NORTH WEST SuDS PRO-FORMA TEMPLATE

Endorsed and recommended for use by:

North West Regional Flood & Coastal Committee

United Utilities
Water for the North West

Document Change Log		
Version	**Date Agreed**	**Changes made**
Version 1	April 2020	Initial version issued
Version 2	July 2020	• Page 1 – 'Guidance to support you' section – word 'approved' changed to 'appropriate' • Section 5 – Box 4 'Evidence Required' - word 'approved' changed to 'appropriate' • Section 5 – Box 9 'Summarise how storage will be provided for 1 in 100 year (plus climate change) event on site' - word 'approved' changed to 'appropriate'
Version 3	August 2020	• Front sheet and Document Change Log added • Page 1 – Para 1 Footnote – words 'of 0.5 hectares' removed

Website: The Flood Hub

This website is an online resource which has been funded by the North West Regional Flood and Coastal Committee as a one stop shop for flood advice and information across the North West.

NORTH WEST SuDS PRO-FORMA

This pro-forma is a requirement for any planning application for major development[1].

It supports applicants in summarising and confirming how surface water from a development will be managed sustainably under current and future conditions.

Your sustainable drainage system should be designed in accordance with **CIRIA The SuDS Manual C753** and any necessary adoption standards.

HOW TO COMPLETE

Blue Box	Instruction/ Question
Orange Box	Evidence Required
White Box	To be completed by Developer / Consultant

1. Complete ALL white boxes
2. Submit this pro-forma to the Local Planning Authority, along with:
    - Sustainable Drainage Strategy
    - Site Specific Flood Risk Assessment (if required)
    - Minimum supporting evidence, as indicated in orange boxes of this pro-forma.

GUIDANCE TO SUPPORT YOU

The pro-forma should be completed in conjunction with 'Completing your SuDS Pro Forma Guide.'

The pro-forma can be completed using freely available tools such as **Tools for Sustainable Drainage Systems** or appropriate industry standard surface water management design software.

[1] *as defined in Section 2 of* ***Statutory Instrument 2015 No. 595*** *or on sites in Critical Drainage Areas.*

SECTION 1. APPLICATION & DEVELOPMENT DETAILS

Planning Application Reference *(if available)*		
State type of planning application *i.e. Pre-application, Outline, Full, Hybrid, Reserved Matters** **Information only required if drainage is to be considered as part of reserved matters application*		
Developer(s) Name:	PROSPECT HOMES GB	
Consultant(s) Name:	EDGE CONSULTING ENGINEERS	
Development Address *(including postcode)*	MITTON ROAD WHALLEY	
Development Grid Reference *(Eastings/Northings)*	E:372634 N:437511	
Total Development Site Area (Ha)	2.29	
Drained Area (Ha)* of Development	1.12	
Please indicate the flood zone that your development is in. Tick all that apply. *Based on the Environment Agency Flood Map for Planning and the relevant Local Authority Strategic Flood Risk Assessment (to identify Flood Zones 3a/3b).*	Flood Zone 1 ☒ Flood Zone 2 ☐ Flood Zone 3a ☐ Flood Zone 3b ☐	
What is the surface water risk of the site? Tick all that apply *Based on the Environment Agency Surface Water Flood Map.*	High ☐ Medium ☐ Low ☒	
Have you submitted a Site Specific Flood Risk Assessment (FRA)? *See separate guidance notes for clarification on when a FRA is required*	Yes ☐ No ☒	
Have you submitted a Sustainable Drainage Strategy?	Yes ☒ No ☐	
Does your drainage proposal provide multi-functional benefits via SuDS?	Yes ☒ No ☐	
Expected Lifetime of Development *(years)* *Refer to Planning Practice Guidance "Flood Risk and Coastal Change" Paragraph 026*	80	
Development Type:		**State Proposed Number of Units**
Greenfield Site • *Site is wholly undeveloped, and a new drainage system will be installed*	☐	
Previously Developed/ Brownfield Site • *Site is already developed, and the entirety of the existing surface water drainage system will be used to serve the new development (evidence must be provided to prove existing surface water drainage system is reusable); **OR*** • *Where records of the previously developed system are not available so that the hydraulic characteristics of the system cannot be determined or where the drainage system is not in reasonable working order i.e. broken, blocked or no longer operational for other reasons, then one of the approaches outlined in Section 24.5 of The SuDS Manual (C753) should be adopted.*	☒	50
Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 1.	SEE BELOW	

SECTION 2: IMPERMEABLE AREA AND EXISTING DRAINAGE

	Existing (E)	Proposed (P)	Change (P – E)
State Impermeable Area (Ha)	0.167	1.12	+0.953Ha
Evidence Required: Plans showing development layout of site with existing and proposed impermeable areas.			☐

200903-EDGE-XX-XX-DR-C-2001_SCHEMATIC DRAINAGE LAYOUT[P04]

200903-EDGE-XX-XX-DR-C-2003_EXISTING DRAINAGE AREA[P01]

Are there existing sewers, watercourses, water bodies, highway drains, soakaways or filter drains on the site?	Yes ☒ No ☐ Don't Know ☐
Evidence Required: Plan(s) showing existing layout to include all: • Watercourses, open and culverted • Water bodies – ponds, swales etc. • Sewers, including manholes • Highway drains, include manholes, gullies etc. • Infiltration features - soakaways, filter drains etc.	☐

Drainage Design *Outline planning applications should be able to demonstrate that a suitable drainage system is achievable.* *All other type of planning application should provide full details or reference to previous planning application where drainage details have been submitted or approved.*	
Select which design approach you are taking to manage water quantity *(refer to Section 3.3 SuDS Manual)* **Approach 1 – Volume control / Long Term Storage (Technical Standards S2/3, S4/5)** • *The attenuated runoff volume for the 1 in 100 year 6 hour event (plus climate change allowance) is limited to the greenfield runoff volume for the 1 in 100 year 6 hour event, with any additional runoff volume utilising long term storage and either infiltrated or released at 2 l/s/ha* • *The discharge rate for the critical duration 1 in 1 year event is restricted to the 1 in 1 year greenfield runoff rate* • *The discharge rate for the critical duration 1 in 100 year event (plus climate change allowance) is restricted to the 1 in 100 year greenfield runoff rate* **Approach 2 – Qbar (Technical Standards S6)** • *Justification has been provided that the provision of volume control/long term storage is not appropriate and an attenuation only approach is proposed. All events up to the critical duration 1 in 100 year event (plus climate change allowance) are limited to Qbar (1 in 2 year greenfield rate) or 2 l/s/ha, whichever is greater.*	☐ ☒
Evidence Required: Plans showing: • Existing flow routes and flood risks • Modified flow routes • Contributing and impermeable areas • Current (if any) and proposed 'source control' and 'management train' locations of sustainable drainage components (C753 Chapter 7) • Details of drainage ownership • Details of exceedance routes (Technical Standards S9) • Topographic survey • Locations and number of existing and proposed discharge points *Note consideration should be given to manage surface water from both impermeable and permeable surfaces (including gardens and verges) likely to enter the drainage system.*	☐

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 2.	

200903-EDGE-XX-XX-DR-C-2003_EXISTING DRAINAGE AREA[P01]

200903-EDGE-XX-XX-DR-C-2001_SCHEMATIC DRAINAGE LAYOUT[P04]

SECTION 3: PEAK RUNOFF RATES – TECHNICAL STANDARDS S2, S3 AND S6 (UNLESS S1 APPLIES)

Rainfall Event	Existing Rate (l/s)	Greenfield Rate (l/s)	Proposed Rate (l/s) *Previously developed sites - In line with S3 should be equivalent to Greenfield runoff rates – discuss with LLFA if this is not achievable pre-application*
Qbar *(Approach 2)*	23.2 (Brownfield element)	17.83	34.07
1 in 1 Year Event *(Approach 1)*			
1 in 30 Year Event			
1 in 100 Year Event* *(Approach 1)*			

** Total discharge at the 1 in 100 year rate should be restricted to the greenfield runoff volume for the 1 in 100 Year 6 hour event with additional volumes (long-term storage volume) released at a rate no greater than 2 l/s/ha where infiltration is not possible. The climate change allowance should only be applied to the proposed rate and not the existing or greenfield rate.*

Evidence Required:	
Methodology used to calculate peak runoff rate clearly stated and justified.	☒
Impermeable areas plan, supported by topographical survey confirming positive drainage.	☒
Hydraulic calculations and details of software used.	☒

State the hydraulic method used in your calculations *(Refer to Table 24.1 of The SuDS Manual)*	

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to section 3.	

200903-EDGE-XX-XX-DR-C-2001_SCHEMATIC DRAINAGE LAYOUT[P04]

200903-EDGE-XX-XX-DR-C-2003_EXISTING DRAINAGE AREA[P04] Showing Wallingford procedure used for brownfield element greenfield. pdf showing greenfield element of sites runoff estimateions from HR Wallingfords UKSudS website

A 30% betterment on existign runoff rates is proposed.

SECTION 4: DISCHARGE VOLUME – TECHNICAL STANDARDS S4, S5 AND S6 (UNLESS S1 APPLIES)

Rainfall Event	Existing Volume (m^3)	Greenfield Volume (m^3)	Proposed Volume (m^3)
1 in 100 Year 6 Hour Event *(Approach 1)*			
Does the below statement apply to your development proposal? Long term storage is not achievable on this site and, in accordance with S6 of the Non Statutory Technical Standards for SuDS, the surface water discharge rates for events up to and including the 1 in 100 year critical event are limited to Qbar (Approach 2)			Yes ☒ No ☐
Evidence Required: Approach to managing the quantity of surface water leaving the site clearly stated and justified			☒
Methodology used to calculate discharge volume clearly stated and justified.			☒
Hydraulic calculations and details of software used.			☒

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 4.	

200903-EDGE-XX-XX-DR-C-2001_SCHEMATIC DRAINAGE LAYOUT[P04]

200903-EDGE-XX-XX-DR-C-2003_EXISTING DRAINAGE AREA[P01]

Greenfield.pdf showing UKSuds website greenfield runoff estimations.

SECTION 5: STORAGE – TECHNICAL STANDARDS S7 AND S8

State climate change allowance used (%)	30%
State housing density (houses per ha)	
State urban creep allowance used (%)	10%
Evidence Required: State / used in appropriate industry standard surface water management design software.	☐

State storage volume required (m^3) *(excluding non-void spaces)* *Must include an allowance for climate change and urban creep*	30 year = 246m3 10 year +40% = 591m3
Have you incorporated interception into your design? *(Refer to Chapter 24 of The SuDS Manual C753)* *Where possible, infiltration or other techniques are to be used to try and achieve zero discharge to receiving waters for rainfall depths up to 5mm.*	Yes ☐ No ☒
Evidence Required: Drainage plans showing location of attenuation and all flow control devices and supporting calculations.	☒

200903-EDGE-XX-XX-DR-C-2001_SCHEMATIC DRAINAGE LAYOUT[P04]

Summarise how storage will be provided for 1 in 30 year event on site. *Storage must be designed to ensure that at no flooding occurs onsite in a 1 in 30 year event except in designed areas **and** no flooding occurs offsite in a 1 in 100 year (plus climate change allowance) event.*	30 year storage within large diameter pipes whcih will be offered to United Utilities for adoption under a section 104 agreement.
Summarise how storage will be provided for 1 in 100 year (plus climate change) event on site. *Where storage above the 1 in 30 year rainfall event is provided in designated areas designed to accommodate excess surface water volumes, plans showing storage locations and surface water depths and supported by calculations used in appropriate industry standard surface water management design software. It is important to run a range of duration events to ensure the worst case condition is found for each drainage element on the site*	100 year +40% additional rainfall for climate change and urban creep will be stored within oversized storage pipes and large diameter chambers. See atatched Drainage schematic drawing
Evidence Required: Plans showing size and location of storage and supporting calculations. Where there is controlled flooding, extents and depths must be indicated.	☐

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 5.	

200903-EDGE-XX-XX-DR-C-2001_SCHEMATIC DRAINAGE LAYOUT[P04]

200903-EDGE-XX-XX-DR-C-2003_EXISTING DRAINAGE AREA[P01]

SECTION 6: WATER QUALITY PROTECTION

Contaminated surface water run-off can have negative impacts on the quality of receiving water bodies. The potential level of contamination will influence final the design of an appropriate treatment train as part of your sustainable drainage system.

Is the proposal site known to be or potentially contaminated?	Yes ☐	No ☒
• *If the site is contaminated, it should be demonstrated that the sustainable drainage system will not increase the risk of pollution to controlled waters though the mobilisation of contaminants and/or creation of new pollution pathways.*		

Confirm the *Pollution Hazard Level* of the proposed development - Tick ALL that apply

Refer to Pollution Hazard Indices for different Land Use Classifications in Table 26.2 of The SuDS Manual C753 for further guidance.

Pollution Hazard Level *Tick ALL that apply*		**Surface water run-off from the proposed development will drain from:**
VERY LOW	☒	• Residential roofs
LOW	☒	• Other roofs (typically commercial/industrial roofs) • Individual property driveways, residential car parks, low traffic roads (e.g. cul de sacs, home-zones and general access roads) • Non-residential car parking with infrequent change (e.g. schools, offices) i.e. < 300 traffic movements/day
MEDIUM	☒	• Commercial yard and delivery areas • Non-residential car parking with frequent change (e.g. hospitals, retail) • All roads except low traffic roads and trunk roads/motorways[2]
HIGH	☐	• Sites with heavy pollution (e.g. haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites) • Sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured • Industrial sites • Trunk roads and motorways[1]

If the development's Pollution Hazard Level is 'Very Low' or 'Low', has the sustainable drainage design been risk assessed and appropriate mitigation measures included?	Yes ☐	No ☒
• *If the proposed development has a very low or low polluting potential, you should design your sustainable drainage system to include an appropriate treatment train in accordance with The SuDS Manual (C753).*		

If the development's Pollution Hazard Level is 'Medium' or 'High', is the application supported by a detailed water quality risk assessment?	Yes ☐	No ☒
• *If the proposed development has a high polluting potential, a detailed risk assessment will be required to identify an appropriate SuDS treatment train and ensure compliance with Paragraph 170 of the National Planning Policy Framework.* • *If the proposed development has a medium polluting potential, a detailed risk assessment may be required depending on the nature, scale and location of the development.*		

Has pre-application advice on water quality been obtained from the Environment Agency?	Yes ☐	No ☒
If YES, provide details:		

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 6.	

[2] Motorways and trunk roads should follow the guidance and risk assessment process set out in Highways Agency (2009).

SECTION 7: DETAILS OF YOUR SUSTAINABLE DRAINAGE SYSTEM

a) Function of your Sustainable Drainage System

Do your proposals store rainwater for later use (as a resource)?	Yes ☐ No ☒
Evidence Required: Please provide a brief sentence in the adjacent white box to describe how this function has been achieved.	

Do your proposals promote source control to manage rainfall close to where it falls? (e.g. promoting natural losses through soakage, infiltration and evapotranspiration)	Yes ☐ No ☒
Evidence Required: Please provide a brief sentence in the adjacent white box to describe how this function has been achieved.	

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 7a.	

b) Hierarchy of Drainage Options – Planning Practice Guidance

The proposed method of discharge are set out within order of priority. Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable.

Proposed method of surface water discharge			**Is this proposed?**
Hierarchy Level 1: Into the ground (via infiltration)			Yes ☐ No ☒
If YES - Evidence Required		**If NO – Evidence Required** **Tick ALL that apply**	
☐	**A.** Completed Infiltration Checklist from The SuDS Manual (C753) Appendix B *An editable version of this form is available on SusDrain website.*	☐	A. Site investigation to demonstrate that the ground is not free draining. Test results to be provided in accordance with: • The methodology within BRE 365 (2016), ***OR*** • Falling head permeability tests BS EN ISO 22282-2: 2012
☐	**B.** British Geological Survey (BGS) Infiltration SuDS Map	☐	B. NOTE: where an applicant is unable to access a site to undertake testing, e.g. where unable to access a site for an outline application, they can submit a *SuDS GeoReport or similar*.
☐	**C.** Infiltration testing to BRE 365 (2016) or falling head permeability tests to BS EN ISO 2228-2: 2012 ***(optional for outline)***	☐	C. Evidence to confirm that infiltration to ground would result in a risk of deterioration to ground water quality.
☐	'Plan B' sustainable drainage plan and statement of approach with an alternative discharge method, in case infiltration proposals are proven not feasible upon further site specific ground investigation e.g. to consider seasonal variations to groundwater.	☐	D. Geotechnical advice from a competent person* which determines that infiltration of water to ground would pose an unacceptable risk of geohazards to the site and/or local area. **Note: Competent person may include a Chartered Engineer, Chartered Geologists, Registered Ground Engineering Professionals (RoGEP).*

Proposed method of surface water discharge	Is this proposed?
Hierarchy Level 2: To a surface water body *(select type)* ***NOTE:** Consent from LLFA or Permit from Environment Agency may be required – refer to guidance*	Yes ☐ No ☒ N/A ☐ ☐ Main river ☐ Canal ☐ Ordinary watercourse ☐ Other water body

If YES - Evidence Required		If NO – Evidence Required Tick ALL that apply	
☐	Surface water body / watercourse survey and report	☐ ☐	Plan showing nearby watercourses and waterbodies **AND** Statement providing justification in your Sustainable Drainage Strategy ***Note:** Where third party land is cited as a barrier, you should provide visibility of discussions held to date with the riparian landowner of the waterbody.*

Proposed method of surface water discharge	Is this proposed?
Hierarchy Level 3: To a surface water sewer or highway drain *(select type)*	Yes ☒ No ☐ N/A ☐ ☒ Surface water sewer ☐ Highway drain

If YES - Evidence Required		If NO – Evidence Required Tick ALL that apply	
☐	Written correspondence from Water and Sewerage Company/ Highway Authority regarding proposed connection.	☐ ☐	Plan showing nearby sewers and highway drains **AND** Statement providing justification in your Sustainable Drainage Strategy

Proposed method of surface water discharge	Is this proposed?
Hierarchy Level 4: To combined sewer	Yes ☐ No ☒ N/A ☐

If YES - Evidence Required		If NO – Evidence Required
☐	Written correspondence from Water and Sewerage Company	N/A

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 7b.	

c) Proposed SuDS Component Types

	Tick ALL that apply				
Within property boundary	☐ Rainwater harvesting	☐ Green/ blue roofs	☐ Pervious pavements *[Type: A ☐ B ☐ C ☐]*	☐ Soakaway	☐ Bio retention systems

	Tick ALL that apply				
Within development site boundary *(not property)*	☐ Infiltration system *[Type: ☐ Surface level ☐ Below ground]*		☐ Filter strips	☐ Filter drains	☐ Swales
	☐ Bio retention system	☐ Detention basins	☐ Ponds and wetlands	☒ Attenuation tanks/ Oversized pipes	☐ Other (state below)
	If 'Other' please state:				

Off site *(not within the boundary of the proposed development)*	***Please state:***

I confirm that the above selected components have been designed in accordance with The SuDS Manual (C753).	I confirm ☒
I confirm that the management of flows resulting from rainfall in excess of a 1 in 100 year plus climate change rainfall event, and their exceedance route(s), has been fully considered in order to minimise the risks to people, property (new and existing) and infrastructure.	I confirm ☒

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 7c.	

SECTION 8: OPERATION AND MAINTENANCE – TECHNICAL STANDARD S12 AND NATIONAL PLANNING POLICY FRAMEWORK

The applicant is responsible to ensure that ALL components selected in Section 7 can be maintained for the design life of the development. This information is required so the Local Planning Authority can ensure the maintenance and management of the sustainable drainage system. The Local Planning Authority will discuss how this will be secured (e.g. via planning condition or planning obligation).

	Information Provided?
Management Plan	Yes ☐ No ☒
Evidence Required: **Plan/ drawing provided to show the position of the different SuDS components with:** • Key included to identify any of the adopting bodies that you will be offering your sustainable drainage components for adoption *(relates to maintenance and management arrangements below).* • Plan/ drawing to identify any areas where certain activities are prohibited, detailing reasons why. **Action plan for accidental pollutant spillages.**	☐ ☐

	Information Provided?
Maintenance Schedule	Yes ☐ No ☒
Evidence Required: A copy of the maintenance schedule including: 1. **Proactive and preventative maintenance** Detailing regular, occasional and remedial maintenance activities including recommendations for inspection and monitoring. This should include recommended frequencies, advice on plant/ machinery required and an explanation of the objectives for the maintenance proposed and potential implications of not meeting them. 2. **Reactive and corrective maintenance** (e.g. product repair and replacement). Including advice on excavations, or similar works, in locations that could affect the SuDS components/ adjacent structures.	☐

	Information Provided?
Maintenance and Management Arrangements	Yes ☐ No ☒
Evidence Required: Evidence of formal agreement with the party responsible for undertaking maintenance. Please select any of the adopting bodies that you will be offering your sustainable drainage components for adoption. Tick all that apply. ☐ **Water and Sewerage Company** *Section 104 agreement (Water Industry Act 1991)* ☐ **Highway Authority** *Section 278/38 agreement (Highways Act 1980)* ☐ **Local Authority Public Open Space** *[Refer to Local Authority Policy]* Please select the arrangement(s) for all non-adopted sustainable drainage components. Tick all that apply. ☐ **Management Company** ☐ **Property Owner** *(for SuDS components within property boundary only)* ☐ **Other** (please state)	☐

Please list any relevant document and or drawing numbers (including revision reference) to support your answers to Section 8.	

DECLARATION AND SUBMISSION

This pro-forma has been completed using evidence from information which has been submitted with the planning application.

The information submitted in the Sustainable Drainage Strategy and site-specific Flood Risk Assessment (FRA), where submitted, is proportionate to the site conditions, flood risks and magnitude of development and I agree that this information can be used as evidence to this sustainable drainage approach.

Submitter Details			
Completed by	RYAN ATHERTON	**Email Address**	
		Telephone Number(s)	
Signed off by	RYAN ATHERTON	**Accreditation(s) and/or Qualification(s) of Signato.**	
Date *(dd/mm/yyyy)*	09.12.2020	**Company**	EDGE CONSULTING ENGINEERS

Client Details			
Name	GARY HUMPHREYS	**Company**	PROSPECT GB