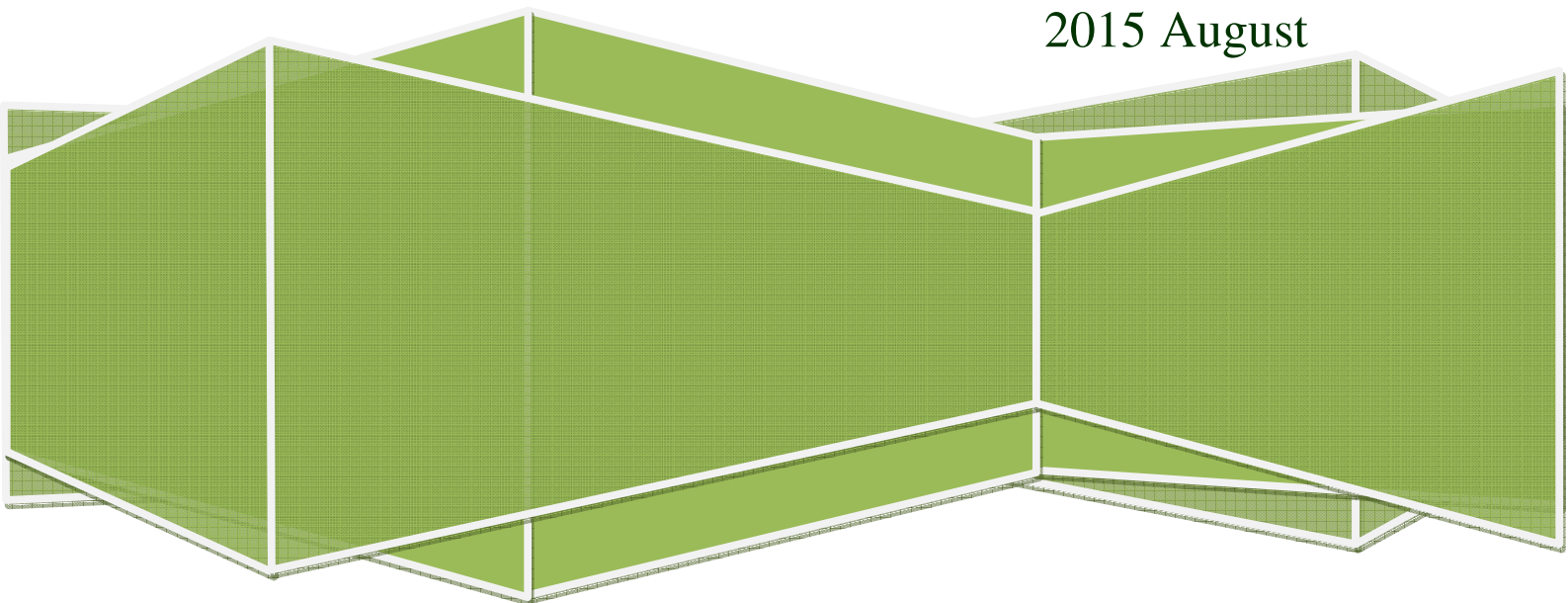




# Green Audit Report

Shri B.M.Patil Medical College Hospital & Research Centre -  
Bijapur

Audit Conducted by  
LG Professional Services  
2015 August



**SAFETY AUDIT REPORT**

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### Executive Summary

BLDE invited LG Professional services to conduct Green audit at its institution. LGPS with its professional experience of one and half decade established a framework through which the institution was assessed for Green audit.

The site was rated for various elements which defines the commitment of the institution to Greener institution to enhance the experience of the stakeholders such as management, faculty, students and the patients. It is found that the institution has high commitment to environment and it is very much evident from the greenery maintained in the campus and practices such as energy audit, water audit, carbon foot print, rain water harvesting, awareness sessions and biomedical waste management, treatment of waste water evidenced in the site during the audit.

A brief of the environmental commitment in each of the element of the framework developed by LGPS for Medical Institution and performance is given below.

**The elements rated for the green audit were 13 in number and each element had sub elements.**

1	Site (10 Marks)	6.95
2	Water Foot print (8 Marks)	4
3	Energy Foot print (8 Marks)	5
4	Waste Management (10 Marks)	5
5	Carbon Foot print (5 Marks)	2.5
6	Green Procurement (5 Marks)	1
7	Hygiene (8 Marks)	3.9
8	Health and safety (8 Marks)	4
9	Awareness (8 Marks)	4.03
10	Participation (4 Marks)	3
11	Legal Compliance (10 Marks)	2.6
12	Policy, strategy, Objectives (8 Marks)	5
13	Monitoring and Measurement (8 Marks)	5

**I) Site -First element Site had 10 sub elements and summary of the same is as below.**

#### **1. Surrounding**

The campus has institutions, commercial and residential localities with few shops on the East and West and Roads on covering 3 sides of the campus. Good green covered around the campus. No industries were found on either sides of the campus that could lead to possible contamination of the campus land, air, soil or water. Therefore no potential danger to the campus from the surroundings was observed.

#### **2. Pest Control**

The University at the moment only fumigates on every Saturday to keep away the mosquito menace

**3. Soil Environment**

No major soils erosion or spillages was observed. The eroded soil/silt that accumulates in low-lying areas are being used for gardening purposes.

**4. Landscaping**

A lot of green cover was observed in the campus, some that exhibit a lot of Oxygen and few medicinal plants along with huge/shady trees were observed. As part of the "WED" program saplings were planted

**5. Incident**

The institution may start identification of occurrences, near misses, environmental concerns coming out of spillages, leakages etc.

**6. Chemical Management**

Good labeling done on the chemicals used and no major chemicals used without permission of the ethical committee approval

**7. Internal Habitat**

Natural Undulation in the topography is maintained well, which gives the campus sufficient heat, light, rains and shade

**8. Heat Island Effect**

There is not much effect of heat islands in the campus, since the campus has good green cover & ventilation

**9. Night Light Pollution**

No major night light pollution was observed, the campus was serene & pleasing at night with no glares & disturbing flashlights that can cause accidents & incidents.

**10. Basic Amenities and Employee facilities**

Post office, Canteen were well equipped, Toilets, Bank, ATM, Good water & well ventilated rooms, with good natural light was observed. The staffs were given appropriate safety gears to use

**II) Water**

The institution has a high commitment to water element – they have identified good sources of water and selected points within the campus for doing rain water harvesting.

Potential is there from expanding the scope of rain water harvesting in to pond and using the water further in the gardening or in the hospital utilities.

Waste water treatment plant exists and treated water is used for gardening – facility has been upgraded to purify the water to greater extent.

**III. Energy**

Institution has been strongly committed to energy conservation and has conducted energy audit through TERI and also reconducted the audit this year.

The report envisages all opportunity which may be taken up by the institute with a year long action plan.

There is greater commitment shown by the institution by investing on renewable energy project – after installation of solar power generation project the institution would be energy positive and carbon positive.

**IV. Waste**

The institution has set up a system for biomedical waste, solid waste management and has created awareness among the whole institutions staff to implement the hygiene practices and manages the waste as per bio medical waste management handling rules.

**V. Carbon**

Institution has conducted carbon foot print studies and detailed report is evident for initiating actions throughout the year.

The commitment on solar power would make it possible for the whole institution to be made as carbon positive.

**VI. Green Procurement**

The institution may have policy for green procurement and make initiatives voluntarily to check on the possibilities of making Green choices in expansion, in routine purchases by having policy, procurement objectives, supplier evaluation for green supply.

**VIII. Hygiene**

Hygiene has been practiced in the facility in several measure, indoor air quality assessments is being conducted in the operation theaters, written procedures, trainings, audits will help the organization to improve.

**VII) Health and Safety**

Several initiatives on health and safety has been implemented as hospital is attached such as pharmacy is run with software for expiry medicines tracking, posters for education on hospital safety, contractor safety. Implementation of OHSAS 18001 will enable address this element with policy, objectives and systematic approach.

**VIII) Awareness**

A survey was conducted on environmental awareness for students on the campus and the response on various matters related to environment was found very good.

**IX) Participation**

A awareness session was conducted in the campus to the students and faculty on environment and more than 50 participants were seen to indulge in the environmental movie, awareness on legal matters such as bio medical waste, questions on innovative ways of protecting environment with initiatives such as organic farming was discussed by the participants. The management team declared the commitment of the institution towards solar project and encouraged communication of participation of students by giving their suggestions to a nominated coordinator who would be nodal person for communication in this regard.

**X. Legal Compliance**

The Green audit has focused on Legal compliances related to Environmental, health and safety related laws

Following recommendations have been drawn

1. Identification of list of applicable legal requirements may be made
2. Site may be conducted with legal compliance evaluation for each of the applicable rules
3. Legal committee may be formed to review the compliance to legal requirements
4. Deviations may be monitored onsite by a legal committee periodically
5. Action plan for the deviations may be identified and reported to management
6. Periodical external audits may be conducted for checking compliance annually
7. Trainings may be conducted to the committee, implementing crew who are responsible for legal compliance onsite

**XI. Policy, Strategy, Objectives**

Institution has high commitment towards environment – it is evident in preservation of some of the trees in the campus for more than 50 years. The institution seems to be following the practices more from a routine practice, It is suggested that having a policy for environment and implementing ISO 14001 – environmental management system will be of help to the organization.

There may be objectives set up which help the institution monitor the performance of environment such as energy, water, waste, paper conservation, plastic reduction etc which enable not only the management and faculties but also the student community to have a practical experience of green commitment in the place where they are moulded and formed.

**XII. Monitoring & Measurement**

The institution may procure and install monitoring and measuring equipments such as energy meters, water meters and initiate log book on monitoring the waste generated to take a stock of the situation on how much of environmental data generation. This would enable measurement and monitoring with accuracy and knowing of the status on continuous basis where the institution can know the deviations and initiate corrective actions.

## AUDIT MINUTAE

### AGENCY CONDUCTING THE GREEN AUDIT

M/s. LG Professional Services

### CONDUCTED ON

10, 11 & 12<sup>th</sup> of Aug 2015

### Auditors

**Keerthi D' Souza**

### BACK GROUND

B.E & M Tech. In Environmental Engineering & PGDHRM

### EXPERIENCE

10 Years' Experience in the Field of Health, Safety & Environment

**M. V. Nagabhushan**

### BACK GROUND

B.E , Electrical Engg

### EXPERIENCE

37 years in Manufacturing Operations.

**M. Mohamed Batcha**

### BACK GROUND

Bachelor of Electrical & Electronics Engg

### EXPERIENCE

38 years of experience out of which energy audit of 25 years' experience,  
Accredited energy auditor from BEE

**Madhuri Subbarao**

### BACK GROUND

MSc Psychology

### EXPERIENCE

12 yrs of experience

## Co Auditors

### Ravi Uppin

#### BACK GROUND

B.E in Chemical Engineering & M E in Environmental Engineering

#### EXPERIENCE

6 Years' Experience in the Field of Health, Safety & Environment

### R. Ramarajiv

#### BACK GROUND

M.Tech ( Energy Conservation & Management)

#### EXPERIENCE

3 Years Experience in Energy Audit

### J. Venkatesh

#### BACK GROUND

DEEE ( Diploma in Electrical & Electronics Engg)

#### EXPERIENCE

2 Years Experience in Energy Audit:.

### Danny Mathew

#### BACK GROUND

Masters in Hygiene and Environment

#### EXPERIENCE

2 years in hygiene auditing

### Saurav Arya

#### BACK GROUND

M.Tech in Water Engineering & Management

#### EXPERIENCE

6 month in water auditing

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## DEDICATION

This study is dedicated to **Shri B.M. Patil Medical College Hospital & Research Centre, Bijapur** Management for their commitment to be the best in adapting the sustainable development like Go Green best practices and its measures as a proactive approach for protecting Environment, human life and property.

## EXECUTIVE SUMMARY

A proactive approach such as a Green audit is taken up to understand the gaps of the organization in the Green best practices initiatives and is an instrumental exercise to build a platform to upgrade the Organization to the sustainability & business vision. Green audits identify the Positive Point, weakness and areas needing improvement in accordance with the present status of the organization. It is instrumental in recognizing the threats to success and recommends goals for critical success factors (CSF). Audit is the heart of successful accident-prevention programs fostered by forward-thinking Green management.

This report describes the Vision, mission, Policy, Objectives, Topography of the site, Conservation of Energy, conservation of water, Hygiene, Employee Participation, Consultation, safety consciousness of the organization in the activities carried out at Hospital. All activities such as waste handling, emergency provisions, Legal Compliances, Hazards associated with the operations carried out, unsafe working practices which are potential hindrances for the organization towards the Environment, safety performance in the organization & records associated therewith were audited.

The observations are classified as Recommendation , Gap and those which are positive observations and some of them are marked area wise photographs with comment in Red, orange and green respectively. Red indicates immediate action, Orange indicates need improvement and green indicates positive points.

Audit Scoring was done with the intent of evaluating the each element considered in the report.

## ACKNOWLEDGEMENTS

LG professional Services convey hearty thanks to the management of **Shri B.M.Patil Medical College Hospital & Research Centre, Bijapur** for having chosen us to carryout this in-depth assessment towards Green audit.

We express our sincere gratitude towards the interest, co-operation and hospitality throughout the assessment extended to us by the Site Doctors, auditees and Management. The awareness and commitment towards Green concept implementation and understanding and compliance is immense and appreciated.

## PROGRAM OBJECTIVE

- The audit determines whether the goals of the organizations are made and adequate, is sufficient if not then it sets the direction of filling the gap to go move in the direction of the sustainable and Business vision.
- Analyzing conditions and work practices that lead to violation of Sustainable environment
- Documentation verification for compliance and completeness and comprehensive Green programs, audits or reviews.
- Legal compliance status
- Systematic evaluation of the Green elements like Site observation, surrounding, landscaping green transport, Night light pollution, water foot print, waste management, Carbon footprint, Hygiene, Health and safety, Employee awareness, Monitoring and measurement.

## AUDIT METHODOLOGY

The approach used is

- Site survey for identification of conformance to Legal & present work practice.
- Interacting with Management, staff & interviewing working personnel
- Looking at the Green elements of the company as defined in the audit criteria
- Collecting objective evidences (E.g. Interaction with workers, documents etc.)
- Evaluation of the Green elements in the organization through scoring
- Auditing the legal compliances
- Suggestions/Recommendations

## AUDIT CRITERIA

- The audit is conducted based on the following criteria:
  - Site (10 Marks)
    1. Surrounding
    2. Pest control
    3. Soil environment
    4. Landscaping
    5. Incident
    6. Chemical Management
    7. Internal Habitat
    8. Heat Island effect
    9. Night Light Pollution
    10. Basic Amenities and Employee facility
  - Water Foot print (8 Marks)
    1. Source of water
    2. Quality for various usage
    3. Waste water source, treatment and reuse
    4. Rainwater harvesting storage, treatment and usage
    5. Specific water consumption
  - Energy Foot print (8 Marks)
  - Waste Management (10 Marks)
    1. Solid waste
    2. Hazardous waste
    3. E-Waste
    4. Bio-Medical waste
  - Carbon Foot print (5 Marks)
  - Green Procurement (5 Marks)
  - Hygiene (8 Marks)
  - Health and safety (8 Marks)
  - Awareness (8 Marks)
  - Participation (4 Marks)
  - Legal Compliance (10 Marks)
  - Policy, strategy, Objectives (8 Marks)
  - Monitoring and Measurement (8 Marks)

## AUDIT REPORT

The audit report is made in to different chapters the overview of each is as described below.

Chapter I – Executive summary

Chapter II - Gives the Introduction to the Green audit, defining the scope, objective and audit criteria

Chapter III – Gives the overall picture of the organization with its background

Chapter IV – Audit Score, Audit Element Observation

In a nutshell the report informs management of the "Green status" of the organization Legal compliance status and opportunities for improvement in ensuring the facility more Greener.

**SITE BACKGROUND**

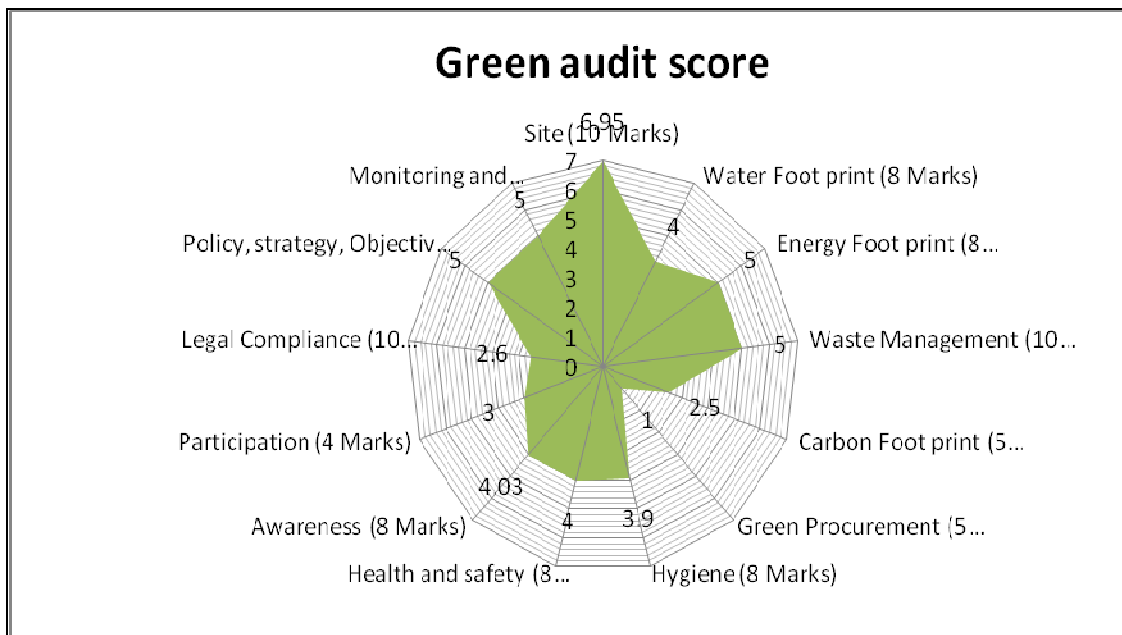
<i>Organization Name</i>	<i>Shri B.M Patil Medical College Hospital &amp; Research Centre.</i>
<i>Location</i>	<i>Bijapur</i>
<i>Audit Site</i>	<i>Shri B.M Patil Medical College Hospital &amp; Research Centre Bijapur</i>
<i>Nature of Project</i>	<i>Hospital and Research Centre</i>
<i>Site In charge from Hospital</i>	<i>Dr. Yellikar</i>
<i>Project Start up date</i>	<i>11<sup>th</sup> Aug 2015</i>
<i>Any special mention</i>	<i>Project selected for preparation of Green Audit from NAAC Committee</i>
<i>Requirements defined by client</i>	<i>Progress towards green elements implementation to improve organization towards Sustainable development.</i>

# **AUDIT OBSERVATIONS, SCORE WITH GRAPH**



Site Green audit rating and scores are as in the following table.

1	Site (10 Marks)	6.95
2	Water Foot print (8 Marks)	4
3	Energy Foot print (8 Marks)	5
4	Waste Management (10 Marks)	5
5	Carbon Foot print (5 Marks)	2.5
6	Green Procurement (5 Marks)	1
7	Hygiene (8 Marks)	3.9
8	Health and safety (8 Marks)	4
9	Awareness (8 Marks)	4.03
10	Participation (4 Marks)	3
11	Legal Compliance (10 Marks)	2.6
12	Policy, strategy, Objectives (8 Marks)	5
13	Monitoring and Measurement (8 Marks)	5

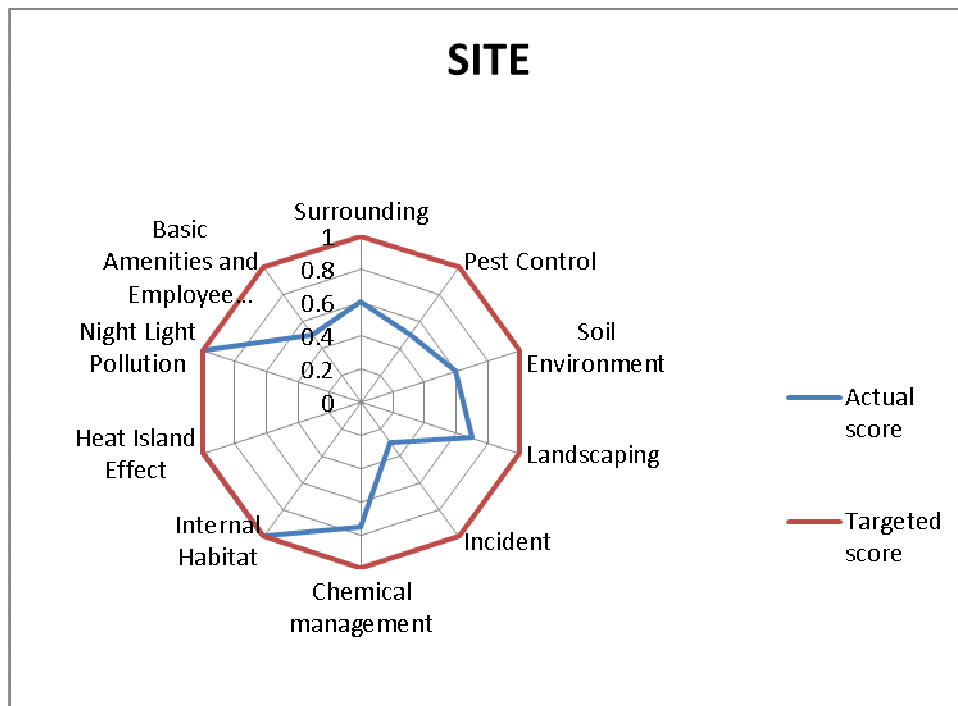


SITE (10 Marks)

Site (10 Marks)

6.95

Element	Score
Surrounding	0.6
Pest Control	0.5
Soil Environment	0.6
Landscaping	0.7
Incident	0.3
Chemical management	0.75
Internal Habitat	1
Heat Island Effect	1
Night Light Pollution	1
Basic Amenities and Employee facility	0.5



### **1. Surrounding**

The campus has institutions, commercial and residential localities with few shops on the East and West and Roads on covering 3 sides of the campus. Good green covered around the campus. No industries were found on either sides of the campus that could lead to possible contamination of the campus land, air, soil or water. Therefore no potential danger to the campus from the surroundings was observed.

### **2. Pest Control**

The University at the moment only fumigates on every Saturday to keep away the mosquito menace

### **3. Soil Environment**

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The institution may start identification of occurrences, near misses, environmental concerns coming out of spillages, leakages etc.

### **6. Chemical Management**

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### **7. Internal Habitat**

Natural Undulation in the topography is maintained well, which gives the campus sufficient heat, light, rains and shade

#### **8. Heat Island Effect**

There is not much effect of heat islands in the campus, since the campus has good green cover & ventilation

#### **9. Night Light Pollution**

No major night light pollution was observed, the campus was serene & pleasing at night with no glares & disturbing flashlights that can cause accidents & incidents.

#### **10. Basic Amenities and Employee facilities**

Post office, Canteen were well equipped, Toilets, Bank, ATM, Good water & well ventilated rooms, with good natural light was observed. The staffs were given appropriate safety gears to use

## II) Water

Water Foot print (8 Marks)

4

The institution has a high commitment to water element – they have identified good sources of water and selected points within the campus for doing rain water harvesting.

Potential is there from expanding the scope of rain water harvesting in to pond and using the water further in the gardening or in the hospital utilities.

Waste water treatment plant exists and treated water is used for gardening – facility has been upgraded to purify the water to greater extent.

**III. Energy**

Energy Foot print (8 Marks) 5

Institution has been strongly committed to energy conservation and has conducted energy audit through TERI and also reconducted the audit this year.

The report envisages all opportunity which may be taken up by the institute with a year long action plan.

There is greater commitment shown by the institution by investing on renewable energy project – after installation of solar power generation project the institution would be energy positive and carbon positive.

**IV. Waste**

Waste Management (10 Marks) 5

The institution has set up a system for biomedical waste, solid waste management and has created awareness among the whole institutions staff to implement the hygiene practices and manages the waste as per bio medical waste management handling rules.

**V. Carbon**

Carbon Foot print (5 Marks) 2.5

Institution has conducted carbon foot print studies and detailed report is evident for initiating actions throughout the year.

The commitment on solar power would make it possible for the whole institution to be made as carbon positive.

**VI. Green Procurement**

Green Procurement (5 Marks) 1

The institution may have policy for green procurement and make initiatives voluntarily to check on the possibilities of making Green choices in expansion, in routine purchases by having policy, procurement objectives, supplier evaluation for green supply.

## VIII. Hygiene

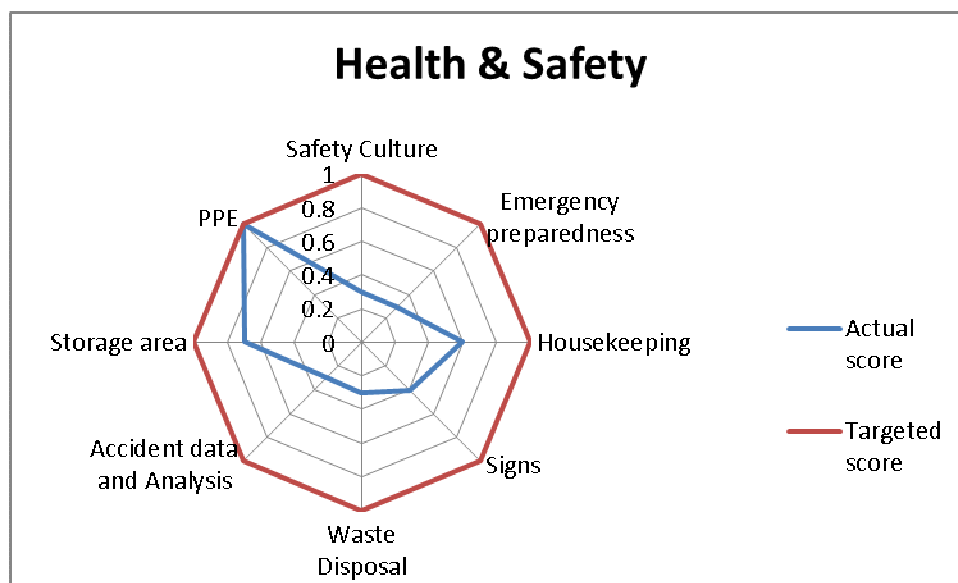
Hygiene (8 Marks) 3.9

Hygiene has been practiced in the facility in several measure, indoor air quality assessments is being conducted in the operation theaters, written procedures, trainings, audits will help the organization to improve.

## VII) Health and Safety (8 Marks)

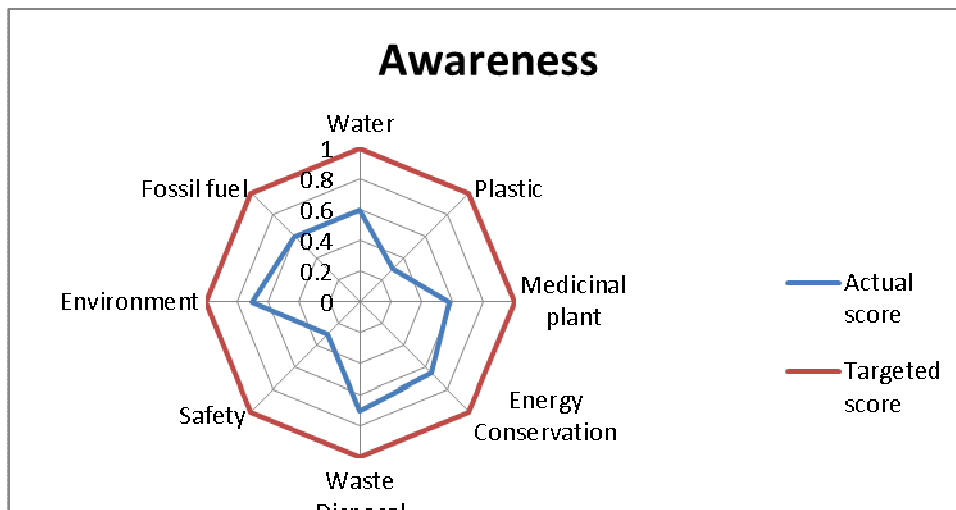
Several initiatives on health and safety has been implemented as hospital is attached such as pharmacy is run with software for expiry medicines tracking, posters for education on hospital safety, contractor safety. Implementation of OHSAS 18001 will enable address this element with policy, objectives and systematic approach.

Element	Score
Safety Culture	0.3
Emergency preparedness	0.3
Housekeeping	0.6
Signs	0.4
Waste Disposal	0.3
Accident data and Analysis	0.3
Storage area	0.7
PPE	1



## VIII) Awareness

Element	Score
Water	0.6
Plastic	0.3
Medicinal plant	0.58
Energy Conservation	0.65
Waste Disposal	0.7
Safety	0.3
Environment	0.7
Fossil fuel	0.2

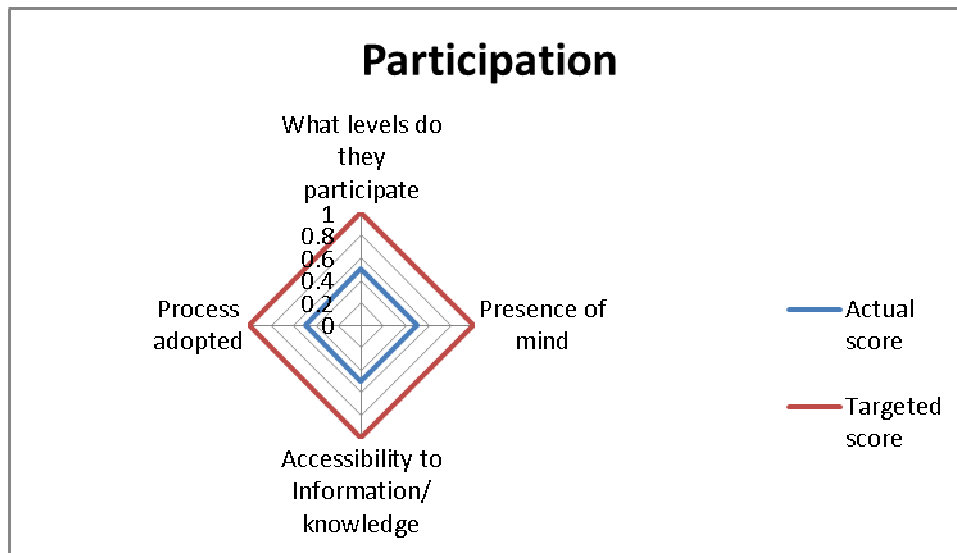


A survey was conducted on environmental awareness for students on the campus and the response on various matters related to environment was found very good.



## IX) Participation

Element	Score
What levels do they participate	0.5
Presence of mind	0.5
Accessibility to Information/ knowledge	0.5
Process adopted	0.5



Environmental awareness session was conducted in the campus to the students and faculty and more than 50 participants were seen to indulge in the environmental movie, awareness on legal matters such as bio medical waste, questions on innovative ways of protecting environment with initiatives such as organic farming was discussed by the participants. The management team declared the commitment of the institution towards solar project and encouraged communication of participation of students by giving their suggestions to a nominated coordinator who would be nodal person for communication in this regard.

## X. Legal Compliance

Legal Compliance (10 Marks)

2.6

The Green audit has focused on Legal compliances related to Environmental, health and safety related laws

Following recommendations have been drawn

1. Identification of list of applicable legal requirements may be made
2. Site may be conducted with legal compliance evaluation for each of the applicable rules
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5. Action plan for the deviations may be identified and reported to management
6. Periodical external audits may be conducted for checking compliance annually
7. Trainings may be conducted to the committee, implementing crew who are responsible for legal compliance onsite

## XI. Policy, Strategy, Objectives

Policy, strategy, Objectives (8 Marks)

5

Institution has high commitment towards environment – it is evident in preservation of some of the trees in the campus for more than 50 years. The institution seems to be following the practices more from a routine practice, It is suggested that having a policy for environment and implementing ISO 14001 – environmental management system will be of help to the organization.

There may be objectives set up which help the institution monitor the performance of environment such as energy, water, waste, paper conservation, plastic reduction etc which enable not only the management and faculties but also the student community to have a practical experience of green commitment in the place where they are moulded and formed.

## XII. Monitoring & Measurement

Monitoring and Measurement (8 Marks)

5

The institution may procure and install monitoring and measuring equipments such as energy meters, water meters and initiate log book on monitoring the waste generated to take a stock of the situation on how much of environmental data generation. This would enable measurement and monitoring with accuracy and knowing of the status on continuous basis where the institution can know the deviations and initiate corrective actions.