INFRASTRUCTURE DESIGN **FLOW**

A fresh approach to drainage design.

Drainage design is complex. Drainage design software is expensive. It doesn't have to be.

What is Flow?

Flow is a hydraulic modelling package for the **design and analysis of storm water drainage networks** and the **design of foul water networks**. This solution is ideal for engineers and architects who are looking for an affordable and compelling drainage design package.

Key Benefits

COST SAVINGS

Delivered as a subscription model, therefore offering **savings of 90% of upfront software investment**

PRODUCTIVITY

Intuitive, friendly interface that typically **increases productivity by 25%**

EASY TO LEARN

Engineers can **start instantly** with no need for expensive training courses

PROFITABILITY

Increase your **billable hours** and consequently your revenue and profit

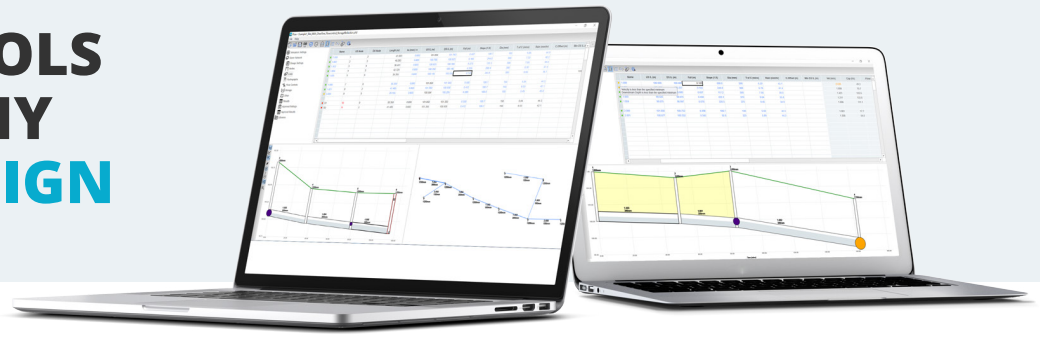
COMPLIANCE

Latest UK specific key legislations, regulations, standards, and guidance are **embedded within Flow**, streamlining the design approval process.

I really appreciated the quick turnaround on the additional elements and tools that you have introduced to Flow, particularly the half drain down times function, as they have enabled our Section 104 Agreement submissions to have been accepted with no queries or concerns with the approving authority.

JOHN CURTIS
DIRECTOR – JRC CONSULTING ENGINEERS LTD

POWERFUL TOOLS TO HANDLE ANY DRAINAGE DESIGN

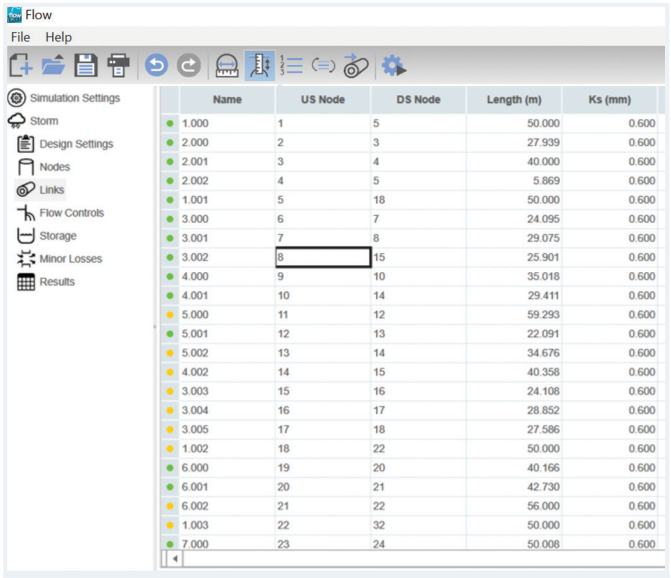


Why Flow?

FLOW is a complete drainage design and modelling software **built on the Modified Rational Method** for sizing any conveyance system and the **state-of-the-art 1D SWMM engine** for hydraulically analysing storm drainage systems. Flow empowers engineers, consultants, developers, and approving authorities to deliver an optimal and compliant design.

DESIGN storm water networks with the Modified Rational Method, and design foul networks in accordance with the **requirements of BS EN 752:2008**. Flow enables designers to combine new design with existing networks seamlessly to conduct integrated hydraulic analysis, including negative falls or backdrops, throttle pipes and bifurcations.

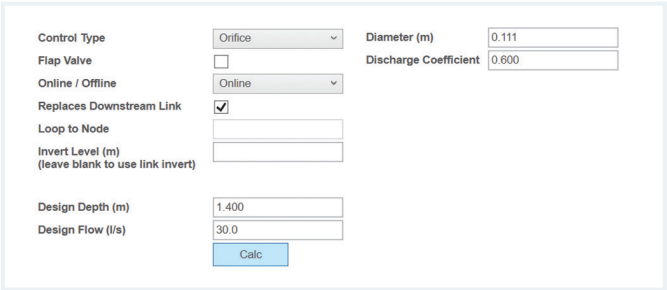
DEFINE network as a set of **nodes and links** making designing multiple links possible. There is no need for a dendritic numbering system, allowing for greater flexibility.



Name	US Node	DS Node	Length (m)	Ks (mm)
1.000	1	5	50.000	0.600
2.000	2	3	27.939	0.600
2.001	3	4	40.000	0.600
2.002	4	5	5.869	0.600
1.001	5	18	50.000	0.600
3.000	6	7	24.095	0.600
3.001	7	8	29.075	0.600
3.002	8	15	25.901	0.600
4.000	9	10	35.018	0.600
4.001	10	14	29.411	0.600
5.000	11	12	59.293	0.600
5.001	12	13	22.091	0.600
5.002	13	14	34.676	0.600
4.002	14	15	40.358	0.600
3.003	15	16	24.108	0.600
3.004	16	17	28.852	0.600
3.005	17	18	27.586	0.600
1.002	18	22	50.000	0.600
6.000	19	20	40.166	0.600
6.001	20	21	42.730	0.600
6.002	21	22	56.000	0.600
1.003	22	32	50.000	0.600
7.000	23	24	50.008	0.600

NODES AND LINKS

AUTOMATED calculation of falls to give minimum velocity. Pipe diameters are selected from a **pre-defined set of pipe sizes**. Manholes sizes are calculated in accordance with sewers for adoption or user definable conduits. Automated backdrop removal and design for capacity gives optimum cover depth or meet known outfall level.



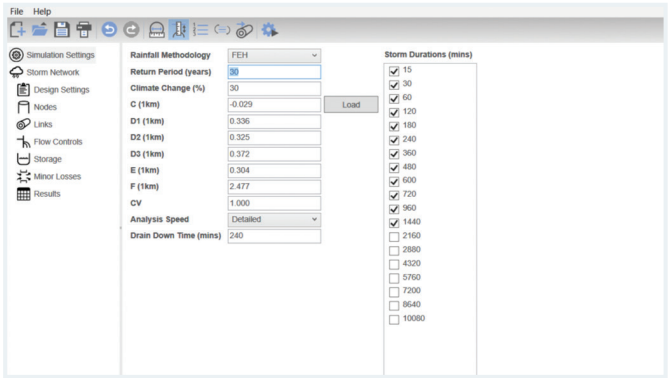
AUTOMATED CALCULATION

SUDS can be modelled to satisfy the **latest guidance (SuDS Manual C753) via templates**, then cascaded with flow-back to upstream structures in the event that downstream structures fail. SuDS can also be designed at the detailed design stage independently or combined with the traditional storm water drainage network.

CALCULATE PRE-DEVELOPMENT RUNOFF RATES AND VOLUMES to show equity or betterment to post-development runoff rates and volume. For SuDS feasibility analysis, **quickly estimate storage sizes** to begin designing infiltrating structures in detail.

DEFINE OR IMPORT RAINFALL data by specifying FSR or FEH rainfall data or directly specify rainfall profiles and add a climate change factor. **Automatically generate time varying rainfall** using UK 50 percent summer profile from a 15-minute to 7-day duration. Analyse one or multiple storm durations in sine run with results collated and critical durations automatically identified at every node.

SIMULATE the design using **cutting-edge 1d dynamic wave routing** over multiple storm durations for a range of return periods and profiles. Hydraulically analyse drainage systems to identify and solve issues with any design swiftly and effortlessly. Dynamic wave routing takes account of node and link storage, backwater effects, entrance and exit losses, flow reversal, and pressurised flow.



SIMULATION SETTINGS

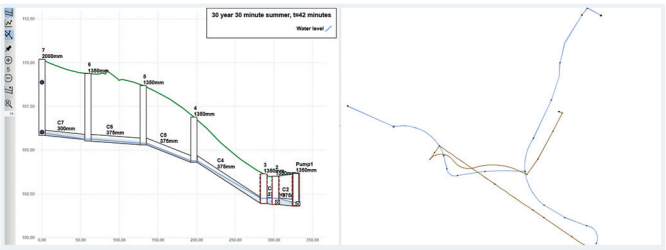
MODEL open manhole, sealed manhole and junctions.

MODEL FLOW CONTROLS composite inline controls, overflow and multiple controls to set a range of discharge rates.

MODEL STORAGE AND INFILTRATION STRUCTURES as online or offline arrangements, loops, and additional losses to **control flooding**. Drain down time can be adjusted to check the feasibility of each SuDS option.

EASY IMPORT/EXPORT functionality supports several formats including the capability to copy and paste from any Excel spreadsheet. Supports **industry file formats**: .SWS .EWS and .MDX.

GRAPHICALLY VISUALISE any drainage network in long section and plan forms, and detect crossings and clashes.



LONG SECTION

CONDUCT AUTOMATIC COMPLIANCE AUDITS to check against **approval authorities' requirements** before submission for consent.

INTEGRATE with **PDS and / or Smart Drainage** (direct AutoCAD integration) for graphical setting out, scheduling, and the production of sections.

REPORT design output data to formats such as **Excel and PDF**.

A FRESH APPROACH TO **DRAINAGE DESIGN**