



Edhill Avenue, South Tyneside
Drainage Statement

This site has been assessed for all potential sources of flooding in accordance with the National Policy for Flooding, including rivers, sea, land, groundwater, sewers and artificial sources. Consideration has also been given to the flood risk vulnerability classification for this type of development.

This statement has also been prepared to discuss the drainage strategy and possible SUDS for the development site at Edhill Avenue on behalf of South Tyneside Homes.

The National Planning Policy Framework (NPPF) and building regulations requires the developer to consider Sustainable Urban Drainage Systems (SUDS) on all developments. Surface Water disposal will be in line with guidance set out in the NPPF and building regulations, following the hierarchy set out within, i) By infiltration, ii) To watercourse, iii) To sewer.

Due to the size and nature of this development, at 0.1 Ha it is not feasible to propose above ground water features such as ponds, detention basins or swales. Best practice is to deal with surface water at source, however ground conditions are not suitable for the use of infiltration techniques and there are no nearby watercourses. Therefore the use of flow controls together with a below ground tank storage (if required) should be considered by the developer to restrict flows to prevent exacerbation of flooding as a result of development.

Existing Drainage:

Inspection of the topographical survey, site walkover and the existing Northumbrian Water sewer records identify an existing private drainage network serving the development discharging to the public combined sewerage system on the opposite side of Edhill Avenue Road.

The existing site was formerly two social landlord dwellings which had a small impermeable roof area of 165m² that positively drained into the existing sewerage system. Using the formulae the (ha) x rainfall intensity x 2.78 as outlines in building regulations and Sewer for Adoption this can give an estimation of a 30 year run off rate: $0.005 \times 59 \text{mm/hr} \times 278 = 2.7 \text{l/s}$.

Using micro drainage data existing brownfield run off rates are:

1 year	1.5 l/s
30 year	3.8 l/s
100 year	5 l/s

The nearest watercourse is the River Tyne located 1.81 Kilometres from the North of the site.

Flood Risk:

Environment Agency Maps and the South Tyneside County Council Strategic Flood Risk Assessment have been reviewed and show that the site is located entirely within a Flood Zone 1. There is no flood risk to the development.

NWL flood maps show that there are no recorded incidents of sewer flooding within the vicinity of the development, the nearest being northwards in Fenwick Avenue Estate across the metro railway.

Proposed Drainage:



The proposed drainage network of private foul and surface water will be designed in accordance with the requirements of Building Regulations 2010 Document H.

The private driveways will be of a permeable block surface to allow an element of infiltration but be backed up against possible future silting by a positive drainage system by means of gully/channels. Roof water will be collected by downcomers and each dwelling will also be given a waterbutt. Sewers will be designed to achieve a self-cleansing velocity to prevent blockages which present the main risk of flooding to systems.

Both the surface and foul water is proposed to be a private system discharging into the existing public sewerage system in the vicinity of MH 9001 on the opposite side of Edhill Avenue Road. Connection will be made within the site boundary utilising an existing combined connection which is currently 2.2m deep allowing sufficient depth for the surface water attenuation.

The foul drainage is proposed to connect unrestricted into the existing combined sewer.

Surface water discharge should be discharged at a rate agreed with South Tyneside Council and Northumbrian Water. NW have consented to discharge into manhole 9001 at a restricted rate of 3 l/s. Surface water flows are to be restricted for the 1 in 100 year return for all storm durations including an allowance for 30% climate change, and all the surface water storage is to be contained within the proposed on site drainage pipework. The 1 in 100 year return period with a 30% allowance for climate change should be checked for all storm durations to ensure that any flood water remains on site. As can be seen below with regards discharge rates betterment is achieved post development for both the 30 year and 100 year critical storm events, with 100 year having 30% climate change.

Using micro drainage data post development run off rates are:

1 year	1.7 l/s
30 year	2.9 l/s
100 year	3.2 l/s

Due to the small area of run off there is no requirement for tank attenuation. The surface water up to 100year can be accommodated within the traditional piped system. At the 100 year event (including climate change) there is minimal flooding which will find it's way to landscaped areas and not affect any buildings.

Maintenance:

The permeable block paved driveways will have to be inspected on a regular basis by South Tyneside Homes to avoid any silting of the joints within the blocks and also tree leaves.

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Your Ref:

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Friday, 18 September 2015

CK21
Shakespeare House
18 Shakespeare Street
Newcastle upon Tyne
Tyne & Wear
NE1 6AQ

Dear Mr. M Hendry,

Re: Pre-Development Enquiry – 18 Edhill Avenue, South Shields, Tyne & Wear

Further to receiving the Pre-Development Enquiry for the above site, received 1st September 2015, we are now able to provide the following response.

We have based our response on the information in your application and accompanying correspondence. Therefore, should any of the information now be different, then you must ensure that you inform us of any changes as further Network Modelling may be required and our response may also change, leading to this response being invalid.

Northumbrian Water assesses the impact of the proposed development on our assets and assesses the capacity within our network's to accommodate and treat the anticipated flows arising from the development. We do not therefore offer comment on aspects of planning applications that are outside of our area of control.

Enclosed for your information is a scaled extract showing the approximate position of our water and wastewater networks and associated assets. Please note that the actual position of any of our assets shown on the plan must be established by taking trial holes in all cases.

An appropriate risk assessment and method statement (RAMS) must be provided to us prior to gaining approval for any trial hole investigations, at least 5 working days in advance of starting any work onsite.

Also enclosed is our extract showing locations within the approximate vicinity of this site that have, from our records, experienced flooding. This has been provided to demonstrate the known flood risks within the vicinity which have been considered as part of our assessment on this enquiry.

We have also carried out a review of your application and can confirm the following:

Sewerage and Sewage Treatment

Northumbrian Water would ask that you please separate the foul and surface water flows in accordance with Part H of the Building Regulations prior to the final connection to the public sewer.

All new connections to the public sewerage system must first be approved through the Section 106 of the Water Industry Act 1991 process prior to construction.

Should you decide to proceed with this development, a fully completed Sewer Connection application form will be required. These are available to download from the following link:

<https://www.nwl.co.uk/developers/new-connections.aspx>

- Foul Water Discharge

The foul flows can discharge without restriction into the 300mm diameter combined sewer on the opposite side of Edhill Avenue, utilising the existing site connection, if possible.

- Surface Water Discharge

No surface water flow from the proposed development will be allowed to connect into the existing public sewerage system unless it is proven that the alternative options which are listed within Part H of the Building Regulations 2003 are not available:

Rainwater from a system provided pursuant to sub-paragraphs (1) or (2) shall discharge to one of the following, listed in order of priority –

(a) an adequate soakaway or some other adequate infiltration system; or, where that is not reasonably practicable,

(b) a watercourse; or, where that is not reasonably practicable,

(c) a sewer.

If the more sustainable options prove to be unfeasible, a restricted surface water flow of 3 l/sec would be permitted to discharge into the 300mm diameter combined public sewer via manhole's 0001 and 9001. Any excess in flows must be attenuated on site.

- Sewage Treatment Capacity

The Sewage Treatment Works to which this development finally discharges to is able to accept the additional flows.

Water Efficiency Information

Water efficiency information can be found on our website by following the web link below:

<https://www.nwl.co.uk/your-home/saving-water/why-save-water.aspx>

Please note that this response is valid for 1 year only and you should resubmit your proposals should this period lapse prior to your development beginning.

Should you require any further assistance or information, then please do not hesitate to contact me at niki.mather@nwl.co.uk or alternatively on 0191 419 6603, please quote our reference number above in any future correspondence.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'N. Mather'.

Mr. Niki Mather
Technical Support Advisor
New Development (Asset Protection)



Waste Water -	NWL Responsibility	Private/Non NWL	Proposed	Water Network -	Network Types	AB Asbestos
Combined	Combined	Combined	Combined	Distribution	Treated	XXXX
Foul	Foul	Foul	Foul	Raw	Abandoned	XXXX
Surface	Surface	Surface	Surface	Fire	Out of Comm	XXXX
Treated Effl	Trade Effl	Trade Effl		Supply		
Untreated Effl	Watercourse	Watercourse		Private		
Overflow						



User : BOWMS

Date : 01/09/2015 10:01:06

Title :

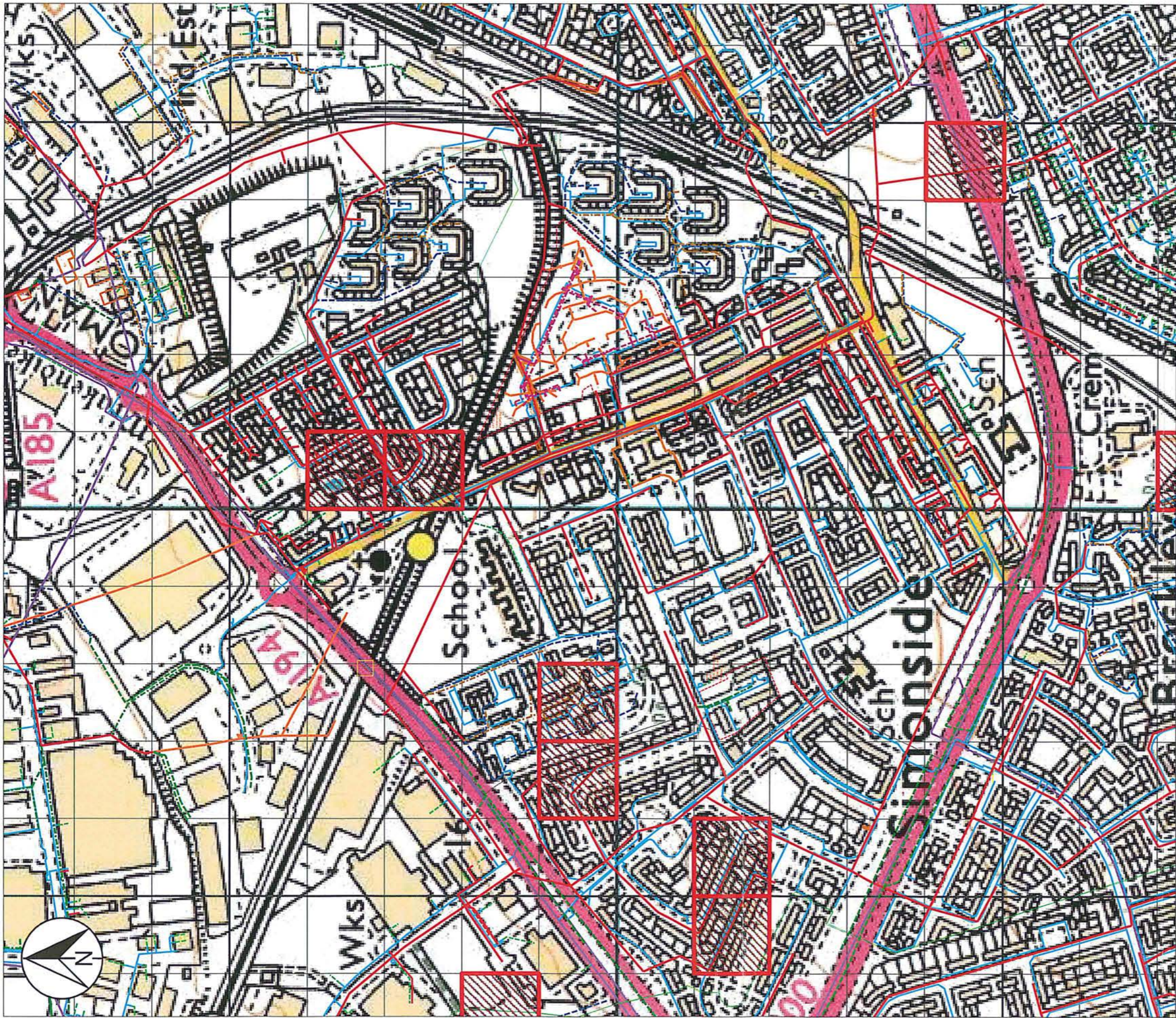
Map Sheet : NZ3464SE

Centre Point : 434999,564034

Paper / Scale : A4@1:1250

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 The information shown on this plan should be regarded as approximate and is intended for guidance only. No Liability of any kind whatsoever is accepted by Northumbrian Water, its servants or agents for any omission. The actual position of any water mains or sewers shown on the plan must be established by taking trial holes in all cases. In the case of water mains Northumbrian Water must be given two working days notice of their intention to excavate trial holes. Private connections are not shown but their presence should be anticipated.
 WARNING...Where indicated on the plan there could be abandoned asbestos cement materials or shards of pipe. If excavating in the vicinity of these abandoned asbestos cement materials, the appropriate Health & Safety precautions should be taken. Northumbrian Water accepts no liability in respect of claims, costs, losses or other liabilities which arise as the result of the presence of the pipes or any failure to take adequate precautions. Emergency Telephone Number: 0345 717 1100





Waste Water -		Private/Non NWL		Proposed		Water Network -		Network Types	
Combined	NWL Responsibility	Combined	Private/Non NWL	Combined	Proposed	Combined	Water Network -	AB Asbestos	Network Types
Foul	Combined	Foul	Combined	Foul	Proposed	Foul	Distribution	Abandoned	Distribution
Surface	Foul	Surface	Foul	Surface	Proposed	Surface	Treated	Out of Comm	Treated
Treated Eff	Surface	Trade Eff	Surface	Trade Eff	Proposed	Trade Eff	Raw		Raw
Untreated Eff	Trade Eff	Watercourse	Trade Eff	Watercourse	Proposed	Watercourse	Fire		Fire
Overflow	Watercourse		Watercourse		Proposed		Supply		Supply
	Overflow				Proposed		Private		Private



NORTHUMBRIAN WATER

User : BOWMS

Title :

Date : 01/09/2015 10:02:55

Map Sheet : NZ3464

Centre Point : 434999,564034

Paper / Scale : A3@1:5015

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