

ASOS – Follow-up- Environmental Assessment Management System Certification

Assessment Services - General

2016-Sept-19 to 2016-Sept-19

Project Title Assessment of Environmental performance
as per ISO 14001:2015

Team Leader: Debanjan Das Gupta

Audit Team: Dibyendu Roy

Project Scope

DNV GL has been engaged to conduct a follow-up green audit to evaluation present compliance status in line with ISO 14001:2015 system for Heramba Chandra College. This follow up assessment report will summarize the present status of institute in the following areas of the environmental management related to – Water management, Energy Conservation, Use of renewable Energy, Rain water harvesting, Efforts of carbon neutrality, Plantation, Solid & Hazardous Waste Management, E-waste Management. Additionally general evaluation in line with environmental management system requirements has been done to provide an overview of the present status of environmental performance of the institute.

Assessment Methodology

Overview

The Educational Institution buildings are owned by Brahmo Samaj Education Society, located at 23/49 Gariahat Road, Kolkata - 700029, Ward Number 90, Borough -VIII, Under Kolkata Municipal Corporation. Total land area is 2874.395 m² of which 1028.22 m² is covered with a building of four stories. Eastern and Western sides of the site are having Roads and residential buildings and Northern and Southern sides are having residential buildings adjacent to the site. The waste water discharges are directly connected with the municipal drains and solid waste generated is collected by the Kolkata Municipal Corporation. The site Layout Plan is indicated in the Annexure - 1.

The follow-up assessment is done based on the framework prescribed in ISO 14001:2015 to evaluate the status of actions based on the last assessment which was conducted on 13th October 2013. In order to collect factual data the assessment team has interacted with concerned management personnel, areas owners and visited different area of the institution namely common room, utility area, library, water storage underground and overhead, first aid facility, toilets, kitchen and canteens, waste storage areas, drainage system. To ensure comprehensive coverage the assessment has been categorized into six broad modules to facilitate a structured evaluation. The modules are as follows:-

1. Policy, Objectives & Programs
2. Environmental Compliance
3. Competence, Awareness & Communication
4. Operations Management and Performance Monitoring
5. Emergency Preparedness
6. Corrective Action & Improvement

A follow up assessment results have been categorised into three types namely :- (1.) Completed, (2.) In Progress and (3.) No action taken.

Green Audit- Management Summary

Executive Summary

Positive indications

- Plantation inside the college premises is found well maintained.

Main areas for improvement

Observation	Status	Remarks
<ul style="list-style-type: none"> • Establishing an environmental policy statement indicating the commitment of the institute towards improving its environmental performance. 	In progress	Policy framing is under progress.
<ul style="list-style-type: none"> • Evaluation of compliance with respect to applicable legal requirement. 	In progress	Summary of compliance status has not been prepared.
<ul style="list-style-type: none"> • Increase visible communication on environmental issues. Effective use of notice boards and signs. 	In progress	Communication on Environmental awareness in each floors, notice boards made.
<ul style="list-style-type: none"> • Improvement require with respect to awareness on environmental issues and concerns 	In Progress	Noted improvement with respect to last Audit
<ul style="list-style-type: none"> • Baseline data generation for water, energy (in all forms electricity, fuel) and waste. Data management and analysis of 	No action taken	Energy consumption data generation is to be done from Energy Bills

Green Audit- Management Summary

trends with respect to energy consumption, water consumption, waste water generation, solid waste generation (stream wise).		
<ul style="list-style-type: none"> Establishing improvement objectives for reducing energy consumption, water consumption, and fuel consumption. 	In progress	Replacement of energy efficient Fans and Lights against the older ones.
<ul style="list-style-type: none"> Identification of improvement initiatives, prioritization and rollout of suitable projects. 	No action taken	
<ul style="list-style-type: none"> Ensuring effective implementation of such projects to attain set environmental goals. 	No action taken	

Policy, Objectives & Programs - Module Summary

Main areas for improvement

Observation	Status	Remarks
<ul style="list-style-type: none"> Suitable institutional policy on environment, green procurement, may be developed to provide overall direction to the environmental improvement efforts. 	In progress	Energy efficient electrical devices procured in a phased manner and being installed.
<ul style="list-style-type: none"> A mechanism needs to be developed to identify the various 	No action taken	Optional. This is a requirement for

Green Audit- Management Summary

<p>environmental aspects & the impact arising from the activities of the institute. This will enable the organization map its various resources usage and waste streams, in accordance with the same control measures can be developed and implemented.</p>		<p>environmental management system.</p>
<ul style="list-style-type: none"> Organization needs to develop a monitoring & measurement program for resource (water, electricity, LPG & fuel) consumption efficiency by (a.) evaluating current consumptions, (b.) setting time based reduction targets (c.) action plan to achieve the same with defined responsibilities (d.) periodic review of effectiveness of actions implemented. 	<p>In progress</p>	<p>Consumption data is not available. Data is yet to be analysed to determine overall trend.</p>

Green Audit- Management Summary

Environmental Compliance - Module Summary

Existing Control

- E-waste generated from office and IT labs are handled through service provider.
- New generation of Air conditioners are observed. They are using the use new generation coolant HFC R401A which creates lead impact on the environment.

Main areas for improvement

Observation	Status	Remarks
<ul style="list-style-type: none"> • The organization is having one DG set. The DG set exhaust is not found to be channelized through stack of stipulated height as per requirement with The Air prevention and control of pollution Rules 1982. The emission level monitoring from the stack needs to be done to check compliance to national emission standard. 	No action taken	
<ul style="list-style-type: none"> • The existing DG set is not equipped with acoustic enclosure as per requirement of the Environmental Protection rules 1986. The standby DG set is the source of both noise pollution & air pollution due to inadequate acoustics & improper exhaust system. DG is located just by the side of boundary wall 	No action taken	

Green Audit- Management Summary

enabling subsequent effect in surrounding outside area.		
<ul style="list-style-type: none"> There is no noise monitoring data available to check the compliance with the ambient noise norms as per noise pollution (Regulation and control) rules 2000. 	No action taken	
<ul style="list-style-type: none"> In DG room fuel storage is without any secondary containment, any spillage will go to ground & the storm water drain just outside the DG room. 	No action taken	

Competence, Awareness & Communication - Module Summary

Existing Control

- Several efforts have been initiated to improve communication with respect to environment and create awareness.

Main areas for improvement

Observation	Status	Remarks
<ul style="list-style-type: none"> Suitable communication by means of banner, posters, one point lesson can be displayed at vantage location to create awareness among all stakeholders. 	In progress	Posters and display boards are in place. Could arrange for an awareness workshop, campaign etc.

Green Audit- Management Summary

ASOS

<ul style="list-style-type: none"> The communication process for awareness in relation to energy conservation found inadequate. Electrical fans and lights found in use in the unoccupied classrooms and other areas during the day of assessment. 	In progress	Improvement observed in conservation of energy and water.
<ul style="list-style-type: none"> The cleanliness of the common room for students and some of the classrooms found inadequate. Some of the walls of the common room found in unhygienic condition. 	Completed	
<ul style="list-style-type: none"> Participation and involvement of the students can be improved by organization event on pertinent days such as world environment day, earth day, World Water day etc. 	In Progress	Nature Club has been formed to enable implementation of such initiatives
<ul style="list-style-type: none"> Student community may be involved in small groups for different environmental improvement project within the college as well outside the college boundary. 	In Progress	Few Initiatives are being explored.

Operations Management and Performance Monitoring- Module Summary

Existing Control

- The organization is presently drawing treated drinking water from the Kolkata Municipal corporation supply.
- The organization has taken initiative for rain water harvesting. Presently rainwater from college roof is being

Green Audit- Management Summary

collected in 2 no. of 2000 Lt. Storage tank for using in gardening.		
Main areas for improvement		
Observation	Status	Remarks
<ul style="list-style-type: none"> <u>Water Conservation</u> 		
<ul style="list-style-type: none"> The organization has not yet introduced any water consumption monitoring within the college campus. The authority may install flow meter at the intake point and generate water consumption pattern. 	No action taken	
<ul style="list-style-type: none"> The detailed layout of water dispensing taps is not available presently. 	No action taken	
<ul style="list-style-type: none"> The organization may compare the water consumption from the measured data with WHO guideline, to chalk out water conservation measures for continual improvement. 	No action taken	
<ul style="list-style-type: none"> The organization may analyse the rainwater harvesting potential from the historic meteorological data and surface area of roofs of the building for detailed planning of aquifer recharge. 	In Progress	Roof top water is being collected in tank for gardening purpose but further action for aquifer recharge has not been planned

Green Audit- Management Summary

<ul style="list-style-type: none"> Organization needs to evaluate its' water consumption efficiency by suitable monitoring of (a.) input from KMC (b.) Quantity of water supplemented by rain water harvesting which is under implementation (c.) operational control to reduce wastage in toilets & canteens , (d.) identification & stoppage of leakages in pipelines. Float valve operated auto shut off switch may be installed for pump sets used for overhead tank filling. (Refer exhibit 5) 	<p>In progress</p>	<p>Structured evaluation has not been completed. Rain water is being used for gardening purpose. Improvement noted with respect to water losses. Float valve option has not been explored as yet.</p>
<ul style="list-style-type: none"> Washing waste water from canteen & kitchens needs to be suitably controlled to prevent residual food waste contaminating the storm water drains. 	<p>Completed</p>	<p>Improvement noted with respect to waste segregation preventing storm water drain contamination.</p>
<ul style="list-style-type: none"> <u>Solid Waste Management</u> 		
<ul style="list-style-type: none"> The organization does not having a waste collection system with proper segregation. The organization may introduce waste collection bins with different colour code for biodegradable and non-biodegradable waste for source segregation with adequate signage 	<p>Completed</p>	<p>Wooden waste bins have been provided at various locations throughout the facility. However colour code segregation has not been done.</p>

Green Audit- Management Summary

<ul style="list-style-type: none"> Adequate awareness program amongst students and other stakeholders (faculty, other staffs, service providers etc.) needs to be organized for proper solid waste disposal. 	In Progress	Nature club has been formed to improve awareness.
<ul style="list-style-type: none"> The organization may start proper communication with the local Municipal Corporation for regular collection of solid waste from the campus. 	Completed	Solid waste disposal system has been improved through better coordination with municipal authority
<ul style="list-style-type: none"> Various wastages like used tube lights, plastic bottles were observed on ground behind the common room. Organization needs to prepare & implement a waste handling & disposal procedure with clear identification for different type of wastes. Disposal area for different types of waste needs to be earmarked. 	Completed	Disposal system has improved as observed during facility visit. Designated area has been provided for storage of tube light components
<ul style="list-style-type: none"> Hazardous Waste 		
<ul style="list-style-type: none"> Handling of reso machine master film disposal containing ink residue needs to be suitably controlled to prevent land contamination. 	In Progress	Options are being explored with relevant authority. No solution has been found yet.

Green Audit- Management Summary

<ul style="list-style-type: none"> <u>Energy Conservation & Efforts on Carbon Neutrality</u> 		
<ul style="list-style-type: none"> Floor wise master list connected electrical equipment with type and energy rating (e.g. - lights, fans, air conditioner, photocopier etc.) is not available for assessment of electrical load. 	Completed	
<ul style="list-style-type: none"> Single line diagram could not be evidenced to assess connected load against approved amount by CESC & floor wise load distribution. This will enable floor wise monitoring of load. 	Completed	
<ul style="list-style-type: none"> The organization may assess the equipment rating to have the baseline data for assessing energy consumption pattern. 	No action taken	Reports not available
<ul style="list-style-type: none"> Maximum number of electrical fans found of older generation non energy efficient. The organization may develop a phase out plan of the same by replacing with new energy efficient fans. 	Completed	All fans have been replaced with energy efficient fans (125+ nos)
<ul style="list-style-type: none"> High energy consuming Incandescent lights and fluorescent lights are found in use. The organization may plan for long term phase out plan of the same with less energy consuming LED or CFL lights. 	In Progress	Tube lights are being replaced with LED tube lights. Total 400+ LED's have been installed
<ul style="list-style-type: none"> Organization needs to evaluate power usage efficiency by suitable 	Completed	During visit significant improvement observed with

Green Audit- Management Summary

<p>measurement & monitoring of (a.) total connected load segregated in lighting, AC, fans & other utilities (b.) developing operational controls to switch off lights, fans & ACs when rooms / classrooms are unoccupied. Many classrooms found unoccupied while fans & lights operational. Automation / time control mechanism may be explored.</p>		<p>respect to prevention of energy waste. Communication for energy conservation has been provided in all the corridors.</p>
<ul style="list-style-type: none"> • Renewable Energy 		
<ul style="list-style-type: none"> • The organization is having considerable area in the roof top, a cost benefit analysis may be done for installation of solar panel to reduce carbon footprint. 	<p>No action taken</p>	
<ul style="list-style-type: none"> • The organization may account the carbon foot print from per capita energy consumption and other means of GHG emission. Based the baseline data the organization may set target and programmed to reduce carbon foot print 	<p>No action taken</p>	

Emergency Preparedness - Module Summary

Existing Control

- Portable and fixed firefighting devices have been installed a various locations throughout the facility.

Green Audit- Management Summary

Main areas for improvement		
Observation	Status	Remarks
<ul style="list-style-type: none"> Organization needs to develop an emergency preparedness plan. 	No action taken	
<ul style="list-style-type: none"> Signages indication emergency evacuation layouts, routes and assembly area are not implemented. 	No action taken	
<ul style="list-style-type: none"> Stakeholder awareness on emergency preparedness needs to be improved. 	In Progress	Attended workshop on emergency Preparedness. However no emergency evacuation / mock drill done to evaluate readiness.
<ul style="list-style-type: none"> Infrastructure for firefighting needs to be reviewed. 	In Progress	Firefighting equipments are available. But no structured survey has been done to evaluate adequacy of existing system. Fire authority has been contacted
<ul style="list-style-type: none"> First aid room is not maintained in proper condition. 	Completed	Saint John ambulance facility with staff at site
<ul style="list-style-type: none"> Unwanted stock of inflammable materials needs to be disposed of. 	Completed	Identified materials have been disposed off

Green Audit- Management Summary

Corrective Action & Improvement - Module Summary

Existing Control

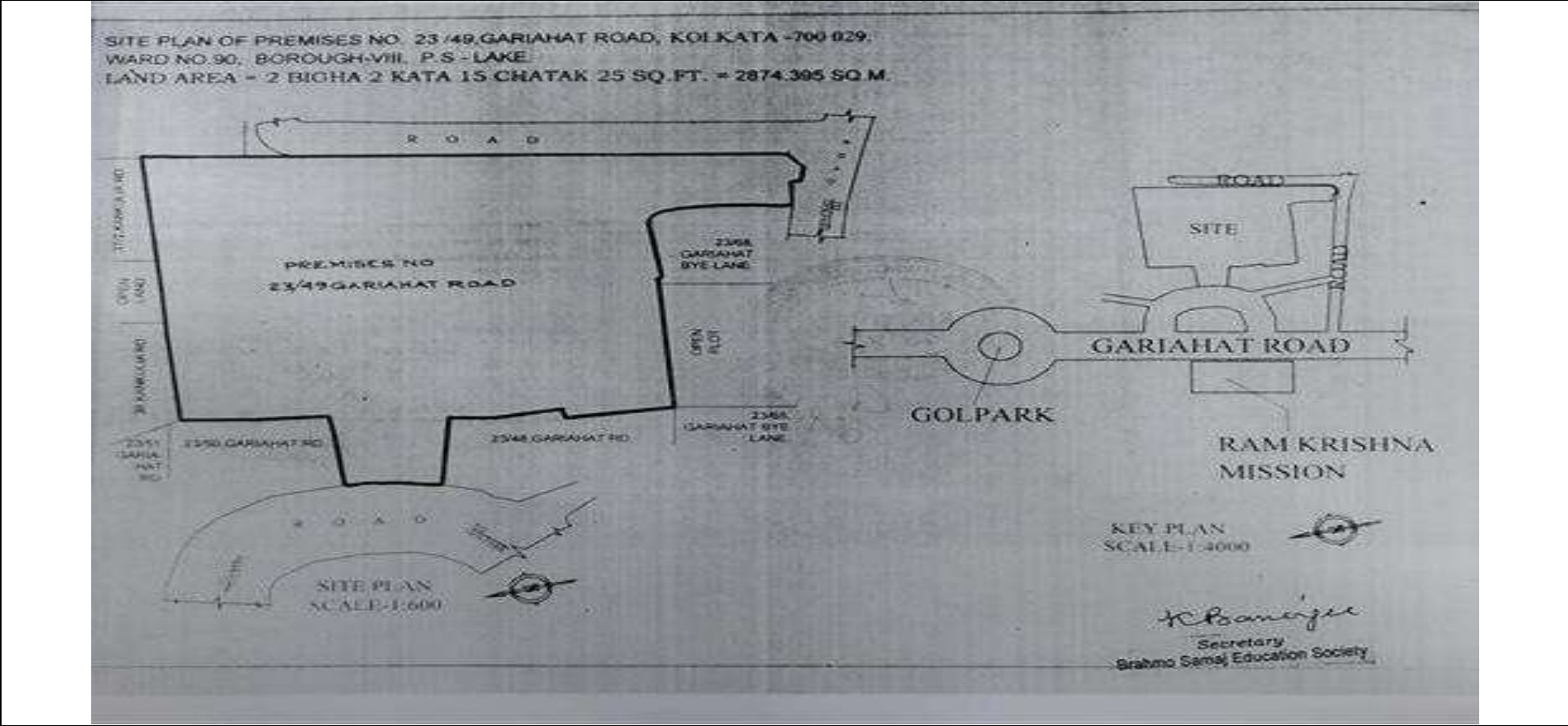
- A structure improvement plan or roadmap to improve the institute's environmental performance is not established.

Main areas for improvement

Observation	Status	Remarks
<ul style="list-style-type: none"> • A structured inspection mechanism of the facility has not been established to monitor deviation leading to loss of resources. 	In progress	Action against deviation is taken based on report by administration personnel. A structured mechanism is yet to be established.
<ul style="list-style-type: none"> • Organization needs to explore the usage of renewable energy sources like solar panels for lighting & water heating 	No action taken	
<ul style="list-style-type: none"> • Waste Water reuse and recycle opportunities have not been explored. 	No action taken	
<ul style="list-style-type: none"> • Plantation 		
<ul style="list-style-type: none"> • The organization may take initiative for community plantation programme by involving students to offset the GHG emission. 	No action taken	

Green Audit- Management Summary

Annexure - 1



Statement of confidentiality

The contents of this Report, including any notes and checklists completed during the Assessment will be treated in strictest confidence, and will not be disclosed to any third party without the written consent of the customer, except as required by the appropriate Statutory Authorities.

Disclaimer

This follow-up assessment is based on verification of a sample of available information. Consequently there is an element of uncertainty reflected in the findings. Also if no non-conformities were identified this do not mean that they do not exist in audited and/or other areas. Prior to release this report is also subject to an independent DNV GL internal review which may affect the report content and conclusions.

For any feedback, please contact:

DNV GL Business Assurance India Pvt Ltd.
P 540 Raja Basanta Roy Road,
Kolkata 700029,
West Bengal, INDIA
Direct +91 33 3021 7000
Fax +91 33 3021 7030
www.dnvgl.com