

AIR-CONDITIONING ENERGY SAVING THROUGH REDUCING VOLUMETRIC COOLING CAPACITY



PROJECT BY:

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PROJECT OBJECTIVE

This project aims to reduce our carbon footprint and improve environmental sustainability by reducing the amount of energy consumed through air-conditioning (A/C).

PROJECT SUMMARY

The system works by reducing the volumetric cooling capacity of the target area. Volumetric cooling capacity is defined as the heat load required to be removed in order to attain the desired humidity and temperature of a room. By designing an appropriately insulated space and enabling automatic feedback through the Internet of Things (IoT), the finished product will greatly reduce the energy consumption required to meet the cooling requirements of consumers.

Furthermore, by adding in suitable insulation (good quality fabric, sufficient cushioning, user friendly size), smart sensors and controllers, the finished product will not only be energy efficient, but also user friendly and portable.

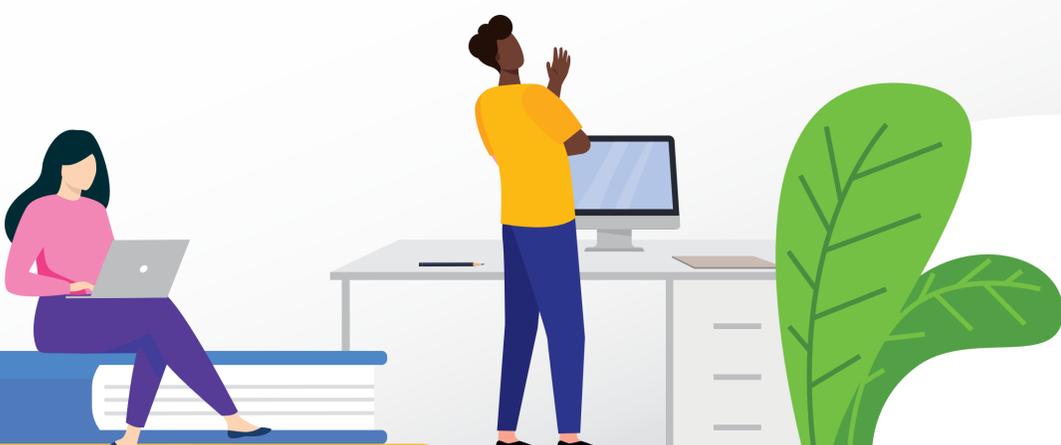
PROJECT OUTCOMES

- Reduce the volumetric cooling capacity of the target area by 45%.
- Maintain a heat barrier through good material insulation (R Value between 2 and 3.9).
- Reduce overall energy consumption by 30% to cool down the target area.

SIDE VIEW OF COCOON



TOP VIEW OF COCOON WITH PORTABLE AIR-CONDITIONING



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