

INTRODUCTION

M/s Gokaldas Warehousing Corporation is the developer of Warehouse for storage of Non Agriculture Produce (Logistic) situated in the revenue state of Village Jhamuwas & Gudhi, Distt. Mewat, Haryana.

The above said warehouse project consisting 3 No. of sheds. The Shed-1 is in operation phase which is having built-up area of 17,689.25 m² for which Occupation Certificate already obtained from Director of Town & Country Planning, Haryana Memo No. MT-132/SD (DK)/2016/20189 dated 26/9/2016. OC letter is enclosed as **Annexure I**. Built-up area of shed-2 and shed-3 are 14,682.201 m² and 2,529.99 m² respectively. Construction of the shed-2 also completed at site. Hence, the total built-up area for existing and expansion of warehousing project is 34,901.44 m².

Cumulative built-up area exceeding the threshold limits of 20,000 sqm, so it requires Environmental Clearance for existing and expansion part of warehouse. The construction work of project has been completed and hence the EC application is being submitted in line with the MoEF&CC notification No. S.O. 804(E) dated 14th Mar., 17.

SITE LOCATION AND SURROUNDING

The project is located in the revenue state of Village Jhamuwas & Gudhi, Distt. Mewat, Haryana on a plot measuring 72,613 m² (17.94 acre).

The geographical co-ordinates of project site are 28°14' 55.96" N & 76°55' 54.76" E.

Google Earth map of 500 m, 10+15 km radius around project site are attached as **Annexure II and III** respectively.

CONNECTIVITY

The project site is connected to nearest NH-8 which is approx. 8.26 km in NW direction.

The nearest railway station is Patli Railway station approx. 18.49 km away in NNW direction.

Nearest Airport is Indira Gandhi International Airport is approx. 38.82 km (NNE).

AREA STATEMENT

The total land area of project is 72,613 m² (17.94 acre). The detailed area statement and break-up of built-up area is provided below in Table 1 & 2 respectively:

Table 1: Detailed Area Statement

S. No.	Particulars	Existing (OC granted) (m ²)	Expansion (m ²)	Total Area (Existing + Expansion) (m ²)
1.	Plot Area		72,613	
2.	Permissible Ground Coverage (@60% of the plot area)		43,567.8	
3.	Proposed Ground Coverage (@46.13% of the plot area)	17,689.25	15,810.551	33,499.801
	• Shed-1	17,666.90		17,666.90
	• Security & Ticketing Room	22.35		22.35
	• Shed-2		13,280.561	13,280.561
	• Shed-3		2,529.99	2,529.99
4.	Permissible FAR (@75% of the plot area)		54,459.75	
5.	Proposed FAR area (@48.06% of the plot area)	17,689.25	17,212.191	34,901.44
	• Shed-1	17,666.90		17,666.90
	• Security & Ticketing Room	22.35		22.35
	• Shed-2		14,682.201	14,682.201
	• Shed-3		2,529.99	2,529.99
6.	Built-up Area	17,689.25	17,212.191	34,901.44
7.	Parking Area		10,933.77	
8.	Landscape Area		800	
9.	Height of the building (in meters)		14.5 m	

Table 2: Break-up of Built-up area

S. No.	Particulars	Existing (OC granted) (m ²)	Expansion (m ²)	Total Area (Existing + Expansion) (m ²)
1.	Proposed FAR area (@48.06% of the plot area)	17,689.25	17,212.191	34,901.44
	• Shed-1	17,666.90		17,666.90
	• Security & Ticketing Room	22.35		22.35
	• Shed-2		14,682.201	14,682.201
	• Shed-3		2,529.99	2,529.99
	Built-up Area	17,689.25	17,212.191	34,901.44

CONSTRUCTION STATUS

The total built-up area for existing and expansion portion is 34,901.44 m². Status of construction at the project site is given below in Table 3:

Table 3: Status of Construction Undertaken at Site

S. No.	Particulars	Constructed area at site (m²)	Percentage of Construction Completed
1	Shed-1	17,689.25	100%
2	Shed-2	14,682.201	100%
3	Shed-3	2,529.99	0%
	TOTAL AREA	34,901.44	

POPULATION DENSITY

The population breakup of all sheds in warehouse project is assumed as 60 staff and 15 visitors in existing and expansion.

The population breakup is given below in Table 4:

Table 4: Population Break-up

S. No.	Particulars	Existing	Expansion	Total (Existing + Expansion)
1.	Staff	20	40	60
2.	Visitors	5	10	15
	TOTAL			75

WATER REQUIREMENT

The source of water for the warehouse will be private water tanker. Total water requirement for the warehouse project including existing and expansion part is approx. 6 KLD, out of which domestic water requirement is 3 KLD.

Comparative Details of Water & Wastewater generated is shown in Table 5 and the daily water requirement calculation is given below in Table 6:

Table 5: Comparative Details of Water & Wastewater generated

S. No.	Particulars	Existing (KLD)	Expansion (KLD)	Total (Existing + Expansion)
1.	Domestic Water (Staff)	0.9	1.8	2.7
2.	Domestic Water (Visitor)	0.075	0.15	0.225
TOTAL DOMESTIC WATER				3 KLD
3.	Horticulture (800 m ²)	3		3 KLD
TOTAL WATER DEMAND				6 KLD

Table 6: Calculation of Daily Water Demand

S. No	Particulars	Occupancy	Per Capita Water Demand (lpcd)	Water Requirement (KLD)
1.	Staff	60	45	2.7
	Visitors	15	15	0.225
TOTAL DOMESTIC WATER				3 KLD
2.	Horticulture (800 m ²)		4 l/sqm	3
TOTAL WATER DEMAND				6 KLD

Table 7: Waste Water Calculations

Domestic Water Requirement	3 KLD
• Fresh (@ 30% of domestic)	1 KLD
• Flushing (@ 70% of domestic)	2 KLD
Waste Water Generated (@ 80% fresh + 100% flushing)	0.8 + 2 = 2.8 KLD

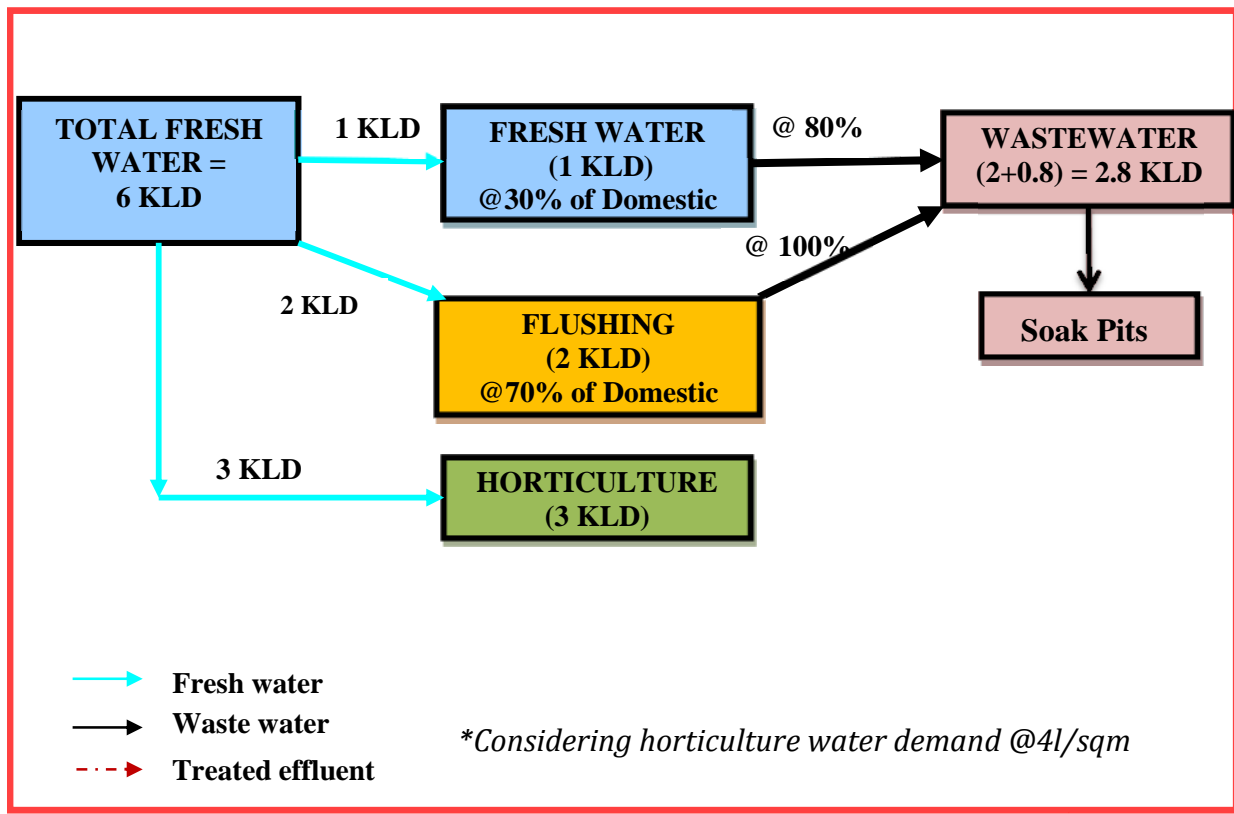


FIGURE 1: WATER BALANCE DIAGRAM (Summer Season)

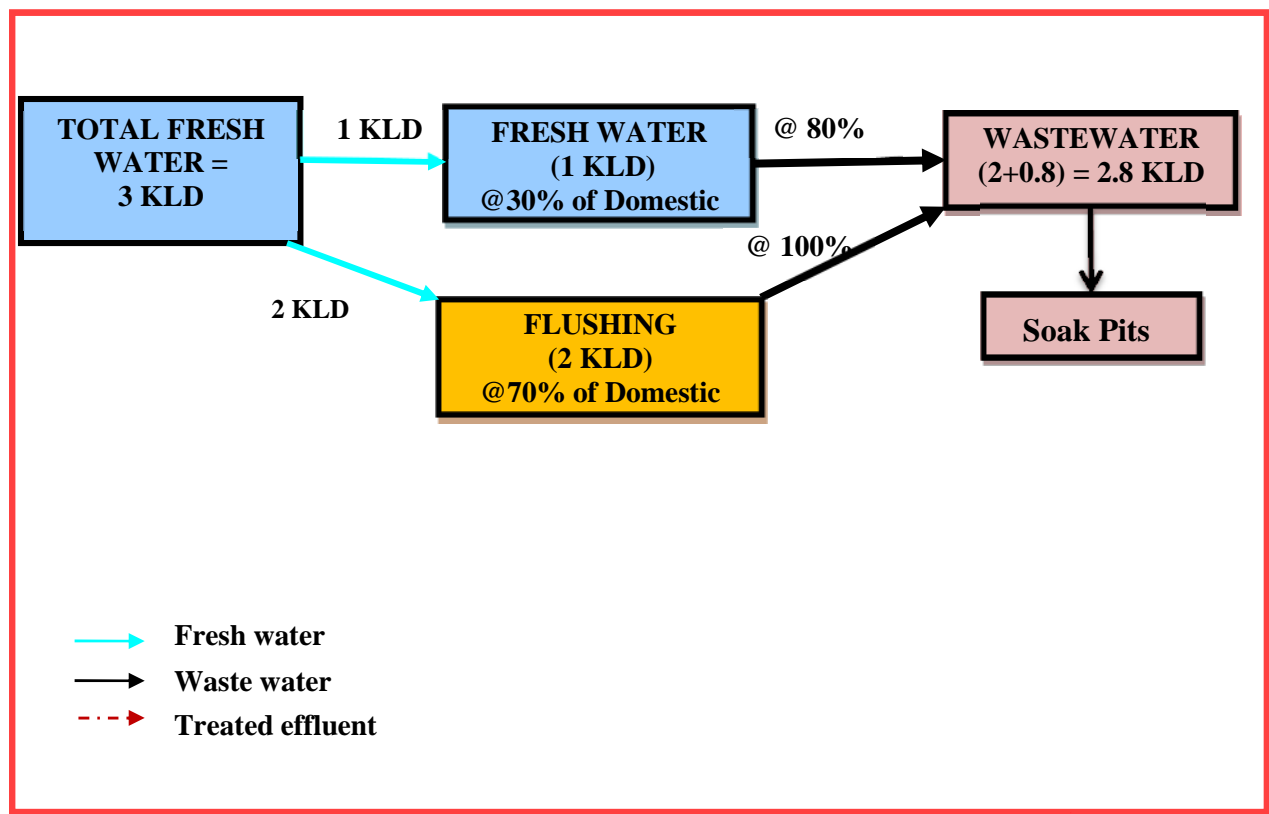


FIGURE 2: WATER BALANCE DIAGRAM (Rainy Season)

Waste water

The waste water generated from the project is approx. 2.8 KLD which will be discharged into soak pits.

RAIN WATER HARVESTING

The storm water collection system for the premises is self-sufficient to avoid any collection/stagnation and flooding of water. The amount of storm water run-off depends upon many factors such as intensity and duration of precipitation, characteristics of the tributary area and the time required for such flow to reach the drains. The drains are located near the carriage way along either side of the roads. Taking the advantage of road camber, the rainfall run-off from roads flow towards the drain.

- 1) Since the existing topography is congenial to surface disposal, a network of storm water pipe drains has been constructed adjacent to roads. All building rooftop run-off has been brought down through rain water pipes.

- 2) Proposed storm water system consists of pipe drain, catch basins and seepage pits at regular intervals for rain water harvesting and ground water recharging.
- 3) The peak hourly rainfall of 45 mm/hr has been considered for designing the storm water drainage system.

Design specifications of the rain water harvesting plan are as follows:

- Catchments/roofs are accessible for regular cleaning.
- The roof are having smooth, hard and dense surface which is less likely to be damaged allowing release of material into the water. Roof painting has been avoided since most paints contain toxic substances and may peel off.
- All gutter ends are fitted with a wire mesh screen and a first flush device would be installed. Most of the debris carried by the water from the rooftop like leaves, plastic bags and paper pieces will get arrested by the mesh at the terrace outlet and to prevent contamination by ensuring that the runoff from the first 10-20 minutes of rainfall is flushed off.
- No sewage or wastewater is being admitted into the system.
- No wastewater from areas likely to have oil, grease, or other pollutants has been connected to the system.

Calculation for storm water load:

$$\text{Roof-top area} = \text{Ground Coverage} = 33,499.801 \text{ m}^2$$

$$\text{Green Area} = 800 \text{ m}^2$$

$$\begin{aligned} \text{Paved Area} &= \text{Plot Area} - (\text{Roof-top Area} + \text{Green Area}) \\ &= 72,613 - (33,499.801 + 800) \\ &= 38313.2 \text{ m}^2 \end{aligned}$$

Runoff Load -

$$\begin{aligned} \text{Roof-top Area} &= 33,499.801 \times 0.045 \times 0.8 \\ &= 1205.99 \text{ m}^3/\text{hr} \end{aligned}$$

$$\begin{aligned} \text{Green Area} &= 800 \times 0.045 \times 0.1 \\ &= 3.6 \text{ m}^3/\text{hr} \end{aligned}$$

$$\begin{aligned} \text{Paved Area} &= 38313.2 \times 0.045 \times 0.75 \\ &= 1293.07 \text{ m}^3/\text{hr} \end{aligned}$$

$$\begin{aligned} \text{Total Runoff Load} &= 1205.99 + 3.6 + 1293.07 \text{ m}^3/\text{hr} \\ &= 2502.66 \text{ m}^3/\text{hr} \end{aligned}$$

Taking 15 minutes retention time, total volume of storm water will become = $2502.66/4$
= 625.665 m^3

Considering the radius and depth of a Recharge pit 3 m and 4 m respectively, Volume of a single Recharge pit = $\pi r^2h = 3.14 \times 3 \times 3 \times 4 = 113.04 \text{ m}^3$

Hence No. of pits required = $625.665 / 113.04 = 5.77$ or 6 Pits

Total 6 rain water harvesting pits have been provided for artificial ground water recharge.

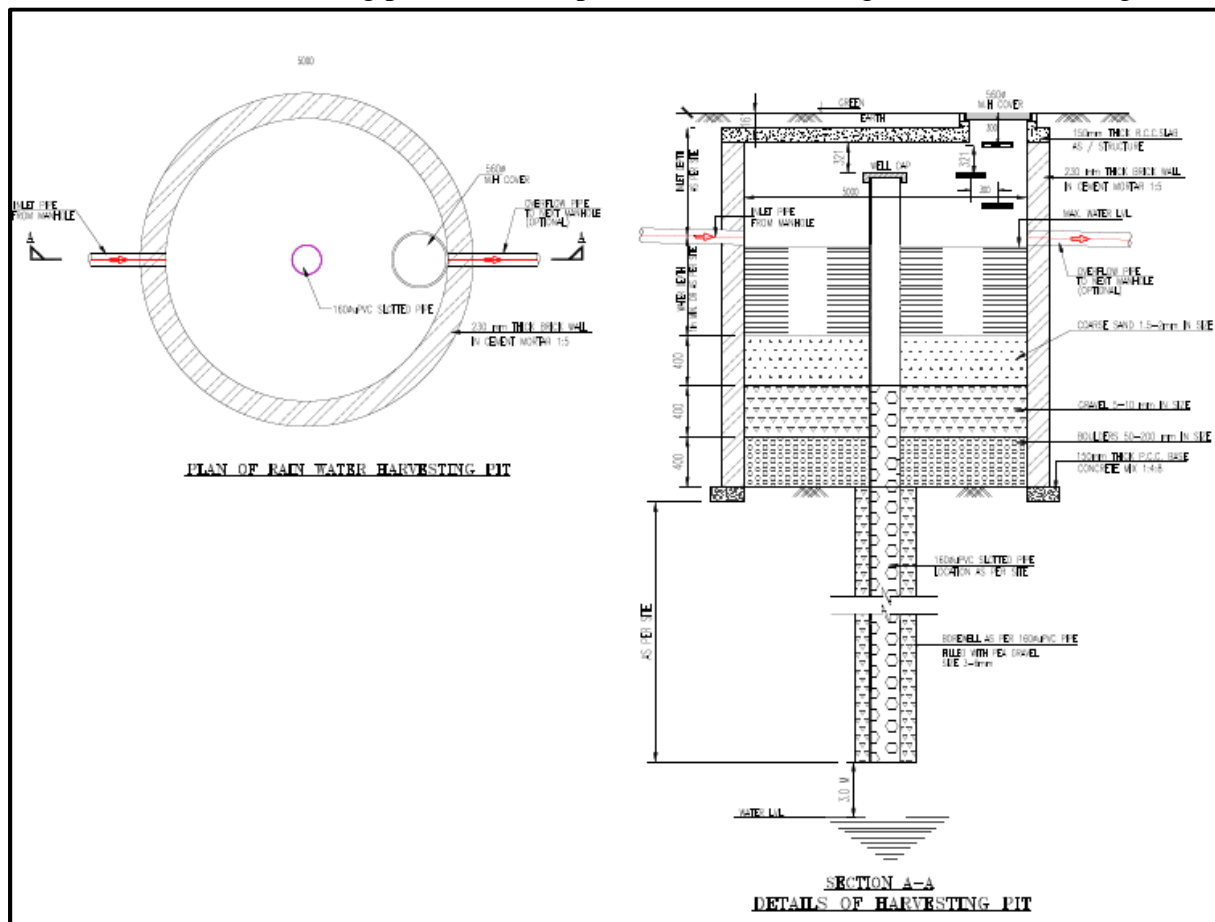


Figure 3: Rain Water Harvesting Pit Design

VEHICLE PARKING FACILITY

Adequate provision will be made for the heavy vehicle parking at the project site to allow smooth movement at the site.

As per MoEF&CC norms

For Ware House facilities	= 1 ECS/250 m ² FAR
	= 34,901.44/ 250
	= 140 ECS
Total Surface Parking Area	= 140 ECS x 25 m ² /ECS
	= 3,500 m ²

As per Haryana Bye Laws

Parking area should be 15% of plot area = 10,891.95 m²

Parking Proposed:

Total Parking proposed (Surface parking @ 15.05 % of the plot area) = 10,928.26 m²

Therefore; as required the proposed parking is more & above the MoEF&CC Norms.

POWER REQUIREMENT

The source of power supply is Dakshin Haryana Bijli Vitran Nigam (DHBVN). The total power demand for the project is approx. 1200 KVA.

POWER BACK UP

There is a provision of 3 DG sets of 250 KVA, 200 KVA and 200 KVA capacities for power backup in warehouse project.

SOLID WASTE GENERATION

The solid waste generated during the construction phase comprised of excavated materials, used bags, bricks, concrete, MS rods, tiles, wood etc. The following steps were followed for the management of solid waste during construction phase:

- Construction yards were provided for storage of construction material.

- The excavated material such as topsoil and stones were stacked and reused during construction.
- Excavated top soil was stored in temporary constructed soil bank and reused for landscaping.
- Remaining soil was utilized for refilling/road work/rising of site level and surplus sold to local vendor.

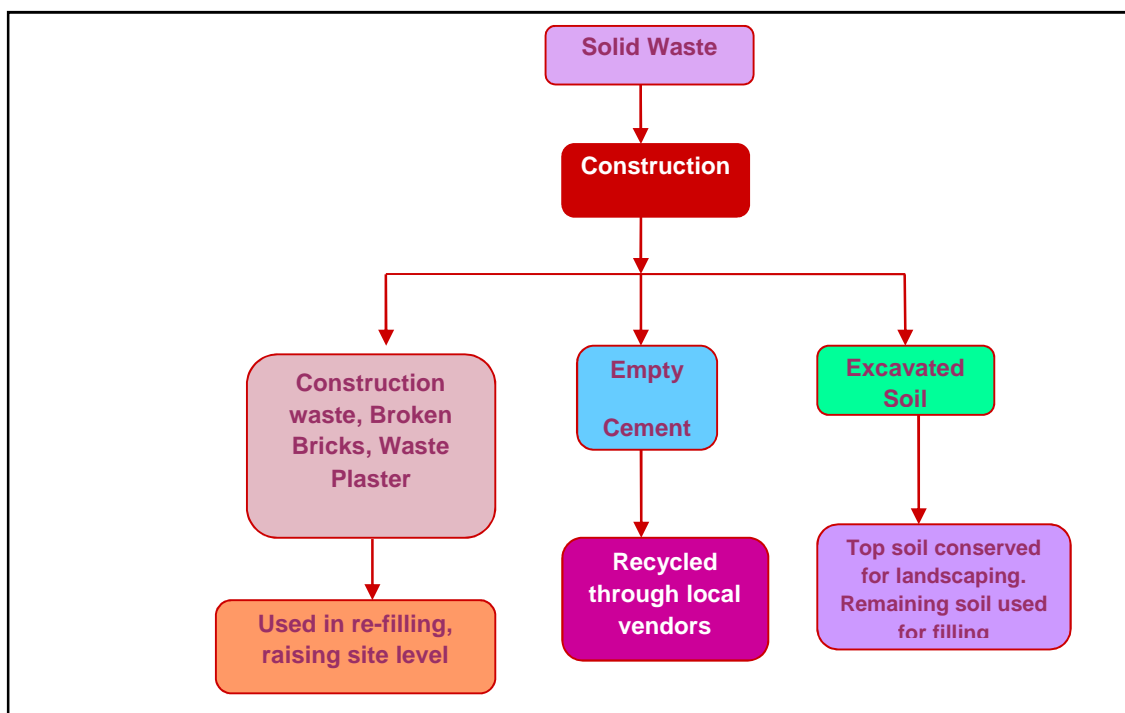


Figure 4: Solid Waste Management (Construction Phase)

During the operation phase waste from a Warehouse project comprises of non-agricultural product. The total solid waste generated from the project shall be approx. 17 kg/day (@ 0.25 kg per capita per day for staff, @ 0.15 kg per capita per day for visitor and landscape waste @ 0.2 kg/acre/day).

Table 7: Calculation of Solid Waste

S. No.	Particulars	Norms (kg/capita/day)	Waste generated (kg/day)
1.	Staff	60 @ 0.25	15
2.	Visitors	15 @ 0.15	2.25
3.	Landscape waste (0.20 acre)	0.2 kg/acre/day	0.04
TOTAL SOLID WASTE			17 kg/day

Following arrangements have been made at site in accordance to Solid Waste Management Rules, 2016.

❖ **Collection and Segregation of waste**

1. Collection system has been provided for collection of domestic waste in colored bins.
2. Local vendor has been hired for management of solid waste from the site.

❖ **Treatment of waste**

• **Bio-Degradable waste**

1. Bio-degradable waste is subjected to composting through Organic Waste Converter and the compost is being used as manure.
2. Horticultural Waste composted and used for gardening purpose.

• **Recyclable waste**

- i. Grass Recycling – The cropped grass is spread on the green area which acts as manure after decomposition.
- ii. Recyclable wastes like packaging material including paper, plastic, metals etc. is being disposed through the local vendor.

❖ **Disposal**

Recyclable and non-recyclable waste from Warehouse is being disposed through a local approved vendor in accordance with the Solid Waste Management Rules, 2016. Solid waste management Scheme is depicted in the following figure:

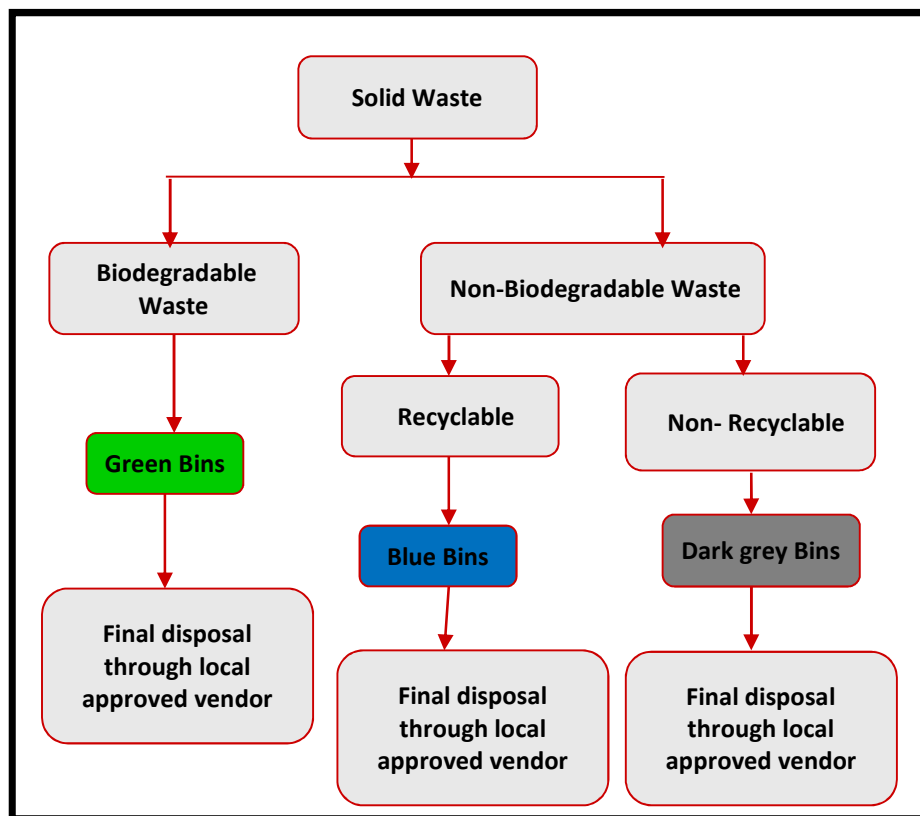


Figure 5: Solid Waste Management Scheme (Operation Phase)

GREEN AREA

Total green area measures 800 m². Plantation has been done using native plantation species for controlling air pollution and enhancing the aesthetic value of project.

DETAILS OF CONSTRUCTION MATERIALS

S. No.	Material used	S. No.	Material used
I	Coarse sand	XI	MDS, MCBs
II	Fine sand	XII	PVC overhead water tanks
III	Stone aggregate	XIII	2 1/2" thick red colour paver tiles
IV	Stone for masonry work	XIV	PPR (ISI marked)
V	Cement	XV	PVC Sullage lines
VI	Reinforcement steel	XVI	S.W. sewer line up to main sewer
VII	Pipe scaffolding (cup lock system)	XVII	PVC rain water down take
VIII	Bricks	XVIII	Stainless steel sink in kitchen

**EXPANSION OF WAREHOUSE FOR STORAGE OF NON AGRICULTURE
PRODUCE (LOGISTIC) AT
VILLAGE JHAMUWAS & GUDHI,
DISTT. MEWAT, HARYANA**

CONCEPTUAL PLAN

IX	CLC fly ash blocks	XIX	Joinery hardware- ISI marked
X	Crazy (white marble) in grey cement	XX	MDS, MCBs

MATERIALS USED FOR CONSTRUCTION & THEIR U-VALUES

Type of Construction	U values (in W/m ² deg C)
WALLS	
Brick:	
Plaster both sides -114 mm	3.24
Solid, Unplastered-228 mm	2.67
Plastered both sides-228 mm	2.44
Concrete, ordinary, Dense:	
-152 mm	3.58
-203	3.18
Concrete block, cavity, 250 mm (100+50+100), outside rendered, inside plastered:	
Aerated concrete blocks	1.19
Hollow Concrete block, 228 mm, single skin, outside rendered, inside plastered:	
Aerated concrete blocks	1.70
Roofs pitched:	
Tiles or Slates on boarding and felt with plaster ceiling	1.70
Roofs Flat:	
Reinforced concrete slab, 100 mm, screed 63-12 mm, 3 layers bituminous felt	3.35
Floors:	
Concrete on ground or hardcore fill	1.13
+ Grano, Terrazzo or tile finish	1.13
+ Wood block finish	0.85

MATERIAL SPECIFICATION FOR PIPING & SPECIFICATION

**EXPANSION OF WAREHOUSE FOR STORAGE OF NON AGRICULTURE
PRODUCE (LOGISTIC) AT
VILLAGE JHAMUWAS & GUDHI,
DISTT. MEWAT, HARYANA**

CONCEPTUAL PLAN

S.No	Purpose	Options	Proposal
1.	Pipes for Internal Water Supply (Cold & Hot Water)	a) CPVC b) PB c) PE-RT d) PEX e) PVC-Sch.40	a) CPVC of Grade SDR-11
2.	External Water Supply	a) HDPE b) UPVC c) GI Medium class	a) HDPE
3.	Suction and Delivery Headers for Water Supply Pumps	a) Stainless Steel (Grade 304) b) PVC c) CPVC	a) Stainless Steel (Grade 304)
4.	Pipe Inserts in Water Tanks	a) Stainless Steel (Grade 304) b) PVC c) Epoxy coated Mild Steel	a) Stainless Steel (Grade 304)
5.	Isolating Valves for Domestic Water Supply	a) Ball Valves b) Butterfly Valves c) Globe Valves d) Gate Valves e) Sluice Valves	a) Ball Valves upto 50mm dia b) Butterfly Valves above 50 mm dia
6.	Soil, Waste, Vent and Rain Water Pipework	a) C.I. b) UPVC c) HDPE	a) Centrifugally Cast Iron.
7.	Underground Drainage Pipes	a) UPVC (Underground drainage grade)	a) UPVC Underground drainage grade for Sewerage

		b) Stoneware c) RCC	b) RCC for Storm Water Drainage
8.	Insulating Materials for Hot Water Pipes	a) Extended Synthetic Rubber Polymeric compound b) Extended Polyethylene (EPE) c) Foamed Nitrile Rubber	a) Extended Synthetic Rubber Polymeric compound insulation for pipes chased in walls. b) Foamed Nitrile Rubber with Mechanical Protection for pipes in shafts, ceiling voids
9.	Sanitaryware, Fixtures & Faucets	Water saving type	Water saving type
10.	Pipes for Fire Fighting System	a) Mild Steel	a) Mild Steel
11.	Jointing System for Pipes for Fire Fighting System	a) Welded joints b) Threaded joints c) Grooved joints (Victaulic type)	a) Threaded joints upto 50mm dia b) Welded joints above 50mm dia c) Grooved joints for the pipework in the Pump Room
12.	Isolating Valves for Fire Fighting System	a) Sluice Valve b) Butterfly Valve	a) Rising Spindle type Sluice Valve on suction side of Fire Pumps (OS&Y type) b) Butterfly Valves elsewhere
13.	Landing Valves	a) Gunmetal b) Stainless Steel c) Aluminium	a) Stainless Steel
14.	First Aid Hose reel	Thermoplastic Fire Hose as per IS:12585	Thermoplastic Fire Hose as per IS:12585
15.	Fire Pumps	Main Pumps : Centrifugal split casing, multi stage multi outlet coupled pumps Jockey pumps: Vertical inline pumps	Main Pumps : Centrifugal split casing, multi stage multi outlet coupled pumps Jockey pumps: Vertical inline pumps

LIST OF MACHINERY USED FOR CONSTRUCTION

- I. Dumper
- II. Concrete mixer with hopper
- III. Excavator
- IV. Concrete Batching Plant
- V. Cranes
- VI. Road roller
- VII. Bulldozer
- VIII. RMC Plant
- IX. Pile Boring Machines
- X. Concrete pressure pumps
- XI. Mobile transit mixer