LED & EXTERNAL ENERGY SAVING

LED (or light emitting diode) is a semi-conductor light source. This technology is now dominant and has largely replaced other types of lighting.

It has general advantages:

1. Energy Efficiency.
2. Long life (typically 50,000 or 100,000 Hours*).
3. Small Size.
4. Low temperature.
5. Instant Switching - on/off.
6. Dimming.
7. Low Voltage (typically 12 or 24v).
8. Robust against Vibration.

The main disadvantages are:

1. Costly (relative to other sources).
2. Sensitivity to heat (a small amount of heat can have a large effect on life).
3. Sensitivity to Voltage swings/surges.
4. Glare
5. Sensitivity to Water, moisture, condensation, etc.

* The lamp life of 50,000 or 100,000 hours for LED's is based on the time elapsed until the light output has reduced to 70% (ie reduced by 30% from initial).

This would be shown as:
- **50,000 hours - L70 B10.**
This indicates that at least 90% of the LEDs are providing light output of at least 70% of initial light output at 50,000 hours.

LEDs are suitable for most lighting applications because of their energy and maintenance benefits. They are also used in association wih occupancy Sensors so they can remain at zero or low output until activated. Because of their low energy consumption, they are also suitable for use with renewable wind or solar systems.

LED Groundlights used in this application are only 3w but have a narrow beam range of 5m to illuminate the pillars. They are also cold to touch (to prevent burning), have a 24v supply (safe if broken) and are a small size (less chance of breakage or trip hazard).

An LED Streetlight (together with a turbine, solar panel, occupancy and daylight sensor, battery and control system) is used in this application where there was no local electricity supply.

Large scale projects such as car parks, roads and service yards are typically illuminated with LED luminaires.