

Energy Auditing – Lighting Team

A lux meter is used to measure light.
Use your lux meter to pinpoint over-lit areas in your building where globes can be removed from lights or the number/type of lighting can be reduced. Look for under-lit areas too.



Notes:

- Measure lux levels at table or waist height.
- Test a room with the lighting on and off.
- Visit four or five different points in a room.
- Compare your findings to the National Standards on the table below.

AREA	LEVEL (LUX)
General purpose learning rooms (at desks and whiteboard)	240
Change rooms	80-100
Technical studies/computers	320
Science/home economics/music/art/trades	320
Assemble hall (auditorium areas)	100
Library reading areas	320
Office and administration	320
Corridors, foyers	80

Based on: The Standards Association of Australia specifies lighting requirements for schools.

What is delamping and relamping?

Delamping is when a school selectively remove tubes (or 'lamps') from light fittings and/or replaces tubes with ones that are more energy-efficient. In double fluorescent light fittings, you can remove one lamp and leave the other.

Relamping is when you replace lamps with a brighter triphosphor tubes (use the same amount of energy). Schools also install reflectors behind the lamp (looks like a mirror) to further increase light levels. Any adjustments should be made with the advise of a qualified electrical contactor.



Energy Auditing - Heating and Cooling

A thermometer is used to measure the temperature of a space.

A laser thermometer is used to measure the surface temperature of different objects. The hotter something is, the more energy it is using.



Notes:

A comfortable room temperature is essential for the productivity and general well being of students and staff.

- Use the laser thermometer to measure things you can't reach or are not safe to touch eg. windows, data projectors
- Use the thermometer to measure the temperature of different spaces in a room or different rooms.
- Visit four or five different points in a room.
- Compare your findings to the National Standards on the table below.

SEASON	RECOMMENDATION	THERMOSTAT SETTING
Summer	24°C - 27°C	Air conditioner - 24°C or less
Winter	18°C - 20°C	Heater - 21°C or less

The Standards Association of Australia makes recommendations for schools and workplaces.

Energy Wastage

Heating and cooling systems are the major contributor to energy consumption within a learning environment (between 35 to 65% of energy use). Part of this consumption is created through energy wastage.

Energy wastage in the workplace is often caused by people thinking that turning up or down the thermostat of a heater or airconditioner will heat or cool a room faster. This is not true as appliances do not work this way, it just makes the system run longer not faster.

You can save considerably on the amount of energy consumed for each 1°C of cooling or heating that you do without. Finding the balance between comfort and efficiency is important. Adding curtains and blinds to keep heat in during winter and out for summer and dressing for the weather will reduce energy use significantly.

