



# ecoTude

changing your schools ecological attitude

## Building walkthrough

### What you are auditing?

In this audit you will inspect buildings in the school. From the audit you will determine the number of large rooms in the school, what the walls are made of and whether or not the rooms contain insulation. You will also be determining the methods of cooling, heating and illumination.

### Why are you auditing it?

This audit determines the contribution to the school's ecological footprint from the energy and resources required for constructing the buildings in the school and also to maintain, heat and cool them. The resources required, and hence the footprint, increase with the number of rooms.

Different wall types and building techniques contribute differently to the footprint due to their relative energy efficiencies. For example, double brick walls reduce exposure to heat and cold and therefore reduce energy consumption. The same can be said for insulation.

The different methods of heating, cooling and illuminating the rooms have an impact on the amount of energy that the school consumes. Both "upstream" and "downstream" factors are taken into consideration. Utilising passive heating and natural ventilation results in minimal energy use. If other methods are used they should only be used when necessary and at an adequate level to keep energy use down.

Illuminating rooms requires energy. Having lights on if the classroom receives plenty of sunlight is wasteful.

### How do you do it?

1. Before you begin a walkthrough audit you will need to plan ahead and consider the following:
  - a. *Who will conduct the audit?* Small teams investigating different areas of the school will save time.
  - b. *When will you conduct the audit?* So you don't disrupt classes the lunch break may be the best time.
  - c. *How will you get access to student restricted areas?* Seek permission and have a staff member present.
  - d. *How will you know that every area of the school has been done?* Using a map of the school divide it up into sections. Allocate out each section and record who is doing what area.
  - e. *Do you have the resources to conduct this walkthrough at the same time as the energy walkthrough?*

2. Determine what questions in the calculator can be answered by this particular audit and note them down.
3. Develop a template to record your observations. A sample is shown below. The following questions need to be asked for each room:
  - a. *wall type*: stone or concrete block or double brick; single brick; timber or fibreboard; materials used in demountables.
  - b. *presence of thermal insulation* (If not easy to identify ask a relevant staff member)
  - c. *heating method*: passive heating; coal or wood fires; oil or gas heaters in the rooms; central heating with hot water from a fuel-burning boiler; electric heaters or airconditioners; central airconditioning system
  - d. *cooling method*: natural ventilation; electric fans; individual airconditioning units; central airconditioning system
  - e. *illumination*: mostly sunlight; lights on during the day; lights on during the evening; lights on during the day and evening; lights on during the day and all night
4. Once you have developed a plan, conduct your audit! Note: Only the large rooms need to be considered here and they include classrooms, offices, reading rooms, toilet blocks, laboratories, studios, staff rooms.
5. After completing your audit collect all your data together.
6. Analyse your data in relation to the calculator questions.
7. Record your results in your Eco'tude journal.
8. Enter your results into the online calculator. How has the footprint changed from your best guess trial?

Building Walkthrough Audit					
Room	Walls	Insulation	Cooling Method	Heating Method	Illumination
Classroom 7B	Single brick	yes	Central aircon	Central aircon	days
Toilet Block E	Concrete block	no	Natural ventilation	Passive heating	Days & evenings
Classroom 11C		no	Electric fans	Electric heater	Mostly sunlight

### **Taking it further**

1. Conduct a school illumination survey to determine the efficiency of lighting in the school.

