

LED (or light emitting diode) is a semi-conductor light source. This is a new technology which is making rapid advances into the general lighting marketing.

**It has general advantages:**

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

**The main disadvantages are:**

1. Costly (relative to other sources).
2. Are very sensitive to heat (even a small amount of heat will have a large effect on life).
3. The risk inherent in all new technologies.
4. Glare

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

A suitable usage for LED luminaries is in association with 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.