



## SUSTAINABILITY CREATED FROM GOOD DESIGN

### What is sustainability?

Sustainability is maintaining our natural resources and environment to maintain ecological balance. We all enjoy living as part of a connected system of biodiversity but the enjoyment comes with a responsibility of care.

At DJCoalition we actively promote a sustainable approach to lighting, not driven only by regulatory standards but driven by a desire to live in ecological balance. There are three key aspects of sustainable design that we develop in our work: reduction of energy use, ecosystem protection and the elimination of light pollution.



**Sathom Square** – Gold LEED standard accreditation. DJCoalition has experience in achieving accreditation under Nabers, Greenstar and LEED.



**Waale:** A turtle sanctuary where paths are lit with amber light so as not to disorientate hatchlings on their way to the sea.



**Amankora fire.** How much light do you need to eat outdoors at night? Not much! We have been doing it by firelight for millenia.

## ENERGY USE

Artificial lighting can account for up to 15% of a building's annual electricity use. Sustainable lighting design aims at reducing this consumption. Start with defining the correct light levels for tasks, not over-lighting and not evenly illuminating all areas to the highest requirement.

**TIPS** we use for reducing energy use are:

- Place different areas of a space into separately controlled lighting zones. Install a dimming system to tune the light levels to match the changing tasks that occur across the day.
- Use task lighting where needed and illuminate to surrounding areas to lower ambient levels.
- Install sensors to automatically dim and turn off lights dependent upon the amount of daylight and upon occupancy in a space.

## ECOSYSTEM PROTECTION

All life, plants, animals - and us - depend upon the daily cycle of light and dark to govern life sustaining behaviours such as reproduction, nourishment and rest. When we light up the night we disrupt this cycle. So, when we light the night for our enjoyment or for our safe movement we should first determine if there really is a need for light?

**TIPS** we use for protecting ecosystems are:

- Light in a low impact way – using luminescence as markers? on perhaps portable lighting?
- Light to very low light levels – it is possible to read a book in moonlight with less than 2 lux.
- Use warm coloured, long wavelength light as this is invisible to most wildlife.
- Light temporarily; have lights on timers and dimmers so that they activate only once occupancy is detected.

## LIGHT POLLUTION

The night-time environment is a precious natural resource for all life on Earth. However, in modern times light pollution generated by uncontrolled outdoor lighting has hidden the stars. Experiencing the night sky provides perspective, inspiration, and leads us to reflect on place in the universe. It is a resource worth protecting!

**TIPS** for how we to preserve the night sky are:

- Mask lights to shine downwards thus not allowing any waste light to shine upwards.
- Use low power light sources aimed to illuminate only what is required.
- Mount lights at low level, preferably below eye height. In this way we light what we need to but retain the ability to see the night sky.