

## Certificate

This is to certify that Green Audit was carried out by us at Nagindas Khandwala College of Commerce, Arts & Mgmt. Studies and Shantaben Nagindas Khandwala College of Science, Bhavishya Bharat Campus, S.V. Road, Malad (West), Mumbai -400 064 during the month of July 2016.

The scope, coverage, findings, and recommendations are submitted vide our report NKC – GA – 2016 dated July 7, 2016.

For **SENERGY CONSULTANTS PVT LTD**



**Tushar Kamble**  
**(Project coordinator)**

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**Tushar Kamble**  
**(Project coordinator)**

**Green Audit Report  
NK College of Commerce, Arts & Mgmt. Studies and SNK College of Science**

# **Report**

**On**

## **GREEN AUDIT**

**For**

**Nagindas Khandwala College of Commerce, Arts & Mgmt.  
Studies and Shantaben Nagindas Khandwala College of  
Science  
Malad**

**Prepared**

**By**

**Senergy Consultants Pvt Ltd  
Mumbai**

**July – 2016**

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NK College of Commerce, Arts & Mgmt. Studies and SNK College of Science

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# I

## Introduction

Green & Environment Audit was undertaken at Nagindas Khandwala College of Commerce, Arts & Mgmt. Studies and Shantaben Nagindas Khandwala College of Science, Bhavishya Bharat Campus , S.V. Road, Malad (West), Mumbai -400 064 during the month of July 2016.

The organization is very keen to promote green culture wherever possible, as a commitment towards better environment and conservation of energy. A lot of efforts have already been put up to bring down the carbon footprint. To further optimize consumption and identify saving opportunities, M/s Senergy Consultants was assigned to carry out Green & Environment Audit of the premises.

This Audit Report presents the analysis of the data collected, observations made at the facility and is governed by the objectives, scope of work, methodology etc. discussed in the ensuing paragraphs.

### **Team:**

The team members of the audit study.

- Mr Ravindra Datar
- Umesh Phatakare

### **Acknowledgment:**

We wish to express our gratitude towards Principal, Dr. Ancy Jose and Vice Principal, Dr. Moushumi Datta for having given us the opportunity for conducting the study and the support provided during the study.

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## **II Executive Summary**

The premises were evaluated against the various criteria laid down by the National Assessment and Accreditation Council (NAAC). The major observations are

1. Air Quality & Ventilation
  - a. The air ventilation is adequate.
  - b. The campus is well covered with green plants to improve air quality.
  
2. Water Quality & Conservation
  - a. The water supplied by the Municipal Corporation is used for drinking after purification; which is a common practice in and around Mumbai.
  - b. A borewell water is used for other applications like toilets flushing, washing of utensils, etc.
  - c. Water fountains / coolers are provided at convenient locations.
  - d. The various water conservation measures are initiated; The water consumption is generally within the norms.
  
3. Waste Management
  - a. The generation of waste is minimized through use of electronic communication and effective water management system.
  - b. The waste water is disposed of through common drainage system, which is usual practice in Mumbai.
  - c. The solid waste is segregated and disposed separately. The possibility of installing a composting pit to convert the organic waste is converted in to manure may be assessed.
  
4. Infrastructure usage
  - a. Movement on-campus is distributed with multiple entrances as well as staircases.
  - b. There is limited parking space for vehicles/four wheelers due to space constraints. Nonetheless, parking space has been provided for faculty. Almost all the students and many of the faculty members avail public transport system which is very convenient due to proximity to railway station and bus services.
  - c. There are adequate fire extinguishers located at key areas. The college has initiated appropriate measures to meet the safety requirement.
  - d. The draining system for washrooms is efficient and effective.
  - e. No seepages were observed in the building premises.
  
5. Green IT culture
  - a. Energy efficient computers and laptops are being procured.
  - b. In most of the cases, the computers are switched off, when not in use.
  - c. Electronic communication is encouraged to minimize usage of papers.
  - d. Most of the papers are reused for doubled sided printing.

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## III

# Electrical System

**Gadget List:****Lamps**

Location	Type of Light	No. of Lights
<b>Aided Building</b>		
Ground Floor	TFL	102
	LED	5
First Floor	TFL	90
Second Floor	TFL	81
Third Floor	TFL	77
Fourth Floor	TFL	90
Fifth Floor	TFL	18
Sixth Floor	TFL	18
Seventh Floor	TFL	18
<b>Self - Finance</b>		
Fourth Floor	TFL	33
Fifth Floor	TFL	36

Abbreviations:

LED: Light Emitting Diode Lamp

TFL: Tubular Fluorescent Lamp

**Fans**

Location	Number of Ceiling Fans
<b>Aided Building</b>	
Ground Floor	23
First Floor	39
Second Floor	33
Third Floor	28
Fourth Floor	28
Fifth Floor	12
Sixth Floor	12
Seventh Floor	12
<b>Self-finance</b>	
Fourth Floor	21
Fifth Floor	22
Total	230

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**Air Conditioners:**

<b>Location</b>	<b>Quantity</b>
<b>Aided Building</b>	
Ground Floor	16
First Floor	21
Second Floor	20
Third Floor	20
Fourth Floor	10
Fifth Floor	6
Sixth Floor	6
Seventh Floor	4
<b>Self-finance</b>	
Fourth Floor	13
Fifth Floor	14

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## IV Environmental System

### Ventilation & Air Quality:

- The air ventilation is adequate. It is suggested to provide additional fresh air through windows, fresh air / exhaust fans, whatever is feasible.
- It has been a general practice to switch off the fans & lights in an occupied area.
- The campus is well covered with green plants to improve air quality. There are total 68 plants of different categories within the campus.

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# V

## Water Management

### **Consumption Pattern:**

The water supplied by the municipal corporation is used only for drinking; while borewell water is used for other applications like toilets, washing of utensils and other requirements.

The incoming water from the municipal corporation is metered.

### **Water Purifiers:**

The water purifiers & coolers are installed on each floor and bottled water is not used in the campus.

### **Rain Water Harvesting:**

The possibility of harvesting rain water from Terrace is being assessed.

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## VI

# Waste Generation & Management

### **Sewage & Waste Water:**

The sewage is fed in to the municipal drainage. This is a common practice and the municipal corporation which charges cess towards the sewage charges.

### **Solid Waste:**

The organic as well as inorganic waste is segregated in the college premises and disposed separately.

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## VII Infrastructure & Safety

### **Movement on-campus (Distributed / non-distributed leading to crowds)**

The premises are provided with single staircase with necessary entrance to ensure quick and effective movement in normal conditions.

### **Parking space:**

There is less parking space for vehicles/four wheelers due to space constraints. Nonetheless, parking space has been provided for faculty. Almost all the students and most of the faculty members avail public transport system which is very convenient due to efficient bus services.

### **Fire-fighting & fire escape system:**

There are efficient fire extinguishers in the premises; which are checked / refilled as per the stipulated frequency.

The premises are provided with single staircase with necessary entrance to ensure quick and effective movement in normal conditions and for emergency the assembly point is provided at first floor.

### **Draining system:**

The drains from the washrooms are connected to the municipal drainage; which is a common practice in the colleges in and around Mumbai.

It is neither feasible nor practical to segregate the drains, install a sewage treatment plant and recycle the treated water for toilet flushing and / or gardening.

### **Seepage in the building:**

The premise was visually inspected for seepages.

No seepages were observed in any of the places.

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## **VIII Green Culture**

### **Computers/Laptops:**

1. The energy efficient LCD monitors & Laptops are being procured.
2. These monitors are not only energy efficient but also generate minimal heat and cut down on air conditioning load.

### **Recommendations:**

The following steps may be initiated to further enhance efficiency of the systems

1. An efficient power management system may be incorporated to
  - a. Switch off the display if not in use.
  - b. Put the computer in Sleep mode / switching off the machines, if not used for prolonged period.
2. Optimize brightness of the screen.
3. Discourage use of screen savers, which has similar power consumption.

### **Paper-less communication:**

The major internal as well as external communication is through electronic medium.

### **Re-using one sided paper for printing:**

It was observed that two side printing / printing on the back side of used paper in more than 80% of the cases.

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