

GOVERNMENT COLLEGE KOTTAYAM

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(Affiliated to Mahatma Gandhi University, Kottayam)



ENERGY AUDIT REPORT

INTERNAL QUALITY ASSURANCE CELL

2023-24

INTRODUCTION

The campus energy audit is a common tool that many colleges and universities have employed in recent years. It is both a summary and a report card. The results can be used to quantify what kind of impacts the campus community and what steps the college can take to reduce these impacts.

The information from energy consumption can highlight areas for potential intervention and provide a baseline for comparing subsequent increases or decreases in a specific stream. Performing an audit can also help facilitate the intervention process.

The Internal Quality Assurance Cell (IQAC) of Government College Kottayam has ventured to undertake an energy audit of the college with the following objectives.

- To collect baseline energy data about the college and campus
- To study the energy usage of the college
- To promote proper energy usage awareness

BASIC INFORMATION

Name of the institution	Government College Kottayam
Year of establishment	1972
Campus area	15.5 acres
Location	Nattakom – Ponkunnath Kavu temple road, Nattakom
District and state in which the campus is situated	Kottayam, Kerala
Name of local body in which the campus is situated	Kottayam Municipality
Coordinates	09.556 N 76.511 E
Average height of campus above sea level	18 m
Access	Road – About 100 m from NH183/SH1/Main Central Road Train – About 6 km from Kottayam railway station Air – About 90 km from Kochi International Airport Water – About 500 m from Nattakom inland port
Total built up area	10200 sq. meters
No. of programs of study	16 Undergraduate – 10 Post graduate – 06
Total Number of students (sanctioned)	1080
Total number of teaching staff	72
Total number of non-teaching staff	33

DETAILS OF BUILDINGS

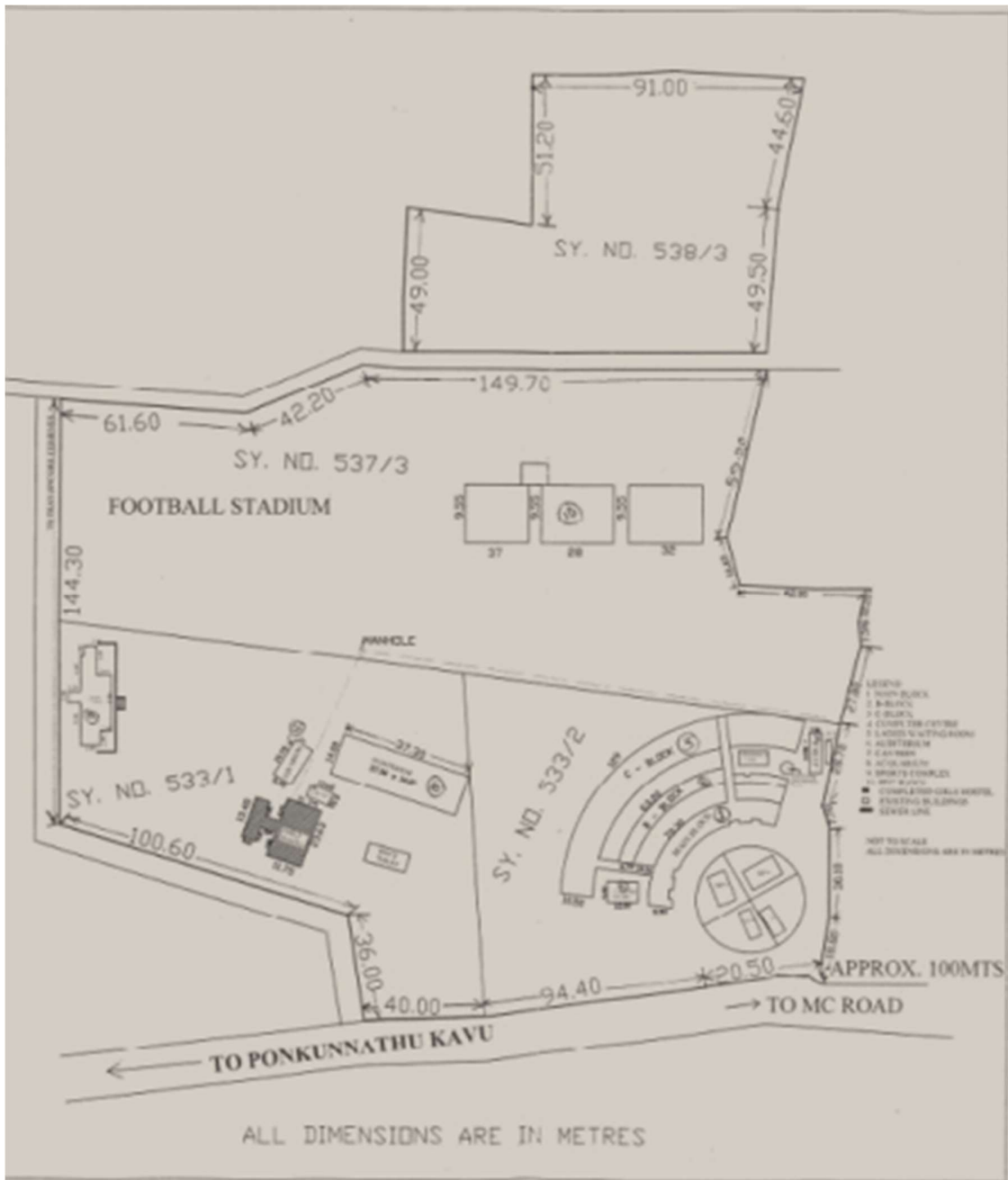
Administrative Building	<ul style="list-style-type: none"> • Near to main building. • Three floors • Ground floor: SN open university office, ORICE room. • Ist Floor: College office, Principal Chamber Second floor: Conference room
Academic buildings	<ul style="list-style-type: none"> ▪ Main building <ul style="list-style-type: none"> • Three blocks- Main (A), B and C • Three floors ▪ Additional building : D block ▪ Three floors
Hostels	<p>Women's Hostel</p> <ol style="list-style-type: none"> 1. Inside the campus, <ul style="list-style-type: none"> • two floors • Roommates: 59 2. Inside the Campus <ul style="list-style-type: none"> • 3 Floors • Room Mates: 160 <ul style="list-style-type: none"> ▪ Men's Hostel <ul style="list-style-type: none"> • In the campus of Govt. Polytechnic College, Nattakom (50 m from campus), two floors • Shared with Govt. Polytechnic college • Roommates: 48
Auditorium	<ul style="list-style-type: none"> ▪ Seating Capacity: 400 ▪ Single floor
Canteen	<ul style="list-style-type: none"> ▪ Seating Capacity: 50

	<ul style="list-style-type: none">▪ Single floor
Other	<ul style="list-style-type: none">▪ Continuing Education Cell classroom building (Single floor)▪ Continuing Education Cell office building (Single floor)▪ Aquarium building (Single floor)▪ ASAP nodal Centre (Single floor)

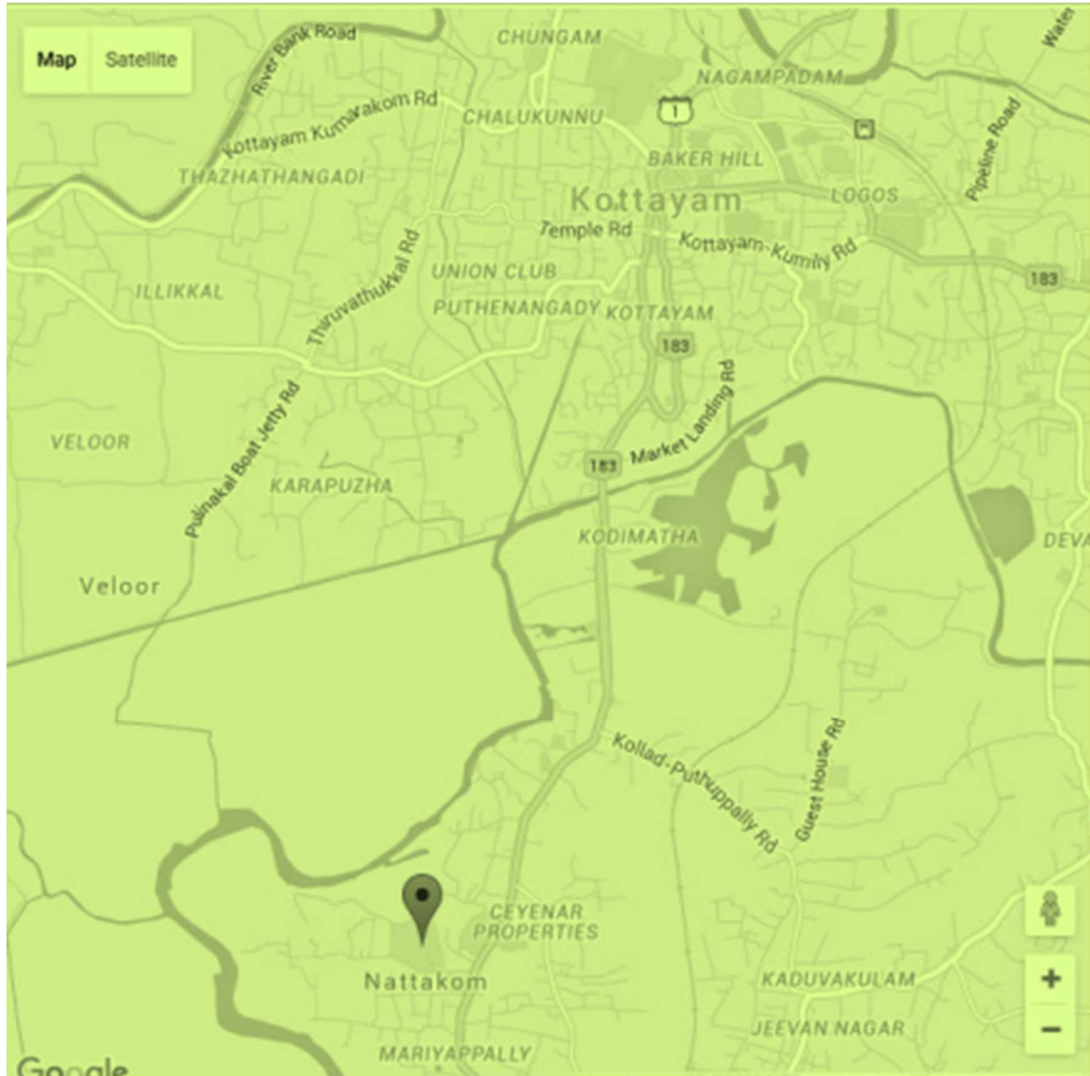
BASIC INFRASTRUCTURE (other than available inside buildings)

Rest room facilities	<ul style="list-style-type: none">▪ Ladies rest room (In ASAP nodal center building)▪ Boys Toilet (Near auditorium)
Sports facilities	<ul style="list-style-type: none">▪ College ground – multipurpose▪ Cricket net▪ Volleyball court▪ Basketball court▪ Badminton court
Parking facility	<ul style="list-style-type: none">▪ Parking facility for staff▪ Parking facility for students
Water resources	<ul style="list-style-type: none">▪ Open wells – 3▪ Bore wells – 3▪ Water harvesting facility – 1 tank of 1.25 lakh liters capacity▪ Paduthakulam of 10 Lakh liters capacity.
Other	<ul style="list-style-type: none">▪ Bio gas plant▪ Thumboormozhi Compost pit▪ Dust bins and waste disposal pit▪ Water taps

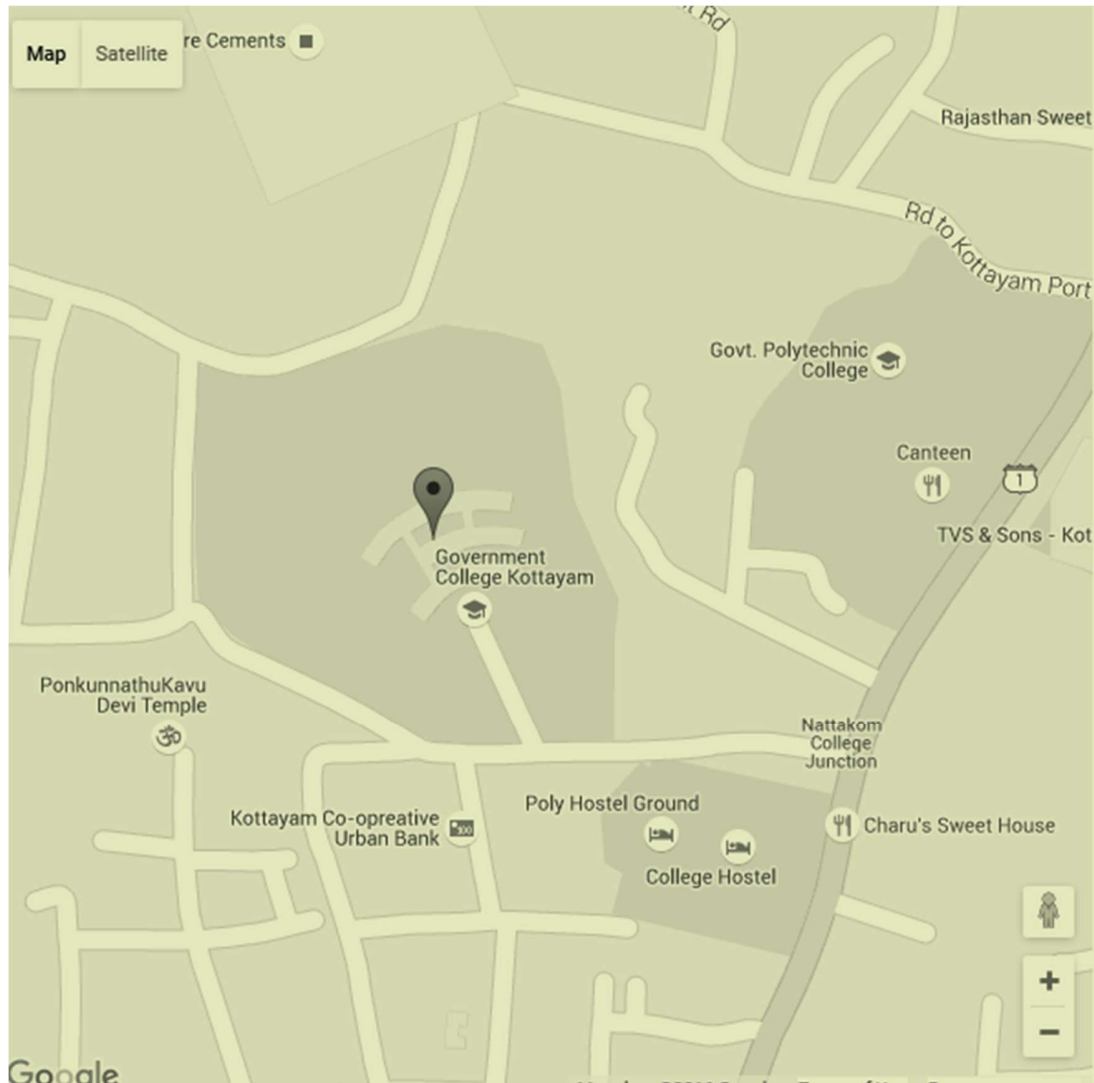
MASTER PLAN OF THE COLLEGE



LOCATION MAP OF THE COLLEGE CAMPUS (COURTESY: GOOGLE MAPS)



LOCATION MAP OF THE COLLEGE CAMPUS (COURTESY: GOOGLE MAPS)



SATELLITE MAP OF THE COLLEGE CAMPUS (COURTESY: GOOGLE EARTH)



ENERGY USAGE

How does the college meet its energy requirements?	Electric connection from KSEB Roof top solar panels
Total connected power	~ 40 KW
Total electricity usage per month	~ 3000 KW
Whether college has exclusive transformer in campus?	YES
Whether generator facility is available?	Yes
Details of UPS facility	UPS are installed in Office, departments and laboratories
Major power consumption equipment	<ul style="list-style-type: none">▪ Water pumps▪ Laboratory instruments▪ Fans and Lights▪ AC▪ Photocopiers and printers▪ Computers▪ UPS
Whether judicious usage of electricity is ensured?	Yes
Whether energy star rating is ensured in the purchase of equipment?	Yes
Whether LED lighting systems are used?	Replacing the existing to LED
Whether any renewable source of energy is used?	Yes, Solar panel
Potential for renewable energy usage	<ul style="list-style-type: none">▪ High potential for solar energy generation

CONCLUSION

The energy audit has studied the practices of the college regarding energy usage. It is observed that

- The college has a large potential for solar energy production and is effectively using in collaboration with KSEB.

Recommendations

- LED lighting system may be improved
- Solar power generation and usage may be enhanced
- Proper usage of electrical energy should be ensured.

It is hoped that the results presented in this audit will serve as a guide for educating the college community on the existing environment related practices and resource usage at the college as well as spawn new initiatives and innovative practices.

Name and signature of Energy Auditor

Name and signature of Coordinator, IQAC

Name and signature of the Principal