

Prism Lighting



**Switch on to
Sustainable
Lighting**

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Agenda

- Requirements for Quality Lighting
- Lighting Audit
- Lighting Developments and Trends
- Energy Efficient Lighting
- Lighting Future – Solar L.E.D. Lighting

Requirements for Quality Lighting

- Create appropriate visual environment.
- Ensure safety (making hazards visible).
- Facilitate performance of visual task.
- Comfortable visual environment.
- Control of glare.
- Flexibility of controls.
- Sustainable solutions.

Changes in Lighting Industry

Moving from conventional light sources to solid state lighting (SSL)

- No replacement means more cost-effective maintenance.
- Emphasis on cost-effective tailored initial installations.

Product focus changing to application focus

- Innovative use of light.
- Task tailored lighting.
- Close contact to end-users.



Focus moving from individual components to total lighting solutions

- The importance of controls has significantly increased.

Conducting your Lighting Audit

- Asses the current lighting installation installed i.e. lamp type, control equipment
- Asses the current lighting levels sufficient for the buildings operations
- Asses the current levels of lighting management that is installed

- Calculate the cost of the current lighting installation

- This is done by the following formula

$$\frac{\text{Total consumed lamp wattages x Hours of usage per day x days per annum}}{1000} = \text{Power (Kw)}$$

- Total Power (Kw) X Unit of Electricity = Total Cost per Annum
- Repeat the above with a energy efficient consumed lamp wattage and compare the new running cost to the existing running cost

Energy Efficient Lighting

2. The Right Controls

Deploy Addressable Lighting System

Sensor detection
Peak capacity monitoring & load shedding
Pre-programmed scenes
Daylight harvesting
Task-tuning
Intelligent Time Controls

3. New Approach

Increase access to best practice information and monitor and report on progress.

Maintain appropriately. Metre electricity used.

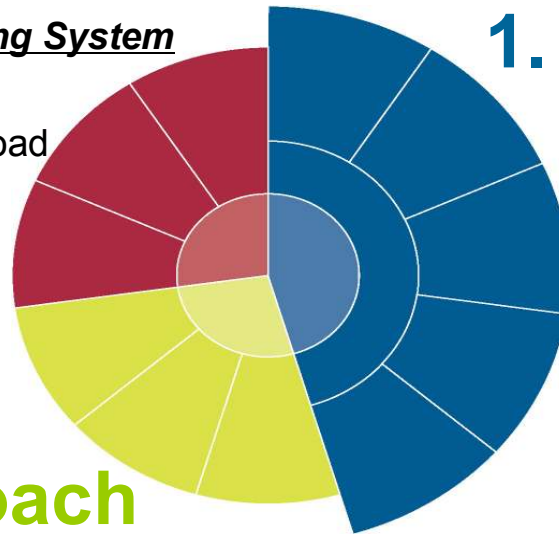
Design for natural light then add electric to supplement. Control electric light relative to daylight in areas where daylight is provided.

1. The Right Lighting

Use Energy Efficient Lamps

Change incandescent, fluorescent, tungsten halogen and metal halide/son lamps to L.E.D.

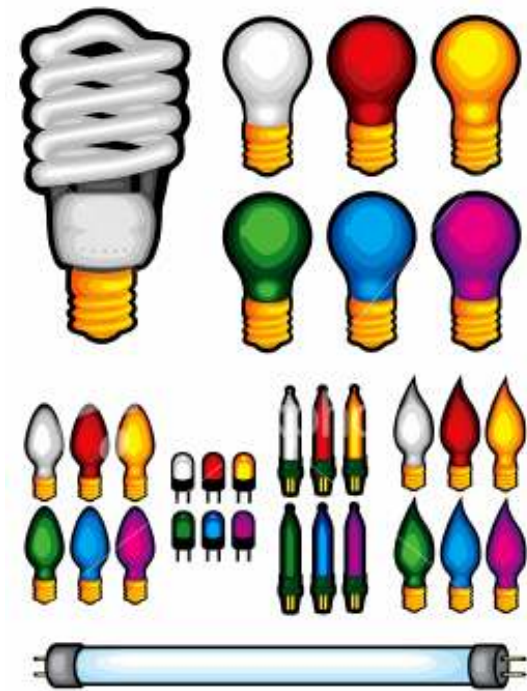
- Standard Lighting
- Emergency Lighting
- Outdoor Lighting



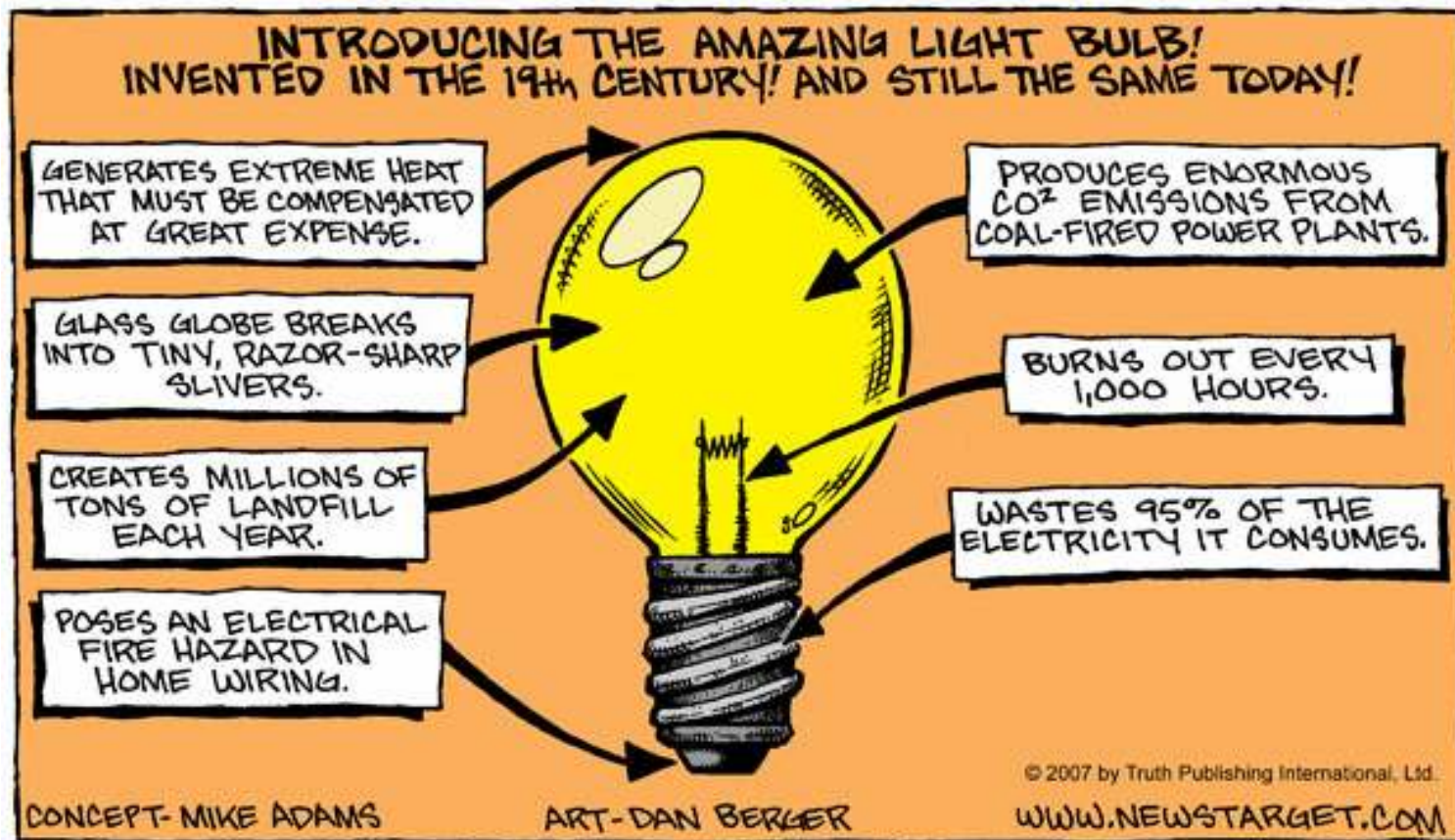
1. Find The Right Lighting

Considerations

- Initial Installation
- Lamps
- Fittings
- Energy Consumption
- Maintenance & Repairs



1. The Right Lighting



THERE IS A BETTER TECHNOLOGY

There is a better technology

L.E.D.

- Solid State Lighting (L.E.D.s).
- US – increasing trend towards L.E.D. commercial adoption.
- Europe / Ireland – early days, however rapid adoption to new technology.
- According to the U.S. Department of Energy, in the next 20 years, rapid adoption of LED lighting in the U.S. can reduce electricity demands from lighting by 62% and eliminate 258 million metric tons of carbon and avoid building 133 new power plants.

Life of the Lamp - Implication for Replacement & Maintenance

L.E.D.s: 50,000 – 100,000 hrs

Compact Fluorescent: Up To 10,000 hrs

Metal Halide: 8,000 hrs

**Tungsten Halogen:
(Dichroic) 2,000 hrs (5,000 hrs)**

Incandescent (GLS): 1,000 hrs (2,000 hrs)

Lighting Developments

Common Misconceptions

1. LED technology is not ready.
2. LEDs are not bright enough.
3. LEDs are too expensive.
4. No practical “bulb” solutions exist.
5. Traditional lighting companies will drive the conversion.
6. LED Lighting is still years from “commercial” applications.

THESE ASSUMPTIONS ARE FALSE

- Technology and Markets are accelerating.
- Industry model is now re-defined.

Lighting Developments

The L.E.D. Revolution

LEDs have changed the way we think about lighting

LEDs:

- Free of hazardous materials – no mercury.
- Delivers long life up to 100,000 hours.
- Emit less heat.
- Less power, lower wattage makes significant energy savings.
- Reduces maintenance.
- Colour Tuning.
- Instant-on, dimmable.
- Reduces air conditioning costs: 3W energy savings in lighting = 1 W savings in air-conditioning costs ¹



Business Case for Energy Efficient Lighting

- **Immediate opportunity to make efficiency savings.**
- **Most abundant, cost-effective and reliable source of energy.**
- **Quickest, lowest cost, and lowest risk path to sustainable reductions of greenhouse gas emissions.**
- **Investment that reduces energy consumption mitigates future energy price risks.**
- **Market-ready technologies are available today.**
- **Reduces operating costs and boosts competitiveness.**
- **Advanced, efficient technologies are creating new industries and jobs.**

The Future of Lighting Prism Research and Development

Power Free Lighting - Solar Power Integration

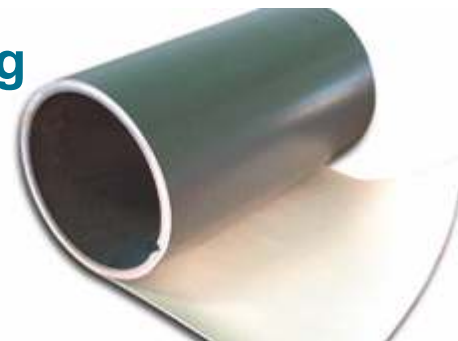
Metal Roofing



Architectural Fabric



Membrane Roofing



Thank you for listening

