

SAKSHI CONSULTANTS

- Consulting Engineer
- R.C.C. Designer
- Approved Valuer

Deepak N. Kakade

B.E. (Civil), M.E. (Structure)
AMIE, A.I.V

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Ref:

Date 05/11/2017

ENVIRONMENTAL AUDIT

QUESTIONARIES

Name : P.E.S. COLLEGE OF ENGINEERING

ADDRESS : Nagsenvana, Panchakki Road, Aurangabad-431001.

Telephone No. : 0240-2403001, 0240-2403011

E-mail ID :

Telephone No. : 9049155005

Date commenced : 05/11/2017

Put ✓ mark in appropriate box

What is the total strength of student and teachers in your College? (Approx.)

	No. Of Student	No Of Teacher
1 UG Engineering	1590	94
2 PG Engineering	110	09
3 MBA	NA	NA
TOTAL	1700	103

Which of the following are available in your College?

- 1 Garden area with Lawn
- 2 Play Ground
- 3 Kitchen 04
- 4 Toilets (Number) 14
- 5 Garbage dumps (Number) 12
- 6 Laboratory 60
- 7 Canteen 01
- 8 Other (Specify)
(Rain water Harvesting, Underground
percolation tank, Farm pond, Raw water
storage pond) 02

Which of the following are found near your College?

Mark the level of disturbance it create for the College in a scale of 1 to 9

1. Municipal dump yard	00
2. Garbage head	01
3. Public convenience	00
4. Sewer line	01
5. Stagnant Water	00
6. Open drainage (River)	01
7. Industry – (Sugar Industry)	00
8. Bus/Railway Station	00
9. Market/Shopping complex/Public halls	00

I-WASTE

1 Does your College generate any waste ?

If so, what are they ?

Yes ✓

Garden waste

Papers, box

Plastic

Keyboared, Drumbs etc

2 What is the approximate amount of waste generated per day ?

(In Kilograms) (Approx)

Approx	Bio degradable	Non-Bio degradable	Hazardous	Others
1 kg				
2-10 kg	Yes ✓			
10 kg		Yes ✓		Yes ✓

3 How is the waste generated in the College managed? By

	Yes	No.	How
1. Composting	✓		Composting
2. Recycling	✓		Giving for recycling
3. Reusing	✓		Paper print both side
4. Other (specify)			Given to pig farm
Food waste from Mess			
(Biological Hazardous waste)			

HAZARDOUS MATERIAL

No any Hazardous material generated in chemistry lab and Civil Engineering labs.

4. How many separate boxes do you think you would need to put a class room laboratory To start a waste segregation and recycling Campaign.

No Need

5. Do you use recycled paper in College ? Yes No
6. How would you spread the message of recycling to other in the community ?
Have you taken any initiatives ? If yes, please specify Yes

A survey was carried by Civil department Government College and the DTE has given Instructions accordingly. We are following the necessary guidelines and they have been Circulated to all the department in 2015.

7. Can achieve zero garbage in your College ? If yes, how ?

Yes No

Aurangabad corporation has appointed a private agency (M/S Reddy) to collect the garbages from campus at regular interval.

II – GREENING THE CAMPUS

8. Is there a garden in your College? Yes No
- Do student spend time in the garden? Yes No
- List the plants with approx. numbers of each species
1. Numbers of plants in campus is approx. 2491
9. Suggest plants for your campus. (Trees, vegetables, herbs etc.)
- Trees, Herbs
10. List the species planted by the students with numbers.
- | | | |
|-----|------------------------------|---------|
| 1. | Bottle Palm | 120 |
| 2. | Neem | 15 |
| 3. | Coconut | 02 |
| 4. | Umber | 01 |
| 5. | Gulmohar and similar species | 05 |
| 6. | Rubber (small leaf) | 40 |
| 7. | Pipal | 06 |
| 8. | Morpankhi | 15 |
| 9. | Babul | 20 |
| 10. | Rose | 30 |
| 11. | Badam | 03 |
| 12. | Ashoka | 10 |
| 13. | Mango | 105 |
| 14. | Assorted plants | 40 |
| 15. | Guava | 375 |
| 16. | Dense forest | 1200 |
| 17. | Lawns | 01 acre |

III - ENERGY

11. List ten ways that you use energy in your College

1. Light & Fans
2. Heating Refrigeration & Air conditioning system
3. Internet & Computer
4. Practical equipments
5. Pumping

(Electricity, Diesel Generators, LPG, Solar, Biogas)

Using this list try to think of ways that you could use less energy every day

Sr. No.	Energy	Reduction of usage
1.	Electricity	10 %
2.	Generator	20 %
3.	LPG	00 %
4.	Solar	20 %

12. Are there energy saving methods employed in your College ?

If yes, please specify

Yes No

CFL Lamps are installed in the College (Provision of CFL/LED Lamps wherever Possible)

Solar Water heaters are used in hostel

Optimum use of electrical equipment

LCD monitors are used in computer labs

13. How much money does your College spend on energy such as electricity, gas, firewood etc. in a month record it

NA

14. How many CFL* bulbs has your College installed ?

100

If none, why not ?

Electronic tubes are also installed in Collee Campus

15. Are any alternative energy sources employed/installed in your College ?
Yes No

(Photovoltaic cells for solar energy, energy efficient stoves, etc) Specify –
Solar collecting panels are installed for water heating in the hostels.

16. Do you run "switch off" drills at College ? Yes No

Boards are displayed in each lab and class room as "Switch of light and fan when
You leave."

Auto switches with illumination intensity sensors are installed in the main building for
Overnight illumination.

17. Are your computers and other equipment put on power saving mode ?

Yes No

18. Does your machinery (TV, AC, Computer, weighing balance printers etc) run on standby

Modes most of the time ?

If yes, how many hours ?

Yes No 02 Hours

IV – WATER CONSERVATION

19. List four uses of water in your College

1. Drinking
2. Washrooms
3. Laboratories
4. Gardening

20. How does your College store water ? Are there any water saving Techniques followed in your College ? Yes No

What are they ?

College having underground and overhead tanks with cover ?

21. If there is water wastage, specify why ? Yes No

How can the wastage be prevented / stopped ?

It is prevented by using push back taps and flushes.

Wastage from the RO filters is collected in open tank and used for garden.

22. Locate the point of entry of water and point of exit of waste water in your College.

Entry - AMC water supply, Bore well and open well.

Exit - Drainage

- Where does your water come from ? (source)
Water comes from Jayakwadi reservoir, open well and Bore well in the campus.

- Where does the waste water go ?

All waste water is collected through underground sewers and disposed to **outside** drainage.

23. Write down four ways that could reduce the amount of water used in your Institute.

1. By using push cock system.
2. Avoid evaporation of water.
3. Provided glass for drinking purpose.
4. By making awareness in students to save the water.

24. Record water used from the College water meter for six months (Record at the same time of each day). At the end of the period, compile a table to show how many liters of water have been used.

Week	Water for toilet (Ltr)	Water for drinking (Ltr)	Water for gardening (Ltr)	Water for laboratory
1	12000	50000	15000	500
2	12010	49998	15007	498
3	12005	50005	12010	504
4	12015	50010	15015	515

25. Does your Institution harvest rain water?

Yes ✓

No

If yes, how many rain water harvesting units are there?

02

V - ANIMAL WELFARE

25. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds insects etc)

Dogs - 04

Cats - 03

Squirrels - 05

Birds of various species - Ample

27. How many dogs in your area have undergone Animal Birth Control Anti Rabis (ABC-AR) ? AMC carries out this regular activity.

How many need ABC - AR ? AMC carries out this regular activity.

28. Which is the animal welfare organization nearest to your College ?

Does it have an ambulance service ?

Yes No✓

29. Is there any incidence of animals getting wounded/affected due to unfavourable conditions existing in your College or nearby (like a dog getting wounded, poisoning of animals, improper caging of animals, hunting of animals etc)

Yes No✓

What did you / your College / neighbour do?

Nil

VI – GENERAL

30. Are you aware of any environment laws pertaining to different aspects of environmental Management? Yes No

31. Does your College have any rules to protect the environment ?

Yes No

List possible rules you could include.

- Building is planned to have natural illumination and good air cross ventilation.
- Plant more trees and educate others about the positive aspects of it.
- Choose fuel efficient travel options, travel less and try to pick more direct routes to save on fuel.
- Use less Fossil Fuel Based Products.
- Conserve Water.
- Reduce use of harmful chemicals.
- Animal should not be injured or killed.
- Having identifies parking near the entry and exit gates.

ACTION PLAN

- Conveniently co-locate recycling and trash bins to improve convenience and reduce cross contamination.
- E-Waste Bins are placed in College Campus.
- Start a composting pilot project.
- To take the Solar energy power generation initiative to the next level. Planned to establish solar energy park and workshops related to renewable energy are conducted during academic to create awareness among the students.

CONCLUSIONS

It is that the College performs fairly well on sustainability issues. The College does consider the environmental impacts of most of its actions and makes concerted efforts to act in an environmentally responsible manner. In conversations with faculty, staff and administration of the College major improvements were made over the last ten years.

The main recommendations are:

- Improve the College's monitoring and reporting of water and energy usage and provide better feedback and information to campus users.
- To continue working towards composting the post-consumer food waste generated by the dining halls.


5/11/2017
Dr. Deepak N. Kakade
Aurangabad.

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Aurangabad - 431 002 (M.S.)
C + 91-9049155005 O+91 8459736033
E- Deepak.kak05@gmail.com

Put mark in appropriate box

What is the total strength of student and teachers in your College? (Approx.)

	No. Of Student	No Of Teacher
1. UG Engineering	1380	93
2. PG Engineering	108	09
3. MBA	NA	NA
TOTAL	1488	102

Which of the following are available in your College?

1. Garden area with Lawn
2. Play Ground
3. Kitchen ..04
4. Toilets (Number) ..14
5. Garbage dumps (Number) ..12
6. Laboratory ..60
7. Canteen ..01
8. Other (Specify)
(Rain water Harvesting, Underground percolation tank, Farm pond, Raw water storage pond) ..02

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7. Industry – (Sugar Industry)	00
8. Bus/Railway Station	00
9. Market/Shopping complex/Public halls	00

I-WASTE

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If so, what are they ?

Yes

Garden waste

Papers, box

Plastic

Keyboards, Drums etc.

2. What is the approximate amount of waste generated per day ?

(In Kilograms) (Approx)

Approx	Bio degradable	Non-Bio degradable	Hazardous	Others
1 kg.				
2-10 kg.	Yes ✓			
10 kg.		Yes ✓		Yes ✓

3. How is the waste generated in the College managed? By

Yes No

How

1. Composting

✓

Composting

2. Recycling

✓

Giving for recycling

3. Reusing

✓

Paper print both side

4. Other (specify)

Given to pig farm

Food waste from Mess

(Biological Hazardous waste)

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Have you taken any initiatives? If yes, please specify Yes ✓

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Yes

No ✓

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II – GREENING THE CAMPUS

8. Is there a garden in your College Yes ✓ No
- Do student spend time in the garden ? Yes ✓ No

List the plants with approx. numbers of each species.

1. Numbers of plants in campus is approx. 2,491.

9. Suggest plants for your campus. (Trees, vegetables, herbs etc.)

Trees. Herbs

10. List the species planted by the students with numbers.

1.	Bottle Palm	120
2.	Neem	20
3.	Coconut	02
4.	Umber	01
5.	Gulmohar and similar species	05
6.	Rubber (small leaf)	40
7.	Pipal	10
8.	Morpankhi	15
9.	Babul	20
10.	Rose	30
11.	Badam	03
12.	Ashoka	10
13.	Mango	105
14.	Assorted plants	40
15.	Guava	375
16.	Dense forest	1200
17.	Lawns	01 acre

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If none, why not ?

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IV – WATER CONSERVATION

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20. How does your College store water ? Are there any water saving Techniques followed in your College ? Yes No
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 If yes, how many rain water harvesting units are there ? 02

V - ANIMAL WELFARE

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Cats - 02

Squirrels - 10

Birds of various species - Ample.

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28. Which is the animal welfare organization nearest to your College ?

Does it have an ambulance service? Yes No[√]

29. Is there any incidence of animals getting wounded/affected due to unfavourable conditions existing in your College or nearby (like a dog getting wounded, poisoning of animals, improper caging of animals, hunting of animals etc)

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What did you / your College / neighbour do? Nil

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ACTION PLAN

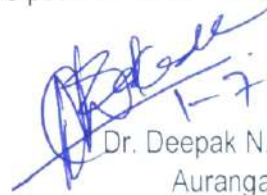
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1-7-2018
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- Conveniently co-locate recycling and trash bins to improve convenience and reduce cross contamination.
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- Start a composting pilot project
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10-9-2019
Dr. Deepak N. Kakade
Aurangabad.

DR. DEEPAK N. KAKADE

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SAKSHI CONSULTANTS

- Consulting Engineer
- R.C.C. Designer
- Approved Valuer

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Ref :

Date :

ENVIRONMENTAL AUDIT

QUESTIONARIES

Name : P.E.S. COLLEGE OF ENGINEERING

ADDRESS : Nagsenvana, Panchakki Road, Aurangabad-431001.

Telephone No. : 0240-2403001, 0240-2403011

E-mail ID : principal@pescoe.ac.in

Name of Co-Ordinator : Prof. Dr. Deepak N. Kakade

Telephone No. : 9049155005

Date commenced : 04/10/2020

Put \checkmark mark in appropriate box

What is the total strength of student and teachers in your College ? (Approx)

TEACHER	NO. OF STUDENT	NO OF
1. UG Engineering	1800	120
2. PG Engineering	108	09
3. MBA	NA	NA
TOTAL	1908	129

Which of the following are available in your College?

1. Garden area with Lawn \checkmark
2. Play Ground \checkmark
3. Kitchen ... \checkmark ..04
4. Toilets (Number) ... \checkmark ..14
5. Garbage dumps (Number) ... \checkmark ..12
6. Laboratory ... \checkmark ..60
7. Canteen ... \checkmark ..01
8. Other (Specify)
(Rain water Harvesting, ... \checkmark ..02

Underground percolation tank, Farm pond, Raw water storage pond)

Which of the following are found near your College?

Mark the level of disturbance it create for the College in a scale of 1 to 9

1. Municipal dump yard	00
2. Garbage head	01
3. Public convenience	00
4. Sewer line	00
5. Stagnant Water	00
6. Open drainage (River)	01
7. Industry – (Sugar Industry)	02
8. Bus/Railway Station	00
9. Market/Shopping complex/Public halls	00

I-WASTE

1. Does your College generate any waste ? yes ✓

If so, what are they ?

Garden waste,

Papers, box

Plastic

Keyboards, Drums etc.

2. What is the approximate amount of waste generated per day ?
(In Kilograms) (Approx.)

Approx	Bio degradable	Non-Bio degradable	Hazardous	Others
Less than 1 kg.				
2-10 kg.	Yes ✓			
Greater than 10 kg.		Yes ✓		Yes ✓

3. How is the waste generated in the College managed? By

	Yes	No.	How
1. Composting	✓		Composting
2. Recycling	✓		Giving for recycling
3. Reusing	✓		Paper print both side
4. Other (specify)			Given to pig farm
Food waste from Mess			
(Biological Hazardous waste)			

HAZARDOUS MATERIAL

No any Hazardous material generated in chemistry lab and Civil Engineering labs.

4. How many separate boxes do you think you would need to put a class room laboratory To start a waste segregation and recycling Campaign.

No Need

5. Do you use recycled paper in College? Yes No

6. How would you spread the message of recycling to other in the community ?

Have you taken any initiatives? If yes, please specify Yes

A survey was carried by Civil department Government College and the DTE has given Instructions accordingly. We are following the necessary guidelines and they have been Circulated to all the department in 2020.

7. Can achieve zero garbage in your College ? If yes, how ?

Yes

No

Aurangabad corporation has appointed a private agency (M/s Reddy) to collect the garbages from campus at regular interval.

II – GREENING THE CAMPUS

8. Is there a garden in your College Yes ✓ No
Do student spend time in the garden ? Yes ✓ No

List the plants with approx. numbers of each species.

1. Numbers of plants in campus is approx. 2,491.

9. Suggest plants for your campus. (Trees, vegetables, herbs etc.)

Trees, Herbs

10. List the species planted by the students with numbers.

1.	Bottle Palm	120
2.	Neem	15
3.	Coconut	02
4.	Umber	01
5.	Gulmohar and similar species	05
6.	Rubber (small leaf)	40
7.	Pipal	06
8.	Morpankhi	15
9.	Babul	20
10.	Rose	30
11.	Badam	03
12.	Ashoka	10
13.	Mango	105
14.	Assorted plants	40
15.	Guava	375
16.	Dense forest	1200
17.	Lawns	01 acre

III – ENERGY

11. List ten ways that you use energy in your College.

1. Light & Fans
2. Heating Refrigeration & Air conditioning system
3. Internet & Computer
4. Practical equipments
5. Pumping

(Electricity, Diesel Generators, LPG, Solar, Biogas).

Using this list try to think of ways that you could use less energy every day.

Sr. No.	Energy	Reduction of usage
1.	Electricity	10 %
2.	Generator	20 %
3.	LPG	00 %
4.	Solar	20 %

12. Are there energy saving methods employed in your College ?

If yes, please specify.

Yes ✓

No

CFL Lamps are installed in the College (Provision of CFL/LED Lamps wherever Possible)

Solar Water heaters are used in hostel

Optimum use of electrical equipment.

LCD monitors are used in computer labs.

13. How much money does your College spend on energy such as electricity, gas, firewood etc. in a month record it.

Record Monthly

Month	Electric meter reading	LPG Consumption	Fuel for Generator
June-2020	34049	Rs. 00	Rs. 5000
July-2020	22768	Rs. 00	Rs. 5000
Aug- 2020	23316	Rs. 600	Rs. 5000
September-2020	39570	Rs. 600	Rs. 5000
October-2020	31540	Rs. 600	Rs. 5000

14. How many CFL* bulbs has your College installed? 100
If none, why not?
Electronic tubes are also installed in Collee Campus
15. Are any alternative energy sources employed/installed in your College?
Yes No
(Photovoltaic cells for solar energy, energy efficient stoves, etc) Specify –
Solar collecting panels are installed for water heating in the hostels.
16. Do you run "switch off" drills at College? Yes No
Boards are displayed in each lab and class room as "Switch of light and fan when
You leave."
Auto switches with illumination intensity sensors are installed in the main building for
Overnight illumination.
17. Are your computers and other equipment put on power saving mode ?
Yes No
18. Does your machinery (TV, AC, Computer, weighing balance printers etc) run on standby
Modes most of the time ?
If yes, how many hours ? Yes No 02 Hours

IV – WATER CONSERVATION

19. List four uses of water in your College

1. Drinking
2. Washrooms
3. Laboratories
4. Gardening

20. How does your College store water ? Are there any water saving Techniques followed in your College ?

Yes No

What are they ?

College having underground and overhead tanks with cover ?

21. If there is water wastage, specify why ?

Yes No

How can the wastage be prevented / stopped ?

It is prevented by using push back taps and flushes.

Wastage from the RO filters is collected in open tank and used for garden.

22. Locate the point of entry of water and point of exit of waste water in your College.

Entry - AMC water supply, Bore well and open well.

Exit - Drainage

- Where does your water come from ? (source)

Water comes from

Jayakwadi reservoir, open well and Bore well in the campus.

- Where does the waste water go ?

All waste water is collected through underground sewers and disposed to outside drainage.

23. Write down four ways that could reduce the amount of water used in your Institute.

1. By using push cock system.
2. Avoid evaporation of water.
3. Provided glass for drinking purpose.
4. By making awareness in students to save the water.

24. Record water used from the College water meter for six months (Record at the same time of each day). At the end of the period, compile a table to show how many liters of water have been used.

Week	Water for toilet (Ltr)	Water for drinking (Ltr)	Water for gardening (Ltr)	Water for laboratory
1	12000	50000	15000	500
2	12010	49998	15007	498
3	12005	50005	12010	504
4	12015	50010	15015	515

25. Does your Institution harvest rain water ? Yes No

If yes, how many rain water harvesting units are there ? 02

V – ANIMAL WELFARE

26. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds insects etc)

Dogs - 05

Cats - 02

Squirrels - 10

Birds of various species – Ample.

27. How many dogs in your area have undergone Animal Birth Control Anti Rabis (ABC-AR) ? AMC carries out this regular activity.

How many need ABC – AR ? AMC carries out this regular activity.

28. Which is the animal welfare organization nearest to your College ?

Does it have an ambulance service ? Yes No ✓

29. Is there any incidence of animals getting wounded/affected due to unfavourable conditions existing in your College or nearby (like a dog getting wounded, poisoning of animals, improper caging of animals, hunting of animals etc)

Yes No ✓

What did you / your College / neighbour do ? Nil

VI – GENERAL

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31. Does your College have any rules to protect the environment ?
Yes No

List possible rules you could include.

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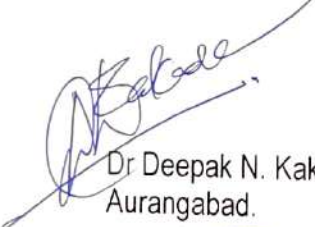
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CONCLUSIONS

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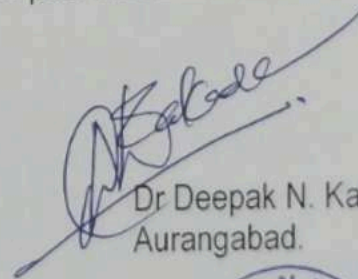
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