

# SuD it- let's do it!

## Making SuDS happen

SuDS in Essex

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4<sup>th</sup> June 2013



## Presentation format

- Introduction
- Where we are:
  - Essex County Council SuDS Design & Adoption Guide
  - Interim process for SuDS approval
  - Interim adoption policy
- SuDS schemes
- Learning points
- Preparation for the SAB role
- Critical success factors for National Standards



## Introduction

- **Area:** 3,700 km<sup>2</sup>/1,420 sq. miles
- 11<sup>th</sup> largest County
- **Population:** 1.4 million
- Driest part of the Country- average annual rainfall of around 600 millimetres
- Clay, impervious soils



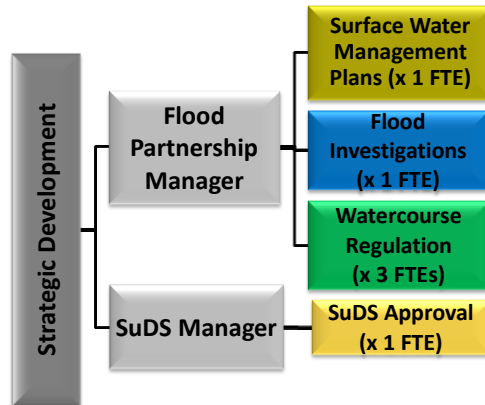
## Introduction

- Two tier Authority
- Twelve District/Borough/ City Councils
- Anglian & Thames River Basin Districts
- 2 Water companies
- No IDBs



## Introduction

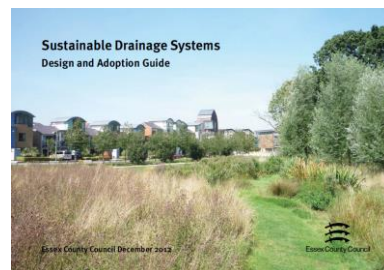
- ECC became the Lead Local Flood Authority in 2010, responsible for establishing partnerships and conducting Flood Investigations
- ECC gained responsibilities for Ordinary Watercourses under the Land Drainage Act 1991 in April 2012



## Where we are- SuDS Guide

### Need

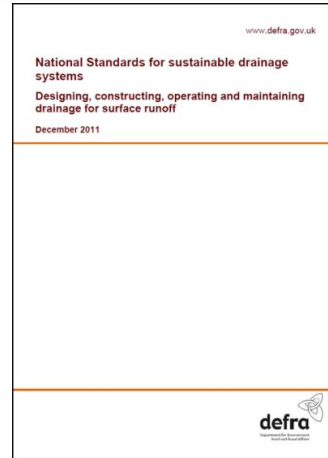
- To guide local developers
- To summarise the best sources of information
- To give examples appropriate to Essex
- Project began March 2011 (ready for SAB role April 2012)



## Where we are- SuDS Guide

### Relation to National Standards

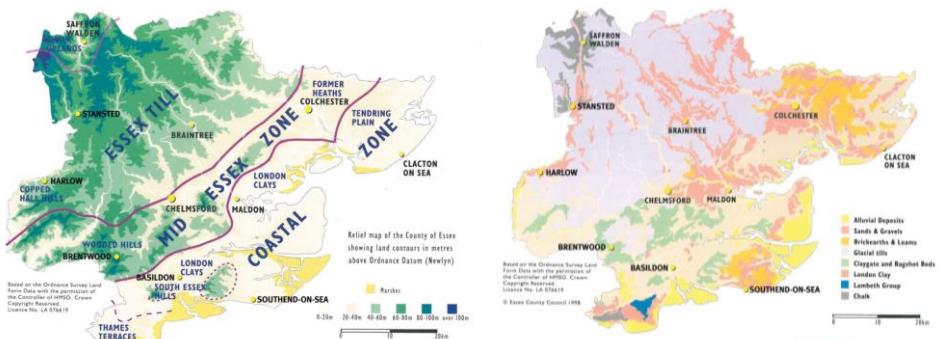
- The National Standards contain:
  - National Principles
  - National Standards
  
- LPAs ‘could set local requirements for planning permission that have the effect of more stringent requirements than these National Standards’
  
- ECC Guide contains:
  - Local Principles
  - Local Standards



## Where we are- SuDS Guide

### Scope/format

- Chapter 1: Introduction
- Chapter 2: SuDS and the Essex Environment



## Where we are- SuDS Guide

### Scope/format

- Chapter 3: Design Criteria

### 12 Local Principles

1. Plan for SuDS
2. Integrate with public spaces
3. Manage rainfall at the surface
4. Manage rainfall at the source
5. Mimic natural drainage
6. Design for water scarcity
7. Enhance biodiversity
8. Link to wider landscape
9. Design to be maintainable
10. Use a precautionary approach
11. Have regard to the historic environment
12. Show attention to detail

### 16 Local Standards

trees (albeit seasonally in deciduous species) in intercepting rainwater before it hits the ground should not be underestimated.

See also:  
Details on how to approach health and safety around water: Local Principle 2 of this guide

**Local Principle 5:  
Mimic natural drainage**

SuDS networks will be designed to match natural drainage routes, infiltration rates and discharges as far as possible.

Designs should work with natural gradients so as to avoid the use of energy consuming water pumps wherever possible, minimise use of man-made materials giving a softer and more natural feel to features and promote infiltration.

One of the main underlying principles of SuDS is that they should mimic natural processes and we would therefore favour systems that avoided the use of pipes or storage tanks. Vegetated SuDS should usually be given priority over pure engineering solutions as their operation is easier to observe and maintain. Below-ground features are not sustainable in the long term as they are not easily maintainable and have a limited life in comparison to grassed

and more natural systems. We would discourage SuDS systems which were reliant on electricity or any kind of pumped system which require specialised maintenance.

**Local Principle 6:  
Design for water scarcity**

New development should employ rainwater/greywater re-use in areas of water scarcity.

Designers and planners should obtain from the local water supply company information about the degree of water scarcity (including climate change implications for water resource security and likely increases in demand) in the area of the development. Where there is pressure on water resources, rainwater harvesting systems should form part of the surface water management strategy for the site. Further information on rainwater harvesting and greywater recycling is provided in Appendix 2.

See also:  
Further advice on landscaping and health and safety near airports is provided in Chapter 20 of the SuDS Manual (CIRIA, 2007).

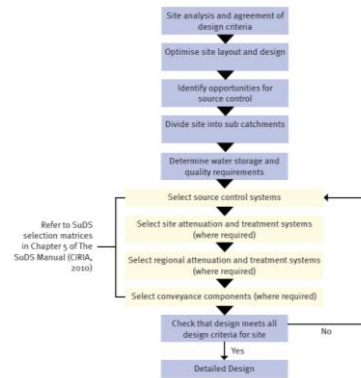
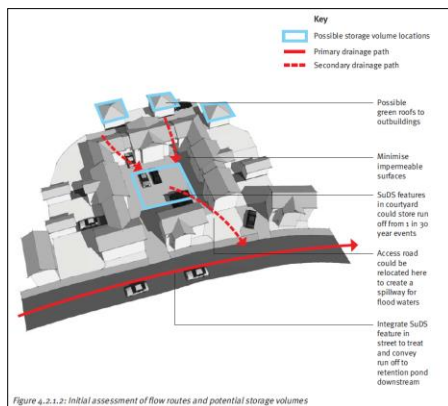
Full details of the CDM requirements and an example of a site-specific risk assessment in: Section 2.5.10 and Section 3.4.2 of The SuDS Manual (CIRIA, 2007).

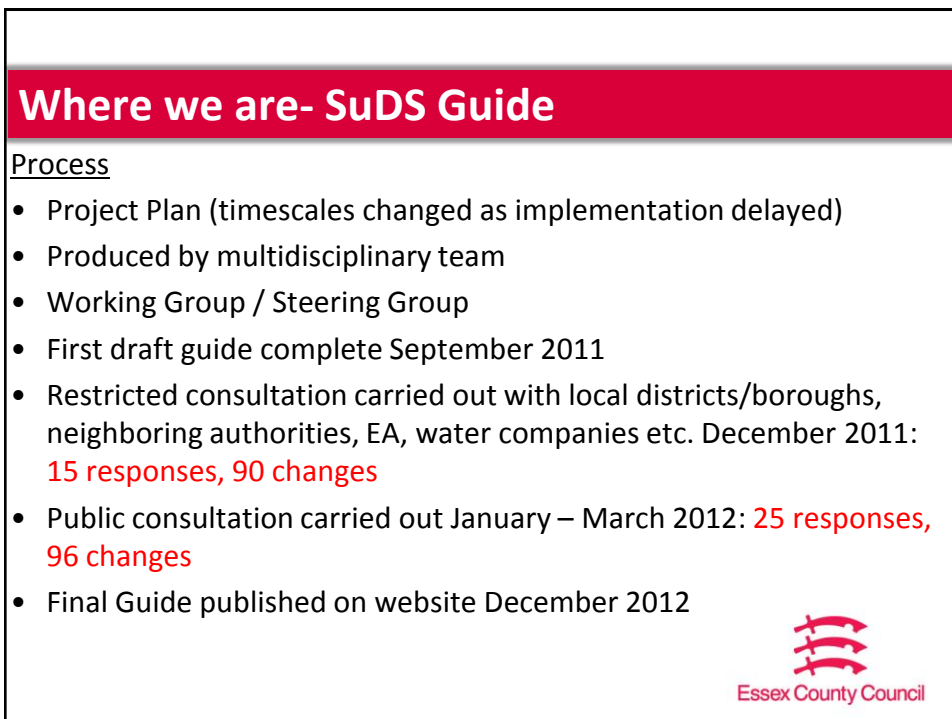
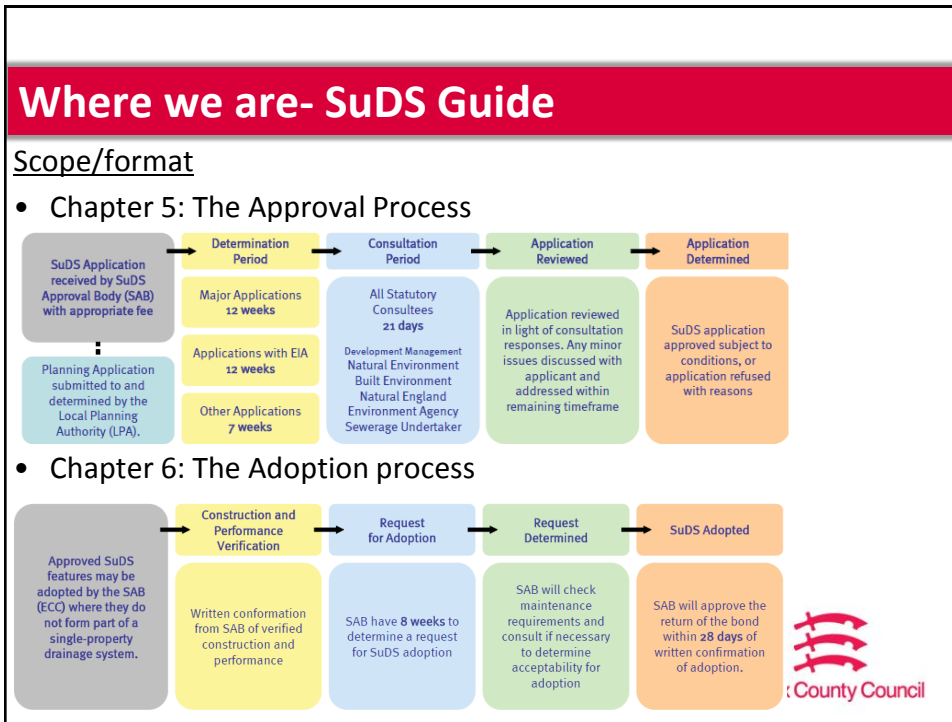


## Where we are- SuDS Guide

### Scope/format

- Chapter 4: Designing SuDS








## Where we are- Interim process for approval

**From June 2010:**

- Copied into Environment Agency correspondence

**From August 2011:**

- Began commenting informally on sites over 1 hectare
- Look for design in line with National & Local Standards
- High level comments with technical approval carried out by Highways
- Standing Advice Note released stating:
  - When SAB expected
  - Requirement for approval
  - May be able to voluntarily adopt if designed to appropriate standards
  - 12 month transition period for developments with planning permission to be exempted from SAB approval

  
Essex County Council

## Where we are- Interim process for approval

- Database/statistics/links to other work
- Looked to set up arrangement with EA to take lead on SW for major developments but not currently feasible
- As EA require Flood Risk Assessment for major sites in FZ1 we considered looking at minor sites in FZ1- contingency?

Sustainable Drainage Consultations									
2013 to 2015									
Ref	Year	Area	Developer	Site	Location	Consultation	Response	Outcome	Notes
1000000001	2013	Colchester	Colchester Development	1000000001	1000000001	1000000001	1000000001	1000000001	1000000001
1000000002	2013	Colchester	Colchester Development	1000000002	1000000002	1000000002	1000000002	1000000002	1000000002
1000000003	2013	Colchester	Colchester Development	1000000003	1000000003	1000000003	1000000003	1000000003	1000000003
1000000004	2013	Colchester	Colchester Development	1000000004	1000000004	1000000004	1000000004	1000000004	1000000004
1000000005	2013	Colchester	Colchester Development	1000000005	1000000005	1000000005	1000000005	1000000005	1000000005
1000000006	2013	Colchester	Colchester Development	1000000006	1000000006	1000000006	1000000006	1000000006	1000000006
1000000007	2013	Colchester	Colchester Development	1000000007	1000000007	1000000007	1000000007	1000000007	1000000007
1000000008	2013	Colchester	Colchester Development	1000000008	1000000008	1000000008	1000000008	1000000008	1000000008
1000000009	2013	Colchester	Colchester Development	1000000009	1000000009	1000000009	1000000009	1000000009	1000000009
1000000010	2013	Colchester	Colchester Development	1000000010	1000000010	1000000010	1000000010	1000000010	1000000010

Final point of discharge	Percentage (%)
Outfall to SW sewer	27
Outfall to watercourse	56
Outfall to main river	18
Infiltration	2



## Where we are- Interim adoption policy

- Consider adoption of SuDS on each site on a case by case basis
- Adopt SuDS using S.38 & commuted sums
- Restrictions:
  - Permeable paving
  - Geocellular systems
- Other options:
  - Anglian Water
  - Districts/Boroughs



Adopted permeable paving-  
Port Lane, Colchester





## SuDS schemes

- Sandon Park and Ride, Chelmsford:



Essex County Council

## SuDS schemes

- Sandon Park and Ride, Chelmsford:



Essex County Council

## SuDS schemes

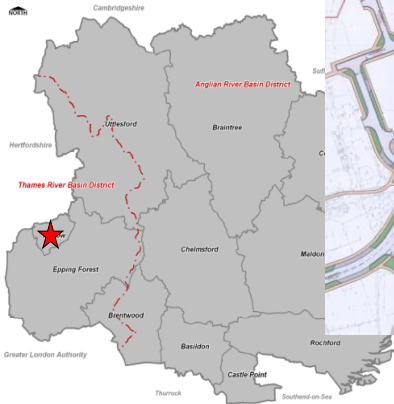

- Sandon Park and Ride, Chelmsford:







## SuDS schemes

- Harlow Gateway Site:



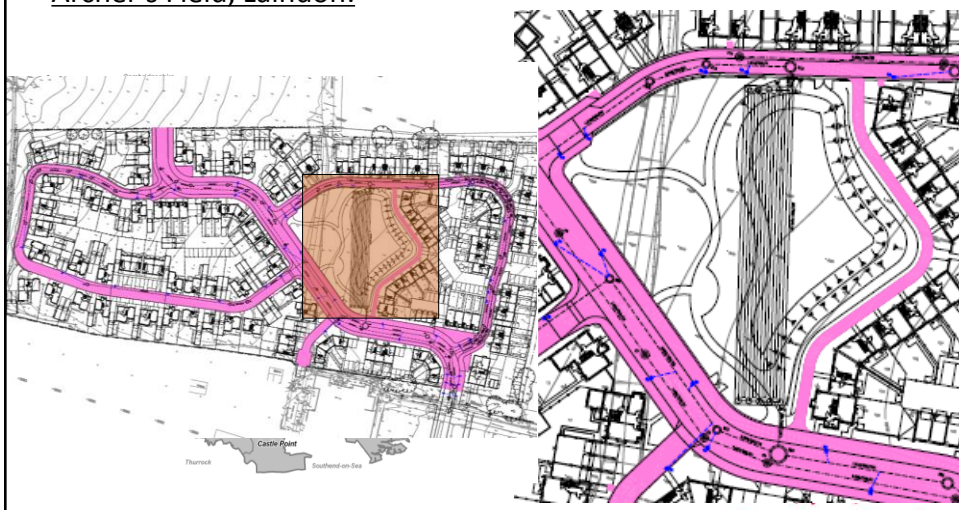
### SuDS schemes

- Harlow Gateway Site:



### SuDS schemes

- Archer's Field, Laindon:



## SuDS schemes

- Archer's Field, Laindon:



## SuDS schemes

- Various, Chelmsford:




Capitol Square



## SuDS schemes

- Various, Chelmsford:





Beaulieu Park



## SuDS schemes

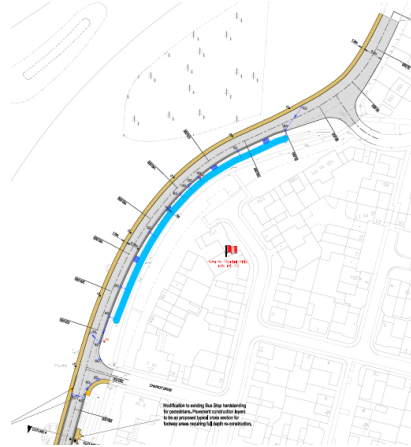
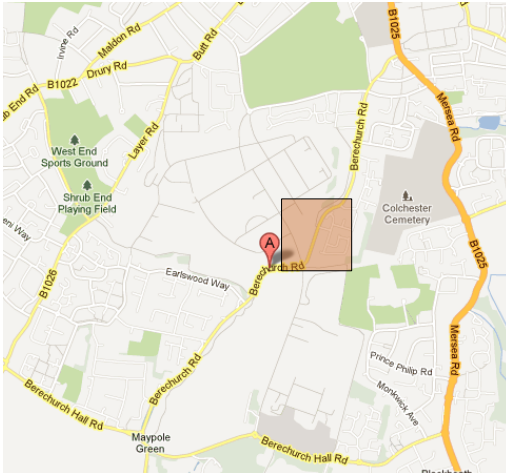
- Downham Road, Wickford





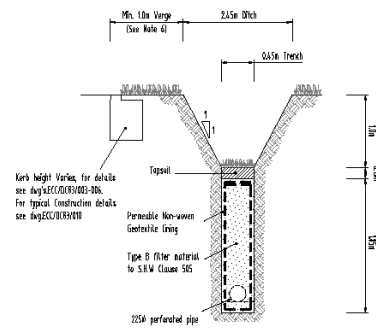
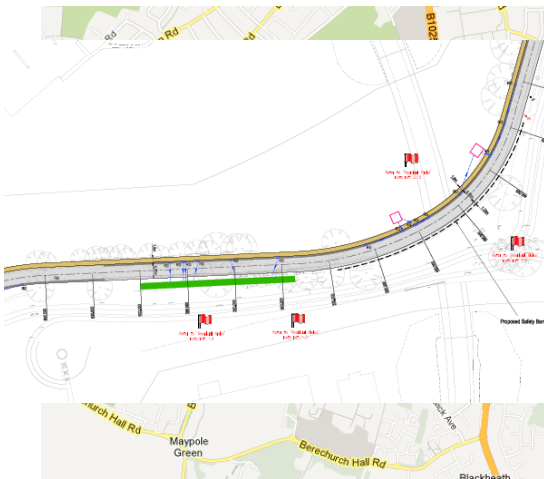
## SuDS schemes

- Berechurch Road, Colchester:



## SuDS schemes

- Berechurch Road, Colchester:



PROPOSED TRENCH SOAKAWAY DETAIL 3



## Learning points

### What has worked

- Improved understanding for developers and us
- Clarified roles
- Links to other responsibilities:
  - Asset Register
  - Designating features
  - Land Drainage Act:
    - S.23 consent for alterations
    - S.25 to ensure maintenance



Great Notley, Braintree

Beaulieu, Chelmsford



## Learning points

### What hasn't worked

- Non-statutory consultee
- Involved too late
- 1 in 30 and 1 in 100 year drainage
- End of pipe systems
- No follow up
- Attention to detail



Figure 4.1.1: Large stand-alone balancing ponds are not the only solution

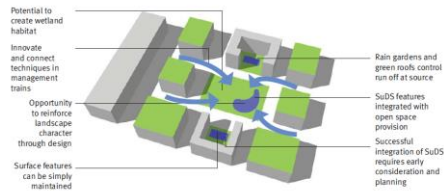


Figure 4.1.2: An integrated approach to surface water management



## Learning points

### What hasn't worked



Priors Green, Takeley



Port Lane, Colchester



## Preparation for SAB role

### 'SAB Trial'

- Being carried out with Anglian Water & Environment Agency
- Major applications
- Case management system & design checks

### Predicted number of applications/resource implications

#### **1<sup>st</sup> 3 years**

- 250 large major/major SuDS applications per year
- 6 FTE (£300k)

#### **Year 4 onwards**

- Major application plus 3,500 minor SuDS applications per year
- 20 FTE (£1M)





## Preparation for SAB role

### Defra Task & Finish Groups

- Keep up to date with latest developments
- Contribute to workable National Standards

### SAB Implementation Working/Steering Groups

- Work towards Action Plan, produced following SuDS and SABs event

### Key issues

- Contingency planning
- Funding for highway SuDS
- Long term funding for SAB adopted SuDS
- SuDS in private property serving more than one property
- Affordability
- Enforcement
- Two tier difficulties



## Critical success factors for National Standards

- Exactly who is responsible for what (aim of FWMA)
- Need for attention to detail
- Method of adoption
- National Application Form
- What happens at outline- purpose of SAB being consultee?



## Preparation for SAB role

Always going to be challenges...



## Thank You

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