



R. C. Patel Educational Trust's  
**R. C. Patel Arts, Commerce and Science College**  
Shirpur-425405, Karvand Naka, Dist.- Dhule (Maharashtra)  
E-mail - principal@rcpasc.ac.in

**Affiliated to: K. B. C. North Maharashtra University, Jalgaon-425001**

## **Self Study Report (SSR): 2024 (4<sup>th</sup> Cycle)**



**Criteria - 7**  
**Institutional Values and Best Practices**

**Key Indicator - 7.1**  
**Institutional Values and Social Responsibilities**

**Metric No. - 7.1.3 (QnM)**

**Quality audits on environment and energy regularly undertaken by the Institution.  
The institutional environment and energy initiatives are confirmed through the following**

- 1. Green audit / Environment audit**
- 2. Energy audit**
- 3. Clean and green campus initiatives**
- 4. Beyond the campus environmental promotion and sustainability activities**

**Submitted to**  
**National Assessment and Accreditation Council, Bangalore**



R. C. Patel Educational Trust's

**R. C. Patel Arts, Commerce and Science College**

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**President**

Hon. Bhupeshbhai Patel

**Principal**

Dr. D. R. Patil

**Date:** 15/06/2024

## Declaration

This is to declare that, the information, reports, true copies of the supporting documents, numerical data etc. submitted in these files is verified by Internal Quality Assurance Cell (IQAC) and it is correct as per the office record.

This declaration is for the purpose of NAAC accreditation of the HEI for the 4<sup>th</sup> cycle assessment period 2018-19 to 2022-23.

**Place:** Shirpur

**Date:** 15/06/2024

**Dr. Sandip P. Patil**

**IQAC Co-ordinator**

**IQAC Coordinator**

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce and Science College

Shirpur, Dist.-Dhule (M.S.) 425405



**Dr. D. R. Patil**

**IQAC Chairman & Principal**

**PRINCIPAL**

R. C. Patel Educational Trust's

R. C. Patel Arts, Commerce and Science College

Shirpur, Dist.-Dhule (M.S.) 425405

# ENVIRONMENTAL AUDIT REPORT

**of**

R. C. Patel Art's Commerce and  
Science College, Shirpur

(April 2023)

Prepared By



**Nature Adobe Systems**  
Environment Management System



# Nature Adobe Systems



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To

Date:01/05/2023

The Principal

R. C. Patel Art's Commerce and Science College, Shirpur

Environmental Audit Report of R. C. Patel Arts, Commerce & Science College Shirpur Dist.- Dhule has been prepared by Nature Adobe System based on survey of the college campus, checking records and interactions with Teaching, Non-Teaching staff and students.

The audit was conducted on dated 20/04/2023 The Environmental audit report presents Environmental initiatives taken up by the institution and provides suggestions and recommendations to improve environmental sustainability.

The data prepared for the R. C. Patel Arts, Commerce & Science College Shirpur will be a useful tool for campus Environment, resource management, planning of future projects, and a document for implementation of sustainable development of the college. Existing data will allow the college to identify areas in need of improvement and prioritize the implementation of future projects.

We expect that the management will be committed to implement the Environmental audit recommendations. We are happy to submit this Environmental audit report to the R. C. Patel Arts, Commerce & Science College Shirpur authorities.

*Wheles*

V. S Shelke

EMS Consultant

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## 1. About the College

The R. C. Patel Arts, Commerce and Science College, Shirpur, was established in 19/09/1991 under the R. C. Patel Education Trust, Shirpur. The R. C. Patel Education Trust is a profound educational movement offering secondary and tertiary education since the last 25 years to rural and tribal students of this region. The R. C. Patel Arts, Commerce and Science College, Shirpur (Dist. Dhule), Maharashtra is located in the rural and tribal area of Maharashtra. The college works with a clear vision to be a pre-eminent institute which brings out the best amongst students. The college is affiliated to Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon (Maharashtra).



## 2. Introduction

Environmental auditing is essentially an environmental management tool for measuring the effects of certain activities on the environment against set criteria or standards. Depending on the types of standards and the focus of the audit, there are different types of environmental audit. Organizations of all kinds now recognize the importance of environmental matters and accept that their environmental performance will be scrutinized by a wide range of interested parties. Environmental auditing is used to • investigate • understand • identify these are used to help improve existing human activities, with the aim of reducing the adverse effects of these activities on the environment. An environmental auditor will study an organization's environmental effects in a systematic and documented manner and will produce an environmental audit report.

Environmental auditing is a process whereby an organization's environmental Performance is tested against its environmental policies and objectives set by Government of India. Intention of audit is identifying the effects of its practices on the Environment. As a part of such practice, internal environmental audit is conducted to evaluate the actual scenario at the campus. On this background it becomes essential to adopt the system of the Environment Campus for the institute. The environmental auditor appropriately monitors the system for safe disposal of waste in the Institutes to ensure the safety of the natural resources.

Nature Adobe System (Environmental Auditor) observed the college premises on month of 20/04/2023 for Environmental Audit. During the audit, the team visited entire college campus i.e., classrooms, library, washrooms, seminar hall, staff rooms, administration office, department, Practical labs etc. During the audit the institute was functioning normally. A systematic approach to environmental management can provide management the information to build success over the long term and create options for contributing to sustainable development by

1. Protecting the environment by preventing adverse environmental impacts.
2. Studying the potential adverse effect of environmental conditions on the organization.
3. Determine how well the environmental management information systems and equipment are performing.

### **3. Methodology for Environmental Impact Assessment**

Environmental Impact Assessment (EIA) is a systematic process to identify, predict and evaluate the environmental effects of proposed actions to aid decision making regarding the significant environmental consequences of a project on environment.

To perform audit, the methodology included different tools such as preparation of physical inspection of the campus, observation, and review of the Environment and recommendations. Includes Water Conservation, Water management, Energy Conservation, Tree Plantation & Waste Management, E-waste management, Paperless Work etc. The specific objectives of the audit are to evaluate the adequacy of the management control framework of environment sustainability. It can make a tremendous impact on student health and learning environment.

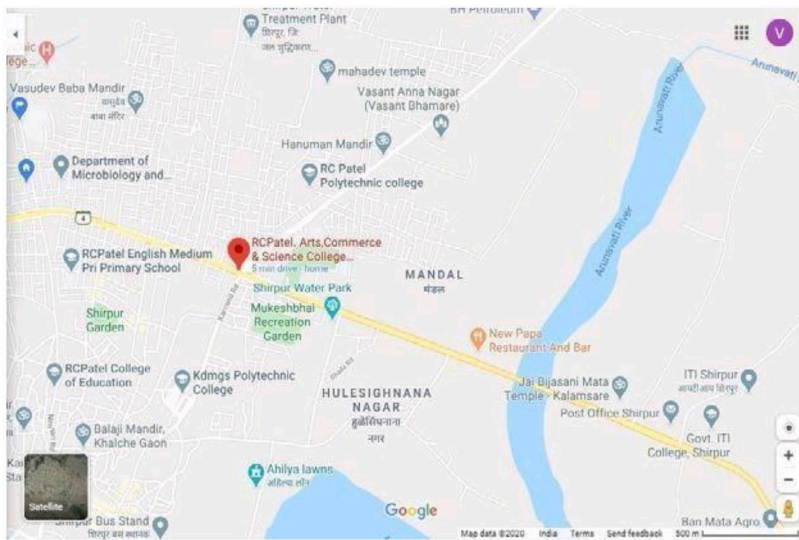
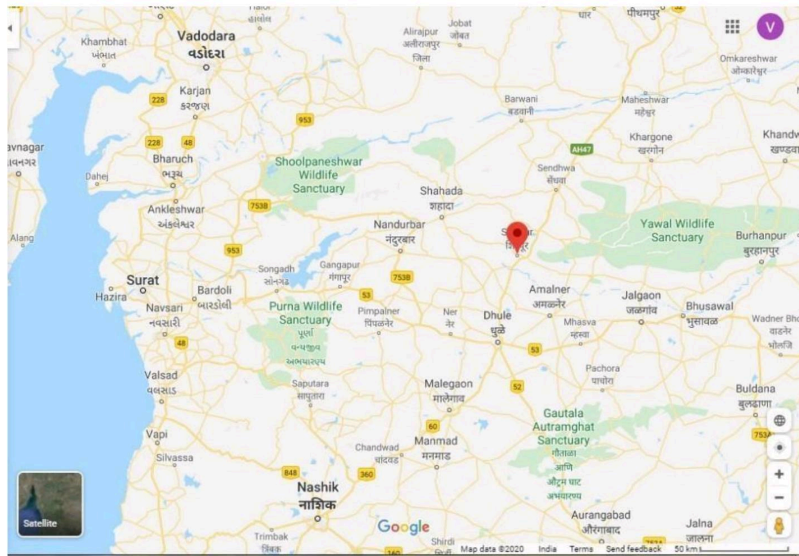
### **4. Objectives of Environmental Auditing**

- Environmental audit assesses the level of compliance of Institutions with regulations and standards in the field of environmental protection.
- Environmental audit is to assess effectiveness of environmental management and
- Environmental auditors assess impact of the practices on the environment.



## 5. Location for Environmental Audit

R. C. Patel Arts, Commerce and Science College, Shirpur. The total built area of is around 5000 sq. meter. Total a campus of 15.5 acres. The approach road is busy as it's a side by National highway and there is considerable traffic. The land use of the area is mainly institutional and residential.



RCP ACS Geographical location

## 6. Environmental Audit Procedural Steps

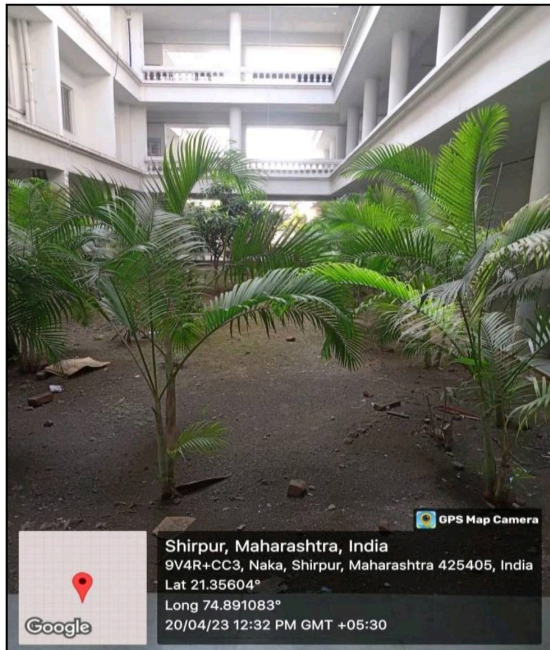
The Audit Procedural Steps covered major areas, which were further divided into subareas. The compliance was checked in following areas and assessment is done by using different assessment tools, like Visual inspection, Questionnaires, Check list.

- Day light Design and Ventilation
- Water Efficiency
- Rainwater Harvesting
- Indoor Air Quality
- Energy Efficiency
- Temperature and Acoustic Control
- Wastewater Management
- Paper Waste Management
- E-Waste Management
- Solid Waste Management
- Liquid Waste Management

## 7. Good day light Design and Ventilation

Well ventilated classrooms with wide doors and large glass windows. However, the windows are closed to avoid noise.

- Corridors are wide with high ceiling.
- Light colored curtains are provided on the windows to avoid glare, but it allows the sunlight.
- LED tube lights are provided in the classrooms & corridors, which save electricity.
- Classrooms have wide windows and fans, which help in ventilation.
- Computer labs have air conditioners.
- Washrooms have windows to disperse heat, fumes and odors



## 8. Water Efficiency

The main source of water is Boar well to the institute. Water used in institute for many purposes like drinking, flushing, cleaning the toilets, and in various labs are chemistry, Microbiology, Biotechnology, Botany and Zoology.

Major observation during the audit is listed below:

- Each floor has drinking water coolers with water purifiers.
- Water is used for toilet flushing.
- Water is used for floor cleaning. (Mops are used for floor cleaning)
- Wash basins are provided with well working conditions.
- In all water coolers eco-friendly refrigerants are used.
- No leaking faucets were seen anywhere. If water leakage is observed, maintenance department is called immediately to attend to the complaints.
- Rainwater harvesting, a sustainable source of water, is practiced.



## 9. Rainwater Harvesting

Rainwater harvesting facility is available for recharge of ground water. The college building design has provision for collection of rainwater. The building design includes PVC piping at various points. The rainwater is carried through the pipeline and discharged in the concealed underground well dug back side of the college building. The rainwater is discharged in big soak pit at the back side of the college building. It is filled of pebbles, stones and fully covered (contrary to an open well for example). The percolation rate of a recharge pit is much less than of an open well. The water percolates slowly because there is no hydrostatic pressure in the pit. The soak pit is covered with concrete to avoid the inconvenience. The covered soak pit also provides extra space for student parking. The rainwater harvested thus helps to recharge the ground water. A ground water recharge pit allows the rainwater to replenish the bore well and groundwater by recharging the underground aquifers.



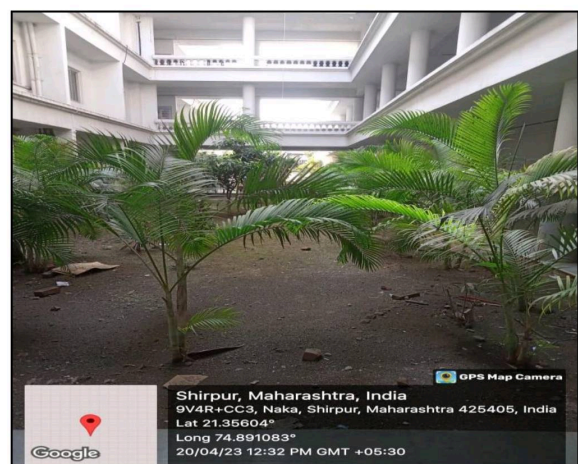
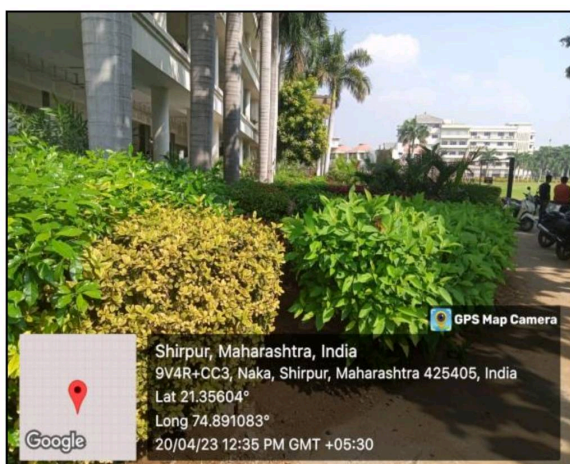
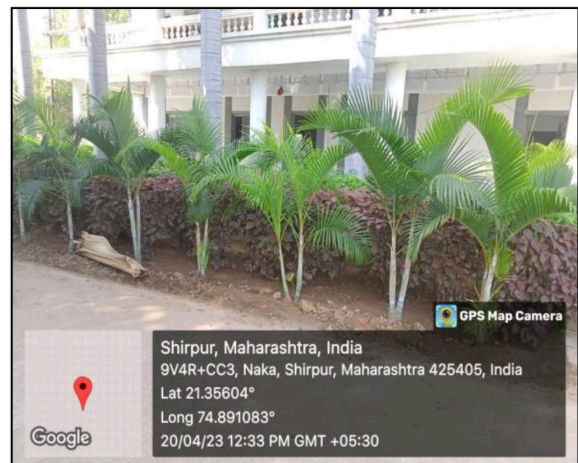
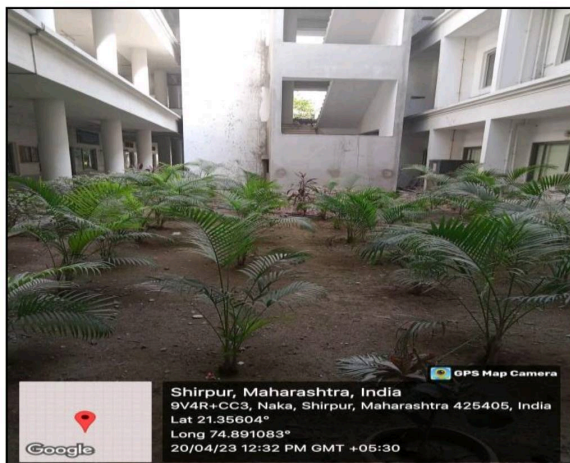
## 10. Indoor Air Quality

Indoor Air Quality (IAQ) refers to the air quality within and around buildings & structures, and it relates to the health and comfort of building occupants. Some common indoor pollutants are listed below:

- Ammonia- Produce at the time of chemistry practical
- Hydrogen Sulfide -Produce at the time of reaction.
- Carbon monoxide – Sources of carbon monoxide are incomplete combustion of fossil fuels.
- Carbon dioxide – Due to human respiration
- Particulate matter – Due to construction and maintenance activities.

It is observed that Institute has

- Washrooms are without exhaust fan.
- More Indoor plants are needed in the entire campus.



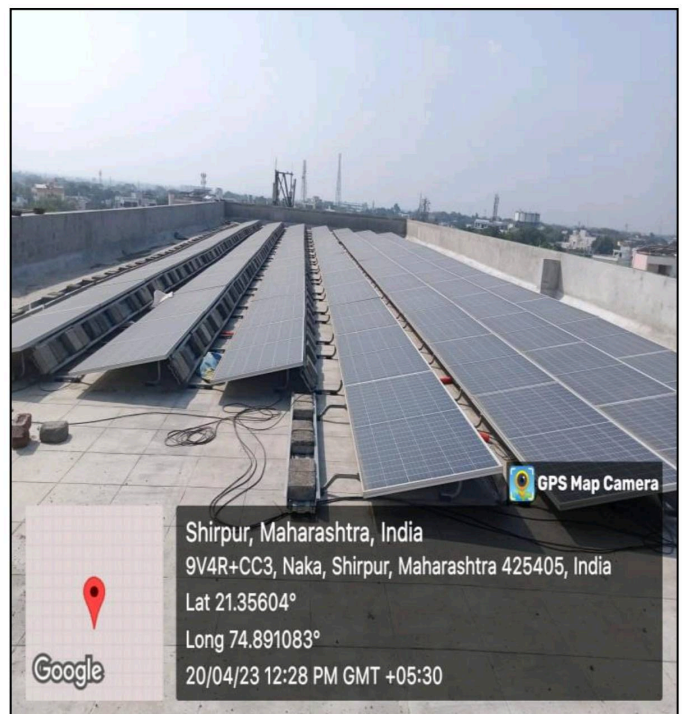
## 11. Energy Efficiency

The areas of major consumption of electricity are:

RCPASC is digitized to a large extent.

It is observed that Institute has

- Institute has Installed Solar Power System on the Roof Top 25 KW
- The total number of computers available in the college are 120 in working condition.
- LED Lights, Tube lights and fans – approximately 56, 190 and 155 nos. respectively.
- One Elevators – Common for the staff & students.
- Air Conditioners – 12 nos.
- The design of buildings assures maximum usage of natural light and air to save electricity.
- It was observed that windows with curtains are provided in classrooms, labs, faculty room, and seminar halls, which allow natural sunlight and in turn, leads to electricity conservation.
- The classrooms are spacious and have large windows which allow all time fresh air to move in and out and thus it requires minimum electricity.
- LED lights are provided in the campus which are eco-friendly and consume less energy. LED lights can save energy up to 75% and they are 25 times durable than incandescent lights.
- The R. C. Patel Arts, Commerce and Science College is naturally ventilated building
- Institute ensure that there is no wastage of electricity as they keep checking after classes/lectures are over and office hours end.
- Use signage encouraging users to switch off light and fans to save electricity.
- Use posters near electrical switches will help in making students responsible for conservation of electricity.

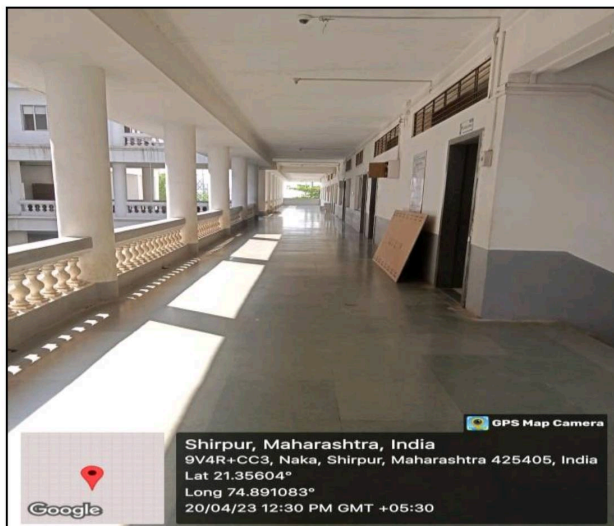
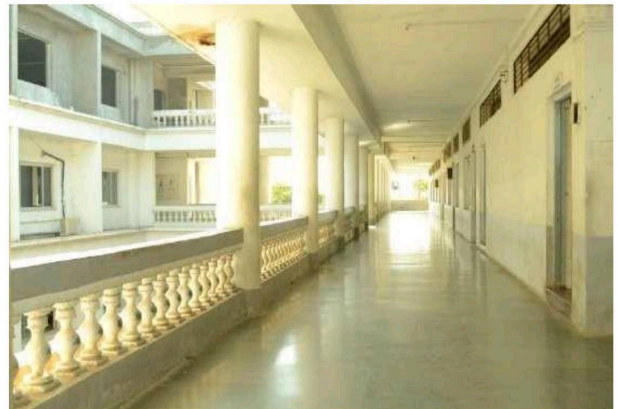




## 12. Temperature and Acoustic Control

It is observed that Institute has

- White-washed rooms & passages improve the lighting conditions.
- Acoustic control walls are provided in seminar hall and meeting rooms, which are designed to minimize the exposure to sound



### 13. Wastewater Management

Major observations under wastewater management are listed below:

1. Sanitary wastewater generated from washrooms is connected to the main channel and that main channel is connected to the ground water recharge tank.
2. Wastewater generated from canteen is also connected to the sewerage system.
3. In addition, wastewater is generated from the chemical lab which is also connected to sewerage system.

### 14. Paper Waste Management

The institution has taken steps to minimize and avoid paper usage because, Waste paper is the main solid waste generated in the premises of institution.

It was observed that:

1. Many official processes such as sanctioning the leave, accounting etc. are made paper less and use of technology is promoted. As per the policy of Government of Maharashtra
2. All communication with all departments and internal notices are majorly through E mail & SMS.
3. Prints and photocopies are taken on both sides of the pages to avoid excess paper usage.
  - Important paper notices are displayed on the notice boards as well as communicated through bulk sms services available in our institution, all students and faculty members are informed through it.
  - Library using Microsoft software. Library database gives detailed information about library books. Several thousand e-books are also available. It is help to reduce paper waste.

## 15. E-Waste Management

It was observed that:

E- Waste is collected and resold to the retailers who contact the college and thus the college ensures recycling.

## 16. Solid Waste Management

It was observed that:

- The combined waste is directly handed over to Waste collector van of Shirpur, Municipal Corporation.
- The biodegradable waste is subjected for processing by vermi- composting in collaboration with municipal corporation Shirpur.
- The Department of Microbiology coordinated the vermicomposting of solid waste in several housing societies during the Swachh Bharat Abhiyan by providing the microbial culture for waste management. The efforts of the college helped Shirpur Municipal Council
- Separate bins are not provided for wet biodegradable and dry recyclable waste.
- Canteen generates major biodegradable and non-biodegradable waste but are not disposed properly.

## 17. Liquid Waste Management

- Liquid waste from the Chemistry, Microbiology and Biotechnology laboratories is processed as per the guidelines.
- Dripping and leaking taps are repaired time to time for effective use of water,
- Processed water is used for garden and maintenance of lawn.



## 18. Recommendations/ Suggestions

### 1. *For Improving Energy Consumption:*

1. Every classroom and lab with central switch board should have a diagram linking place of tube light, fan etc. with corresponding switch. This will ensure that correct fitting is switched on/ off and can save time & unnecessary operation.
2. Conduct awareness program for students and staff for energy conservation.
3. Notices/signage can be put up/ displayed near switches and on notice boards, informing students and staff to switch off all electricals when not in use

### 2. *Water Conservation:*

1. In campus small scale/medium scale/large scale reuse and recycle of water system is necessary
2. Reduce water usage by installing water saving faucets such as tap aerators, dual flushing system in toilets etc.
3. Encourage efficient water use Provide information on water usage and savings to students/ staff through notices, screen savers in computer labs.
4. Wastewater is conserved and recycled by filtration process.

### 3. *Paper and other Solid Waste Reduction:*

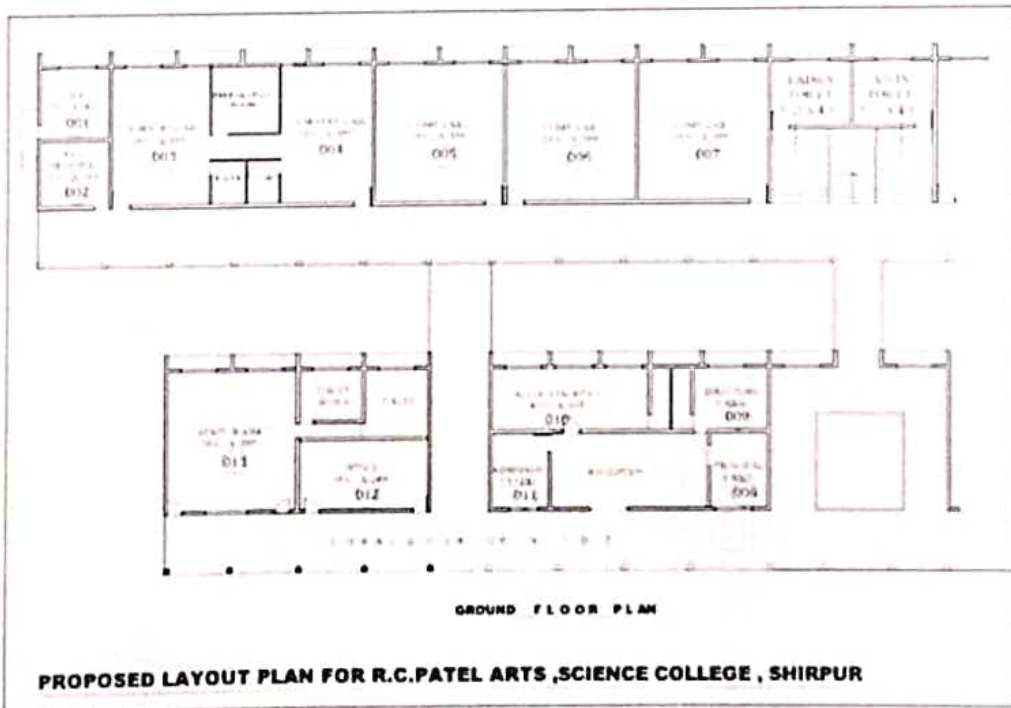
1. Solid waste generated in the premises must be maintained by awareness in students, staff (Teaching and non-teaching).
2. Training as well as awareness programs should be organized on segregation of biodegradable waste and recycling of waste
3. Biodegradable waste from canteen can be used for composting.

#### 4. *Others:*

1. Environmental advisory committee could be formed.
2. Promote environmental awareness as a part of course work in various curricular areas.
3. Adopt environmentally responsible purchasing policy, and work towards creating and implementing a strategy to reduce environmental impact of its purchasing decision.
4. Small Bio-gas project can be provided for canteen to treat the biodegradable waste.
5. Ensure that an audit is conducted annually, and action is taken based on audit report, recommendation, and findings.
6. Establish a College Environmental Committee that will hold responsibility for the Enactment, enforcement, and review of the Environmental Policy.
7. Celebrate every year 5th June as 'Environment Day'

# Annexure

## 1. Institute Layout



*Whelke*

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