

**300 King's Way
Reading
RG1 4HP**

Drainage Statement

for

Green Structural Engineering Ltd

March 2018

Project No: 500.0010

**NOLA
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Revision History

Rev	Date	Purpose/ Status	Document Ref.	Comments
	11/03/18	1 st Issue	500.0010/RC/ss/Drainage Statement.	Preliminary Issue.

Prepared by:

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Director

Approved by:



Geoff Green

300 King's Way, Reading, RG1 4HP - Drainage Statement Pursuant of a FULL Planning Application.

Planning Reference

Application No: New FULL Planning Application.
Proposal: 14No new flats with a mix of undercroft and external parking bays.
Site Address: 300 Kings Way, Reading, RG1 4HP.
On Behalf of: Titan Property Developments Ltd.

DRAINAGE STATEMENT

1. Review of Information by Others

- Ground Investigation.
No information provided.
- Proposed Site Layout prepared by Titan Property Developments.
The proposed site layout will provide an overall impervious area which is similar to that of the existing carpark development.
- Structural Details at Ground Floor Level prepared by Green Structural Engineering.
A piled solution has been prepared for the new foundations, this has been referred to for the routing of new below ground drainage.
- Topographical Surveys by Mayfords Chartered Surveys
The site has been surveyed and based on both OS Datum and the National Coordinate Grid.
- CCTV Drainage Survey
Whilst no information has been provided, a review of the topographical survey suggests that the present site is a fully hard paved carpark drained by a linear drainage channel which runs centrally in a south to north direction.

From this, we have assumed that the drainage outfall connects to the public foul water sewer in King's Way.

2. Identification of Design Constraints both On and Off Site

- **Public Sewers.**

With reference to the TWUL public sewer records plan in the local area, foul and surface water public sewers exist along Muirfield Close and only foul water sewers exist along both Fartherson Road and King's Way.

As the proposed development will have a change of use from carpark to residential, new S106 Connection Agreements with Thames Water will be necessary for both the new foul and surface water drainage.

- **Site Development Layout Proposals.**

The site layout proposed by Titan Developments will not provide any areas of soft landscaping to accommodate swales or ponds, so any new storage requirements will need to be located in the south of the site under the access aisle between the parking bays.

3. PROPOSED DRAINAGE STRATEGIES

3.1 Resilience Measures from Potential Flooding

As this site falls within a well-established commercial area of Reading, we do not envisage any potential flooding issues which require any resilience measures.

3.2 Surface Water Drainage.

- **Status Quo**

This is a Brownfield Site with an area of Circa 0.064Ha with access off Muirfield Close which forms its southern boundary.

From the site survey, the pre-development impervious carpark has a runoff area amounting to 0.0389Ha.

- **Existing Off-Site Connections**

The site appears to currently drain to the off-site public foul water sewer in King's Way.

- **Existing Attenuation and Flow Controls**

There is no evidence of any existing attenuated storage on site, so we can only presume that runoff leaves the site in an uncontrolled and unrestricted manner for all storm events.

- **Existing Flows**

In the absence of any other drainage data, the rate of existing runoff from existing impervious areas has been calculated as follows:

Catchment Area - 0.0389Ha = 389m², @ 0.014 l/s/m² implies a rate of 5.45 l/s for a storm event of Circa 1:1yr.

- **Proposed Runoff Areas**

From the proposed site layout, the post development building and impervious carpark area will amount to 0.045Ha which is 70.3% of the gross site area, compared with the 60.78% which currently exists. This suggests a marginal post development increase of:

- $(0.045 - 0.0389) = 0.006 \text{ Ha}$
- 15.4% impervious area
- 9.38% of gross site area
- 0.84 l/s for a storm event of Circa 1:1yr.

- **Proposed On-Site SUDS Strategy**

The following SUDS measures have been considered:

- Infiltration - Not possible owing to the close proximity of new piled footings.
 - Swales - Not possible owing to insufficient area of soft landscaping.
 - Pollution Control - Will be provided by trapped road gullies.
 - Attenuation - Will be provided by over-sizing the below ground SW drainage.
 - Transportation and Conveyance - Runoff from new access roads will be collected in trapped road gullies and a conventional piped drainage system.
- Proposed Off-Site Flows and Attenuation

As the post development runoff will only have a marginal increase on the current status quo, we do not consider that attenuated storage will be required however, should this become a requirement of Thames Water, then this will be provided using over-sized pipes and a flow control device, both of which will be appropriately designed to suit their requirements. A new connection to the public surface water sewer in Muirfield Close is proposed.
 - Allowance for Urban Creep
In respect of this redevelopment, we do not consider this requirement to be applicable in that all the dwellings will be within a single building within a commercial environment rather than urban and for this reason, no allowance has been considered.
 - Proposed Flow Control
This will be provided by a HydroBrake device designed to restrict flows within acceptable parameters to be clarified by Thames Water.

3.3 Foul Water Drainage

- New Accommodation
14 No new flats are proposed.
- Proposed Flows
Based on a unit Peak Flow of (0.046 lt/dwelling/day), a design peak flow of $(14 \times 0.046) = 0.644$ l/s can be expected from a conventional gravity system however, as these are flats are not 3bed dwellings, we consider the following design flow to be more realistic:
 - Occupancy levels from Architect's schedule will be 46 people in total.
 - 46 @ 200 l/p/day = 9200 l/day DWF
 - Peak Factor = 6
 - Peak Flow = $6 \times 9200 = 55200$ l/day
 - 10% for runoff ingress = 5520 l/day
 - Design Peak Flow = 60720 l/day
 - Anticipated Design Peak Flow = 0.703 l/s.
- New Connection to Public Sewer
A single point of connection is proposed, and this will be a new demarcation chamber located in the south of the site with a new connection into the public sewer in Muirfield Close.

4.0 Supporting Documentation.

Included in this pack of supporting information are the following:

- Dwg J000970 C/01 Sheet 1 of 1 - Combined Drainage Strategy.

Whilst we acknowledge that the above design proposals are in strategy form and still subject to detailed design, we trust that the above information and drawings provided with this statement will be sufficient to demonstrate the design intent and justify the granting of Full Planning Permission for this redevelopment, with the final drainage elements being Conditioned pending detailed design.

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

Prepared By,

Rob Collins

Rob Collins
FIHE
Director

Nola Design Ltd