

PROJECT - PROPOSED COMMERCIAL COMPLEX AT GHAZIABAD

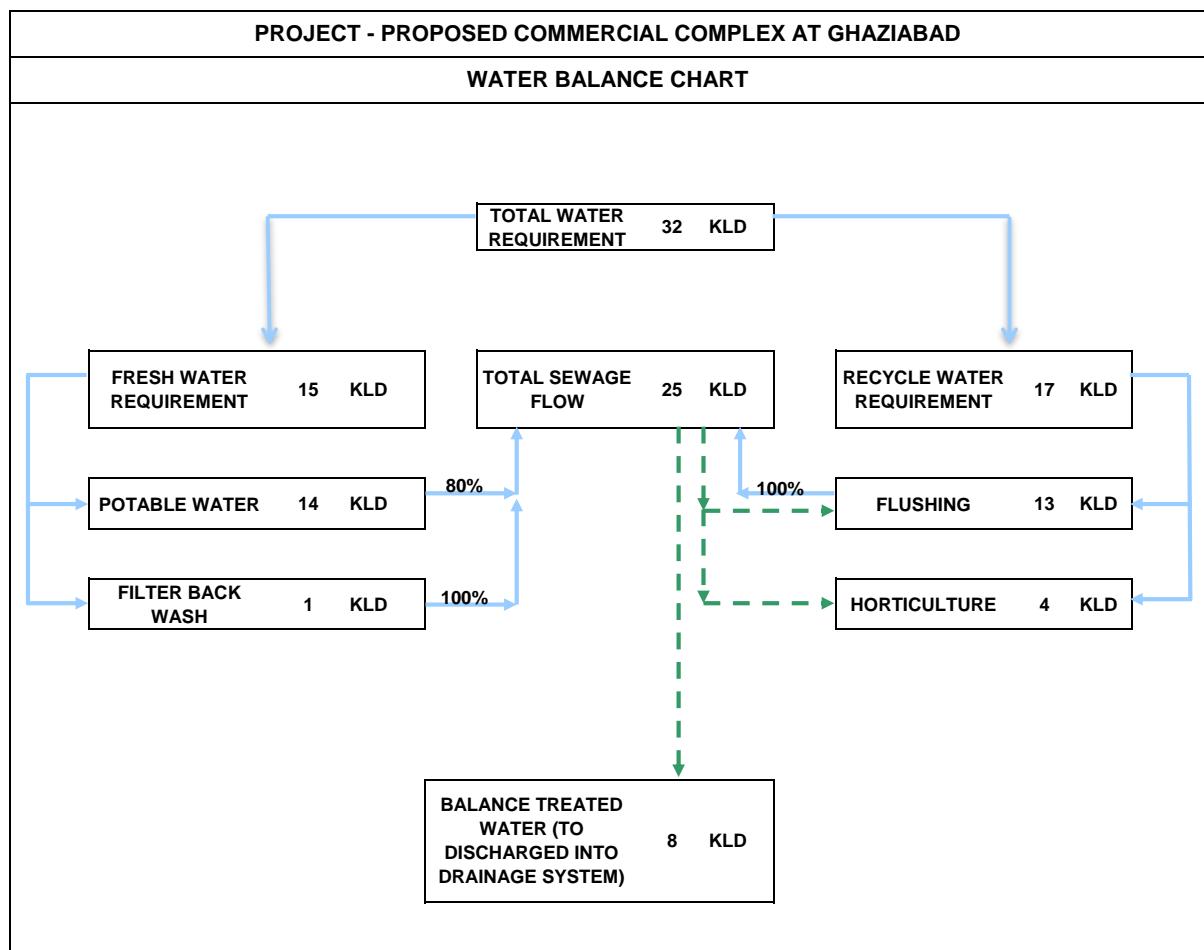
RAIN WATER HARVESTING CALCULATION

The capacity of tank and recharge pit is designed to retain runoff for at least 15 minutes of rain fall of the peak intensity.

Peak Rainfall in one hour	= about 40 mm / hr
Peak Rainfall in 15 minutes, R	= $40 / 4$ mm
	= 10 mm
	say = 10 mm
Peak Rainfall in 15 minutes, R	= 0.01 m.
Total Area, A	= 1895 sq.m.
Run off coefficient, C	= 0.58
Hence total combined capacity of desilting tank and recharge pit required,	= $A \times R \times C$
	= 11
Providing Desilting tank of size	= $2.5 \times 1.75 \times 2$ m. effective depth
Capacity of desilting tank of given size (Cu.m.), a	= 8.75
Providing Recharge pit of size	= $3.5 \times 1.75 \times 2$ m. effective depth
Capacity of recharge pit of given size (Cu.m.), b	= 12.25
Hence total combined capacity of one set of desilting tank and recharge pit, (Cu M)	= $a+b$
	= 21
Therefore no. of desilting tank and recharge pit required	= $(A \times R \times C) / (a+b)$
	= 0.53 nos.
	Say, = 1 no.

Hence, 1 no. set of recharge pit and desilting tank is required of following size :

Desilting tank	= $2.5 \times 1.75 \times 2$ m. effective depth
Recharge pit	= $3.5 \times 1.75 \times 2$ m. effective depth



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WATER REQUIREMENT CALCULATIONS														
S.No.	Description	Built up Area	Horticulture Water Requirement	No. of Units / Seats	Unit Population	Total Population	Domestic Fresh Water Requirement (A)	Recycle Water Requirement (B)	Total Water Requirement (A+B)	Flow to Sewer				
		(Sq.M)	per Sq.M Area				LPCD	LPD	LPCD	LPD	LPD	Domestic 80%	Flushing 100%	LPD
1	Population (Sales Basement & Street Floors) (Shopping)	1737			3 SqM/person	580								
2	Population (Upper Sales Floors) (Shopping)	832			6 SqM/person	140								
3	Permanent Population (Shopping)				@ 10% of total population of Shopping	70	25	1750	20	1400	3150	1400	1400	2800
4	Transient Population (Shopping)				@ 90% of total population of Shopping	650	5	3250	10	6500	9750	2600	6500	9100
5	Rooms			51	2	102	90	9180	45	4590	13770	7344	4590	11934
6	Floating Population					10	5	51	10	102	153	41	102	143
7	Maintenance Staff					10	25	250	20	200	450	200	200	400
8	Filter Backwash							1000			1000		1000	1000
9	Horticulture	600	7							4200	4200			
	Total							15,481		16,992	32,473	11,585	13,792	25,377

SUMMARY OF WATER REQUIREMENT / UGT & STP CAPACITY CALCULATION		
S.No.	Description	Water Requirement (KLD)
1	Domestic Fresh Water Requirement	15
2	Recycle Water Requirement	17
3	Flow to Sewer	25
	STP Capacity required	25
	STP Capacity provided (by adding 20% as per MOEF)	30
	STP Capacity rounded off	30
4	Net water balance (to discharge into drainage system)	8
	UGT Capacity	
	For Domestic Use (24 hrs storage)	20 KL
	Total UGT Capacity	20 KL