

GuruJal



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Water Management initiative by



DISTRICT ADMINISTRATION
GURUGRAM

Supported by



WATER CONSERVATION GUIDELINES

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RWA Guidelines

1. Source of Water Supply

- Source of water supply will be the surface water, ground water and recycled water.
- Fresh water supply will be distributed by the PHED/HUDA/MCG through the piped network with a metered system setup at each door step.

2. Total Consumption per head per day

- As per Bureau of Indian Standards, for residential buildings with a population of 20,000-1,00,000 the per capita consumption is 100-150 lpcd and for those with population above 1,00,000 the consumption is 150-200 lpcd.
- For RWAs water consumption per day is 135 lpcd as per National Building Code, 2016.
- As per Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Water Supply and Treatment, 1999.

S. No.	Classification	Recommended Maximum Water Supply Levels (lpcd)
1	Town provided with piped water supply but without sewerage system	70
2	Cities provided with Piped water supply where sewerage system is existing/ contemplated	135
3	Metropolitan cities and Mega Cities Piped water supply where sewerage system is existing/ contemplated	150

3. Rainwater Harvesting

As per Model Building Bye-Laws, 2016, Town and Country Planning Organisation and Haryana Building Code, 2017:

- All buildings having plot size of 100 sq.m. or more, while submitting the building plans for sanction, shall mandatorily include the complete proposal of rainwater harvesting. A rainwater system consists of:
 - a) Roof catchment
 - b) Gutters
 - c) Down pipes
 - d) Rainwater/Storm water drains
 - e) Filter chamber
 - f) Storage tanks/pits/sumps
 - g) Ground water structure like pit, trench, tubewells or combination of above structure
- In the areas specified by the competent Authority, through a notification arrangement of roof rainwater harvesting within the plot shall have to be made by the plot owner, constructing the building on the plot where the area of the rooftop is 100 sq.m.
- Groundwater Recharge:
 - a) Recharging of groundwater shall be mandatory not only for residential buildings but for all types of buildings, including Group Housing Societies having plot area of 500 sq.m. and above.
 - b) The groundwater recharge shall be mandatory for open spaces like parks, parking, plazas, playgrounds and other common areas. The harvesting and recharge structures could be constructed by the Authority with the involvement of community-based organizations like Resident Welfare Associations (RWAs).

Note: As per EIA Notification, 2006 it is essential to provide rainwater harvesting or storage systems to capture at least 50% of the runoff volume from the roof surfaces.

Rainwater can be harvested to the extent of 55,000 litres per 100 sq.m. area per year from rooftops.

4. Plumbing and Sanitary Fixtures

As per EIA Guidance Manual, 2010 (MoEF&CC), RWAs should have water saving devices/fixtures, about 40% of all water used indoors is in the bathroom and toilets and more than 10% of that used is in the kitchen. The conventional fixtures used in toilets use water at the rate 12-15 liters per flush.

- RWAs should have dual plumbing system;
- Aerators should be installed at each water tap to reduce the water usage;
- RWAs have dual pipe plumbing for using recycled water/ rainwater. One supplies fresh water for drinking, cooking, bathing etc. and the other supplies recycled water/ rainwater for flushing, irrigation, car washing, thermal conditioning etc.

5. Recycled Water

- As per the Haryana Building Code, all buildings having a minimum discharge of 50,000 litres and above per day shall incorporate wastewater recycling system. The recycled water shall be used for horticulture, flushing and cooling tower purposes.
- RWAs should have decentralized wastewater treatment systems to treat their wastewater within their premise and use the treated water within the premise for flushing, irrigation, car washing, thermal conditioning etc.
- As per EIA Notification, 2006, all construction projects should have decentralised wastewater treatment facilities if the area is equal to and more than 20,000 sq.m.
- As per BIS 150-200 litres per head per day, 45 litres per head per day for flushing requirements and the remaining quantity for other domestic purposes. The water requirement to flush should be met by treated water.

6. Water Pricing

As per National Water Policy, 2012

- Pricing of water should ensure its efficient use and reward conservation. Equitable access to water for all and its fair pricing, for drinking and other uses such as sanitation, agricultural, and industrial purposes.
- Recycle and reuse of water, after treatment to specified standards, should also be incentivized through a properly planned tariff system.

Schools Guidelines

1. Source of Water Supply

- Source of water supply will be the surface water, ground water and recycled water.
- Fresh water supply will be distributed by the PHED/HUDA/MCG through the piped network with a metered system setup at each door step.
- School/College will not extract groundwater without taking prior permission from Central Ground Water Authority if a school/college found to do so it should be punishable as per Section 15 to 21 of EPA, 1986.

2. Total Consumption per head per day

- As per Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Water Supply and Treatment,1999.

S. No.	Type of Building	Liters per head per day
1	Boarding schools/ colleges	135
2	Day schools/ colleges	45

3. Rainwater Harvesting

As per Model Building Bye-Laws, 2016, Town and Country Planning Organization and Haryana Building Code, 2017:

- All buildings having plot size of 100 sq.m. or more, while submitting the building plans for sanction, shall mandatorily include the complete proposal of rainwater harvesting. A rainwater system consists of:
 - h) Roof catchment
 - i) Gutters
 - j) Down pipes
 - k) Rainwater/Storm water drains
 - l) Filter chamber
 - m) Storage tanks/pits/sumps
 - n) Ground water structure like pit, trench, tube wells or combination of above structure

- In the areas specified by the competent Authority, through a notification arrangement of roof rainwater harvesting within the plot shall have to be made by the plot owner, constructing the building on the plot where the area of the rooftop is 100 sq.m.
- Groundwater Recharge:
 - c) Recharging of groundwater shall be mandatory not only for residential buildings but for all types of buildings, including Group Housing Societies having plot area of 500 sq.m. and above.
 - d) The groundwater recharge shall be mandatory for open spaces like parks, parking, plazas, playgrounds and other common areas. The harvesting and recharge structures could be constructed by the Authority with the involvement of community-based organizations like Resident Welfare Associations (RWAs).

Note: As per EIA Notification, 2006 it is essential to provide rainwater harvesting or storage systems to capture at least 50% of the runoff volume from the roof surfaces.

Rainwater can be harvested to the extent of 55,000 liters per 100 sq.m. area per year from rooftops.

4. Plumbing and Sanitary Fixtures

As per EIA Guidance Manual, 2010 (MoEF&CC), RWAs should have water saving devices/fixtures, about 40% of all water used indoors is in the bathroom and toilets and more than 10% of that used is in the kitchen. The conventional fixtures used in toilets use water at the rate 12-15 liters per flush.

- Schools/colleges should have dual plumbing system;
- Aerators should be installed at each water tap to reduce the water usage.
- Valve at each overhead tank to stop overflow.
- Schools/colleges should have dual pipe plumbing for using recycled water/ rainwater. One supplies fresh water for drinking, cooking, bathing etc. and the other supplies recycled water/ rainwater for flushing, irrigation, car washing, thermal conditioning etc.

5. Recycled Water

- Schools/colleges should have decentralized wastewater treatment systems to treat their wastewater within their premise and used the treated water within the premise for flushing, irrigation, car washing, thermal conditioning etc.

S.No.	Type of Building	Fresh Water litres per head/day	Flushing water litres per head per day	Total water consumption litres per head per day
1	School/ college with boarding facilities	90	45	135
2	Without/ Day school/ college	25	20	45

Corporates /Institutions Guidelines

1. Source of Water Supply

- Source of water supply will be the surface water, ground water and recycled water.
- Fresh water supply will be distributed by the PHED/HUDA/MCG through the piped network with a metered system setup at each door step.
- Any Corporate office will not extract groundwater without taking prior permission from Central Ground Water Authority if a school/college found to do so it should be punishable as per Section 15 to 21 of EPA, 1986.

2. Total Consumption per head per day

- As per Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Water Supply and Treatment,1999.

S.No.	Type of Building	Litres per head per day
1	Hospitals (including laundry)	
	a. No. of beds exceeding 100	450 per bed
	b. No. of beds not exceeding 100	340 per bed
2	Nurses Homes and medical quarters	135
3	Hotels	180 per bed
4.	Offices	45

3. Rainwater Harvesting

As per Model Building Bye-Laws, 2016, Town and Country Planning Organization and Haryana Building Code, 2017:

- All buildings having plot size of 100 sq.m. or more, while submitting the building plans for sanction, shall mandatorily include the complete proposal of rainwater harvesting. A rainwater system consists of:
 - o) Roof catchment
 - p) Gutters

- q) Down pipes
- r) Rainwater/Storm water drains
- s) Filter chamber
- t) Storage tanks/pits/sumps
- u) Ground water structure like pit, trench, tube wells or combination of above structure
- In the areas specified by the competent Authority, through a notification arrangement of roof rainwater harvesting within the plot shall have to be made by the plot owner, constructing the building on the plot where the area of the rooftop is 100 sq.m.
- Groundwater Recharge:
 - e) Recharging of groundwater shall be mandatory not only for residential buildings but for all types of buildings, including Group Housing Societies having plot area of 500 sq.m. and above.
 - f) The groundwater recharge shall be mandatory for open spaces like parks, parking, plazas, playgrounds and other common areas. The harvesting and recharge structures could be constructed by the Authority with the involvement of community-based organizations like Resident Welfare Associations (RWAs).

Note: As per EIA Notification, 2006 it is essential to provide rainwater harvesting or storage systems to capture at least 50% of the runoff volume from the roof surfaces.

Rainwater can be harvested to the extent of 55,000 liters per 100 sq.m. area per year from rooftops.

4. Plumbing and Sanitary Fixtures

As per EIA Guidance Manual, 2010 (MoEF&CC), RWAs should have water saving devices/fixtures, about 40% of all water used indoors is in the bathroom and toilets and more than 10% of that used is in the kitchen. The conventional fixtures used in toilets use water at the rate 12-15 liters per flush.

- Corporate/Institution/Office should have dual plumbing system;
- Aerators should be installed at each water tap to reduce the water usage.
- Corporate/Institution/Office should have dual pipe plumbing for using recycled water/ rainwater. One supplies fresh water for drinking, cooking, bathing etc. and the other

supplies recycled water/ rainwater for flushing, irrigation, car washing, thermal conditioning etc.

- For government and corporate offices sensor-based fixtures, water less urinals, tap aerators etc.

5. Recycled Water

- As per EIA Notification, 2006, all construction projects should have decentralized wastewater treatment facilities if the area is equal to and more than 20,000 sq.m.
- As per the Haryana Building Code, all buildings having a minimum discharge of 50,000 liters and above per day shall incorporate wastewater recycling system. The recycled water shall be used for horticulture, flushing and cooling tower purposes.

S.No.	Type of Building	Fresh Water litres per head/day	Flushing water litres per head per day	Total water consumption litres per head per day
1	Hospital			
	a. Number of beds not exceeding 100	230	110	340
	b. Number of beds exceeding 100	300	150	450
	c. Outpatient Department	10	5	15
2	Nurses homes and medical quarters	90	45	135
3	Hotels (up to 3 star) excluding laundry, kitchen, staff and water bodies	120	60	180
4	Hotels (4 star and above) excluding laundry, kitchen, staff and water bodies	260	60	320
5	Offices	25	20	45

Industries Guidelines

1. Source of Water Supply

- Source of water supply will be the surface water, ground water and recycled water.
- Fresh water supply will be distributed by the PHED/HUDA/MCG through the piped network with a metered system setup at each door step.
- Any Factory/Industry will not extract groundwater without taking prior permission from Central Ground Water Authority if a school/college found to do so it should be punishable as per Section 15 to 21 of EPA, 1986.

2. Total Consumption per head per day

- As per Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Water Supply and Treatment, 1999.

S.No.	Type of Building	Litres per head per day
1	Factories	45 (could be reduced to 30 where no bathrooms are provided)

3. Rainwater Harvesting

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 - v) Roof catchment
 - w) Gutters
 - x) Down pipes
 - y) Rainwater/Storm water drains
 - z) Filter chamber
 - aa) Storage tanks/pits/sumps
 - bb) Ground water structure like pit, trench, tube wells or combination of above structure

- In the areas specified by the competent Authority, through a notification arrangement of roof rainwater harvesting within the plot shall have to be made by the plot owner, constructing the building on the plot where the area of the rooftop is 100 sq.m.
- Groundwater Recharge:
 - g) Recharging of groundwater shall be mandatory not only for residential buildings but for all types of buildings, including Group Housing Societies having plot area of 500 sq.m. and above.
 - h) The groundwater recharge shall be mandatory for open spaces like parks, parking, plazas, playgrounds and other common areas. The harvesting and recharge structures could be constructed by the Authority with the involvement of community-based organizations like Resident Welfare Associations (RWAs).

Note: As per EIA Notification, 2006 it is essential to provide rainwater harvesting or storage systems to capture at least 50% of the runoff volume from the roof surfaces.

Rainwater can be harvested to the extent of 55,000 liters per 100 sq.m. area per year from rooftops.

4. Plumbing and Sanitary Fixtures

As per EIA Guidance Manual, 2010 (MoEF&CC), RWAs should have water saving devices/fixtures, about 40% of all water used indoors is in the bathroom and toilets and more than 10% of that used is in the kitchen. The conventional fixtures used in toilets use water at the rate 12-15 liters per flush.

- Factory should have dual plumbing system;
- Aerators should be installed at each water tap to reduce the water usage.
- Valve at each overhead tank to stop overflow.
- Factories should have dual pipe plumbing for using recycled water/ rainwater. One supplies fresh water for drinking, cooking, bathing etc. and the other supplies recycled water/ rainwater for flushing, irrigation, car washing, thermal conditioning etc.

5. Recycled Water

- Factories should have decentralized effluent treatment plants to treat their wastewater within their premise and use the treated water within the premise for flushing, irrigation, thermal conditioning etc.

S.No.	Type of Building	Fresh Water litres per head per day	Flushing water litres per head per day	Total water consumption litres per head per day
1	Factories including canteen where bathrooms are required to be provided	30	15	45
2	Factories including canteen where no bathrooms are required to be provided	20	10	30