

**Thorneydown Farm
Moorhill Road, West End
Southampton
SO30 3AY**

Drainage Statement

for

Mr John Mobey

September 2022

Project No: 2000.0016

**NOLA
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Revision History

Rev	Date	Purpose/ Status	Document Ref.	Comments
	09/02/22	1 st Issue	2000.0016/Site/RC/ss/ Drainage Statement.	Preliminary Issue.

Prepared by:



Rob Collins (FIHE)
Director

Approved by:

Thorneydown Farm, Moorhill Road, West End, Southampton, S030 3AY - Drainage Statement

Planning Reference

Appeal No: NEW FULL PLANNING APPLICATION.

Proposal: A new Touring Park which will provide 33No touring pitches for use by touring caravans, motorhomes and camping tents all served by a new communal amenity block. This will provide toilet, shower, washing-up, and a chemical toilet emptying facility. A new motorhome service point will also provide a facility to empty grey water on-board tanks and top up with fresh water.

This new development will have access off Moorhill Road (A27) and new on-site access roads.

Site Address: Thorneydown Farm, Moorhill Road, West End, Southampton, S030 3AY.

On Behalf of: Mr John Mobey.

DRAINAGE STATEMENT

1. Review of Information by Others

- A Flood Risk Assessment prepared by Ground and Water in July 2022.
- Proposed Site Layout prepared by Decimus Designs - Landscape Architects.
- Topographical Survey carried out by Redline Surveys.

2. Identification of Design Constraints On Site

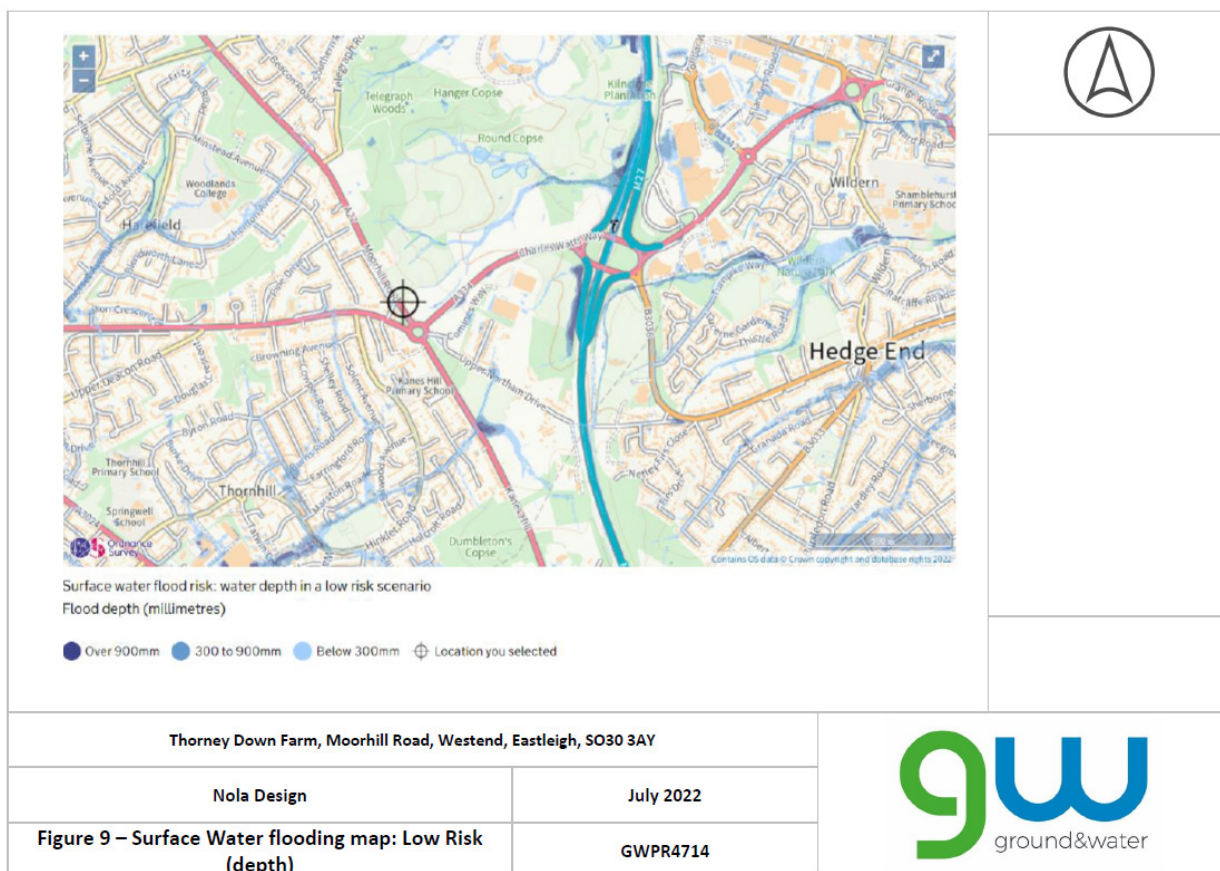
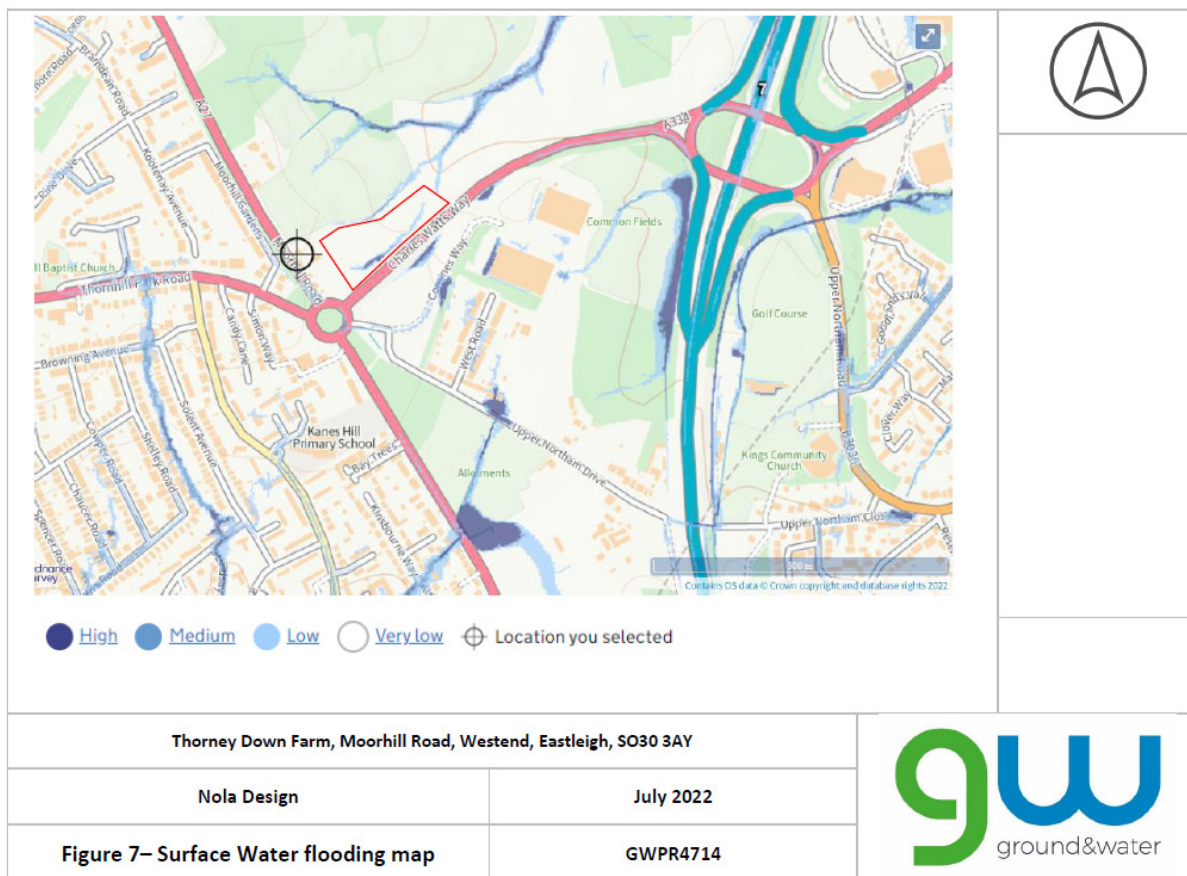
Site Geology.

The BGS Solid and Drift Geological Map for the Area (Sheet Number 315) revealed that the site was underlain by the Wittering Formation bedrock in the northern/western portion of site. The southern/eastern portion was underlain by the London Clay Formation bedrock. In the north-eastern of site the Whitecliff Sand Member was noted and 72m west of the site 9th River Terrace Deposits were recorded.

From these records, it can be concluded that the underlying clays will not support infiltration.

Flood Risk

From the Ground and Water FRA, the EA Flood Maps suggest that there might be a Low Risk of flooding from Surface Water (Refer to Figures 7 and 9 below):



When comparing this risk with the topographical survey on-site and the actual conditions immediately off-site, the following factors suggest that this recorded risk is no longer the case:

- The EA surface water flood map details a watercourse which roughly follows the northern site boundary which is then joined by a further watercourse from on site. Currently neither are correct as these natural flow paths have both been severed by recent earthworks off-site to the north and east which form part of the new development of the Boundary Lakes Golf Course redevelopment.
- The local area of surface water ponding suggested along the southern site boundary does self drain in a north easterly direction along the toe of the embankment to A334 Charles Watts Way, before draining north west along the toe of the adjacent fill embankment formed by the new earthworks along the eastern site boundary.
- During a recent site visit we observed a 225mm dia pipe installed through this new fill embankment to roughly mimic the original flow paths. We have no information or calculations to advise whether it has been appropriately designed but as things stand, this pipe culvert is currently the only means of draining this development site.

3. PROPOSED FOUL WATER DRAINAGE STRATEGY

- Existing Flows
This touring park site is currently undeveloped and is steeply sloping from west to east.
- Existing Off-Site Connection to Public Sewer
Under an earlier planning application for the replacement of an old dwelling on the upper terrace level, a new application was made to connect to the Southern Water public sewer in Moorhill Road, this was granted and will be reused to serve this lower touring park site.
- New Accommodation
On this touring park, 33No new pitches are proposed all of which will be non-serviced.
- Proposed On-Site Strategy
A new communal amenity block will be centrally located on site to provide toilets, showers, wash-up facilities as well as chemical toilet emptying. This building will have a below ground foul water drainage system which will gravitate to a new pumping station located adjacent to the eastern site boundary. This pump station will elevate flows from the lower touring park to the upper terrace where it will discharge into an existing demarcation chamber on site which connects by gravity to the public sewer.
- Proposed On-Site Flows and New Emergency Storage
Gravity inflows to the new pump station from the amenity block will be based on 100 l/p/day as per (British Water Flows and Loads 4) with the volume of emergency storage calculated on this basis for a 24 hour period to comply with the requirements of Building Regulations.

Assuming that in general, average occupancy levels are likely to be 3No at any one time per touring pitch, this suggests a new gravity flow of $(3 \times 100\text{l/p/day}) = 300\text{ l/day DWF}$ per pitch, and an overall DWF of $(33 \times 300\text{ lt/pitch}) = 9900\text{ lt/day}$ or 9.90m^3 min to ensure 24hr emergency storage at the pump station.

New pumped flows are estimated to be in the order of $(4 - 6)\text{l/s}$ to provide minimum self cleansing velocities in the new rising main. The new pumps and delivery rates will be designed by a specialist pump supplier to comply with the requirements of Building Regulations.

- Proposed Off-Site Flows
A new pumped rate of (4 - 6) l/s has been agreed with Southern Water.

4. **PROPOSED SURFACE WATER DRAINAGE STRATEGY**

- Pre-Development Impervious Areas
As this site is currently undeveloped there is no runoff from existing impervious areas.
- Pre-Development Greenfield Runoff Rates
The gross developable area of this site will be 1.50Ha.

For planning purposes, we are proposing that a Greenfield runoff rate of 2.00 l/s/Ha be used. Based on a developable area of 1.50Ha, this would amount to 3.0 l/s (Max).

- Post-Development Impervious Areas
With reference to the Architect's proposals, the post-development impervious areas have been calculated as follows:

Communal Amenity Block -	0.017 ha
Access Roads -	<u>0.230 Ha</u>
Total =	0.247 Ha

- Allowance for Urban Creep
As the nature of this new development will comprise camping pitches only, any additional allowance for urban creep is not deemed applicable as it is unlikely that additional impervious areas will be introduced in the future
- SUDS Considerations

Infiltration

As stated in (2) above, the underlying geology will not support infiltration so alternative methods to both control and disposal of surface runoff will need to be considered.

- Proposed Infiltration Blankets on Touring Pitches
Each touring pitch will be provided with a 150mm thick layer of porous gravel blanket. This will self drain and keep the surface dry for the erection of tents and/or awnings.
- Proposed Filter Drains
As can be seen from the topographical survey, this site slopes steeply from west to east and will necessitate the construction of small terraces to provide level platforms on which to position the touring pitches. Between each terrace there will be a difference in level of up to 1.5m and on the sloping earthworks batter between the two, selected planting will be introduced. At the base of each batter slope, a filter drain is proposed which will both intercept and convey surface runoff to the main carrier drain routed adjacent to each access road.

Filter drains routed along the access roads will intercept and convey runoff from the road which will be constructed with a crossfall rather than a camber.

A bonded gravel surface for the access roads is being proposed with a natural gravel coloured scatter coat surface which will blend in with peri-urban setting,

- Proposed Cellular Attenuation
We are proposing the use of cellular attenuation on the eastern site boundary, these storage units will be located under three camp sites. Although designed to have adequate cover over the crates, these camp sites would be best used by tented campers to reduce the risk from static loading which a heavy motorhome would impose.

- Proposed Off-Site Flows

New off-site flows will discharge into the existing 225mm dia pipe provided through the earthworks on the Boundary Lakes Golf Course redevelopment site, these flows will be restricted to 3.00 l/s for the 100yr event with a 40% allowance for climate change.

- Flood Mitigation

No flood mitigation is deemed necessary for this new touring park development.

5. Supporting Documentation.

Included in this pack of supporting information are the following:

- Flood Risk Assessment by Ground and Water
- Dwg 2000.0016_100_P1 - Access Off Moorhill Road.
- Dwg 2000.0016_101_P1 - Site Levels.
- Dwg 2000.0016_102_P1 - Disabled Pitches and Access Routes.
- Dwg 2000.0016_103_P1 - Combined Drainage Layout.
- Micro Drainage Calculations.

We trust that the above supporting drawings, documentation, and calculations provided with this statement will demonstrate the design intent and indicate compliance with the requirements of NPPF25 and sufficient to support the granting of Planning Permission for this new development.

Should you have any queries in this regard, please kindly contact me direct.

Prepared By,



Rob Collins
FIHE
Director

Nola Design Ltd