From: Matthew.Porter <Matthew.Porter@horsham.gov.uk>
Sent: 28 August 2024 20:48:00 UTC+01:00
To: "Matthew.Porter" <Matthew.Porter@horsham.gov.uk>
Subject: FW: DISC/23/0258 – Leonardslee Gardens

Matthew Porter

Senior Planning Officer

Telephone: 01403 215561

Email: Matthew.Porter@horsham.gov.uk





From: Peter Loader <Peter.Loader@insall-architects.co.uk>
Sent: 30 July 2024 10:53
To: Matthew.Porter <Matthew.Porter@horsham.gov.uk>
Cc: Derran Holden <derran.holden@leonardsleegardens.co.uk>; Dilip Lakhani <Dilip.Lakhani@landuse.co.uk>; Michele Verdi <Michele.Verdi@insall-architects.co.uk>
Subject: RE: DISC/23/0258 – Leonardslee Gardens

Good Morning Matthew,

We have discussed West Sussex LLFA's comments on the submitted Leonardslee Car Park drainage scheme with the engineers who have designed the scheme, and wish to make the following clarifications with regards their four objections:

1. *"There is significant flooding occurring in the calculations for the 1 in 100 plus climate change calculations. An exceedance plan is required, showing where the flooding will be located and the depth of flooding that will occur. The flooding must not leave the site or flood any part of a building or utility plant within the development boundary."*

   The calculations show flooding occurs, as this is the only way the program can work. The program models a fully impermeable surface and the water collected reaching the underground drainage immediately.
   The real construction is predominantly closed plastic cell tile paving with shingle fill, this laid upon a porous stone of some 450 deep, which unfortunately could not be included in the modelling.

The collector drains are again in stoned filled trenches, the total additional volume of voids in the fill will exceed any flooding volume shown by the calculations.
The water collected will also take time to enter the system and will not enter as it would with a fully impermeable pavement.
Due to the site levels and the permeable nature of the existing porous stone & cell surface, the site falls both ways from a central crown. It is unlikely therefore that any flood waters can be retained on site and any exceedance would be from the site onto the A281.
We note that nature of the site levels has not changed since before the present ownership, and the natural impermeability of the clay on which the car park sits suggest that this pattern of exceedance has been the case naturally.

2. *"The calculations also show surcharging in a 2-year event. Updated calculations must be provided to demonstrate there is no surcharging in the network in a 2-year event."*

   The risk of surcharge is also addressed by the above comments regarding the capacity of the stone fill within the existing car park, which could not be included within the modelling.

3. *"The greenfield runoff rate must be calculated based on impermeable area."*

   The greenfield runoff rate is based upon the area of the existing car park only, and assumes it being 100% impermeable (i.e. clay) which it is not as noted above.

4. *"Calculations must include Cv value of 1 and there should be no additional storage in pipes."*

   Calculations are based upon CV values of 0.75 for Summer and 0.84 for winter. These values have been taken as they are the accepted norm for such simulations.
   A factor of 1.0 will increase the calculated flood values, however as noted against point #1, are very unlikely to occur in practice due to the permeable plastic cell surface, and storage within the stone fill.

I can put these responses into a formal statement to upload if this helps, or would you prefer to share directly to the LLFA via email?

Kind regards, Peter

Peter Loader
(he / him)
BA(Hons) Dip(Arch) RIBA RIAS
Architect

Tel: 07799890145
www.donaldinsallassociates.co.uk

Donald Insall Associates
Chartered Architects and Historic Building Consultants

This email is sent for and on behalf of Donald Insall Associates Limited, a private limited company registered in England no.1550406; 12, Devonshire Street, London, W1G 7AB, United Kingdom (Tel: +44 (0)20 7245 9888; email: london@insall-architects.co.uk). This email and any attachments are confidential and may also be privileged. If you have received this message in error or have not reasonably been expecting it, please notify the sender immediately, destroy this email and any attachments, and do not use, copy, store and/or disclose to any person this email and any attachments. Reasonable care has been taken to ensure that this communication (and any attachments or hyperlinks contained within it) is free from computer viruses: no liability is accepted by Donald Insall Associates Limited in this respect; and the recipient should carry out their own appropriate virus checks and security. We are committed to protecting and respecting your privacy and will never share your details with third parties without your prior consent.

Donald Insall Associates is Cyber Essentials Plus certified.