

# **ENERGY SAVING, MONITORING AND SECURITY SYSTEM**



**Kamla Nehru Institute of Technology**

**Technical Education Quality Improvement Program [TEQIP]-Phase II  
Enhancement of Research & Development and Consultancy**

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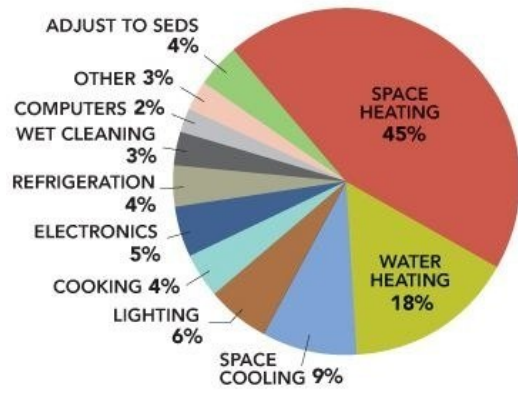
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# ENERGY SAVING AND SECURITY SYSTEM

RESIDENTIAL SITE ENERGY CONSUMPTION BY END USE



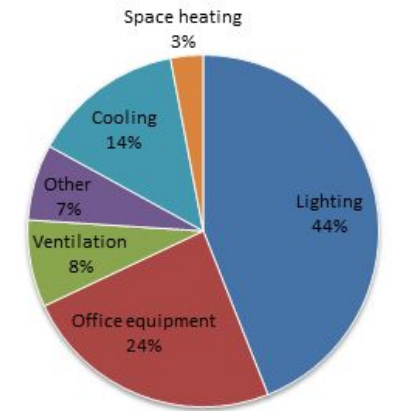
## Incentive:

- Both residential and Office buildings waste a huge amount of electricity by virtue of overusing appliances due to different reasons like Ignorance, low maintenance or lack of awareness.
- We waste about 20-40% of residential and office building electricity due to this which makes up to 20% of the total energy produced.
- Most of this wastage can be prevented by using home and office appliances smartly. Since, time is of the essence for anyone such mistakes and inefficiency is only natural. Thus, the best solution is to automate their use.

## Objectives:

- To engineer most energy efficient technique for automating the use of appliances in homes and offices that doesn't invade privacy, keeping security a paramount concern. We accomplished this by logically planning use of appliances on the basis of people present in the premises.
- We used infrared sensors for keeping track of people in the building instead of cameras which is both energy efficient and does not create a sense of being monitored all the time. Though we still have the capability of integrating a camera into the system if required.
- Some important features of the system are user defined profiles, authorized entry, security alarm and customizability and expandability.
- Future additions have also been left room for, from android integration, weather assessment and suggestion to remote locking and monitoring as it is designed using open source and

Office building electricity use



## Result:

The System can detect entry and exit as well as the number of people with high accuracy in the premises and take actions like switching appliances on, off or set them at a given rate. Profiles according to residents can be created. It is also capable of detecting intrusion and alarming the correct authorities. We were able to save up to 70% of the wasted electricity in a medium sized setup.