



DR. J. J. MAGDUM TRUST'S

7.1.3 Describe the facilities in the institution for the management of the following types of degradable and non degradable waste (within 200 words) Solid waste management Liquid waste management Biomedical waste management E-waste management Waste recycling system Hazardous chemical and radioactive waste management.

Sr. No	Description
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Dr. J. J. Magdum College of Engineering, Jaysingpur

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Environmental Consciousness and Sustainability

a) Solid Waste Management: Bio degradable solid waste is collected from college campus and dumped in constructed pits, which are then covered with locally available soil in alternate layers, till pit is completely filled. When one pit is filled completely then second pit is used for dumping. After 45 to 60 days good quality compost is obtained which is used as manure for the trees in the campus. Apart from this old newspaper, waste papers and cartons are sold to the local vendor.

b) Liquid Waste Management:

In the college campus 60,000 litre waste water is generated every day. This waste water is being treated by -

A) Equalization and grit chamber: This tank is provided to meet fluctuations , removing grit in waste water generation. The clear water is then sent to percolation tank.

B) Chemical Effluent Treatment pit- Waste water from environmental engineering lab and Chemistry Lab was supposed to collect in the constructed pit which is filled with layers of broken coal, broken bricks, sand and salt.

Brown garden waste is treated by horizontal rotating drum.

C) E-waste management: E-waste generated are given to vendors for buyback puepose while purchasing new components.



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Brief report of Biogas unit

It mainly comprises of hydro-carbon which is combustible and can produce heat and energy when burnt. Bio-gas is produced through a bio-chemical process in which certain types of bacteria convert the biological wastes into useful bio-gas. Since the useful gas originates from biological process, it has been termed as bio-gas. Methane gas is the main constituent of biogas

Advantages of biogas production-

- It is a eco-friendly fuel.
- The required raw materials for biogas production is available in college canteen.
- It not only produces biogas, but also gives us nutrient rich slurry that can be used for crop production.
- It prevents the health hazards of smoke in poorly ventilated rural households that use dung cake and fire-wood for cooking.
- It helps to keep the environment clean, as there would be no open heap of dung or other waste materials that attract flies, insects and infections
- Availability of biogas would reduce the use of firewood and hence trees could be saved.

Components of biogas plants-

- **Mixing tank** - The feed material (dung) is collected in the mixing tank. Sufficient water is added and the material is thoroughly mixed till a homogeneous slurry is formed.
- **Inlet pipe** - The substrate is discharged into the digester through the inlet pipe/tank.



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- **Digester** - The slurry is fermented inside the digester and biogas is produced through bacterial action.
- **Gas holder or gas storage dome** - The biogas gets collected in the gas holder, which holds the gas until the time of consumption.
- **Outlet pipe** - The digested slurry is discharged into the outlet tank either through the outlet pipe or the opening provided in the digester.
- **Gas pipeline** - The gas pipeline carries the gas to the point of utilization, such as a stove or lamp

Production of Gas-

Average gas production from dung may be taken as 40 lit/kg. of fresh dung or kitchen waste; when no temperature control is provided in the plant. One Cu. m gas is equivalent to 1000 litres.

1 Kg of food waste (sugar, starch, cellulose, protein or fat) yields 1 Kg biogas in 1d instead of 40 kg dung required in 40d.

Dr. R.S. Chougule

Dept. of Civil Engg.

Dr. J.S. Lambe

H.O.D, Dept. of Civil Engg.





Brief report of Composting unit

Waste generation from tree droppings & lawn management is a major solid waste generated in the campus. The waste is segregated at the source by providing separate dustbins for Bio-degradable and plastic waste. Single sided used papers reused for writing and printing in all departments and recently both side printing is carried out as per requirements. Metal, wooden, plastic waste is stored and given to authorized agents for further processing. The solid waste is collected by the municipal corporation and disposed by their methods.

The gardening team have been working to dispose or recycle the amount of waste coming out of the gardens. Greens are materials rich in protein or nitrogen like hedge clippings, coffee grounds and fresh leaves, while browns are materials rich in carbohydrates like twigs and cardboard.

We built a whole composting system in an unused part of the garden, which takes in all of our garden waste and turns it into super nutritious, healthy leaf mulch in about nine months.

Benefits-

Compost is really good for the soil and helps build the health of the plants: it's a bit like taking vitamins regularly for general health rather than relying on medication when you get ill.

Everything goes back into growing new plants, helping the lawns and even building new pathways.

The coffee grounds and the cardboard come from our offices: recycling them helps us reduce waste even more.

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Brief report of Waste water treatment unit

A. Grit Chambers

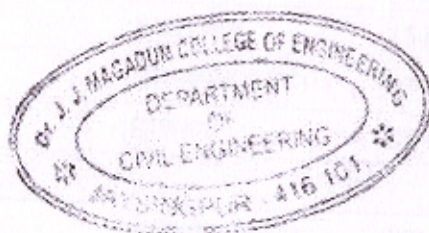
Grit chambers are long narrow tanks that are designed to slow down the flow so that solids such as sand, coffee grounds, and eggshells will settle out of the water. Grit causes excessive wear and tear on pumps and other plant equipment. Grit is composed of small coarse particles of sand, gravel, or other minute mineral material. Grit is removed to prevent damage to mechanical equipment and to maintain tank volume capacities.

Waste water is generated in various areas of college campus. It's specially designed for canteen and nearby toilet blocks.

B. Soak Pit

A soak pit or a soakaway is a closed porous chamber that is directly connected to a primary treatment unit of building. It serves the function of letting the wastewater coming from the septic tank and grit chambers to slowly soak into the underlying ground.

1. Soak pit serves the purpose of receiving the effluent water from the primary treatment unit.
2. Soak pit undergoes the partial treatment of the effluent water coming out of the primary treatment unit.
3. The soak pit discharges clear and non-harmful water to the ground.



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4. The soak pit is designed in such a way that the treated water comes out of the porous walls of the soak pit.
5. The soak pit helps to recharge the groundwater bodies

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Brief report of Percolation Tank

Percolation tank is an artificially created surface water body, submerging in its reservoir a highly permeable land, so that surface runoff is made to percolate and recharge the ground water storage.

1. Percolation tank is an artificially created surface water body, submerging in its reservoir a highly permeable land so that surface runoff is made to percolate and recharge the ground water storage.
2. Percolation tank should be constructed preferable on second to third order streams, located on highly fractured and weathered rocks which have lateral continuity down stream.
3. The size of percolation tank should be governed by percolation capacity of strata in the tank bed. Normally percolation tanks are designed for storage capacity of 0.1 to 0.5 MCM. It is necessary to design the tank to provide a ponded water column generally between 3 & 4.5 m.
4. The percolation tanks are mostly just like earthen dams with masonry structure only for spillway. The purpose of the percolation tank is to recharge the ground water storage and hence seepage below the seat of the bed is permissible. For dams upto 4.5 m. height, cut off trenches are not necessary and keying and benching between the dam seat and the natural ground is sufficient

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Brief report of Effluent Treatment unit-

Effluent Treatment Plant or ETP is one type of waste water treatment method which is particularly designed to purify and dispose waste water for its reuse and its aim is to release safe water to environment from the harmful effect caused by the effluent.

Effluents contain various materials. Some effluents contain oils and grease, and some contain toxic materials (e.g., cyanide). Effluents from food and beverage factories contain degradable organic pollutants. Since industrial waste water contains a diversity of impurities and therefore specific treatment technology called ETP is required.

Benefits-

1. To clean laboratory effluent and dispose it.
2. To reduce the usage of fresh water in laboratories; in campus.
3. To preserve natural environment against pollution.
4. To meet the standards for emission of pollutants set by the Government & avoid heavy penalty.
5. To reduce expenditure on water acquisition.

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Dr. J.J. Magdum College of Engineering

Payment Voucher

Dated 20-8-22
25 Aug-2022

Particulars	Amount
Account : Machinery & Instruments A/c	7,400.00
Less: SANJAY KALE	(-)-5,000.00

Through :

Cash

On Account of :

BEING AMOUNT PAID TO SANJAY KALE
TOWARDS PREPARATION OF COMPOSIT
MACHINE

Amount (in words) :

Indian Rupees Two Thousand Four Hundred
Only

₹ 2,400.00

Receiver's Signature:

Antal
Authorised Signatory



Form No.02.

Dr. J. J. Magdum Trust, Jaysingpur

Date:- 20/5/22

In continuance of Requisition /Form No-01 Dt.

To,

The Director/Principal/Medical Superintendent/Head Master/Head Mistress
Dr. J. J. Magdum C. O. Buzh, Jaysingpur

Sir/Madam,



Subject - Civil Work:- Rs Making Composting Machine for college salary wage.

1. Labour Name/Contractor Name	2. Date of commencement of work	3. Material supplied details Amount: Rs.
<u>Sangya kote</u>	<u>01/08/22</u>	<u>5100/-</u>
4. Percentage (%) of work done	5. Weather site is cleaned (Yes/No)	6. Quality of work (Very Good/Good/Average)
<u>100%</u>	<u>Yes</u>	<u>Good.</u>
7. Weather work completed as per work order (Yes/No)	8. Weather work completed as per agreed rate (Yes/No)	
<u>Yes</u>	<u>Yes</u>	

Remarks:- As per - 5000/- Amount approved 6900 - 5500 = 1900/- pay be.

Signature Supervisor

Sign of Accountant

Sign of Registrar

Sign of Principal

Sign of Director

20/5/22



श्री समर्थ साधुवासी, इटावा

पु.सो. उदगांव, ता. गिरीक

पिन 9011447179

डॉ. डी. डी. मजूमदार इंजिनियरिंग कॉलेज 23/8/22

1) 10" x 1000 पीपल	-	15000
2) 1/2" स्टील बरडी	-	2000
3) प्रिन्ट 12 पत्ती x 330	-	4080
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		21080

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Dr. J. J. Magdum Trust, Jaysingpur

Date: 22/08/16

To,
The Director/Principal/Medical Superintendent/Head Master/Head Mistress
Dr. J. J. Magdum C. O. Day Jaysingpur

Sir/Madam,

Subject - Civil Work: Construction of Sewage treatment Sella tank
near Panchayats Center & Panchayat Panch

First Bill:-

1. Name of the Contractor/Labour/Supplier 2. Material Required Details & Amount Rs. 3. Labour Charges Amount Rs.

Mr. Rajesh Chaudhary
Jaysingpur
Mrs. Shobha Pathanot

- ① Bricks 25000 = 12500/-
- ② Cement 25 x 2200 = 8000/-
- ③ Coarse sand 115 = 7500/-
- ④ Sand pit - 2500

35,500/-

13500/-

4. Work Duration
10 days.

5. Remarks: Wk Done - 6000/-

Note: - Enclosed Quotation

WJK

SK

Signature supervisor

Sign of Registrar

Sign of Registrar

Sign of Principal

Sign of Director

