PUBLIC

Flood Risk Management
Derbyshire County Council
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Development Management
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Ask for William Treves
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Our ref AVBC/2020/70
Your ref AVA/2020/0618
Date 12 August 2020

Dear Rae

Proposal: **Application for approval of appearance, layout and scale of 3 no. electricity substations, 2 no. foul water pumping stations and 1 no. gas governor compound to serve the permitted mixed development**

Location: **American Adventure Theme Park Pit Lane Shipley Heanor Derbyshire**

Application reference **AVA/2020/0618**

No objections in principle		Conditions Recommended	
No Comment	X	Objection Recommended	

Derbyshire County Council as the Lead Local Flood Authority (LLFA) has reviewed the information submitted for this application, which was received on 28 July 2020. As this is a minor application the Lead Local Flood Authority (LLFA) has no formal comment to make and would refer the applicant to our informative notes below.

Advisory/Informative Notes (It should be noted that the information detailed below (where applicable), will be required as an absolute minimum in order to discharge any of the drainage conditions set by the LPA):

A. The County Council does not adopt any SuDS schemes at present (although may consider ones which are served by highway drainage only). As such, it should be confirmed prior to commencement of works who will be responsible for SuDS maintenance/management once the development is completed.

B. Any works in or nearby an ordinary watercourse may require consent under the Land Drainage Act (1991) from the County Council. For further advice, or to make an application please contact Flood.Team@derbyshire.gov.uk.

C. No part of the proposed development shall be constructed within 3-8m of an ordinary watercourse and a minimum 3 m for a culverted watercourse (increases with size of culvert). It should be noted that DCC have an anti-culverting policy.

D. The applicant should be mindful to obtain all the relevant information pertaining to proposed discharge in land that is not within their control, which is fundamental to allow the drainage of the proposed development site.

E. The applicant should demonstrate, to the satisfaction of the Local Planning Authority, the appropriate level of treatment stages from the resultant surface water discharge, in line with Table 4.3 of the CIRIA SuDS Manual C753.

F. The County Council would prefer the applicant to utilise existing landform to manage surface water in mini/sub-catchments. The applicant is advised to contact the County Council's Flood Risk Management team should any guidance on the drainage strategy for the proposed development be required.

G. The applicant should provide a flood evacuation plan which outlines:

- The flood warning procedure
- A safe point of extraction
- How users can safely evacuate the site upon receipt of a flood warning
- The areas of responsibility for those participating in the plan
- The procedures for implementing the plan
- How users will be made aware of flood risk
- How users will be made aware of flood resilience
- Who will be responsible for the update of the flood evacuation plan

H. Flood resilience should be duly considered in the design of the new building(s) or renovation. Guidance may be found in BRE Digest 532 Parts 1 and 2, 2012 and BRE Good Building Guide 84.

I. Surface water drainage plans should include the following:

- Rainwater pipes, gullies and drainage channels including cover levels.
- Inspection chambers, manholes and silt traps including cover and invert levels.
- Pipe sizes, pipe materials, gradients, flow directions and pipe numbers.
- Soakaways, including size and material.
- Typical inspection chamber / soakaway / silt trap and SW attenuation details.
- Site ground levels and finished floor levels.

J. On Site Surface Water Management;

- The site is required to accommodate rainfall volumes up to the 1% probability annual rainfall event (plus climate change) whilst ensuring no flooding to buildings or adjacent land.

- The applicant will need to provide details and calculations including any below ground storage, overflow paths (flood routes), surface detention and infiltration areas, etc, to demonstrate how the 100 year + 30% Climate Change rainfall volumes will be controlled and accommodated, also incorporating a sensitivity test to 40% Climate Change. In addition, an appropriate allowance should be made for urban creep throughout the lifetime of the development as per 'BS 8582:2013 Code of Practice for Surface Water Management for Developed Sites' (to be agreed with the LLFA).

- Production of a plan showing above ground flood pathways (where relevant) for events in excess of the 1% probability annual rainfall event, to ensure exceedance routes can be safely managed.

- A plan detailing the impermeable area attributed to each drainage asset (pipes, swales, etc).

Peak Flow Control

- For greenfield developments, the peak run-off rate from the development to any highway drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event, should never exceed the peak greenfield run-off rate for the same event.

- For developments which were previously developed, the peak run-off rate from the development to any drain, sewer or surface water body for the 100% probability annual rainfall event and the 1% probability annual rainfall event must be as close as reasonably practicable to the greenfield run-off rate from the development for the same rainfall event, but should never exceed the rate of discharge from the development, prior to redevelopment for that event.

Volume Control

- For greenfield developments, the runoff volume from the development to any highway drain, sewer or surface water body in the 6 hour 1% probability annual rainfall event must not exceed the greenfield runoff volume for the same event.

- For developments which have been previously developed, the runoff volume from the development to any highway drain, sewer or surface water body in the 6 hour 1% probability annual rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event, but must not exceed the runoff volume for the development site prior to redevelopment for that event.

  Note:- If the greenfield run-off for a site is calculated at less than 2 l/s, then a minimum of 2 l/s could be used (subject to approval from the LLFA).

- Details of how the on-site surface water drainage systems shall be maintained and managed after completion and for the lifetime of the development to ensure the features remain functional.

- Where cellular storage is proposed and is within areas where it may be susceptible to damage by excavation by other utility contractors, warning signage should be provided to inform of its presence. Cellular storage and infiltration systems should not be positioned within the highway.

- Guidance on flood pathways can be found in BS EN 752.

- The Greenfield runoff rate which is to be used for assessing the requirements for limiting discharge flow rates and attenuation storage for a site should be calculated for the whole development area (paved and pervious surfaces - houses, gardens, roads, and other open space) that is within the area served by the drainage network, whatever the size of the site and type of drainage system. Significant green areas such as recreation parks, general public open space, etc., which are not served by the drainage system and do not play a part in the runoff management for the site, and which can be assumed to have a runoff response which is similar to that prior to the development taking place, may be excluded from the greenfield analysis.

K. If infiltration systems are to be used for surface water disposal, the following information must be provided:
   - Ground percolation tests to BRE 365.

   - Ground water levels records. Minimum 1m clearance from maximum seasonal groundwater level to base of infiltration compound. This should include assessment of relevant groundwater borehole records, maps and on-site monitoring in wells.

   - Soil / rock descriptions in accordance with BS EN ISO 14688-1:2002 or BS EN ISO 14689-1:2003.

   - Volume design calculations to 1% probability annual rainfall event + 30% climate change standard. An appropriate factor of safety should be applied to the design in accordance with CIRIA C753 – Table 25.2.

   - Location plans indicating position (soakaways serving more than one property must be located in an accessible position for maintenance). Soakaways should not be used within 5m of buildings or the highway or any other structure.

   - Drawing details including sizes and material.

   - Details of a sedimentation chamber (silt trap) upstream of the inlet should be included.

   Soakaway detailed design guidance is given in CIRIA Report 753, CIRIA Report 156 and BRE Digest 365.

L. All Micro Drainage calculations and results must be submitted in .MDX format, to the LPA. (Other methods of drainage calculations are acceptable.)

M. The applicant should submit a comprehensive management plan detailing how surface water shall be managed on site during the construction phase of the development ensuring there is no increase in flood risk off site or to occupied buildings within the development.

Yours sincerely

[redacted]

William Treves
Technician, Flood Risk Management Team