Delivering SuDS in Kent - design and delivery

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Dan Samaila – Associate Director, WSP
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- Development - Key Drivers (Developer / Designer Perspectives)
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Presenters

Glenn Holliday
○ Background
  • Engineering Manager, Redrow South East
  • Civils engineering background
  • Design Engineer
  • Highway Authority Adoptions Engineer

Dan Samaila
○ Background
  • Associate Director, WSP
  • Chartered Civil Engineer
  • APM – Project Management Qualification (PMQ)
  • Highway Design
  • Urban Realm Design
  • Sustainable Drainage
  • Project Steering Group Member – CIRIA C737
    (Structural and Geotechnical Design of Modular Geocellular Drainage Systems)
Development

What Developers Want

Key Drivers:
- Build high quality homes
- Create places where people really want to live
- Building sustainable, vibrant communities
- More recently Promote Biodiversity Net Gain

What Designers Want

Key Drivers:
- Functional
- Fit for purpose
- Compliant with design guides and standards

SuDS – Key to enhance development!
Development
How do we achieve this?

- Designed for Connection
- Community Spaces
- Promote Walking & Cycling
Development

How do we achieve this?

• Green Routes
• Natural ‘usable’ open spaces
• Help People Connect with Nature on their Doorstep
Keeping it local

Promote:
• Freedom to Roam
• Peace and Quiet
• Family Fun
Delivering SuDS in Kent

- Ebbsfleet Green
- Sutton Road, Maidstone
- Tilden Gill, Tenterden
- Woodlands, Staplehurst
- Woodlands, Staplehurst
- Hoplands, Hersden
- Conningbrook Park, Ashford
Development to Date

Phases:
- Phase 1a
- Phase 1b
- Phase 1c
- Phase 2a & b
- Phase 2c
- Phase 3a & b
- Phase 4

Areas:
- Sports Pitches and Pavilion
- Pub & Hotel
- Redrow Regional Offices
Relationships

Key Relationships

• Design Team – Planning Architects/Landscape Architects/Civil Engineers.
• Kent LLFA
• Ebbsfleet Development Corporation / Processes

Processes

• Pre-Apps
• Statutory Stakeholder Consultations
• Delivery Team
  - Landscapers
  - Contractors
  - Management Companies
• Verification/compliance inspections/reports
Key Requirements

Up Front
- Early engagement with LLFA and LPA
- Clear vision for the scheme
- Design Team buy in to the vision

Design
- Cross between functional and desirable
- Incorporate areas for nature/biodiversity

Delivery
- Competent contractors
- Comprehensive records of installation.
Where we are now
Where we are now
Where we are now
Where we are now
Challenges in Delivering SuDS

- Water Quantity
- Water Quality
- Amenity
- Biodiversity

**Control the quantity of runoff to**
- support the management of flood risk, and
- maintain and protect the natural water cycle

**Manage the quality of the runoff to prevent pollution**

**SuDS Design**

**Water Quantity**

**Water Quality**

**Amenity**

**Biodiversity**

**Create and sustain better places for people**

**Create and sustain better places for nature**

CIRIA C753 The SuDS Manual
Challenges in Delivering SuDS
Challenges in Delivering SuDS

- Public Perceptions / Acceptance
- Planning Policy

Kent County Council

Drainage and Planning Policy Statement

Local flood risk management strategy guidance

June 2017

Drainage Strategy Summary

1. Site details
   - Site/development name
   - Address including post code

2. Existing drainage
   - Total site area (ha)
   - Impervious area (ha)

   Final discharge location
   - Infiltration
   - Watercourse
   - Total

   Where applicable specify catchment rainfall rates
   - GI
   - QBAR (mm)
   - 1 in 5 year (mm)
   - 1 in 25 year (mm)
   - 1 in 100 year (mm)

3. Proposed drainage area
   - Impervious area (ha)
   - Day
   - Permeable area (ha)

   Final discharge location
   - Infiltration
   - Watercourse
   - Total

   Climate change distance included in design
   - 20%
Challenges in Delivering SuDS

Public Perceptions / Acceptance

Planning Conditions

- KCC – Verification Reports

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Lessons Learnt:

What went well
- Understanding of the SUDS approval process
- Early Engagement with the LLFA
- User friendly guidance from Kent LLFA

What could be improved
- SFA 8?
- Installation records - Staged Inspection (by who??)
- More inclusive designs/layouts
Next Steps:
- Continue to work with LLFA and LPAs to implement SuDS
- Application of lessons learnt on upcoming developments:
  - Conningbrook, Ashford
  - Tilden Gill, Tenterden
Thank you!