

Colney Heath Group (CH Group)

Appeal by Brett Aggregates Limited

Land at former Hatfield Aerodrome Hatfield Hertfordshire AL4 0JB

Ref. App/M1900/W/24/3346607

CHG Hydrology & public access issues

M Hartung

Evidence regarding the public access strategy and the lagoons and hydrology of the park

This document provides some detailed technical evidence that shows that the lagoons are positioned in the wrong place and that the hydrology will be altered when the quarry is in operation, and the public access strategy does not demonstrate how it will cope with the hydrology changes.

1. The Lagoons

1.1. Extract from the Ministry of Housing Communities & Local Government

“b) a failure to integrate the restored phases into the unaffected part of EP in a timely manner, **in part due to the positioning of the lagoons**, which means that when the worked-out areas to the west are restored, it will not be possible to integrate them into the unaffected part of the park to the east through extensions to it, until the quarry is in its final stages of restoration.”

extract from a letter from the SoS11th November 2025

1.2. The background as to the position of the Lagoons

In 2014 the Environment Agency EA advised Brett Aggregates that the eastern position of the lagoons would act as a barrier to known bromate pollution in the LMH and protect mineral extraction in phase A and phase B. The present position of the lagoons is shown in HQ 3/1 on the eastern side of the site. The North Recharge Lagoon is taking rainfall runoff and gravel washing water which will recharge into the upper aquifer over time.

HQ 6/9, Water Environment 6

1.3. Blocked East – West access

The image *drawing 1* shows the location of the lagoons from Home Covert in the North to the University playing fields in the South. It shows how the lagoons block E-W traffic.

Three routes have been proposed, one being a small path between the lagoons, the other main routes are north and south of the lagoons.

Part of the existing concrete runway path has been removed to make way for the lagoons. The concrete path is used by the majority of Park users, but the “narrow muddy track” is avoided as it goes through a cattle field



My inlaid graphic *drawing 1* from CD1702_public_access_strategy_feb26, (taken from drawing number 5)

1.4. Conclusion

The lagoons are just in the wrong place. There will be no way of integrating land sections or phases in the western part of the Park with the area to the East.

Even In its final stages of restoration the single lake still blocks and splits the Park in two.

2. Reclaimed land and Restoration and the hydrology implications for Public Access

2.1 Summary

The new public access strategy (PAS) allows for an active quarry to pass reclaimed land back to the park. This land will have been previously filled with inert waste, topsoil and now opened to the public. A new drainage assessment is needed to integrate into the PAS.

2.2 Cause for concern

- Today, if 100 drops of rain fall on Ellenbrook Fields, hypothetically it will result in 15 as rainfall runoff, 85 drops infill the aquifer.
The balance will reverse, when 8million tonnes of inert waste is filled into the void, more drops will have to be diverted to the recharge lagoon - the transfer can be slow via SuDS or fast by 24/7 pumping.

2.3 Background notes

With reference to [CD15.12 Hydrology and Flooding Bundle \(correspondence & maps\)](#)

- *Extracts from LLFA to Chay Dempster, Local Planning Authority, HCC, 23rd November 2021 requesting information on managed rainfall:*

“Overcoming our objection”

“However, as a new, full planning application and in accordance with Hertfordshire County Council’s Local Flood Risk Management Strategy 2 (LFRMS2) published in 2019, the applicant is required to provide full details of how surface water will be managed on site up to and including the 1 in 100 year + 40% climate change event.”

- *Extracts from LLFA to Chay Dempster, Local Planning Authority, HCC, 19th May 2023:*

“Following a review of the memorandum, **we maintain our objection** to this planning application in the absence of an acceptable Drainage Strategy.”

- Technical memorandum has been prepared to respond to the Lead Local Flood Authority’s (LLFA) letter of 19 May 2023 that provides comments on planning application reference PL/0232/21. From Ian Walton to Richard Ford dated 7th August 2023.
- *Extracts from LLFA to Chay Dempster, Local Planning Authority, HCC, 20th October 2023:*

“If the following **conditions** are not included, the development would be contrary to NPPF and Hertfordshire local planning policy and we would **object** until such time that the operational first phase details are submitted for review.”

- Mike Rawlins statement of case CD15.13 Restoration: landfill, soil types, drainage, plant species, timescale, 8-11 clay buttress.
- Mike Hartung CHPC-07 Flooding part 2: 6 plans of swales, runoff calculations, restoration, drainage maps.
- 2108_Hatfield_ES_chp06_Water_FINAL: flood risk, 6.203 restoration, inert waste.

2.4 The impact on rainfall before and after quarrying and the new public access strategy.

2.5 Rainfall runoff (before quarry)

Ellenbrook Fields, the proposed quarry site has dense vegetation and sandy soil. The projected rainfall runoff is 5-15%.

Characteristically the land is dry, with an ephemeral “main river” called the Nast. There are no streams, swales, or channelled water.

Most of the rainfall (85%) is claimed by evaporation and Infiltration into the aquifer.

It is a giant aquifer storing water.

Essentially, public access is not restricted by lakes, ponds, rivers or swales - you can roam free in any direction.



A passive swale

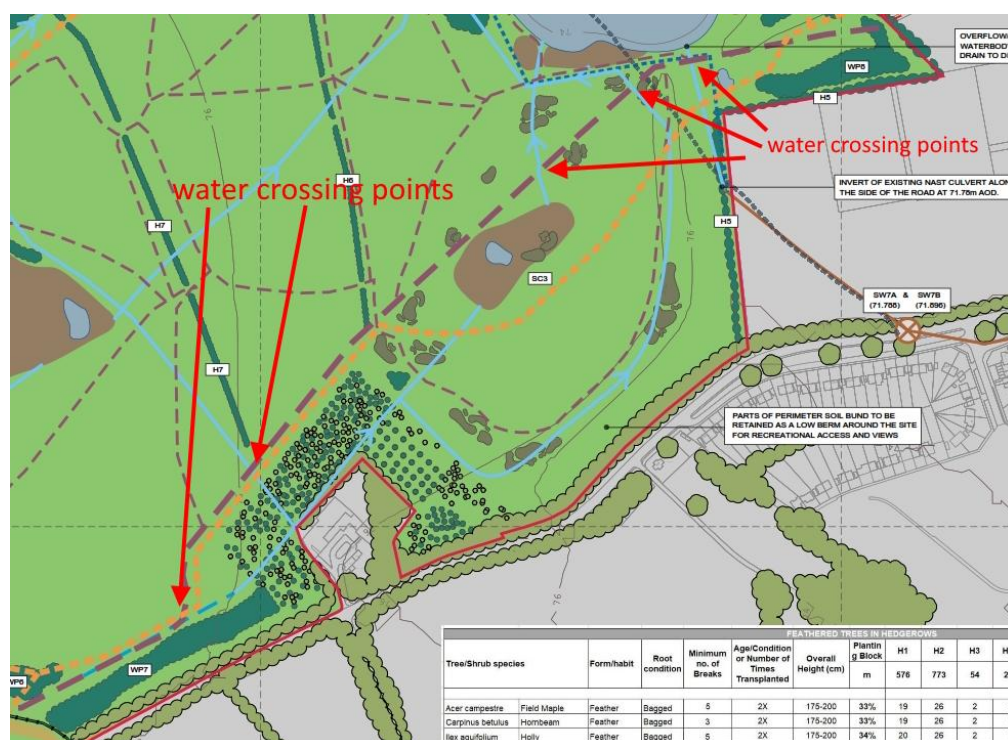


An example of active pumping

2.7 Crossing points over streams

The SuDS system relies on attenuation ponds, swales, streams and culverts to route the water through to the lagoons.

Map 2 shows a dotted path running E-W a main route. It is set in the restoration time showing where phase A would have been. The blue streams crossing the paths are part of the drainage system



CD 17.03-15 HQ 3/15 final restoration showing Phase A with added crossing points in red, *map 2*

In map 2, at least 5 crossing points shown in red. The Applicant has failed to mark these on the map even in this restoration mode.

It would be expected that these crossing points would be a bridge or pipework. In either case free access over the whole site is restricted as the ground is acting as a catchment for water.

2.8 Intermediate drainage period – No SuSDS included

From CD 1703-04 drawing HQ3/9 part of phase A is restored back into the Park, *see map 3*

SuSDS scheme has not been included in any of the drawings.

It is expected that at least 3 streams or pipes will be required to drain the parcel of land to the Northern Recharge Lagoon (NRL). I would also suggest that 24/7 pumping would be put into operation to transport this excess water.



An expanded section of drawing CD1703-04 HQ3/9 showing Phase A, *map 3*

2.9 An uncrossable phase A Restored

Map 3 shows restored phase A with a multiuser path (dotted). It fails to show any water features including streams, bridges or crossing points.

Phase A reclaimed land is the lowest point on the site 74–75mAOD it is dependent on infill height.

Without SuDS features the land (phase A) will quickly become waterlogged and revert to marshland and become uncrossable.

2.10 The Applicant response to drainage in the Restoration period

The Applicant has included in an addendum - CD17.05 Addendum to Environmental Statement 2024 – that:

“Surface water runoff would be intercepted by a network of lined swales and ponds before discharging to the Upper Mineral Lagoon. These features provide attenuation of water and delay the discharge for surface water from the site,

reducing flood risk.”

“If the water level within the infiltration lagoon reaches 74.5m AOD, it is proposed that an overflow be provided into the River Nast at the southeast boundary of the application site.”

2.11 Rainfall run off

All the drainage calculation are aimed at Restoration Period (32 years) and not Reclaimed Period (4-5 years) in an active quarry.

In my opinion Phase A does not have an adequate drainage system in East - West routes. The route will be become impassible.

An estimate of the amount of water to be removed quick storm can be calculated from the equation where Q = rainfall runoff:

$$Q = C \times P \times A$$

(note Phase A area = 10,000 x 8.25ha = 82,500 m²)

Excluding exceedance calculations * then **3,300 cubic metres** of rainfall runoff must be removed and transferred to the NRL lagoon.

**Annual exceedance probability (AEP) 1 in 30 year and 1 in 100 year, and climate change.*

3. Conclusion

The Public Access Strategy does not work because:

1. The lagoons are in the wrong place, the lagoons split the Park in two for the full duration
2. The land will change dramatically to a wetland and so the proposed paths will be impassable
3. The rainfall run off will change with the quarry working and inert waste but the public access strategy doesn't demonstrate how it will cope with this
4. Phase A does not have an adequate drainage system in East - West routes. The route will be become impassible.
5. The public access strategy does not demonstrate how it integrates with the drainage system specifically with the crossing points
6. The quarry cannot be attractive to the park user, restrictive view due to bunds, quarry workings.
7. The access is not “unfettered” due to the nature of the reclaimed land.
8. Park users will have to stay on the paths. They will not be able to roam as they can now.

These are the principal failures of the Public Access Strategy.

Mike Hartung

EARA committee member

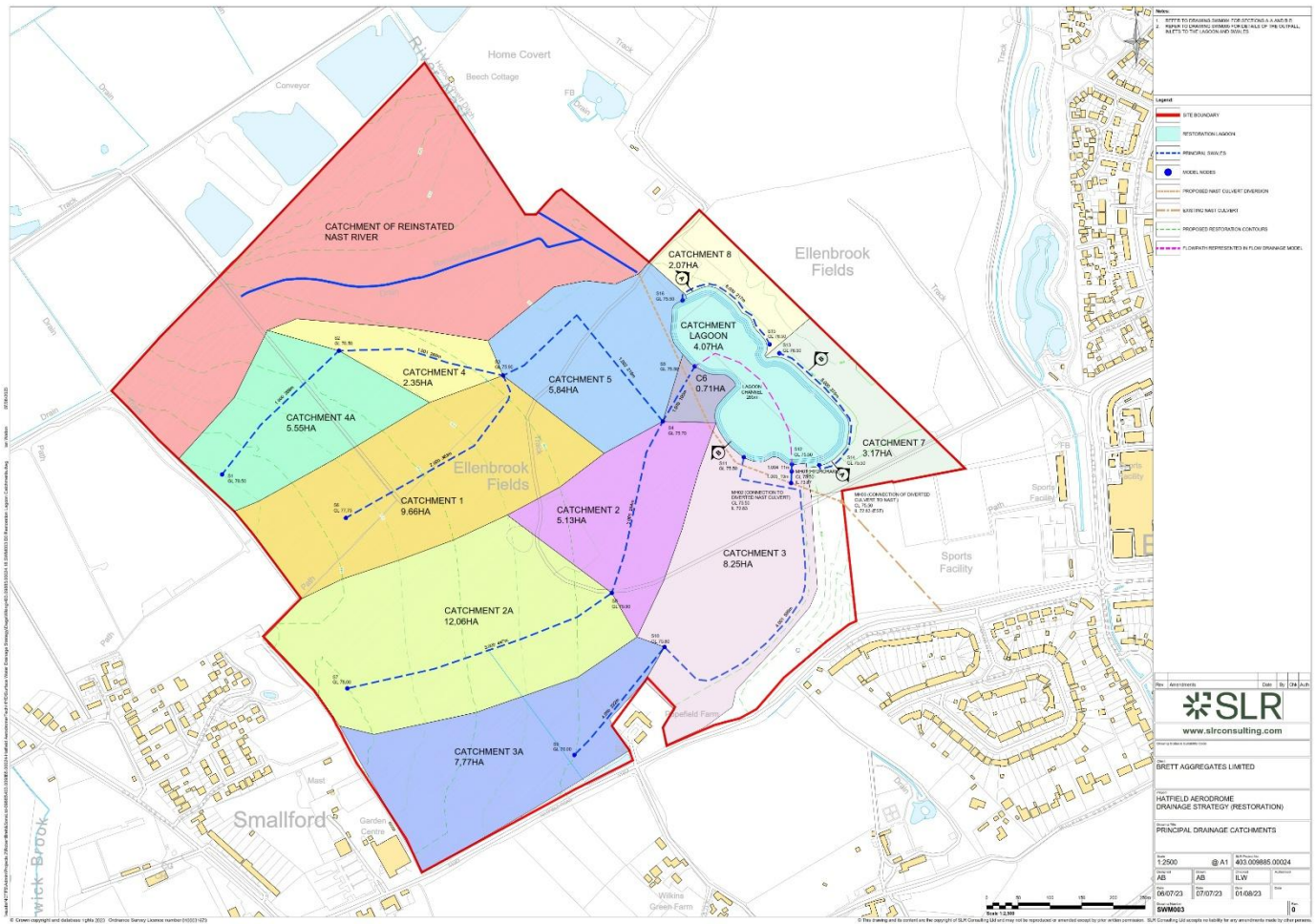
Addendum

This Technical Note has been prepared to respond to the Lead Local Flood Authority's (LLFA) letter of 19 May 2023 that provides comments on planning application reference PL/0232/21.

“Set out below is a summary of the analysis that has informed the development of the proposed surface water management strategy to drain the restored landform following completion of quarrying of the mineral reserve. The location of the site is shown by Drawing SWM001.”



The drawing shows 5 large reedbeds (brown patches) that are part of the restoration that implies the land will be wet.



A drawing from the Technical Memorandum, Principal Drainage Catchment, SWM003, note Phase A is catchment 3

