

Planning Committee

Supplemental Agenda

Meeting date	5 th April 2022
Officer	Linda Sparrow
Agenda Item	Land To The North West Of Junction 7 Of The A1(M)
Proposal	Erection of electric vehicle charging station with ancillary retail unit, associated electrical infrastructure, car parking and landscaping
Reference	21/00536/FPM
ADDENDUM INFORMATION	

Members will recall that at the meeting on 9th December 2021 this application was resolved to be granted subject to the imposition of suitable safeguarding conditions, with authority given to the Assistant Director of Planning and Regulation in consultation with the Chair of Planning Committee, to amend or add to the suggested draft conditions set out in the report, prior to the decision notice being issued, where such amendments or additions would be legally sound and most effectively deliver the development that the Planning Committee has resolved to approve.

Following extensive negotiations and a meeting between the applicant and their agents, the Lead Local Flood Authority (LLFA) and Officers, an agreement has been reached with regards to the drainage strategy and related conditions. The LLFA have agreed that the most recent drainage strategy and evidence provided are now satisfactory and they are satisfied that the development can proceed in accordance with the approved details.

The previously applied conditions read as follows:

- 9 No development shall take place (including site clearance) until a detailed surface water drainage scheme for the site has been submitted to and approved in writing by the Local Planning Authority. The drainage strategy should demonstrate the surface water run-off generated up to and including 1 in 100 year + climate change critical storm will not exceed the run-off from the undeveloped site following the corresponding rainfall event. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed.
 - 1) Detailed infiltration tests conducted to BRE Digest 365 standards and geotechnical investigations to confirm the feasibility of discharge via infiltration and groundwater levels on site.
 - 2) Detailed engineered drawings of the proposed SuDS features including cross section drawings, their size, volume, depth and any inlet and outlet features including any connecting pipe runs.
 - 3) Final post-development network calculations for all storm events up to and including the 1 in 100 year + 40% climate change event with half drain down times.
 - 4) Exceedance flow paths for surface water for events greater than the 1 in 100 year including climate change allowance.
 - 5) Final detailed management plan to include arrangements for adoption and any other arrangements to secure the operation of the scheme throughout its lifetime.

REASON:- To prevent the increased risk of flooding, both on and off site.

- 10 The development hereby permitted shall be carried out in accordance with the approved surface water drainage assessment in condition 9 and the following mitigation measures:

- 1) Limiting the surface water run-off generated by the critical storm events so that it will not exceed the surface water run-off rate of 2 l/s during the 1 in 100 year event plus 40% climate change event.
- 2) Providing storage to ensure no increase in surface water run-off volumes for all rainfall events up to and including the 1 in 100 year + climate change event providing a minimum of 227.58m³ (or such storage volume agreed with the LLFA) of storage volume in underground attenuation tank and lined permeable paving cascade.
- 3) Discharge of surface water from the private network into the Thames Water surface water sewer, or to the ground if infiltration proven feasible.

The mitigation measures shall be fully implemented prior to occupation and subsequently in accordance with the timing / phasing arrangements embodied within the scheme, or within any other period as may subsequently be agreed, in writing, by the Local Planning Authority.

REASON:- To prevent flooding by ensuring the satisfactory disposal and storage of surface water from the site and to reduce the risk of flooding to the proposed development and future occupants.

The new conditions, as provided by the LLFA, and agreed by the Chair of Committee, the Assistant Director of Planning and Regulation, and the applicant, are as follows:

9. The development permitted by this planning permission shall be carried out in accordance with the principles of the approved Addendum to Flood Risk & Drainage Assessment produced by CPA, Ref:2027/ADDENDUM FRA&DA/PL02 Rev PL02, dated 14.10.2021 and the Letter to the LLFA, dated 30 November 2021 and the following mitigation measures:

- 1) Limiting the surface water runoff generated by the critical storm events so that it will not exceed the surface water runoff generated for all rainfall events up to and including the 1 in 100 year plus 40% climate change event.
- 2) Providing storage in an above ground basin feature and an underground soakaway to ensure no increase in surface water runoff volumes for all rainfall events up to and including the 1 in 100 year plus climate change event.
- 3) The surface water from the site will discharge from a private network into the ground via infiltration.

The drainage scheme shall be fully implemented prior to occupation and subsequently in accordance with the timing/phasing arrangements embodied within the scheme, or within any other period as may subsequently be agreed, in writing, by the Local Planning Authority.

REASON:- To prevent flooding by ensuring the satisfactory storage of, and disposal of, surface water from the site.

10. Upon completion of the drainage works, a detailed management plan for the SuDS features and drainage network, to include arrangements for adoption and any other arrangements to secure the operation of the scheme shall be submitted and approved in writing by the Local Planning Authority. The approved plan shall be implemented and be operational for the lifespan of the development and shall include:

- 1) Provision of a complete set of as built drawings including the final drainage layout for the site drainage network.
- 2) Maintenance and operational activities for the lifetime of the development.
- 3) Arrangements for the adoption and any other measures to secure the operation of the scheme throughout its lifetime.

REASON:- To prevent flooding by ensuring the satisfactory storage of, and disposal of, surface water from the site.

Meeting date	5 th April 2022
Officer	Thomas Frankland-Wells
Agenda Item	Sanders Building and Gunnels Wood Building
Proposal	Demolition of existing buildings and structures and erection of 4no. buildings totalling 6967 sq m (GEA), (6623 sq m GIA) , for uses within Use Class E(g) (Business), B2 (General Industrial) and B8 (Warehouse or Distribution) of the Use Classes Order, together with car and HGV parking, landscaping and hard surfacing as well as associated engineering works, facilities and services.
Reference	21/01362/FPM
ADDENDUM INFORMATION	

Update on Flood Risk and Drainage

At the time of drafting the planning officer's report, the response from the Council's flood risk and drainage consultant had not been received. It has now been received and it reads as follows:

Overview of development proposal

The proposed application is to redevelop the site into four industrial units (Use Class E, B2, B8) with associated offices, car parking, service yards and limited areas of landscaping. The proposed developments will have a total impermeable area of 1.320ha and permeable area of 0.142ha. The proposed site levels will be set such that they tie in into existing retaining wall levels along the northern site boundary as well as north-east corner of the site. A new retaining wall is proposed along the south eastern boundary of the site, where ground levels on-site would be raised.

Drainage strategy

The drainage strategy is included in the FRA, which extends to a total of 161 pages, including four appendices.

Overview of drainage strategy

The Drainage Strategy proposes gravity drainage to surface water sewer, via underground storage to provide attenuation and permeable paving in car park areas (which may or may not utilise infiltration). Landscaping proposals appear to have been developed entirely independently of the SuDS proposals, with none of the landscaped areas forming part of the SuDS strategy.

We welcome that attenuation is proposed to reduce run-off to greenfield rates for all events up to the 1 in 100 plus 40% climate change. The attenuation would primarily be achieved in underground tanks (modular plastic geo-cellular systems) and oversized pipes. A rate of 7.4 l/s, i.e. 5 l/s/ha is proposed, as set out in Section 7.1 of the FRA. We also welcome the use of permeable paving in car park areas, which would further contribute to the attenuation, as well as provide treatment for flows passing through it. We note that very limited use of green roofs is proposed on-site, for the cycle shelters. The FRA advises that swales were not included due to a lack of available space and rainwater harvesting is not included as it is deemed to be cost prohibitive. The remaining attenuation would be achieved through 'allowable' flooding at the ground surface in specific locations on-site, up to a depth of 100mm. We note that the footprint

of this flooding is limited in extent (centre of south-eastern boundary) during the 1 in 100 plus climate change event, and contained within one of the service yard areas. The FRA indicates that run-off from service yards would pass through oil interceptors before discharge to the Thames Water sewer.

Lack of above ground SuDS

The proposed Drainage Strategy only satisfies one (arguably two) of the three opportunities provided by SuDS set out in the Government's Planning Practice Guidance . Whilst the strategy has sought to reduce the causes and impacts of flooding, the ability of the scheme to remove pollutants from urban run-off at source is lacking, and no opportunities to combine water management with green space for amenity, recreation and wildlife benefits are proposed. This is primarily because the development proposals lack any above ground SuDS (other than permeable paving for car parking areas).

The reason for this is described as "the site layout does not allow the space required for any type of open feature within the surface water drainage system." This indicates that no attempt to influence the site layout to include surface SuDS was attempted. The drainage strategy should be considered at masterplanning stage of site layout considerations, to ensure that space for surface SuDS are included in the proposals, in the same way that space is set aside for car parking and vehicular access.

Hertfordshire County Council's guidance for developers requires storage volumes to be "... provided on site utilising above ground storage where practicable." The argument that there is a lack of space for surface SuDS when the site covers an area of over 1.4 ha is unjustified – maximising the developable footprint at the expense of the sustainability is disappointing.

With the expected upcoming release of both updated Defra Non-statutory technical standards for SuDS, and the Manual of Blue Green Infrastructure from the Institution of Civil Engineers, the underground approach proposed is unlikely to be acceptable for developments of this type in the future. We would urge the applicant to seek more-sustainable and holistically-designed strategies on any future development sites, whereby surface SuDS are incorporated into the development proposals at the outset of the development layout/masterplanning process. The aim being to achieve sustainable treatment using natural processes, amenity and biodiversity benefits, and a reduction in the maintenance burden (as well as the (long-required) reduction in flood risk, as achieved for this scheme).

The reliance on an underground system for this development has further reduced the sustainability of the proposed drainage solution in this case by reducing the gradients of the pipe network, thereby reducing the likelihood that the system would be self-cleansing, and in turn further increasing the long term maintenance burden required to ensure the system continues to function (and achieve the stated reduction in flood risk) as designed. Pipe gradients are discussed in more detail below.

Treatment

Section 7.3.2 of the FRA (treatment and management train) does not acknowledge that insufficient treatment is included in the strategy at present. Parts of the site are subject to insufficient treatment, and it appears that some areas would not receive any treatment at all before discharge.

The lack of surface SuDS in the proposals will present a challenge to the detailed design in achieving the level of run-off treatment required before discharge. Runoff generated on all hardstanding areas, including the access roads and parking spaces, should receive robust treatment prior to the final discharge. The simple index approach set out in Section 26 of the CIRIA SuDS Manual (C753) sets out the methodology by which the required treatment can be demonstrated. In this case, it is anticipated that the treatment required to achieve the mitigation indices required of a commercial site will need to be achieved using proprietary underground treatment systems. For example, interceptors which can capture total suspended

solids and metals as well as hydrocarbons are available, (e.g. the SuDS Compliant ESR Stormceptor Range from SPEL©).

We note that in their response to the planning application, Thames Water also advised that they would “recommend that petrol / oil interceptors be fitted in all car parking/washing/repair facilities,” and that “failure to enforce the effective use of petrol / oil interceptors could result in oil-polluted discharges entering local watercourses” (via their sewer systems). As stated above, in order for the drainage solution to provide treatment for suspended solids and metals, it may be necessary to upgrade the petrol interceptors to versions which are certified to capture those pollutants as well.

Rainwater harvesting and green roofs

The SuDS hierarchy recommends reuse of rainwater (rather than discharge) in the first instance, with the significant roof coverage of the proposed buildings providing ample opportunities for rainwater harvesting. However, the design and access statement indicates that the only measures to reduce water usage onsite would be “through the use of dual flush WC’s and spray taps.” Given the site is located in a water scarce area, as stated in consultee comments from Affinity Water, it is expected that rainwater harvesting on the main site buildings be considered. The desire for rainwater harvesting to contribute to a reduction in the water demand of the site is also stated in Affinity Water’s consultation response. We expect rainwater harvesting to feature in the detailed design proposals.

Even if sufficient justification for omitting rainwater harvesting from the detailed design is provided (on the basis of lack of demand for example), we would expect green roofs to be incorporated into the proposals. The SuDS Manual advises that ‘extensive’ green roofs have low substrate depths (and therefore low loadings on the building structure), simple planting and low maintenance requirements. There are precedents for sloped green roofs, and thus we would not accept the pitched roof to be justification for omission of green roofs from the detailed design. The inclusion of green roofs in the proposals would improve the sustainability of the site through increased biodiversity, interception of the first 5mm of rainfall, pre-treatment of run-off from the roof, capture of dust, and improvement to the thermal performance of the building in the summer.

Infiltration and groundwater

Following reuse, the next approach on the SuDS hierarchy is for infiltration of run-off to the ground.

Ground conditions

Both the FRA and Land Quality assessment misleadingly indicate that the ground conditions simply comprise ‘stiff clay’ (and on this basis conclude that infiltration would not be appropriate), whereas the borehole logs indicate a more complex situation whereby the site is generally underlain by glaciofluvial deposits which variously comprise stiff sandy gravelly clay (more prevalent in the west of the site, and at shallower depths) and sands and gravels (more prevalent in the east and at depths generally below 3m). Made Ground is generally limited to the near surface (from 0.23m – 1.5m) and limited contamination is reported. The Land Quality assessment also suggests that the version provided with the application is an interim version, to be updated upon receipt of further site investigation work which was being carried out at the time the report was issued.

Infiltration

Both the FRA and the Land Quality report state that infiltration testing of the site soils has not been carried out. Both refer to infiltration testing carried out on the neighbouring Airbus site, where rates of $3.49 \times 10^{-8} \text{m/s}$ at the depth of 1-2m below ground level (bgl) and $3.31 \times 10^{-6} \text{m/s}$ below 2m were identified. Based upon a ground investigation carried out in 2016 (seemingly

one for three investigations carried out at the site), it was concluded that “with care, infiltration via soakaways would be possible if placed below 3m.”

However, the trial pit logs included with the Land Quality Report indicate that infiltration testing was also carried out in 2 x trial pits (TP1/SA1 and TP2/ SA1) onsite in November 2021. The logs indicate that further information is provided in the separate results sheets, however these were not included in the report. It is unclear why infiltration tests were carried out in only two of the five trial pits excavated in November 2021, and indeed why the trial pits were only excavated to a depth of approximately 2.5m when it had been concluded that tests undertaken at depths of greater than 3m would likely identify more suitable conditions.

We note that a number of boreholes were excavated in November 2021, and that the glaciofluvial deposits generally comprised sand and gravel at depths below 3m (encountered at only 1.3m bgl at DCS8 in the centre of the site). A number of these boreholes (DCS1, DCS2, DCS4, DCS8, DCS11) were installed sufficiently into the sand and gravel (to depths of 4.4m to 5m bgl) such that falling head tests could be undertaken in the existing installations to obtain indicating infiltration rates. Where falling head tests are undertaken in boreholes, we advise the guidance provided in the CIRIA SuDS Manual is followed, including that, where positive rates are identified, as many tests as possible are undertaken in each location to account for the significantly reduced volume of water compared to a standard BRE Digest 365 test undertaken in a trial pit.

Based solely on the two tests undertaken on the adjacent Airbus site, the FRA concluded that the rate of infiltration is likely to be sufficiently low enough such that the surface water drainage system would be unlikely to be able to rely solely on infiltration techniques and would require a connection with a controlled discharge to an existing sewer.

The FRA indicates that “site specific infiltration testing is to be carried out to confirm whether soakaways only would be feasible.” We recommend that any new tests are carried out in trial trenches in preference to falling head tests in boreholes (albeit we acknowledge that falling head tests in the pre-existing installed boreholes could be useful in providing indicative rates to inform whether trial pit tests would be necessary, hence the suggestion for this above), and at least three times, to ensure that long-term infiltration rate is found for the site. This is to reduce the risk of the tests just measuring the porosity of the ground rather than the permeability. This is especially important given the Lowestoft Formation was identified at depth below the glaciofluvial deposits in some exploratory hole locations. Infiltration testing should be conducted at the proposed depth of infiltration and ideally in the same location. We also recommend that a groundwater risk assessment is prepared to consider the risk that infiltration of surface water on-site could pose to the Environment Agency’s groundwater Source Protection Zones (SPZ) (discussed further below).

Groundwater and SPZ

The land quality assessment advised that groundwater was found at two locations at depths of 6.4m bgl and 6.8m bgl in limited quantities and is therefore not considered to be continuous across the site. The proposed development straddles the boundary of Groundwater Source Protection Zones both the Outer Protection Zone (Zone II) and Total Catchment Zone (Zone III) and is located approximately 100m from an Inner Protection Zone (Zone I). The Site is also situated in an area of Medium-High groundwater vulnerability in an area where the Superficial Drift deposits are designated as a Secondary A aquifer and the bedrock geology is designated as a principal aquifer.

Discharge to sewer

It is acknowledged that the lack of nearby surface watercourse means that discharge to the surface water sewer is likely to be necessary, if infiltration is found to be inappropriate. One discharge point is proposed in the FRA, to the existing Thames Water sewer which runs north to south in Gunnels Wood Road. A peak rate of 7.4 l/s during the 1 in 100 plus 40% climate

change event is proposed, which is noted in the FRA as the greenfield run-off rate for the 1 in 100 year plus 40% climate change event.

Agreement of discharge with Thames Water (principle of connection and acceptable rate)

The FRA states that “Thames Water will be contacted to obtain their approval to discharge into these sewers,” i.e. as of December 2021, neither the principle of connection, nor the rate had been agreed with Thames Water.

The proposed rate of 7.4 l/s, being related to the greenfield run-off rate during the 1 in 100 year plus 40% climate change event may be acceptable to Thames Water. Strictly speaking allowances for climate change should not have been applied to the greenfield rates and efforts to reduce rates to the QBAR (1 in 2.33 event) greenfield rate should be sought wherever possible, to mitigate the effects of climate change and to account for the additional volumes of run-off arising from the site compared to its undeveloped state respectively.

Overestimation of betterment

The betterment in discharge rates from the site is considered to be overestimated. Existing peak runoff rates values have been calculated using the Modified Rational Method, apparently using FSR rainfall. Neither of these approaches are recommended in the CIRIA SuDS Manual for calculating run-off from a previously developed site. Furthermore, the existing rate presented is for the 1 in 100 plus 40% climate change event (146.32 l/s), whereas good practice requires that climate change is not included when calculating existing run-off rates.

In addition, we note that the total site area has been used for the calculation. Whilst using the total site area is appropriate for considering the overall betterment in the watercourses further downstream, the risk to the intervening sewers should also be considered. Being able to demonstrate the betterment in rates to the specific existing Thames Water sewer into which the discharge is proposed will likely be necessary is gaining agreement with Thames Water on the proposed rate. The existing rates to the 2 x existing discharge points (one to the east) have not been calculated, as discussed further below.

The existing utilities plan included in the appendices of the FRA indicate that there are currently two surface water discharge points for the site, one serving the Sanders Building and the other serving the Gunnell's building, i.e. approximately 50% of the site each. The utilities survey included in the FRA indicates that the drainage system serving the Sanders Building ultimately leads to a 225mm pipe, which connects to the 300mm Thames Water surface water sewer in Gunnell's Wood Road on the western side of the site (300mm diameter as indicated in the TWUL plans, whereas 375mm indicated in the utilities plan). The drainage system serving the Gunnells building ultimately leads to a 150mm diameter pipe discharging to the site adjacent to the south east. It follows that if the proposed drainage strategy intends to drain to only one of these discharge locations, the calculation of existing discharge rate to the existing Thames Water sewer should be determined using the contributing catchment to that discharge point only.

It is also worth noting that, for other sites in Stevenage, Thames Water have previously advised that the 1:20 event should be used for calculating existing discharge rates, on the basis that their system would not have the capacity for events greater than this. We recommend confirming this matter with Thames Water as part of the process of agreeing the proposed discharge rate. Rates less than the 7.4 l/s would require additional attenuation on-site. Given space appears to be available to increase the size of the tanks and or provide additional tanks, we would expect the same or better attenuation to be achievable at detailed design stage.

Pipe gradients and connection point to Thames Water sewer

The shallow gradients of the pipework proposed onsite appear to be dictated by the elevation of the Thames Water pipe at the proposed point of connection in Gunnels Wood Road. We

note that the proposed point of connection is partway along the southwestern boundary, i.e. not the lowest point of the site. We also note that the Thames Water pipe in Gunnels Wood Road appears to have a significant slope in the region of 1:25, i.e. significantly deeper in the south than in the north. It follows that a connection further to the south than that proposed would enable greater depths and gradients to be achieved in the detailed design.

The site generally slopes to the southeast, and thereby, a strategy whereby drainage is routed to the southern corner of the site may also allow steeper gradients and greater depths (of tanks for example) to be achieved. We acknowledge that the public footpath is within a cutting in this area, but the Thames Water records indicate that their pipework remains below this elevation, thus indicating that a gravity connection would still be possible. We also note that the final pipe which connects to the Thames Water sewer is indicated as having a 225mm diameter. Pipes of 225mm diameter (the same as the final pipe indicated as connecting the site to the Thames Water sewer) are also indicated running along the south-western and south-eastern sides of unit 2, almost reaching the southern corner of the site, thereby suggesting that it could be possible to drain all of the site to the southern corner without requiring any changes to the layout of the site. This appears to be a potential opportunity to increase the gradients of the proposed drainage system on-site, which would in turn improve the capability of the site to self-cleanse and thus reduce the risk of blockages and the capacity of the system to be reduced due to siltation, and/or reduce the maintenance burden.

In addition to increase maintenance considerations (maintenance is discussed further below), passive siltation control could be provided such as sediment catch pits at manholes across the site and most importantly upstream of structures. We expect to see suitable measures included in the detailed design.

Attenuation

The FRA states that 970m³ of attenuation is required for the 1 in 100 plus 40% climate change event. The FRA indicates that this attenuation would be provided in underground tanks (755m³), pipework, manholes and channels drains, as well as permeable paving subgrade. Separately the FRA indicates that some of the attenuation would be provided in 'allowable' flooding in one of the service yards at the ground surface (up to 100mm of flooding, achieved through site levels being set to enable this, as discussed further below).

As indicated previously, if Thames Water require a rate of less than the proposed 7.4 l/s, we would expect additional attenuation to be provided, likely underground, for which there appears to be ample space underground according to the proposal plans.

Flood risk

Existing flood risk

The Site is located in Flood Zone 1 and is not located close to an existing watercourse. Environment Agency mapping indicates areas of low, medium and high risk of surface water flooding for the existing site, which is not acknowledged in the FRA. These areas are mainly associated with run-off ponding behind the existing buildings, which present a barrier to overland flow.

Allowable flood risk

The FRA states that "additional storage of peak storm water has been incorporated into the design by allowing car-parking, access drives and soft landscaped areas to flood up to 100mm, provided this will not put the buildings, or neighbouring properties at risk of flooding. The proposed site levels should be set such that this is achieved, for the critical 1 in 100 year plus climate change storm event.... levels within car parking areas will be designed at the appropriate detailed design stage such that critical 100 year plus climate change storm events are contained above ground, but safely within the site boundaries without increasing the risk to surrounding / neighbouring properties."

This suggests that the design may not currently account for holding this water on-site, and that elements of the design may need to be amended at the detailed design stage to ensure that any flooding would be contained safely on-site.

“Furthermore, the Microdrainage calculations have been carried out for the exceedance storm event for 1 in 200 years plus climate change. The calculations have confirmed the approximate volume of flooding on site which would be contained within the proposed service yard, car parking and road areas without affecting neighbouring sites / properties. For flood routing plan for exceedance event refer to appendix B.”

Sub-station flood mitigation

The topographic survey indicates that existing ground levels across the site naturally slope towards a low point in the centre of the south-eastern boundary. During an exceedance event, overland flow will naturally flow towards this area at present. The proposed substation’s location at the centre of the south-eastern boundary appears to coincide with this low point. According to the flood exceedance map included in Appendix B of the FRA, despite the proposed raise in ground levels in this area (to be retained by a retaining wall along the south-eastern boundary), the area adjacent would remain at risk of flooding during extreme rainfall events.

The height of the wall above ground level on the site-side of the retaining wall is not indicated in the plans, and so it has not been possible to ascertain from the information provided the peak elevation that floodwater could reach in extreme rainfall events beyond those presented. Given the vulnerability of an electricity sub-station to flooding, we will require further assessment of the potential floodwater levels in this location to inform the detailed design of the sub-station, and specifically the elevation to which flood-sensitive infrastructure should be set to address flood risks. We recommend that appropriate resilience measures, such as the elevation at which flood sensitive infrastructure should be set (which could be the 1 in 200 peak water level), are agreed with the substation operator. Any infrastructure below the elevation identified should be flood resilient.

Maintenance

The FRA states that “the various SuDS features will remain privately owned and be maintained by Arlington,” and that “the exact details of this arrangement will be defined with the future tenants and confirmed.” Given the underground nature of the drainage strategy, including ‘allowable’ flooding at the surface, and shallow gradients which are unlikely to be self-cleansing, it is essential that the maintenance regime adequately reflects these specific requirements of the site and is appropriately secured as part of the planning permission.

The FRA notes that the proposed cellular storage tanks will require silt trap protection and suitable means of access for cleaning and inspection. More silt trap measures and access points are likely to be required than usual, alongside more frequent maintenance regime to account for the shallow gradients in the proposed system.

Planning policy compliance

Compliance with the NPPF

The proposed development falls entirely within Flood Zone 1, therefore passes the sequential test. The site use is considered appropriate within this flood zone under NPPF guidance, meaning completion of the Exception Test is not required.

Compliance with policy and guidance

The local policy requires that the approaches to both attenuation and disposal of surface water runoff follow standard hierarchies as set out in the SuDS Manual. Subject to provision of

further details regarding infiltration potential at detailed design stage, these hierarchies will have been followed.

The development should result in a reduction in flood risk onsite and downstream, through the attenuation of run-off to greenfield rates, including an allowance for climate change. Provided suitable treatment can be incorporated into the detailed drainage design proposals as anticipated should be possible, the development should also address the risk of pollution entering nearby watercourses.

The incorporation of rainwater harvesting into the detailed design would ensure water efficiency opportunities are maximised, to increase the sustainability of the development.

Planning conditions recommendations

Based on the review of the proposal set out in the FRA we recommend the following conditions to the Local Planning Authority, should planning permission be granted.

Condition 1 – Drainage Scheme

No development shall take place (including site clearance) until a final detailed design for the drainage scheme for the site, which addresses the issues highlighted in [SBC REFERENCE], has been submitted to and approved in writing by the Local Planning Authority. The scheme shall be based on the following principles:

- limiting the surface water run off generated by the 1 in 100 year + 40% climate change critical storm to a rate of 7.4 l/s or less, in accordance with an agreement from the relevant body to whom discharges would occur
- providing attenuation on-site for all rainfall events up to and including the 1 in 100 year + 40% climate change event;
- permeable paving for all car parking areas; and,
- ensuring site levels are set such that any 'allowable' flooding at the ground surface would be: contained within car-parking, access drives and soft landscaped areas (i.e. outside of buildings) for all events (including exceedance events); and also within the site boundaries to a maximum flood depth of up to 100mm during the 100 year plus 40% climate change storm events.

The scheme shall also provide the following:

- further consideration of infiltration as a means of discharging surface run-off;
- evidence of infiltration testing, carried out in accordance with BRE Digest 365, at the location and proposed depth of any infiltration measure(s);
- rainwater harvesting and/or green roofs (wherever possible);
- appropriate treatment before discharge;
- evidence of agreement (of principle and rates) from the relevant body or bodies to whom discharges would occur;
- updated estimates for betterment;
- increased depths and/or pipe gradients (wherever possible);
- details of flood risk mitigation proposed for the substation and evidence of agreement with the substation operator;
- an assessment of the risk of sedimentation of the system and any additional maintenance measures that may be required to mitigate that risk;
- updated surface water drainage calculations and modelling for all rainfall events up to and including the 1 in 100 year plus climate change event, including infiltration options;
- an updated detailed surface water drainage plan, showing all proposed discharge points, SuDS features and pipe runs (with sizes);
- detailed engineered drawings of the proposed SuDS features including their size, volume, depth and any inlet and outlet features, including any connecting pipe runs, along with all corresponding detailed calculations/modelling;

- updated detailed exceedance flow path drawings for surface water for events greater than the 1 in 100 year plus climate change event.

The approved drainage scheme shall be implemented in full prior to the beneficial occupation of the development to which this permission relates and shall be permanently retained as such thereafter unless otherwise agreed in writing by the Local Planning Authority.

REASON:- To adhere to the hierarchy of drainage options, as set out in paragraph 080 (Reference ID: 7-080-20150323) of the Planning Practice Guidance; to maximise the use of SuDS in the interests of mitigating the risk of flooding to the site itself and downstream; to prevent pollutants entering the public water supply and nearby watercourses; and to maximise the sustainability of the development.

Condition 2 – SuDS Maintenance

Prior to the beneficial occupation of the development to which this permission relates, a management and maintenance plan for the approved SuDS features and drainage network must be submitted to and approved in writing by the Local Planning Authority. The scheme shall include:

- provision of a complete set of as built drawings, including the final drainage layout for the site drainage network;
- maintenance and operational activities;
- arrangements for adoption; and,
- any other measures necessary to secure the operation of the scheme throughout its lifetime.

The approved plan shall be fully implemented from the date of approval and thereafter for the lifetime of the development unless otherwise agreed in writing by the Local Planning Authority.

REASON:- To maximise the use of SuDS in the interests of mitigating the risk of flooding to the site itself and downstream; to prevent pollutants entering the public water supply and nearby watercourses; and to maximise the sustainability of the development.

Informative to the LPA

For further advice on what should be covered in the Drainage Strategy can be found on the Hertfordshire County Council webpage for surface water drainage, at <https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/surface-water-drainage/surface-water-drainage.aspx>

Officer Comment:

In light of the above, it is considered that the proposed development would not increase the risk of flooding either to the site itself or elsewhere. While the drainage strategy as submitted is unacceptable because it fails to properly consider infiltration as a method of discharging surface run-off and does not propose sufficient treatment, these issues can be resolved at the detailed design stage through the imposition of conditions. Further consideration should also be given to rainwater harvesting in order to maximise the sustainability of the development.

It is therefore recommended that the above conditions be imposed on any grant of planning permission. Subject to these conditions, it is considered that the proposal would accord with Policies FP1 and FP2 of the Local Plan 2019.

Amendments to Planning Officer's Report / Recommendations

1 – Plan Numbers

On page 1 of the report, the plan numbers are listed as:

“31366-PL-200; 31366-PL-201; 31366-PL-202; 31366-PL-203; 31366-PL-204; 31366-PL-205; 31366-PL-206; 31366-PL-207; 31366-PL-208; 31366-PL-209; 31366-PL-210; 31366-PL-211; 31366-PL-212; 31366-PL-213;”

This should read (amendment underlined):

“31366-PL-200; 31366-PL-201 A; 31366-PL-202; 31366-PL-203; 31366-PL-204; 31366-PL-205; 31366-PL-206; 31366-PL-207; 31366-PL-208; 31366-PL-209; 31366-PL-210; 31366-PL-211; 31366-PL-212; 31366-PL-213;”

Reason for amendment: Typographical error.

2 – Wording of Condition 3

Condition 3 currently reads:

“Notwithstanding Section 55 of the Town and Country Planning Act (as amended) and Part 3 of Schedule 2 to the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) (or any order revoking and re-enacting that Order with or without modification), the development to which this permission relates shall be used for purposes falling within Classes E(g)(i), E(g)(ii), E(g)(iii), B2 and B8 of the Schedule to the Use Classes Order 1987 (as amended) (or within any provision equivalent to those Classes in any statutory instrument revoking and re-enacting that Order with or without modification).

REASON:- To prevent the site being used for purposes that would have a detrimental impact on the economic function of the area.”

It should read (amendment underlined):

“Notwithstanding Section 55 of the Town and Country Planning Act (as amended) and Part 3 of Schedule 2 to the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) (or any order revoking and re-enacting that Order with or without modification), the development to which this permission relates shall be used for purposes falling within Classes E(g)(i), E(g)(ii), E(g)(iii), B2 and B8 of the Schedule to the Use Classes Order 1987 (as amended) (or within any provision equivalent to those Classes in any statutory instrument revoking and re-enacting that Order with or without modification) and for no other purposes whatsoever unless otherwise agreed in writing by the Local Planning Authority.

REASON:- To prevent the site being used for purposes that would have a detrimental impact on the economic function of the area.”

Reason for amendment: Typographical error.

3 – Wording of Informative 4

Informative 4 currently reads:

“The proposed development should achieve Secured by Design (SBD) accreditation in order for it to comply with current Building Regulations. The Police Crime Prevention Design Advisor can be contracted by telephone on 01707 355227”

It should read (amendment underlined):

“The developer is strongly encouraged to achieve Secured by Design (SBD) accreditation for the development. The Police Crime Prevention Design Advisor can be contracted by telephone on 01707 355227”

Reason for amendment: The Building Regulations do not require SBD accreditation in this instance.

4 – Additional Drainage Scheme Condition

The following additional condition is now recommended:

“No development shall take place (including site clearance) until a final detailed design for the drainage scheme for the site, which addresses the issues highlighted in *LPA Response to Drainage Strategy* dated 04/04/2022, has been submitted to and approved in writing by the Local Planning Authority. The scheme shall be based on the following principles:

- limiting the surface water run off generated by the 1 in 100 year + 40% climate change critical storm to a rate of 7.4 l/s or less, in accordance with an agreement from the relevant body to whom discharges would occur
- providing attenuation on-site for all rainfall events up to and including the 1 in 100 year + 40% climate change event;
- permeable paving for all car parking areas; and,
- ensuring site levels are set such that any ‘allowable’ flooding at the ground surface would be: contained within car-parking, access drives and soft landscaped areas (i.e. outside of buildings) for all events (including exceedance events); and also within the site boundaries to a maximum flood depth of up to 100mm during the 100 year plus 40% climate change storm events.

The scheme shall also provide the following:

- further consideration of infiltration as a means of discharging surface run-off;
- evidence of infiltration testing, carried out in accordance with BRE Digest 365, at the location and proposed depth of any infiltration measure(s);
- rainwater harvesting and/or green roofs (wherever possible);
- appropriate treatment before discharge;
- evidence of agreement (of principle and rates) from the relevant body or bodies to whom discharges would occur;
- updated estimates for betterment;
- increased depths and/or pipe gradients (wherever possible);
- details of flood risk mitigation proposed for the substation and evidence of agreement with the substation operator;
- an assessment of the risk of sedimentation of the system and any additional maintenance measures that may be required to mitigate that risk;
- updated surface water drainage calculations and modelling for all rainfall events up to and including the 1 in 100 year plus climate change event, including infiltration options;
- an updated detailed surface water drainage plan, showing all proposed discharge points, SuDS features and pipe runs (with sizes);
- detailed engineered drawings of the proposed SuDS features including their size, volume, depth and any inlet and outlet features, including any connecting pipe runs, along with all corresponding detailed calculations/modelling;
- updated detailed exceedance flow path drawings for surface water for events greater than the 1 in 100 year plus climate change event.

The approved drainage scheme shall be implemented in full prior to the beneficial occupation of the development to which this permission relates and shall be permanently retained as such thereafter unless otherwise agreed in writing by the Local Planning Authority.

REASON:- To adhere to the hierarchy of drainage options, as set out in paragraph 080 (Reference ID: 7-080-20150323) of the Planning Practice Guidance; to maximise the use of SuDS in the interests of mitigating the risk of flooding to the site itself and downstream; to prevent pollutants entering the public water supply and nearby watercourses; and to maximise the sustainability of the development.”

Reason for amendment: In response to flood risk and drainage update above.

5 – Additional SuDS Maintenance Condition

The following additional condition is now recommended:

“Prior to the beneficial occupation of the development to which this permission relates, a management and maintenance plan for the approved SuDS features and drainage network must be submitted to and approved in writing by the Local Planning Authority. The scheme shall include:

- provision of a complete set of as built drawings, including the final drainage layout for the site drainage network;
- maintenance and operational activities;
- arrangements for adoption; and,
- any other measures necessary to secure the operation of the scheme throughout its lifetime.

The approved plan shall be fully implemented from the date of approval and thereafter for the lifetime of the development unless otherwise agreed in writing by the Local Planning Authority.

REASON:- To maximise the use of SuDS in the interests of mitigating the risk of flooding to the site itself and downstream; to prevent pollutants entering the public water supply and nearby watercourses; and to maximise the sustainability of the development.”

Reason for amendment: In response to flood risk and drainage update above.

6 – Additional Informative

The following additional informative is now recommended:

“Further advice on what should be covered in the Drainage Strategy can be found on the Hertfordshire County Council webpage for surface water drainage, at:

<https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/surface-water-drainage/surface-water-drainage.aspx>”

Reason for amendment: In response to flood risk and drainage update above.