



**PLANNING AND DEVELOPMENT COMMITTEE**

**6 SEPTEMBER 2022**

**SUPPLEMENTARY AGENDA**

**PART I**

**5. 22/00468/FPM - MBDA, SIX HILLS WAY**

To consider the demolition of an existing storage facility, and erection of a 3-Storey Research and Development Facility.  
Addendum Report - Pages 3 - 10

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### Supplemental Agenda

<b>Meeting date</b>	6 September 2022
<b>Officer</b>	Linda Sparrow
<b>Agenda Item</b>	MBDA UK
<b>Proposal</b>	
<b>Reference</b>	
<b>ADDENDUM INFORMATION</b>	

#### **Update on Landscaping**

At the time of drafting the planning officer’s report the Council’s Arboricultural and Conservation Manager and the Green Spaces Officer had raised concerns over a shrub on the landscaping plan and as such it was recommended that a condition be imposed to request a revised landscaping plan prior to work above slab level. Since then, the applicant has provided a revised plan to address the concerns. The Council’s Green Spaces Officer has agreed the changes made and removed their concern. Accordingly it is requested that condition 12 is amended to require the development to proceed in accordance with the approved plan. Details of the amendment follow at the end of this report.

#### **Update on Flood Risk and Drainage**

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

#### **Drainage Strategy**

##### **Overview of drainage strategy**

The drainage strategy proposes a mixture of gravity and pumped drainage to two surface water sewer networks. Attenuation tanks and permeable paving are proposed as SuDS features for the development. The drainage system will be split with surface water runoff from the proposed building roof to be routed into the roof water drainage network leading to an attenuation tank in the west of the site before being pumped into existing surface water sewers within the wider MBDA site. Runoff from roads and paved footway areas will pass into an area of permeable paving before being routed through one of two oil interceptors before discharging to a surface water manhole (MHSW8) and being pumped into an existing surface water sewer. Currently infiltration is not proposed and no infiltration testing for the site has been undertaken.

As the site is previously developed the brownfield runoff rates have been calculated using the modified rational method and a 50% betterment is proposed on the 1 in 1 year discharge event of 31.8 l/s. The proposed DS will restrict surface water runoff from the site to the surface water sewers to a maximum of 16 l/s, discharging 8 l/s to each manhole connection using pumping stations at MHSW8 and MHSW3 (drawing 99571-DC -XX-00-DR- C-10001, DS Appendix D). The applicant has referenced the London Plan Supplementary Planning Guidance for Sustainable Drainage and Construction as the basis for providing 50% betterment at the site. However, Hertfordshire County Council Guidance for developers<sup>1</sup> requires that all applicants “*aim to provide greenfield run-off rates for all brownfield sites*”. We also highlight Policy 15 within the Hertfordshire County Council LFRMS 22 stating “*Previously developed sites should aim to discharge at the original predevelopment greenfield rate for the whole site area where possible. If not, a significant reduction in the current rate*”

*of discharge should be achieved and evidence provided as to why greenfield rates are not viable.”* Currently the applicant has not provided sufficient evidence as to why betterment to greenfield rates is not achievable. We also note that in Section 4.1 of the DS the Hertfordshire County Council LFRMS 2 is not mentioned. The LFRMS 2 is the most up to date document detailing the SuDS policies for Hertfordshire.

No drawings detailing exceedance flow paths have been included in the application. Greenfield runoff rates are displayed in the main body of the report but no outputs from the UK SuDS tool have been included for examination.

The DS states that CCTV survey of the existing public sewers surrounding the site will need to be undertaken before and after the demolition of the existing building. As the DS proposes that the SuDS will discharge into the existing sewers on present on the boundary of the site, we would expect CCTV survey to occur in order to demonstrate that the receiving pipe network is suitable for the proposed discharge (in a good state of repair without blockages).

#### Lack of above ground SuDS

The proposed DS only satisfies one of the three opportunities provided by SuDS set out in the Government’s Planning Practice Guidance<sup>3</sup>. 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 not sufficiently quantified, 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 sufficient above ground SuDS (with the exception of permeable paving areas). Hertfordshire County Council’s Guidance for Developers<sup>1</sup> requires storage volumes to be “... *provided on site utilising above ground storage where practicable.*” The drainage layout plan (DS Appendix D) indicates several areas of ‘soft landscaping’. However, no justification has been provided within the DS as to why these spaces have not been utilised as spaces for providing SuDS. There may be the potential to include tree pits or rain gardens within/instead of the proposed landscaped areas.

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

Whilst we welcome the use of oil interceptors to treat runoff from the areas of hardstanding on the site, there are relatively few other treatment methods for runoff proposed for the site. Under the proposed drainage strategy runoff from the ground passes through one of two oil interceptors before being discharged directly to a surface water sewer. Permeable paving in this instance will provide a level of treatment. However, runoff from the roof of the proposed building is to be directed into underground pipes and routed to underground attenuation storage before discharging to one of two surface water sewers. Therefore, no treatment is being provided for this runoff.

We would expect the applicant to provide evidence that the water quality of discharge from the development has been considered in the DS. The use of the Simple Index Approach (as detailed in the SuDS Manual 4) is an accepted approach to evidencing that sources of pollution and appropriate mitigation measures have been considered and are in place within the DS. We request that a Simple Index Approach is set out to demonstrate that the proposed water treatment stages are suitable for both of the surface water drainage networks. If they are not suitable then additional treatment will need to be added.

#### Rainwater harvesting and green roofs

The SuDS hierarchy recommends reuse of rainwater (rather than discharge) in the first instance. Rainwater harvesting and green roofs has been discounted for use in the DS on the basis of economic costs.

Whilst the addition of green roofs 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, it is noted that there is potentially limited space on the roof for the placement of these features. It is however recommended that suitable treatment is provided for roof runoff before discharge.

#### Infiltration and groundwater

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

#### Infiltration

The DS discounts infiltration as a viable means of discharging runoff from the site on the basis of a quick storage estimate produced using MicroDrainage WinDes software. However no details are provided as to the set up and results of these calculations. As no infiltration rates are quoted for the site it is not known what values were used in these calculations and therefore further justification is required as to discount the use of infiltration.

Given that infiltration is preferable to attenuation in the SuDS hierarchy, and that infiltration testing has not been undertaken, it would be expected that infiltration testing is undertaken, and infiltration incorporated in the drainage strategy for the site if suitable infiltration rates are returned.

Appendix C contains multiple borehole records taken within the vicinity of, but not within the site, and shows the presence of a range of clayey, sandy to gravelly soils underlain by chalk at varying depths, which has been used as justification for not undertaking infiltration testing.

We do not believe that this presents sufficient justification that infiltration is not viable. We would recommend that Infiltration testing should be in accordance with BRE Digest 365 which should be carried out at the location of any infiltration measure(s) in order to determine whether infiltration can form part of the SuDS disposal strategy.

However, it is recognised that the site is all currently hardstanding and that infiltration testing may not be feasible on-site until demolition works are complete.

If sufficient evidence can be provided that infiltration is not suitable at this location or feasible to be carry out then this will be accepted, however sufficient justification will be required.

#### Groundwater and SPZ

The DS references groundwater levels from borehole records within the vicinity of the site, showing that groundwater levels vary between 4.2 to 4.5m bgl. However, the report does not reference the material included in the Land Contamination report (Phase 1 Desk Study: Land Contamination), including groundwater source protection zones and groundwater vulnerability. The Land Contamination report states that there are no potential linkages to contamination and the site is low risk. The DS states that the site is not located within a groundwater Source Protection Zone, however Defra's Magic map shows it as being with Source Protection Zone 3. 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 (undifferentiated) aquifer and the bedrock geology is designated as a Principal aquifer.

#### Discharge to sewer

It is acknowledged that the lack of a nearby surface watercourse means that discharge to the surface water sewers is likely to be necessary, should it be demonstrated that infiltration is not a feasible runoff disposal option for this site. The drainage strategy proposes connection to two existing surface water sewers adjacent to the site. The rate of discharge proposed is 8 l/s for each point of connection, resulting in a total discharge from the site of 16 l/s. The main report states that hydro-brake flow controls will be present to limit the discharge to 8 l/s. However, the drainage layout drawing included in Appendix D of the DS states that pump stations will be present at MHSW3 and MHSW8. As no reference to pump stations for surface water are made in the main report it is unclear whether pump stations or hydro-brakes are planned for discharging water to the public surface water sewers. As no information has been provided on the invert level of the Thames Water manholes (SMH.18.1 B,

SMH.43 D) it is not possible to discern whether pump stations will be necessary for the site. Additional detail of the planned discharge to sewers including clarification of the requirement for pump stations is required. Clarification on whether the pumps shown in the drainage layout are existing or proposed should also be provided. If it is possible to drain the site without the use of pump stations this would be the preferred option as it will ensure that the site can continue to drain positively which would not be the case with any potential pump failure.

Additionally, the proposed drainage strategy has two drainage networks, one draining the areas of hardstanding and one draining the roof. However, runoff from hardstanding areas is currently proposed to be discharged solely to SMH.43 D. It is not specified as to why the roof and ground drainage is divided and to why both systems discharge to sewers on opposite boundaries of the site. Thames Water will need to confirm that the proposed discharge rates for both of their sewers are acceptable.

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

Other than an initial enquiry to Thames Water included with the application, no evidence has been supplied that an agreement with Thames Water has been sought about the principle of connection and acceptable rates of discharge from the site. Confirmation of a connection agreement and acceptable discharge rates to the two surface water sewers where discharge is proposed will be required before construction can commence.

#### Overestimation of betterment

The modified rational method has been used to estimate the existing brownfield runoff from the development as a baseline to provide betterment. Whilst it is acceptable to use the modified rational method for estimating the peak runoff rate from existing developments, we question whether appropriate rainfall intensities have been used. No explanation has been provided as to why the Transport and Road Research Laboratory Report has been used for rainfall intensities when calculating the brownfield runoff rates for the Site. The CIRIA SuDS Manual<sup>4</sup> recommends the use of either FSR or FEH rainfall intensities.

However, the proposed 50% reduction of the calculated brownfield rates appear to be sensible in this instance and are therefore deemed to be acceptable. While a betterment to greenfield discharge rates would be ideal, it is appreciated that the space constraints on this site limit the feasibility of providing sufficient SuDS attenuation storage for this to be achieved. However, further justification that this is the case is required.

In addition, whilst the main body of the report states that the UK SuDS greenfield runoff estimation tool was used to calculate the greenfield runoff rates for the site, no detailed outputs from the tool have been included in the DS appendices. We would expect this to be included for review.

#### Pipe gradients and connection point to Thames Water sewer

Examination of the drawing 99571-DC -XX-00-DR- C-10001 indicates that pipe gradients appear to be suitable and sufficient for an element of self-cleansing to be present within the drainage system. Appendix A contains the utilities survey by Drainworx Limited. The connection points to the surface water sewers are manhole SMH.18.1 B, directed into surface water drainage system B, and SMH.43 D towards the south side into surface water drainage system D.

#### Attenuation

The DS states that the volume of attenuation storage required is 375m<sup>3</sup>. Attenuation for roof runoff will be provided by an attenuation tank (290m<sup>2</sup> x 0.8m deep, with a total volume of 220m<sup>3</sup>). Additional attenuation storage volume for surrounding hardstanding will be achieved through voids in the sub-base aggregates of the permeable car park and permeable paving materials (165m<sup>3</sup>). Pipework and manhole volume have been taken into account in the MicroDrainage calculations.

#### **Flood risk**

##### Existing flood risk

The Site is located in Flood Zone 1 and is not located close to an existing watercourse. Environment Agency surface water flood mapping indicates areas of Low (0.1% and 1% AEP) to High (>3.3% AEP) Risk of surface water flooding, with High risk areas in the west of the site. Flood depths for the

High risk flood areas are below 300mm. Flood depths for Medium risk range from 300 to 900mm, to below 300mm. Flood depths for the Low risk areas also range from 300 to 900mm, to below 300mm.

#### Allowable flood risk

The residual risk of flooding must be managed and contained safely on the site should any drainage features fail (pumps and/or Hydro-Brakes in this instance), or during an extreme storm event. The location, depth and flow routes of any overground flooding should be clearly shown on a plan. No document showing exceedance flow paths has been included with the application. Based on ground levels included in the Existing Block Plan (5100-FDG-ZZ-ZZ-DR-A-08002) the majority of exceedance flows to occur on the site would pool in the area between Six Hills Way and the proposed building, which based on the Level 0 General Arrangement Plan (5100-FDG-ZZ-00-DR-A-08005) would be in front of the primary access route to the building. However, as multiple other access points on all sides of the building are present this is considered an acceptable location for allowable flooding. This will however need to be demonstrated by the applicant on an exceedance flowpaths diagram.

#### Drainage network flood risk

The supplied MicroDrainage outputs show that for the 15 minute, 100 year summer storm with 40% climate change Manhole MHSW1 would flood with a volume of 2.4m<sup>3</sup> and for the 15 minute, 100 year winter storm with 40% climate change it would flood with a volume of 3.3m<sup>3</sup>. No reference is made to this flood risk within the DS. It would be expected to be demonstrated how this surcharged flood water would be managed across the site, while not posing a risk to the proposed building or any other receptors.

#### Maintenance

Section 6 of the DS contains the Outline Maintenance Schedule. The frequency of inspection and maintenance measures proposed for SuDS components of the drainage system are in line with current guidance on maintenance set out in the CIRIA SuDS Manual<sup>4</sup>. We would expect justification for why no routine inspection and maintenance will be required for the storm drainage pipe network. It is not sufficient to only undertake incidental jetting in the event of obstructions. We would also expect a reference in the maintenance schedule as to which body will be responsible for the maintenance of the drainage system.

While the text of the DS does not mention the pump stations, these are shown on the drainage figure. A maintenance schedule for the pump stations should be submitted. It must also be ensured that good access is available for the pump stations to carry out this maintenance.

#### **Compliance with the NPPF**

The proposed development falls entirely within Flood Zone 1, and 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**

As set out above, we believe that the policy to maximise the sustainability of the development has not been fully considered and that the potential for infiltration, above ground SuDS and rainwater harvesting should be considered further in the drainage strategy, and robust justification provided if still deemed unsuitable. We do not accept that sufficient evidence has been provided that infiltration rates on the site will not be suitable. Unless suitable justification is supplied we will expect infiltration testing to be undertaken on the site in order to comply with Hertfordshire County Council's Guidance for Developers<sup>1</sup> – Technical Requirements 3 and 6, which state that priority should be infiltration based SuDS techniques over tanked systems.

#### **Further information required**

Based on a review of the submitted application documents we are not able to recommend that the planning permission for this proposal is granted.

In order for us to be confident that the DS could be acceptable and compliant with local and national policy and guidance, the following additional information will need to be provided by the applicant:

- further justification for the proposed discharge rate, detailing why the greenfield discharge rate is not achievable;

- further justification that rainwater harvesting, above ground SuDS and infiltration are not appropriate for the site;
- details of the pump stations within the proposed drainage strategy and justification for their use;
- evidence of the adequacy of the proposed water quality treatment, using for example, the SuDS Manual Simple Index Approach;
- details of how sewer surcharge events will be managed without affecting the proposed building along with a figure demonstrating how exceedance flow paths for surface water for events greater than the 1 in 100 year plus 40% climate change, would be managed; and
- an update to the maintenance schedule to include for the surface water pipe network and pump stations, and with details of who the responsible party for all the maintenance will be.

### **Recommended conditions**

If the above information is provided by the applicant and judged to be acceptable then it could be recommended that the application is approved with the following conditions.

#### **Condition 1 – Detailed design of the Surface water run-off scheme**

No development shall take place until a final design of the drainage scheme for the site has been submitted to and approved in writing by the Local Planning Authority. The scheme shall subsequently be implemented in accordance with the approved details before the development is occupied.

The scheme shall include the following:

- infiltration testing in accordance with BRE Digest 365 to be carried out to determine whether infiltration rates are suitable to form part of the surface water disposal strategy;
- updated surface water drainage calculations and modelling for all rainfall events up to and including the 1 in 100 year + 40% climate change event, including allowance for infiltration, should testing demonstrate sufficient infiltration capacity exists at the site;
- appropriate stages of treatment in accordance with SuDS Manual requirements;
- an updated full detailed surface water drainage plan showing the proposed discharge points, the location of the proposed SuDS features, any pipe runs and size; and
- detailed engineering drawings of the proposed SuDS features including their, size, volume, depth and any inlet and outlet features including any connecting pipe runs;
- evidence that Thames Water has given agreement (of principle and rates) for the surface water from the site to discharge into their network; and
- evidence that the proposed CCTV drainage survey of the surrounding surface water sewerage network which it is proposed to discharge into has been undertaken, and that this has shown that the drainage proposals for this site can be accommodated.

**Reason:-** To prevent flooding by ensuring the satisfactory storage of and disposal of surface water from the site; to ensure that sufficient treatment of surface water is provided before disposal, to prevent pollutants entering downstream watercourses and to determine that the receiving drainage network is fit for purpose and of sufficient capacity condition in order to be able to receive discharge from the site drainage system.

#### **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 downstream watercourses; and to maximise the sustainability of the development throughout its lifetime.



### **Planning Officer Comments**

In light of the above, the drainage strategy as submitted is unacceptable because it fails to properly consider above ground SuDS features and infiltration as methods for discharging surface water. Further there is lack of justification or information on the pump stations, maintenance and how sewer surcharge events would be managed.

However, no substantive concerns have been raised in terms of flood risk. It is therefore considered that the identified issues can be resolved with additional information supplied by the applicant and secured through the imposition of conditions.

Accordingly, it is recommended that Condition 9 on the officer report be amended to reflect the drainage consultant's advice. Full details of this amendment are set out below. Members should note that the recommended condition 2 above is the same wording as condition 16 on the officer report and therefore no changes are required in this regard.

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/Recommendation**

#### **1 – Replacement of Condition 9**

9. No development shall take place (including site clearance) until a final detailed design for the drainage scheme for the site has been submitted to and approved in writing by the Local Planning Authority. 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; and to maximise the sustainability of the development.

This condition will now read as follows:

9. No development shall take place (excluding site clearance and demolition) until a final design of the drainage scheme for the site has been submitted to and approved in writing by the Local Planning Authority. The scheme shall subsequently be implemented in accordance with the approved details before the development is occupied.

The scheme shall include the following:

- infiltration testing in accordance with BRE Digest 365 to be carried out to determine whether infiltration rates are suitable to form part of the surface water disposal strategy;
- updated surface water drainage calculations and modelling for all rainfall events up to and including the 1 in 100 year + 40% climate change event, including allowance for infiltration, should testing demonstrate sufficient infiltration capacity exists at the site;
- appropriate stages of treatment in accordance with SuDS Manual requirements;
- an updated full detailed surface water drainage plan showing the proposed discharge points, the location of the proposed SuDS features, any pipe runs and size; and
- detailed engineering drawings of the proposed SuDS features including their, size, volume, depth and any inlet and outlet features including any connecting pipe runs;
- evidence that Thames Water has given agreement (of principle and rates) for the surface water from the site to discharge into their network; and
- evidence that the proposed CCTV drainage survey of the surrounding surface water sewerage network which it is proposed to discharge into has been undertaken, and that this has shown that the drainage proposals for this site can be accommodated.

**Reason:-** To prevent flooding by ensuring the satisfactory storage of and disposal of surface water from the site; to ensure that sufficient treatment of surface water is provided before disposal, to prevent pollutants entering downstream watercourses and to determine that the receiving drainage network is fit for purpose and of sufficient capacity condition in order to be able to receive discharge from the site drainage system.

2 – Amendment to Condition 12

12. No development shall take place above slab level until a landscaping and planting plan has been submitted to and approved in writing by the local planning authority. The approved plan shall then be implemented in the first planting and seeding season following completion of the development unless otherwise agreed in writing by the local planning authority.  
**REASON:-** To ensure a satisfactory appearance upon completion of the development.

This condition will now read as follows:

12. The development shall be carried out in accordance with the approved landscaping plan 5100-FDG-ZZ-ZZ-DR-A-55199-S4-P03. The approved plan shall be implemented in the first planting and seeding season following completion of the development unless otherwise agreed in writing by the local planning authority.  
**REASON:-** To ensure a satisfactory appearance upon completion of the development.