Further Objection to Planning Application No. 1400505/FUL – Avenue Lodge Lake.

The statement (and reasoning) by the **Land Drainage Officer of 24th April 2014** has merely been repeated, rather than being modified to take account of the Hydrology Report submitted in July 2014. The LD Officer states that:

"***There is no evidence to suggest that the pond within the grounds of Avenue Lodge serves any flood risk management purpose. There is no formal inlet to, or outlet from the pond and water levels within it are determined by the normal variations of groundwater. Such variations being associated with seasonal changes and the prevailing weather conditions.***

Infilling the pond (partial or complete) will have no long term effect upon ground water levels as they will balance out with time. However, if permitted, infilling operations would displace the water impounded within the pond at the time. Such displacement would need to be managed to ensure that the surrounding land and property was not adversely affected.
In my view (subject to the appropriate management of displaced water during infilling operations), in the long term, the proposal will not increase flood risk upon the site or the surrounding land."

With regard to his first paragraph, he states that the Avenue Lodge pond serves no flood risk management purpose, and that the overflowing from groundwater rising, is associated with seasonal changes and prevailing weather conditions.
Flooding in my adjoining garden has occurred in both summer and winter, disproving his simplification that it is seasonal. July 2007 is an example of an extreme mid summer rainfall event. Such events are becoming more common with climate change.

The LD Officer's sole concern is with the water that is displaced **at the time of the infilling**, rather than with the permanent loss of half the lake's capacity to hold rising ground water in severely wet periods, and thereby he dismisses any flood risk at all upon the site or surrounding land. There is, however, plenty of photographic evidence to show flooding of my neighbouring garden with the lake as it is, so it would be impossible for this flooding not to be exacerbated once half the lake had been filled in.
The previously submitted flood photos will be made available for the committee to view. Special note should be taken of all the photos dated the **16th January 2008** which show the hugely expanded lake during a wet period.

The Hydrologist states that the difference between the summer and winter level of the lake is 300 mm i.e. just under 12 inches. The photos demonstrate that the difference is much greater in wet periods. The Hydrologist also states that the depth of the lake is 4 feet, but the previous owner who kept a boat on the lake, stated that it could go down to 6 feet deep in the centre.
Infilling half the lake with clay soil, as recommended by the Hydrologist, means that not only will the holding capacity of the lake be much reduced, but also water cannot flow through clay easily – a well known fact. Hence water rises up in clay soil, as everyone living in this area well knows from their gardens. Therefore it cannot be correct to say that the lake does not serve any flood risk management purpose, and that infilling half of it will have no long term effect upon ground water levels. If the water can only rise up and flow (slowly in a north-west direction the hydrologist states) through the reduced half of the lake, then the surplus will rise up somewhere else nearby.

The concluding paragraphs 7.2 and 7.3 of the **Planning Officer's Report** are inconsistent. At 7.2 he states:

"Professional advice expressed by both the Council's Drainage Engineer and informally by the Environment Agency indicated that despite what is alleged by local residents, the infilling of the pond in the long term, would not increase flood risk upon the site or the surrounding land.
This view is supported in the conclusions to the Hydrology report submitted at Members' request: "the operation of infilling half the existing pond area with clay will therefore have an insignificant effect in

relation to groundwater flooding at the surrounding properties, including the most affected property, Brambles."

Having concluded that both the LD Officer and the Hydrology Report state that the infilling of half the lake would have an insignificant effect in relation to groundwater flooding at the surrounding properties, the Planning Officer then says in the next paragraph (7.3):

"*The Hydrologist does, however highlight the fact that there may be some increased risk of water flood frequency arising from a reduction in the size of the pond. He recommends that compensatory storage volume of around 80m³ should be provided. It is considered that this requirement could be secured by way of condition."*

The Planning Officer's conclusions are confusing, but he does admit that "***there may be some increased risk of water flood frequency arising from a reduction in the size of the pond"***.
The recommendation to "permit" relies upon the provision of a significant capacity for further water storage being provided, via a planning Condition, but no details are provided as to the reality of what this entails or how it would work in practice.

Condition 6 of the "Permit" recommendation states the following:

"No work on site shall commence until such time as details of a scheme for compensatory storage of water during times of extreme rainfall has been submitted to and approved by the Local Planning Authority. The scheme shall provide for compensatory storage volume of around 80m³ and shall be designed to take the form of underground storage or the creation of a depression in the landscape (with appropriate planting) either of which would flood temporarily and then soak away. The measures approved in compliance with this condition shall be implemented in full and otherwise be available for use before any work in compliance with this planning permission is commenced.

Reason: To ensure the development does not result in an increased risk of surface water flooding. "

The implications of **Condition 6** require serious consideration in order to understand just what it entails.

If an **underground storage tank** is chosen, which is required to store 80 cubic metres of water, the tank size would need to be enormous, as 80 cubic metres equates to 80,000 litres. It is not possible to find any on-line supplier providing a storage tank of this size. The largest tank found would hold 75,000 litres and the dimensions of it are 16.5 feet wide by 16.5 feet long by 10 feet deep. Therefore an **80,000 litre tank would be approx. 18 feet long by 18 feet wide by 10 feet deep**. This would equate to excavating and installing an underground room of this size!
Another supplier showed their largest size tank to hold 62,000 litres and this was a cylindrical shape, measuring 22 feet long with a diameter of 11.5 feet. To increase the capacity of a cylindrical tank to take 80,000 litres it would need to be even longer - 28.4 feet long by 11.5 feet diameter, assuming that the diameter could not be increased due to the depth required to be excavated, and also that such a large cylindrical size is actually made.

The underground water storage tanks provided for domestic garden use are on a significantly smaller scale – up to a maximum of 10,000 litres capacity, so installing an underground tank of this size i.e. 8 times larger than the largest domestic size, is something that would normally only be undertaken on a large scale development, or on a commercial or industrial site.

The siting of such a massive underground tank would also need to be well away from any neighbouring garden boundaries, otherwise the required constant water release, as required by Condition 6, could cause their gardens to become either permanently or intermittently waterlogged, or even flooded.

The level of the water table also has to be taken into account when an underground storage tank is installed. This area has a known high water table so it could be problematic to excavate an area measuring 12 feet deep and 20 feet square. A tank must be able to resist the soil and soil water pressure from outside when the tank is empty. An empty tank can rise up when the ground water level rises. Backfilling with concrete may be required. The tank must be correctly sized to discourage stagnant water becoming a breeding ground for bacteria (which can include Legionnaires Disease), and needs to overflow at least twice a year to flush out, avoid stagnation and remove floating debris. The overflow must be the same size or larger than the inlet to permit this.

Condition 6 also states that instead of an underground storage tank, **a 'depression' in the landscape** could be excavated with appropriate planting. In order to have the capacity to hold 80,000 litres of water, this depression would need to be 29 feet long by 29 feet wide and one metre deep.
It may not be effective to dig the depression deeper than one metre, otherwise it might retain some water permanently, due to the high water table, and in the event of a period of sudden, prolonged rainfall, there would be insufficient capacity to take the floodwater inflow. The "appropriate planting" for this depression, as mentioned in the Condition, would likely be affected by frequent periods of water logging, so may be severely limited or even prevented from growing at all. The stated planting of 50 trees may be possible only around the boundary of the garden.

A new depression of these dimensions amounts to filling in half the existing lake just to create another lake of a similar size, in close enough proximity to be able to take the overflow water. It is illogical and self defeating!
This historic lake (as shown on an 1847 map, but likely of much earlier origin), was only annexed into the garden of Avenue Lodge in the 1980's, when the surrounding residential development took place. The lake and its setting, as a wildlife area, were much valued by the Inspector in her Appeal Decision in 2010. The building of Avenue Lodge itself is also on the Local List of Buildings of Special or Historic Interest.

It is clear that the **Tree Officer** has not been able to take account of either the installation of a massive underground storage tank, or the alternative requirement to excavate a new "depression", effectively creating another 'pond', as his Comments were made in **May 2014**, before the Hydrology Report was submitted, and therefore without any knowledge of the implications of Condition 6.
Excavating to accommodate an underground storage tank of the measurements given above would likely result in the loss of some trees and/or damage roots (some trees are TPO'd).

Whether an underground tank or a new depression is chosen, both systems need to release the water taken in during wet periods into the surrounding land.
Both would need to be sited adjacent to the existing lake, but away from neighbouring gardens in order not to cause water logging or flooding of their land. How the overflow water gets into either the tank or the new depression is also not known, but must require piping and a submersible pump of some kind.
The tank method would need pro-active pumping, to keep it normally empty and available to receive overflow from the remaining pond. Depending on the depth of a new "depression", this might also require a submersible pump.

If, as is most likely, the creation of a new "depression" is chosen, how can the Council ensure or enforce the following:

1. That it is excavated to the correct capacity in the first place. Does the council have the required expertise to be able to do this?
2. Ensure that the new pond is not reduced in size or infilled in the future, (becoming the location of another application for a dwelling).
3. The new depression may require long term monitoring by the council, and risks a scenario of constant vigil and worry for neighbours. It is also extremely doubtful that the council can be relied upon to monitor, control or enforce the required storage capacity in the future. Neighbours should not be left to police this matter themselves, but essentially this would be the reality.

4. If the new depression is not created to the correct capacity, or is reduced or infilled in the future, and flooding of neighbouring land is exacerbated, what responsibility does the council have regarding this planning decision, and for enforcing remedial action?

This application should be therefore be **refused** because of the implications arising from Condition 6. Once the application is granted there would be no certainty of ensuring that the required 80,000 litres of additional water storage capacity is retained in the future.

In addition the application contravenes much of the Inspector's previous Appeal Decision of 2010, whereby she valued the environmental benefits provided by this historic lake and ruled that its "essential character" should be protected.

Yours sincerely,

[redacted]

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