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Green and Clean Policy Adopted for Reducing Energy, Water and Carbon Footprint at NIO, Pune

National Institute of Ophthalmology Super Speciality Eye Clinic, Pune

GGHH Agenda Goals

- Energy
- Water
- Waste

Hospital Goal

- Reduce energy footprint of the hospital and use maximum natural light for building operations
- Reduce water footprint of the hospital
- Reduce carbon footprint by minimizing the waste

Progress Achieved

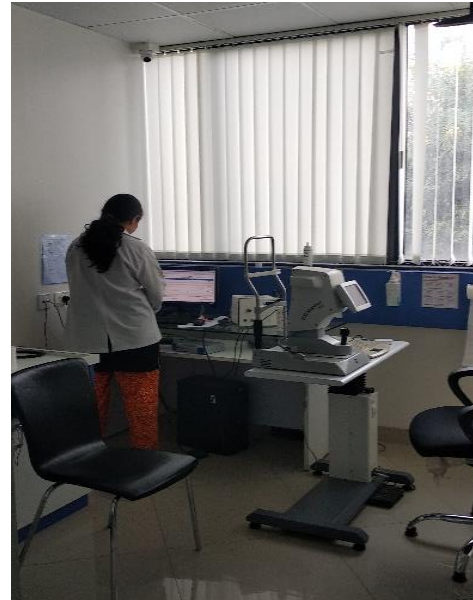
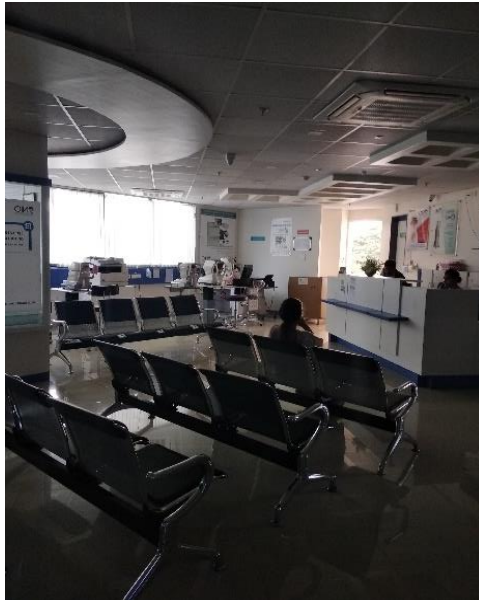
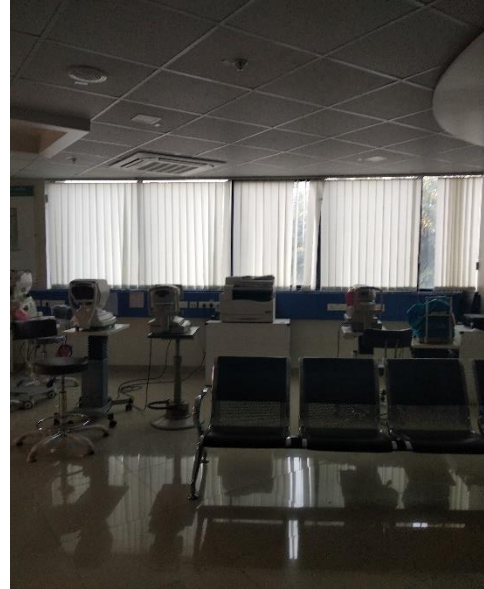
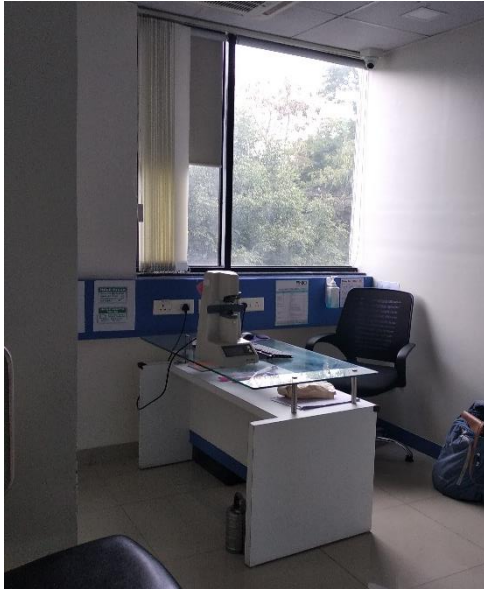
- Green policy and its key objectives are communicated and implemented at all levels within the organization
- Knowledge of Green Environment among the members of hospital is enhanced
- Message of Green Environment spread to the community by the initiatives taken up under Green Policy

The Issue

Healthcare is considered among one of the fastest growing sectors in India and spending on it is supposed to increase with time. A report of 2010-11 by Confederation of Indian Industry (CII) projected the healthcare spending to double every five years till 2020. Hospitals being an inseparable part of this sector require latest equipments with uninterrupted power supply for suitable functioning. Having realized long ago by the Governments as well as individual study groups, that hospitals have the huge potential of saving energy much emphasis has been given to build energy efficient and green hospitals. It has been observed that energy conservation measures coupled with enabling architectural design to harness natural light and ventilation, can bring about a reduction of 10% in electricity consumption stated the CII report. This 10% reduction would in turn save up to INR 800 Million ever year, sufficient to cater to the cap-ex requirement of setting up a 150 bed tertiary care Hospital.¹ Usually a green hospital tends to make maximum use of natural light and solar energy. Green buildings are constructed in a certain angle of alignment with the sun to enhance the use of nature light. The major orientation of building in the north and south directions maximizes this use of natural light. Windows are generally located in such a manner so as to ensure ventilation, further

increase access to natural light and reduce heat.² Apart from energy efficient measures, hospitals can also reduce their carbon footprint by minimizing the non-hazardous waste generation through paper recycling, minimal packaging, waste segregation etc. Reduction of water footprint by adopting simple measures like creating awareness among the hospital staff on judicious use of water are among other sustainable or green practices adopted by hospital setups.

Figure 1: Use of Natural Light at NIO hospital building



National Institute of Ophthalmology is one such hospital that has successfully been able to implement energy, water and waste efficient measures at the same time. It is the first NABH accredited eye hospital of Pune that adopted Green Policies in 2016 to implement in its newly built green building primarily designed to minimize energy footprint. Among other sustainable practices adopted under this policy, hospital has implemented measures to reduce its carbon as well as water footprint.

Sustainability Strategy Implemented

The initiative of adopting green policy in NIO was taken up by the management team at the hospital in 2016 through launch of their newly built environment friendly building in Pune. The major focus was to reduce energy, water and carbon footprint of the hospital building by following simple set of guidelines and standards. These were formulated and implemented by an on campus Green and Clean Committee in a stepwise manner.

Steps undertaken to formulate and implement the green policy:

- The management set up a Green and Clean Committee comprising Chairman and Secretary along with 3 members and 2 representatives from the hospital staff as the core group.
- Green and Clean Committee lays out Green Policy and Green Standards for efficient implementation within the hospital with respect to reducing water, energy and carbon footprint.
- A quality team and an apex improvement committee is set up for providing assistance during the review and audit process of laid out Green Policy and Standards.
- The policy and standards were devised to have individual strategy for each specific aspects of energy, water and carbon footprint reduction.

Strategy formulated and implemented to reduce energy footprint:

- Building is constructed to capture maximum natural light during the day which reduces use of regular lights and bulbs during the day.
- Hospital uses high efficiency and energy saving LED lights for indoor and outdoor applications that are used only when necessary and preferably avoided during the day time.
- Energy consumption is monitored regularly by committee members and representatives through close check on power bills and per unit spent. Necessary steps are taken to reduce the consumption as and when required.
- Hospital is working on a plan for using solar energy for heating water that could be used for general operations and functioning.
- The hospital ensures energy audit at periodic intervals with plans for energy saving.
- Awareness programs organized for the staff about the need and benefits of energy conservation.

Strategy formulated and implemented to reduce water footprint:

- Water meters installed to measure consumption and regulate its wastage.
- Representatives conduct regular checks to prevent any leakages in water taps, toilet flush and cleaning areas.
- Education programs are organized on a regular basis for staff, patients and visitors regarding different measures that can be adopted for water conservation within the hospital. They are sensitized through posters and visuals on judicious use of water taps in drinking and washing areas.
- Ground and cleaning staff is particularly trained on not to leave the taps open when not in use and reuse waste water (non-infectious) for cleaning porch and outside premise area.
- A bore well is used as an alternative source of water.

Strategy formulated and implemented to reduce carbon footprint:

- Hospital uses natural ventilation and light wherever possible reducing the overall contribution to both energy and carbon footprint of the building.
- It is ensured that only eco-friendly products are procured with minimal packaging and only have contracts with eco-friendly service providers. For instance, using plastic to the minimum and biodegradable material during the processes.
- The committee monitors hospital's own vehicles and vehicles under the control or influence of the organization to reduce carbon emissions through promoting regular maintenance checks, carpooling, reduce idle timing etc.
- A separate program has been developed for waste reduction and its appropriate segregation at the source.
- Hospital ensures that papers are double used to minimize wastage.
- General waste is collected and segregated as per the Pune Municipal Corporation guidelines.
- Trees are planted inside as well as outside the hospital premise.
- The Diesel Generator set is utilized only as an emergency service and only essential load is diverted on it.

Implementation Process

- Chairman and Secretary manage and provide guidance on the overall implementation of Green Policy and Standards along with the help of assistance provided by the committee members.
- Two representatives monitor the implementation of Green & Clean Standards with respect to waste segregation at the source (biomedical and general waste), energy consumption and water conservation.
- Representatives provide training on each aspect of energy, water and waste to the hospital staff to generate awareness among them through posters and visuals. Training is provided as per the strategy laid out by committee and management team for each specific aspect of energy, water and carbon footprint reduction.
- Audits are conducted by the Quality Team that works in close association with the Green and Clean Committee along with its representatives to ensure compliances. They together also map key performance indicators and monitor surveillance activities for the overall guideline and standards.

Following indicators have been defined to monitor and measure performance related to compliance to Green & Clean Standards:

Sustainability strategy:

1. Compliance to energy saving practices
2. Compliance to water saving practices
3. Paper consumption rate

Infection Control:

4. Compliance to Biomedical waste disposal (as per the Bio-medical Waste Management Regulations of 2016)
5. Compliance to Hand Hygiene and use of Personal Protective Equipment
6. Incidence Reporting & Analysis
7. Incidence of post-operative infection

Tracking Process

Monitoring and supervision of the Green Policy and Green Standard is carried out by the Green and Clean Committee representatives. Committee members provide assistance in overall implementation, monitoring and surveillance as and when required at both implementation and monitoring stages. In case of any violation or any discrepancy representatives take an account of the matter which is then raised to the concern of Chairman and Secretary. Further the entire Green & Clean management system is reviewed by the management separately every quarter to ensure its continuity, suitability, adequacy and effectiveness. Any updates or proposals for the renewal of the guidelines and standards are approved by the Chairman and Secretary along with the consent of committee members and representatives.

A Quality Improvement Committee which is the Apex Committee is also developed by the management to review the following:

- Statutory Compliances
- Risk Assessment & Management
- Feedbacks and suggestions received from external sources in relation to green and clean compliances
- Adequacy of Green & Clean Policy
- Extent to which the Green & Clean Objectives have been achieved

Challenges and lessons learned

The hospital is successfully able to manage new building as per the devised policy and standards. To make the processes more resource efficient, reduce the energy and carbon foot print and the money spent on conventional electricity, management is on the way to switch to renewable energy.

Next Steps

- The hospital management is considering to install solar water heaters and solar panels for power supply in the building. This is aimed at not only reducing the overall energy and carbon footprint but to also bring down the cost of electricity and avail financial benefits.

Demographic information

National Institute of Ophthalmology is a private Ophthalmology hospital in Aundh, Pune. The hospital has recently been established in 2016. It has an old parent hospital branch under the same name that was established in 1993 in Shivaji Nagar Pune.

Links

To know more about Energy Efficient and Green Hospitals:

- <http://www.cii.in/webcms/Upload/CII%20Report%20on%20Energy%20Efficient%20Hospital%20%E2%80%93%20visiting%20the%20realities.pdf>
- https://igbc.in/igbc/html_pdfs/technical/Green%20Hospitals.pdf

To learn more about NIO, Pune: <http://nioeyes.com/>

Health and Environment Leadership Platform's work and other case studies:
<https://www.ceh.org.in/activities/help/about/>

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References

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<http://www.cii.in/webcms/Upload/CII%20Report%20on%20Energy%20Efficient%20Hospitals%20%E2%80%93%20visiting%20the%20realities.pdf>

2

<http://www.cii.in/webcms/Upload/CII%20Report%20on%20Energy%20Efficient%20Hospitals%20%E2%80%93%20visiting%20the%20realities.pdf>