbish	Good Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W N (m) E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
W9	M **Mixed species** -	**up to 16**	**0**	- -	**up to 700**	- - - -	Unmanaged includes Hawthorn, Grey poplar, Apple, Ash, Oak, Elm, Wych elm, Dog rose, ivy, Ash with woodpecker holes on eastern edge	No immediate action required	Good Fair	40+	**B2**
W10	EM **Mixed species** -	**up to 16**	**0**	- -	**up to 400**	- - - -	Ditch east and south side, unmanaged includes Oak, Elm, Apple, Norway maple, Scots pine, Bird cherry, Ash, Sycamore (Sooty bark disease present)	No immediate action required	Good Fair	40+	**B2**
W11	M **Mixed species** -	**up to 16**	**0**	- -	**up to 550**	- - - -	Ditch north and east side, unmanaged, dense in places, includes Hawthorn, Apple, Field maple, Horse chestnut, Norway maple, Scots pine, Cherry, Alder, Blackthorn, Corsican pine, Dog rose, Ash (die-back), Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**
W12	EM **Mixed species** -	**up to 7**	**0**	- -	**210**	- - - -	Unmanaged includes Hawthorn, Blackthorn, Grey poplar, Apple, Elder, Elm (Dutch elm disease present), ivy, bramble, dense	No immediate action required	Good Fair	40+	**B2**
W13	EM **Mixed species** -	**up to 13**	**0.5**	- -	**300**	- - - -	Unmanaged includes Poplar, Cherry, Elm, Hawthorn, Elder, Horse chestnut, Ash, Scots pine, Blackthorn, Bird cherry, Dogwood, Field maple, Leylandii, Dog rose, ivy, dense	No immediate action required	Good Fair	40+	**B2**
W14	EM **Mixed species** -	**up to 7**	**0.5**	- -	**200**	- - - -	Off-site, unmanaged includes Goat willow, Field maple, Ash, Oak, Elder, Hawthorn, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**
W15	EM **Mixed species** -	**up to 7**	**0.5**	- -	**300**	- - - -	Off-site, unmanaged includes Oak, Ash, Elm (Dutch elm disease present)	No immediate action required	Good Fair	40+	**B2**
W16	M **Mixed species** -	**up to 18**	**0**	- -	**390**	- - - -	Ditch north & south side, unmanaged includes Lime, Hawthorn, Elder, Bird cherry, Field maple, Blackthorn, Alder, Sycamore, Grey poplar, Silver birch, Red oak, Oak, Plum, Cherry, Ash (die-back), Elm (Dutch elm disease present), bramble, dense, several standing dead trees, trees with trunk cavities and woodpecker holes	No immediate action required	Good Fair	40+	**B3**

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread (m) N W E S	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
W17	M **Mixed species** -	**up to 13**	**-**	- -	**380**	N - W - E S -	Planted Sycamore, Scots pine, Oak, Plum, Norway maple, Field maple, Bird cherry, Lime, Beech, Elm, Hawthorn, Cherry, Ash, Red oak, Horse chestnut, standing dead trees, multiple trunk cavities	No immediate action required	Good Fair	40+	B2
W18	M **Mixed species** -	**up to 11**	**0**	- -	**430**	N - W - E S -	Unmanaged includes Scots pine, Field maple, Oak, Horse chestnut, Hawthorn, Crack willow, Elder, Cherry, lichen, ivy, dense	No immediate action required	Good Fair	40+	B2
W19	EM **Mixed species** -	**up to 12**	**0**	- -	**430**	N - W - E S -	Restricted access, unmanaged includes Field maple, Oak, Cherry, Silver birch, Hawthorn, Blackthorn, Rowan, Evergreen oak, Horse chestnut (leaf miner), Whitebeam (gall), Elm (Dutch elm disease present), several trees with small cavities, some with ivy	No immediate action required	Good Fair	40+	B2
W20	EM **Mixed Species** -	**up to 10**	**0**	- -	**up to 500**	N - W - E S -	Planted mixed woodland screening, species include Field Maple, Silver Birch, Wild Cherry, Corsican Pine, Dog Rose, Elder, Hazel and Laurel.	No Immediate action required	Good Good	40+	B2
W21	EM **Mixed Species** -	**up to 10**	**0**	- -	**up to 270**	N - W - E S -	Planted mixed woodland screening, species include Field Maple, Silver Birch, Ash, Norway maple, Dog Rose, Elder, Hazel and Laurel.	No Immediate action required	Fair Fair	40+	B2
W22	EM **Mixed Species** -	**up to 12**	**0**	- -	**up to 450**	N - W - E S -	Mixed planted woodland for screening, species include Silver Birch, Field Maple, Wild Cherry, Corsican pine, Alder, Ash. Laurel, Cotoneaster, Privet, Bramble understorey, occasional deadwood throughout.	No Immediate action required	Fair Fair	40+	B2
W23	EM **Mixed Species** *0*	**up to 12**	**0**	- -	**up to 500**	N - W - E S -	Unmanaged woodland planted for screening, dominated by Corsican Pine with occasional Hazel, Elder, Hawthorn, Sliver Birch and Bramble scrub nearer the road	No Immediate action required	Good Fair	40+	B2
W24	EM **Mixed Species** -	**up to 12**	**0**	- -	**up to 500**	N - W - E S -	Mixed unmanaged woodland includes Hazel, Small Leaved Lime, Field Maple, Corsican Pine, Norway maple, Poplar, Plum, Elder, Cherry, Silver Birch and Alder.	No Immediate action required	Good Fair	40+	B2

Reference	Life Stage & Species	Height (m)	Crown Ht (m)	FSB Ht (m) Dir	Stem Diameter (mm)	Branch Spread W (m) N S E	Observations	Preliminary management recommendations	Physio Cond Struct Cond	Life Expectancy	BS5837 Ret. Cat.
W25	EM **Mixed Species** -	**up to 10**	**0**	- -	**up to 550**	**-** **-** **-** **-**	Willow, Ash, Oak with occasional blackthorn understory.	No Immediate action required	Fair Fair	40+	**B2**
W26	EM **Mixed Species** -	**up to 16**	**0**	- -	**up to 780**	**-** **-** **-** **-**	High canopy mixed woodland, species include Oak, Ash, Goat Willow, White Willow, Alder, Hornbeam, Sycamore with a bramble and elder understory.	No Immediate action required	Fair Fair	40+	**B2**
W27	M **Mixed species** -	**up to 16**	**-**	- -	**up to 700**	**-** **-** **-** **-**	Planted woodland includes Poplar and Crack willow, little understory, some standing dead trees	No immediate action required	Fair Fair	40+	**B2**
W28	EM **Mixed species** *0*	**up to 18**	**0**	- -	**up to 450**	**0** **0** **0** **0**	Unmanaged, includes Plum, Corsican pine, Hawthorn, Willow, Lime, Elm	No immediate action required	Good Fair	40+	**B2**
W29	M **Mixed species** *0*	**up to 15**	**0**	- -	**up to 700**	**0** **0** **0** **0**	Unmanaged, includes Oak, Norway maple, Apple, Elm, Hawthorn, Field maple, fly tipping occurring	No immediate action required	Fair Fair	40+	**B2**
W30	EM **Mixed species** *0*	**up to 13**	**0**	- -	**up to 450**	**0** **0** **0** **0**	Unmanaged, predominantly Corsican pine with occasional Oak, Alder, Plum, Cherry, Silver birch, Ash, Field maple, Hawthorn, Cotoneaster, Elder	No immediate action required	Good Fair	40+	**B2**
W31	EM **Mixed species** *0*	**up to 14**	**0**	- -	**up to 350**	**0** **0** **0** **0**	Unmanaged, predominantly Corsican pine with Plum, Cherry, Silver birch, Ash, Field maple, Hawthorn, Cotoneaster, standing dead trees	No immediate action required	Good Fair	40+	**B2**

APPENDIX C

Explanation of Terms

Reference Numbering

Each tree, group of trees or hedgerow is given an individual reference, made up of sequential numbers prefixed by a letter where:

T = Individual Tree, **G** = Group, **H** = Hedge, **S** = Stump, **R** = Reference, **X** = Shrub, **JK** = Japanese Knotweed

Age and Species

Life Stage
Trees are assigned to one of five age classes as follows:

Young (Y)	Tree in establishment stage, normally up to 5-10 years old
Semi-mature (SM)	Establishing tree with potential for significant growth both in terms of tree height and crown spread. Typically, having attained at least 25% of likely mature height and crown spread
Early Mature (EM)	Establishing tree with potential for significant growth both in terms of tree height and crown spread. Typically, having attained at least 50% of likely mature height and crown spread
Mature (M)	Established tree, typically having attained at least 70% of likely mature height and crown spread
Over-mature (OM)	Extensive decline in physiological functions and/or structural integrity
Veteran (V)	A tree that 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.

Species
Tree names and other plant names follow Stace (1997) and are provided as both Common (English) species names and scientific (Latin) names.

Size and Spread

Height
Current tree height in metres.

Stem Diameter
Stem diameter, measured in millimetres, at 1.5m above ground-level. On multi-stemmed trees this measurement is taken using the guidance in Annex C of BS5837:2012.

Branch Spread
Radial crown spread measured in four compass directions (north, south east, and west) using magnetic north.

First Significant Branch (FSB)
Height of first significant branch above adjacent site ground-level in metres and direction of growth measured in one compass direction using magnetic north.

Crown Height
Height of crown clearance above adjacent site ground-level in metres. Where this varies around the canopy, the height of the lowest point is recorded.

Observations

This section provides details, where relevant, pertaining to the tree's position, form, pruning history and an account of any significant defects observed. Access restrictions and other incidental observations are also noted here.

Recommendations

These are normally based upon remedial action to address any observed significant defects. These may be recommended for tree safety reasons, or for reasons of good arboricultural practice and tree management.

Condition and Value

Physiological Condition

Good	Healthy tree with no symptoms of significant disease
Fair	Tree with early signs of disease, small defects, decreased life expectancy, or evidence of less than average vigour for the species
Poor	Significant disease present, limited life expectancy, or with very low vigour for the species and evidence of physiological stress
Dead/dying	Tree is in advanced stages of physiological failure and is dying or dead

Structural Condition

Good	No significant structural defects observed
Fair	Some structural defects observed, including the presence of deadwood in otherwise healthy trees with a good life expectancy
Poor	Significant structural defects observed resulting in a tree which is likely to require either monitoring or remedial action
Dead/dying	Major defects which compromise the safety of the tree. Remedial works or tree removal are likely to be required in many target locations

Life Expectancy or Estimated Remaining Contribution (ERC)

The estimated number of years before the tree may require removal is expressed as one of the following categories: (i) <10 years; (ii) 10+ years; (iii) 20+ years; (iv) 40+ years.

BS5837 Retention Category

Each tree, group of trees or hedge is assigned to a retention category where:

A	Trees of high quality, retention is highly desirable
B	Trees of moderate quality where retention is desirable
C	Trees of low quality, or young trees with a stem diameter <150mm. Category C trees may be retained, replaced or relocated
U	Trees unsuitable for retention or trees which should be removed

In accordance with BS5837:2012, a numerical suffix is added to the retention category of each tree, which indicates the principal reason for the value of each tree or group of trees, where:

1	Mainly arboricultural values, including fine examples of the species
2	Mainly landscape values, including trees providing screening and/or softening effects to the locality, or trees of visual prominence
3	Mainly cultural values, including conservation, historical and commemorative values

APPENDIX D

Tree Retention & Removal Plans (Highway Infrastructure)

T229
Fastigate hornbeam
B2

T133
Silver birch
B2

G61
Ash
B2

G60
Ash
C2

W23
Mixed species
B2

G59
Mixed species
B2

T132
Dead Silver birch
U

G58
Ash
C2

W20
Mixed species
B2

G57
Ash
C2

T131
London plane
C2

T130
Ash
C2

G56
Corsican pine
B2

G54
Corsican pine
B2

T129
Corsican pine
B2

G55
Crack willow
B2

G115
Mixed species
B2

T128
Corsican pine
U

T127
Corsican pine
U

G53
Crack willow
B2

G114
Mixed species
B2

G52
Silver birch
C2

G113
Mixed species
B2

G51
Ash
C2

G50
Mixed species
B2

G49
Mixed species
B2

T126
Ash
C2

G48
Norway maple
C3

G47
Silver maple
C3

G46
Horse Chestnut
B2

T125
Horse chestnut
C2

T124
Horse chestnut
B2

G45
Mixed species
B2

G44
Mixed species
B2

G43
Mixed species
B2

T123
Norway maple
B2

T122
Norway maple
C2

G121
Mixed species
B2

G120
Mixed species
B2

G119
Mixed species
B2

G122
Mixed species
B2

G123
Mixed species
B2

G124
Mixed species
B2

T225
Cherry
B2

G42
Mixed species
B2

T224
Cherry
B2

T226
Cherry
B2

G125
Mixed species
B2

G126
Mixed species
B2

G127
Laurel
C2

W24
Mixed species
B2

T121
Norway maple
B2

G66
Poplar sp.
B2

G135
Willow
B2

G134
Mixed species
B2

G130
Mixed species
B2

T227
Crack willow
B3

G131

G131
Mixed species
B2

G132
Mixed species
B2

G133
Mixed species
B2

T136
Crack willow
B2

G129
Mixed species
B2

G128
Mixed species
B2

G116
Mixed species
B2

G117
Mixed species
B2

G65
Common lime
B2

W24
Mixed species
B2

G88
Crack willow
B2

H103
Mixed Species
B2

H120
Mixed Species
B2

G87
Mixed species
B2

G86
Mixed species
B2

G84
Ash
C2

G85
Mixed species
B2

G4
Mixed Speci
B2

H14
Mixed Species
C2

H13
Mixed Species
B2

T13
Ash
B3

T15
Ash
B2

G5
Mixed Species
B2

north

Scale - metres
0 20 60 120 200

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland
- Feasibility of Moving Tree Under Investigation
- Highways Infrastructure full application boundary

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

CLIENT:
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PROJECT:
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TITLE:
Tree Retention and Removal Plan - Highway Infrastructure (Sheet 1 of 7)

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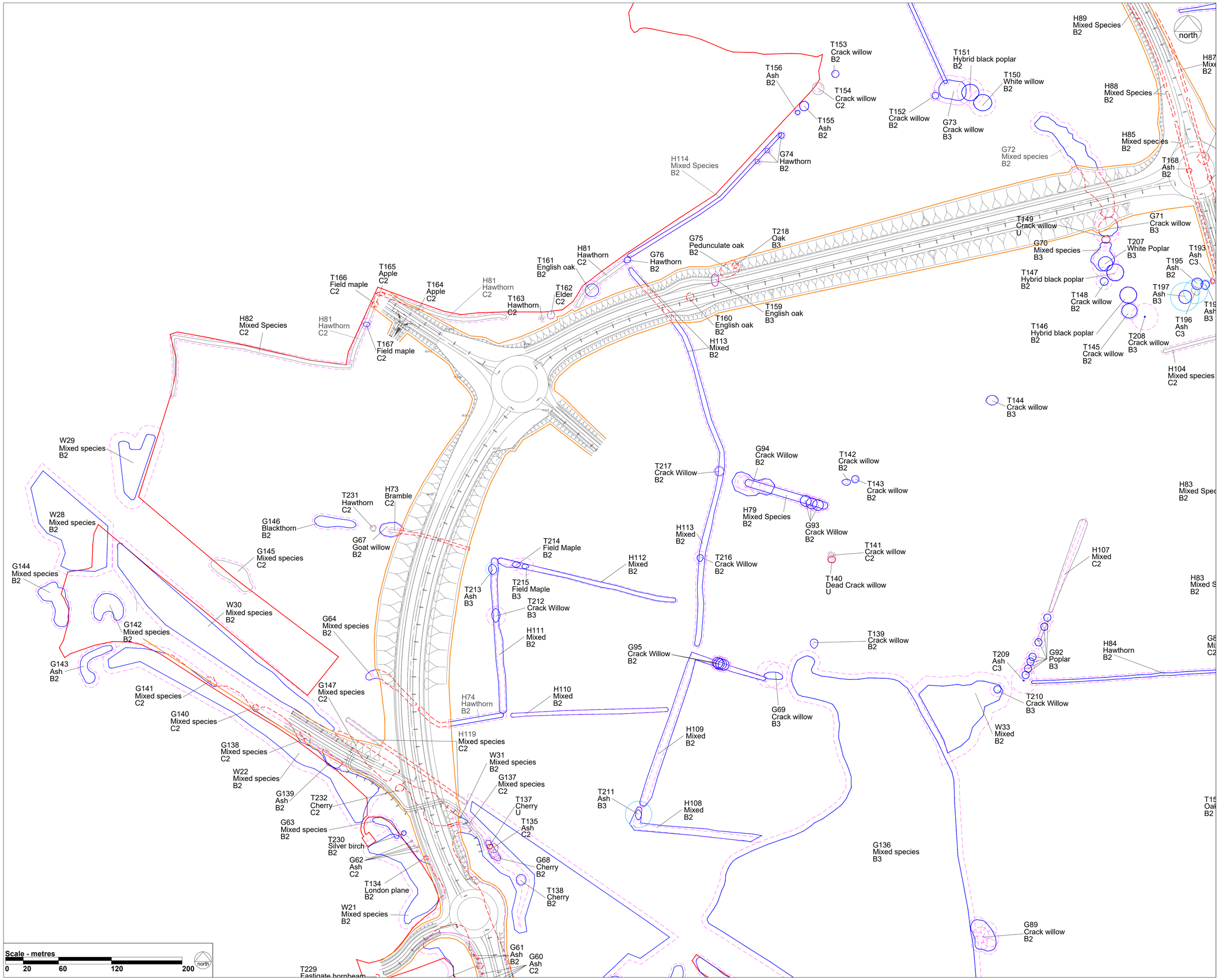

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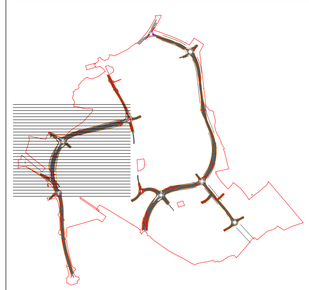

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north

W8
Mixed species
B2

T35
Ash
B2

G98
Mixed species
C2

H76
Mixed species
C2

G101
Mixed species
B2

G102
Fastigate hornbeam
B2

G103
Mixed species
B2

G104
Mixed species
C2

H75
Box
C2

G99
Mixed species
B2

G100
Mixed species
B2

H77
Mixed species
C2

T221
Scots pine
C2

G105
Mixed species
B2

T222
Scots pine
U

H98
Hawthorn
B2

T223
Fastigate hornbeam
B2

G106
Mixed species
B2

G108
Mixed species
B2

G109
Leyland cypress
C2

G110
Mixed species
B2

H97
Leylandii
C2

G111
Ash
C2

G107
Mixed species
B2

G112
Ash
C2

H80
Mixed Species
C2

T176
Ash
B2

T175
English
B3

G118
Mixed species
B2

H96
Mixed species
B2

H99
Mixed species
B2

T177
Ash
C2

T173
Ash
B2

T180
Ash
B2

T178
Oak
B3

H78
Hawthorn
B2

W25
Mixed species
B3

H93
Mixed species
B2

T179
Oak
B3

T203
Ash
B2

G148
Mixed species
B2

T172
English oak
B2

T171
Ash
B2

G91
Goat willow
B2

H95
Mixed species
B2

T204
English oak
B2

H94
Mixed species
B2

T219
Ash
B2

H92
Mixed species
B2

T205
English oak
B3

H93
Mixed species
B2

W26
Mixed species
B2

H79
Mixed Species
B2

T206
Ash
C2

H90
Hawthorn
B2

H91
Mixed species
B2

G92
Cherry
B2

H89
Mixed Species
B2

G149
Mixed species
B2

T153
Crack willow

T151

H87

Scale - metres
0 20 60 120 200

KEY

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Tree Retention and Removal Plan - Highway Infrastructure (Sheet 3 of 7)

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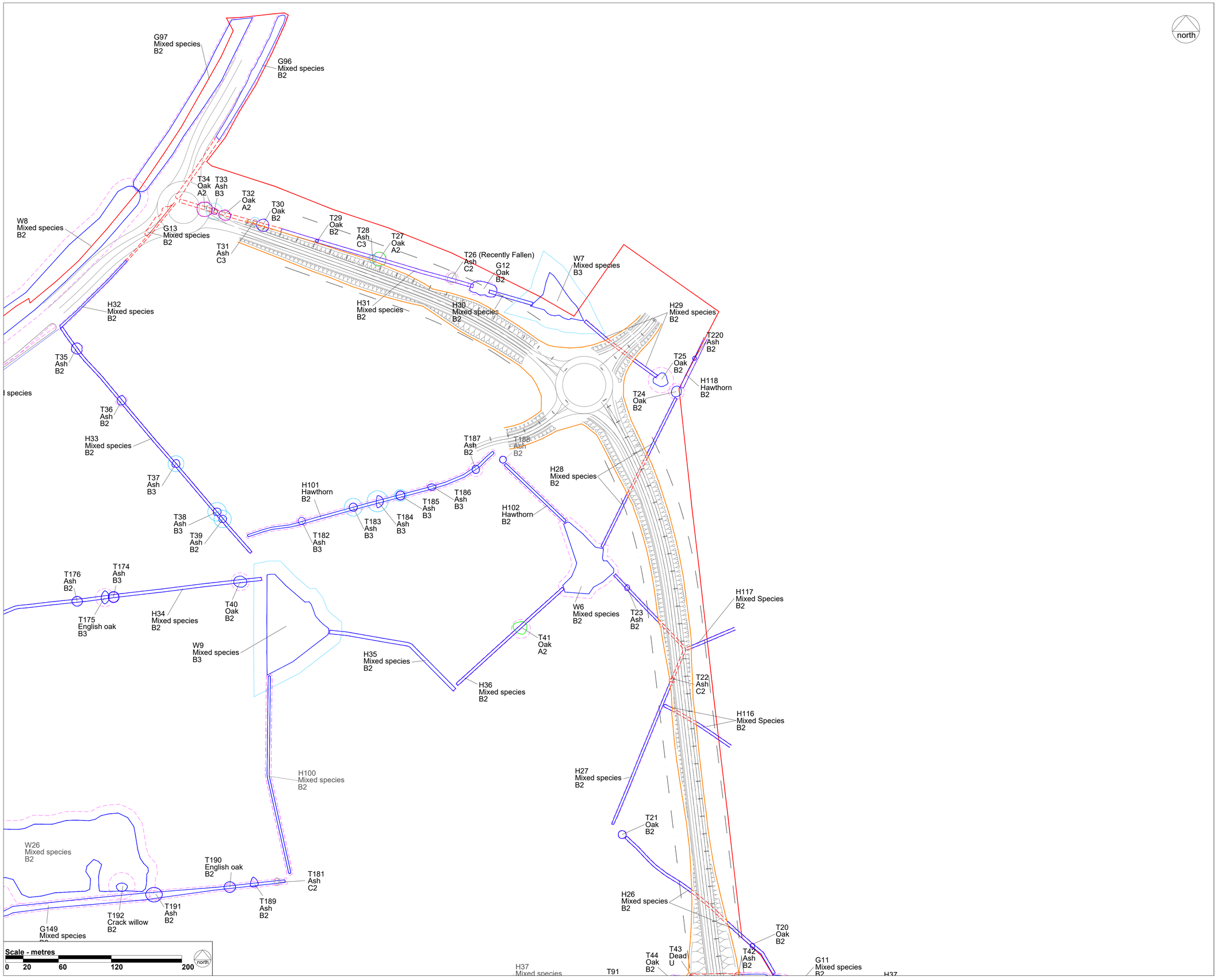

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- Canopy extent of tree: Category U

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north

W26
Mixed species
B2

H100
Mixed species
B2

H91
Mixed species
B2

T190
English oak
B2

T181
Ash
C2

T191
Ash
B2

T189
Ash
B2

T192
Crack willow
B2

G149
Mixed species
B2

H27
Mixed species
B2

T21
Oak
B2

H26
Mixed species
B2

T20
Oak
B2

T44
Oak
B2

T43
Dead
U

T42
Ash
B2

G11
Mixed species
B2

H37
Mixed species
B2

H87
Mixed Species
B2

T95
Oak
B3

H37
Mixed species
B2

T91
Ash
C2

T94
Ash
B2

T93
Ash
B2

T92
Oak
B3

G14
Mixed species
B2

T97
Ash
B2

T99
Ash
B2

T96
Ash
B2

H59
Mixed species
B2

T98
Ash
B3

T170
Oak
B2

T200
Ash
B2

T199
Ash
B3

T198
Ash
B3

T168
Ash
B2

T169
Ash
C2

H106
Mixed species
B2

T100
Ash
B2

T101
Ash
B3

W5
Mixed species
B2

H86
Mixed Species
C2

H58
Mixed Species
B2

G71
Crack willow
B3

G90
Mixed species
B2

H105
Mixed species
B2

H25
Mixed species
B2

T193
Ash
C3

T195
Ash
B2

W27
Mixed species
B2

H60
Mixed Species
B2

T197
Ash
B3

T194
Ash
B3

T196
Ash
C3

G10
Mixed species
B2

T18
Oak
B2

T19
Oak
B2

H106
Mixed species
B2

H106
Mixed
B2

H104
Mixed species
C2

T202
Ash
B2

H24
Mixed species
B2

H23
Mixed species
B2

T201
Ash
B2

T102
Ash
B2

T103
Ash
B2

H60
Mixed Species
B2

H71
Mixed Species
B2

T115
Sycamore
C2

H83
Mixed Species
B2

T117
Oak
B2

G38
Mixed species
B2

T114
Ash
B2

T17
Ash
B3

H22
Mixed species
B2

G83
Mixed species
B2

G39
Mixed species
B2

T119
Oak
B2

T116
Sycamore
C2

G37
Mixed species
B2

G40
Leyland cypress
C2

T120
Dead
U

T118
Oak
B2

H70
Mixed Species
B2

H83
Mixed Species
B2

G41
Sycamore
B2

T157
Weeping ash
B2

H72
Mixed Species
B2

H61
Mixed Species
B2

H21
Mixed Species
B2

G82
Mixed species
C2

G78
Mixed species
C2

H62
Mixed Species
B2

H68
Mixed Species
B2

T113
Ash
B2

T112
Ash
B2

H63

G79
Mixed species
C2

H64
Mixed Species
B2

T104
Ash
B2

G81
Mixed species
C2

H68
Mixed Species
B2

G34
Mixed Species
B2

G9
Mixed Species
B2

H38
Mixed Spe
B2

H69
Mixed Species
B2

H70
Mixed Species
B2

G80
Ash
B2

H64
Mixed Species
B2

H68
Mixed Species
B2

T111
Ash
B3

H61
Mixed Species
B2

H20
Mixed Species
B2

Scale - metres
0 20 60 120 200

KEY

- T1 — Tree Number
- G1 — Group Number
- H1 — Hedgerow Number
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- Root Protection Area
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BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

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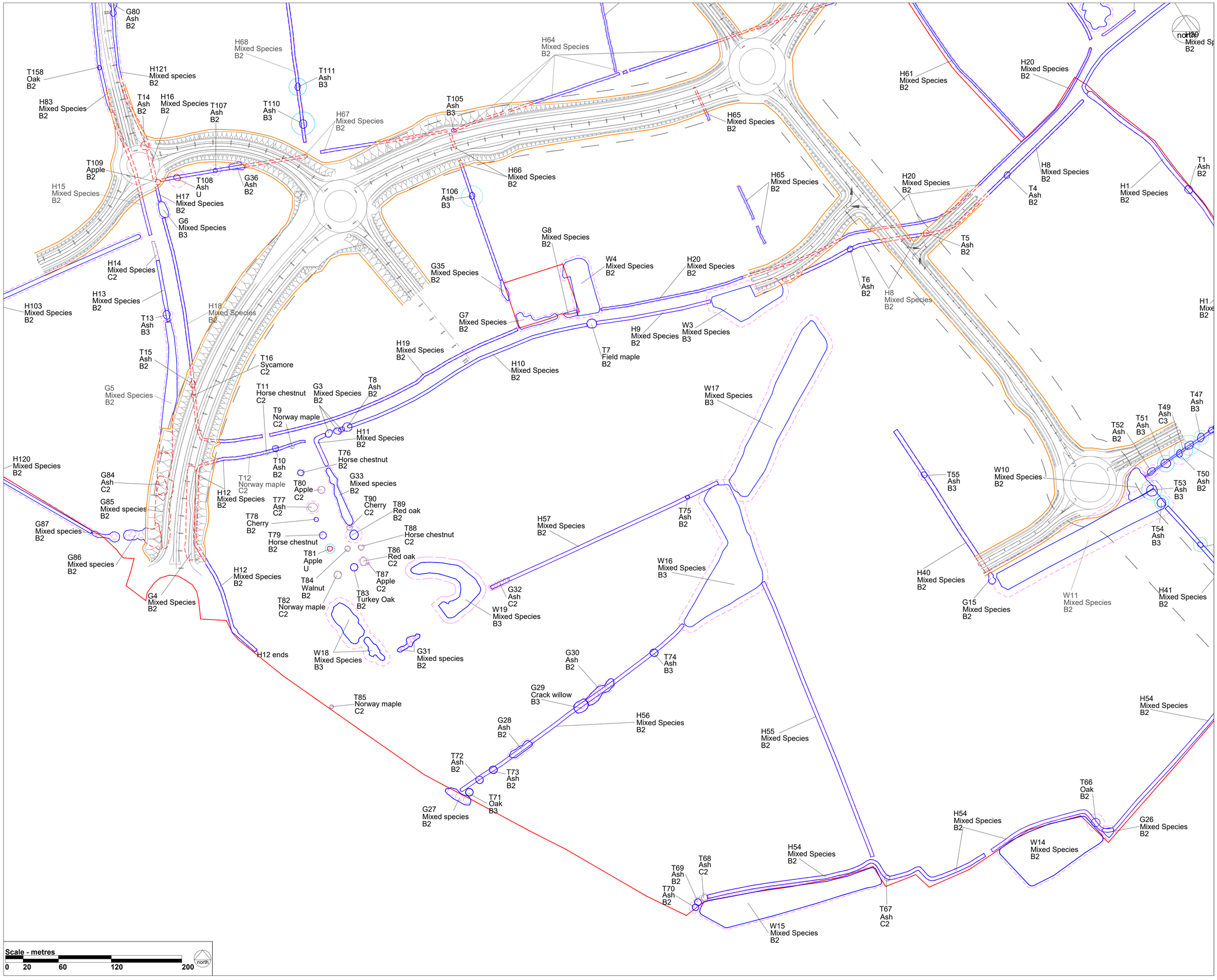

KEY

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north

H47 Mixed Species B2
H46 Mixed Species C2
H52 Mixed Species B2
T64 Silver birch B2
H53 Mixed Species B2
T63 Alder B2
G22 Mixed species B3
H49 Mixed Species B2
T62 Lawson cypress C2
H61 Mixed Species B2
H21 Mixed Species B2
H50 Mixed Species B2
T65 Sycamore B2
G23 Hawthorn B2
T61 Alder B2
T60 Lime B2
H51 Mixed Species B2
H62 Mixed Species B2
H63
T104 Ash B2
G34 Mixed Species B2
G9 Mixed Species B2
H38 Mixed Species B2
G25 Mixed species B2
G24 Silver birch B2
W13 Mixed species B2
H39 Mixed Species B2
H61 Mixed Species B2
H20 Mixed Species B2
W12 Mixed species B2
H43 Mixed Species B2
H8 Mixed Species B2
T1 Ash B2
H20 Mixed Species B2
T4 Ash B2
H1 Mixed Species B2
H115 Mixed Species B2
T5 Ash B2
H43 Mixed Species B2
T6 Ash B2
H8 Mixed Species B2
H4 Mixed Species B2
T58 Ash B3
H1 Mixed Species B2
G17 Mixed Species B2
H44 Mixed Species B2
H2 Mixed Species B2
T45 Ash B3
T47 Ash B3
T49 Ash C3
T51 Ash B3
T52 Ash B2
H5 Mixed Species B2
H3 Mixed Species B2
T46 Ash B3
T48 Ash B3
H6 Mixed Species B2
T55 Ash B3
W10 Mixed Species B2
T50 Ash B2
T53 Ash B3
H7 Mixed Species B2
G2 Ash C2
T59 Ash B2
H45 Mixed Species B2
T3 Ash B3
G20 Mixed Species B2
G18 Mixed Species B2
T2 Ash B2
G19 Mixed Species B2
T54 Ash B3
T56 Ash B3
H40 Mixed Species B2
G1 Mixed species C2
W1 Mixed Species B2
W2 Mixed Species B2
G15 Mixed Species B2
W11 Mixed Species B2
H41 Mixed Species B2
T57 Oak B2
G16 Mixed Species B2
H42 Mixed Species C2
H54 Mixed Species B2

Scale - metres
0 20 60 120 200

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland
- Feasibility of Moving Tree Under Investigation
- Highways Infrastructure full application boundary

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

CLIENT:
St James

PROJECT:
Milton Keynes East - Trees

TITLE:
Tree Retention and Removal Plan - Highway Infrastructure (Sheet 7 of 7)

SCALE AT A3:
1:2000

DATE:
March 2021

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APPENDIX E

Tree Retention & Removal Plans (Illustrative Masterplan)

W23
Mixed species
B2

G135
Willow
B2

G134
Mixed species
B2

W20
Mixed species
B2

G130
Mixed species
B2

T227
Crack willow
B3

G129
Mixed species
B2

G131

G54
Corsican pine
B2

G55
Crack willow
B2

G115
Mixed species
B2

T136
Crack willow
B2

G131
Mixed species
B2

G132
Mixed species
B2

G133
Mixed species
B2

T128
Corsican pine
U

T127
Corsican pine
U

G53
Crack willow
B2

G128
Mixed species
B2

G114
Mixed species
B2

G116
Mixed species
B2

G52
Silver birch
C2

G65
Common lime
B2

G113
Mixed species
B2

G117
Mixed species
B2

G51
Ash
C2

G50
Mixed species
B2

G49
Mixed species
B2

T126
Ash
C2

W24
Mixed species
B2

G48
Norway maple
C3

G47
Silver maple
C3

G46
Horse Chestnut
B2

T125
Horse chestnut
C2

T124
Horse chestnut
B2

G66
Poplar sp.
B2

G45
Mixed species
B2

G44
Mixed species
B2

W24
Mixed species
B2

G43
Mixed species
B2

G127
Laurel
C2

T225
Cherry
B2

G42
Mixed species
B2

G126
Mixed species
B2

G121
Mixed species
B2

T224
Cherry
B2

G120
Mixed species
B2

G119
Mixed species
B2

G125
Mixed species
B2

G122
Mixed species
B2

G123
Mixed species
B2

G124
Mixed species
B2

T226
Cherry
B2

G6
Mix
B3

H14
Mixed Species
C2

H13
Mixed Species
B2

H103
Mixed Species
B2

T13
Ash
B3

G5
Mixed Species
B2

H120
Mixed Species
B2

G87
Mixed species
B2

G86
Mixed species
B2

H12
Mixe
B2

North

Scale - metres
0 20 60 120 200

north

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

Note: Trees lost due to highway scheme are excluded from this plan. The removed trees/hedgerows/woodlands/group due to the highway scheme can be found on plans 2090.83_32 - 45

CLIENT:
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PROJECT:
Milton Keynes East - Trees

TITLE:
Tree Retention & Removal Plan - Masterplan Infrastructure (Sheet 1 of 7)

SCALE AT A3:
1:2000

DATE:
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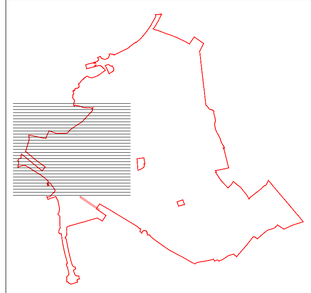
KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

Note: Trees lost due to highway scheme are excluded from this plan. The removed trees/hedgerows/woodlands/group due to the highway scheme can be found on plans 2090.83_32 - 45



CLIENT:
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PROJECT:
Milton Keynes East - Trees

TITLE:
Tree Retention & Removal Plan - Masterplan Infrastructure (Sheet 2 of 7)

SCALE AT A3: 1:2000

DATE: March 2021

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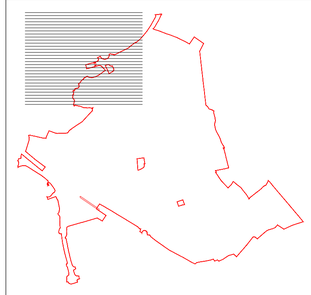
KEY

- T1 — Tree Number
- G1 — Group Number
- H1 — Hedgerow Number
- W1 — Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

Note: Trees lost due to highway scheme are excluded from this plan. The removed trees/hedgerows/woodlands/group due to the highway scheme can be found on plans 2090.83_32 - 45



CLIENT:
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PROJECT:
Milton Keynes East - Trees

TITLE:
Tree Retention & Removal Plan - Masterplan Infrastructure (Sheet 3 of 7)

SCALE AT A3:
1:2000

DATE:
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north

G97
Mixed species
B2

G96
Mixed species
B2

W8
Mixed species
B2

T29
Oak
B2

T28
Ash
C3

T27
Oak
A2

H31
Mixed species
B2

T26 (Recently Fallen)
Ash
C2

G12
Oak
B2

H30
Mixed species
B2

W7
Mixed species
B3

H29
Mixed species
B2

T220
Ash
B2

T25
Oak
B2

H118
Hawthorn
B2

T24
Oak
B2

H32
Mixed species
B2

T35
Ash
B2

species

T36
Ash
B2

H33
Mixed species
B2

T187
Ash
B2

T38

H28
Mixed species
B2

T37
Ash
B3

H101
Hawthorn
B2

T186
Ash
B3

T185
Ash
B3

H102
Hawthorn
B2

T39
Ash
B3

T184
Ash
B3

T183
Ash
B3

T182
Ash
B3

T39
Ash
B2

T123
Ash
B2

T176
Ash
B2

T177
Ash
B3

H117
Mixed Species
B2

T40
Oak
B2

T179
English oak
B1

H34
Mixed species
B2

W9
Mixed species
B3

W6
Mixed species
B2

T41
Oak
A2

H35
Mixed species
B2

H37
Mixed species
B2

H116
Mixed Species
B2

H36
Mixed species
B2

H27
Mixed species
B2

T21
Oak
B2

T180
English oak
B2

T181
Ash
C2

H26
Mixed species
B2

T189
Ash
B2

T191
Ash
B2

T192
Crack willow
B2

G149
Mixed species

H26
Mixed species
B2

T20
Oak
B2

G14
Mixed species
B2

T44
Oak
B2

T91

G11
Mixed species
B2

H37

Scale - metres
0 20 60 120 200

north

KEY

- T1 — Tree Number
- G1 — Group Number
- H1 — Hedgerow Number
- W1 — Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

Note: Trees lost due to highway scheme are excluded from this plan. The removed trees/hedgerows/woodlands/group due to the highway scheme can be found on plans 2090.83_32 - 45

CLIENT:
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PROJECT:
Milton Keynes East - Trees

TITLE:
Tree Retention & Removal Plan - Masterplan Infrastructure (Sheet 4 of 7)

SCALE AT A3:
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DATE:
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north

Scale - metres
0 20 60 120 200

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

Note: Trees lost due to highway scheme are excluded from this plan. The removed trees/hedgerows/woodlands/group due to the highway scheme can be found on plans 2090.83_32 - 45

CLIENT:
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PROJECT:
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TITLE:
Tree Retention & Removal Plan - Masterplan Infrastructure (Sheet 5 of 7)

SCALE AT A3:
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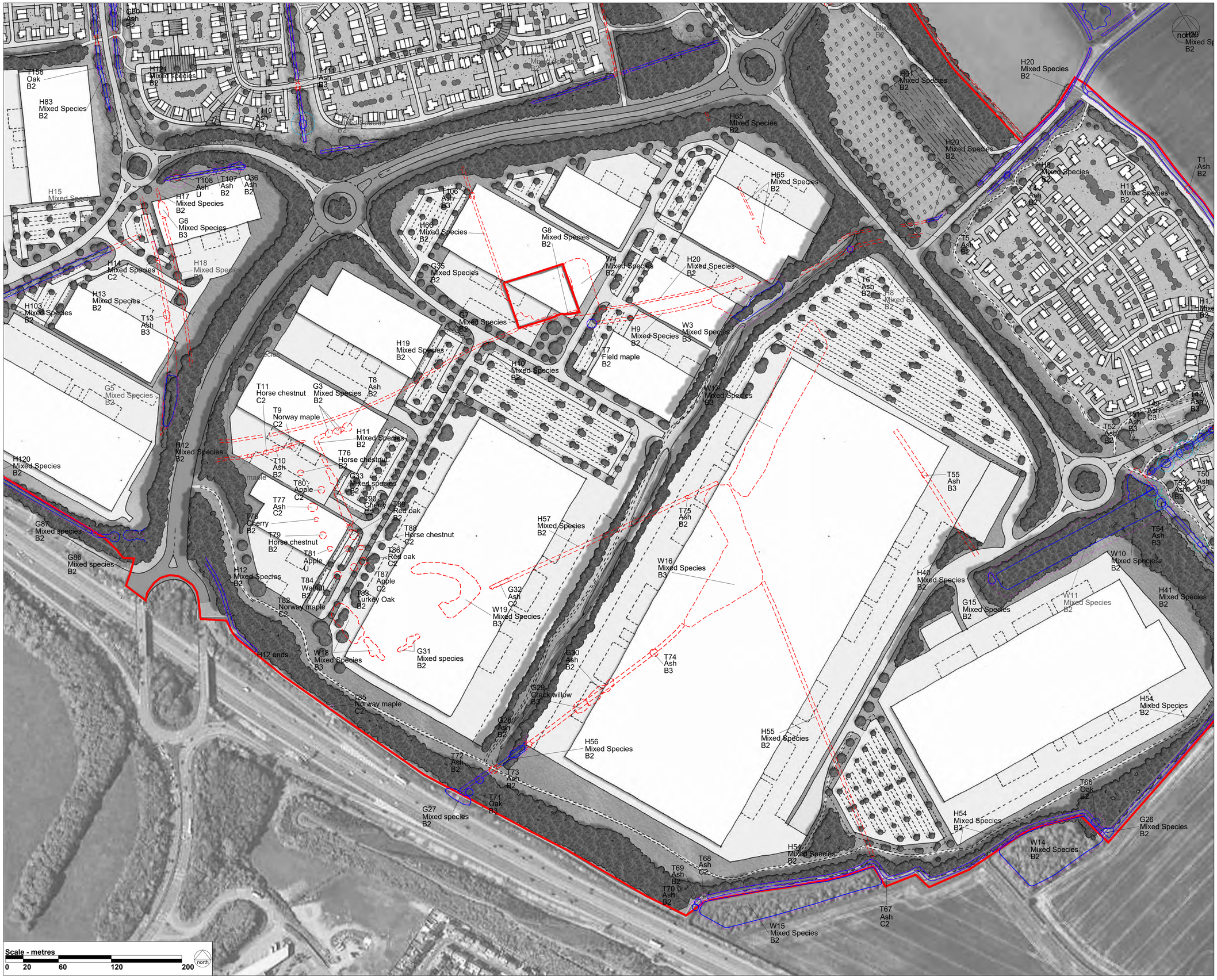


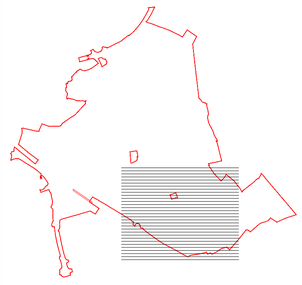
KEY

- T1 — Tree Number
- G1 — Group Number
- H1 — Hedgerow Number
- W1 — Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

Note: Trees lost due to highway scheme are excluded from this plan. The removed trees/hedgerows/woodlands/group due to the highway scheme can be found on plans 2090.83_32 - 45



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PROJECT: Milton Keynes East - Trees

TITLE: Tree Retention & Removal Plan - Masterplan Infrastructure (Sheet 6 of 7)

SCALE AT A3: 1:2000

DATE: March 2021

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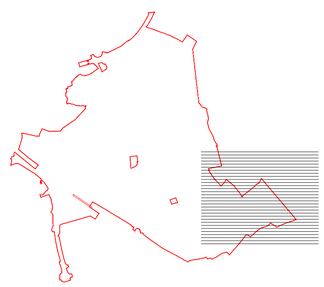
KEY

- T1 — Tree Number
- G1 — Group Number
- H1 — Hedgerow Number
- W1 — Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Removed canopy/tree/ group/hedge/woodland

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

Note: Trees lost due to highway scheme are excluded from this plan. The removed trees/hedgerows/woodlands/group due to the highway scheme can be found on plans 2090.83_32 - 45



CLIENT:
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PROJECT:
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TITLE:
Tree Retention & Removal Plan - Masterplan Infrastructure (Sheet 7 of 7)

SCALE AT A3:
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DATE:
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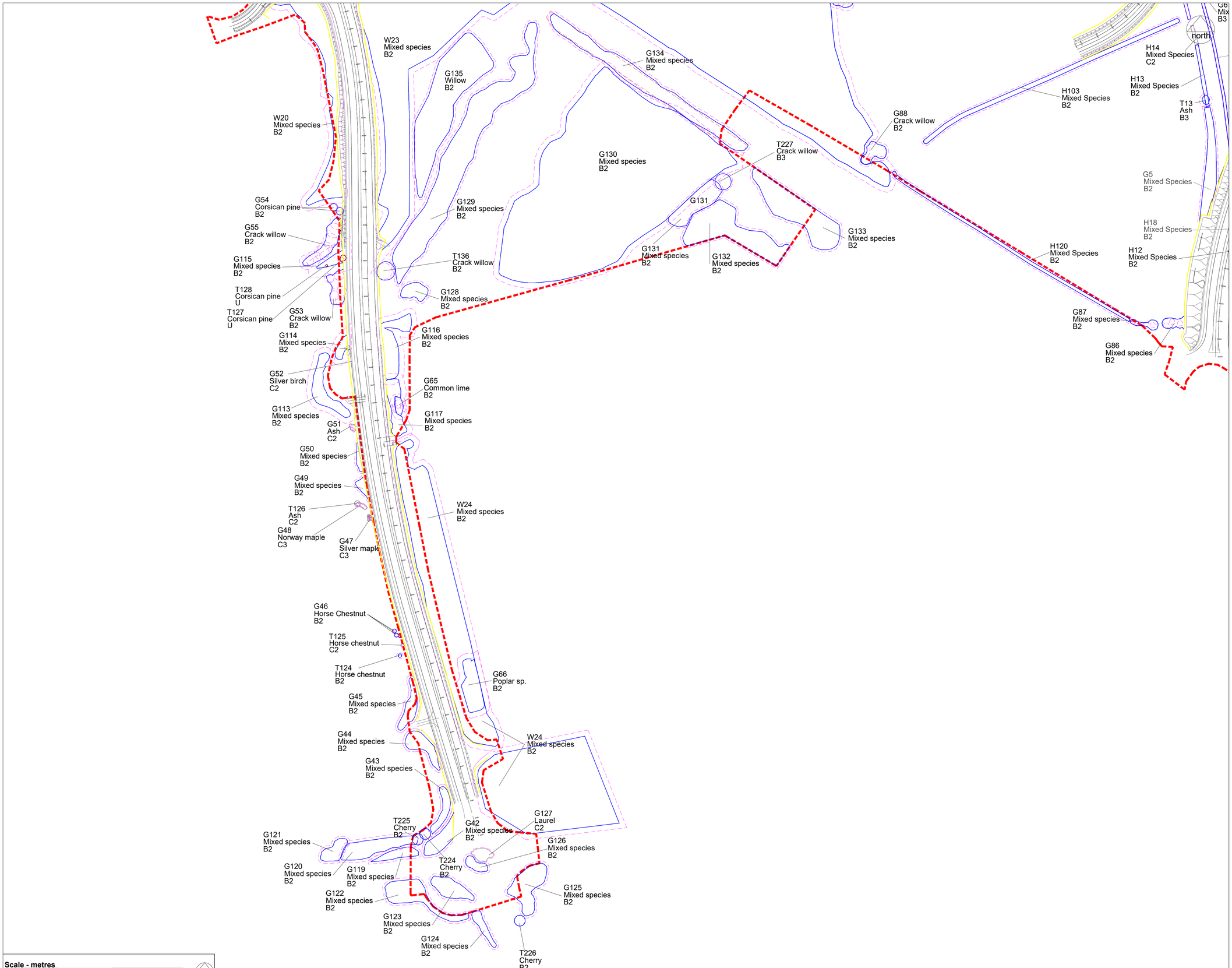
APPENDIX F

Preliminary Tree Protection Plans (Highway Infrastructure)



KEY

- T1 — Tree Number
- G1 — Group Number
- H1 — Hedgerow Number
- W1 — Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Tree Protection Fence

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

CLIENT:
St James

PROJECT:
Milton Keynes East - Trees

TITLE:
Preliminary Tree Protection Plan - Highway Infrastructure (Sheet 1 of 7)

SCALE AT A3:
1:2000

DATE:
March 2021

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north

T153
Crack willow
B2

T156
Ash
B2

T154
Crack willow
C2

T155
Ash
B2

T151
Hybrid black poplar
B2

T150
White willow
B2

T152
Crack willow
B2

G73
Crack willow
B3

H114
Mixed Species
B2

G74
Hawthorn
B2

G72
Mixed species
B2

G71
Crack willow
B3

T207
White Poplar
B3

T149
Crack willow
U

G70
Mixed species
B3

T147
Hybrid black poplar
B2

T195
Ash
B2

T197
Ash
B3

T148
Crack willow
B2

T196
Ash
C3

T146
Hybrid black poplar
B2

T208
Crack willow
B3

T145
Crack willow
B2

H104
Mixed species
C2

T144
Crack willow
B3

H81
Hawthorn
C2

G76
Hawthorn
B2

T161
English oak
B2

T162
Elder
C2

T164
Apple
C2

H81
Hawthorn
C2

T163
Hawthorn
C2

H82
Mixed Species
C2

H81
Hawthorn
C2

T167
Field maple
C2

H113
Mixed
B2

W29
Mixed species
B2

W28
Mixed species
B2

G144
Mixed species
B2

G145
Mixed species
C2

G146
Blackthorn
B2

T231
Hawthorn
C2

H73
Bramble
C2

G67
Goat willow
B2

T217
Crack Willow
B2

G94
Crack Willow
B2

T142
Crack willow
B2

T143
Crack willow
B2

H79
Mixed Species
B2

G93
Crack Willow
B2

H113
Mixed
B2

T216
Crack Willow
B2

T141
Crack willow
C2

T140
Dead Crack willow
U

H83
Mixed Spec
B2

H107
Mixed
C2

H83
Mixed S
B2

T214
Field Maple
B2

T213
Ash
B3

T215
Field Maple
B3

T212
Crack Willow
B3

H112
Mixed
B2

H111
Mixed
B2

W30
Mixed species
B2

G142
Mixed species
B2

G143
Ash
B2

G64
Mixed species
B2

H119
Mixed species
C2

H74
Hawthorn
B2

H110
Mixed
B2

G95
Crack Willow
B2

T139
Crack willow
B2

G69
Crack willow
B3

T209
Ash
C3

G92
Poplar
B3

H84
Hawthorn
B2

T210
Crack Willow
B3

W33
Mixed
B2

H109
Mixed
B2

H119
Mixed species
C2

W31
Mixed species
B2

G137
Mixed species
C2

T137
Cherry
U

T135
Ash
C2

G138
Mixed species
C2

W22
Mixed species
B2

G139
Ash
B2

G63
Mixed species
B2

T230
Silver birch
B2

G62
Ash
C2

G68
Cherry
B2

T138
Cherry
B2

W21
Mixed species
B2

T211
Ash
B3

H108
Mixed
B2

G136
Mixed species
B3

G89
Crack willow
B2

T15
Oak
B2

Scale - metres
0 20 60 120 200
north

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Tree Protection Fence

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

CLIENT:
St James

PROJECT:
Milton Keynes East - Trees

TITLE:
Preliminary Tree Protection Plan - Highway Infrastructure (Sheet 2 of 7)

SCALE AT A3:
1:2000

DATE:
March 2021

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north

W8
Mixed species
B2

T35
Ash
B2

G98
Mixed species
C2

G101
Mixed species
B2

H76
Mixed species
C2

G102
Fastigate hornbeam
B2

G103
Mixed species
B2

G104
Mixed species
C2

H77
Mixed species
C2

H75
Box
C2

G99
Mixed species
B2

G100
Mixed species
B2

T221
Scots pine
C2

T222
Scots pine
U

H98
Hawthorn
B2

H33
Mixed
B2

G105
Mixed species
B2

T223
Fastigate hornbeam
B2

G106
Mixed species
B2

G108
Mixed species
B2

G109
Leyland cypress
C2

G110
Mixed species
B2

H97
Leylandii
C2

G111
Ash
C2

G107
Mixed species
B2

G112
Ash
C2

T176
Ash
B2

T175
English
B3

H80
Mixed Species
C2

G118
Mixed species
B2

H96
Mixed species
B2

H99
Mixed species
B2

T177
Ash
C2

T180
Ash
B2

T178
Oak
B3

T179
Oak
B3

H78
Hawthorn
B2

W25
Mixed species
B3

T203
Ash
B2

T172
English oak
B2

G91
Goat willow
B2

T204
English oak
B2

H94
Mixed species
B2

T205
English oak
B3

W26
Mixed species
B2

H79
Mixed Species
B2

T206
Ash
C2

G92
Cherry
B2

G149
Mixed species
B2

T153
Crack willow

T151

Scale - metres
0 20 60 120 200

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Tree Protection Fence

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

CLIENT:
St James

PROJECT:
Milton Keynes East - Trees

TITLE:
Preliminary Tree Protection Plan - Highway Infrastructure (Sheet 3 of 7)

SCALE AT A3:
1:2000

DATE:
March 2021

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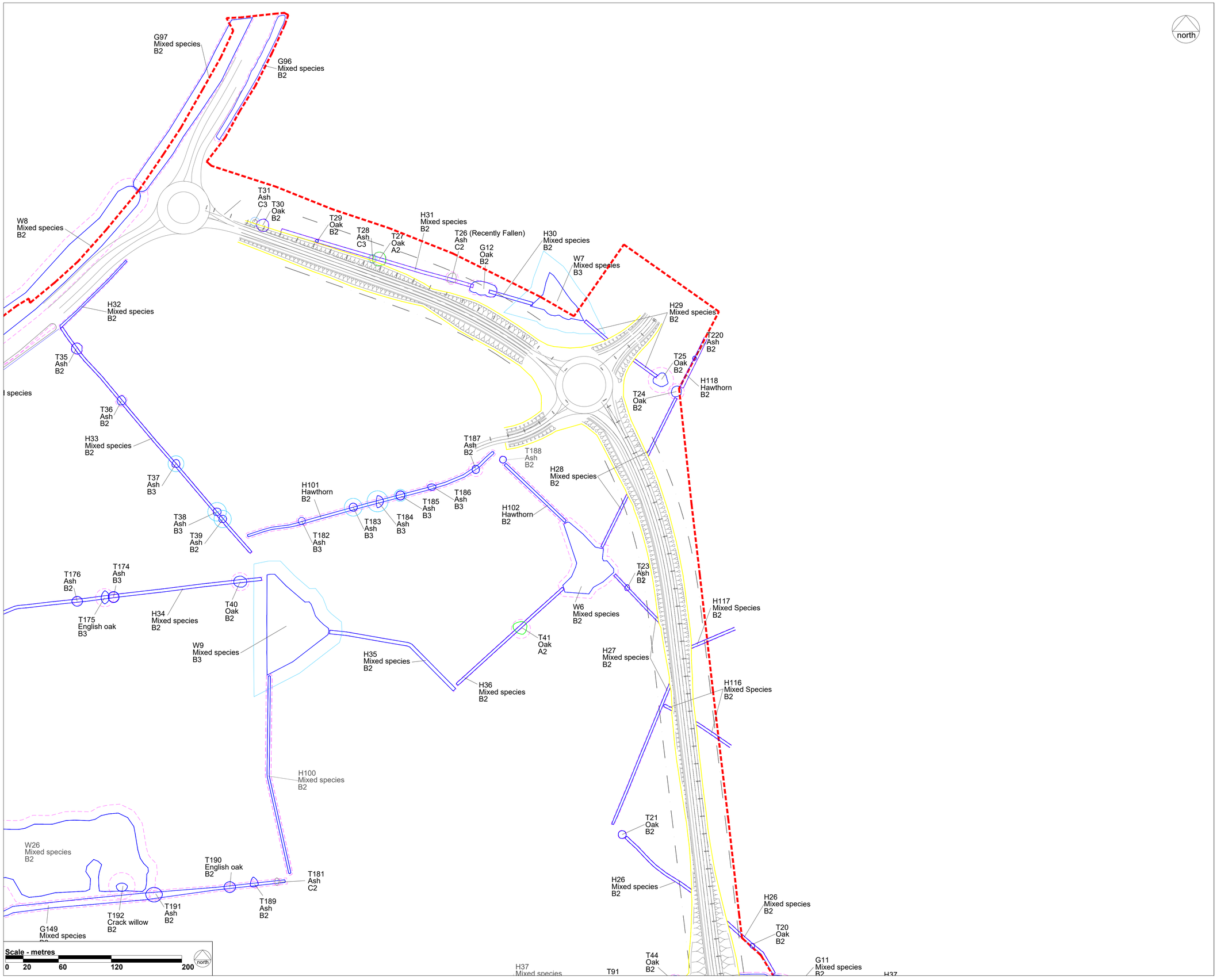

KEY

- T1 — Tree Number
- G1 — Group Number
- H1 — Hedgerow Number
- W1 — Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Tree Protection Fence

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

CLIENT:
St James

PROJECT:
Milton Keynes East - Trees

TITLE:
Preliminary Tree Protection Plan - Highway Infrastructure (Sheet 4 of 7)

SCALE AT A3:
1:2000

DATE:
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north

H100
Mixed species
B2

W26
Mixed species
B2

T190
English oak
B2

T181
Ash
C2

T189
Ash
B2

T191
Ash
B2

T192
Crack willow
B2

G149
Mixed species
B2

T21
Oak
B2

H26
Mixed species
B2

H26
Mixed species
B2

T20
Oak
B2

G11
Mixed species
B2

H37
Mixed species
B2

T44
Oak
B2

G14
Mixed species
B2

H37
Mixed species
B2

T95
Oak
B3

T94
Ash
B2

T93
Ash
B2

T91
Ash
C2

T92
Oak
B3

T97
Ash
B2

T99
Ash
B2

T96
Ash
B2

H59
Mixed species
B2

T98
Ash
B3

T100
Ash
B2

T101
Ash
B3

T199
Ash
B3

T200
Ash
B2

T198
Ash
B3

H106
Mixed species
B2

H58
Mixed Species
B2

W5
Mixed species
B2

H25
Mixed species
B2

G71
Crack willow
B3

207
/hite Poplar
3

T195
Ash
B2

T197
Ash
B3

T194
Ash
B3

T196
Ash
C3

208
rack willow
3

H105
Mixed species
B2

W27
Mixed species
B2

H60
Mixed Species
B2

G10
Mixed species
B2

T18
Oak
B2

H106
Mixed species
B2

H104
Mixed species
C2

H106
Mixed
B2

T202
Ash
B2

T201
Ash
B2

T102
Ash
B2

T103
Ash
B2

H60
Mixed Species
B2

H24
Mixed species
B2

H23
Mixed species
B2

H61
Mixed Species
B2

T17
Ash
B3

H22
Mixed species
B2

H71
Mixed Species
B2

H83
Mixed Species
B2

G83
Mixed species
B2

G39
Mixed species
B2

T119
Oak
B2

T117
Oak
B2

G38
Mixed species
B2

T115
Sycamore
C2

T114
Ash
B2

T116
Sycamore
C2

G37
Mixed species
B2

T118
Oak
B2

G40
Leyland cypress
C2

T120
Dead
U

H70
Mixed Species
B2

H83
Mixed Species
B2

G41
Sycamore
B2

T157
Weeping ash
B2

H72
Mixed Species
B2

H61
Mixed Species
B2

H21
Mixed Species
B2

G82
Mixed species
C2

G78
Mixed species
C2

G79
Mixed species
C2

H68
Mixed Species
B2

T113
Ash
B2

T112
Ash
B2

H62
Mixed Species
B2

H63

T104
Ash
B2

G34
Mixed Species
B2

G9
Mixed Species
B2

H38
Mixed Spe
B2

G81
Mixed species
C2

H68
Mixed Species
B2

H69
Mixed Species
B2

H70
Mixed Species
B2

H64
Mixed Species
B2

G80
Ash
B2

H68
Mixed Species
B2

T111
Ash
B3

H64
Mixed Species
B2

H61
Mixed Species
B2

H20
Mixed Species
B2

Scale - metres
0 20 60 120 200

north

KEY

- T1 — Tree Number
- G1 — Group Number
- H1 — Hedgerow Number
- W1 — Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Tree Protection Fence

BS5837 Tree Categories

- Canopy extent of tree: Category A
- Canopy extent of tree: Category B
- Canopy extent of tree: Category C
- Canopy extent of tree: Category U

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PROJECT:
Milton Keynes East - Trees

TITLE:
Preliminary Tree Protection Plan - Highway Infrastructure (Sheet 5 of 7)

SCALE AT A3:
1:2000

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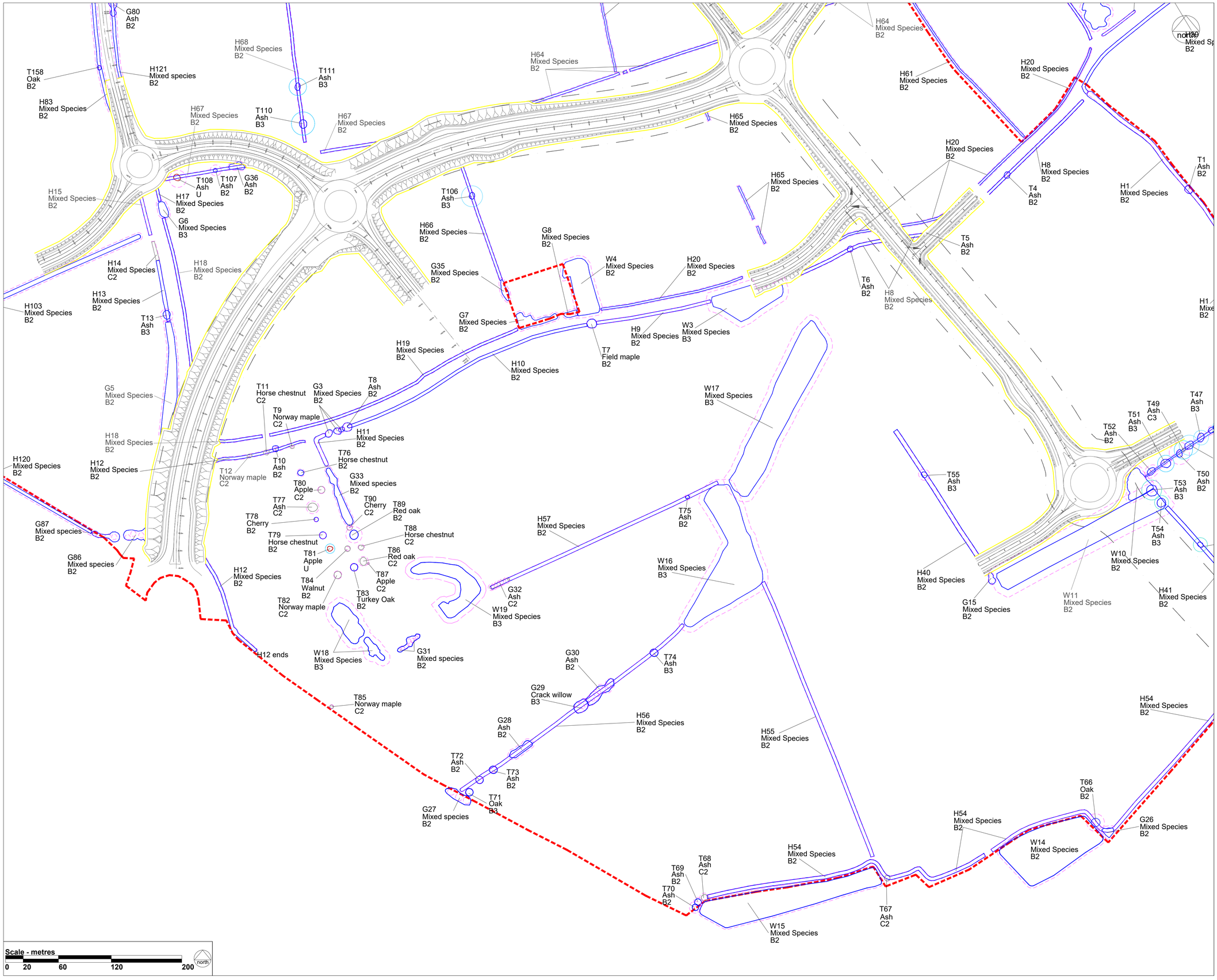

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
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- Tree Protection Fence

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- Canopy extent of tree: Category U

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TITLE:
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north

H47 Mixed Species B2
H46 Mixed Species C2
H52 Mixed Species B2
T64 Silver birch B2
H53 Mixed Species B2
T63 Alder B2
G22 Mixed species B3
H49 Mixed Species B2
T62 Lawson cypress C2
H61 Mixed Species B2
H21 Mixed Species B2
H50 Mixed Species B2
T65 Sycamore B2
G23 Hawthorn B2
T61 Alder B2
T60 Lime B2
H51 Mixed Species B2
H62 Mixed Species B2
T104 Ash B2
H63
G24 Silver birch B2
G9 Mixed Species B2
H38 Mixed Species B2
G25 Mixed species B2
G34 Mixed Species B2
W13 Mixed species B2
H64 Mixed Species B2
H39 Mixed Species B2
H61 Mixed Species B2
H20 Mixed Species B2
W12 Mixed species B2
H20 Mixed Species B2
H43 Mixed Species B2
H8 Mixed Species B2
T1 Ash B2
T4 Ash B2
H1 Mixed Species B2
H115 Mixed Species B2
T5 Ash B2
H43 Mixed Species B2
H4 Mixed Species B2
T6 Ash B2
H8 Mixed Species B2
H1 Mixed Species B2
T58 Ash B3
G17 Mixed Species B2
H44 Mixed Species B2
H2 Mixed Species B2
T45 Ash B3
T47 Ash B3
T49 Ash C3
T51 Ash B3
H5 Mixed Species B2
H3 Mixed Species B2
T52 Ash B2
T46 Ash B3
H6 Mixed Species B2
T48 Ash B3
T50 Ash B2
T55 Ash B3
T53 Ash B3
H7 Mixed Species B2
G2 Ash C2
T59 Ash B2
H45 Mixed Species B2
T2 Ash B2
T3 Ash B3
G20 Mixed Species B2
G18 Mixed Species B2
T54 Ash B3
G19 Mixed Species B2
T56 Ash B3
W10 Mixed Species B2
H40 Mixed Species B2
G1 Mixed species C2
W1 Mixed Species B2
W2 Mixed Species B2
W11 Mixed Species B2
H41 Mixed Species B2
T57 Oak B2
G15 Mixed Species B2
G16 Mixed Species B2
H42 Mixed Species C2
H54 Mixed Species B2

Scale - metres
0 20 60 120 200
north

KEY

- T1 Tree Number
- G1 Group Number
- H1 Hedgerow Number
- W1 Woodland Number
- Root Protection Area
- Potential Veteran Buffer Zone
- Site Boundary
- Tree Protection Fence

BS5837 Tree Categories

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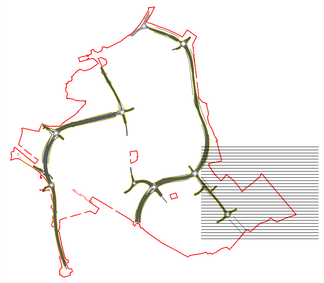

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PROJECT:
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TITLE:
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