

Proposed development of Wimbledon Park Lake and surrounds. Planning submission on AELTC proposals. June 2022.

Dr D.G. Dawson

Summary

In May 2022, new details were given of the July 2021 All England Lawn Tennis Club proposals for new reedbed and circular walkway, following “de-silting” Wimbledon Park Lake. These details include the preferred method of sediment removal and the aims that led the All England Club to propose a circular walkway largely within the lake, rather than around it. I consider that the lake would benefit from the removal of sediment, as this would restore Lancelot Brown’s original design and increase its depth by an average of 0.7m but this operation could cause immeasurable harm to the lake, so full detail is required before any grant of planning permission. This submission seeks to remove the factors that make the Grade II* heritage park at Risk.

1. The planning application is deficient because the locations of the sediment to be left in the lake and that to be removed are not detailed, nor is the method of removal decided. Some existing information on pollutants in the sediment is not considered. The purpose of bunds at the edge of the proposed reedbeds is not given. The disposal of material removed from the lake is not detailed. It is not appropriate to grant planning permission for sediment removal without much better information on its consequences.
2. The removal of the sediment by the preferred method would release such large quantities of nutrient pollutants into the lake water as to cause long-term harm to the lake water quality and consequently to amenity use, fisheries and biodiversity. This is adequate reason to refuse planning permission for the “de-silting”.
3. The new reedbeds and walkway would harm biodiversity by encroaching into the lake, so harming three national priority habitats and the special species that these habitats support. No species, reedbed specialist or not, is shown to benefit from the proposals. Approval should not be given to proposals that would result in a net loss to biodiversity.
4. The proposed “Quiet zones” in the two arms of the lake would prove to be “Disturbed zones”, as they would have significant, close human disturbance, preventing wildlife from flourishing.
5. Realistic alternatives to the proposed walkway exist on land owned by, or which could readily be acquired by, AELTC. Such walkways would avoid the harm to biodiversity and could be dedicated as public rights of way.
6. The proposed boardwalks and reedbeds would harm views that survive from Lancelot Brown’s design. Realistic alternatives would allow the restoration and enhancement of this design.
7. All of the reedbed and most of the walkway are proposed on land not owned by AELTC. Both will require regulation of access, and maintenance, but no provision is made for arranging this with the owner.

Introduction

In my submission on All England Club's July 2021 planning application for Wimbledon Park Golf Course and Lake, I gave an evaluation of the proposals for Wimbledon Park Lake. Although the planning application was described as detailed, it was badly deficient in detail. In late May 2022, the Club published two supplementary reports: *Lake Desilting Strategy Statement* and *Landscape addendum*. There was also a revised version of the Environmental Impact Assessment. So, some of the documentation that was held back in July 2021 is now provided¹. This is welcome.

I have always considered that the lake would benefit from the removal of sediment, as this could conserve Lancelot Brown's original design and increase its depth by an average of 0.7m. However, removal on the cheap poses a threat to all the values of the lake. Similarly, there is great potential for public access to nature with appropriately designed public paths, but there is also great potential for harm from poor design.

Here, I update my submission, as is needed now that further detail is provided in the two new documents. I am particularly interested in whether there is now sufficient detail to overcome the great limitations of the earlier application documents and to justify the design choices made in the context of the risk to the Grade II* heritage park:

- Uncertainty about its future;
- The impacts of divided ownership on landscape management;
- Views of the original designed landscape being obscured; and
- The deteriorating condition of the lake.

My earlier submission

The July 2021 planning application documents provided very little information on the proposed "de-silting" (removal of sediment)², and the nature and function of the reedbed and circular walkway. 57,500m³ of sediment was to be removed from the middle 80% of the lake, so increasing the depth by up to 2.5m, and just 1,750m³ (3%) of this was to be dumped in the shallows around the edges of the lake. The shallows were proposed for big new reedbeds, eroding 15% of the area of open water, and the location of a circular walkway was defined.

By way of introduction, I provide, here, a summary of my earlier submission which detailed the deficiencies in the 2021 planning application:

Water quality depends upon low concentrations of plant nutrients (mainly phosphates and nitrates). Quality declined around 1990 and recovered around 2011. The recovery was from a reduction in nitrogenous pollution. The application did not address the causes and history of water quality.

There is a natural annual cycle of plankton and waterweed growth in the lake. This cycle was disrupted by blooms of blue-green bacteria (previously known as blue-green algae) in some recent summers. Blooms are caused by excess nutrients and threaten the biodiversity of the lake and human health. This shows that the lake is on the cusp of a decline to the previous poor water quality, caused by nutrient pollution. Blue-green bacteria were not addressed in the application.

Sources of nutrient pollution were not remedied in the AELTC planning application:

- *Pollutant nutrients arrive dissolved in the water of its three main tributaries. Such dissolved pollutants are not captured by “silt traps”. Detail is needed to show how this is to be prevented or greatly reduced.*
- *The intensive management of the 39 new grass courts, and a great increase in irrigation will dump more nutrients into the lake. The swales and vegetated pools supposed to catch pollutants are too few and small. Without very much better control over nutrient input from the proposed development, the quality of the lake is doomed.*
- *Many nutrients are locked away in the sediment on the bottom of the lake. Disturbing the sediment brings those nutrients back up into the water. Disturbance can come from bottom-feeding fish (Carp, Tench and Bream) or cutting waterweeds. Preventing sediment disturbance is essential for water quality, but is not covered in the application documents.*
- *15% of the fringes of the lake are proposed as new reedbeds to remove pollutants. However, these are in the wrong place and far too small, so would be ineffective.*

The lake has three “National Priority Habitats” for biodiversity: open water, reedbed and wet woodland, making it biodiverse. Replacing some of this with new reedbeds will cause a net loss of biodiversity. The analysis of net gain in the planning application was biased by failure to consider losses to priority habitats.

The lake supports many animals that are uncommon or specially protected. The importance of these is not recognised in the planning application, nor is the damage that the proposals would do to them. The new reedbeds would harm special species, causing a net loss to biodiversity.

There is a gain to amenity from the proposal to restore the lost southern arm of the lake but, unfortunately, this adds only 3% to the area of the lake. The proposed reedbeds and walkway, however, will destroy the lines of Lancelot Brown’s lake, which would be a significant loss to amenity.

AELTC do not plan to implement the lakeside walkway agreed when they acquired the golf course from LB Merton in 1993. The alternative proposal in the planning application is greatly inferior. It is 20% shorter, is buried in dull reedbeds and will disturb birds and detract from views.

The lake has lost around 35% of its depth through sedimentation over the 250 years since it was created. Much more detail is needed for a full evaluation of the proposed removal of sediment. Apart from an increase in depth, other supposed benefits of sediment removal are illusory:

- *There would be no benefit to flood control, because all the sediment is below the regulated level of the lake.*
- *Nutrients more than 10 cm down in the sediments are locked away and the existing problems from the top 10 cm would not be remedied by silt removal.*
- *Sediment is to be moved from the middle 80% of the lake and dumped in the shallows. This will facilitate the damaging new reedbeds and release much nutrient into the lake water, harming its quality.*

Is the detail now sufficient?

There is still no detail of the actual proposal for “de-silting”³

The plans show the present maximum depth of the lake to be 2.7 metres below the current regulated level⁴, which is a minor update.

The estimated amounts of material to be removed are given⁵. Excavation of the infilled southern arm of the lake removes 6,400m³ of soil. There is no plan for how this is to be removed, nor disposed. This material could well be suitable for use in the landscaping elsewhere on the site. Detail must be provided.

51,000m³ of sediment is to be removed from the middle of the lake and just 3% (1750m³) of this is to be dumped in the lake shallows to prepare these for a new reedbed. The total amount of sediment in the lake is estimated as 80,000m³, so some 30,000m³ remain unaccounted for⁶. It remains unclear whether it is proposed to remove all sediment down to the original land surface and, if so, over precisely what area of the lake. Clarity must be provided.

Two plans in the *Sediment Removal Strategy* and Figure 10 of the *Landscape addendum* show a bund at the edge of the proposed new reedbeds, but neither the keys to the plans nor the text make any mention of this. The bunds might retain the sediment around the edges of the lake so that it doesn't make its way back to the middle. The planning application should indicate what is the nature and purpose of the bunds.

The *Sediment Removal Strategy* reports the toxicity of the lake sediments to human health (excess concentrations of lead and three polycyclic aromatic hydrocarbons) and to plant growth (excess concentrations of zinc). This information is based upon just 10 grab samples which were not compared with differing results of earlier investigations (see problems, below).

It is stated that the water and organic content of the sediment might make it unsuitable for use in construction, but it may be suitable as a subsoil in a landscaping project. However, this needs confirmation with a trial removal. The volume of the sediment is said to be too great for it to be used for local landscaping but, of course, some of it could be. Maximising local disposal is desirable and is not impossible⁷; it must be considered.

Lake water quality.

The preferred method of removal of the lake sediment is with an amphibious dredger and a dewatering centrifuge⁸. The sediment would be removed with much lake water, and the centrifuge would separate most of the water and return it to the lake, so reducing the volume of sediment for disposal. This method is said to limit “*any risk to the ecology of the lake and reducing the number of vehicles to and from site.*”⁹ However, this process will wash pollutants from the sediment that were previously locked away at depth, and return them to the lake. This would certainly cause a catastrophic decline in water quality, so threatening the health and welfare of recreational users, pets, and water life. Far from limiting any risk to water life, this would cause catastrophic harm, and recovery from such a pollution event could take decades¹⁰.

The description of the relationship between sediment and lake water quality in the *Landscape addendum* is incorrect¹¹. See the summary of my earlier submission above. The errors include:

- a. Seeing the reduction of eutrophic conditions as an improvement¹², when Eutrophic Standing Waters are a National Priority Habitat.
- b. Attributing poor water quality to the volume of sediment.
- c. Failing to cite the controlling effect of nutrient pollution.
- d. Citing low oxygen levels as a problem.
- e. Failing to mention the contribution to water turbidity by planktonic photosynthetic organisms.
- f. Failing to account for the effects of plankton-feeding fish.
- g. Failing to appreciate that the proposed reedbeds will not ameliorate lake water quality because they are too small and in the wrong places.
- h. Claiming that new reedbeds will “restore” scarce London habitat in a place where new reedbeds will harm two other national priorities.

Biodiversity and access to nature

The Landscape addendum, paragraph 2.7.3.4, states that the development will help “to reduce eutrophic conditions” and provide diverse habitat for other wetland species to colonise. Both statements are misleading (see lake water quality above and Reedbed below).

London Plan Policy G6 *Biodiversity and access to nature* encourages the provision of access in areas otherwise deficient in access to nature. It states that *Proposals which reduce deficiencies in access to nature should be considered positively*.

There is a tiny Area of Deficiency in Access to Nature centred at the southern end of the existing AELTC development west of Church Road, but the rest of the surrounding area is not deficient in access. So, there would be no material reduction in deficiency from the proposals. There is access to recognised Sites of Borough Importance close to each of the three points of access to the public Wimbledon Park¹³. So, whilst the provision of access to nature afforded by the proposals is welcome, it is not a priority in planning policy.

As access to the golf course is permissive, it is not available, except when AELTC wishes, and so is below the standard required by the existing positive obligation accepted by AELTC for the public of LB Merton in 1993. This is easily overcome by AELTC expressively dedicating public rights of way over the paths on their land but the planning application does not undertake this.

Reedbed habitat and species

The extensive reedbed proposed is said to create diverse habitat¹⁴, but just three species are proposed to be planted¹⁵, nor is it acknowledged that richer reedbeds already occur in the lake and that the proposed new reedbed would displace two other National and London Priority Habitats, so that the proposal would result in a decrease in the diversity of Priority Habitat¹⁶. The proposals are still deficient in considering only the positive impact of the reedbeds and ignoring the negative impacts.

It is said that the reedbed will support “... a wide variety of native breeding birds, fish spawning grounds and is an important shelter for European Eel (of which a tiny population is present within the lake)¹⁷. The published description of the National Priority Reedbed Habitat¹⁸ lists seven Red Data Book species, one of which, Cetti’s warbler already occurs at the lake. The four species named by AELTC as benefitting from the new reedbeds¹⁹ are not mentioned in the national description. All are already present on the site:

1. The European eel is supported by the existing reedbeds of the lake and by the open water. As the new reedbeds are provided at the expense of open water, the net effect on the eel of exchanging the one priority habitat for the other is not obvious.
2. The Kingfisher would be harmed, because it uses the wet woodland fringe, which would be sacrificed to the proposed reedbed.
3. Grey herons visit the lake from nearby heronries and a heronry is being established in a tree on the island. This species uses the wet woodland edges to the lake, so it too would clearly be harmed by the loss of wet woodland.
4. Sand martins visit to hunt over the open water of the lake. Establishing a Sand martin bank would be welcome²⁰, as it would reduce the distance this species needs to travel to visit, but the proposed new reedbed would reduce the food supply of this species, so would harm it.

Quiet zones

The ends of the two arms of the lake are identified as quiet zones to be kept free from human disturbance to allow wildlife to flourish²¹. The proposed boardwalk crosses open water at the edge of both of these, introducing disturbance. The western zone also has a proposed access pathway squeezed between four tennis courts and the lake edge, which would introduce further significant disturbance to this zone²². Access paths and tennis courts are also proposed very close to the southern zone. It would be more apt to name these zones as “Disturbed zones”, as they would clearly introduce human disturbance and prevent sensitive wildlife from flourishing.

The route of the walkway

The proposed walkway is described, incorrectly, as being “around the perimeter” of the lake²³. In fact, it is proposed largely within the lake. The choice of route for the circular walkway commendably avoids encroaching on the root protection zone of old and veteran trees²⁴, but there is no need to put the walkway over the lake to achieve this (Figure 1). A diversion on dry land would avoid the harm caused by the proposed boardwalks. Users of the boardwalks are said to be protected by reedbeds from the impacts of anglers and watersports²⁵. It is not clear what impacts these may be, but a threat to walkers from watersports seems fanciful. Watersports and public access are mixed on the existing lakeside promenade. Protection from fishing tackle is afforded primarily by distance, and reedbeds add little to this.

Placing the proposed circular walkway in the lake will introduce disturbance to sensitive wildlife, where there is currently minimal disturbance. The lack of screening of users of the walkway to avoid such disturbance is well illustrated by Figure 11 of the Landscape Addendum. This would effectively reduce the area of open water and

water's edge that is available to sensitive birds and disturb breeding birds at their nests and flightless young birds. The value of the lake for sensitive wildlife would be very significantly harmed. The deliberate disturbance of protected bird species illegal, the proposals seem designed to do this and should not be permitted²⁶.

There is an existing path along the western edge of the lake which lies on land in two ownerships: AELTC and LB Merton. No explanation is given for not using the route of this pathway and so avoiding the considerable disturbance to sensitive species by using the lake. This route is screened from the lake by a wet woodland fringe which is adequate in the south, but thin in the north. It would be readily reinforced to fully protect sensitive wildlife from disturbance. It would be straightforward to provide access through this wet woodland screen to lake edge bird hides, so allowing the public to enjoy the wildlife without introducing undue disturbance.

Heritage

Section 2.7.3 of the Landscape Addendum includes several historical inaccuracies and omissions and should not be relied upon²⁷.

A major deficiency is that the addendum omits the parkland grass of the golf course, which is a heritage

feature, as it grows largely upon the original heritage soils which have a heritage seed bank. This grassland comes to the lake edge in several places today.

The approximate reinstatement of the historic southern arm of the lake²⁸ could result in a very welcome restoration of Lancelot Brown's original lines, where views across the lake from the north and east suggest that a sinuous water body curves off far into the distance out of sight. The western arm of the lake retains Brown's original design. Here, the island hides the far shore in views from the south and east, again giving the visual impression that the water body continues off out of sight.

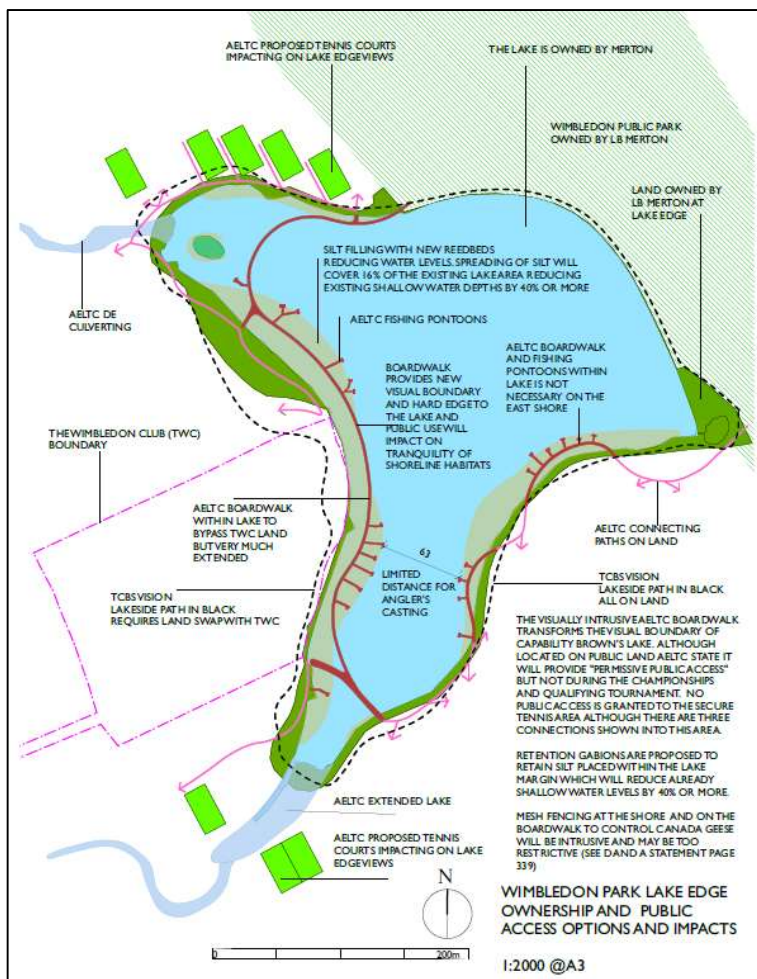


Figure 1. Circular walkway options. © Capability Brown Society 2022.

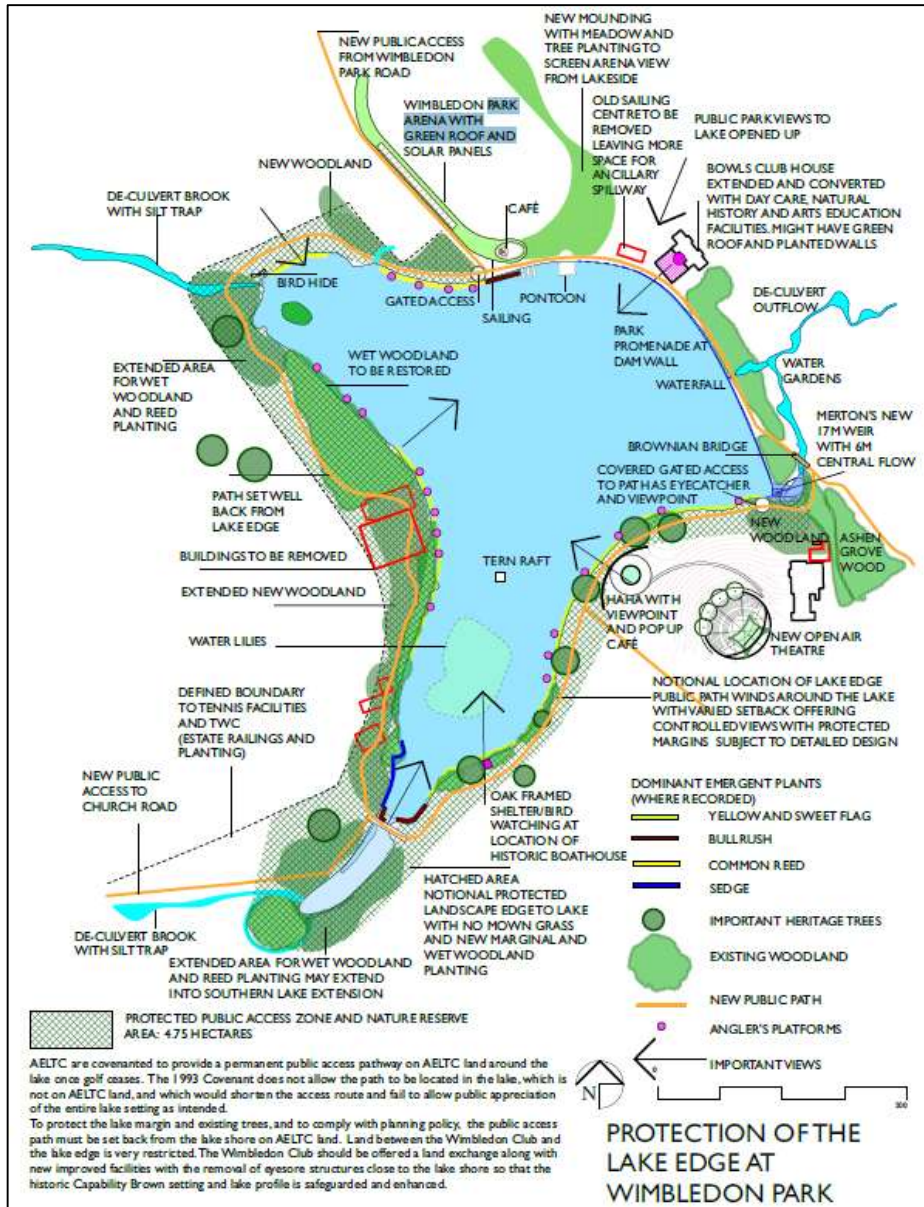


Figure 2. An alternative vision of a circular, lakeside walkway wholly on lakeside land. © Capability Brown Society, 2022²⁹.

However, it is claimed that views are improved by taking the proposed circular walkway over the western and southern arms of the lake, rather than around its perimeter³⁰. Clearly the converse is the case. Taking the walkway over the lake harms heritage design by preventing views of open water beyond, so effectively truncating the two arms of the lake and ensuring that they no longer give the impression of a sinuous water body continuing off into the distance³¹. The EIA states that: "...consideration should be given to whether the adverse effect of the boardwalk on the heritage significance of Wimbledon Park RPG could be reduced by design (e.g. by avoiding crossing the lake tips and/ or reducing the number of jetties)."³²

There is no shortage of land around the perimeter of the lake to route a terrestrial walkway and avoid this serious intrusion into historic views³³.

The proposed reedbeds would grow 2 to 3 metres above lake water level, so presenting a visual barrier and hiding the lake edge. Visually, the lake would appear to be 15% smaller and views would be curtailed. This would exacerbate the effect of the boardwalks and take even more away from Brown's designed vistas.

Alternatives

AELTC do not consider any explicit alternative to their damaging circular walkway design. They do not mention the existing positive obligation, enforceable in public law, to provide a lakeside walkway once golf should cease. Using this obligation as a starting point, and negotiating a sensible land swap, allows alternative circular walkway designs. Use of the existing access route on the western edge of the lake is possible (see above), and another alternative is reproduced as Figure 2 above. Although this independent vision gets no mention in the AELTC application, it surely shows that there are less damaging alternatives than the proposed walkway constructed largely within the lake and which would better meet with AELTC's own brief for a circular walkway³⁴. It is informative that the *Landscape addendum* puts the walkway over lake water because of limited land availability³⁵. I suggest, rather, that the ambition of AELTC for a huge number of new grass courts is what limits the availability of land for honouring a community obligation and providing a great community asset.

Whilst alternative methods of moving sediment are detailed in the *Desilting strategy*, only one scheme of removal and redistribution is considered. The possibilities of removing all sediment from the lake, or none at all, are not investigated.

Problems that are not redressed

1. The claim that: "*de-silting will improve the water .. quality,...*", is repeated, in the desilting strategy and landscape addendum, despite a review of scientific studies on lake water quality finding no clear evidence that this is the case³⁶. Rather, the preferred method of sediment removal (see above) would certainly cause a catastrophic decline in lake water quality. So, the proposals still fail to overcome problems with water quality.
2. The summary of sediment depth in different parts of the lake in section 2.2 of the *Desilting strategy* is based upon a survey in May 2021. This is misleading for several reasons, which are evident on the bathymetric plan of the 2021 survey. First, there were few or no point estimates of depth in the western and southern arms of the lake and in places close to the lake edges. Conversely, there were many point estimates near to the dam. These two biases in the sampling pattern would lead, at best, to poor interpolated estimates across most of the lake or, at worst, to a gross overestimate of the quantities of sediment in the lake. Second, the surface of the sediment was estimated by tuning the sampling instrument rather than calibrating it, so resulting an unknown bias. The results were smoothed, so introducing statistical error into point estimates of depth. Neither of these problems affected the survey of silt depths undertaken for LB Merton by Mid Kent Fisheries in February 2008 yet no reason is given for not considering that survey.

3. The dumping of 1750m³ of sediment behind bunds in the shallows of the lake would have three effects. First, the existing sediment in the shallows would not be removed, so saving perhaps 5% on the cost of sediment removal³⁷. Second, the dumped material would reduce the average depth of water there by around 0.13m, a tiny amount³⁸ and certainly within the range of possible error in the bathymetric survey. Such a tiny reduction in lake depth would not be material in any proposal to create a reedbed. Third, the bund would serve to prevent existing and dumped sediment from slumping into deeper waters, so undoing some of the deepening. This, however, is also a marginal effect because the volumes are small and even if all should end up in the depths, it would be spread over a wide area. Clearly, the proposal for bunds to hold dumped sediment in the shallow margins of the lake is not justified. Further detail is needed of their supposed function.
4. No reference is made to earlier analyses of lake sediment for LB Merton in 1998 and 2008 and 2016, which together investigated as many samples as those made in 2021. These earlier investigations found levels of Arsenic, Chromium, Copper, Iron, Lead, Mercury, Nickel, Sulphate and Zinc suggesting phytotoxicity, or worse. As there has been no removal of sediment since 1998, it is likely that elevated levels remain. It is not clear why the 2021 survey failed to find these. The conflict between the surveys should be resolved. The Angling Club commissioned analysis of the lake water in 2009 for drinking water standards, showing elevated levels of Coliform bacteria and E. coli. Although six water samples were taken in 2020, no results are given for the pollutants found. It would be inappropriate to grant permission for removal of sediment without knowing how the pollutants in it will determine its disposal.
5. The lake water level is not given on the bathymetric survey plan, but on the other two plans in the *Desilting strategy* it is given as 17.470m AOD, however the lake is already certified and regulated at the lower level of 17.42m. All the plans and estimates must be revised to match the actuality. This detail is required before the grant of any permission.
6. The management of reedbeds for biodiversity is best done by allowing the water level to vary seasonally. Cutting the reeds is required for maintenance, which needs drawdown of water to give a dry surface. At other times it is recommended that water depths are varied, to allow drying out in autumn and flushing with water in winter, with maximum water depths of 1 metre³⁹. The present outflow weir from the lake has not been designed to enable such seasonal variation, so the biodiversity benefit of the reedbed is likely to be compromised by a decline in the habitat. The outflow weir has been designed to enable a permanent lowering of lake level to nearer its historic level of 17.12m AOD, should the removal of sediment enable water depths to be maintained. This amounts to a lowering of 0.35m compared to the level assumed in the proposals. Reedbeds constructed to match current water levels would be much drier should this lowering of the lake occur, again compromising their habitat value. Should the lake levels not be lowered, so as to optimise the reedbed habitat, the benefits of lowering the regulated level of the lake would not be realised. Before the removal of sediment and planting of new reedbeds should be permitted it is essential that the consequences of future regulated lake levels is known.

¹ I emailed the Chief Executive of AELTC on 21st January 2022 seeking an exchange of information on the lake, for which the planning application documents provided insufficient basis. Her reply of 1st February listed the documents within which she claimed the whole data could be found. The extra information available only now shows that her reply was not accurate and that data were apparently held back.

² I use the word “sediment” to avoid confusion over terminology, as the technical definition of silt is material of particle sizes intermediate between clay and sand and all three particle sizes occur in the sediments on the bottom of the lake.

³ Paragraph 1.2 of the *Desilting strategy* states that the: *...preferred option ... is subject to further site investigation to verify its appropriateness.*

⁴ The regulated level is 17.42 metres above ordnance datum (AOD) and the deepest part of the lake (about 30 metres off the watersports jetty) is indicated on the bathymetric survey map as a little below 14.75 m AOD. This is not substantially different from the earlier detail.

⁵ A table in the WIMBLEDON PARK LAKE PROPOSED LAKE BED AND CUT & FILL LAYOUT PLAN. This table gives the volumes to five significant figures (to the nearest m³) a misleading precision, given the nature of the bathymetric survey.

⁶ Paragraph 2.7.3.3 of the Landscape Addendum.

⁷ About 50,000m³ of soil and sediment is to be removed and the area of the proposed tennis development is around 20ha. Spreading the soil and sediment across the 20ha would give a depth of 0.25m (or significantly less should drying the sediment reduce its volume). This shows that it would be a challenge, but far from impossible, to use much of the derived material within the landscape of the proposed intensive lawn tennis development.

⁸ Sediment strategy 4.2.

⁹ Sediment strategy 4.2.

¹⁰ A recent review (Hilt, S. et al. 2018. Response of Submerged Macrophyte Communities to External and Internal Restoration Measures in North Temperate Shallow Lakes. *Frontiers in Plant Science* 9:194) discussed hysteresis in lake water quality, whereby improvements to nutrient inputs may take decades or longer to effect recovery of water quality.

¹¹ This description is to be found in paragraphs 2.7.3.3 & 4 of the *Desilting Strategy*, which asserts, without citing any authority, matters contradicted in my earlier submission on the lake (The water quality and biodiversity of Wimbledon Park Lake Dave Dawson, December 2021), my submission is referenced to peer-reviewed scientific papers and will not be repeated here. The volume of sediment *per se*. has no effect on lake water quality. Rather it is disturbance of the sediment by bottom feeding fish or waterweed cutting that releases nutrient pollutants, otherwise locked away in the sediment, and it is these that cause algal and bacterial growth. It is this plankton, not sediment *per se*, that results in turbid water, which in turn harms waterweeds and hence lake water quality. Additional harm comes from algae growing on the fronds of the waterweeds. As is typical of shallow, eutrophic lakes, oxygen levels are not a problem. The proposed reedbeds are badly positioned and far too small to have an appreciable effect on lake water pollutants. They would replace existing priority habitats, so resulting in a net loss to biodiversity. The accurate account of influences on lake water quality, including reedbeds, is to be found in my earlier submission on the planning application

¹² This claim is repeated in paragraph 2.7.7.1.

¹³ LB Merton’s *Green and Blue Infrastructure, Biodiversity and Open Space Study* mistakenly omits three points of access to Borough Sites of Importance. First, is access to Horse Close Wood (Borough Grade I) from the Wimbledon Park Road entrance to the public park. Second, is access to the hedgerow running north from the Revelstoke Road Car Park (Borough Grade II). Third, is access to Ashen Grove Wood (Borough Grade I) from the Home Park Road entrance. The latter was erroneously omitted from the local plan, an error corrected in a proposed modification to the LB

Merton local plan. Even without this correction, there is access to nature on the lakeside promenade, which is also close to the Home Park Road entrance. The first two involve access to nature in the LB Wandsworth parts of the public park, which perhaps explains the error. It is nevertheless an error, because areas of deficiency apply regardless of London Borough boundaries. Paragraph 4.27 of the *Study* states that “As part of the Green Infrastructure, Biodiversity and Open Space Study all existing SINC’s will be surveyed by a suitably qualified ecologist and any enhancement opportunities will be identified. The survey will also provide information on the existing boundaries of SINC’s and identify any boundary changes which could lead to the expansion or reduction of a site.” There is no detail of these site visits in Merton’s *Study*, but it seems likely that the consultants didn’t visit the public park, perhaps because they were using the Local Plan sites map which, of course, shows only LB Merton sites and was in error (see above).

¹⁴ Paragraphs 2.7.3.4 & 2.7.7.1

¹⁵ The list of species given on the revised *Soft Landscape General Arrangement 04 (Mix of typha latifolia (reedmace/bullrush), sparganium ramosum (burr reed), and phragmites australis (Norfolk reed), planted as seedlings and locally sourced)* has incorrect, and so ambiguous, terminology, but just three species would make a species poor reedbed in comparison to what is already in the lake.

¹⁶ As this was considered in my earlier submission, I just list these here. London priority habitats are given in Appendix 2B of the Mayor’s Environment Strategy and are woodland, open water and reedbed. The equivalent National priority habitats in and beside the lake are Wet woodland, Eutrophic standing waters and Reedbeds. Details of these are available online.

¹⁷ 2.7.7.1 of the Landscape Addendum.

¹⁸ UK Biodiversity Action Plan. Priority Habitat Descriptions. Reedbeds. The species are the Bittern, Marsh harrier, Crane, Cetti’s warbler, Salvi’s warbler, Bearded tit and Aquatic warbler.

¹⁹ Landscape addendum, Paragraph 2.7.7.1.

²⁰ Although welcome, this would require permission from the owner of the lake, LB Merton, who have always resisted such provision.

²¹ Landscape addendum 7.7.7.2.

²² EIA, Figure 4.8: Court Layout with Constraints and Landscape Improvements.

²³ Landscape addendum 2.7.4.1

²⁴ Landscape addendum 2.7.5.1

²⁵ Landscape addendum 2.7.7.1 & 2.7.9.2.

²⁶ It is illegal to intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird. Schedule 1 species currently using the lake include Cetti’s warbler and Kingfisher.

²⁷ The map excerpt in Figure 4 of the Sediment Strategy is attributed incorrectly as “from the Haynes Plan of Wimbledon Park, 1765-1785”. This map is from 1785, not any earlier, and was not by Haynes. The southern arm of the lake was intact in the 1894 Ordnance Survey, half had been lost and half mapped as swamp by the 1911 OS and it was wholly infilled by the 1933 OS, giving a date range around 1905-1915. Rushmere Brook was put underground between 1894 and 1911. The loss of the eastern arm of the lake occurred between 1911 and 1933, probably corresponding to the landscaping of the public park in the late 1920s and the addition of the sheet piling was in the 1970s and there was no straightening of the dam face as a result (*The dam holding back Wimbledon Park Lake, a history*, Dawson, March 2021). The same reference gives details of the various changes to the outlets. Only a short mid section of Bigden Brook was underground in 1950.

²⁸ The southern arm was clearly indicated on the 1768 Richardson plan of Wimbledon Park and so was part of Brown’s first contract in the park, completed just two years earlier. The reinstatement is described in EIA Technical Appendix 10.1 Historic Environment: 5.20. “...the shape of the lake tip may be reinstated but not necessarily its exact historic profile.”

²⁹ *A Vision for Capability Brown’s Wimbledon Park*. The Capability Brown Society, March 2021.

³⁰ Landscape addendum 2.7.5.2 & 3.

³¹ This is described in the EIA Technical Appendix 10.1 Historic Environment: 5.22: the "... board walk will negatively affect the ability to perceive the lake as a 'natural' body of water, as probably intended by Brown, by introducing (albeit low-level) development to its margins and across it. Where the boardwalk crosses the northern and southern lake tips it will interrupt and reduce the naturalistic design intent of their composition (e.g. the ability to perceive the water as disappearing in to the distance). This will be readily apparent in the views of the northern and southern lake tips, from the south-western lake tip and eastern edge of the lake. These are some of the few historic views that it is possible to understand given the diminished form of the park."

³² EIA Technical Appendix 10.1 Historic Environment: 6.5.

³³ One such alternative design is illustrated by the Capability Brown Society's "Vision" for the whole Grade II* historic park.

³⁴ Landscape addendum 2.7.1.

³⁵ This underlies the justification for a damaging route for the walkway in Landscape addendum 2.7.5.2 & 3 and in 2.7.8.2. The latter paragraph claims that putting the western section of the walk into the lake is the "only credible option". This is obviously incorrect, given that the golf club had an access path in just this location, generally well-screened from the lake (so avoiding disturbance to sensitive wildlife). Land ownership there is LB Merton and AELTC, so its use as a lakeside walk is entirely possible should AELTC take over the current leasehold arrangement between LB Merton and the golf club. It seems that the actual reason for claiming no path is possible here, and on dry land elsewhere, is to permit an access route devoted to the private grass courts development. In other words, AELTC wants to offer a substandard public walkway so as to free up land for its intensive, private tennis development.

³⁶ The claim is in the second paragraph of section 3.1. I provided the relevant reference in my earlier comments on the effect of the proposals on the lake. This was a recent review (Hilt, S. *et al.* 2018. Response of Submerged Macrophyte Communities to External and Internal Restoration Measures in North Temperate Shallow Lakes. *Frontiers in Plant Science* 9:194.). The review examined 49 lakes which had lost their waterweeds and where attempts were made to recover waterweeds and the accompanying ecosystem services and functions, including biodiversity, low nutrient levels, drinking water quality and swimming quality. They found that a lasting recovery of waterweeds, and hence water quality, depends upon both a sustained reduction in the nutrient concentration of inflows and the repeated removal of fish that feed on the bottom of the lake, or on plankton. Four lakes where fish were removed achieved long-term water clarity and in three of these no other measures were taken, so demonstrating the efficacy of fish removal. No lake where sediment was removed without fish also removed showed any long-term benefit, so a beneficial effect of sediment removal by itself was not demonstrated.

³⁷ Given the deficiencies of the bathymetric survey, no good estimate of the existing amount of sediment in this 15% of the lake is possible. The few point estimates of sediment depth in and near this area suggest that it is all less than 0.5m. Taking a mid figure of 0.25m, a very coarse estimate of the saving would be 3,375m³, which is but 6% of the amount proposed to be removed from the middle of the lake.

³⁸ The proposed "reedbeds" constitute around 15% of the 9ha lake, so 1.35ha.

³⁹ White, G. 2004. *Reedbed design and establishment*. RSPB Information and Advice Note.