

Lead Local Flood Authority
Post Point CHN 215
Hertfordshire County Council County Hall, Pegs
Lane
HERTFORD SG13 8DN

c/o: Sophie Taylor
By email:

[REDACTED]



Unit 23 The Maltings
Stanstead Abbots
Hertfordshire SG12 8HG

Tel 01920 871 777

[REDACTED]
www.eastp.co.uk

11th January 2023

Dear Sophie,

6/2022/1355/MAJ - Former Beales Hotel Comet Way Hatfield AL10 9NG

I am writing in response to a letter dated 22nd December 2022 (enclosed in **Appendix A**) in relation to the submitted Flood Risk Assessment and SuDS Report dated May 2022 prepared by EAS.

Please see below a response to the comments received which I hope provides the additional requested information and clarifies the outstanding queries sufficiently to remove LLFA's objection.

LLFA Comment- Point 1

We understand that the built development takes over most of the space within the redline boundary, therefore above ground landscaped SuDS have been discounted by the applicant on this site. However, there are other options available higher up on the SuDS hierarchy before opting for the use of an underground tank to attenuate all surface water as proposed.

The applicant needs to explore other options such as a green/blue roof for the roof area which takes up the majority of the impermeable area. Rain gardens at the bottom of each roof downpipe may also be an option to manage the lower rainfall events. The applicant also needs to explore the use of permeable materials on the access road which can either infiltrate (if demonstrated to be viable) or integrated with a subbase prior to discharge.

The applicant has reiterated what has been 'considered' and what 'could be' provided within the drainage strategy to comply with the SuDS hierarchy however the drainage strategy has not been amended to include these measures showing on a complete drainage plan. As this is a full application with the final layout being agreed, a commitment to the use of other SuDS measures should be provided at this stage.

EAS Response-

With regards to the scope of SuDS features proposed at the site, design constraints such as site levels, spatial constraints, building design and infiltration test results have informed the chosen SuDS features. All practical and viable SuDS features have been included, it is clear from the site layout for example that ponds or swales cannot be included in the SuDS scheme. Please refer to Table 5.1 in the FRA which reviews SuDS devices in relation to the proposed scheme and their applicability.

Green Roofs and Permeable Paving

Green roofs have been proposed and have been incorporated into the landscape design forming communal amenity areas and well as being integrated with PV panels. Enclosed in Appendix B of the Flood Risk Assessment and SuDS Report dated May 2022 are the proposed site plans which identify the green roofs areas. It is acknowledged that these site plans do not specifically detail the green roof features and therefore the SuDS Outline Plan has been updated to clearly identify these features.

Green roofs are located on the first, fifth, sixth and seventh roof levels and will manage runoff at source whilst providing a treatment stage. The green roof features have not been hydraulically modelled as the chosen specification will be subject to specialist design input and review by a structural engineer. For now the proposed geocellular attenuation device has been sized as a 'worst-case' whereby no attenuation is provided by green-roofs or other SuDS features. At detailed design stage, and when green roof specifications are confirmed, it is possible that the geocellular attenuation device could be reduced in size when taking account of attenuation volume in the proposed green-roofs.

The proposed SuDS Drainage strategy also includes areas of permeable paving, which are sited where proposed external levels are anticipated to be of a suitable gradient. Areas where it is anticipated that permeable paving can be provided are now shown on the SuDS Drainage Strategy drawing. As described above, attenuation volume within any permeable paving subbase has not been included at this stage as detailed proposed external levels have not been set, and it is currently unconfirmed if the subbase would be lined or unlined – for now the proposed geocellular attenuation device has been sized as a 'worst-case' whereby no attenuation green-roofs or other SuDS features.

As described within the Flood Risk Assessment and SuDS Report dated May 2022, EAS recommend that further infiltration testing is undertaken at detailed design stage to determine if any external paved areas could be drained via infiltration. A suitably worded Condition could cover this.

To reiterate, green-roofs and permeable paving are proposed to form part of the SuDS Drainage Strategy to serve the site. At detailed design stage, the specification of the green-roofs, the exact extent of permeable paving and whether this is to be lined or unlined, will be included in any hydraulic models to confirm the attenuation volume requirement for the geocellular attenuation device. The proposed maximum outfall rate of 3.5 l/s has been agreed with Thames Water and would also inform the detailed design.

Raingardens

At this stage, it is anticipated that all rainwater down-pipes serving the green-roof and 'standard' roof areas shall be internally located within the building and shall not be located external to the building face. As such, the use of Rainwater Gardens is not expected to be viable. Rainwater down-pipes are expected to discharge to inspection-chambers and manholes in the undercroft carpark then directed to the geo-cellular attenuation device.

LLFA Comment- Point 2

There is no water quality treatment as part of the proposed surface water drainage strategy. The proposed tank will not offer any treatment and even with integrated catchpits, will increase the required maintenance to the tank and the catchpits themselves. Prior treatment stages such as permeable paving, filter strips etc in particular from

the access road should be provided prior to discharge into the attenuation feature, should a tank be the only technically viable option.

As stated in point 1 a green roof/blue roof should be explored for the management of surface water treatment from the roof area.

As stated in Point 1, no amendments have been made to show a commitment to the use of non-proprietary products to treat the surface water run-off. The use of smart sponges requires regular maintenance and replacement and is not a sustainable way of collecting diffuse pollution at source. We understand that infiltration has not been confirmed, we would therefore expect the applicant to provide sustainable solutions that do not rely on infiltration such as lined filter strips/ permeable paving.

As stated in Point 1 there needs to be a commitment to the use of these options showing their location and extent on a final drainage plan as would be expected for a full planning application. The use of permeable tarmac/paving on the access road would not require any additional space.

EAS Response-

As discussed above, green-roofs shall provide a treatment stage for rainwater falling on this area prior to outfall into the geocellular attenuation device. For 'standard' roof areas, surface water run-off shall be treated via the proposed Smart-Sponges within the catch-pit chambers in the undercroft floor car park prior to outfall into the geocellular attenuation device. The Smart Sponge or similar approved device is the only viable treatment stage for the traditional roof area as runoff cannot be passed through any other SuDs device e.g., permeable paving prior to the outfall to the geocellular attenuation device.

For external areas where permeable paving is proposed, this itself will provide a suitable treatment stage for run-off.

Comments regarding the Smart Sponge are noted however all SuDS features, including the green roof and permeable paving will require regular maintenance to ensure continued operational efficiency as discussed in Section 6 of the Flood Risk Assessment and SuDS Report dated May 2022 however it is appreciated that a full Maintenance and Management Plan could be Conditioned accordingly.

LLFA Comment- Point 3

As stated in Point 1, the applicant has only provided 1 management feature for surface water with an underground tank, which is in the under-croft car park. Surface water should be managed in stages to manage lower to higher and short and long rainfall events, providing resilience in the system and reduce the risk of failure, requirement for maintenance and water quality treatment.

The applicant has stated that 3 management features have been proposed to manage surface water, including a green/blue roof, permeable paving and tank. However only the tank has been shown on the drainage plan and this is the only feature that has been committed to within the drainage strategy report. All other options have been stated as 'could be', not providing any commitment to their use.

EAS Response

An updated SuDS Outline Plan is enclosed in Appendix B which identifies the location of the proposed green roofs and permeable paving area. As discussed in the response to Point 1, these features are proposed and have been integrated into the SuDS Drainage Strategy however the detailed design of these features shall be undertaken at a later stage and will inform the final attenuation volume requirements of the proposed geo-cellular attenuation device – which is currently sized on a worst-case scenario. The use of green-roofs and permeable paving will not remove the need for a geo-cellular attenuation device.

Point 4

Whilst we appreciate at this stage infiltration testing is limited, the applicant has provided an option to discharge surface water into an existing Thames Water sewer. As this is a full application, we require full detailed surface water calculations based on this option including all rainfall events up to and including the 1 in 100 year + climate change event for the pre and post development site.

As stated above, we require detailed surface water calculations for the alternative discharge option into the Thames Water sewer at the rate of 3.5l/s. These calculations should also include the other drainage features which are now stated as 'proposed', including the permeable paving.

EAS Response

To reiterate, the agreed outfall to Thames Water is not an alternative discharge option, this outfall will still be required even if there is small scale infiltration in the form of the unlined permeable paving.

Paragraph 3.9 of the submitted Flood Risk Assessment details the existing (pre-development) surface water drainage arrangements at the site. At present, runoff is managed by soakaways however these are noted to be in poor condition and were likely installed and designed prior to modern design standards. Given runoff is directed to the soakaways, in principle there should be no runoff leaving the site with the exception of exceedance events or when the soakaways become overwhelmed and flows may leave the site. This worst-case scenario is reflected in the pre-development runoff rates detailed in paragraphs 5.1-5.4 of the submitted Flood Risk Assessment.

Utilising the Modified Rationale Method and the existing impermeable area, the total rate of runoff is estimated to be 87.93l/s using a rainfall intensity of 50mm/hr. To obtain the 100yr+40% climate change pre-development runoff rate, the rainfall intensity for this modelled event has been taken from the submitted hydraulic calculations and applied to the Modified Rationale Method. The rainfall intensity for the critical storm 100yr+40% climate change event is 11.189mm/hr (480min winter storm) resulting in a pre-development 100yr+40% climate change runoff rate of 19.80l/s.

The post-development 100yr+40% climate change runoff rate, as agreed in principle with Thames Water is 3.5l/s.

To reiterate, as the green-roof specification and the exact extent of permeable paving (or whether this will be lined or unlined) is unconfirmed at this planning application stage, a worst-case scenario hydraulic calculation assumes that all surface water runoff from proposed impermeable area shall be directed to a geo-cellular attenuation device. As described above, at detailed design stage, when the green-roof and permeable paving details can be confirmed, the hydraulic model will allow for these features and will possibly result in the reduction of attenuation volume requirement in the geo-cellular attenuation device.

The proposals presented and hydraulic modelling undertaken at this stage demonstrate that surface water runoff from the development site can be treated and managed suitably with an agreed outfall to the Thames Water.

I trust the above now provides the additional information and clarifications required by the LLFA in order to allow for the removal of their Objection.

If you need any other information or wish to discuss, please do not hesitate to get in contact.

Yours sincerely,



Rose Cargill

Senior Flood Risk Consultant, for and behalf of EAS Transport Planning Ltd

Appendix A-LLFA Comments

Appendix B- SuDS Outline Plan

Appendix A-LLFA Comments

David Elmore
Welwyn Hatfield Borough Council
The Campus
Welwyn Garden City
Hertfordshire
AL8 6AE

Lead Local Flood Authority
Post Point CHN 215
Hertfordshire County Council
County Hall, Pegs Lane
HERTFORD SG13 8DN

Contact Sophie Taylor

Email [REDACTED]

Date 22 December 2022

Dear David

RE: 6/2022/1355/MAJ - Former Beales Hotel Comet Way Hatfield AL10 9NG

Thank you for re-consulting the LLFA on the above application for the Demolition of existing building and construction of 145 residential units (Use Class C3) with private and communal amenity space, landscaping, access, associated car and cycle parking, refuse and recycling storage and supporting infrastructure at the Former Beales Hotel Comet Way Hatfield AL10 9NG

The applicant has submitted the following information in support of their application in relation to flood risk and management of surface water and in response to our letter dated 2 November 2022:

- E-mail response dated 17 November 2022 prepared by EAS

The applicant has previously provided the following information:

- Flood Risk Assessment and SuDS Report dated May 2022 prepared by EAS

However, the information provided to date does not satisfy all our previous points of objection and therefore does not provide a suitable basis for an assessment to be made of the flood risks arising from the proposed development and management of surface water. We therefore maintain our objection to the grant of planning permission until the following information is provided and acceptable:

1. Compliance with the SuDS hierarchy
2. Lack of appropriate surface water quality treatment
3. Lack of a surface water management train
4. Insufficient surface water calculations
5. Confirmation of the surface water discharge location

The current proposal is to discharge all surface water run-off from the roof, car park and access road areas to an underground tank beneath the under-croft car park which will then need to be pumped into a Thames Water sewer (subject to permission) at a discharge rate of 3.5l/s.

Point 1

We understand that the built development takes over most of the space within the redline boundary, therefore above ground landscaped SuDS have been discounted by the applicant on this site. However, there are other options available higher up on the SuDS hierarchy before opting for the use of an underground tank to attenuate all surface water as proposed.

The applicant needs to explore other options such as a green/blue roof for the roof area which takes up the majority of the impermeable area. Rain gardens at the bottom of each roof downpipe may also be an option to manage the lower rainfall events. The applicant also needs to explore the use of permeable materials on the access road which can either infiltrate (if demonstrated to be viable) or integrated with a subbase prior to discharge.

The applicant has reiterated what has been 'considered' and what 'could be' provided within the drainage strategy to comply with the SuDS hierarchy however the drainage strategy has not been amended to include these measures showing on a complete drainage plan. As this is a full application with the final layout being agreed, a commitment to the use of other SuDS measures should be provided at this stage.

Point 2

There is no water quality treatment as part of the proposed surface water drainage strategy. The proposed tank will not offer any treatment and even with integrated catchpits, will increase the required maintenance to the tank and the catchpits themselves. Prior treatment stages such as permeable paving, filter strips etc in particular from the access road should be provided prior to discharge into the attenuation feature, should a tank be the only technically viable option.

As stated in point 1 a green roof/blue roof should be explored for the management of surface water treatment from the roof area.

As stated in Point 1, no amendments have been made to show a commitment to the use of non-proprietary products to treat the surface water run-off. The use of smart sponges requires regular maintenance and replacement and is not a sustainable way of collecting diffuse pollution at source. We understand that infiltration has not been confirmed, we would therefore expect the applicant to provide sustainable solutions that do not rely on infiltration such as lined filter strips/ permeable paving.

As stated in Point 1 there needs to be a commitment to the use of these options showing their location and extent on a final drainage plan as would be expected for a full planning application. The use of permeable tarmac/paving on the access road would not require any additional space.

Point 3

As stated in Point 1, the applicant has only provided 1 management feature for surface water with an underground tank, which is in the under-croft car park. Surface water should be managed in stages to manage lower to higher and short and long rainfall events, providing resilience in the system and reduce the risk of failure, requirement for maintenance and water quality treatment.

The applicant has stated that 3 management features have been proposed to manage surface water, including a green/blue roof, permeable paving and tank. However only the tank has been shown on the drainage plan and this is the only feature that has been committed to within the drainage strategy report. All other options have been stated as 'could be', not providing any commitment to their use.

Point 4

Whilst we appreciate at this stage infiltration testing is limited, the applicant has provided an option to discharge surface water into an existing Thames Water sewer. As this is a full application, we require full detailed surface water calculations based on this option including all rainfall events up to and including the 1 in 100 year + climate change event for the pre and post development site.

As stated above, we require detailed surface water calculations for the alternative discharge option into the Thames Water sewer at the rate of 3.5l/s. These calculations should also include the other drainage features which are now stated as 'proposed', including the permeable paving.

Point 5

It is stated that further infiltration testing will need to be carried out post planning permission to allow for the demolition of the existing building due to the limited areas that can be tested. Infiltration has therefore not been discounted and should be given priority where viable. As this is a full planning application however, the applicant needs to demonstrate a feasible means of discharge off site at this stage to ensure surface water can be managed should it be determined that infiltration is not viable. The applicant is proposing to discharge into a sewer which lies outside of the redline planning boundary and therefore crosses third party land. As this is a full application evidence is required at this stage to confirm the discharge location is permitted by all relevant parties.

The applicant has provided the relevant correspondence from Thames Water to demonstrate a feasible discharge mechanism should infiltration not be viable. We are therefore satisfied with Point 5.

The applicant still needs to provide information in relation to Points 1, 2, 3 and 4, demonstrating a commitment to the use of appropriate SuDS measures higher up on the hierarchy and that provide water quality treatment. Once this information is provided and an acceptable drainage scheme based on an appropriate SuDS management and treatment train is provided, we may be able to recommend an appropriate condition for additional infiltration testing to be carried out. Should it then be demonstrated infiltration is

fully or partially viable, the applicant will need to provide an amended drainage scheme complying with the principles agreed at the full planning stage.

However as this is a full planning application, final details of the drainage scheme including detailed surface water calculations should be provided including location of SuDS features, pipe runs and other associated drainage infrastructure.

We would also suggest that the LPA require a plan indicating how surface water will be managed on site during the construction phase to ensure the development does not increase flood risk off site while works are underway.

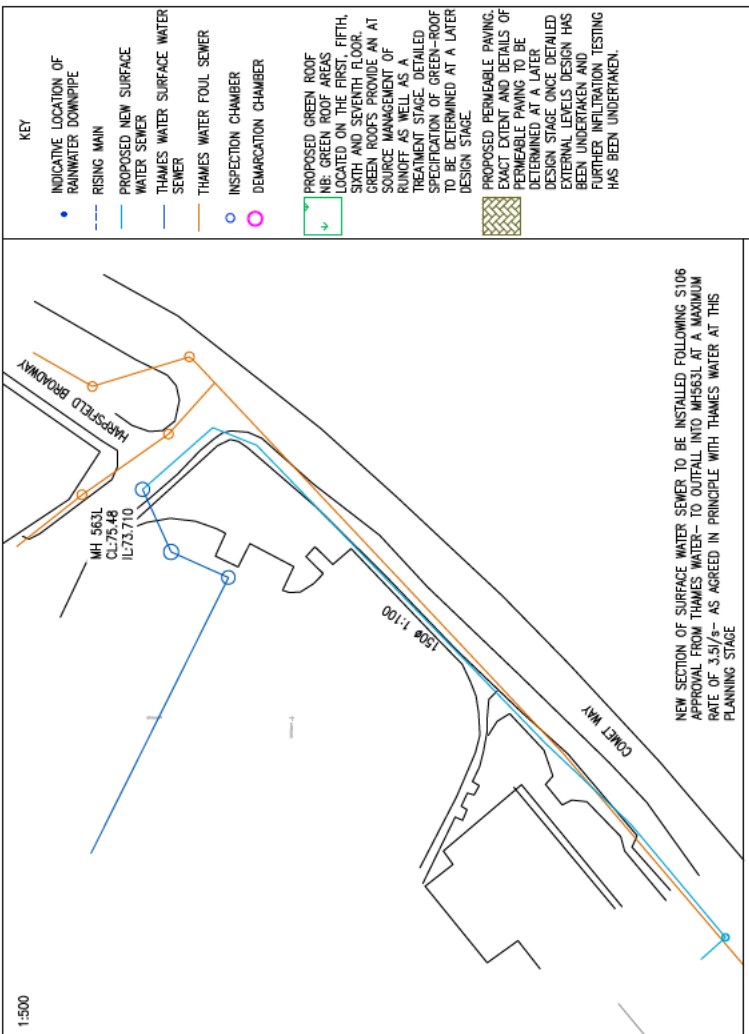
For further advice on what we expect to be contained within the FRA to support a full planning application, please refer to our Developers Guide and Checklist on our surface water drainage webpage <https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/water/surface-water-drainage/surface-water-drainage.aspx> this link also includes HCC's policies on SuDS in Hertfordshire.

Please note if the LPA decide to grant planning permission, we wish to be notified for our records.

Yours sincerely

Sophie Taylor
SuDS and Watercourses Support Officer
Environment & Transport and Sustainable Growth

Appendix B- SuDS Outline Plan



1:500

KEY

- INDICATIVE LOCATION OF RAINWATER DOWNPIPE
- RISING MAIN
- PROPOSED NEW SURFACE WATER SEWER
- THAMES WATER SURFACE WATER SEWER
- THAMES WATER FOUL SEWER
- INSPECTION CHAMBER
- DEMARICATION CHAMBER
- PROPOSED GREEN ROOF
- MR GREEN ROOF AREAS LOCATED ON THE FIRST, FIFTH, SIXTH AND SEVENTH FLOOR. GREEN ROOFS PROVIDE AN AT SOURCE MANAGEMENT OF RUNOFF AS WELL AS A TREATMENT STAGE. DETAILED SPECIFICATION OF GREEN-ROOF TO BE DETERMINED AT A LATER DESIGN STAGE.
- PROPOSED PERMEABLE PAVING. EXACT DETAIL AND DETAILS OF PERMEABLE PAVING TO BE DETERMINED AT A LATER DESIGN STAGE ONCE DETAILED DETAIL LEVELS DESIGN HAS BEEN UNDERTAKEN. FURTHER INFILTRATION TESTING HAS BEEN UNDERTAKEN.

DATE: 2025		FOR PLANNING ONLY		REV	NO
<p> E.A.S. Unit 23, The Millers, Stoneyfields, Leicestershire, LE12 8SS Tel: 01530 877777 www.easplanning.co.uk </p>					
PROJECT	FORMER HEADS HOTEL COCKET WAY, HARFIELD				
DESCRIPTION	SURFACE WATER DRAINAGE STRATEGY				
DATE	11.01.2025	SCALE	AS SHOWN	PROJECT NO.	3807
REVISED BY		DATE		REVISED BY	
REVISED BY		DATE		REVISED BY	
REVISED BY		DATE		REVISED BY	



N.B AT A DETAILED STAGE, THE SPECIFICATION OF THE GREEN ROOF WILL BE CONFIRMED AND HYDRAULICALLY MODELED. GREEN ROOF SPECIFICATION TO BE DESIGNED BY SPECIALIST AND REVIEWED BY STRUCTURAL ENGINEER.

DOWNPIPES ANTICIPATED TO BE INTERNALLY LOCATED, OUTFALLING DIRECTLY TO GEOCELLULAR ATTENUATION DEVICE VIA TREATMENT SMART-SPONGE FEATURES AND CATCH-PIT CHAMBERS IN THE LOWER-FLOOR CAR-PARK.

FULL EXTENT OF PERMEABLE PAVING AND WHETHER THIS WILL BE LEFT UNLINED OR LINED IS SUBJECT TO FINAL SITE LEVELS AND FURTHER INFILTRATION TESTS.

TAKING THE ABOVE INTO CONSIDERATION - THE HYDRAULIC MODEL IN THIS PLANNING APPLICATION FLOOD RISK ASSESSMENT AND SUDS DRAINAGE REPORT ASSUMES A WORST-CASE SCENARIO WHEREBY ALL SURFACE WATER RUN-OFF FROM IMPERMEABLE AREAS IS DIRECTED TO THE GEOCELLULAR ATTENUATION DEVICE.

IT IS ANTICIPATED THAT AT DETAILED DESIGN STAGE AND ONCE GREEN-ROOFS AND PERMEABLE PAVING DETAILS ARE CONFIRMED, THE HYDRAULIC MODEL SHALL INCLUDE FOR THESE SUDS FEATURES.