

# Wastewater Technical Forum

Wednesday 4 March 2020

**Welcome**



# Easy to do business with

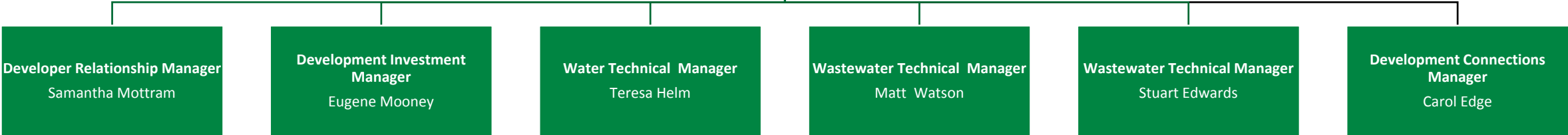
Graham Morley, Developer Services Manager

# Technical Assurance

Meet the team



Developer, SLP & NAV Services  
Manager  
Graham Morley



Field Services Manager  
Matthew Yates



# Easy to do business with

## Knowing our customers

Who are our customers and what services they need from us?



## Listen and learn

Gather feedback through channels and act on it.



## Application forms and guidance

Accessible, easy, no jargon, personal.



Developer Services – S104 Support Guide

## Accountability and Ownership

One name, one owner, single point of contact.



## Service levels

Quicker responses. Reduce the end to end time.



## Improving our website services

Accessible, easy, no jargon.





# Codes for Adoption

## Wastewater

# Codes for Adoption – Wastewater

1. What we've been doing
2. Pre-Application
3. Stages in the process
4. What does it mean for you?
5. Transition
6. Local Practices



# Overview

## Sector guidance

### Procedures

### Model adoption agreements

### Design & construction guidance

January – March 2019

2 x Water UK consultations

March – July 2019

OFWAT Review & Feedback

July 2019

**UU Developer Forum**  
Overview of planned Code

October 2019

**UU Developer Day**  
Focus on developer impact

November 2019

OFWAT Approves Code  
Sewerage sector guidance Approved

December 2019 – March 2020

**UU workshops – Local Practice Consultation**  
Developer working group & PS designer Local practice Meeting

**1<sup>st</sup> April 2020 Implementation**  
(with 6 month Transitional Period)





# Wastewater codes for adoption

## Procedure and Levels of Service



Process Stage	Activity	Level of Service
Stage 1a: Pre-Planning Enquiry	Acknowledge application and review submission for completeness	7 Days
	Provide full response to application (includes 7 days from receipt)	21 Days (includes 7 days from receipt)
Stage 1b: Pre-Design Strategic Discussion/Assessment (complex sites)	Review design application send response or arrange meeting	14 Days
	If meeting required – Full response to be sent after meeting	7 Days
Stage 2: Design of New Sewerage System S104 application	Acknowledge application and provide an initial assessment response	7 Days
	Full technical assessment and formal response confirming design alterations or technical acceptance	28 Days (Includes 7 days from receipt)
	Provided technical assessment of re-submission and send response	14 Days
Stage 3: Adoption Agreement	Issue draft agreement to developer for signing	14 Days
Stage 4: Construction Period Developer notifies of construction start date	Arrange pre-start meeting with developer	14 Days
Stage 5: Maintenance Period Construction complete	Review all information is acceptable and arrange pre-maintenance inspection	14 Days
	Inspection complete send remedial list or issue provisional certificate	7 Days
Stage 6: Final Inspection and Vesting Gravity system incl. pumping station and/or components	Review provided site inform and arrange final inspection if site ready	14 Days
	Vesting of sewers to be done 7 days after final certificate has been issued	7 Days
Stage 7: Variation of New Sewerage System	Acknowledge receipt of S104 variations and confirm type of variation and action	7 Days
	Technical assessment of design confirm if variation is agreed or not	14 Days (Includes 7 days from receipt)
	If variation design agreed provide variation acceptance	7 Days

# Wastewater codes for adoption

## Procedure and Levels of Service

Pre-planning

Design  
Approval

Adoption  
Agreement

Construct  
Sewers

Maintenance  
Period

Vesting of  
Sewers

Variations



**Pre-Planning Enquiry**  
**Pre S104 application**

- Free pre development service
- Surface Water connection to sewer must follow the pre planning stage
- More information is required to support the most sustainable drainage solutions
- You can ask for Pre S104 application advice
- New application forms S104 & pre development enquiry
- Defined services levels for responses to pre application advice

# Wastewater codes for adoption

## Procedure and Levels of Service

Pre-planning

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Variations



**Design approval  
Adoption Agreement**

- SuDS adoption (CIRIA Standards)
- 1:20 manhole details only required in certain scenarios
- UU construction details for items not in the DCG.
- Can give partial design acceptance (Gravity elements)
- Resubmitted applications have 2 week Service Level
- Consistent legal agreement
- Local Practice for pumping station & Easement policy

# Wastewater codes for adoption

## Procedure and Levels of Service

Pre-planning

Design  
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Construct  
Sewers

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Vesting of  
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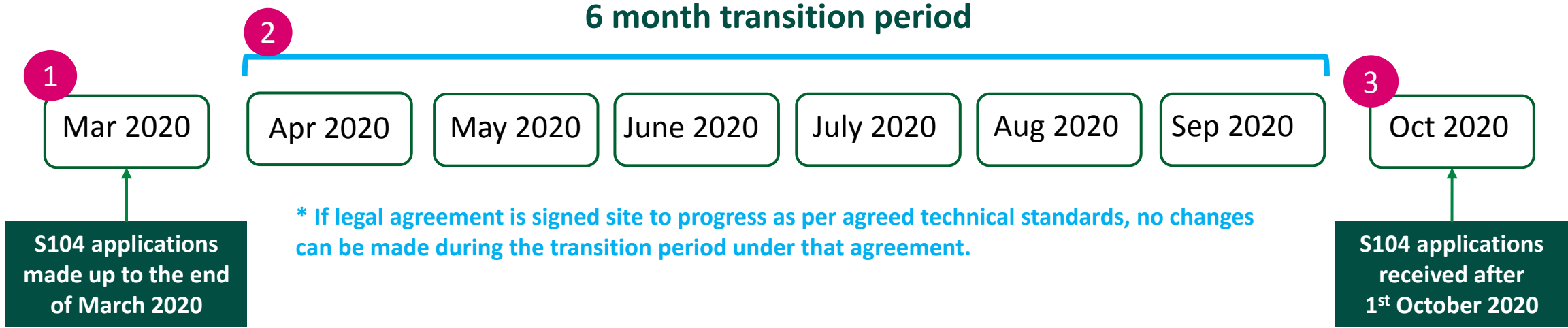
Variations



**Construction  
Vesting  
variations**

- Contact made for first inspection within 2 weeks
- Inspection regime to be locally agreed site specific
- Onsite variation are permitted
- New application for maintenance and final adoption
- New SLAs for applications to progress final adoption
- 6 month defect resolution period
- We will inform you when maintenance period is ending

# Transition to the new sewerage adoption codes



**1** Any applications made up to and including 31<sup>st</sup> March 2020, are to be designed to current standards

**2** \*Applications received between 1<sup>st</sup> April 2020 and 30<sup>th</sup> September 2020, can be designed to current standards or the new DCG standards

**3** From the 1<sup>st</sup> October 2020, all applications need to be designed to the new DCG standards and follow the new process



# Planning for Surface Water

Stuart Edwards, Wastewater Technical Manager

# Legislation & Organisations involved in Flood Risk Management

Town & Country Planning Act



Planning Officers, LLFA & EA

Floods Water Management Act



Section 42 not enacted

Land Drainage



LLFA / Riparian Owners

Highways Act



Highways Authority

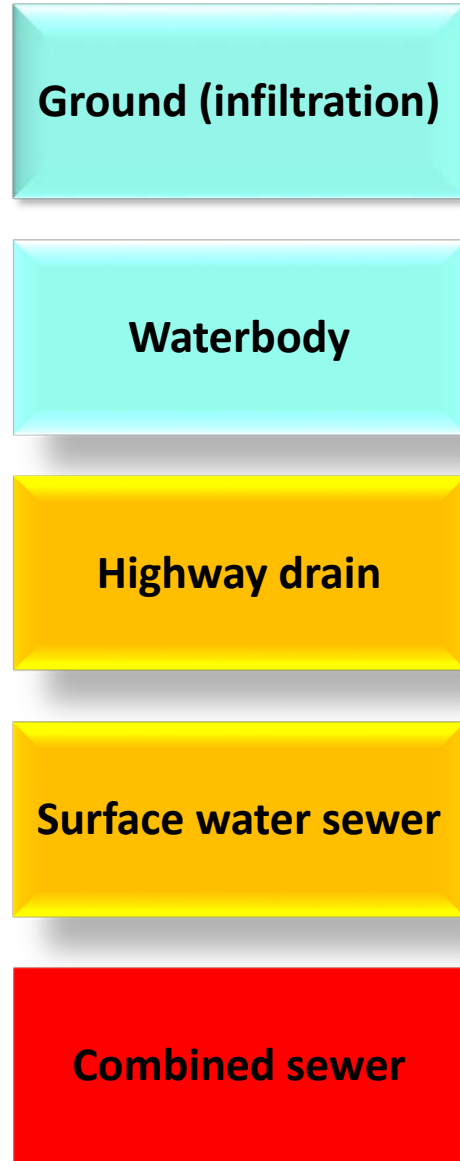
Water Industry Act



Water Companies

# Hierarchy of surface water discharge

Planning Practice Guidance &  
Building Regulations



• Most sustainable

Soakaways, permeable paving, SI confirm infiltration / levels

LLFA / EA rate approval

Negotiate with land owners / Highway Authority at earliest stage in land purchase.

• Least sustainable



# Infiltrating surface water to ground

What evidence are we looking for?

## Scope of Works

IDG were commissioned to conduct infiltration tests at SK07 at approximate depths of 1.0m to 2.15m. A plan showing the locations of the tests is provided in Appendix A.

Based on initial results from SK07, the soakaway was excavated to depths of 2.15m to 2.35m. Three soakaway tests were conducted at these depths.

## Ground Conditions

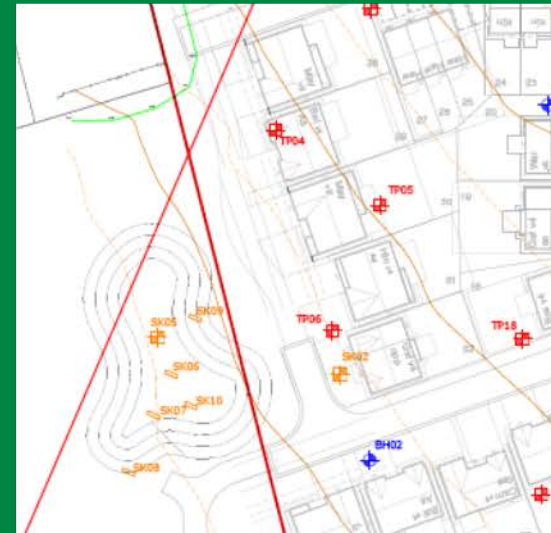
Detailed descriptions of the ground conditions are provided in Appendix B, as summarised below.

## Results

A summary of the results is presented in the following table.

Summary of Soakaway Test Results

Test Pit	Infiltration Zone Depth	Infiltration Rate	Comments
SK06-1	0.48m – 1.15m	-	25%
SK07-1	0.57m – 1.50m	-	25%
SK08-1	0.90m – 2.15m	$2.83 \times 10^{-5}$ m/s	
SK08-2	0.89m – 2.15m	$1.87 \times 10^{-5}$ m/s	
SK08-3	0.77m – 2.35m	$2.21 \times 10^{-5}$ m/s	
SK09-1	1.31m – 2.50m	$2.02 \times 10^{-4}$ m/s	
SK09-2	1.28m – 2.50m	$1.66 \times 10^{-4}$ m/s	
SK09-3	1.34m – 2.50m	$7.12 \times 10^{-5}$ m/s	
SK10-1	1.13m – 2.30m	$8.80 \times 10^{-5}$ m/s	
SK10-2	1.10m – 2.35m	$5.94 \times 10^{-5}$ m/s	
SK10-3	1.05m – 2.35m	$5.21 \times 10^{-5}$ m/s	



Level	Legend	Depth (m)	Description
58.20	[Symbol]	0.40	Dark brown slightly gravelly sand. Sand is fine to medium. Gravel is fine to coarse.
57.60	[Symbol]	1.00	Red-brown slightly cobbly graded SAND. Gravel is rounded of sandstone and quartzite. angular of tabular laminated subangular sandstone.
57.45	[Symbol]	1.15	End Of Trial Pit At 1.15 m

Report describing work carried out & ground conditions

Summary of results for infiltration tests & each calculation as per BRE365

Plan indicating positions of tests relative to size of the development

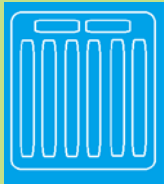
TP & BH logs or photos of a square/rectangular pit.

# If you can't infiltrate, what are the next options to explore?



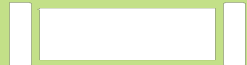
## Waterbody

Please provide us with evidence of your correspondence with any landowners with your pre-development enquiry. The Lead Local Flood Authority (LLFA) will determine discharge rate from the site.



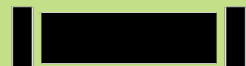
## Highway drain

A highway drainage system may have an effective outfall to a water body. Discuss this with the LLFA & Highway Authority.



## Surface water sewer

Whilst we can provide you with an indicative rate to discharge, the LLFA will confirm this as they will want to assess the impact on the receiving watercourse.



## Combined sewer

The least sustainable option, this should only be considered if all other options have been exhausted.

**UU can adopt surface water pumping stations which can be more sustainable than surface water discharging to the combine sewer.**

# SuDS – Trial Areas

<b>Merseyside</b>	<b>Sefton</b>	<b>Graham Perry</b>
	<b>Knowlsey</b>	
	<b>Liverpool</b>	<b>Andy Jack</b>
	<b>Wirral</b>	
	<b>Congleton</b>	<b>Daniel McDermott</b>
<b>Cheshire East</b>	<b>Macclesfield</b>	
	<b>Crewe &amp; Nantwich</b>	<b>Craig Daniels</b>
	<b>Vale Royal</b>	

## Trial purpose

Assess schemes put forward by development community against CIRIA C753 and DCG

Test out one engineer covering pre-dev and adoption



# Trial Areas – The start of the SuDS journey

SuDS type assessed	Volume
Infiltration basin	1
Attenuation basin	6
Conveyance Swale	2
Attenuation Swale	2

## One engineer – Pre development through to Adoption

- Early input to design layout
- Increased liaison with the LLFA, beneficial on large strategic sites
- Feedback so far from customers have seen an improvement in service.

## SuDS & Design Construction Guidance (DCG)

- So far only a few sites have come forward for SuDS adoption, others more query based.
- Have reviewed and progressed learning on basins, ponds and swales.
- Few sites have come forward early wanting an early DCG assessment. Nevertheless learning has taken place.

# SuDS adoption approach from April 2020

## Our approach and principles.

- Adopt any SuDS that are proposed and comply with the CIRIA SuDS manual and Design & Construction Guidance.
- If a SuDS component is not designed fully in line with the guidance then we would have a preference that it is kept off-line.
- We must have confidence that the SuDS component will continue to function both over the short, medium and long term.
- Continue to support consultants & developers to develop proposals into adoptable designs.
- All sewers that discharge to ground via infiltration must have the whole sewerage system adopted (all or nothing).

- We will continue to consider sewers that communicate with un-adopted SuDS provided they can satisfy the following principles:
  - The proximity to other adoptable or existing UU assets e.g. sewers or pumping stations has been fully considered (structural integrity, slope stability etc.).
  - You can evidence to us that the long term performance of the asset has been considered in that:
    - ❑ It has reasonable sediment control & fall across the structure (acts as an effective channel)
    - ❑ Provided freeboard (CIRIA) & flood routing (e.g. overflow into w/c - if the component fails, where does water go?)
    - ❑ Access and egress to for maintenance has been considered and evidenced (e.g. access around sides, reasonable gradient of slopes, clear access to outfall structures)
    - ❑ We have been provided with clear construction details (e.g. sections, including lining details etc.)
    - ❑ Key maintenance dependencies, with visibility of the maintenance plans.
    - ❑ Relevant designer risk assessments.

# Our learning – assessment against the CIRIA SuDS Manual

## Maintenance

Access restricted either side, fencing required due to steep sides.

Accessible, vehicle parking at turning head.

Restricted access to outfall to watercourse behind.



- Unnatural shape
- Limited flow path length (susceptible to premature silting)
- Little or no amenity and biodiversity benefits, restricted access to watercourse beyond.
- Exceedance path – electrical equipment adjacent.

## Health and safety

Overlooked by one property, corner of site

Fencing around perimeter, gate at the back.

Located very close to a wastewater pumping station and dwelling.

# Our learning – assessment against the CIRIA SuDS Manual

## Maintenance

Sediment forebay with engineered base – for ease to desilt (bi-annually)

Accessible, vehicle parking at turning head and within pump station compound



SuDS design provided connectivity to nature reserve with steps down outfall to watercourse. This was a requirement of planning for biodiversity, as well as making the amenity accessible to homeowners



## Health and safety

Visible and overlooked by properties

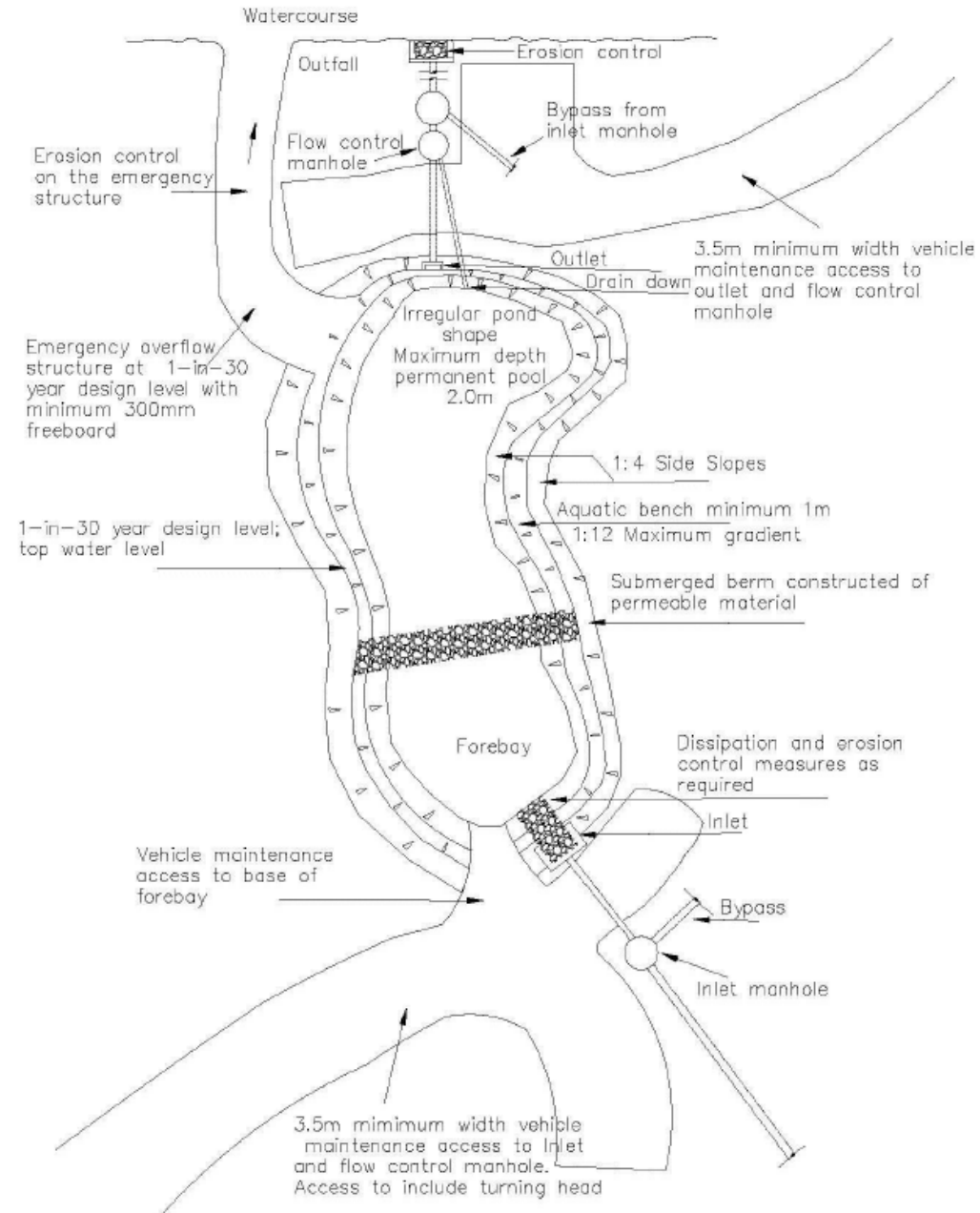
Fencing to prevent toddler access, however gate can be opened to access the amenity

Pond withholds permanent water during storm  
Permanent water depth and maximum attenuated depth both limited within CIRIA C753 design guidance for safety

Slope compliant with Minimum Design Standards

# Example SuDS layout (Sewers for Scotland)

## POND LAYOUT





# SuDS Transition arrangements

Early implementation  
**March to April**

**Trial for Early adoption  
assessment against DCG /  
CIRIA C753**

**Trial for one engineer one  
patch to cover pre  
development through to  
Adoption.**

Transition period  
**April to October 2020**

**In this period will consider  
SuDS in accordance with the  
principals.**

**Non compliant SuDS  
components will need to be  
offline.**

**Sites at planning post 1<sup>st</sup> of  
April must comply with  
Adoption SuDS standards - all  
or nothing approach.**

SuDS all or nothing  
**October 2020**

**Will require 'all or nothing  
approach'**

**The entire continuous system  
to the LLFA approved point of  
discharge will need to meet the  
adoption standards.**

**Sites not complying will not be  
able to have their surface water  
drainage adopted.**

**Thank you for  
joining us today**