

25/1781/FUL Data centre campus former Mercure Hotel and land adjoining

INTRODUCTION TO DATA CENTRES

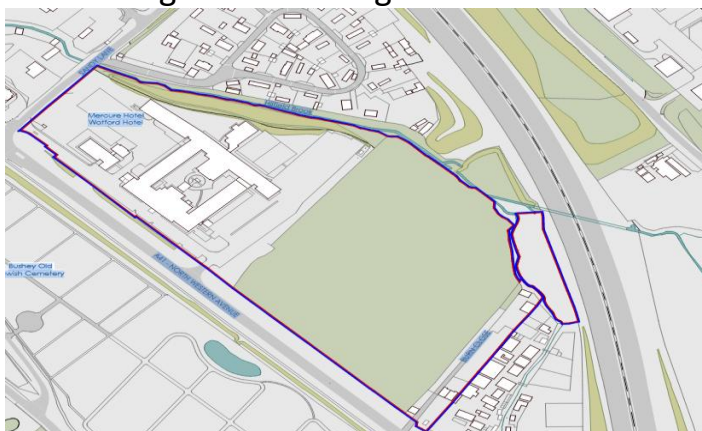
Data centres are storage facilities housing computer servers and telecoms equipment for data processing and data storage and were designated as critical national infrastructure in 2024. They have specific locational requirements. They need to be close to the dark fibre network, have access to a substantial amount of power, and, at the scale proposed here, be within an Availability Zone (a group of data centres connected over a redundant, high speed, low latency private link). This site ticks these boxes and is within both the Hemel Hempstead Availability Zone and the North London Availability Zone. There is apparently unmet need in both Zones. NPPF para 87A requires that the local plan making and decision making process recognises the need that modern society has for data centres and their specific locational requirements. A number of recent appeal decisions for data centres in the Green Belt have been recovered by the Secretary of State and allowed.

APPLICANT:

Ark Estates 5 Ltd; part of the Ark Data Centres Ltd group , operating for 20 years; with 5 live data centres and 4 in the pipeline. Ark own the land and will develop and run the data centre. They sublet to end users and have Crown Hosting arrangements where Government Departments can lease data centre space at favourable rates.

SITE:

7.3 hectares (18 acres) comprising: (a) former Mercure Hotel (b) open land to the south east, predominantly woodland, plus a vacant house with two outbuildings and (c) east of that a further parcel of land covered by trees and mature vegetation all edged blue below. The straight line boundary is the A41.



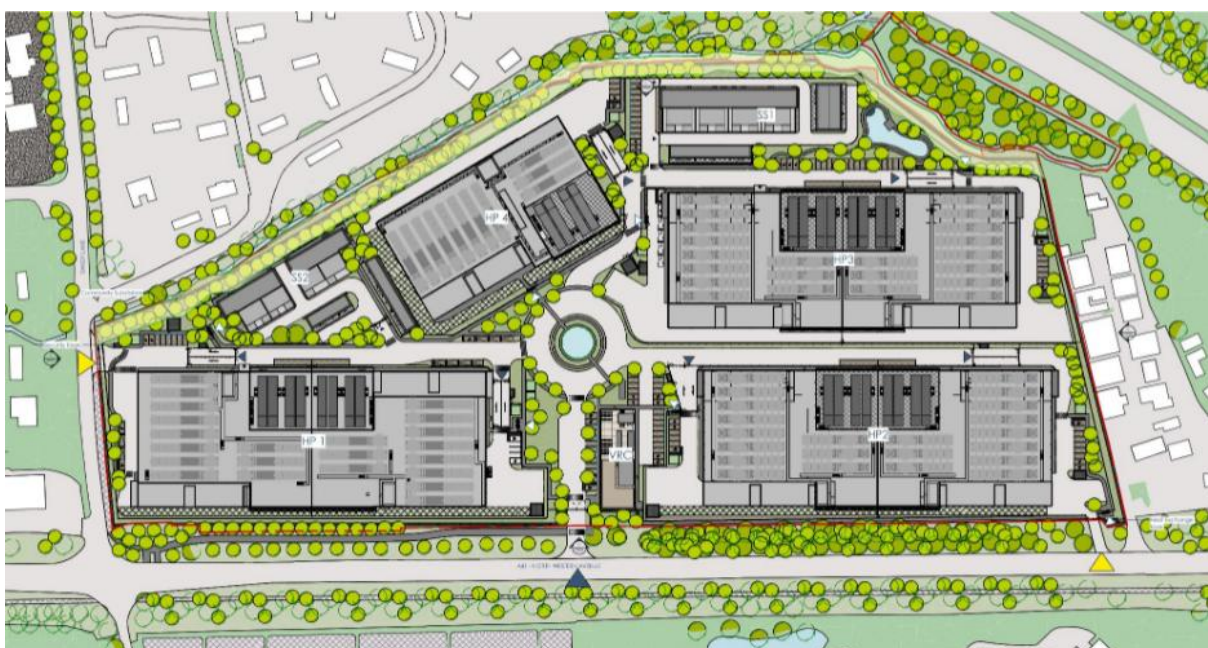
PROPOSAL:

Demolition of all existing buildings followed by construction of

- 4 data centre buildings in individual secure compounds with separate parking and service yards. Three of these will be similar in terms of scale and massing, the fourth, parallel to the site's boundary with the Sandy Lane HCC Traveller Site, will have a reduced footprint. Each will be **36.25m (119 ft) high plus a ventilation stack taking them to 38.95m (128 ft)** Facades to be horizontal metal louvre or perforated metal cladding.
- 2 substations- **11 m high (36 ft)**
- visitor Reception Centre **20 m (66 ft) high**, located centrally
- three vehicular access points. Two, as existing, from the A41 and one from Sandy Lane further east, away from the current signal-controlled junction. The Sandy Lane access and the southern vehicular access along the A41(both arrowed yellow below) will be restricted to emergency use.
- energy to include back up generators, power, and water infrastructure
- site access, internal roads
- **4 m (13ft)** perimeter security fencing topped by **1m** anti climb razor wire
- hard and soft, green and blue, landscaping and infrastructure.

Total floor space will be 137,410 sq m. This is over 4.5 times both the current warehouse permission and the local and emerging local plan proposed size and represents a massive overdevelopment of the site.

Ark state the proposal was originally for more linear, lower buildings but the current proposal was formulated after extensive pre-app with HBC. The layout and height are illustrated below.



CURRENT PLANNING POSITION:

Green belt, partly previously developed land, identified as an employment allocation in both the existing and emerging Local Plan. Planning permission 22/1117/OUT was granted for the whole site for a 30,000 sq. m Class B8 scheme with a maximum height of 18m on the basis of Very Special Circumstances. This expires in March. Since then the revised NPPF requires planning authorities to plan positively for data centres and has also introduced the concept of Grey Belt. Ark have put forward both a grey belt case and a green belt case for development. The site will be entirely built upon with removal of most open space – almost half the frontage to the A41 is currently open land which should be protected so as to prevent ribbon development and maintain the (semi) rural nature of the A41. Ark's assertion that the A41 "could be further urbanised if the redevelopment of the National Animal Welfare site came forward" only strengthens this point.

The major issues that can be put forward against the development relate to Landscape and Visual impact and Noise, and power and water consumption all discussed below.

LANDSCAPE AND VISUAL IMPACT

The major concern with the development is the height and visual impact. It is simply too large in terms of scale and intensity. The proposal is also inappropriate for this site when assessed against planning criteria. At over 4 times the size proposed in the existing and emerging local plan it hugely exceeds the capacity of the site to accommodate it without causing harm to its surroundings. There are also concerns regarding overshadowing the Traveller site and detracting from the rural aspects of the A41.

Ark acknowledge that the magnitude of impact in a number of views will result in an assessment of Major Adverse (ie significant) effects, which could not be mitigated by landscape treatments. This is a consequence of both the height and massing of the built form proposed which will inevitably be widely visible. Major Adverse effects include users of the Jewish cemetery to the south and users of Byway B38 to the east. But there are also acknowledged Moderate Adverse effects on pedestrians using the A41 footway and other footpaths. Even so points also need to be raised regarding the LVIA where there are insufficient views and those taken are mostly in summertime (save footpaths and heritage assets) and many potentially affected views have been omitted including on higher ground.

Though Ark says its design approach to the buildings themselves has sought to soften outward facing facades as much as possible this will not reduce perceptions of mass. The loss of the orchard is particularly regrettable; whilst this was unfortunately permitted under 22/1117/OUT in the context of this application its retention here is desirable.

Though interior lighting will be fully switched off outside of the proposed development's operational hours in order to minimise potential disturbance to neighbouring areas, the data centre will operate 24/7 and there may well be staff in attendance during some evening/night hours when light used will spill to the surrounding area disturbing neighbours (and also disrupting species and habitats nearby.)

NOISE

Two types of plant are required for successful operation of a data centre campus – operational plant, which runs continuously and is required for the powering, cooling, and overall successful continued operation of the data centre and back-up generators which, whilst subject to regular testing, are only used where there has been a National Grid power failure. UK Power Networks say “It is a recognised fact that transformers emit a low level hum which can cause annoyance to nearby properties.” In addition, the back-up generators will apparently be tested for a few hours monthly and these can be extremely noisy.

The Noise and Vibration preliminary acoustic modelling for the Data Centre detailed modelling methods, assumptions about ground, building and plant geometry, sound power levels for generators, chillers, ADACs, DAOs and AHUs, and presented two operational scenarios: night normal operation and daytime generator testing.

Five sensitive receptors were identified, with two scenarios assessed—night-time normal operation (excluding emergency generators) and daytime generator testing (worst-case). The result of the preliminary acoustic modelling predicted noise exceedances up to more than 26 dB at receptors during night-time and more than 18 dB during daytime testing which indicates how serious noise can be and that substantial noise mitigation is necessary. **I believe daytime scenario without generators should have been assessed too.**

Subsequent recommended mitigation measures include selecting quieter plant, reorienting equipment to use building screening, and installing silencers, barriers, and acoustic louvres; priority to be given to plant with highest noise contributions requiring up to 28 dB attenuation.

The report concluded that the preliminary modelling showed significant noise exceedances from the Data Centre plant, necessitating comprehensive mitigation and iterative acoustic design to ensure compliance with noise standards and protect sensitive receptors.

The subsequent, (current) Noise Assessment considers the potential impact of noise associated with the proposed development on the same nearest noise sensitive receptors during the construction stage and operational stages – they are as follows

Receptors

9.13 The closest noise sensitive receptors to the site have been identified in Figure 9.1 and presented in Table 9.1 below.

Ref.	Address	Minimum Distance to Boundary of Site (m)	Receptor Type
R1	Sandy Lane HCC Traveller Site	<10	Residential
R3	Hilfield Farm House	375	Residential
R4	1 Sutcliffe Close	360	Residential
R5	1 - 5 Sandy Lane	100	Residential

The Noise Assessment now confirms that noise from operational plant will remain below existing background levels at all noise sensitive receptors during the daytime and at night time will remain below the background noise level for all but two of the noise sensitive receptors. Ark state the exceedance is modest but will clearly be troublesome on a nightly basis to those affected.

Ark now intend that the back-up generators are located as centrally within the site as possible so that they are away from the nearest noise sensitive receptors outside of the site's boundaries but admits generator noise will be above background at at least one of the noise sensitive receptors.

Environmental protection require the usual condition that noise be 10 db below background and have asked Ark to factor in that the Animal Welfare proposed development will increase background noise by 1db. It is hoped that the Council assess the Noise Assessment stringently as it is clearly a problematic aspect of Data Centres.

No comment can be offered on construction-related noise as no details have been given, but aspects may well be troublesome to those nearby, exacerbated by the lengthy construction period.

HERITAGE

There are several designated assets within a 2 km radius , including Patchetts Green and Delrow Conservation Area, Aldenham, Round Bush, and Letchmore Heath Conservation Areas, as well as a number of listed buildings and the Bushey Rose Garden (a registered park and garden). The nearest listed buildings are located in Patchetts Green and at Tylers Farm House. Ark's assessment concludes that while the proposed development may introduce some change to the wider setting of certain heritage assets, this would be distant, peripheral, and largely screened by vegetation and built development and conclude overall, no harm to the significance of any designated heritage assets has been identified. No mention is made of any conservation areas in Bushey and, subject to checking topography, this is an issue.

Place Services state "The nearest designated heritage assets are Patchetts Green and Delrow Conservation Area to the north and the Grade II listed Tylers Farmhouse (List Entry Number: 1346912) to the south. However, due to the separation distance, the presence of intervening natural environment and highway corridors, the proposed development would not result in any harm to the setting or significance of these assets. Therefore, no objection is raised on built heritage grounds"

CONSTRUCTION PHASE

Construction is proposed to start in 2027/2028 and is variously referred to as being 9 or 10 years which reflects the magnitude of the project. Ark say a Construction Environmental Management Plan (CEMP) will be prepared post grant with details of measures to protect the environment during the construction to include address hours of working, noise, vibration, dust, light spill, wheel washing and control of runoff. In turn the CEMP will include a Construction Traffic Management Plan (CTMP) so no details of that are available now. Often a draft CTMP would be supplied at this stage and in view of the long construction period, its impact on the A41 and the cumulative effect of construction alongside other nearby projects, some already permitted and some in the planning pipeline, outline details should be given now.

CLIMATE CHANGE DEPARTMENT COMMENTS AS STATUTORY CONSULTEE

The proposed development will be larger than the largest data centre currently operating in the UK. For this size data centre, its potential climate change and environmental impact could be very significant, specifically in terms of water

consumption, emissions and power used. Whilst Ark's claim that "the Climate Change impact of construction is considered to result in a Minor Adverse impact" the Climate Change Department's comments clearly show this is not the case in terms of operation.

Water: Below are the Climate Change comments about water consumption.

Water consumption

The proposed data centre will be using an evaporative cooling system. This implies that water will be used to cool down the heat generated by the data centre. The target Water Utilisation Efficiency (WUE) for the development is set at 0.4l/kWh.

This implies that total water needed every year by the development would be -
 $0.4 * 1910 * 1000 * 1000 = 764,000,000$ litres of water per year.

For context, the average daily water use per person is 136.5 litres in the UK. On that basis, the water used by the data centre could have met the needs of 15,000 Hertsmere residents.

There are other closed loop cooling system that require less or minimal water. The applicant is **encouraged** to investigate lower water use cooling systems along with non-potable sources of water should be investigated to mitigate the impact of the water consumption.

Emissions: Based on the information provided so far, the impact of the development cannot be claimed to be negligible. If the electricity used does not result in additional renewable electricity generation and draws from the current National Electricity grid, the emissions could be argued to be:
 $1910 \text{ GWh} * 0.207274 \text{ kg CO}_2 \text{ eq./kWh} = 395,000 \text{ tonnes of CO}_2 \text{ eq./year}$ ie
63% of emissions across all of Hertsmere.

Power: The metric for data centre power usage is PUE. [Power usage effectiveness] This calculates how efficiently energy is used by comparing total facility power to the power used by IT equipment.; the lower the better, 1.0 is ideal. Ark. propose a PUE of 1.3 so the electricity required by the proposed data centre would be 1910 GWh. **This is 4.5 times the electricity used by all of HBC currently, including homes, industries and businesses.**

A PUE of 1.3 compares unfavourably to data centres already in operation; for a development of this size a reduction to 1.2 reduces GWh by 147 and a reduction to 1.15 reduces GWh by 220. Ark claim there will be a negligible impact as it will be procuring 100% renewable energy. **This of course is not possible. Instead it will buy" certified renewable energy" to mitigate the impact of the energy consumption.** This is what the Climate Change consultee says in this respect:

Renewable Energy and Climate Change impacts

The 'negligible climate change impact' of the application relies on its claim of procuring renewable energy.

The application proposes to buy 'certified' renewable energy to mitigate the impact of the energy consumption. It may be noted that the drawbacks of 'certified' - also commonly known as Renewable Energy Guarantees of Origin (REGO) backed energy - are widely known^{5, 6}:

- **No Additionality** - REGO do not require additional renewable energy capacity to be installed. It uses the existing capacity of the grid. So this development in any new renewable energy infrastructure being developed.
- **Separate market for energy and certificates** – REGO Certificates are traded in the market separate from renewable energy. So, the applicant could buy electricity from a coal power plant and separately buy equivalent capacity REGO certificates and claim to have bought renewable energy.
- **Cost difference between certificates and renewable energy** – Buying actual 100% renewable energy is a lot more expensive than buying certificates.

UK Green Building Council (UKGBC) guidance recognises these shortcomings⁷. Quoting the UK GBC:

- *Page 16 - REGOs do not need to be sold with their associated units of electricity megawatt-hour, and this can lead to issues of double counting of the emissions reductions from procuring renewable electricity. Purchasing these 'unbundled' REGOs also **does not actively drive the electricity system to decarbonise**. Whilst trading of certificates across borders is possible and is commonplace, it can lead to further issues with accurately accounting for emissions.*
- *Page 17 - Unless procurement leads to the creation of new, additional renewable generation, any renewable procurement takes a share of the electricity that is already available, and there is no net change in emissions at a system level.*

While use of REGOs is legal, it is considered a weak way to claim renewable energy. UK GBC provides a structure for energy procurement based on consumer type (Page 20). The applicant is **strongly encouraged** to review these and apply the renewable energy procurement principles to their energy procurement strategy.

MORE ON POWER (ELECTRICITY)

Ark say onsite power will be supplied by National Grid Electricity Transmission (NGET) via Uxbridge Moor substation – being built next to Iver Station in Buckinghamshire as to 72.05% and the proposed new Letchmore Heath substation as to 27.95%. All these NGET connections will be terminated at the two onsite substations. All electrical supplies from the onsite substations will be distributed underground at 11 kV throughout the facility.

The Alternative Site Assessment, drawn to only consider sites that are within 10km of the Letchmore Heath National Grid Substation; and either within the Hemel Hempstead or North Acton Availability Zone may have been too restrictive if the majority of power can come from so far away.

The campus will also have its own backup generators, hopefully for occasional use only as these are noisy in operation.

MORE ON WATER

Though Ark states that preliminary discussions with Affinity Water indicate that a maximum flow rate of 3.9 litre / second can be provided from the existing water mains network to support the development it's clear that **Affinity Water, is still to confirm the amount of water that it can supply to the development and assurance is required that this can be done without disrupting existing households or businesses.**

FIRE

Data centres are a fire risk due to high-density electrical equipment, heat, extensive cabling, and the increasing use of high-energy lithium-ion batteries, but while major incidents are infrequent, they can be catastrophic. To date the Council has only consulted with the Fire Hydrants department of FRS and **consultation should take place more widely with FRS.**

Ark's fire strategy report was produced by consultants who are not qualified for specialist regulations and requirements outside of the Building Regulations (fire safety). **They recommend that the project engages a suitably qualified consultant for hazardous materials and processes advisory.**

Clearly a high vertical data centre makes it harder to deal with a fire as evacuation and fire fighter access would be more difficult.

SEWAGE

Thames Water has identified an inability of the existing sewage treatment works infrastructure to accommodate the needs of this development proposal.

FLOODING AND PROXIMITY OF HILFIELD BROOK

The site is in Flood Zone 1 but the rear boundary and beyond is an area of Flood Zones 2 and 3; climate change is anticipated to bring areas of low, medium and high flooding within scattered parts of the site. Thames Water advise that the foul and surface water network in this catchment is impacted by high infiltration flows during certain groundwater conditions and require additional precautions are taken to minimise infiltration and also help to reduce the risk of pollutions in the wider environment.

Ecology have said that the proximity of the site to Hilfield Brook, a tributary to the River Colne, will necessitate an ecological buffer zone along the north boundary of the site. However the Environment Agency object outright and state the changes proposed, being within 8 metres of the top of the bank of the watercourse will have a detrimental impact on the biodiversity, physical habitats, and the Water Regulations requirements and they are unlikely to grant the requisite flood risk activity permit under the Environmental Permitting (England and Wales) Regulations 2016 as things stand. They too may be satisfied with an 8-metre-wide ecological buffer zone.

AIR QUALITY

Ark state that with appropriate mitigation measure no significant residual effects on air quality are anticipated in EIA terms during either the construction or operation. However **given the proximity of the Traveller Site, 10 m away, and 1-5 Sandy Lane, 100 m, away it is hard to see how they will not be dust impacted during construction and also from the emissions associated with back-up generators** which will be regularly tested during operation.

PARKING FOR CARS AND BICYCLES

A total of 119 parking spaces will be provided on site including 9 disabled spaces, along with 72 cycle parking stands. This is well below Council requirements which are calculated according to floor space. On B8 use those requirements would be 1,753 car spaces and (using full day stayers) and 260 cycle spaces. Ark maintain that “HBC’s Sustainable Transport & Parking Standards SPD do not include parking standards directly applicable to the proposed data centre land use and the proposed parking provision has been based on Ark’s expected operational requirement” But data use is B8. **This needs to be assessed particularly as the full build out of the space means that there would be little room for additional provision if the site reverted to a non data centre use in future.**

CUMULATION

This is always relevant in assessing applications and unusually here we need to consider 3 categories:

Construction traffic and construction noise: little is known about the proposals here but for a 10 year build significant issues will arise. The build will substantially overlap with the Letchmore Heath substation build, also 10 years, where vehicles will have to enter site from the A41/Hilfield Lane junction only and where during peak construction of around 9 months we have calculated there will be one construction vehicle movement every 90 seconds. The nearby

consented development at National Animal Welfare Trust (ref. 23/1731/FUL) will bring construction traffic too. Additionally, 45,000 sq m of warehousing has been consented at land north east of Elton Way (24/1283/OUTEL); this will add to the construction traffic, exacerbated by traffic arising from the developer's obligations in the accompanying S.106 agreement to carry out upgrade works to the Toby Carvery roundabout and the M1 Junction 5 interchange. The recently consented BESS off Hilfield Lane (25/0153) will bring more construction vehicles to this area, as will the 17,000 sq. m of warehousing at the junction of Daggers Lane with the A41 currently under consideration.

Whilst Ark state the proposed development has limited potential for cumulative noise effects when considered alongside other schemes, this is incorrect. **Significant cumulative noise effects will occur where development construction overlaps.**

Impact of multiple new builds. In preparing its Environmental Impact Assessment Ark were asked to consider the cumulative impact of the Animal Welfare build and also the Elton Way warehousing **but the rest of the construction, mentioned above needs to be considered too.**

Cumulative Data Centres. Impact of water and electricity usage across Hertsmere from this and the South Mimms data centre must be considered as well as the potential of further BESS requirements in our area to act as backup.

LOCAL BENEFIT (OR NOT!)

Ark states there will be 470 net additional construction jobs and that 255 net additional jobs will be created when the data centre campus is operational and that any new development will give rise to a 'multiplier effect' relating to jobs and associated expenditure created by the development and make much of the damage for UK Digital Economy if permission is refused. In truth many of the jobs created, particularly once operational, may be employees out of district who can work remotely. Set against job creation there will be a 10 year disruptive building programme and a huge drain on electricity and water resources. **Additionally a standard B8 use would create far more jobs and this site is, after all, zoned for employment.** Added to that Hertsmere has already granted permission for an even larger data centre **in South Mimms with a floor space of 187,000 square metres, also pulling on the Borough's water and electricity resources.** We currently don't have zonal pricing for electricity in the UK – however this was recently proposed, then dropped. Were zonal pricing to be introduced in future then hosting two of the largest European data centres in our borough could make our domestic and business electricity charges soar.

Ark put forward, to weigh favourably in the planning balance, the possibility of

future ability to export heat into a **district heating network but this must be regarded as highly nebulous** as there is currently no plan for a district heat network in the area. Despite this the Climate Change department state Ark is encouraged to actively support utilisation of waste heat by undertaking a heat network feasibility study there is no evidence that this has been done.

TRAVEL AND TRANSPORT

Current public transport to the site is not good. Ark downplay this as staff numbers for this size building will be low compared to other uses. However National Highways state it “does not fully accept the trip generation results presented. These appear to be based on a series of assumptions for how the site may operate, with limited information or evidence in support.”

Ark propose pedestrian/cycle crossing improvements at A41/Sandy Lane signal junction across the south side. The pedestrian/cycle crossing of western Sandy Lane arm of the junction will also be improved benefiting existing users of the shared pedestrian/cycle route running along the western side of the A41, as well as improving access for people travelling to the site. Creation of a footway along the site’s frontage with the A41 is proposed.

Herts Highways raise no objection to the application, subject to a £900,000 bus contribution and new bus stops; they have also requested the CTMP which has not been prepared.

As part of the off-site access improvements it is proposed to reduce the speed limit on the A41 in the vicinity of the site from the NSL (60mph) to 50mph.

Active Travel England have asked the Council to consider how the development meets Government criteria for sustainable travel advice.

LANDSCAPING

Landscaping is proposed to strengthen the site’s integration with its surroundings. The perimeter will be enhanced through extensive native tree planting intended to create a robust ‘green halo’ that helps to mitigate the visual impact of new buildings and reinforces the connection between the development and the surrounding landscape. A wildlife and welfare garden for enhanced bio-diversity and staff welfare is located to the north east of the site; to include a permanent water pond designed to provide habitat for wildlife. In truth no landscaping will materially ameliorate the impact of this building and the welfare garden is little compensation for the removal of the orchard.

BIODIVERSITY NET GAIN

To achieve the required minimum 10% biodiversity net gain, off-site registered habitat units – such as lowland mixed deciduous woodland – will be secured to meet trading requirements, possibly within the Aldenham estate.

ARCHAEOLOGY

Herts CC, as consultee, is satisfied that there are no adverse archaeological implications.

GEOLOGY

More ground investigations are required as a result of Ark's own reports and arising from consultee comments. Notably these include investigating a potentially buried sink hole, previous use as a landfill site, asbestos contamination and unexploded ordnance from World War II.

ECOLOGY

Ecology have stated that, in the absence of any mitigation measures, the proposed development would have the potential to result in negative effects significant at up to County level. Mitigation and compensation measures are required to address all significant residual negative effects on important ecological features. In particular in the centre of the site older woodland, along the riparian corridor to the north, comprises mature oak trees with hazel stools beneath and a number of ancient woodland indicator species, likely to meet criteria for LWS designation, and is therefore concluded to be of County importance. Hilfield Brook and grasslands to the west of the site are concluded to be of local ecological importance. As the development does not allow feasible mitigation of the majority of woodland habitat losses on-site derogation licences will be required from Natural England.

The western portion of the Site is located within an EA designated groundwater Source Protection Zone.

JANET ENGELS

LETCHMORE HEATH VILLAGE TRUST

19 JANUARY 2026