Friends of Wimbledon Park
Dam Safety Works Notes 03

Questions:

1) As there will be significant downstream effects of the new design, can we see the results of the predicted peak flows and of the flood modelling downstream for the 1:10,000 Flood Event, the Safety Check (the Probable Maximum Flood), the design flood and of a flood requiring the full capacity of the primary spillways, but not overtopping the auxiliary spillway?
2) Do you agree that regulating the lake at a lower level would increase the freeboard and hence the volume of flood that can be stored in the lake?
    a. Have you considered designs that involve lowering the regulated level of the lake, such as was suggested in the flood study?
    b. If so, why was lowering not taken forward and if not, why not?
3) What design changes would be necessary to avoid lowering the lakeside path?
4) Why not avoid extra ramps, steps and sleeping policemen by having a low, lakeside, wave-deflecting wall?
5) Why deliver flood flows to the children's play area, when this requires extra channels or pipes in the public park to convey them safely to the open brook?
6) Do the sheet piles need repair or replacement?
7) If existing lakeside trees are to be retained, why is it not proposed to replace any that are lost?
8) The proposal is in a multiple-use public park and a grade II* heritage landscape. What priority is given to each use when choosing design options?

Comment:

1) A planning application is being made for Revelstoke Road entrance which includes ground cover. If there are any requirements or options for this area relating to the dam works early notification would be appreciated.
2) The water sports will, in time move to the stadium area. The boats could go earlier and takeover the dam works compound when they leave. This will remove the huge congestion and barriers that are currently a big problem.
3) The Capability Brown Design spillway takes all flows down one part of the dam face, requiring big structures in a public place, the full capacity of which is unlikely to be needed in a human lifespan. Designing a Lancelot Brown cascade as part of these structures is a challenge, especially given the low everyday flows. Also, there is a mature English Oak (T51 in the lakeside tree survey) that would need to be retained and a few other trees desirably retained. However, it has been possible to have cascades and public safety in other places where works have been undertaken (for example Blenheim Park).
4) Only 2½ % of woodland in the UK is ancient so our Ashen Grove Wood is worth preserving and we need to bear in mind that a lot of this value is in the soil biodiversity.
5) The waterfall was turned off during the summer months which spoils the scenery and restricts child play and learning.
6) The waterfall is scheduled for relandscaping and occupies the garden part of the Heritage site and more extensive works are required here as well.
    a. The waterfall has two significant problems.
    b. First, is that the inlet grille on the dam face clogs readily and needs clearing at least weekly. This, not the outflow valve, is the main reason for the variation in waterfall flow.
    c. Second, is that there is a leak somewhere within the waterfall structure which leads to water oozing up near the bottom basin.
    d. Also, both the pedestrian paths and landscape planting were not robust, so both need repair to a more sensible design.
    e. The waterfall is seen in the master plan as a landscape feature. Visitors with young children also recognise it as a place for water play.
    f. Creating a big new outflow with a landscaped cascade which can also serve as a water play feature would be a design challenge.
7) A well-designed cascade would become a major feature and preferred over the partial loss of ancient woodland.

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Supporting information

FOWP Aim on Dam Safety works

The proposed dam works required to make people safe from downstream flooding also offer the opportunity to design this in such a way that it becomes a major feature to be enjoyed by visitors for the next 100 years, this includes:

- ***Celebrating Capability Brown's lakeside carriage drive (now the lakeside path) and the vistas across the lake from there,***
- ***Admiring and playing in the cascade,***
- ***Appreciating and learning from the meandering Wimbledon Park Brook which allows the glass eels from the Sargasso Sea to enter the lake.***

Provision for the:

- ***safe keeping of Ashen Grove Wood (ancient woodland),***
- ***restoring the lost eastern arm of the lake and***
- ***improving biodiversity and habitat for nature.***

Dave Dawson: Options to make the Wimbledon Park dam safe

The normal low flows of the brook present a challenge to the re-design of the outfall structure as a "Brownian cascade", proposed in the Masterplan, but something not unlike the present waterfall design should be possible. Merton Council's Wimbledon Park Masterplan suggests replacing the waterfall with a new "Brownian cascade" outfall. By moving the position of the outfall, the Capability Brown design would preserve the best part of Ashen Grove Wood from a disruptive new construction and would enable the restoration of part of Brown's lake that was lost when the present outfall was constructed. But this is not considered in the report and the present outline design would need substantial modification to approximate to a Brownian design.

From Wimbledon Park and Lake Masterplan *December 2018*

2.3.5. This pond [*the lake outfall*] discharges via a trash screen and pipe into the open course of the Brook which runs through the Park, under the cafe via a culvert, then in an open channel to exit the Park via a trash screen and pipe under the railway embankment. There is another outflow (at a lower level) in the middle and steepest section of the dam, feeding an artificial waterfall introduced in 1952 [*It featured on an OS map published in 1951, so certainly was not constructed as late as 1952]* which runs through the Waterfall Garden laid out in 2010 before joining the Wimbledon Lake Brook, an ordinary watercourse. After exiting the Park, the water continues underground for roughly 1km before discharging into the River Wandle at Ravensbury Terrace in Earlsfield.

4.9.7. The Waterfall garden could be relandscaped as a natural Brownian cascade (potentially designed to serve as a secondary spillway for the Lake during flood events), and linked with a re-landscaping of the Brook, creating a more natural character with meanders and improved riparian habitat with areas acting as flood storage.

5.10.10. The re-landscaped Waterfall Garden should continue to appear as a natural cascade, ideally increased in scale to make a more meaningful, positive feature, linked with the re-landscaped Brook, which will offer a more natural character with meanders and improved riparian habitat with areas acting as flood storage.

2.9.1. The Park is a significant and much valued open space for both Merton and Wandsworth. Its primary use is for informal recreation – walking (with or without dogs), exercise, playing, relaxing, enjoying the outdoors, and socialising – which is reflected by significant areas of amenity landscape such as mown grass, paths and seating, and ornamental planting and features such as the Brook and the Waterfall Garden.

2.9.2. Importantly, this informal recreation includes valuable opportunities for access to nature, particularly the habitats and species present in the Lake, Horse Close Wood, Ashen Grove, the Brook, numerous mature trees, hedgerows and ornamental planting.

4.9.2. Horse Close Wood and Ashen Grove woodland will be retained and enhanced, with management improved for nature conservation.

2.10.24. Watersports & Outdoor Activities Centre appears to date from the 1970s. Built of yellow brick and exposed concrete, most now painted mauve, it is an unattractive building sited tight behind the lakeside path. Although below lake level, making it prone to flooding, its ungainly profile fills the only open views across the lake from Home Park Road. Some brickwork appears to require repointing and other repairs. The concrete may require extensive repairs and should be inspected and tested. The single-glazed sloping patent glazing is due to be replaced, we assume with doubleglazed units. The lecture room and staff area are in practice used as additional stores. Internal area is just under 300m2, much of it in cramped changing areas and inadequate, unattractive shower/WC areas. Some WCs are externally accessed.

2.10.25. It is an unattractive, obtrusive building in a conspicuous location, providing a poor level of facilities despite recent expenditure. Its inadequate storage area impacts on other spaces, both within the Centre and in the Bowls Pavilion. Changing provision is inadequate: reported use of 250 people per day at peak times is enabled only by staggering times onto and off the water, existing changing room capacity is around 70 persons,

excluding staff changing provision. It should be noted that the size of the lake is a limiting factor for watersports numbers, and is probably already at a maximum. However, the Centre is significantly underused for 8-9 months of the year, peaking from June-August with school events and children's holiday courses. There is reportedly limited scope for expanding adult courses as the lake is unsuitable for advanced ability levels.

5.6.15. Watersports Centre. The existing Watersports Centre will be demolished and relocated further North as a two-storey lakeside building adjacent to the current Athletics site. Accommodation will include four changing suites like that to the Bowls Pavilion described above: we have assumed that a changing suite comprises two 15-20 person changing rooms, each with shower and WC provision, all to Sport England standards.

5.11. Views

5.11.1. The Masterplan provides some opportunities to improve views within the Park and to the wider landscape.

- The existing Watersports & Outdoor Centre will be removed and the area re-landscaped, creating the opportunity to open-up views between the Lake and the Great Lawn.
- The boat storage and sheds in the yard behind the Bowls Pavilion will be relocated to behind the new Watersports & Outdoor Centre at the northern end of the Lake embankment, improving views along the Lake embankment and between the Lake and the Bowls Pavilion.
- The boundary fencing, tall Lleylandii trees/hedge and mature Poplar trees surrounding the Athletics compound will be removed and the area re-landscaped to better integrate these facilities with the rest of the Park. This also creates the potential for long views between the north of the Park and the Lake across the Athletics track and filtered by new parkland tree planting.

Wimbledon Park Lake Safety Project

Public Consultation: Friends of Wimbledon Park Meeting

Collated Project Team Responses to Questions Raised

1. *As there will be significant downstream effects of the new design, can we see the results of the predicted peak flows and of the flood modelling downstream for the 1:10,000 Flood Event, the Safety Check (the Probable Maximum Flood), the design flood and of a flood requiring the full capacity of the primary spillways, but not overtopping the auxiliary spillway?*

W&B response: The modelling downstream of the spillway is currently being developed alongside the Flood Risk Assessment as part of the planning requirements and design process.

D&R response: There will be no increased flood risk downstream. The flow rates can be provided

LBM response: Nothing further to add on the above.

2. *Do you agree that regulating the lake at a lower level would increase the freeboard and hence the volume of flood that can be stored in the lake?*
    a. *Have you considered designs that involve lowering the regulated level of the lake, such as was suggested in the flood study?*
    b. *If so, why was lowering not taken forward and if not, why not?*

W&B Response: Yes, lowering the water level of the lake will increase free board and subsequently improve attenuation. Equally increasing the embankment height can be utilised to achieve the same result. An analysis has been undertaken, within the framework of engineering requirements, on the benefits of reducing the water level and/or increasing the embankment height versus the resulting negative impacts to the recreational use of the lake, it's water quality and effect to fish, cost of de-silting works, visual impact to the Capability Brown landscape and access/egress along the waterside walkway. The conclusion is that a 50m reduction in water level and 50mm increase in embankment height, resulting in a net increase of 100mm to the free board, provides the greatest benefits whilst ~~not~~ keeping the negative impacts to a minimum.

D&R response: Agreed but would not meet all stakeholders' requirements and expose large areas of siltation. A balanced approach of some reduction in water level and a raising of the dam has been followed. Designs that involve lowering the regulated level of the lake have been considered as part of the aforementioned balanced approach.

LBM response: Agree with W&B response nothing further to add.

3. *What design changes would be necessary to avoid lowering the lakeside path?*

W&B Response: As part of the above analysis, and based on input from various stakeholders and consultants, it was deemed that the lowering of the lakeside walkway in the 75m long auxiliary should be avoided. Hence the current proposal sees this walkway maintained at its exiting level of 17.7mAOD.

D&R response: The lakeside path is now not being lowered.

LBM response: Nothing further to add on W&B response.

4. *Why not avoid extra ramps, steps and sleeping policemen by having a low, lakeside, wave-deflecting wall?*

W&B Response: The construction of a low level lakeside wall (circa 250mm) is likely to be more impactful than the introduction of more gentle ramps/grades and kerbing. From an access/egress viewpoint the wall would obstruct access to the lake to the water sports club and their boats. The wall also restricts access to the lakeside to the public for duck feeding and cause a trip hazard with an increased potential for falling into the lake. Finally the wall would have a significant visual impact and moves away from the Capability Brown landscape.

D&R response: A wall would be very intrusive and preclude people getting to the water. We won't have steps and there will be gradual ramps

LBM response: Nothing further to add.

5. *Why deliver flood flows to the children's play area, when this requires extra channels or pipes in the public park to convey them safely to the open brook?*

W&B Response: The current proposal places the primary spillway in one of the lowest, shallowest and hence safest sections of the dam with the added advantage of the existing stilling pond which will dissipate the energy from cascading flows. A consideration for conveying flows is necessary no matter where this spillway is located.

D&R response: We will not be directing flows into the play area. Any overland flows will be in very extreme events.

LBM response: There is already an existing culvert from the stilling pond through the childrens play area discharging into the open brook and this may be utilised subject to the hydraulic modelling assessment. Opportunities for deculverting are also being considered but needs to be balanced in terms of other constraints including space to avoid tree removal and health and safety concerns.

6. *Do the sheet piles need repair or replacement?*

W&B Response: The sheet piles need to be repaired, as required, pending a visual inspection of them during the construction.

D&R response: It is likely that minor repairs in the upper parts will be required.

LBM response: Nothing further to add.

7. *If existing lakeside trees are to be retained, why is it not proposed to replace any that are lost?*

W&B Response: The replacement of any trees that are lost as part of this project is one of the considerations being undertaken.

D&R response: The design seeks to retain as many lakeside specimen and important trees as possible. Tree replacement outside the footprint of the dam and its structures is a matter for Merton.

LBM response: A tree mitigation and compensation strategy is being proposed which looks at replacement of trees in appropriate locations.

8. *The proposal is in a multiple-use public park and a grade II* heritage landscape. What priority is given to each use when choosing design options?*

D&R response: We seek to minimise disruption, apply appropriate designs to the setting whilst meeting the requirements of the Reservoirs Act 1975.

LBM response: The design option are being appraised in regards to it setting and will be sympathetic to its location in a grade 2* heritage landscape. A heritage assessment by a capability brown specialist consultant will accompany the planning application.

Response Provided	Project Team Member	Role
W&B	Ward and Burke	Design and Build Contractor
D&R	Dams and Reservoirs	All Reservoirs Panel Engineer (ARPE) Consultant
LBM	London Borough of Merton	Council