I write further instructions, desk-based research and a site visit of 7th inst. to set out my findings in relation to the matter referred above.

**Background information**

1. My instruction arises as a result of proposals for the comprehensive redevelopment of the site of the former London Chest Hospital, within the grounds of which stands the subject tree. The tree is subject to a Tree Preservation Order which protects it from, inter alia, uprooting

2. Prior to a planning application (ref. 16/03342) for the redevelopment being determined by the jurisdictional local planning authority, London Borough of Tower Hamlets (or its successor decision-maker should the matter go to appeal or be called-in), a satellite application (ref. 16/03610) has been submitted for consent under the TPO regime for above and below ground pruning works to the tree. These works are said to be required to prepare the tree for relocation this autumn, so as to make way for the as-yet unapproved development; consent for the tree works has been granted by LBTH
3. The subject area of trees in relation to proposed development is covered by BS5837:2012 *Trees in Relation to Design, Demolition and Construction – Recommendations*, for which I was a technical editor. I was chiefly responsible for drafting the sections on tree surveying methodology (within Clause 4), and demolition and construction in proximity to trees (Clause 7), as well as being generally involved with the Standard’s drafting and editing.

4. BS3998:2010 *Recommendations for Tree Work* (for which I was on the British Standards Institution’s oversight Committee, B/213), provides a definition for “veteran trees”, adopted by BS5837:2012 at its 3.12. This defines a veteran tree as: *Tree that, by recognized criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.*

   A note to the definition explains that: *These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.*

5. At its Annex C, BS3998:2010 provides guidance for inter alia retrenchment pruning of veteran trees. I have been promoting techniques for this type of tree work which are in agreement with this guidance, since 2005. Lectures given by me on this subject include those delivered at the Arboricultural Association Annual Conference, York, September 2005, and at the Parkland Management Symposium, Chatsworth, October 2007; I have advised extensively in this area subsequently.

6. Relevant extracts from the BS3998 guidance at its Annex C2, *Retrenchment pruning of veteran trees and lapsed pollards* state:

   *The tolerance of the tree to loss of leaf area and wounding should be assessed before retrenchment pruning is started. If, because of its species and condition, it is unlikely to respond by producing new branches, any pruning should be kept to the absolute minimum required in order to gain any biomechanical benefit at this initial phase. The pruning should be implemented by shortening heavy, long or weakened branches throughout the crown, while retaining as much leaf area as possible.*

7. Another definition for veteran tree is provided at Annex 2 to the National Planning Policy Framework (“the Framework”):

   *A tree which, because of its great age, size or condition is of exceptional value for wildlife, in the landscape, or culturally.*

8. Paragraph 14 of the Framework articulates the Government’s view that the planning system rests on a presumption in favour of sustainable development, with this only countervailed by certain restrictive policies, examples of which are given in Footnote 9. It is widely accepted by planners and Planning Inspectors that Framework paragraph 118 includes restrictive policies in relation to significant harm to biodiversity, and to loss or deterioration of ancient woodland, and the loss of aged or veteran trees found outside ancient woodland.
9. In this regard, Framework paragraph 118 at bullet five establishes a threshold that must be cleared by development proposals if they are to move forward at the expense of inter alia aged/veteran trees:

Planning permission should be refused for development resulting in the loss... of aged or veteran trees..., unless the need for, and benefits of, the development in that location clearly outweigh the loss

10. Returning to BS5837:2012, at its 4.4.2.5. is a list of the attributes to be recorded in development-related tree surveys. At sub-clause (i) is a recommended list of bands to be used to identify estimated remaining contribution in years. These bands are:

<10, 10+, 20+, 40+

11. The year bands are linked to the recommended system for tree quality assessment, conceived originally by me, which appears at BS5837:2012 Table 1. Under this system, trees are to be graded into four categories of quality:

- U Unretainable in viable condition, <10 years’ remaining contribution
- C Low quality, at least 10 years’ remaining contribution
- B Moderate quality, at least 20 years’ remaining contribution
- A High quality, at least 40 years remaining contribution

12. Within each quality band, trees are to be placed into one of the three sub-categories which best describes why they have been given the applied letter grade (for grades A-B-C). The sub-categories are:

1. Mainly arboricultural qualities
2. Mainly landscape qualities
3. Mainly cultural values, including conservation

13. Under each of the sub-categories appear notes giving examples to guide the user apply the system. Under grade A, sub-category 3, the example is given of veteran trees. Referring on to paragraph 4.5.11 of this Standard, a note to this paragraph includes the advice:

[Veteran] trees will... almost always be included in the A3 category

14. BS5837:2012 also provides advice regarding protection of tree roots during site development, recommending the establishment of a Root Protection Area (“RPA”), which the Standard describes (at 3.7) as the

Minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability

15. The RPA is found by multiplying the stem diameter of a tree by 12, with this deriving the radius of a circle centred on the stem. Where the notionally circular RPA is interrupted by (for example) structures, it is necessary to form and protect it as a polygon that realistic would enclose the same area as described by the circular form.
16. Regarding the relocation of mature trees, I note that it is intended to employ the services of the well-known firm of Civic Trees. The Civic Trees website publishes technical guidance for moving trees, which includes the following information:

   *Root-pruning encourages the development of new roots, which will better enable the tree to establish itself once it has been moved. Root-pruning should be done in spring to allow the fibrous roots to grow over the summer period. A good rule of thumb is to start root-pruning three years prior to relocation.*

   *For example, root-prune one third of the final rootball diameter in the first year, another third in the second year, then the final third in year three. If this isn’t possible... [we’d] recommend lifting the tree with a larger rootball.*


17. The London-based Conservation Foundation has obtained support from the Heritage Lottery Fund to establish a project to find, describe and map London’s oldest mulberry trees. This project, called *Morus Londinium* (“ML“), reports via a website. The mulberry in question is included within the ML database; its entry is found at: [http://www.moruslondinium.org/map/london-chest-hospital](http://www.moruslondinium.org/map/london-chest-hospital)

The ML entry describes the mulberry as a veteran tree

*The assessment of the tree*

18. The wider planning application is supported by various documents prepared by a consultancy calling itself [TF](http://www.civictrees.co.uk/news/preparing-to-relocate-a-tree-glendale-civic-trees-share-their-top-tips/) (“TF”). These documents include a tree survey, which, in terms of the data collected, is broadly in accordance with the recommendations of *BS5837:2012*

19. As part of the survey information, TF records the tree’s stem diameter as being 680mm. The TF material identifies the mulberry’s RPA as 8.2m, and describes its vitality as “normal”. It concludes that the tree has “20+” years of remaining contribution, and assigns it to the B category, or “moderate” quality. No opinion is offered in the TF tree survey or related material as to whether the tree is a veteran

*My assessment of the tree*

20. The subject tree is referable as a black mulberry (*Morus nigra* L.) and is broadly as dimensioned in arboricultural material prepared by [TF](http://www.civictrees.co.uk/news/preparing-to-relocate-a-tree-glendale-civic-trees-share-their-top-tips/)

21. The stem diameter as measurable today does not appear to represent the maximum expansion of the stem, with – by my estimate – between 20 and 40% of the original stem missing due to the processes of aging and decay, which typify both this species and the tree in question. It follows that the measurable stem diameter of 680mm reflects a tree of – probably – 800mm or more former maximum
22. The top five London mulberry trees recorded in the database known as the Tree Register of the British Isles, range 570-970mm stem diameter for single-stemmed examples. Comparison of these dimensions to the subject tree, demonstrates that it sits towards the upper end of this peer group. This being so, there can be no reasonable challenge to the inclusion of the mulberry within the ML database of notable mulberries in London.

23. The 8.2m RPA computed by TF is probably over-generous in that the tree is not fully functional around the entirety of its remaining stem; in my view an RPA of 5m radial from stem centre would be sufficient to safeguard it if left in situ.

24. We differ further, and more significantly, regarding the tree's remaining life expectancy. In my opinion, with moderate and appropriate care, there is no reason why the tree would not be expected to survive for well over the 40 years required to enable its admission to the ranks of high quality trees. Indeed, with suitable husbandry, it has realistic potential to outlast anyone alive today.

25. By far the most important difference of opinion between TF and me is that I identify the mulberry as a veteran tree. Indeed, I cannot understand how any reasonable arboriculturist could conclude otherwise. It so clearly fits the criteria (my paragraphs 4 and 7), that I consider the omission of this categorization by TF to amount to a very serious professional lapse. This is not a question of a difference of opinion within reasonable bounds, but instead a profound failure to identify the single most obvious point that should have arisen from an assessment of the tree. As such, it is apparent that I agree with the Morus Londinium on this point.

26. Consequent upon this, in line with the recommendations of BS5837:2012 the tree should have been assigned to the “A3” quality category, which covers trees of high quality due to their cultural importance, and captures, by this description, veteran trees.

27. Finally, I note that TF has failed to appreciate the fact that the stem of the tree is now effectively in two mechanically separated parts. The residual co-attachment of these parts has, by virtue of the mechanical separation, lost one of the critical structural elements of intact stems, namely circumferential growth stress. The reader will be familiar to the consequences of this from looking at the trunks of felled trees, which commonly show one or more radial splits. The TF material makes no mention of this, and I do not believe that it has been taken into account, either properly or indeed at all.
The proposed tree works

28. The application for consent under the TPO regime describes the proposed works as comprising two elements:

- To carry out all preparation works as required for the relocation from the tree’s current location to a location identified as point B (appendix 1). Works include, excavation using air spades, pruning of up to 50% of the roots to form a root ball, excavation of the root ball, preparation and moving by crane and low loader.
- To crown reduce southern scaffold branches by up to 50% (this equates to up to 4.5m)

However, the first element itself subdivides, into root pruning and relocation.

29. The application was referred for consultation to the council’s Tree Officer, who responded to the case officer by email dated 3 February 2017, in which he states that his conclusion that there was no pressing reason to refuse the application rests on him being happy with the explanation that the tree isn’t 500 yrs. old [sic] and is a later, Victorian addition

30. It appears from the foregoing and from the remainder of his email that the Tree Officer relies on the narrative provided by in other words, he adds no new information. This is important because:

i) He has not determined, for himself, whether the tree is a Victorian planting (though NB this is of no relevance as to whether or not it is a veteran tree: these being not mutually exclusive), or is of earlier origin (instead merely accepting the “explanation” he has been given);

ii) The Tree Officer appears not to have engaged with the question of whether the tree is a veteran, and does not seem to have reached an independent conclusion on its remaining life expectancy, and or the appropriate quality grade to be applied under the BS5837:2012 system;

iii) In consequence to (ii), he has not tested the application for tree works consent against paragraph 118 of the Framework; and

iv) In its letter to you of 9 May 2017, LBTH places reliance on the Tree Officer’s opinion (for example its para. 15c); however, insofar as this opinion is highly parasitic on that provided by the Tree Officer does not appear to have offered his own opinion

31. The council granted consent for the then proposed tree works on 7 April 2017 pursuant to a Condition which states:

The development hereby permitted shall be carried out in accordance with the approved plan and tree schedule to this planning permission
32. The council considers that reference to the “approved plan” directs the reader to the plan appended to the Schedule of Tree Work prepared by [REDACTED] in November 2016, and submitted as supporting material to the TPO application. This plan identifies the new location of the tree; it bears the note final location to be agreed with London Borough of Tower Hamlets Tree Officer.

33. Per its letter of 9 May, the council considers that the Condition prevents the relocation of the tree outwith determination of the wider planning application (para. 13 of the letter). In truth this assertion does not bear scrutiny, insofar as all the Condition requires, via the [REDACTED] plan, is the agreement to the new location by the Tree Officer.

34. The Council states that this is linked to the wider application, however the proposed new location for the mulberry is adjacent to the Listed Building, which there is no proposal to redevelop in any event. Indeed, it is difficult to conceive any plausible iteration of the site’s redevelopment that would prevent the new location being used and so there is, in reality, nothing to stop the Tree Officer from approving it, thereby triggering the relocation absent grant of wider planning permission. As such, the Condition does not indelibly prevent the relocation of the mulberry unless or until the wider scheme has been approved.

35. In its letter dated 3 May 2017, TF states that the proposed tree works, which comprise both crown and root pruning (discussed further below), would not have an adverse impact on the tree. Indeed, TF considers that if the tree is not relocated (i.e. in the event that planning permission for the wider development is refused):

It would remain in-situ and continue to mature as it has throughout the previous seasons, but with the benefit of a more fibrous root system and rejuvenated crown

My opinion of the approved tree work

36. As noted already, the tree work comprises two elements, one of which sub-divides; I will deal with these in turn

Crown pruning

37. As regards the pruning of the crown of the tree, in principle I consider that in this is necessary to relieve excess weight from the propped limb. I agree with the [REDACTED] assessment that the upper parts of this are showing slightly weaker vitality, and that the strong vitality lower down indicates that this part of the tree is retrenching. This is a natural process that is typical of veteran trees, and indicates neither pathology nor systemic decline.
38. I consider that the pruning points indicated in TF photographs 2 and 7 (found on page 6 of its tree work schedule) are some way below the upper bounds of the vitality concentration on the limb in question, which bears the majority of the crown of the tree. As such, the approved treatment would remove an excessive quantum of functionally thriving material.

39. Whilst this would probably not be significant for an ordinary tree, this is precisely the sort of treatment that should be avoided when dealing with a veteran. Accordingly, it is highly regrettable that the Tree Officer took the flawed TF material at face value because no reasonable arboriculturist should consider that excess pruning of a veteran tree accords with best practice. Indeed, the contrary is emphatically the case.

Root pruning

40. Of even greater concern is the proposed root pruning. Nowhere do I find this specified other than in the vaguest of terms: “up to 50%”. This begs the question as to 50% of what? Root volume? Radial root-spread? Root protection area? Whichever of these or any other alternatives applies, no information has been provided as to how the upper limit would be established. As with the excessive crown pruning, the acceptability of this has not been tested by the council against the tree’s veteran status. I know of no parallel example for the removal of up to half of the roots of a veteran tree being proposed as sound practice.

41. Beyond even this wholly objectionable proposition, there is the fact that it is proposed to undertake the treatment as a single operation, thus removing in one fell swoop all of the tree’s fine root growth found towards the outer parts of its root system. This is a very far cry from the advice provided by Civic Trees on its website (my paragraph 16 refers), that three growing seasons of phased root pruning should be undertaken. In my view, an absolute minimum of two growing seasons root preparation would be required to offer the tree a plausible chance of survival.

Relocation

42. Finally, I consider the biomechanical integrity of the tree to be inadequate to the task of surviving being lifted, craned and relocated, even allowing for the intended crown reduction. In my opinion, any attempt to move the tree is likely to rupture the vestigial attachment between the stems, with serious and potentially catastrophic consequences for the tree’s survival.

43. Overall, I consider that the intended tree works offer very little chance of the tree’s survival and are, therefore, wholly inconsistent with what any reasonable arboriculturist would propose and promote for a veteran tree.
Historical information relating to the tree and its connection to Bishop Bonner

44. The tree in question is claimed to have been present at the time of Bishop Edmund Bonner’s occupation of the site, ca. mid to late C16. Contemporary records (which I have not seen in original form) refer to Bonner sitting under the shade of a mulberry in contemplation of the persecution of heretics.

45. An illustration from Foxe’s Book of Martyrs (Figure 1) published in 1563, shows Bonner enthusiastically flogging an heretic in the garden of his residence (the usual seat of episcopal justice), beneath the branches of a young tree, presumably the mulberry referred to in the tale above.

46. Gascoigne’s map of 1703 (Figure 3) names the site as Bishops Hall, but by the time of Roque’s map of 1746 (Figure 4) it was known as Bishop Bonners Hall. The site became the founding home of the London Chest Hospital, from ca. 1850. The connection between Bonner and the modern site is not in dispute.

47. The Hospital museum has an inkwell (which I have not seen) bearing a brass plaque which states that it was made from a branch of the tree in 1915. The plaque goes on to rehearse the story of Bonner sitting under the tree. It is, then, fair to say that the cultural memory of this tree as Bonner’s mulberry has persisted for over a century.

Figure 1 – Illustration from Foxe’s Book of Martyrs, 1563

48. In the 1930s the Hospital’s Treasurer, a former Lord Mayor of London, published a pamphlet appealing for funds for the Hospital, referring in this document to the tree as The Bethnal Green Mulberry and citing its heritage as Bonner’s tree, and using the example of its generous and reliable bearing of fruit to urge similar generous and reliable donations to the hospital.
49. These details show that the current local belief that the tree is Bonner’s mulberry has a substantial history that significantly predates the contemporary planning process. There is no doubt that this belief comprises a cultural experience of and value attaching to the mulberry, the fame of which only increased when it survived the WW2 bomb that destroyed the Chapel that used to stand next to it (Figure 2).

*Figure 2 – Photograph from the 1930s fund-raising pamphlet*

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*Figure 3 – Extract from Gascoigne’s map of 1703*
Historical information relating to the site

50. The planning application is supported inter alia by a *Historic Environment Assessment* prepared by Museum of London Archaeology (MOLA). This document identifies the site as having a connection with the early Christian church in England dating back to AD 604 (MOLA 4.2.8), with the Bishop’s seat located at the site since at least AD 1207 (MOLA 4.2.13).

51. At its section 3.3, the MOLA assessment reflects on the findings of an intrusive site investigation, also supplied as supporting material to the planning application. Referring to a summary of the investigation found on its page 6, at 3.3.4 MOLA states:

*Table 1 summarizes the results of the geotechnical investigation. It differentiates between modern made ground, containing identifiably modern inclusions such as concrete and plastic, and undated made ground, which may potentially contain deposits of archaeological interest.*

52. It appears that MOLA concluded as it did with regards to the modernity of the made ground in the north of the site or, at least, that found by sample reference WS8 (the closest to the mulberry), based on *identifiably modern inclusions such as concrete and plastic*. However, this is not what the site investigation found. Figure 5 is an extract from the site investigation report for sample reference WS8. From this, it is apparent that the word “plastic” does not refer to a modern inclusion, but to a property of the clay soil (see highlighted text in Figure 5).
53. The other inclusions reported for WS8 of cobble rounded to sub-angular flint, brick concrete glass and mortar might sound like modern artefacts, and indeed they might have been modern artefacts, but neither the site investigation nor the MOLA report comments on this. Instead, the MOLA report merely states that (in addition to plastic, which was not in fact found), concrete is a modern inclusion.

54. This is a very surprising statement for an archaeologist to make, as such a person should know well that concrete has been with us for thousands of years and was extensively used by the Romans. By way of example, the Pantheon in Rome, built by Hadrian (of Wall fame) in AD 125, boasts the largest non-reinforced concrete dome in the world (with a diameter of 43.3m).

55. Thus, the mere finding of undated and untested concrete residuals in soil does not demonstrate modernity: such a finding is the starting point for enquiry, not its conclusion. It follows that to date there is no evidence that the mulberry stands on modern made ground, meaning that it could, indeed, be as old as is believed.

Figure 5 – Extract from site investigation reporting for sample WS8, key text highlighted
My opinion as to the age of the tree

56. I find that it is not possible to determine with certainty the age of the tree without invasive study, and even then I am not convinced that this could be done with sufficient accuracy to determine whether the tree is indeed Bonner’s mulberry.

57. However, I do not consider that it is merely a Victorian planting from the time of the hospital’s foundation. The photograph at my Figure 2 shows the tree bearing the same form as it does now, i.e. the original north stem has already failed. It seems probable that the 1915 inkwell (see my paragraph 47) in the hospital museum was fashioned from wood of this limb, thus indicating the date of its likely failure.

58. Whilst it is known that mulberries do undergo collapse failures in maturity, this tends to occur when the tree has reached a relatively advanced age. I would say that major failures before ca. 100-120 years old or so are unlikely in this species. So, if the limb failed, as is probable, in or shortly prior to 1915, and if such failures tend to indicate at least a century of life, this derives a latest planting date of the early 1800s. My assessment of the tree as it appears in the 1930s photograph is that this is a tree some way beyond 100 years old; this is consistent with the likely latest planting date as derived from the historic photograph and the inkwell.

59. I note that the Morus Londinium entry for the tree concludes that:

There is little chance the mulberry is a survivor of Bishop Bonner’s day, though it does look old enough to date to the 17th century.

60. I think this is a fair assessment. This raises one other possibility that, apparently, has so far not been considered: the original Bishop Bonner mulberry was propagated on by a cutting, and it is the cutting that is now before us. Thus, the cultural history of the subject tree could well provide a direct link to Bishop Bonner. Equally, the tree could simply be a C17 century planting associated with James I drive to establish silk weaving in England using home-grown silk, or it could be planted later than this, right up to the early part of C19 (as noted).

61. Interesting though these questions are, and important though they undoubtedly are to the local residents (including my client) who seek the tree’s preservation, the answer – whichever it is – does not alter the facts that:

i) The tree is a veteran;

ii) It should have been considered as such by the council when determining the tree work application (it was not, and so the council misdirected itself);

iii) It must now be considered with fresh eyes, including as part of the wider planning application; and

iv) The restrictive policy of Framework Paragraph 118 applies, such that the need for and benefits of development in that location must clearly outweigh the loss of the tree, being what I believe will happen if the tree work proceeds as presently intended.
Conclusion

62. Consent for the tree work, which is highly inappropriate for a veteran tree, was patently granted absent proper consideration of the tree’s true nature, with this being highly material to the acceptability of the then proposals. Further, contrary to the council’s assertion, there is no binding link between the restrictive Condition applied to the consent and the wider planning application.

63. The TPO consent is objectionable in its effects on the tree, rests on mis-direction, is premature and was granted absent any consideration of how this prematurity might play out in the context of the National Planning Policy Framework’s protection for veteran trees.

64. In light of the foregoing, I recommend that the TPO consent be quashed.

Julian Forbes-Laird
Director