



HILLINGDON
LONDON

PROJECT
CENTRE

Eastcote Town Centre Rain Gardens

Modelling SuDS using Flow Through Structures

Samer Muhandes



Eastcote Historical Flooding – June 2016



Photo taken by LB Hillingdon Flood Investigation team



Photo taken by LB Hillingdon Flood Investigation team

Existing Hedge Rows (Before)



Photo taken by PCL

Rain Gardens (After)



Photo taken by PCL

London Borough of Hillingdon – Commissioner of the project
Project Centre Limited – Detailed Design of rain gardens and planting
Steer Davis – Concept Design
O’Hara Bros Limited - Highways Contractor
Links Signs Limited - Eastcote Bridge fencing, lighting and graphic works
Designed by Good People - Shop Front design and town centre branding



Photo taken by PCL

Considerations

Public sewer capacity

Traditional modelling methods underestimated the role of SuDS

Planting design should consider drought periods

Stakeholder engagement/public consultation

Verifications of levels

Inlet design

Flow Control Chambers

Flow Through Structures (FTS)

Module Selector

Edit Options

N **Network** (recommended)
Increase productivity by running the network build modules together

SYS1 **System1**
Design & schedule optimised Storm and Foul networks

SIM **Simulation**
Model and analyse fully integrated drainage systems

DN **DrawNet**
Enables for a live, fully interactive graphical interface

QuOST **QuOST**
Tools to complete taking-off, billing and pricing the job

MDS **MDSuDS**
SuDS design with hydraulic and water quality analysis

C **Channel**
Determine water levels in Open Channels using a Backwater Step Method

APT **APT**
Enables Existing Networks and advanced modelling options inc. Terrain Models.

CASDeF **CASDeF**
Allows for Pipe Sizing, Control Sizing and Storage Design.

FloodFlow **FloodFlow**
Full 2D overland flow analysis.

MDS **MDSuDS (Plugin)**
Allows MDSuDS data to be combined within the network design.

SC **Source Control**
Design SuDS systems, Ponds and calculate Rural Runoff

P **Pluvius**
A rainfall management and analysis tool built around Met Office rainfall gauges

Bio-Retention Area Details

Flow through structure

Manning's N

Invert Level (m)

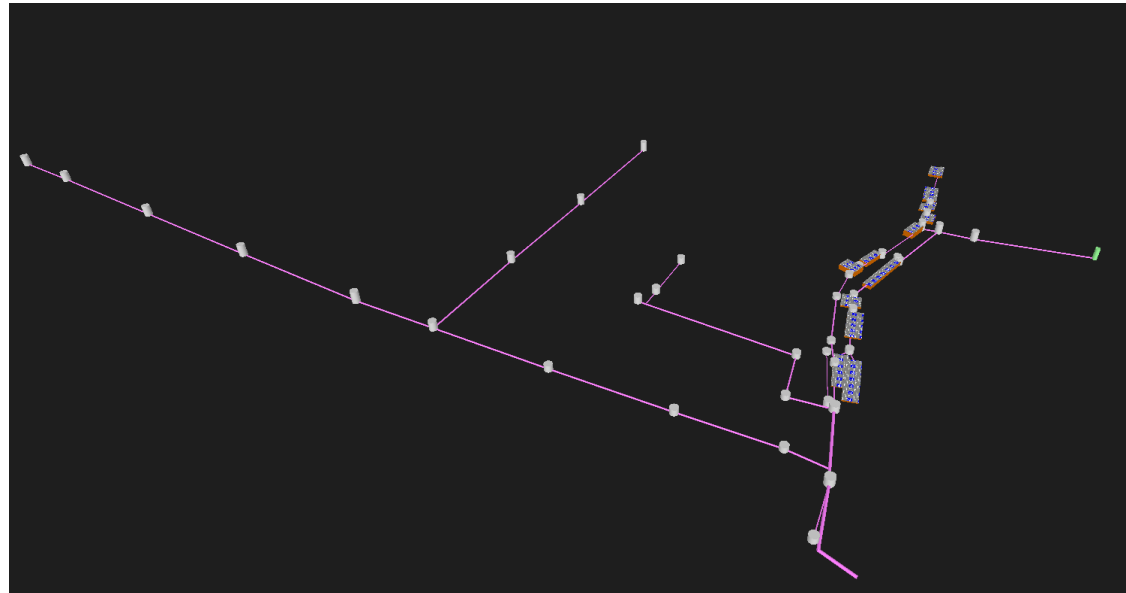
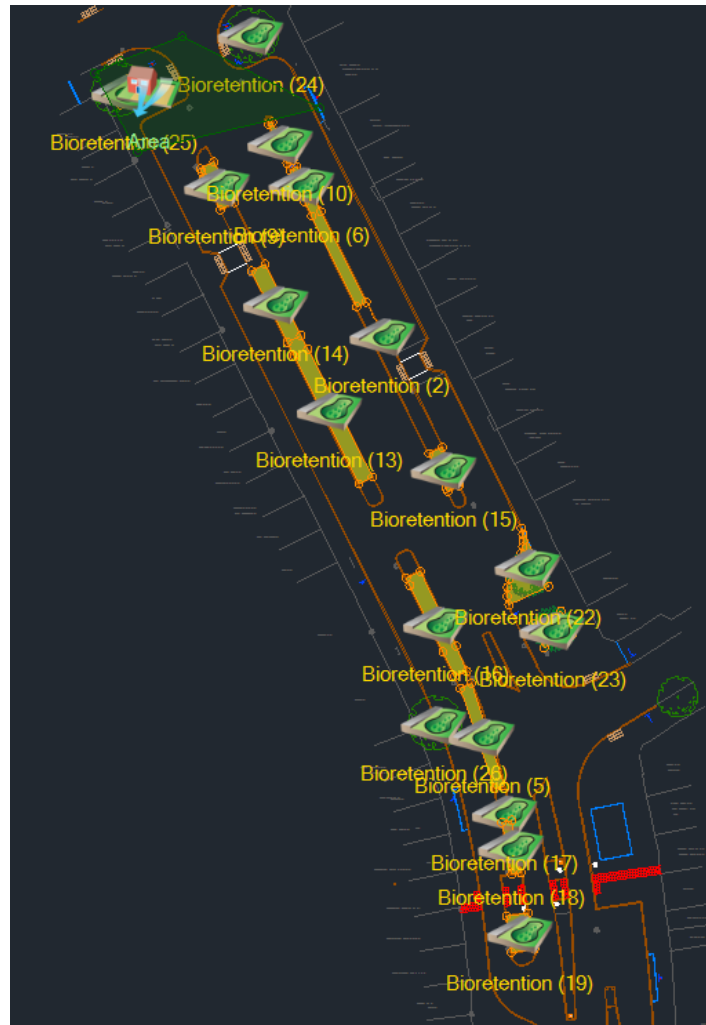
Infiltration Coefficient Base (m/hr)

Infiltration Coefficient Side (m/hr)

Safety Factor

Porosity

Eastcote Rain Gardens using FTS and MDSuDS



Eastcote Rain Gardens in Action!



Eastcote Town Centre Rain Gardens

https://www.dropbox.com/home/Videos?preview=20191001_144353.mp4

Feedback from residents

Date: Mon, 29 Jul 2019 at 12:10
Subject: The new planting in Eastcote
To: <contact@hillingdon.gov.uk>

Please pass this message on to whoever was responsible for planning the transformation and the new planting scheme in the shops area of Field End Road, Eastcote. I just wanted to say how absolutely fabulous it looks and what a great job you've made of it. I particularly like the planting as it is natural and beautiful (and nothing like the 'corporation' planting we often see in parks). The benches with their grasses are also lovely. It all looks GREAT!

So again many thanks to everyone responsible - and I'm sure I speak for many Eastcote residents.

With best wishes

Form Submission

Compliments and suggestions

**My
compliments/suggestions**

Huge thank you for the wonderful work just finished in Eastcote high street. It looks splendid and look forward very much to the plants maturing and the new trees. Thank you also for the extra zebra crossing. I do hope we have the beautiful hanging baskets as a finishing touch.

THANK YOU
Q&A