



Project No.	FEDS-223105	By:	DKP	Chkd:	SLD
Title	4 Dwellings, 112 Brize Norton road, Minster Lovell OX29 0SQ				
Sheet No.	1	Date:	November 2023		

1. Foul Water Peak Flow Design:

Daily Peak Foul Water Flow:

Development consists of a total of 4 dwellings

Discharge Unit Appliance	Flow l/s	No. of DU	Tot. Flow l/s
Washbasin	0.30	12	3.6
Shower without plug	0.40	8	3.2
Shower with plug	1.30	0	0.0
Urinal with cistern	0.40	0	0.0
Bath	1.30	4	5.2
Kitchen sink	1.30	4	5.2
Dishwasher	0.20	4	0.8
Washing Machine 6kg Household	0.60	4	2.4
Washing Machine 12kg Commercial	1.20	0	0.0
WC with 6.0ltr cistern (new)	1.45	12	17.4
WC with 9.0ltr cistern (Old)	2.50	0	0.0
Floor Gully DN 50	0.80	0	0.0
Floor Gully DN 75	1.50	0	0.0
Floor Gully DN 100	2.00	0	0.0
		ΣDU	37.8

Frequency Factors kDU

Type of Building	kDU		
Dwelling, guest house, office (intermittent use)	0.5		
Hospital, school, restaurant, hotel (frequent use)	0.7		
Toilets and/or showers open to the public (congested use)	1.0		
Laboratory buildings (special use)	1.2		
		kDU	0.5

Peak Flow, $Q = kDU \sqrt{\Sigma DU}$ **Q = 3.1**

Therefore, all drainage pipes to be 100mm diameter and laid at minimum gradients of 1:40 and 1:80 as appropriate



Project No.	FEDS-223105	By:	DKP	Chkd:	SLD
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Sheet No.	2	Date:	November 2023		

1. Foul Water Daily Flow Design Continued:

Domestic Housing Water usage = 150 litres/person/day - British Water Flows and Loads 4

No. of Bedrooms	No. of Dwellings	No. of People Per Dwelling	Total Water Usage
1	0	3	0
2	0	4	0
3	1	5	750
4	3	6	2700
5	0	7	0
6	0	8	0
	Σ Total	23	3450

24hr Foul Water Flow 3450 litres/day

24hr Foul Water Flow 3.45 m³/day

Connect to public foul water sewer manhole 2102 via existing on site manhole FWMH04.



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4 Dwellings, 112 Brize Norton road, Minster Lovell OX29 0SQ					
Sheet No.	3	Date:	November 2023		

2. Foul Water Pre Development Peak Flows:

PRE Development Peak Foul Water Flow:

Pre-development number of Dwellings discharging to the existing foul sewer = 10

Discharge Unit Appliance	Flow l/s	No. of DU	Tot. Flow l/s
Washbasin	0.30	30	9.0
Shower without plug	0.40	20	8.0
Shower with plug	1.30	0	0.0
Urinal with cistern	0.40	0	0.0
Bath	1.30	10	13.0
Kitchen sink	1.30	10	13.0
Dishwasher	0.20	10	2.0
Washing Machine 6kg Household	0.60	10	6.0
Washing Machine 12kg Commercial	1.20	0	0.0
WC with 6.0ltr cistern (new)	1.45	0	0.0
WC with 9.0ltr cistern (Old)	2.50	30	75.0
Floor Gully DN 50	0.80	0	0.0
Floor Gully DN 75	1.50	0	0.0
Floor Gully DN 100	2.00	0	0.0
		ΣDU	126.0

Frequency Factors kDU

Type of Building	kDU
Dwelling, guest house, office (intermittent use)	0.5
Hospital, school, restaurant, hotel (frequent use)	0.7
Toilets and/or showers open to the public (congested use)	1.0
Laboratory buildings (special use)	1.2
	kDU
	0.5

Peak Flow, $Q = kDU \sqrt{\Sigma DU}$

Q = 5.6



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4 Dwellings, 112 Brize Norton road, Minster Lovell OX29 0SQ					
Sheet No.	4	Date:	November 2023		

2. Foul Water Post Development Peak Flows Continued:

POST Development Peak Foul Water Flow:

Post-development number of Dwellings discharging to the existing foul sewer = 14

Discharge Unit Appliance	Flow l/s	No. of DU	Tot. Flow l/s
Washbasin	0.30	42	12.6
Shower without plug	0.40	28	11.2
Shower with plug	1.30	0	0.0
Urinal with cistern	0.40	0	0.0
Bath	1.30	14	18.2
Kitchen sink	1.30	14	18.2
Dishwasher	0.20	14	2.8
Washing Machine 6kg Household	0.60	14	8.4
Washing Machine 12kg Commercial	1.20	0	0.0
WC with 6.0ltr cistern (new)	1.45	12	17.4
WC with 9.0ltr cistern (Old)	2.50	30	75.0
Floor Gully DN 50	0.80	0	0.0
Floor Gully DN 75	1.50	0	0.0
Floor Gully DN 100	2.00	0	0.0
		ΣDU	163.8

Frequency Factors kDU

Type of Building	kDU
Dwelling, guest house, office (intermittent use)	0.5
Hospital, school, restaurant, hotel (frequent use)	0.7
Toilets and/or showers open to the public (congested use)	1.0
Laboratory buildings (special use)	1.2
	kDU
	0.5

Peak Flow, Q = kDU $\sqrt{\Sigma DU}$

Q = 6.4

Therefore, all drainage pipes to be 100mm diameter and laid at minimum gradients of 1:40 and 1:80 as appropriate