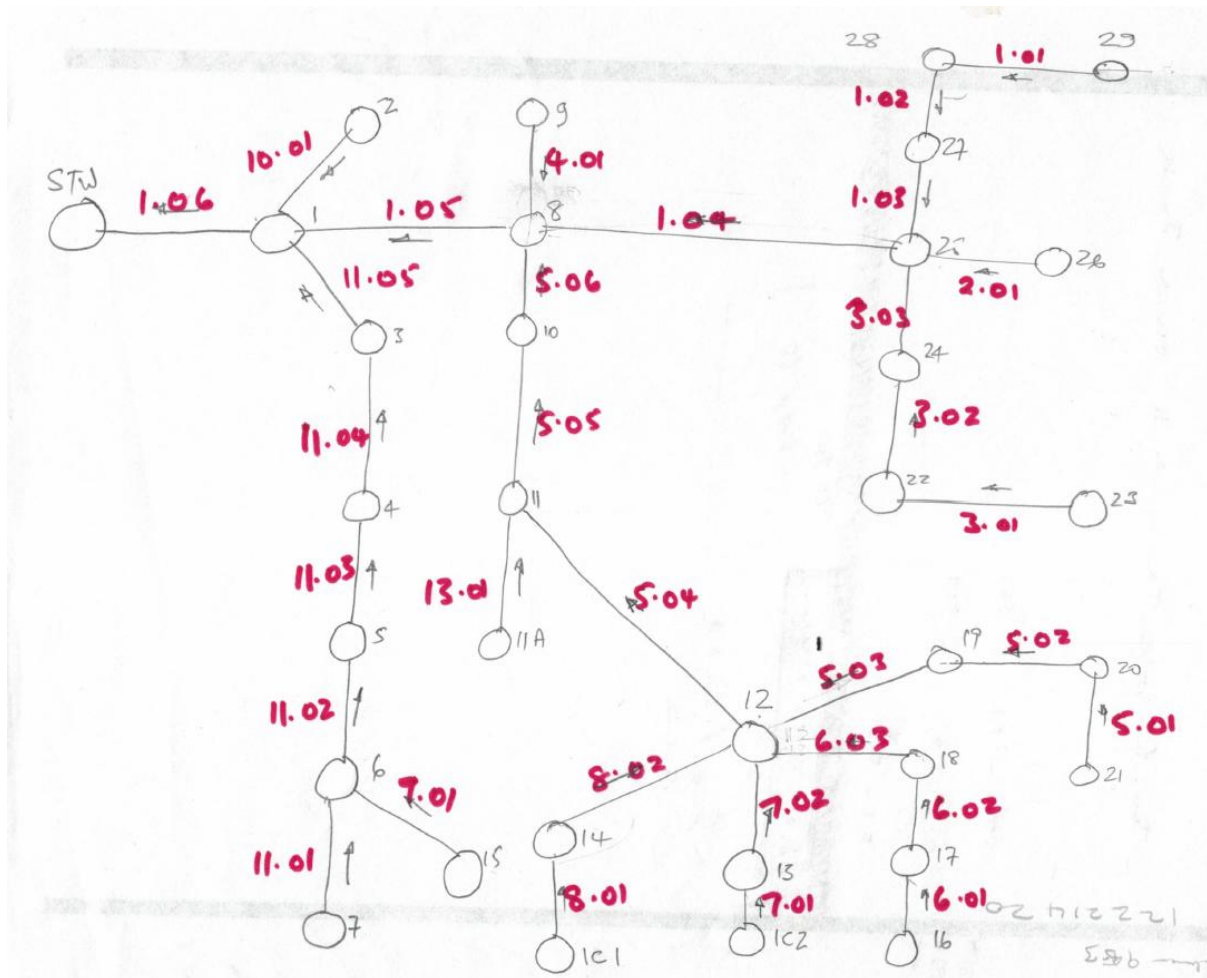


Basic design instructions for the SW program

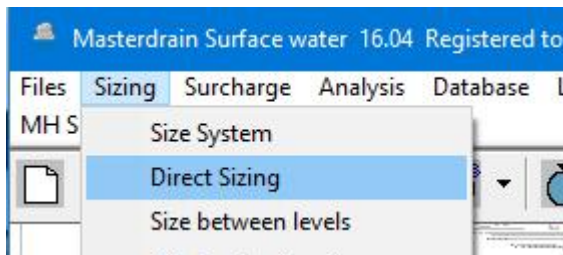
- 1) Assume the drawing has the manhole positions and pipe runs
- 2) Decide on the Index run – this is usually the longest run from the head to the outfall – if you get it wrong, the program will sort it out.
- 3) Start at the head of the index run and number the pipe sections (in this run only) as 1.01, 1.02 *et seq.*
- 4) Again, starting at the head of the index run, move down this run until you see a branch coming in. Go to the head of this branch and number the sections starting at 2.01, 2.02 *et seq.* Only label the pipes that are directly in this run. If you meet a branch coming into this run, go to the head and number this 3.01, continuing as above.
- 5) Move down the index run numbering the branches, sub-branches, sub-sub-branches and sub-sub-subbranches as above.

Example layout for a job

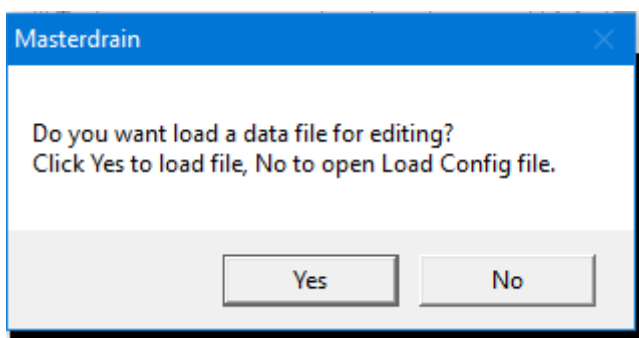


- 6) List the pipe runs in the order that you labelled them
- 7) Calculate the areas drained by each pipe – do not summate these areas to get a cumulative area – the program does this. Add these measurements to the list.
- 8) Take off the lengths of each pipe section and add these to the list

- 9) Number the manholes e.g. SW1, SW2 etc.
- 10) If you have cover levels and invert levels, add these also.
- 11) Now enter this data into the program, using (in this case) Direct Sizing.



- 12) The following screen is displayed



- 13) Click on No to load the configuration file for the location of the job. (You may have to make this if it is not already present - see notes at the end of this document)

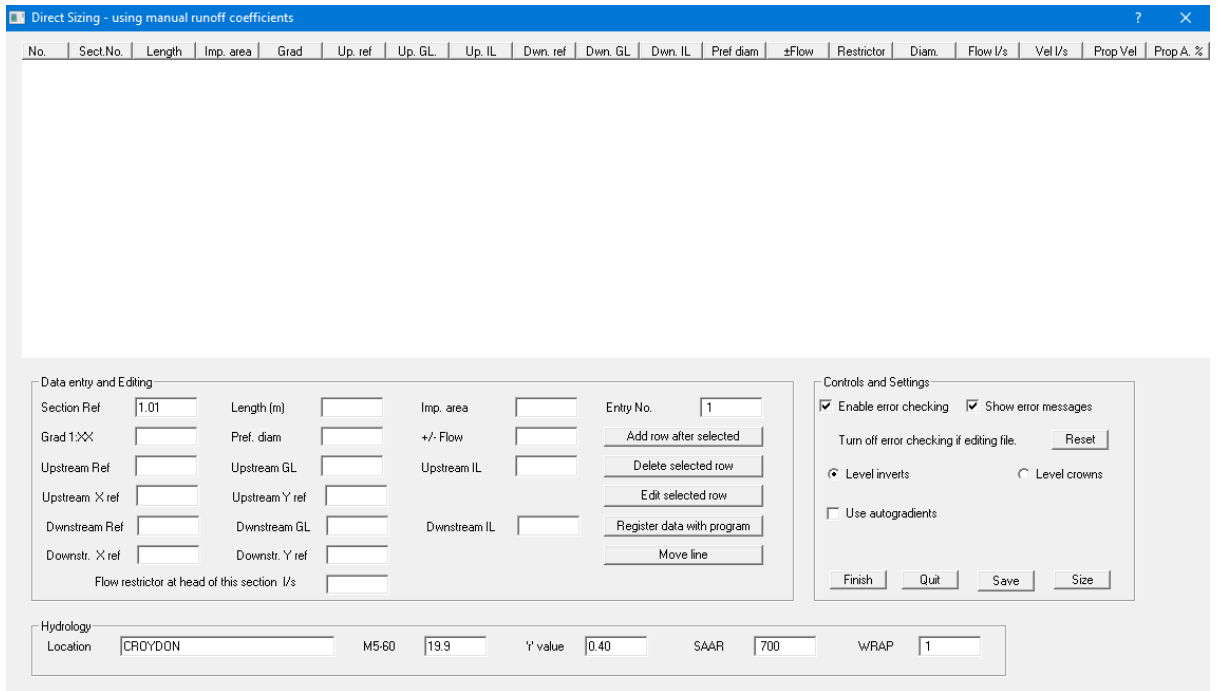
- 14) The Sizing constants screen is displayed

- a. This shows the hydrology for the chosen location
- b. Urban creep can be left at zero
- c. Runoff defaults to Manual. The Wallingford method calculates this using both the impervious and pervious areas – since runoff from pervious areas such as gardens cannot be put into a surface water sewer, it is better to use a manual figure of 95% for impervious areas.
- d. Set the return period as required. A design is now expected to take a 30yr storm with surcharging, so use 30 year return period to make sure that this condition is accommodated. A climate change factor of 30% is also used (40% in Scotland).
- e. Select the pipe material and the slope of the site.
- f. If there are no invert levels available, select Recalculate
- g. The Aerial Reduction Factor only applies to the bigger sites – exceeding 1ha in area.
- h. The question mark in the caption bar will provide context sensitive help – click on the question mark and then on a box in this screen for further information.
- i. Click on OK when you have finished with this screen and it is all set up for the next section.

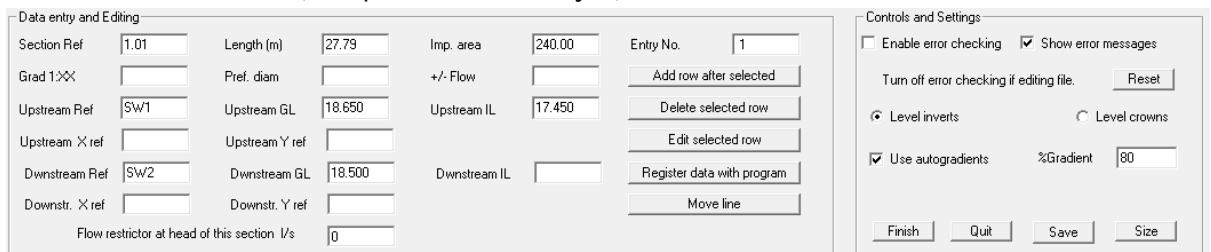
15) You are now asked for a file name for saving the data. This will default to the location name and the .SW extension.

16) The data input screen is displayed and we can input data.

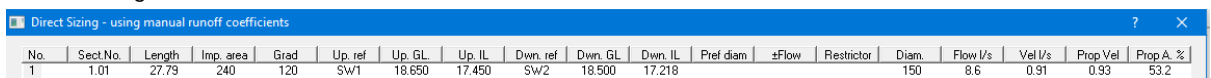
- a. Turn on Autogradients by clicking in the Use autogradients box
- b. Enter the section number – for the first section this is already in place at 1.01.
- c. Enter the length in metres
- d. Enter the impervious area
- e. Enter the upstream manhole reference e.g. SW1 – tip – use Caps Lock for this
- f. Enter the ground level if known (metres)
- g. There are no invert levels, but if there were, they would be entered here.
- h. Enter the downstream manhole reference e.g. SW2
- i. Enter the ground level if known (metres)
- j. There are no invert levels, but if there were, they would be entered here.
- k. Click on Register data with program – this puts the data in the main screen and sizes it.



17) First set of data entered (Liverpool used for this job)



18) Click on Register data button



19) Calculated data is displayed

20) Data entry errors can be corrected by highlighting the entry number (first column) and then clicking on Edit selected row. Make the correction and then click on the register button again – check that the data is in the correct position.

21) Continue entering the data as above. Finally, make sure that the system ends on the index run.

22) If you have already entered a manhole and its data, the program will fill in the missing bits if you subsequently just put in the manhole reference (case sensitive – see note about Caps Lock).

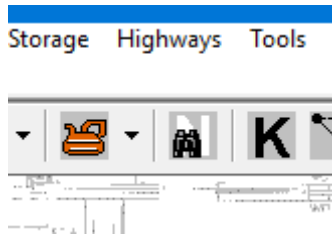
23) The Save button will save the data to the file and can be used throughout the data entry process (just in case!).

The final file will contain all the data entered plus the calculated data. Use the Edit file function for adding data that is not catered for in the Direct sizing function. Use the main Sizing/Size system function for final sizing and obtaining the printout.

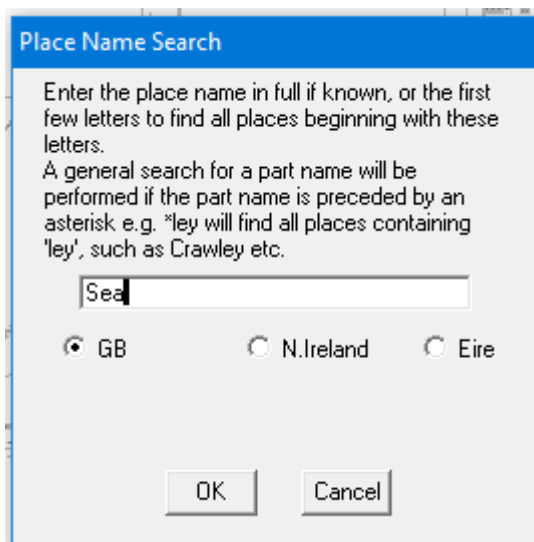
Notes

Config files

The program database contains over 6000 UK/Eire locations. To search for a location click on the Search icon (the N with the binoculars)



The following screen is displayed – enter the place name or the first few letters, then click on OK



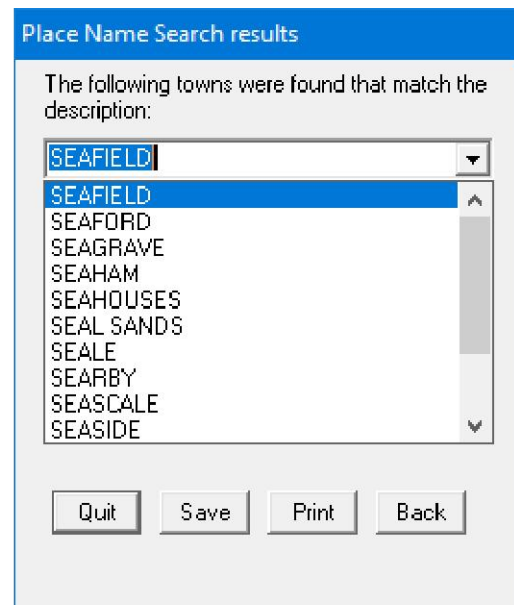
Place Name Search

Enter the place name in full if known, or the first few letters to find all places beginning with these letters.
A general search for a part name will be performed if the part name is preceded by an asterisk e.g. *ley will find all places containing 'ley', such as Crawley etc.

Sea

GB N.Ireland Eire

OK Cancel



Place Name Search results

The following towns were found that match the description:

SEAFIELD

SEAFIELD
SEAFORD
SEAGRAVE
SEAHAM
SEAHOUSES
SEAL SANDS
SEALE
SEARBY
SEASCALE
SEASIDE

Quit Save Print Back



Place Name Search results

The following towns were found that match the description:

SEAFIELD

SAAR	845	WRAP	2
M5-60	15.1	r	0.23

NJ9104

Location: Scotland and N Ireland

Quit Save Print Back

Select the required location by clicking on it and the data is displayed. Check the National Grid reference (NJ9104 in this case) to make sure it is the correct location.

Click on Save to write the config file for that location.

Problems with data entry etc can be resolved by emailing the .SW file to support@mstdrain.co.uk. This allows us to run it and reproduce the error. Corrected files will be sent back with a change to the file name to prevent the modified one over-writing the original. This is the full data file printout for the previous drawn schematic.

Company		Project																
Demonstration Version		Job Ref																
Item		Sheet no.																
Data file printout of NBV-AB3.SW		1																
Date		Date																
16/11/17		Approved by																
Entry No.	Section No.	Length m	Fall mm	Gradient 1 in	Imp. m ²	Per. m ²	Up GL m	Up Inv m	Up Ref. m	X ref	Y ref	Dem GL m	Dem Inv m	Dem Ref.	Stump mm	Pref diam	+/- 1/s	Restrict 1/s
1	I	1.01	496	56	240	0	18.65	17.45	RHICB1	335213.242	387932.859	18.50	16.95	MHAL	0	225	0.0	0.0
2	B	2.01	352	29	700	0	18.50	17.30	ACC	335196.105	387911.000	18.50	16.95	MHAL	0	300	0.0	0.0
3	B	3.01	507	27	125	0	18.65	17.45	RHICAL	335183.788	387906.140	18.50	16.95	MHAL	0	150	0.0	0.0
4	B	4.01	501	24	125	0	18.65	17.45	RHICM2	335181.807	387909.284	18.50	16.95	MHAL	0	150	0.0	0.0
5	I	1.02	78	116	150	0	18.50	16.95	MHAL	335189.344	387918.666	18.50	16.87	MHA2	0	300	0.0	0.0
6	B	5.01	580	19	240	0	18.65	17.45	RHICM3	335175.180	387920.751	18.50	16.87	MHA2	0	150	0.0	0.0
7	I	1.03	211	23	150	0	18.50	16.87	MHA2	335184.603	387926.465	18.50	16.66	MHA3	0	300	0.0	0.0
8	B	6.01	812	15	125	0	18.65	17.45	RHICM5	335170.154	387927.576	18.50	16.66	MHA3	0	150	0.0	0.0
9	B	7.01	791	18	125	0	18.65	17.45	RHICM6	335167.763	387932.994	18.50	16.66	MHA3	0	150	0.0	0.0
10	I	1.04	349	179	194	0	18.50	16.66	MHA3	335181.861	387930.995	18.50	16.48	TANK	0	300	0.0	0.0
11	B	8.01	989	26	125	0	18.65	17.45	RHP1	335189.825	387935.683	18.50	16.48	TANK	0	150	0.0	0.0
12	B	9.01	989	8	125	0	18.65	17.45	RHP2	335206.154	387945.382	18.50	16.48	TANK	0	150	0.0	0.0
13	B	10.01	1902	10	0	0	19.50	18.30	AC05	335228.125	387952.182	18.50	16.48	TANK	0	150	5.8	0.0
14	B	11.99	1681	4	200	0	19.50	18.30	AC06	335184.513	387946.124	18.50	16.48	TANK	0	150	0.0	0.0
15	I	1.05	79	436	0	0	16.50	15.70	TANK	335209.111	387952.784	16.50	15.62	OUTFALL	0	150	0.0	0.0
16	I	1.06	167	113	0	0	18.50	15.62	OUTFALL	335177.180	387938.705	18.50	15.45	SD1	0	150	0.0	16.0
17	I	1.07	124	118	0	0	18.50	15.45	SW1	335159.970	387946.123	18.50	15.32	SD2	0	150	0.0	0.0
18	B	12.99	2575	21	0	0	20.00	17.85	MEVE	335147.278	387992.797	18.50	15.32	SD2	0	150	2.0	0.0
19	I	1.08	523	97	0	0	18.50	15.32	SW2	335147.239	387938.714	18.50	14.80	COM1	0	150	0.0	0.0



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SW 16.04