Green Audit Report

Rajeev Gandhi Memorial

College of Engineering & Technology,

Nandyal Andhra Pradesh

EDUCATION FOR PEACE

(ESTD-1995)

Service Request No.: GDCL/GA/02/012023

GREEN DONE CONSULTANTS

Striving to make the globe greener

1. ABOUT INSTITUTE

RGMCET (Rajeev Gandhi Memorial College of Engineering and Technology) is a renowned educational institution dedicated to fostering excellence in technical education. Located in Nandyal, Andhra Pradesh, India, RGMCET has emerged as a leading engineering college known for its commitment to academic excellence, innovation, and holistic development of students.

With a rich heritage dating back to its establishment in 1995, RGMCET has consistently upheld its mission of nurturing aspiring engineers and providing them with a conducive learning environment. The college offers a diverse range of undergraduate and postgraduate programs in engineering, empowering students with the knowledge and skills needed to excel in the ever-evolving global industry.

RGMCET prides itself on its state-of-the-art infrastructure and modern facilities that facilitate a comprehensive learning experience. The college boasts well-equipped laboratories, advanced research centers, spacious classrooms, and a well-stocked library that houses an extensive collection of books, journals, and digital resources. The campus also provides hostel facilities for students, ensuring a comfortable and secure environment for their academic pursuits.

The college has a distinguished faculty comprising experienced professors, industry experts, and scholars who are committed to delivering quality education and mentorship to the students. They employ innovative teaching methodologies, encourage active participation, and foster a spirit of inquiry and critical thinking. This pedagogical approach enables students to develop a strong foundation in engineering principles while nurturing their creativity and problem-solving abilities.

Beyond academics, RGMCET is dedicated to nurturing the overall development of its students. The college encourages participation in extracurricular activities, sports, cultural events, and social outreach programs. These initiatives foster leadership qualities, teamwork, and a sense of social responsibility, preparing students to become well-rounded professionals capable of making meaningful contributions to society.

RGMCET's commitment to excellence has been recognized through various accolades and affiliations. The college is affiliated with Jawaharlal Nehru Technological University, Anantapur, and is approved by the All India Council for Technical Education (AICTE), New Delhi. It has consistently achieved impressive results in academic examinations and has a strong record of placements in reputed companies.

In conclusion, RGMCET stands as a leading institution that provides a transformative educational experience, shaping the future of engineering professionals. By fostering academic rigor, promoting research and innovation, and nurturing holistic development, RGMCET continues to inspire and empower the next generation of engineers to make a positive impact in the world.

2. INTRODUCTION

2.1 Green Audit Report

The building footprint in India is growing at a rapid pace and is contributing immensely to the growth of the economy. This augurs well for the country and now there is an imminent need to introduce green building concepts in this sector, which can aid growth in a sustainable manner. Green practices in the Institutes can help address national issues like water efficiency, energy efficiency, reduction in fossil fuel use in commuting, handling of waste and conserving natural resources. Most importantly, these concepts can enhance occupant health, happiness, and well-being.

The intent of this Green Audit is to assess Institute Infrastructure, Operation Processes and Policies with respect to various Green Building Standards. This report is prepared based on the site visit conducted by the Auditor, Information given by the Institute though Documents and Interviewing various stake holders.

2.2 Benefits of Green Institutes

Green Institutes can have tremendous benefits, both tangible and intangible. The most tangible benefits are the reduction in water & energy consumption. The operational savings through energy & water efficiency could range from 15 - 30 %. The consumer waste generated in the Institute can also be substantially reduced. Intangible benefits of green Institute buildings include enhanced air quality, health & higher satisfaction levels of occupants.

- Water Conservation: Green Institute can save potable water to an extent of 15 – 30%.
- Handling of Consumer Waste: Green Audit intends to address this by encouraging institute buildings to segregate the building waste.
- Energy Efficiency: The operational energy savings that can be realized by adopting audit suggestions can be to the tune of 15 – 30%.
- Health and Well-being of Occupants: Green Institute ensures minimum ventilation aspects, occupant well-being facilities which are critical in a building.

3. GREEN AUDIT CHECKLIST

Sr No.	Requirement	Observation
4.1	**Site & Facility Management**	
4,1.1	Green Policy	Action Required
4,1.2	Waste Collection & Disposal	Action Required
4,1.3	Eco-friendly Commuting Practices	Action Required
4,1.4	Eco-friendly Landscaping Practices	No Action Required
4,1.5	Heat Island Reduction	No Action Required
4,1.6	Building Operations & Maintenance	No Action Required
4.2	**Water Efficiency**	
4.2.1	Water Efficient Fixtures	Action Required
4.2.2	Rain Water Harvesting	No Action Required
4.2.3	Waste Water Treatment	No Action Required
4.2.4	Waste Water Reuse	Action Required
4.2.5	Water Metering	Action Required
4.2.6	Turf Area	Action Required
4.3	**Health & Comfort**	
4.3.1	Tobacco Smoke Control	No Action Required
4.3.2	Fresh Air Ventilation	No Action Required
4.3.3	Eco-friendly Housekeeping Chemicals	No Action Required
4.3.4	Thermal Comfort, Indoor Temperature & RH	No Action Required
4.3.5	Facilities for Differently Abled People	Action Required
4.3.6	Occupant Well-being Facilities	Action Required
4.4	**Location and Transportation**	
4.4.1	Access to Quality Transit	No Action Required
4.4.2	Bicycle Facilities	Action Required
4.4.3	Green Vehicles	Action Required
4.5	**Innovation**	
4.5.1	Eco Design Approach	No Action Required

4. DETAIL ASSESSMENT

4.1 SITE & FACILITY MANAGEMENT

Sr No.	Requirement	Observation
4.1	**Site & Facility Management**	
4,1.1	Green Policy	Action Required
4,1.2	Waste Collection & Disposal	Action Required
4,1.3	Eco-friendly Commuting Practices	Action Required
4,1.4	Eco-friendly Landscaping Practices	No Action Required
4,1.5	Heat Island Reduction	No Action Required
4,1.6	Building Operations & Maintenance	No Action Required

4.1.1 GREEN POLICY

GREEN AUDIT INTENT

To adopt green practices as and when the buildings go for retrofitting and renovation, thereby reducing the environmental impacts.

GREEN BUILDINGS REQUIREMENTS

To ensure that the building conforms to the requirements of the local bylaws, provide a declaration from the building owner stating that the required clearances from all regulatory bodies are in place.

Have a policy in place which mandates the adoption of at least 3 of the following ecofriendly practices during any small or major renovation of the building.

- Building materials including interior materials to have at least 10% recycled content, by cost
- 50% of the wood materials to have FSC or PEFC or equivalent certification.
- 50% of waste generated (by weight or volume) on site do not go to a landfill
- Paints and adhesives to have low VOC.
- Workmen involved in the construction to be provided with restrooms and safe drinking water facility.
- All appliances purchased to have BEE 3 star or above rating. This applies to appliances for which the BEE star labeling program is in place.

AUDIT OBSERVATIONS

- ✓ Based on conformation from Institute, required clearances from all regulatory bodies are in place
- ✓ Institute has mandated to use of eco-friendly materials for any future renovation activities.

ACTIONS REQUIRED

- Institute needs to create Organizational policy signed by the institute owner, mandating the purchase of eco-friendly and green materials/equipment for any future renovation/replacements activities as mentioned in requirements.
- Ongoing renovation should follow the requirements as mentioned in above.

4.1.2 WASTE COLLECTION & DISPOSAL

GREEN AUDIT INTENT

Segregate building waste at source and facilitate proper disposal for recycling, thereby avoiding such waste being sent to landfills.

GREEN BUILDINGS REQUIREMENTS

- Demonstrate an ongoing solid waste collection and disposal system to include both hazardous & non-hazardous waste.
- Hazardous waste includes e-waste, batteries, lamps etc and non-hazardous waste includes paper, plastic, metals, organic waste, etc. The project must follow the Hazardous Waste management Guidelines as prescribed by Ministry of Environment & Forest (MoEF), Government of India.
- Have provision to segregate at least food, e-waste, metals, plastic and paper in the central waste collection area.

AUDIT OBSERVATIONS

- ✓ The Institute have separate waste bins for plastic, paper, E-waste, glass and organic.
- ✓ The Institute have central waste collection area.
- ✓ Institute does not have any hazardous waste, being educational institute.

ACTIONS REQUIRED

- Institute have provision to segregate e-waste, metals, plastic, and paper in the central waste collection area. Same shall be send for recycle purpose through authorize vendor. Proper record of the same shall be maintain.
- Institute should have organic converter so that they can compost Food and landscape waste inside the campus and create manure.

Picture for reference

4.1.3 ECO-FRIENDLY COMMUTING PRACTICES

GREEN AUDIT INTENT

Reduce air pollution and land development impacts from personal automobile use.

GREEN BUILDINGS REQUIREMENTS

Provide shuttle services to nearest public transportation facility (OR) Provide bus pool / van pool facilities to pick and drop permanent occupants to their residential places.

AUDIT OBSERVATIONS

- ✓ The Institute have busses for students and staff to travel from home to office. (Photos attached)
- ✓ Based on the survey conducted more than 50% college occupants travel through college bus and more than 30% with public transport.

ACTIONS REQUIRED

- Institute can promote car/bike pooling between staff. It can be done in various ways like by creating a portal for carpooling.
- Promote Alternative Modes of Transportation: The College can actively promote and provide information about alternative transportation options such as walking, cycling, and using public transportation. Highlight the benefits of these modes, such as improved health, reduced carbon emissions, and cost savings.

4.1.4 ECO-FRIENDLY LANDSCAPING PRACTICES

GREEN AUDIT INTENT

Adopt eco-friendly landscaping practices to minimize the impact of chemicals on ecology.

GREEN BUILDINGS REQUIREMENTS

Have in place, eco-friendly landscaping practices such as use of organic fertilizers and / or use of locally adaptive plants for a minimum of 50% of the landscape requirements.

AUDIT OBSERVATIONS

- ✓ The Institute shall use natural eco-friendly fertilizers processed through wet waste in own composters.
- ✓ 85% Species at landscape are native.

List of Plants - RGMCET

S.No	Common name	Count
1.	Senegal date palm	2
2.	Orchid tree	2
3.	Indian rose wood	1
4.	Yucca	50
5.	Tropical almond	200
6.	Pongame oiltree	10

S.No	Common name	Count
7.	Buddha bamboo	5
8.	Night jasmine	40
9.	Neem Tree	50
10.	Lemon balm	10
11.	Indian laurel	150
12.	Bonplands croton	20
13.	Gaint milkweed	20
14.	Yellow flame	5
15.	Hairy fig	8
16.	Henna	10
17.	Guava	10
18.	Tamarind	10
19.	Tulsi	20
20.	Amla	20
21.	Variegated croton	150
22.	Bankok teak	200
23.	Areca palm-green	200
24.	Areca palm-red	200
25.	Night jasmine	20
26.	Coconut palm	150
27.	Mango	50

S.No	Common name	Count
28.	Bougainvillea	50
29.	Climbling aloe	20
30.	Big leaf mint	10
31.	Jack fruit	4
32.	Curry leaf tree	10
33.	Hawaiian hibiscus	60
34.	Wild date palm	20
35.	Jambolan	50
36.	Drum stick	10
37.	Pomegranate	50
38.	Almond	200
39.	Amla	20
40.	Lemon	10
41.	Medipandu	8
42.	Ashoka	50
43.	Teku	200
44.	Guava	10
45.	Kanakambaram	20
46.	Lily turf-black	100
47.	Garden croton	150
48.	Black panda	100

S.No	Common name	Count
49.	Green panda	100
50.	Fellow form-green	200
51.	Fellow form-red	50
52.	Rudra Ganneru	50
53.	Royal Form	50
54.	Arce form	50
55.	Temple tree	400
56.	Tekoma	100
57.	Kanuga	100
58.	Red Sandal	300
59.	Dubai Plant	100
60.	Nooruvaralu	50
61.	Ecsora	50
62.	Radhamanoharam	20
63.	Thuja	100
64.	Green Ribbon	200
65.	Black Ribbon	50
66.	Lilly	100
67.	Cycas	20
68.	Wood apple	10
69.	Nandivardhanam	30

S.No	Common name	Count
70.	Ganneru Tree	10
71.	Mahagani-Australia	10
72.	Mahagani-Karnataka	10
73.	Christmas Tree	4
74.	Docoma	20
75.	Panchamukhi Rudraksha	2
76.	Eucalyptus	5
77.	Duranta	200

ACTIONS REQUIRED

- No Actions Required.

4.1.5 HEAT ISLAND REDUCTION

GREEN AUDIT INTENT

Minimize heat island effect to reduce impact on microclimate.

GREEN BUILDINGS REQUIREMENTS

For exposed roof areas, have vegetation OR materials with high Solar Reflective Index (SRI) value (such as white/ light colored tiles or high reflective coatings or other high reflective materials). Reflective materials / surfaces shall have a minimum SRI value of 78.

For exposed non-roof hardscape areas (such as footpaths, pathways, roads, uncovered surface parking and other hardscape areas) within the project site, have atleast one or combination of the following:

- Shade from the existing tree canopy
- Open grid pavers, including grass pavers
- Shade from solar panels
- Structured surface parking

AUDIT OBSERVATIONS

- ✓ Non roof tiles-blocks are light colored natural stone tiles helps to reduce microclimate cool.
- ✓ Many roads are cover from shade from the existing tree canopy.
- ✓ Roof is covered with Solar Panels which avoide head ingress.

ACTIONS REQUIRED

- ✓ No Action Required

4.1.6 BUILDING OPERATIONS & MAINTENANCE

GREEN AUDIT INTENT

Ensure sustained performance of the building systems, to achieve benefits during the lifetime of the building systems & facility.

GREEN BUILDINGS REQUIREMENTS

Have in place an operation & maintenance plan for the following, as applicable.

- HVAC systems (including chillers, cooling towers etc)
- Lighting systems
- Wastewater treatment systems
- Onsite renewable energy systems
- Rainwater harvesting structures
- Power back-up systems (Generator sets, gas turbines etc)
- Elevators and escalators
- Building management systems

Carry-out energy and water audit, once in 3 years and explore opportunities for improvement (1 point)

AUDIT OBSERVATIONS

- ✓ The Institute scheduled maintenance for HVAC System. Rainwater harvesting structures, Onsite renewable energy systems.
- ✓ Energy and green audit is conducted in 2023 Jan. Same will be repeated in every 3 years.

ACTIONS REQUIRED

- No Actions Required.

4.2 WATER EFFICIENCY

Sr No.	Requirement	Observation
Water Efficiency		
4.2	**Water Efficiency**	
4.2.1	Water Efficient Fixtures	Action Required
4.2.2	Rainwater Harvesting	No Action Required
4.2.3	Wastewater Treatment	No Action Required
4.2.4	Wastewater Reuse	Action Required
4.2.5	Water Metering	Action Required

4.2.1 WATER EFFICIENT FIXTURES:

GREEN AUDIT INTENT

To enhance water use efficiency and minimize the use of potable water.

GREEN BUILDINGS REQUIREMENTS

Use water efficient plumbing fixtures whose flow rates less than the baseline criteria, individually or in aggregate. The baseline criteria is as under:

Fixture Type	Maximum Flow Rate/ Consumption	Duration	Estimated daily uses per person*
Water Closets	6.0 LPF	1 flush	1 for male; 3 for females
Faucets / taps**	8.0 LPM	0.25 min	4
Urinals	4.0 LPF	1 flush	2 for males

AUDIT OBSERVATIONS

- ✓ The institute have high flow water fixture and urinals which is not suitable to match above criteria.

ACTIONS REQUIRED

- It is recommended to install aerators to reduce water flow in taps wherever possible. Otherwise, fixtures needs to be replaced to match the mentioned criteria.
- Urinals should be sensor based or flow rate should be adjustable.

Image is for reference.

4.2.2 RAINWATER HARVESTING

GREEN AUDIT INTENT

Recharge the local aquifer or capture rainwater to reduce potable water consumption.

GREEN BUILDINGS REQUIREMENTS

Have rainwater harvesting systems in place, to capture at least 25% of run-off volumes from roof and non- roof areas. The harvesting system must cater at least 1 day of normal rainfall* occurred in the last 5 years.

AUDIT OBSERVATIONS

- ✓ Institute have Rainwater harvesting pits with required capacity.

ACTIONS REQUIRED

- No actions required.

4.2.3 WASTE WATER TREATMENT

GREEN AUDIT INTENT

Treat wastewater generated on site to make it available for reuse or safe disposal and hence avoid polluting the receiving streams.

GREEN BUILDINGS REQUIREMENTS

Have on-site treatment systems to treat 100% of wastewater generated in the building / campus, to the quality standards suitable for reuse as prescribed by Central (or) State Pollution Control Board (CPCB), as applicable.

AUDIT OBSERVATIONS

- ✓ Institute campus have sewage treat plant to process wastewater.

ACTIONS REQUIRED

- No actions required.

4.2.4 WASTE WATER REUSE

GREEN AUDIT INTENT

Use treated wastewater thereby reducing dependence on potable water.

GREEN BUILDINGS REQUIREMENTS

Demonstrate that the treated waste water from waste water treatment plant is being reused for irrigation/ cooling water make-up/ flushing water requirements.

AUDIT OBSERVATIONS

- ✓ Institute currently using potable water for Gardening and Toilet Flushing purpose.

ACTIONS REQUIRED

- Institute shall use STP waster for the Gardening. It can be taken from campus STP plant. Also Drip and sprinkler irrigation must be used for landscape.

4.2.5 WATER METERING

GREEN AUDIT INTENT

Ensure continuous monitoring of water consumption, both on supply and demand side, to identify improvement opportunities in potable water efficiency.

GREEN BUILDINGS REQUIREMENTS

Demonstrate water monitoring for the following, as applicable:

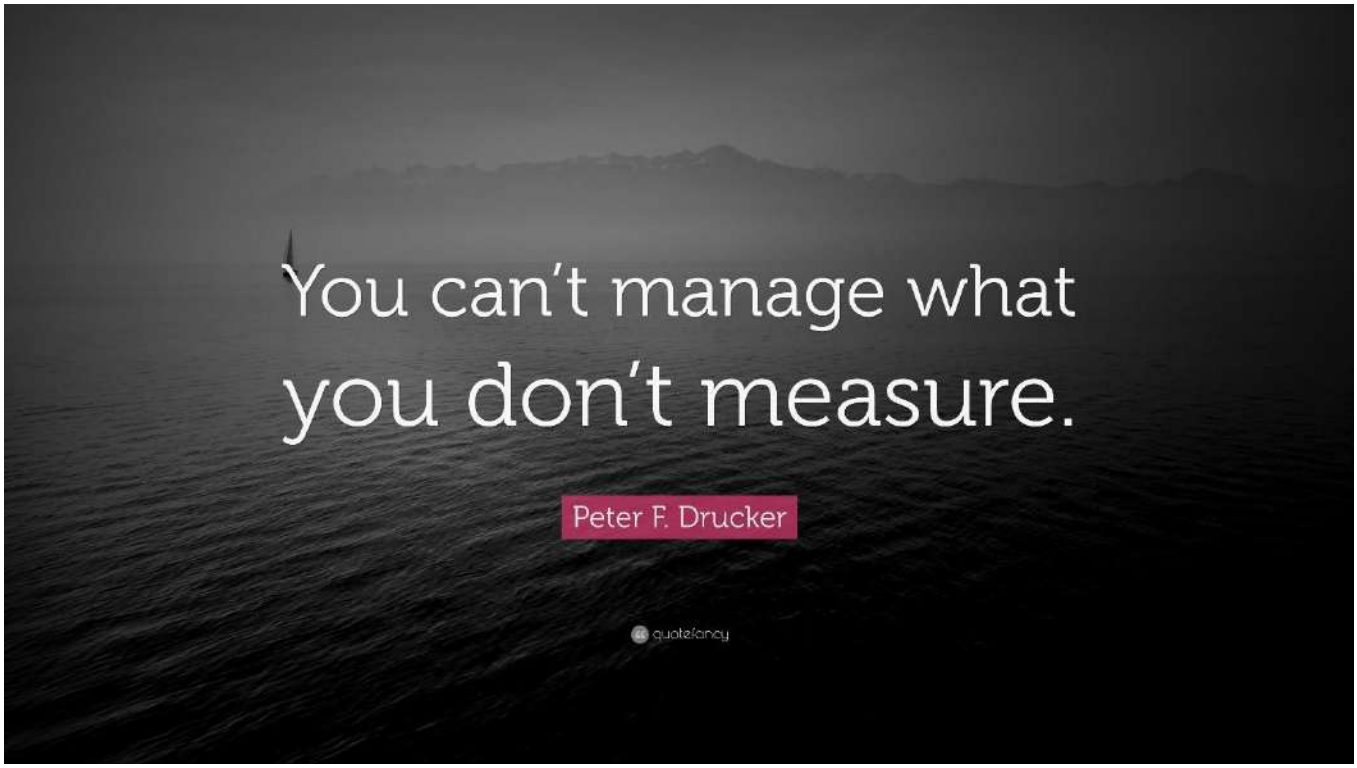
- Water consumption through bore well
- Municipal water supply
- Water consumption of each tenant in multi- tenant spaces (as applicable)
- Water purchased from external sources like tankers
- Water consumption/ supply for flushing
- Water consumption/ supply for irrigation requirements
- Any other major consumers of water consumption.

AUDIT OBSERVATIONS

- ✓ Institute does not have any water meters.

ACTIONS REQUIRED

- It is Recommended to install a water meter for Borewell water and Irrigation.



4.2.6 TURF AREA

GREEN AUDIT INTENT

Minimize the extent of turf areas in landscaping to reduce potable water consumption.

GREEN BUILDINGS REQUIREMENTS

Have limited turf onsite to save water required for irrigation. Less than 50% of the total Landscape

AUDIT OBSERVATIONS

- ✓ Institute only have approximately 20% of space as turf and other area is covered with trees.

ACTIONS REQUIRED

- No Action Required.

4.3 HEALTH & COMFORT

Sr No.	Requirement	Observation
4.3	**Health & Comfort**	
4.3.1	Tobacco Smoke Control	No Action Required
4.3.2	Fresh Air Ventilation	No Action Required
4.3.3	Eco-friendly Housekeeping Chemicals	No Action Required
4.3.4	Thermal Comfort, Indoor Temperature & RH	No Action Required
4.3.5	Facilities for Differently Abled People	Action Required
4.3.6	Occupant Well-being Facilities	Action Required

4.3.1 TOBACCO SMOKE CONTROL

GREEN AUDIT INTENT

Minimize exposure of non-smokers to the adverse health impacts arising due to passive smoking in the building.

GREEN BUILDINGS REQUIREMENTS

Demonstrate that smoking is prohibited in the building and is in accordance with the Government of India regulations.

In case the project has assigned outdoor smoking areas, locate such areas at a minimum of 7.6 meters from all outdoor air intakes (entrance doors, window openings etc.)

Alternately, compliance can be shown through designated smoking rooms which capture and remove tobacco smoke from the building. At a minimum, the smoking room must be directly exhausted to the outdoors, away from air intakes and building entry paths, with no recirculation of tobacco smokecontaining air to nonsmoking areas and enclosed with impermeable deck-to-deck partitions.

The smoking room must be operated at a negative pressure, compared with the surrounding spaces, of atleast an average of 5 Pascals (Pa) (0.5 mm of water gauge) and a minimum of 1 Pa (0.025 mm of water gauge) when the doors to the smoking rooms are closed.

AUDIT OBSERVATIONS

- ✓ Institute campus is declared as no smoking zone.

ACTIONS REQUIRED

- No Action Required.

4.3.2 FRESH AIR VENTILATION

GREEN AUDIT INTENT

Provide adequate outdoor air ventilation so as to avoid pollutants affecting indoor air quality.

GREEN BUILDINGS REQUIREMENTS

For Air-Conditioned Spaces

Demonstrate that the fresh air ventilation in all regularly occupied areas meet the minimum ventilation rates as prescribed below.

Minimum Ventilation Rates in Various Functional Zones*

Occupancy Category	People Outdoor Air Rate	Area Outdoor Air Rate
	Cfm/person	Cfm/ sq.ft
Correctional Facilities		
Dayroom, Guard station	5	0.06
Booking/ waiting	7.5	0.06
Education Facilities		
Daycare (through age 4), daycare sickroom, Art Classroom, science laboratories, college laboratories, wood, metal shop	10	0.18
Classrooms (ages 5-8), (age 9+), computer lab, media centre	10	0.12
Lecture Room/ hall (fixed seating)	7.5	0.06
Music/ theater/ dance,	10	0.06
Multi use assembly	7.5	0.06
Food & Beverages Services		
Restaurant dining rooms/ cafeteria/ fast food dining/ Bars/ Cocktail Lounges	7.5	0.18
General		
Break Rooms, Coffee stations, conference/ meeting	5	0.06
Corridors	-	0.06
Storage Rooms	-	0.12
Hotels, Motels, Resorts, Dormitories		
Bedroom/ living room, barracks sleeping areas	5	0.06
laundry rooms	5	0.12
Lobbies/ prefunction	7.5	0.06
Multipurpose assembly	5	0.06

For Naturally Ventilated Spaces

Demonstrate that the ratio of openable area to the carpet area is atleast 4% in each regularly occupied zone.

Note: Regularly occupied areas are those where people sit or stand as they work, irrespective of the number of days occupied in a year.

AUDIT OBSERVATIONS

- ✓ Institute have nicely ventilated classrooms having multiple windows and courtyard at centre which allows cross ventilation in classrooms.

ACTIONS REQUIRED

- No Action Required.

4.3.3 ECO-FRIENDLY HOUSEKEEPING CHEMICALS

GREEN AUDIT INTENT

To encourage the use of eco-friendly housekeeping chemicals so as to reduce adverse health impacts for building occupants.

GREEN BUILDINGS REQUIREMENTS

Demonstrate that project is using housekeeping chemicals that meet green seal standard (GS-37) or other Indian/European equivalent standards, for all building applications.

AUDIT OBSERVATIONS

- ✓ Institute have been using certified eco-friendly housekeeping chemicals only for all housekeeping purposes.

ACTIONS REQUIRED

- No Action Required.

4.3.4 THERMAL COMFORT, INDOOR TEMPERATURE & RH

GREEN AUDIT INTENT

To provide comfortable thermal indoor environment, to promote productivity and well-being of occupants.

GREEN BUILDINGS REQUIREMENTS

Demonstrate that the building was maintained at the requisite temperature and relative humidity conditions, for 90% of the time. The comfort condition to be maintained is 26+ 2 degree C and RH in the range of 30 to 70 %.

Also conduct a survey once in 6 months and show that 80% of the building occupants are satisfied with the temperatures maintained.

AUDIT OBSERVATIONS

- ✓ Based on site audit, all the indoor air quality parameters is complying requirements.

ACTIONS REQUIRED

- No Action Required.

4.3.4 FACILITIES FOR DIFFERENTLY ABLED PEOPLE

GREEN AUDIT INTENT

Ensure that the building is user-friendly for differently abled people.

GREEN BUILDINGS REQUIREMENTS

Demonstrate that the facility has the following provisions for differently abled people*

• Non-slippery ramps for easy access to the main entrance of the building. Such ramps should have with hand rails on atleast one side

• Uniformity in floor level for hindrance-free movement in common areas such as wash rooms, canteen and common assembly area

• Preferred car park space(s) having an easy access to the main entrance or closer to the lift lobby

• Braille and audio assistance in lifts for visually impaired people

• Rest rooms (toilets) for differently abled people

* All the above criteria are as per NBC 2005.

AUDIT OBSERVATIONS

- ✓ Institute have provided **non-slippery ramps, Uniformity in floor level** for differently abled people.

ACTIONS REQUIRED

- Railing required at ramps. (Image for reference) and Toilets design for differently abled people

4.3.4 OCCUPANT WELL-BEING FACILITIES

GREEN AUDIT INTENT

To provide facilities so as to enhance physical, emotional & spiritual wellbeing of building occupants.

GREEN BUILDINGS REQUIREMENTS

Demonstrate that the project has atleast 2 occupant well-being facilities (such as gymnasium, aerobics, yoga, meditation or any indoor / outdoor games) to cater to atleast 10% of building occupants, through the day.

AUDIT OBSERVATIONS

- ✓ Institute currently does not have any indoor games. However insitute have huge space for outdoor games.

ACTIONS REQUIRED

- Institute should have indoor games at least for 5% of students.

4.4 LOCATION AND TRANSPORTATION

Sr No.	Requirement	Observation
4.4	**Location and Transportation**	
4.4.1	Access to Quality Transit	No Action Required
4.4.2	Bicycle Facilities	Action Required
4.4.3	Green Vehicles	Action Required

4.4.1 ACCESS TO QUALITY TRANSIT

GREEN AUDIT INTENT

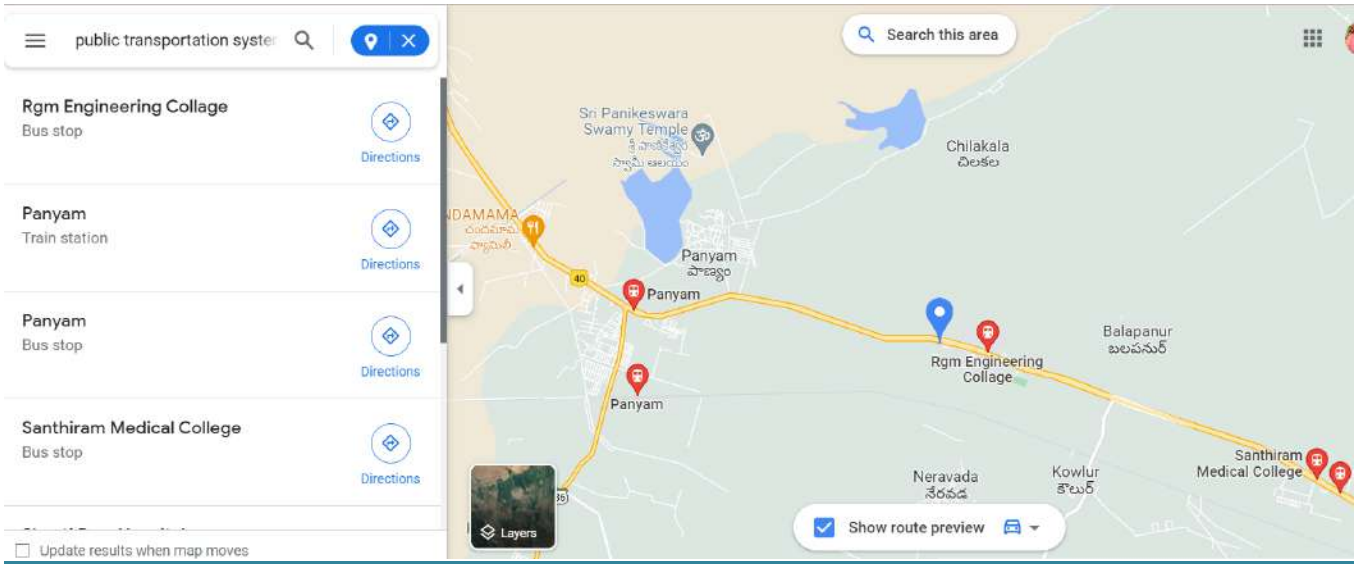
To encourage development in locations shown to have multimodal transportation choices or otherwise reduced motor vehicle use, thereby reducing greenhouse gas emissions, air pollution, and other environmental and public health harms associated with motor vehicle use.

GREEN BUILDING REQUIREMENTS

Locate any functional entry of the institute within a ¼-mile (400-meter) walking distance of existing or planned bus, streetcar, or informal transit stops, or within a ½-mile (800-meter) walking distance of existing or planned bus rapid transit stops, light or heavy rail stations, commuter rail stations or ferry terminals.

AUDIT OBSERVATION

Institute is situated in near about many BEST Bus stops. following Public Bus Stops are within 400m distance.



ACTIONS REQUIRED

- No Action Required.

4.4.2 BICYCLE FACILITIES

GREEN AUDIT INTENT

To promote bicycling and transportation efficiency and reduce vehicle distance traveled. To improve public health by encouraging utilitarian and recreational physical activity.

GREEN BUILDING REQUIREMENTS

Bicycle Stand:

Provide bicycle stand for 10% of the occupants.

AUDIT OBSERVATION

- ✓ Institute does not have dedicated Bicycle stand near entrance.

ACTIONS REQUIRED

- It Is recommended to provide bicycle stands at parking spaces for at least 10 Bicycles near any entrance.

4.4.3 GREEN VEHICLES

GREEN AUDIT INTENT

To reduce pollution by promoting alternatives to conventionally fueled automobiles.

GREEN BUILDING REQUIREMENTS

Designate 5% of all parking spaces used by the institute as preferred parking for Electric vehicles. Clearly identify and enforce for sole use by Electric vehicles.

In addition to preferred parking for Electric vehicles, Provide:

Electric vehicle charging

Install electrical vehicle supply equipment (EVSE) in 2% of all parking spaces used by the project. Clearly identify and reserve these spaces for the sole use by plug-in electric vehicles. Parking spaces that include EVSE must be provided separate from and in addition to preferred parking spaces for green vehicles.

The EVSE must:

- Provide a Level 2 charging capacity (208 – 240 volts) or greater.
- Be networked or internet addressable and be capable of participating in a demand-response program or time-of-use pricing to encourage off-peak charging.

AUDIT OBSERVATION

- ✓ Institute have EV cars for internal transportation. However Currently there is no EV charging facility available for general cars.
- ✓ No reserved parking for EV.

ACTION REQUIRED

Install at least 2 no. of Electric charging stations.

Cost implication

As per Green Done consultant calculation the required number of charging socket is 2 in numbers.

Since the cost of one electric charging facility is Rs 20000 hence for 2 numbers cost would be Rs 40,000.

Along with the charging socket, internet addressable controller is also required.

4.5 INNOVATION

Sr No.	Requirement	Observation
4.5	**Innovation**	
4.5.1	Eco Design Approach	No Action Required

4.5.1 Eco Design Approach

GREEN AUDIT INTENT

Encourage designers to have a eco-vision, thereby incorporating sustainable strategies in all facets of design

GREEN BUILDING REQUIREMENTS

Institute design philosophy and approach must have sustainable practices & impacts in the following areas:

- ❖ Vernacular architectural elements
- ❖ Health & wellbeing of occupants
- ❖ Space efficiency
- ❖ Materials and resources
- ❖ Passive Interior Architecture

AUDIT OBSERVATION

Institute have incorporated an ecologically sensitive vision into the design right from the conceptual planning stage that is helping them in enhancing the environmental sustainability of the campus as well as quality of life of the occupants. An eco-vision encompasses a wide range of elements and measures as described below:

- ✓ Internal verandahs / courtyards: help keep interior spaces comfortable in hot and humid climates by enhancing air circulation. They also serve to create comfortable internal outdoor spaces in harsh and dry climates. Verandahs and courtyards also act as break-out spaces and social interaction spaces for the building occupants.
- ✓ High ventilators: which provide a vent for warm air to exhaust out of interior spaces and enable deeper penetration of natural light into interior spaces.

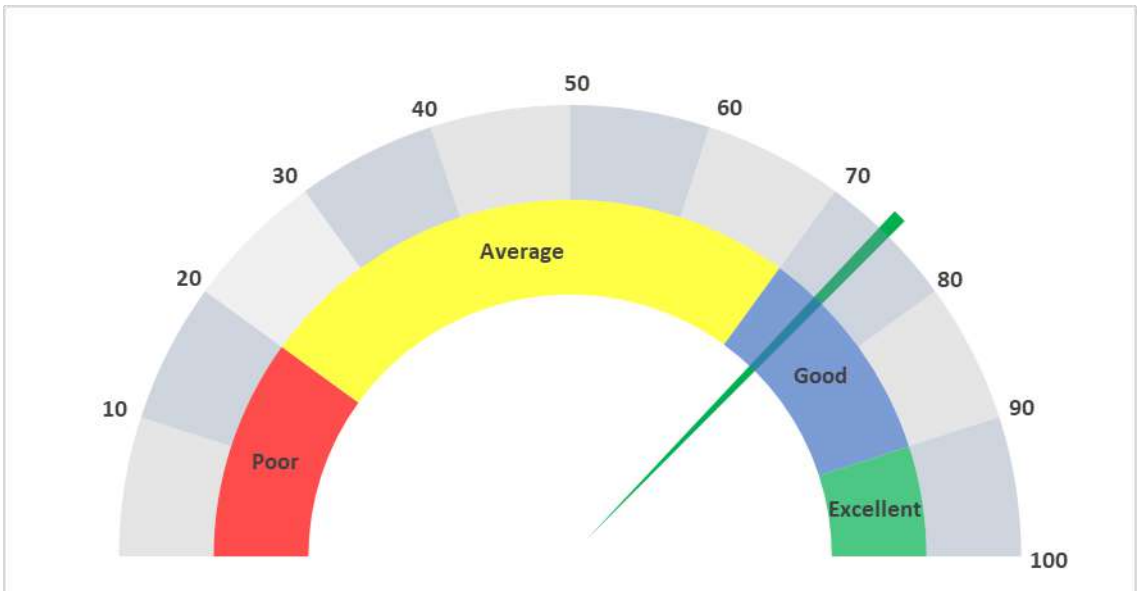
Action Required

- No Action Required.

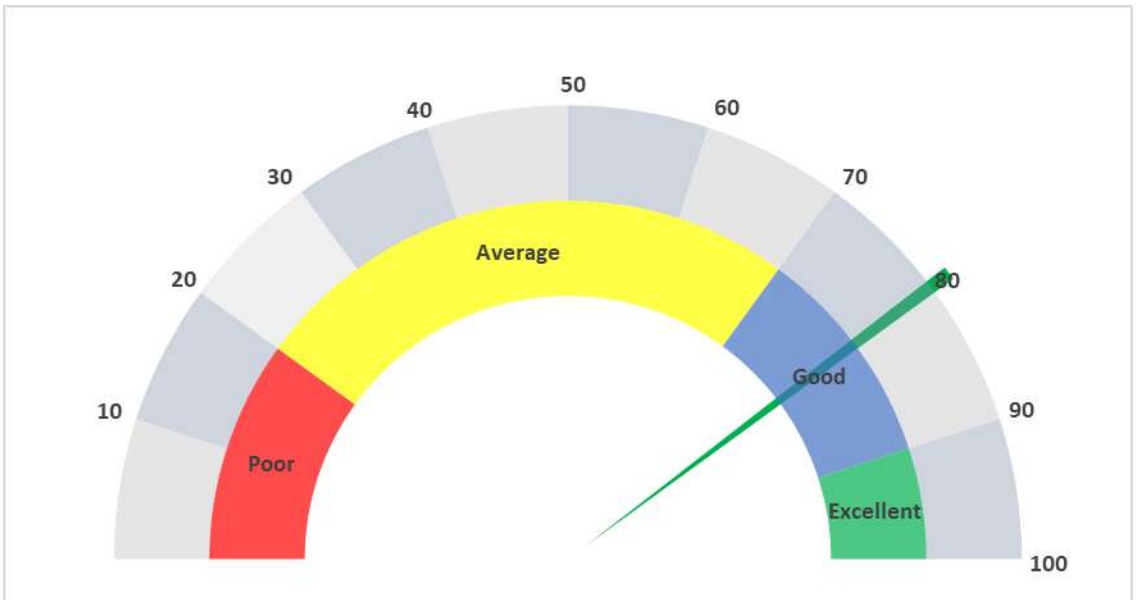
5. CONCLUSION

- The Project have incorporated all the major requirements of green building standards.
- Based on the assessment of Green Done Consultants, Institute Performance in various aspects are shown in below graphical presentation.

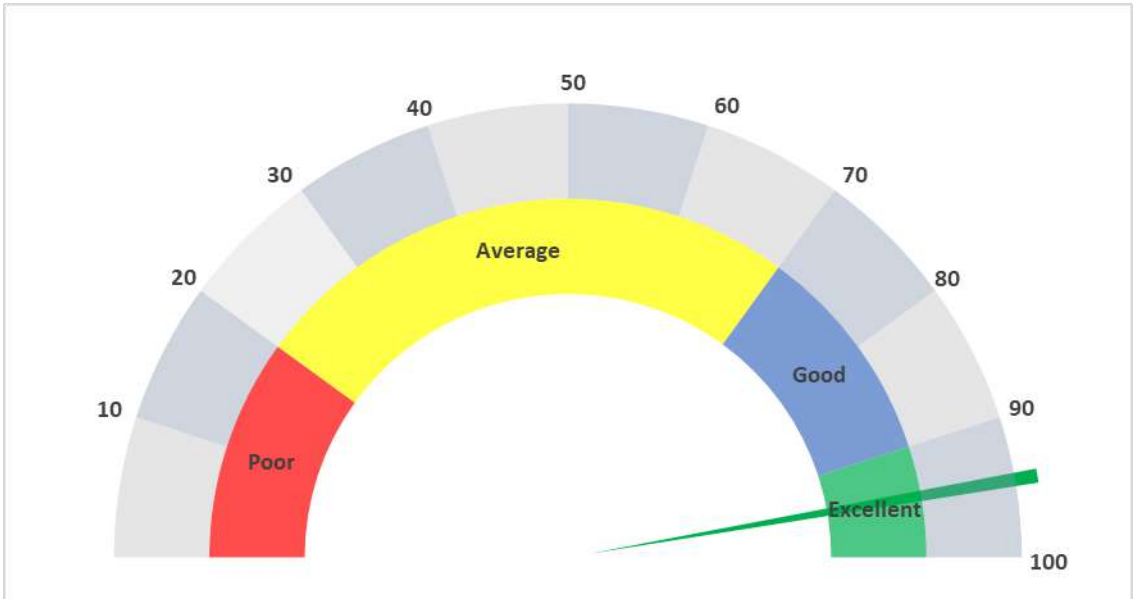
  Note: Weightage of the various parameters are different based on its impact on performance of the building. Below charts are visual representation of the green performance. However, these charts shall not be considered as certification.



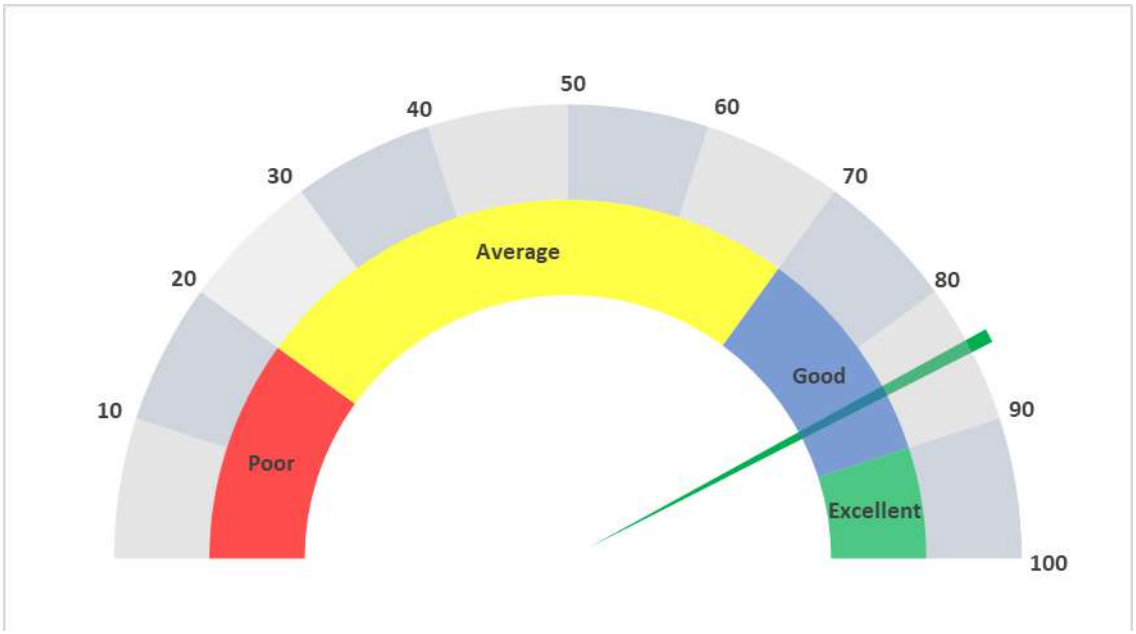
SITE & FACILITY MANAGEMENT



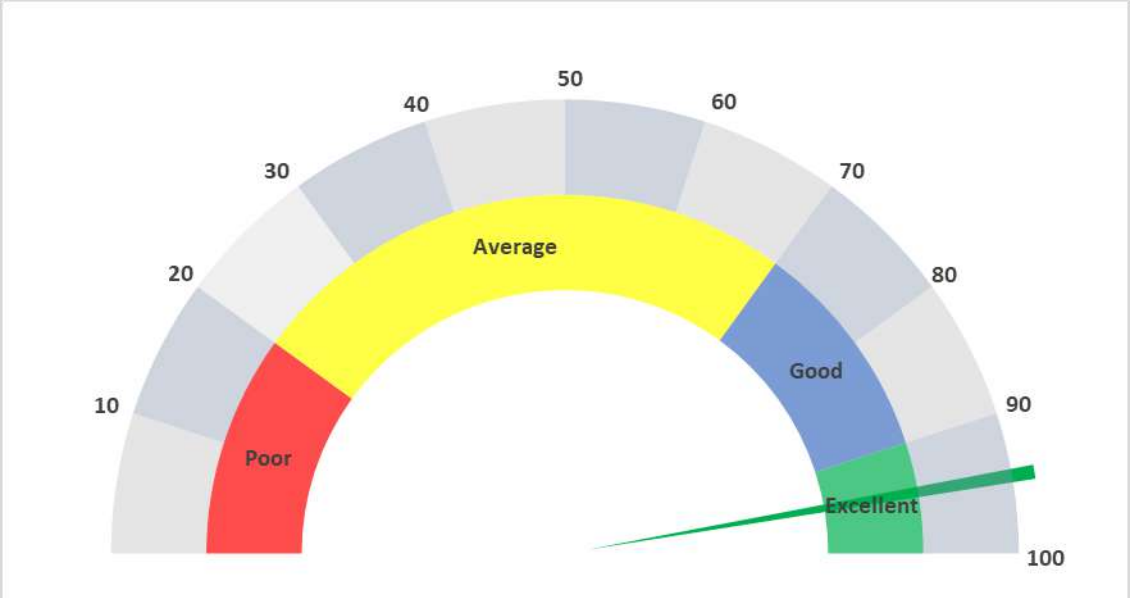
WATER EFFICIENCY



HEALTH & COMFORT



LOCATION AND TRANSPORTATION



INNOVATION

- **Institute is requested to implement all the recommended changes for making institute Greener and Environment Friendly.**

THANK YOU