DISSEMINATION OF ENERGY AUDIT FINDINGS IN THE UNIVERSITY CAMPUS

BY

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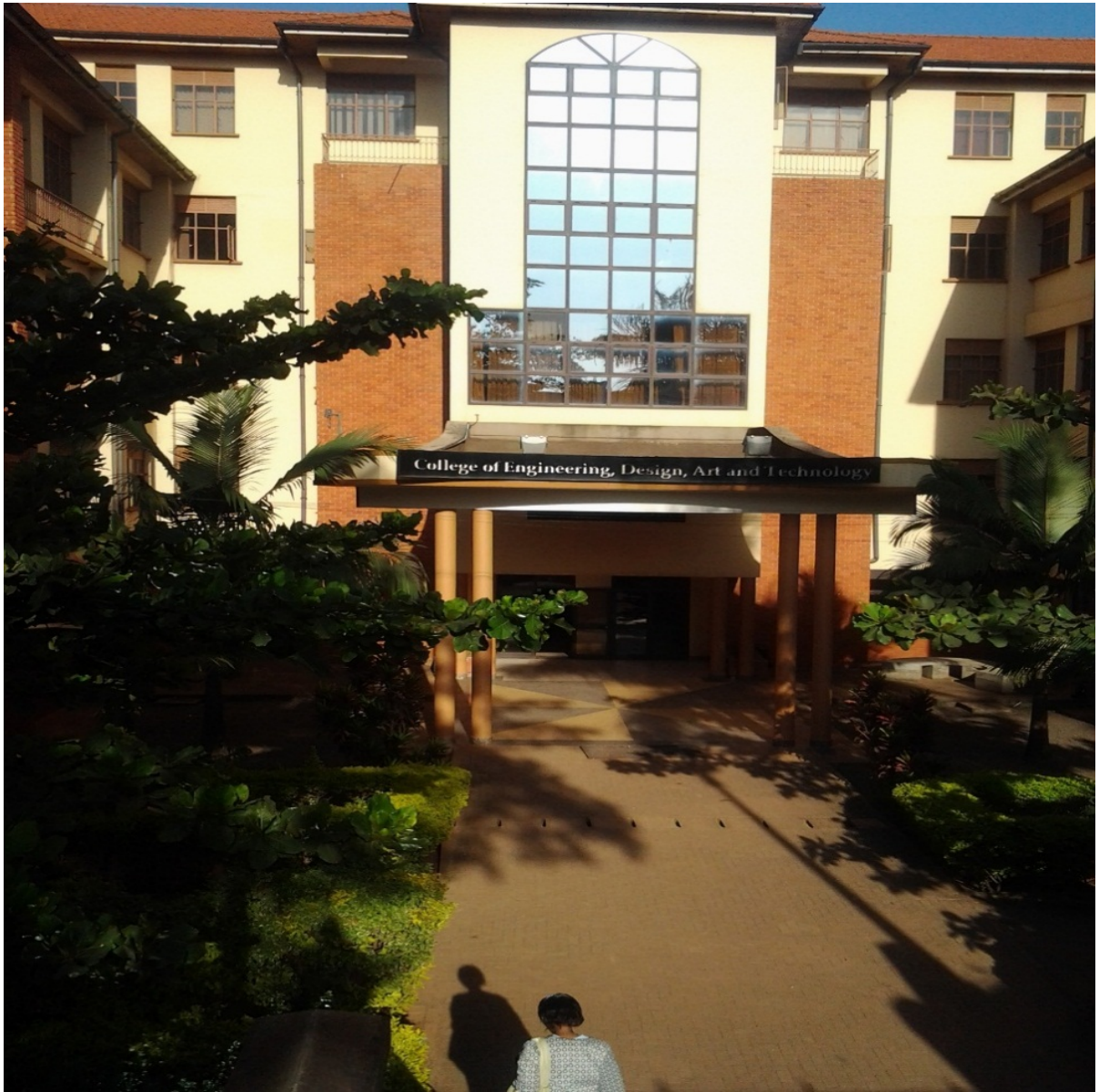
BACKGROUND

- Power bills in the University average about 350m monthly
- Part of this bill is wasted energy
- Audit done by a team (Ministry, EWD, PDD)
- Need to bring stakeholders (esp. end users) on board
- Aim is to curtail energy wastage

FINDINGS (CEDAT- Technology buildings)



ENERGY USE IN CEDAT

- Lighting
- Air conditioning
- Printers, Photocopiers, Projectors, Laptops (Computers and accessories)
- Laboratory equipment.
- Other (Refrigeration, phone charging, etc)

ENERGY USE IN CEDAT

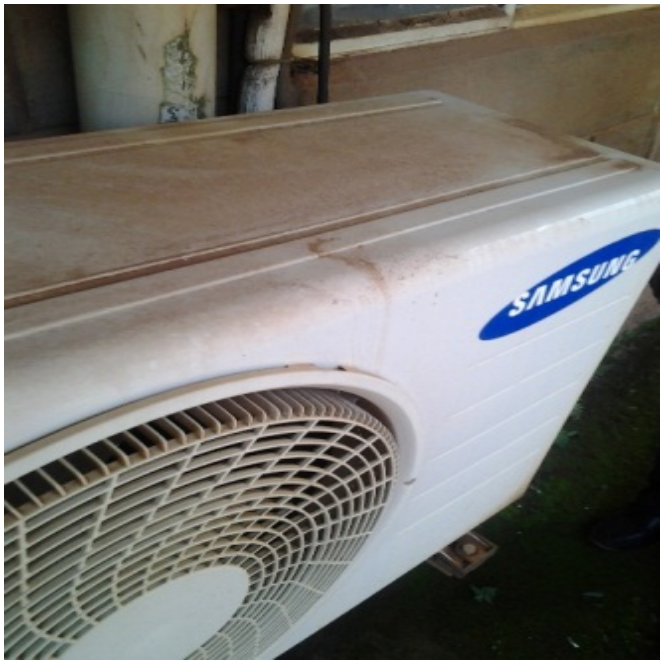
Lighting

- Linear fluorescent tubes 5ft and 4ft (65W, 40W, 20W)
- Mercury vapor lamps of 120W mainly used for outside lighting (New and Old buildings)
- LED bulbs in the corridors (New building)
- The total daily energy consumption of the lights is 183.237kWh which adds up to 5,497.11kWh monthly (3.3m monthly for Old building)

ENERGY USE IN CEDAT

Air conditioning

- 21 air conditioners (rating 3100W)
- 10 Fans



ENERGY USE IN CEDAT

Computers and Accessories

- Photocopiers and *hp* laser jet printers.
- 2 computer laboratories with about 96 computers in the old building. There are three computer laboratories (new building)
- Some students use their laptops
- Computers in offices (With separate UPSs)
- Projectors

ENERGY USE IN CEDAT

Laboratory Equipment

- Thermodynamics lab
- Mechanical engineering laboratories
  Materials labs
- CREEC lab
- Power lab
- PH&EE lab
- Photocopying Pool (6 in number)

Observations

- There is a technician (Mr. Dan Muzuura) to handle power faults.
- There is no staff-customer sensitization on energy consumption, management or usage in the two buildings.
- No energy management awareness messages exist, anywhere, to guide on power saving.
- There is an effort towards switching off lights that are not in use. Usually done at the end of the business day.

Observations

- Lights are controlled by the custodian with the help of security guard.
- The lights were on in classrooms which were not in use during the day.
- Due to orientation of the buildings, most of the rooms receive insufficient natural light and hence lights are on even during the day
- Equipment in the laboratories was found switched off

Observations

- Apart from these lights being of high wattage (20W – 65W), the only control point is at the switch
- Some appliances were left switched on even when not in use like printers and photocopiers
- Some air conditioned rooms are not air tight (operated when windows and doors are open)
- Air conditioners in the old building are dusty and rarely cleaned.

Recommendations

- There is need to have a policy for buying and installing energy saving lights for rooms, corridors and security lights (Technical guidance).
- In order to minimise the lighting loads natural daylight should be utilised where possible.
- Provide and install lighting controls (motion sensors and/or occupancy sensors) as additional control especially in corridors and lavatories.
- The University administration should ensure energy efficiency in the Colleges by adopting new energy saving technologies such as LEDs, Timers and many others.

Recommendations

- Network Machines to allow sharing. This will ensure withdrawal of some printers and UPSs.
- Ensure that air conditioned rooms are air tight
- Install real-time energy monitoring systems to monitor energy consumption in the buildings
- Sensitization meetings to educate students, college management and staff to help increase the level of awareness of energy efficiency.
- Encouraging users to switch off lights when they do not need them
- Encouraging users to switch on only the appliances they are using and switch off the appliances that are not in use

Recommendations

- Energy champions can also be appointed to oversee energy efficiency in the College.
- Develop and provide written awareness information tips on office energy management to educate staff/students and to ensure improvement on energy efficiency
- Endeavor to procure energy efficient appliances.
- Centralize the lighting controls so that they are easily controlled by the person in charge.
- Programme computers to sleep, hibernate or auto-turn off after for example 10 minutes of inactivity

General Power Saving Tips

IRONING

- Iron clothes while still damp
- Use a flat iron with a heat control knob
- Iron many clothes at once
- Switch off your flat iron when you are done using it

LIGHTING

- When not in use, switch off lights
- Energy saving bulbs save you more in the long run
- Use natural light as much as possible
- Switch off security lights as soon as there is daylight

Conclusion

The two College buildings receive power off the UMEME grid that is used for many purposes as highlighted. As observed, there is room for improvement as regards energy efficiency.

There is great potential for saving energy if the EE power saving tips are adopted.

Discussion and Way forward