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ARBORICULTURAL REPORT

Walthamstow Town Square E17

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1 Executive Summary

1.1 The author understands that it is proposed to fell 80 trees on the development site which currently contains 125 trees. Most of the trees designated for removal are healthy, mature, large specimens. Given the location and context, and the quality of the trees listed for removal, the proposal is extreme in its approach to tree loss. It appears to greatly under value, and fail to appreciate the importance of large, long lived mature trees. This is at odds with a considerable body of public policy and science that recognises the vital part mature trees, especially large species, play in healthy cities. It is hard to imagine how any development could bring benefits to local people that could merit such significant tree loss.

2 Introduction

2.1 This report was written by Russell Miller, an independent arboricultural consultant engaged by Save Our Square. The group is concerned about aspects of the proposed development, including its potential impact on trees. The purpose of this report is to review the findings of an arboricultural survey conducted by Landmark Trees for the purposes of a proposed development; and the proposals to fell 80 of those trees. The views expressed here are the professional opinions of the author.

2.2 The author is an arboricultural consultant and Professional Member of the Arboricultural Association. He has an MSc in Biological Recording (distinction), and a Technician's Certificate in arboriculture (distinction). He has been working with trees for 15 years and is currently Chair of the Ancient Tree Forum. He also advises the multi-award winning Hackney tree charity Tree Musketeers.

3 Scope and Limitations

3.1 The author has been asked to review the content and findings of the 2016

Landmark Trees Report & Survey (hereafter **LT 2016**) and the proposals for tree removal . He has visited the site but he has not reinspected all the trees. The current report focuses on the findings, methodology and arboricultural coherence of the earlier report and proposals for removal, rather than a reassessment of each tree.

3.2 The author has reviewed the trees listed for removal in the 'Tree Retention and Removal Plan' dated Feb '17 (drawing 063065-L-102, Rev C), hereafter referred to as **TRRP**. Those trees are itemised in the table at Appendix 1 of this report.

3.3 The author comments on various areas of public policy and science without considering each of these matters in detail. This is inevitable in a brief report such as this. The author's comments and opinions are based on well known and established principles that are easily verified.

3.4 Trees are constantly changing, living organisms. The observations regarding a particular tree in any tree report are valid for a limited period. Further tree inspections are required if an accurate understanding is to be achieved at specific date.

4 Landmark Trees Report of 15 January 2016

4.1 The LT 2016 is stated to be based upon an industry standard Visual Tree Assessment (VTA) and British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* [BS5837:2012]. This is a standard approach to assessing trees prior to or during a planning process pursuant to development.

4.2 The LT 2016 report is signed off by Adam Hollis, but the survey was conducted by James Bell. Mr. Hollis' qualifications and experience are listed in the report. Mr. Bell's are not.

4.3 The survey recorded 168 trees as at January 2016, although it appears only

125 of these are within the development site. The latter figure is based upon the retention and removal figures listed in the TRRP.

5 Trees Listed for Removal **(as identified in the 'Tree Retention and Removal Plan' dated Feb '17) - TRRP**

5.1 Trees listed for removal total 80, whilst those listed for retention amount to 45. The discrepancy between the total of these trees 125 (i.e. 80 + 45) and the LT2016 total of 168 would appear to be because part of the LT2016 covered trees outside the development area.

5.2 **The proposed development therefore would involve felling and removing 64% of the trees on site**. This is a very high figure for tree removal.

6 Discrepancies and Errors

6.1 It is difficult to be definitive about which trees are to be retained or removed because there are a number of discrepancies between the LT2016 survey data and the data in the TRRP. At least fourteen of the numbered trees listed in the LT2016 survey are listed with the same number but a different species in the TRRP. This obviously makes it hard to identify the tree in question. The plan associated with the list in the TRRP is of assistance in identifying the location of the respective trees and even the species (assuming it is accurate), however it is impossible to associate the survey data about that tree with that number since in these 14 cases the survey is clearly referring to a different tree. The fact that the trees have not been physically tagged with numbers adds to the difficulty of ground truthing the documents.

6.2 In addition to these discrepancies it appears some of the species identifications in both the LT2016 survey and the TRRP are incorrect. Several, probably four, of the 'Honey Locust' trees (*Gleditsia triacanthos*), are in fact False Acacia (*Robinia pseudoacacia*). As indicated in para 3.1 the author has not re-

surveyed the trees and these errors are only those which were immediately obvious on a short site visit.

6.3 Overall the survey and tree removal data is badly presented, inconsistent and impossible to reconcile. The above is a brief summary of some of the problems with the data provided in both LT2016 and TRRP. This is a poor reflection on the professionalism of data provided for consideration by a planning authority, and the public, on a such major development.

7 Under Estimating Life Expectancy

7.1 In addition to the above, this author disagrees with the life expectancy data given in respect of some of the trees in LT2016. There may also be concerns about the categorisation of some of the trees (in particular trees downgraded from category A to B or from B to C), however without resurveying each tree it is difficult to specify precise areas of disagreement. It is apparent that there are a number of trees in the LT2016 survey that are listed as either Category B or C where their useful life expectancy and apparent lack of defect (i.e. none is documented) might merit grading as Category A or B. The BS5837 system is a cascading one, so a tree should be included in the higher category unless there is reason to downgrade it.

7.2 Irrespective of the accuracy as to categorisation there are issues with the projected useful life expectancy of the trees listed in LT2016. Lime trees are known to be long lived, even in stressful urban environments, regularly attaining 100+ years, but not one of the 51 Early Mature to Mature lime trees listed in LT2016 is given a useful life expectancy of 40 years. They are all listed as having a useful life of 39 years or less, expressed in BS5837:2012 notation as '>20 years' (cf >40 years). Similarly only 14 of the 38 London Plane trees are listed as '>40 years' even though this species is known to be very long lived (100 to 200+ years), even in urban

settings. Furthermore London Plane is a species that is relatively rarely subject to disease or decay related early removal. Given that none of the lime or plane trees on site could be described as old, and many of the planes are clearly still young, the useful life tariffs listed appear to be systematic under estimates.

7.3 Without a specific inspection the author cannot categorically identify a specific tree for which the life expectancy of has been under estimated but the data alone suggests that the figures are very conservative (e.g. 11 Early Mature planes with modest or no defects listed as having under 40 years useful life). This under estimation of life expectancy is further evidenced in the use of the word 'sapling' to describe at 11 trees which are clearly not saplings. Eight of these 11 are, contradictorily, also listed as 'semi-mature'. The British Standard for nursery stock specifies any tree over 18cm in girth as semi mature (BS3936). The smallest of the Walthamstow 'saplings' was measured by James Bell as having a girth of over 40cm and eight of them are over 50cm. In other words all are more than twice as large as the BS threshold for semi mature. It is unclear as to why the term sapling was used other than perhaps to provide a misleading impression as to their true size and contribution to the landscape. All 11 are listed for removal in TRRP.

7.4 The conservative life expectancy estimates should be considered in conjunction with the categorisation since the two are related with the BS5837 system. A healthy, defect free tree that has only 20-39 years of useful life expectancy cannot be graded A because grade A trees should have a useful life expectancy of at least 40 years. Likewise a tree cannot be graded B unless it has a life expectancy of at least 20 years. Therefore if the conservative under estimation of life expectancy were to be corrected it is possible that some of the trees would be up graded from C to B or B to A.

8 Tree Removal

8.1 Working within the limitations dictated by all of the above it is nevertheless possible to make some observations about the tree removal proposals. It is important to remember that detailed comments about the trees to be removed are difficult because of the discrepancies in data referred to in para 6.1 above.

8.2 As a professional arboricultural consultant the author is well aware that it is not possible, or even desirable, to retain every tree at all costs. The purpose of BS5837 is to enable a reasoned approach and to provide a basic framework from which to the value existing trees and their role in any development. Other more complex valuation systems are available but BS5837 is specifically designed to assist with planning decisions.

8.3 According to the TRRP data the proposal to is to remove 80 trees. It would appear that only three of the trees listed for removal are graded U and two C/U which means 75 to 77 are healthy enough to be retained for at least 10 years (based on the LT2016 data).[1] Of these 77 trees: 31 are graded B and 46 graded C. The accuracy of these grades has not been affirmed by the author and, as discussed at para 6 above, there is reason to believe they may be conservative.

8.4 Contemplating felling 75 healthy trees out of a population of 125 in a very urban area is a very drastic approach. It is even more drastic if one considers that this is a modest sized green space that sits between a street market, a bus station and an Underground/Overground station. Data should be available as to the footfall in this area but it is obvious many hundreds of thousands, if not millions of people transit very close to these trees every year.

1 Note: even a grade U or dead tree often has significant biodiversity value. Dying trees and decaying wood host thousands of species of invertebrates and fungi, as well as bats, owls and other vertebrates that require hollows.

9 Public Policy Considerations

9.1 Climate change, flooding and air pollution are all monumental, pressing environmental issues. They each cause havoc, massive economic loss and human fatalities. Air pollution in London alone is calculated to be responsible for 5000 to 10000 deaths in London every year. There is clear, strong national and regional policy in all these areas and despite this none of these problems is even close to being under control. Trees are known to be significant contributors to carbon capture, local climate mitigation, flood alleviation and pollution reduction. It is not an over statement to say that trees save lives. The local temperature moderating role of trees, especially the influence of mature trees in reducing extreme heat by shading and transpiration, reduces fatalities associated with very hot weather as experienced in the UK recently.

9.2 None of the above means that all trees must always be retained. However public policy and common sense points to retaining trees, especially large trees which delivery disproportionately large ecosystem services, where possible. So the burden on this development to justify the scale of the proposed tree loss must be very high.

9.3 The proposal is not to fell 77 category C trees. It is to fell 46 category C trees and 31 category B trees. This is a high percentage of healthy, valuable trees to remove. The purpose of categorising trees U, C, B and A is precisely so as to enable easy distinction of the most valuable trees. Category A trees are very rare in urban situations outside old parks and even there they are still a small minority. Category B trees are therefore the best of the rest. Here it is proposed to fell 31 of the best trees on site.

9.4 Forty one of the 77 trees are lime and planes, most of them mature but not

yet old. These are some of the most valuable trees it is possible to have. As mentioned above limes and planes can live for well over 100 years and they are both very large species. Larger trees are known to play a significantly greater role as compared to smaller species. These trees are reaching their maximum potential, as regards ecosystems services (pollution, flood and climate mitigation and biodiversity) and they still have many decades of useful life during which their contributions will be very substantial. The importance of existing mature trees of long lived large species is well established.

9.5 Felling such trees is also unwise because it involves removal of strong, established trees. Trees are facing an uncertain future due to climate change and bio-security risks from the global spread of tree diseases. It is far from certain that it will be possible to establish similar trees in the future (see para 10 below).

9.6 The lime avenue in particular is an extraordinary asset creating a human and wildlife friendly corridor in a busy, polluted urban context. The effect of the high, closed canopy above the narrow avenue is particularly effective in altering the harshly urban landscape and offering a softer, more natural experience. Experience of nature is proven to be essential to mental well being. There is solid scientific evidence that enables one to say that removing this avenue is likely to have an adverse effect mental health locally. Lime trees also contribute significantly to biodiversity and biomass. Lime is host to a wide diversity of other species and very large numbers of some small insects, such as aphids, which are a huge food resource for species higher in the food chain.

9.7 It is difficult to over state the tree cover loss and associated loss of human and environmental benefits that will result from felling these trees. In the local context this would represent a very significant tree cull.

10 Replanting v Replacement

10.1 There are several misconceptions regarding replanting of trees to replace trees that are removed.

10.2 Many planted trees do not survive. A large percentage of new trees planted in urban areas die within five years of planting. This is down to a number of factors including; poor species choice; poor stock; poor planting; poor site preparation, poor aftercare, poor contract management, extreme weather, inconsistent seasons, disease and vandalism. It is not uncommon, even with well funded and well resourced planting schemes to see loss rates of 30-50% or higher in years 1-5. Many schemes vow that they will not repeat these mistakes but only very well managed and delivered projects, managed by experienced arboriculturalists achieve success rates of 90-95%. And these are a small minority of major replanting projects.

10.3 There is an additional, less quantifiable risk associated with newly planted trees. Many of London's old trees were planted and matured in less challenging circumstances than those that apply now. In many, if not most situations, there was less hard-standing, less reflected heat, more soil, more permeable surfaces, less compaction, and less root area restriction due to above or below ground constraints. In addition the climate was generally wetter, cooler and seasons more consistent year on year. There were also far fewer tree diseases. Global travel and trade has exponentially increased the incidence of new plant diseases being introduced to the UK.

10.4 This additional cocktail of threats and stresses militates against a new tree ever reaching maturity. Often, even with successful urban planting, a tree does establish and grow but it dies very quickly after, or even before, reaching maturity. This is especially true of street trees and trees surrounded by hard surfaces. The

vitality of youth somehow overcomes the multitude of stress factors but these combine to create acute vulnerability so that long before natural maturity (in terms of time, rather than growth form) the organism succumbs to one or more common diseases. All of which adds to the importance of retaining old, established trees. An existing mature tree will often out live a newly planted specimen of the same species because it has established a strong and large root system that a new tree often fails to achieve.

10.5 New trees do not replace old trees. Replanting is an essential part of tree population management but it is very misleading to claim that a newly planted tree can 'replace' an existing mature specimen. Replacement suggests, like for like, or equivalence. However there is no equivalence when removing a mature tree and planting a young one. The ecosystem services of carbon capture, pollution mitigation, shading, air cooling, wind break, flood control, etc. are all vastly greater with a big old tree than any new planting. Replacement, if it is to mean equivalence, would require a planting ratio in the order of 100:1, and even then many benefits would still be missing for decades to come.

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Appendix 1

Trees Proposed for Removal

as per Tree Retention and Removal Plan
(drawing 063065-L-102, Rev C)

Tree No.	Species	Tree species listed in LT2016	Age Class	Grade	Life Expectancy
1	Plane		Early Mature	B	>20
2	Plane		Early Mature	B	>20
3	Plane		Early Mature	B	>20
4	Plane		Early Mature	B	>20
5	Plane		Early Mature	B	>20
6	Plane		Early Mature	C/U	>10
7	Plane		Early Mature	B	>20
17	Lime		Early Mature	B	>20
18	Lime		Early Mature	B	>20
19	Lime		Early Mature	B	>20
20	Lime		Early Mature	B	>20
21	Lime		Early Mature	B	>20
22	Lime		Early Mature	B	>20
23	Lime		Mature	B	>20
24	Lime		Mature	B	>20
25	Lime		Early Mature	C	>20
30	Lime		Early Mature	C	>10
31	Lime		Early Mature	C	>10
32	Lime		Early Mature	B	>20
33	Lime		Early Mature	B	>20
34	Lime		Early Mature	C	>10
35	Lime		Early Mature	B	>20
36	Lime		Early Mature	B	>20
37	Lime		Early Mature	B	>20

38	Lime		Mature	B	>20
39	Lime		Semi Mature	C	>10
43	Lime		Mature	B	>20
44	Lime		Mature	B	>20
45	Lime		Early Mature	B	>20
45a	Lime		Early Mature	B	>20
55	Lime		Early Mature	C	>10
56	Lime		Early Mature	B	>20
57	Lime		Mature	B	>20
58	Lime		Mature	B	>20
59	Lime		Semi Mature	C	>10
60	Lime		Mature	B	>20
63	Lime		Semi Mature	U	<10
65	Lime		Early Mature	C	>10
77	Honey Locust		Young	C	>20
78	Honey Locust		Young	C	>20
79	Honey Locust		Young	C	>20
80	Honey Locust		Young	C	>20
81	Honey Locust		Semi Mature	C	>20
82	Honey Locust		Semi Mature	C	>20
83	Maple		Semi Mature	U	<10
84	Maple		Semi Mature	U	<10
85	Maple		Young	C	>20
86	Honey Locust		Semi Mature	C	>20
87	Honey Locust		Semi Mature	C	>20
88	Honey Locust		Semi Mature	C	>20
89	Honey Locust		Semi Mature	C	>20
90	Maple	Honey Locust	Semi Mature	C	>20
91	Maple		Young	C	>20
92	Maple		Young	C	>20
93	Plane	Maple	Young	C	>20
94	Plane		Semi Mature	B	>40
95	Plane		Semi Mature	B	>40
96	Chanticleer Pear	Plane	Semi Mature	B	>40
97	Chanticleer Pear		Semi Mature	C	>20
98	Chanticleer Pear		Semi Mature	C	>20

99	Honey Locust	Pear	Semi Mature	C	>20
100	Honey Locust		Semi Mature	C/U	>10
101	Honey Locust		Semi Mature	C	>20
102	Honey Locust		Semi Mature	C	>20
103	Chanticleer Pear	Honey Locust	Semi Mature	C	>20
104	Chanticleer Pear		Semi Mature	C	>20
105	Chanticleer Pear		Semi Mature	C	>20
120	Privet, Chinese	Birch	Young	C	>20
122	Privet, Chinese		Young	C	>20
123	Privet, Chinese		Young	C	>10
129	Chanticleer Pear		Semi Mature	C	>20
130	Chanticleer Pear		Semi Mature	C	>20
131	Cherry	Pear	Semi Mature	C	>20
132	Ornamental cherry		Semi Mature	C	>10
133	Ornamental cherry		Semi Mature	C	>10
134	Ornamental cherry		Semi Mature	C	>10
135	Ornamental cherry		Semi Mature	C	>10
136	Whitebeam		Young	C	>10
137	Whitebeam		Young	C	>10
138	Birch	Whitebeam	Young	C	>10