A Sustainable Lighting Framework

The impact of human activity on Earth's ecological balance has reached a critical tipping point. Climate change, biodiversity loss, resource depletion, the warning signs are clear.

As designers and investors, we face a profound responsibility: to create built environments that not only sustain but actively regenerate the living systems we depend on.

Sustainability is no longer an optional certification or marketing tagline. It is an existential imperative for our species and an investment in the long-term value of every project we undertake.

At DJCoalition, we embrace this responsibility as an opportunity. Through conscious design decisions, we can create lighting solutions that reduce embodied carbon, build lasting economic value, foster human wellness, and protect the vibrant web of life we are part of.

Our planet's future is not a matter of chance, but of choice. The question is not whether we can afford to invest in sustainable solutions, but whether we can afford not to.

01 Protect Biodiversity

02 Reduce Carbon

03 Build for Longevity

04 Promote Wellness

DJCOALITION

We do not know the future of our planet, but we can design it. Join us in building projects that invest in ongoing planetary health.

Are you ready to shape a legacy of resilience, regeneration,
and lasting value in every project you undertake? Discover our sustainability framework with sets breifing guidlines for our clients, our communities,
and our collective home.

DJCOALITION

01 — PROTECT BIODIVERSITY

Ecological balance

Every project exists within a living ecosystem. Sustainable lighting design starts with understanding and honoring those connections.

Protect habitats

- **Aim lighting downwards.** Light shining above the horizontal illuminates the sky, masking the moon and stars that are used for navigation by nocturnal life.
- **Use warm light.** Warm coloured light is not easily seen by nocturnal animals so poses little disruption to their daily cycles.
- **Set a time limit.** Determine how long the light is needed to sustain human activity. Turns lights off when areas or spaces are not in use.

Eliminate toxins

- Consult the Living Building Challenge **"Red List"** and avoid products containing harmful chemicals.
- **Request Declare labels** and Health Product Declarations from manufacturers to verify material safety.
- **Minimize electrical cabling**, which contains copper, PVC and other Red List components.
- Specify luminaires with **reduced off-gassing and low-VOC finishes** to support indoor air quality.

Natural rhythms

- **Design dynamic lighting** that adjusts to natural daylight cycles and minimizes impact on wildlife.
- **Reduce light exposure** at night. Excessively high light levels alters plant growth patterns and insect behaviour.
- Choose light distributions and optics that **focus illumination on human tasks**, not the night sky.

02 — REDUCE EMBODIED CARBON

Full lifecycle impact

Embodied carbon represents the environmental impact of a product across its full lifecycle. By selecting products and manufacturers wisely, we can dramatically lower a project's carbon footprint.

Recycle & reuse

- **Reduce virgin resources use.** What % of the specified light fittings that are made from recycled material? A guide would be a minimum of 90%.
- Choose manufacturers with **end-of-life takeback programs** where used parts are recycled and reused.
- Specify luminaires with **replaceable components** and modular designs to simplify maintenance and reduce waste.

Reduce energy

- **Don't overlight,** focus light where you need it. Map out where light is needed to support each task rather than provide overall even illumination.
- **Install presence detection.** For spaces with intermittent occupation use presence detection to control lighting.
- **Harvest free daylight** for lighting. For spaces with daylight available install sensors to deactivate artificial lighting when there is sufficient daylight to illuminate tasks.

Simplify supply chains

- **Specify local products.** Identify manufacturing within 500km radius of the project site and specify their products where applicable.
- **Buy direct from the source.** Each handling stage introduces more cartage.
- **Avoid air freight.** Airplanes have large carbon footprints so plan ahead to order products with sufficient timing for sea freight delivery.

03 — BUILD FOR LONGEVITY

Quality that compounds

Investing in quality pays dividends. Durable, efficient products and control strategies not only reduce replacement costs but create long-term value for clients and communities.

Product quality

- **Evaluate lifecycle costs** (materials, energy, maintenance) rather than the initial upfront price alone.
- **Seek minimum 5-year warranties** on lighting products as an indicator of construction quality and manufacturer confidence.

Product efficiency

- **Use light sources of 130lm/W or better**. LED light sources are improving each year; higher efficiency means less energy consumed for the same light output.
- **Control the light spread.** Light shining away from the task surface is wasted light. Efficient light fittings shape the light beam to illuminate the target area.
- **Install lights in ventilated spaces.** Heat reduces efficiency and lifespan of lights, so allow free space around each light for heat dissipation.

Design for maintainability

- **Simplify on-going maintenance**. Are all light fittings easily reached for maintenance using easily available access equipment?
- Select fittings that are repairable and supported by **readily available** replacement parts.
- **Keep lighting controls simple**. Easy to use lighting gives the user confidence to effectively operate the lights when they need them.

DJCOALITION

04 — PROMOTE WELLNESS

Light for human health

Sustainable lighting supports the wellbeing of people and the planet. Effective design enhances comfort, health, and connection to the natural world.

Circadian health

- Provide high melanopic lux during the day (min 250 vertical lux) using cool CCT light sources.
- Transition to lower light levels (max 50 vertical lux) and warm CCTs in the evening.
- Offer personal control and tunable fixtures to accommodate individual preferences.
- Minimize short-wavelength light exposure (especially <480nm) within 2 hours of bedtime.

Visual comfort

- Maintain luminance ratios of 2:1 or lower between tasks and adjacent work surfaces.
- Shield sources above 50° from horizontal to minimize direct glare.
- Favor indirect and diffuse illumination to create soft, balanced luminous environments.
- Verify UGR values are within acceptable ranges for each space type.

Connection to nature

- Balance daylight and electric light in spaces by day to maintain a bright ambience at the back of large rooms.
- Use warm, firelight-like CCTs (2200-2700K) in intimate, residential-scale settings and when preparing for rest.
- Select luminaires with organic aesthetics (natural materials, curved forms, irregular patterns).
- Reinforce circadian rhythms with slowly shifting intensities/CCTs throughout the day.

DJCOALITION

Are you ready to shape a legacy of resilience?

Our planet's future is not a matter of chance, but of choice.
Join us in building projects that offer ongoing benefit —
for our clients, our communities, and our collective home.

DJCoalition.com

youtube/DJCoalition

fb/DJCoalitionLightingDesign

pinterest/djcoalition

© DJCOALITION