Integrated design...

….SuDS in new housing estates

CIRIA
September 2019
The problem is everywhere

WE ALL UNDERSTAND THE PROBLEMS

- Climate change - more extreme and prolonged rainfall events
- Towns and cities historically located on rivers
- Groundwater
- Coastal flooding
- Effect of land management and overland flows from agricultural land
- Urban creep and upstream development
- Combined sewers have limited capacity
- 1 in 5 homes and businesses at risk
- Huge financial and social cost of flood damage and reinstatement

The problem is increasing
Managing water in our cities, towns and villages

- Good planning policies to support local needs
- Flood alleviation
- Flood protection
- Realignment/routing through the urban environment
- Reconsidering land planning within urban space
- Managing surface water from all new development and redevelopment
- Comprehensive retrofitting of SuDS
- Property level resilience

Requires an integrated approach
So how do we deliver it?

- COLLABORATION

Where do we start?
So how do we deliver it?

- **COLLABORATION**
- **COMMUNICATION**
So how do we deliver it?

- COLLABORATION
- COMMUNICATION

- By selling the benefits!

Where do we start?
How to sell the (financial) benefits

What can it deliver?

- Houses easier to sell
- Sell for higher prices
- Satisfies multiple planning requirements
- Makes Biodiversity Net Gain easier to achieve
- Delivering multiple benefits is cost effective (and generally cheaper)
- Efficient use of land
- More attractive
- Modifies the environment: excess heat and rainfall

Cost and time benefits...
Delivering multi-functional SuDS through design

The benefits it can deliver

- Attractive healthy places
- Relevant to locality
- Inherent resilience
- Reuses rainwater effectively
- Enhances water quality
- Supports the aquatic environment
- Creates new habitats and networks
- Healthier environments

...places for people and wildlife to flourish

Maximising the benefits...
Revision the land – urban retrofitting
The bad
and the ugly
But still not there...
Better integrated
The need for detail
Delivering Blue and Green (and places for people)

Through integrated design
What do we need to consider?

THE BASELINE ISSUES
• Does it flood and where does the water flow?
• How does water discharge?
• Topography
• Local landscape character
• Historic context
• Visual issues arising from development
• Tree resource
• Ecological resource

WHAT MAKES IT LIVEABLE
• Placemaking
• An attractive environment
• Access and connections
• Play and public open space
Flood zones 2 and 3
Historic context
Planning designations
Consideration of key views into the site

... and local landscape character
How these factors influence the spatial design

KEY:
- SITE LOCATION
- NOTABLE BUILDINGS
  - To be retained
- EXISTING FOOTPATHS
  - To be retained
- EXISTING PUBLIC OPEN SPACE
  - Not affected by development
- AREA OF MATURE TREES AND REMNENT HEDGEROW TREES
  - Creates visual divide between the NW and SE portions of the site and definition between field boundaries
- EXISTING AGRICULTURAL BUILDINGS
  - Potential for redevelopment
- VEGETATED BOUNDARIES
  - Screens views into site from surrounding areas
- EXISTING VIEWS INTO SITE RETAIN CHARACTER
- POTENTIAL ACCESS POINTS
  - Promote pedestrian links into and across site
- AREA SUITABLE FOR DEVELOPMENT
- EXISTING OPEN FIELDS
  - Retain ‘Green Entrance’ into Holyport
- FLOOD ZONE
  - No built form within this area

Dense tree and shrub planting within
screens views into the rest of the
site from the south and south west

Housing screens
views of the site from
the north and east

Housing screens
views of the site from
the south and east
Defining the developable area
Access and movement
Development concept
Concept of street typologies
Making space for water
1. CENTRAL BOULEVARD

1. Proposed central boulevard, wide planting beds with avenue tree planting create attractive streets as part of SuDs system dealing with run-off from road
2. Wide green verges to road side incorporating existing trees and 3m footpath / cycleway
3. Dwellings max 2 storey – mix of sizes / tenures incorporating household level SuDS features
4. Permeable paved private drives and access to properties
5. Planting to housing frontages to provide privacy buffer to dwellings
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2. PARK EDGE

1. Existing road with existing hedgerow to footpath retained
2. Proposed native tree and shrub planting provides screening to development, and improved habitat creation
3. Proposed footpath networks, with connections into existing Public Rights of Way
4. Open grass areas for informal recreation
5. Proposed street network
6. Proposed swale – shallow grassed depression to deal with storm water run-off from road
7. Proposed Dwellings - max 2 Storey incorporating household level SuDS features (permeable paving to drives, rain gardens / soak away)
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3. CENTRAL ZONE

1. Green Streets - bioretention planters as part of SuDS with tree planting.
2. Homezones - planting and materials indicate pedestrian priority.
3. Permeable paving to parking area.
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Any questions?