ENVIRONMENTAL AUDIT – 2018

BISHOP CHULAPARAMBIL MEMORIAL COLLEGE FOR WOMEN

Kottayam

Kerala

EXECUTED BY

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ACKNOWLEDGEMENTS

We express our sincere gratitude to the **BISHOP CHULAPARAMBIL MEMORIAL COLLEGE FOR WOMEN** for giving us an opportunity to carry out the project of Environment Audit. We are extremely thankful to all the staffs for their support to carry out the studies and for input data, and measurements related to the project of Environment audit.

1	Prof. Josephina Simon	Principal
2	Fr. Philmon Kalathra	Secretary Corporate Educational Agency of Colleges
3	CA Reshma Rachel Kuruvilla	Asst. Professor in Commerce
4	Dr. Peter K Monai	Head Department of Botany
5	Mr. Jimmy K Stephen	System Administrator
6	Mr. Shiju Joseph	Mechanic on Contract

Table 1

Also congratulating our Environment audit team members for successfully completing the assignment in time and making their best efforts to add value.

ENVIRONMENT AUDIT TEAM

1. **Mr. G. Krishnakumar**
   Registered Energy Manager of Bureau of Energy Efficiency (BEE – Govt. of India)
   Lead auditor EMS certificate No: 106604 by Intertech.

2. **Mr. Jaideep P P,** Project Engineer - ME, Energy Engineering.

Yours faithfully

Managing Director
Athul Energy Consultants Pvt Ltd

1. ENVIRONMENT AUDIT SUMMARY

- College segregated the waste from college, canteen, and hostels and treated in a scientific manner
- Biodegradable wastes re treated in a biogas plant installed behind hostel
- Non-biodegradable wastes are incinerated in incinerator installed behind the auditorium.
- E- Wates are collected and given to an authorized collecting agent and college is signed a MOU with them already.

Suggestions for improvement

- Internal inspection team to be formed which comprises of staff and students.
- Introduce 'refuse plastic' concept among college for inventories. This will spread among students and staffs and percolate into their behaviour.
- Segregation and collection of wastes done on every month and record the same which will be an eyeopener and we can control on that data basis.
-

2. GENERAL DETAILS

The general details of the BCM College are given below in table.

Sl.No:	Particulars	Details
1	Name of the College	Bishop Chulaparmabil Memorial College
2	Address	Kottayam Kumily Road
		Kottayam - 686001
3	Contact Person	Dr. Stepy
4	Contact Phone numbers & Fax	0481-2562171
		0481-2560307
5	E-mail ID	bcmktym@yahoo.com
6	Type of Building	Educational Institution
7	Annual Working Days	210
8	No: of Shifts	Day Shift (One) (9AM -4PM)

TABLE 2: GENERAL DETAILS

ABOUT BCM COLLEGE

Bishop Chulaparmabil Memorial College was founded by His Excellency Bishop Thomas Tharayil, a pioneer in women's education in the Christian Community of Central Travancore. A priest true to heaven and an educationalist concerned with the progress of the world, Bishop Thomas Tharayil founded this institution in honour of his illustrious predecessor, His Excellency Bishop Alexander Choolaparambil, in 1955, with a student community of 63 girls. Bishop Thomas Tharayil felt that women's education was the key to social progress.

Prof. V.J. Joseph was the first principal of this college which began with eight members on the teaching staff and one member in the non-teaching staff. The college was formally inaugurated by Cardinal Valerian Gratius. As per the University specification a lady Principal, Sr. Fidelius of the Mangalore Carmel Convent was appointed.

From its humble beginnings, the college has made steady progress and is now one of the foremost Women's Colleges in Kerala with over 1400 students.

The college motto is SAPIENTIA ET GRATIA i.e. WISDOM AND GRACE, the two essential qualities in a woman. Believing that the true purpose of education is the overall development of personality, the college tries to promote spiritual and moral growth along with intellectual development. It is expected that when a student leaves the portals of B.C.M. after her education, she will have become what our founder visualized as the ideal educated woman, one who combines in her wisdom and grace.

ENVIRONMENT AUDIT

The ICC defines Environmental Auditing as: "A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

A clean and healthy environment aids effective learning and provides a conducive learning environment. There are various efforts around the world to address environmental education issues. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without stress on legal issues or compliance. This innovative scheme is user friendly and totally voluntary. The environmental awareness helps the institution to set environmental examples for the community and to educate young learners.

One of the main trust areas in the institution is Waste management. Here we can mainly divide into as activity from the college and student initiatives to the social environment.

1. WASTE MANAGEMENT

Waste is generally termed as 'a resource at the wrong place'. The college authorities are aware of the possible methods and have installed waste management measures like biogas systems. The waste clearance measures associated with different types of wastes are briefly given below. In an college normally three types of wastes are generated and we can divide the same as Bio degradable , Non bio degradable and E-waste

2. BIODEGRADABLE WASTES

❖ **Biodegradable waste** includes any organic matter in waste which can be broken down into carbon dioxide, water, methane or simple organic molecules by micro-organisms and other living things by composting, aerobic digestion, anaerobic digestion or similar processes. In waste management, it also includes some inorganic materials which can be decomposed by bacteria

These materials are non-toxic to the environment and mainly include the natural substances only Plants and animals waste, even the dead plants and animals, fruits, paper, vegetables, etc. get convert into the simpler units, which further get into the soil and are used as manures, biogas, fertilizers, compost, etc.

The biodegradable wastes are mainly from the college canteen. The bio-slurry is used as manure to the plantation.

- **College canteen**
- The biogas plant converts food wastes into methane gas and usable bio fertilizers which will used for plants. The methane gas from the biogas plant is used in the canteen for cooking purpose and for heating drinking water hot water. Approximately 2 to 3kg of LPG is saved by using biogas plant. The bio maneuver from the biogas plant is used for gardening, agriculture and for trees. This biowaste is also act as best bio insecticide and thus the college avoided the usage environmentally toxic precipices for environment.
- **College Hostel:** A biogas plant is installed which uses the food waste as aresource. The stationary and other wastes are incinerated. The gas is consumed in the kitchen as per the available production.

Other wastes like those from the toilets are disposed through septic tank at locations situated away from water sources.

3. NON-BIODEGRADABLE WASTE

Non-recyclable wastes are collected and burned once in a month using incinerator places inside the campus itself. The recyclable wastes are sorted out into categories and supplied it to the collecting units.

Materials that remain for a long time in the environment, without getting decompose by any natural agents, also causing harm to the environment are called non-biodegradable substances. These materials are metals, plastics, bottles, glass, poly bags, chemicals, batteries, etc. But as these are readily available, convenient to use, and are of low cost, the non-biodegradable substances are more often used. But instead of returning to the environment, they become solid waste which cannot be broken down and become hazardous to the health and the environment. Hence are regarded as toxic, pollution causing and are not considered as eco-friendly

. Many measures are taken these days, concerning the use of non-biodegradable materials. The **three 'R'** concept which says **Reduce-Recycle -Reuse** is in trend, which explains the use of the non-biodegradable materials. As we already discuss that these substances do not decompose, or dissolve easily so can be recycled and reuse. And one can help in reducing this waste by instead of throwing the plastics and poly bags in the garbage; it can be put in the recycling bags to use again.

Incinerator

The incinerator is used for incinerating non-biodegradable waste such as paper, plastic, sanitary napkins etc. The ash generated are as for manoeuvre after mixing with cow dung for plants. The ash generated from plastic will be treated separately.

The ash generated from canteen were wood is used as a fuel is used as manoeuvre for plants. The college campus promoting biodegradable packaging and reducing the consumption of plastic to a large extent.

Figure 1: Incinerator

Figure 2: Bio gas plant

Electronic waste: Electronic waste or e-waste describes discarded electrical or electronic devices. E-waste or electronic waste is created when an electronic product is discarded after the end of its useful life. The rapid expansion of technology and the consumption driven society results in the creation of a very large amount of e-waste in every minute Used electronics which are destined for refurbishment, reuse, resale, salvage recycling through material recovery, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environment pollution Certain components of some electronic products contain materials that render them hazardous, depending

on their condition and density. College already signed a MOU with ----------for the disposal of E waste generated in the college.

STUDENT ACTIVITIES FOR ENVIRONMENTAL CONSERVATION

- On Gandhi Jayanthy day October-2 day celebrated as Swach Bharath Abhiyan"-In this day NSS Volunteers cleaned Railway ststion, DD office, Pakal veedu in Kottayam.

Figure 3: Gandhi Jayanthi day

- ***Paper Bag Making:*** NSS Volunteers were taught on making paper bags. This class was organized with the aim of reducing plastic usage among the society and to show students a means of earning a living by selling manufactured paper bags

  The volunteers would interact with the 1, 97400 people in the district to adopt ethical organic practices to enrich the soil and preserve the environment for a healthy generation.

Figure 4: Paper bag making

- **Nadhisamyojanam** . It is a program conducted for cleaning the river and to restore those rivers which lost its flowing waters. NSS volunteers actively participated in this program. As a result of this program, we also became a part to give a new life for rivers and it helps to begin agriculture in many places.

- **Butter fly Garden** Butterflies are attracted to brightly coloured, fragrant flowers and feed on nectar produced by the flowers. As the butterflies travel from one flower to another, they pollinate the plants, resulting in further development of plant species. Numerous plants rely on pollinators, such as butterflies, for reproduction. BCM College has a butterfly garden. Nss volunteers and programme officers of BCM college NSS unit has decided and has set up a butterfly garden in their homes for a healthy ecosystem. Areas rich in butterflies and moths are rich in other invertebrates. These collectively provide a wide range of environmental benefits, including pollination and natural pest control.

Conclusion

Environment audit is the best way to analyses and solving the critical issues of waste management. Environment audit can add value to management approach being taken by college for identifying, collecting, segregating and processing of waste generated in the college campus. By analysing the waste generation in each segment such as biodegradable, non-degradable, R waste etc. gave an indication of waste generation and thus put control for the same to reduce the environmental impacts in due course.

The findings in the report shows that college perform well in waste management issues and taken considerable efforts in a responsible manner. During audit and the conversations with the college team, we observed that Bishop Chulaparmabil Memorial College done various approaches in the past few years to performing well to sustainable environment. Even though there is space for further improvement that mentioned in the executive summary.

ANNEXURE-1

Certificate of Attendance

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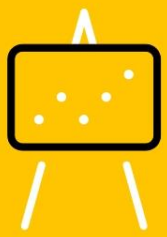

G KRISHNAKUMAR

has attended the following live virtual classroom course:

Transition training for Environment Management System as per ISO 14001:2015

Course is designed to explain:

- Requirements of ISO 14001:2015 in context of audit.
- Key changes from ISO 14001: 2004 to 14001:2015

Session Duration: 16 Hours

CERTIFICATE NUMBER
2020260507

TRAINING DATE:
25th & 26th May, 2020

Authorising Signature:

Intertek India Private Limited