

GREEN AND ENVIRONMENT AUDIT REPORT

2017-18

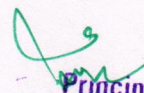


Principal
Dr. Kuldeep Singh Bal



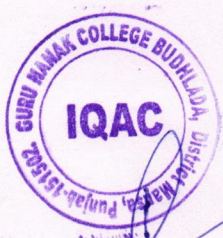
GURU NANAK COLLEGE, BUDHLADA

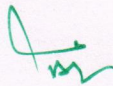



Principal
Guru Nanak College
BUDHLADA

Content

Sr. No	Title/topic	Page
	Exclusive Summery and about Team	3-4
1	Introduction	5
1.1	Objective of green Audit	5
1.2	About the college	6
1.3	Motto, Vision, Mission and Objectives	6
2	Audit Methodology	7
2.1	Survey action plan	7
2.2	Data Evaluation	7
3	Land data observation and analysis	8
3.1	Greenery Site Analysis and Recommendation	8-11
3.1.1	Carbon Foot print	11
3.2	Water and Waste Water Conservation Analysis and Recommendation	12-13
3.3	Waste Management Analysis and Recommendation	14-15
	Pics of proof	16-18




 Principal
 Guru Nanak College
 BUDHLADA

Exclusive Summary:

Environment degradation intensified everywhere in recent decade due to interference of human being by the excess emission of natural resource and conversion of agricultural land into housing area and industrialization process, leads many climatic issue like climate changes and global warming etc. So there is need for academic institution act as role model take initiative for the adoption a sustainable ecofriendly practice for all humans in harmony with nature and natural resource. Guru Nanak College Budhlada is situated in green area mostly surrounding of the college is having green vegetation though out the year in form of agricultural practices. Besides this institution want to know about exact natural climatic status of the college premises and planned for conducting a green audit of the college in October 2017 with expert panel nominated by authority. After field work survey and other formalities, the report was finally sent for approval to the authority (Principal and IQAC).

Audit policy statement

This audit is conducted first time with the cooperation of internal and external experts to assure the national/ international standard of environment auditing.

In this auditing report institution has mentioned evidence of climatic features gathered as per auditing criteria to conclude the existing situation of the institution based on audit report.

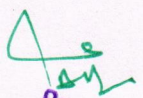
Purpose of audit

For assurance of climatic features of the campus as per the set procedures, team has prepared this report for Guru Nanak College; Budhlada Mansa Punjab is based on input data submitted by the representatives of College. complemented with the best judgment capacity of the expert team.

While all reasonable care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the calculations are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report




Principal
Guru Nanak College
BUDHLADA

About Team: Institution plan to conduct green audit studies after the accomplishment of meeting under the guidance of Higher authority (Principal) and IQAC coordinator for evaluation of environmental statuses of college premises in this surroundings. For this institution has planned internal expert of different discipline having good research track record in field of environment related studies and external committee from the same background is invited to do the green audit in institution.


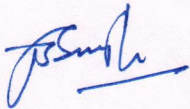


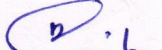


AS
Principal
Guru Nanak College
BUDHLADA

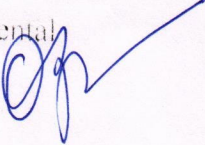

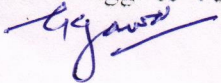
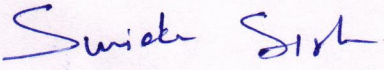

Green Audit Team

(Session 2017-18)

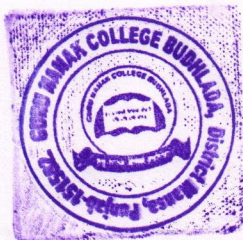
Member of Internal Committee for Green and Environment Audit

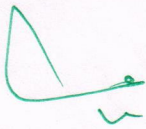
1. Dr. Narinder Singh, Coordinator IQAC 
2. Sri. Bikramjeet Singh, Associate professor and Head, Chemistry Department 
3. Mr. Harpreet Singh, Assistant Prof. Department of Mathematics 
4. Dr. Jatinder Singh Assist. Prof. Department of Chemistry 
5. Mr. Dilip Kumar Ojha, Assist. Prof. Department of Agriculture 

Member of External Committee for Green and Environment Audit

1. Dr. Onkar Singh Braich, Assistant Professor, (Department of Zoology and Environmental Sciences, Punjabi University, Patiala.) 
2. Dr. Sandeep Mohan Ahuja, Professor, (Department of Chemical Engg. & Tech. SLIET, Longowal, Punjab) 
3. Dr. Gulshan Kumar Jawa, Associate Professor (Department of Chemical Engg. & Tech. SLIET, Longowal, Punjab) 
4. Dr. S.S. Bhinder, Assistant Professor (Dr. S.S. B.U.I.C.E.T, Panjab University Chandigarh) 
5. Dr. Harpreet Kaur, Assistant Professor, (PG, Department of Agriculture. GSSDGS, Khalsa College, Patiala) 

10 MAY 2018




Principal
Guru Nanak College
BUDHADA

1.INTRODUCTION:

Green audit is a process of systematic identification, quantification, data recording, reporting and analysis of components of the environmental related action plan. It is a general term done for the known of exact status of environment that is based on various kinds of evaluations intended to identify environmental features and its management system. And it can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics.

As environmental sustainability is becoming an important issue for the human and its surrounding, the role of higher educational institutions in relation to environmental sustainability is more prevalent for the communication of information and available technology that reduce of water, energy and carbon footprint and assured sustainability in human and environment welfare.

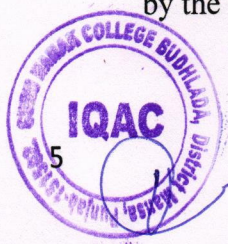
1.1 Objectives of Audit

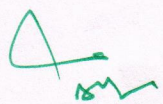
In recent years many researchers expert given enough proof for the environment degradation related effect like drastic increase in global temperature and variation in climate is really given indication of side effect of this. The aim is of green audit is to observe data of environmental feature help to access the problem and finding its solution that promote practices for sustainability of nature and develop model to adopt this for the reduction of water and carbon footprint.

The National Assessment and Accreditation Council, New Delhi (NAAC) has mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through carbon footprint reduction measures. GNC, Budhlada has fixed the following objective to find the prices information of nature.

Objectives of Green Audit

- ❖ To recognize the initiatives taken towards the green campus by means of gardening by the Organization.




Principal
Guru Nanak College
BUDHLADA

- ❖ To identify and provide baseline information to assess threat and risk to the ecosystem.
- ❖ To recognize and resolve different environmental threats of the institution.
- ❖ To set a procedure for proper disposal of all kinds of wastes.
- ❖ To assess the greenish nature of a campus in terms of trees, herbs, shrubs, climbers, lawns and reflected in reducing the environmental pollution, biodiversity conservation and landscape management.
- ❖ Curriculum enhancement through practical experience.

1.2 ABOUT THE COLLEGE

Geography: Guru Nanak College is within the geo-position between latitude 27.20⁰ N and longitude 77.49°E in Budhlada (Mansa), Punjab, India. It encompasses an area of approximate 11 acre. The locality comes under the *Malwa* region of Punjab, which is semi-arid region tapering into cotton fields. The climate is subtropical/semiarid in this region. The average temperature varies from 7°C during winters to 38 °C during summers. The average annual rainfall is 429 mm. Institution had well maintained 4 blocks Science, Computer, Indoor and Bahi Nand Lal Block with hostel facility. Every Department has well aerated and sufficient natural lighting in classroom and hostel. About 44% area is covered under greenery including lawn/garden/Agriculture field and playground sites.

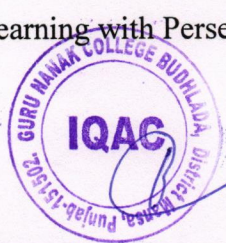
Guru Nanak College, affiliated to Punjabi University, Patiala (listed in 12(b) & 2(f) sections of UGC Act 1956) is situated in Budhlada city - a small town of Mansa district in Punjab. To tribute the 500th birth anniversary of "Sri Guru Nanak Dev Ji", it was started in 1971 by some eminent personalities of the region keeping in mind the noble cause to make affordable education accessible to all the people of this backward, rural and remote area. In the beginning, it was functioning under the local management but later on handed over to SGPC (Shiromani Gurdwara Parbandhak Committee, Sri Amritsar Sahib) an apex and philanthropic body of the Sikhs committed to serve the humanity, on 09 November 1994 due to meager financial resources and some other executive problems.


1.3 MOTTO, VISION, MISSION AND OBJECTIVES

MOTTO

Learning with Perseverance; Rising with Honour

6




 Principal
 Guru Nanak College
 BUDHLADA

VISION

'Enlightening Human Minds and Social Empowerment through Education'

MISSION

Transforming the youth into a productive asset of society through value-based quality education focusing on their all-round development so that they are able to contribute to the progress of society to their utmost potential.

OBJECTIVES

- To achieve excellence in teaching and learning.
- To inculcate social, moral and spiritual values among the students.
- To sensitise the students towards social issues and make them responsible citizens.
- To make the students skilled and productive.
- To groom the students intellectually with a scientific temper, providing congenial ambience.
- To enable the youth to become tomorrow's leaders of change.
- To provide educational opportunities for the under-privileged sections of society.
- To ensure all round development of the students through extra-curricular activities.

2. Audit Methodology

The purpose of the green audit of Guru Nanak College Budhlada is to ensure that the practices followed in the institution are in accordance with the Green Policy of the country. The methodology includes: collection of data, physical inspection of the campus, observation and review of the documentation and data analysis.

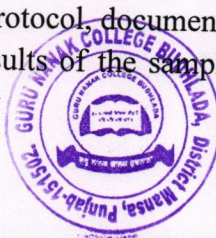
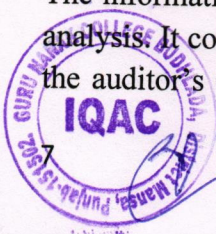
2.1 Survey action Plan

Institution plans different questionnaire formats with different combinations and modifications. The final sets of questionnaires were prepared based on green area, solid waste, energy, fuel, water, hazardous wastes.

The questionnaires contained the general information of the related section, including name of the section, total number of students and employees, number of buildings along with the area under green, open and build up etc.

2.2 Data evaluation

The information of all related data gathered during the surveys was compiled for the further analysis. It consists of the audit protocol, documentation shown by institution administration, the auditor's own recordings, results of the sampling and monitoring photographs, records,



Principal
BUDHLADA

plans, maps, audit findings and reviewing documentation against standards and action plan and policy.

3. Land Data observation and analysis

Land Area: GNC, Budhlada, has mostly wide open area for diverse purposes so that proper place is provided to all concerned for the smooth functioning and working of academic and related activity. Institution covers an area of 88Kanal approximate 11 acers. Zone wise land distribution is mentioned in **Table: 1 Area distribution pattern**

Table:1

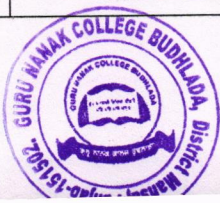
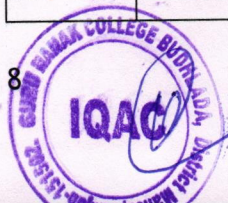
S. No.	Area specific
1	Green belt Zone like Lawn/plantation area
2	Open land (Play Ground)
3	Road/Paved area
4	Roof area of buildings

3.1 Greenery Site Analysis:

Institution has full of greenery in premises. Institution is very much concern for nature conservation and reduction of carbon foot print and plan extensive plantation drives periodically Dueto that the campus is turned into a lush green vegetation spot with all type of plants in including tree herbs, shrubs and indoor plants. More than 1500 plants are available in campus mentioned in **table: 2 & 3.**

Table:2Types of tree and shrubs planted in college Premises

Sr.No	NameofPlant	BotanicalName	Family	No. of plants
1	Ficus	<i>Ficus sp.</i>	Moraceae	164
2	Alstonia	<i>Alstoniascholaris</i>	Apocyanaceae	3
3	Amaltas	<i>Acaciafistula</i>	Fabaceae	7
4	Amla	<i>Phyllanthusemblica</i>	Phyllanthaceae	06
5	Arjun	<i>Terminaliaarjuna</i>	Combretaceae	09
6	Ashoka Tree	<i>Saracaasoca</i>	Caesalpiniodeae	29
7	Bohad/ Banyan	<i>Ficus benghalensis</i>	Moraceae	03
8	Hibiscus	<i>Hibiscus sp.</i>	Malvaceae	30
9	Ber	<i>Ziziphusmauritiana</i>	Rhamnaceae	7
10	Araucaria	<i>Araucaria sp.</i>	Araucariaceae	02
11	Bottlebrush	<i>Callistemonviminalis</i>	Myrtaceae	04



Principal
Guru Nanak College
BUDHLADA

12	Bottle Palm	<i>Hypophorbelagenicaulis</i>	Arecaceae	22
13	Areca palm	<i>Dypsislutescens</i>	Arecaceae	05
14	Date palm (Phoenix plam)	<i>Phoenix sp.</i>	Arecaceae	24
15	Cheeku	<i>Manilkarazabota</i>	Asparagaceae	2
16	Lantena (West Indian Lantana)	<i>Lantenacamra</i>	Verbenaceae	14
17	Cycas	<i>Cycasrevoluta</i>	Cycadaceae	9
18	Dek	<i>Meliaazedarch</i>	Meliaceae	10
19	China palm	<i>Livistona Chinensis</i>	Arecaceae	01
20	Golden shower tree	<i>Cassia fistula</i>	Fabaceae	01
21	Chandni	<i>Tabernaemontanadivaricata</i>	Apocynaceae	04
22	Double Chandni	<i>Tabernaemontanadivaricata</i>	Apocynaceae	04
23	Guava	<i>Psidiumguajava</i>	Myrtaceae	18
24	Rose (Gulab)	<i>Rosa indica</i>	Rosaceae	29
25	Kadam (Burflower Tree)	<i>Neolamarckiacadamba</i>	Rubiaceae	01
26	Gulmohar	<i>Delonixregia</i>	Fabaceae	9
27	Harshingar	<i>Nyctanthesarbortristis</i>	Oleaceae	02
28	Cheel tree (Narrow leaved paperbark)	<i>Melaleuca alternifolia</i>	Myrtaceae	01
29	Jamun	<i>Syzygiumcumini</i>	Myrtaceae	02
30	Jatropha	<i>Jatrophacurcus</i>	Euphorbiaceae	01
31	Kachniar	<i>Bauchiniavariegata</i>	Caesalpinaceae	02
31	Kachniar	<i>Bauchiniavariegata</i>	Caesalpinaceae	01
32	Nolina (Ponytail palm)	<i>Beaucarnearecurvata</i>	Asparagaceae	04
33	Washingtonia tree (Maxican Fan plam)	Washingtoniarobusta	Arecaceae	51
34	Lasuda	<i>Cordiamyxa</i>	Boraginaceae	01
35	Mango	<i>Mangiferaindica</i>	Anacardiaceae	03



Principal
Guru Nanak College
BUDHLADA

36	Neem	<i>Azadirachta indica</i>	Meliaceae	30
37	Peepal	<i>Ficus religiosa</i>	Moraceae	02
38	Rabishpalms	<i>Rhapis excelsa</i>	Arecaceae	09
39	RubberPlant	<i>Ficus elastica</i>	Moraceae	01
40	Safeda	<i>Eucalyptus obliqua</i>	Myrtaceae	12
41	Sarien	<i>Albegialebeck</i>	Fabaceae	01
42	Sukhchain	<i>Millettiapinnata</i>	Fabaceae	43
43	Tahli	<i>Delbergiasisso</i>	Fabaceae	16
44	Tecona	<i>Tecona sp.</i>	Bignoniaceae	09
45	Cupressus	<i>Cupressus sp.</i>	Cupressaceae	01
46	Ixora (West Indian Jasmine)	<i>Ixora sp.</i>	Rubiaceae	03
47	Furcraea	<i>Furcraea sp.</i>	Asparagaceae	02
48	White Marigold	<i>Caltha sp.</i>	Ranunculaceae	100
49	Baheda	<i>Terminalia bellirica</i>	Combretaceae	14
50	Coral tree	<i>Erythrina variegata</i>	Fabaceae	02
51	Graps	<i>Vitis vinifera</i>	Vitaceae	05
52	Pear	<i>Pyrus</i>	Rosaceae	10
53	Pomegranate	<i>Punica granatum</i>	Lythraceae	10
54	Peach	<i>Prunus persica</i>	Rosaceae	01
55	Lemon	<i>Citrus limon</i>	Rutaceae	04
56	Phalsa	<i>Grewia asiatica</i>	Malvaceae	10
57	Bougainvillea	<i>Bougainvillea sp.</i>	Nyctaginaceae	10

Table:3 Herbal and shrubs Plants Lsit

Sr. No.	Name Plants	No
1	Aloe vera	50
2	Tulsi	200
3	Lemmon Gross	5 location
4	Cari Patta	05



Principal
Guru Nanak College
BUDHLADA

5	Haldi	--
6	Ajwain	05
7	Coriander	--
8	Garlic	---
9	Fennel seed	--
10	Mint (Pudina)	10
11	Giloy	05
12	Shatavari	04
13	Kali tulsi	10

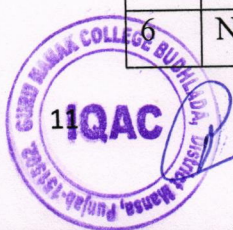
Recommendation:

- Do more of awareness programme on nature conservation by involving student, faculty and local community,
- Do more plantation drive in campus and outside by involving student, faculty and local community
- Assure growth and development of planted plantin campus and outside.
- Do monitor precisely each and every plant for the maintain nature health.
- Develop and implement new idea and concept for the nature conservation.

3.1.1 Carbon Footprint

Intuition is having great realization about causes of carbon emission and their effect on human health faculty member continually consulting latest update in carbon emission related climate data. Institution taken sufficient measures to reduce carbon foot print that is accomplished with the help following measures like use of fossil fuel in canteen area and hostel is strictly prohibited, appreciation for use of bicycle in college premises proper, use of solar based light, any king of burning is strictly prohibited. Data correlated to carbon footprint are shown in **table: 4**

Sr. No.	Item	Number
1	No. of Students	5790
2	No. of Teaching staff	166
3	No. of Non-teaching staff	82
4	No. of Vehicle used by person (Approximate)	26
6	No. of Two-wheeler uses (Approximate)	359



Principal
Guru Nanak College
BUDHLADA

7	Cooking medium used in hostel/canteen	LPG cylinder/Electric Hot plate
---	---------------------------------------	---------------------------------------

3.2 Water and Waste Water Conservation Analysis:

Auditing of water is done periodically with team expert to check the following measures. e. what capacity of pump is installed, volume of water abstracted water, storage capacity, water quality. Also team noted availability of water harvesting facility/technique used to conserve water within institution. Institution having proper water distribution system and auto cut tap water system to reduce water footprint inspected by team. Waste RO water used to recirculate for flushing point and to clean the area.

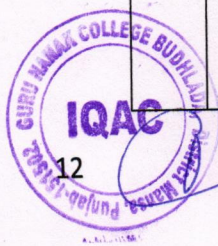
The total water consumption in the Campus is 1.2 lac liters per day. Av. per capita utilization of the institution is 21 Liters per capita per day. The requirement of such a huge amount of water include usage for drinking, cleaning, laboratory use, garden use, leakages and overflows sometimes. The waste water generated is disposed off into the underground sewage tanks. Proper designed with grit and filter water harvesting borewell is available to collect roof water and safe dispose off into ground. Information of respective data in **table: 5**

Water waste Management practices

- Constructed grit and filter safe rainwater harvesting system
- Waste water reusable facility
- Awareness event and notices on water management practices are displayed within the campus premises
- Well maintained water distribution system
- Limited water loss through leakages
- Installed RO filtered water for drinking purposes

Table: 5 Water Audit data

Sr. No.	Item	Number
1	No. of water pump	02 (with Hp of 5 and 3)
2	No. of Water storage tank	26 (with one time storage capacity of 72000 lit.)



Principal
Guru Nanak College
BUDHLADA

3	No. of water harvesting bore well	01
4	Water testing facility	Yes
5	Plumber	02
6	RO water system	04

Water testing report

Session 2017-18

Internal water Quality analysis Report: It was prepared for the assurance of quality of water uses on the basis of national and international standard.

Water quality parameter uses

Place: Guru Nanak College, Budhlada

Report submitted by: Science and Agriculture Department

Sr. No.	Parameter	Method	Ground water	RO- Water	As per DWTL MANSA Per. Limit/WHO
1	pH	pH meter	7.5	7	6.5-8.5
2	EC	Conductivity Instrumental method	Nil	Nil	---
3	Total dissolved solids	TDS meter	1080	200	500
4	Total hardness	EDTA Titrimetric method	260	180	200
5	Alkalinity	Titrimetric method	180	170	200

Department of Science

Department of Agriculture

Principal

Guru Nanak College
BUDHLADA

Recommendation:



- Do more and more awareness programmes to aware about how save water in daily life for the future,
- Assign more task to students and faculty how reduce to water foot print.
- Regularly monitor and plan action to control linkage, overflow and other kind of water wastage.
- Form very strict rules to control the wastage of water.
- Take new initiative for reduction and recycle and reuse of waste water.

3.3 Waste Management Analysis.

Intuition has well planned action plan for the prevention reduce, recycle and reuse of wastage. For the prevention of wastage proper guideline and notices are circulated in campus and conducted various awareness activities. Use and thrown of any plastic material is prohibited, for the waste recycling of waste collection dustbin is placed in each area and further use to separate into degradable and non-degradable form. From the total waste about 80 percent waste is generated in the form of Biodegradable material like kitchen, hostel waste and plants residue used to convert into compost and reuse in garden to maintain soil fertility. Institution ensure that recyclable and non-recyclable materials are disposed of properly. This protects our environment and helps to reduce. Available facility in waste management in **table: 6**.

E-waste and non-degradable waste like electric computer/printer mouse etc proper collected and separated for the safe dispose of it to agency.

Source and type of waste Generated

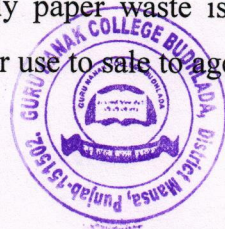
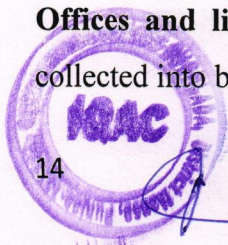
Canteen: Generally major portion is food waste and generated and use to give in Gausala and use to convert into compost. Very less amount of plastic rapper from spice and cream packet is generated.

Garden and lawn: Plant residue waste generated and whole use to convert into compost.

Hostel: Generally major portion is food waste and generated and use to give in Gausala and also use to convert into compost. Very less amount of non-degradable plastic rapper from soap rapper, sanitary pad, spice and Cream packet is generated.

Lab: Some of hazardous waste generated from lab and safe dispose into decided place. Some of broken glassware generated that collected and sold to agency.

Offices and library: Mostly paper waste is produces from library area and offices that collected into bins and farther use to sale to agencies.



(Handwritten signature)
Principal
Guru Nanak College
BUDHLADA

Table: 6

Sr. No.	Item	Number/amount
1	No of Dustbin	40
2	No of Compost unit	03
3	No of water harvesting bore well	01
4	Waste generated per day	
a	Degradable item in kg/day including plant residue, kitchen waste and canteen waste and tree/plants drops	16 kg
b	Non-degradable in kg/day like plastic/e-waste/other	0.7 kg

Recommendation

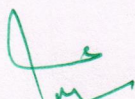
- Use more sustainable technique to recycle waste
- Assure more categories waste for proper dispose off
- Electronic wastes and hazardous wastes should be handed over to authorized waste collection centers.
- Do more awareness programme publicly indoor and outdoor.
- Enrich the co-curricular activity of student by involving them into waste management task.



Principal
Guru Nanak College
BUDHLADA

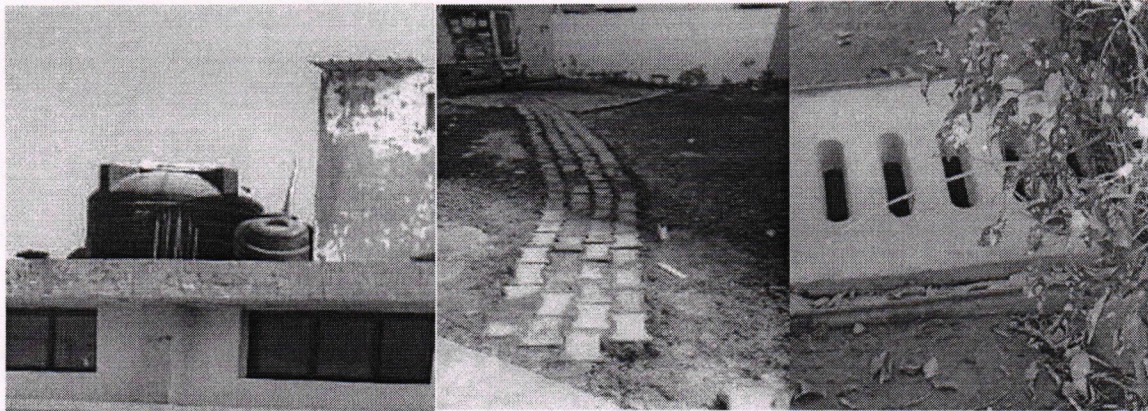
Greenery Site Practices and Process




Principal
Guru Nanak College
BUDHLADA



Water Management Practices



Water conservation path

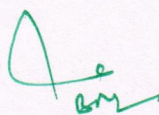


Principal
Guru Nanak College
BUDHLADA



Waste Management tools and practices




Principal
Guru Nanak College
BUDHLADA