# LIGHTING DESIGN AT LUXEFINITY

At **Luxefinity**, lighting is approached as a sophisticated synthesis of architecture, engineering, environmental science, and human perception. Our Lighting Design Consultancy operates either as a fully independent specialist service or as an integrated component of our Interior Architecture and Design offering, allowing clients and project teams to engage with us at multiple stages of the design and construction process.

Our work focuses on the creation of visually compelling, technically robust, and environmentally responsive lighting environments that enhance spatial experience while supporting performance, sustainability, and human wellbeing.

Through carefully layered lighting compositions, balancing ambient, task, accent, and architectural feature lighting, we shape interior environments that influence perception, define spatial hierarchy, and reinforce the architectural narrative. Each design is supported by a rigorous technical framework that includes reflected ceiling plans, luminaire layouts, circuiting strategies, fixture schedules, photometric modelling, lux level calculations, glare control analysis, electrical load assessments, and integrated lighting control schematics.

A critical component of **Luxefinity's** methodology is the integration of daylight as a primary design resource. Natural light is analysed not simply as a passive environmental condition but as a dynamic architectural element that significantly influences spatial quality, energy performance, and occupant wellbeing.

Using advanced daylight simulation software and environmental modelling tools, we perform detailed studies to understand how daylight enters and interacts with a space throughout the day and across seasonal variations. These studies typically include:

- Daylight Factor (DF) analysis
- Spatial Daylight Autonomy (SDA) studies
- Annual Sunlight Exposure (ASE) assessments
- Daylight distribution mapping
- Visual comfort and glare risk evaluation

The results allow us to accurately predict natural light performance and to optimise building design strategies that maximise daylight penetration while maintaining visual comfort. Where daylight access is limited or uneven, Luxefinity develops daylight optimisation strategies that enhance natural illumination and reduce reliance on artificial lighting systems. These strategies may include the implementation of daylight redirection devices, light shelves, high-reflectance interior surfaces, specialised reflective materials, architectural daylight channels, and high-performance glazing systems designed to improve daylight distribution deeper into the built environment.

Our daylight analysis also identifies zones within the space where supplementary artificial lighting is required during daytime conditions. This allows us to design intelligent lighting systems that respond dynamically to natural light levels, ensuring that artificial illumination is introduced only where necessary to maintain visual consistency and comfort.

To further support occupant wellbeing and align lighting conditions with human biological rhythms, Luxefinity incorporates Human-Centric Lighting (HCL) strategies, including the integration of tuneable White luminaire technology. These luminaires allow the colour temperature of light to adjust dynamically throughout the day, delivering cooler white light during daytime hours to support alertness, focus, and productivity, and transitioning toward warmer tones in the evening to promote relaxation and comfort.

Beyond interior environments, Luxefinity provides comprehensive architectural and external lighting design services, including façade illumination, landscape lighting strategies, and public realm lighting masterplans. These designs articulate architectural form, enhance spatial legibility and safety, and create a distinctive nighttime identity for buildings and urban environments.

Our façade lighting concepts reveal structural rhythm and material texture while respecting environmental considerations such as light pollution, ecological impact, and energy efficiency. Landscape lighting strategies are carefully developed to guide movement, reinforce spatial hierarchy, and create balanced nighttime environments that complement both architecture and nature.

All **Luxefinity** lighting designs are supported by comprehensive technical documentation, environmental impact assessments, regulatory compliance verification, emergency lighting layouts, and full coordination with architectural and MEP engineering systems. **Luxefinity** Lighting Design Methodology To ensure design integrity and technical precision, our consultancy services follow a structured engineering-led methodology:

**A. Client Vision & Project Brief Analysis**

Understanding architectural intent, project objectives, operational requirements, daylight opportunities, sustainability targets, and user experience goals.

**B. Site Analysis & Environmental Assessment**

Detailed site surveys documenting existing lighting conditions, façade orientation, solar exposure, reflection properties of materials, and architectural constraints.

**C. Integrated Lighting & Daylight Concept Design**

Development of a comprehensive lighting strategy that integrates artificial lighting with natural daylight utilisation, defining spatial character and visual hierarchy.

**D. Daylight Modelling & Simulation Studies**

Advanced environmental modelling using specialist simulation software to analyse daylight behaviour across time, seasons, and occupancy patterns.

**E. Daylight Optimisation Strategy**

Identification and implementation of design solutions to improve daylight penetration and distribution, including architectural interventions and reflective material strategies.

**F. Technical Lighting Design Development**

Preparation of detailed technical drawings including reflected ceiling plans, luminaire positioning layouts, circuiting diagrams, and integrated lighting control strategies.

**G. Photometric Analysis & Visual Comfort Studies**

Lux calculations, uniformity analysis, glare assessments, and combined daylight/artificial lighting simulations to validate performance and compliance.

**H. Human-Centric Lighting Integration**

Specification and programming of adaptive lighting systems including tuneable White luminaires and dynamic lighting control strategies.

**I. Product Specification & Technical Documentation**

Preparation of luminaire schedules, technical product specifications, lighting control requirements, and sustainability performance data.

**J. Tender Support & Vendor Coordination**

Development of Request for Proposal (RFP) packages, technical evaluation of supplier submissions, and coordination with lighting manufacturers and suppliers.

**K. Installation Oversight & Design Verification**

Monitoring installation works to ensure compliance with design intent, including luminaire positioning, circuiting verification, and system integration.

**L. Lighting Commissioning & Control Programming**

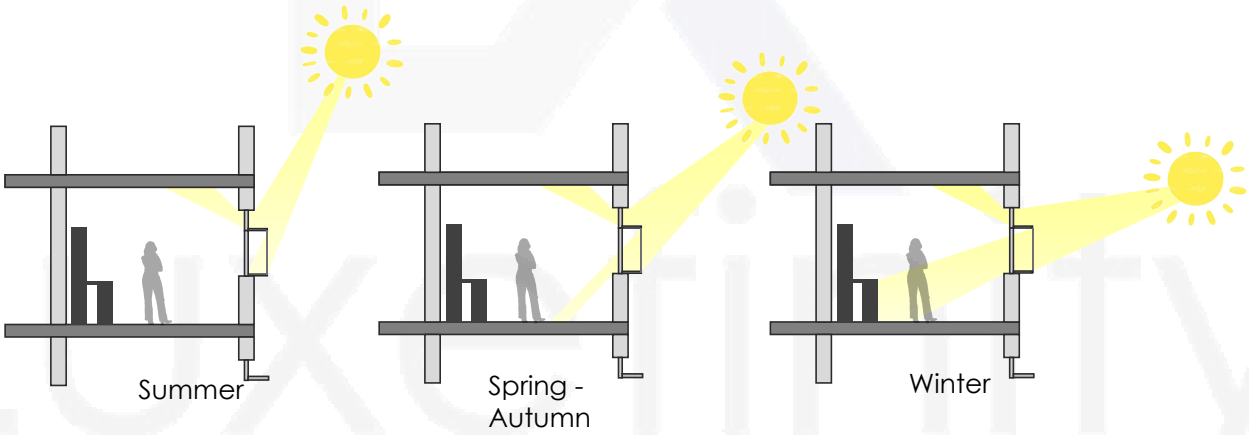
Configuration of lighting scenes, calibration of dimming systems, integration of daylight sensors and occupancy controls, and system testing.

**M. Testing, Validation & Performance Tuning**

On-site lux measurements, glare verification, daylight response testing, emergency lighting validation, and final optimisation of lighting scenes.

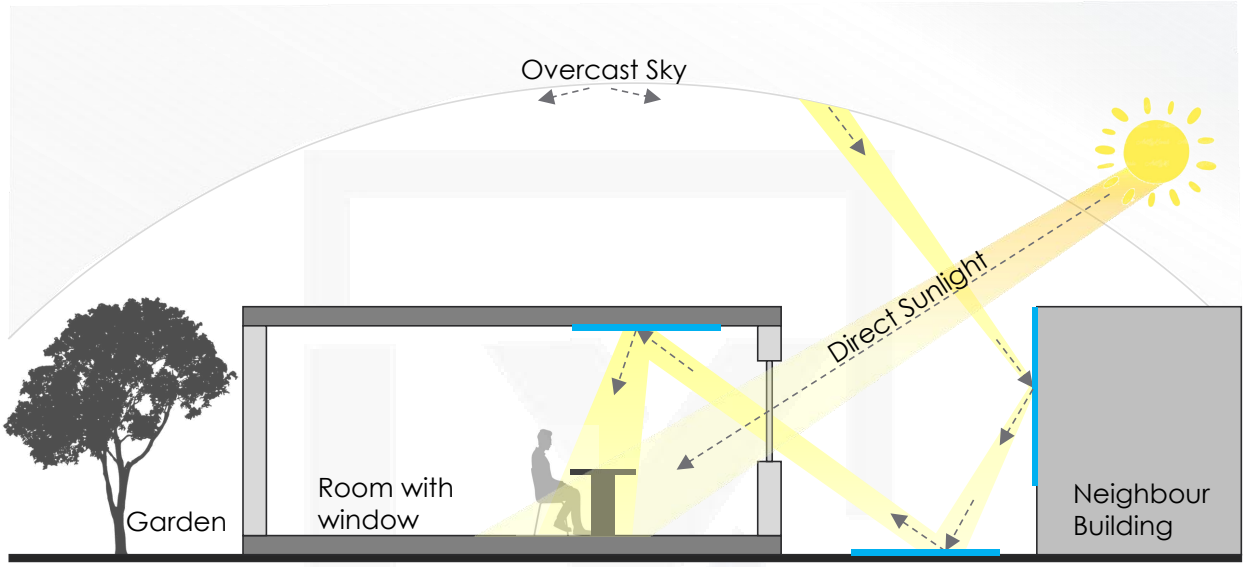
**N. Final Documentation & Project Handover**

Delivery of as-built drawings, luminaire schedules, control system documentation, warranties, maintenance manuals, and performance reports.




**Day Light**

Exposure to daylight significantly affects the psychological well-being of occupants by diminishing headaches, eye tensions, or stress. Daylight penetration is a matter of collaboration between building façade and perimeter zones that can be controlled through façade design features. This study reviews available daylighting systems to block or redirect natural light inside the space and their overall performance. Adaptation found to be the main key feature of daylighting systems to improve their effectiveness in indoor environments. As the main implication of such systems on the visual comfort performance of occupants, a list of quantitative indices is studied based on their mathematical equation to outline their advantages and limitations. Findings revealed a lack of agreement on acceptable indoor illuminance thresholds for most of the indices and the absence of a reliable glare index in presence of sun within the view field of the occupant. Similarly, many green building certifications propose a specific criterion to assess view out but remain a challenge for future studies.

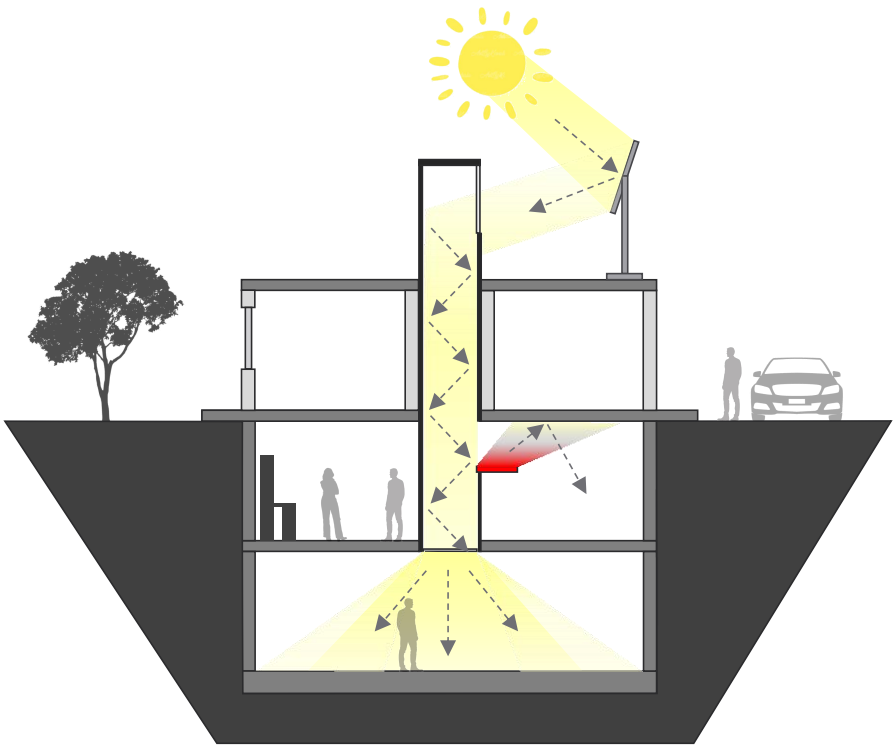



**Daylighting is the controlled admission of natural light into buildings.**

**Benefits:**

- Reduces energy use
- Enhances occupant comfort and productivity
- Supports circadian rhythms
- Strengthens connection to nature

Possible collection of natural light and transmitting it to lower floors like basement using special tool, the primary tool used to collect and transport natural light from above ground down into a basement is a Tubular Daylighting Device (TDD), commonly known as a solar tube, sun tunnel, or light pipe.



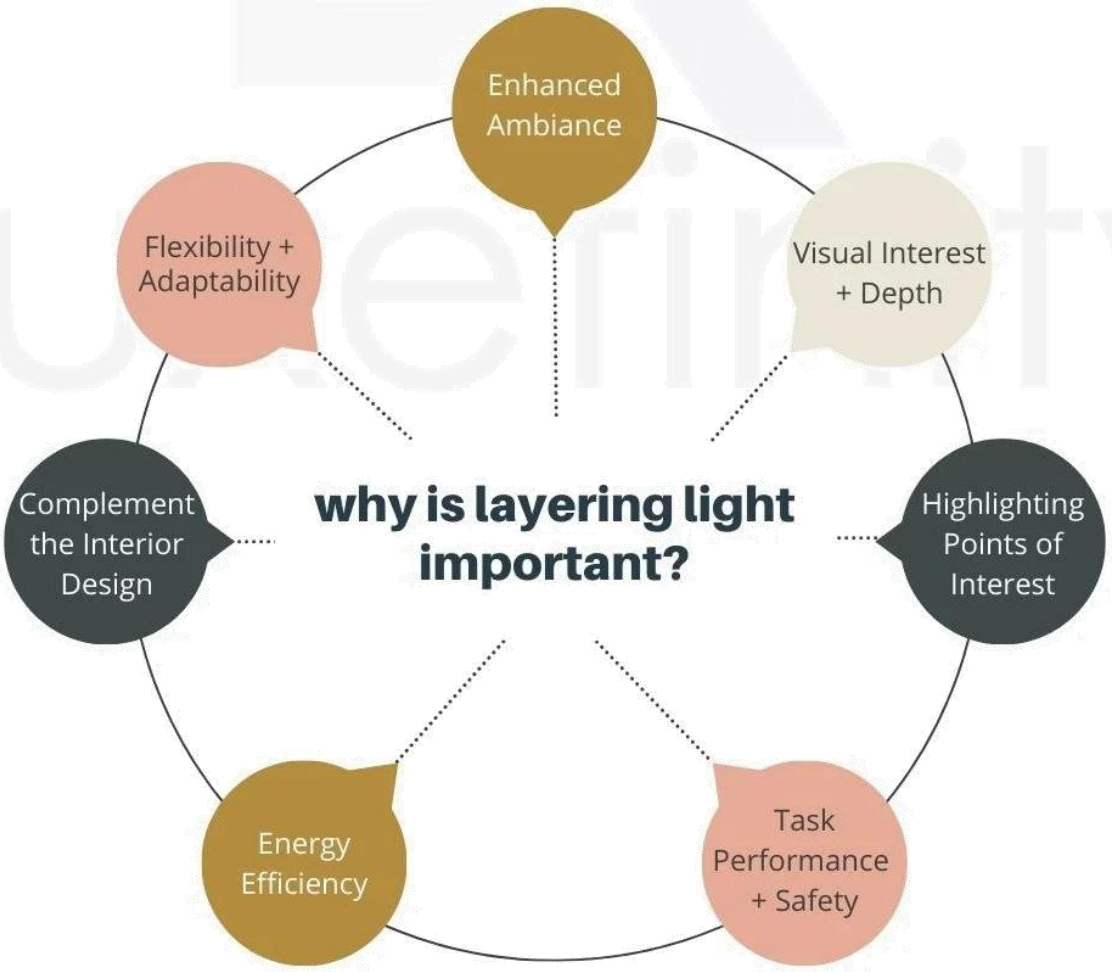
**Artificial Light**

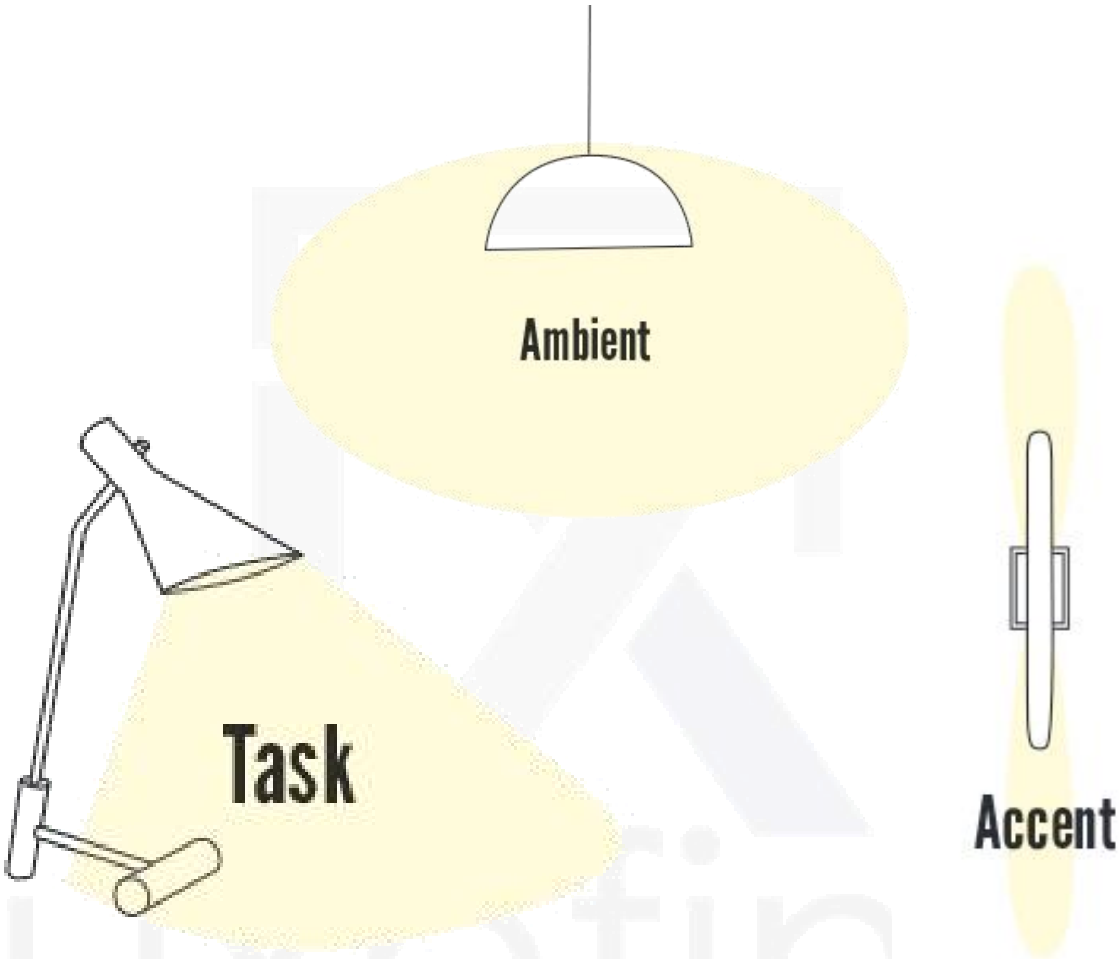
Artificial lighting complements Daylight and ensures usability at all times. It should support:

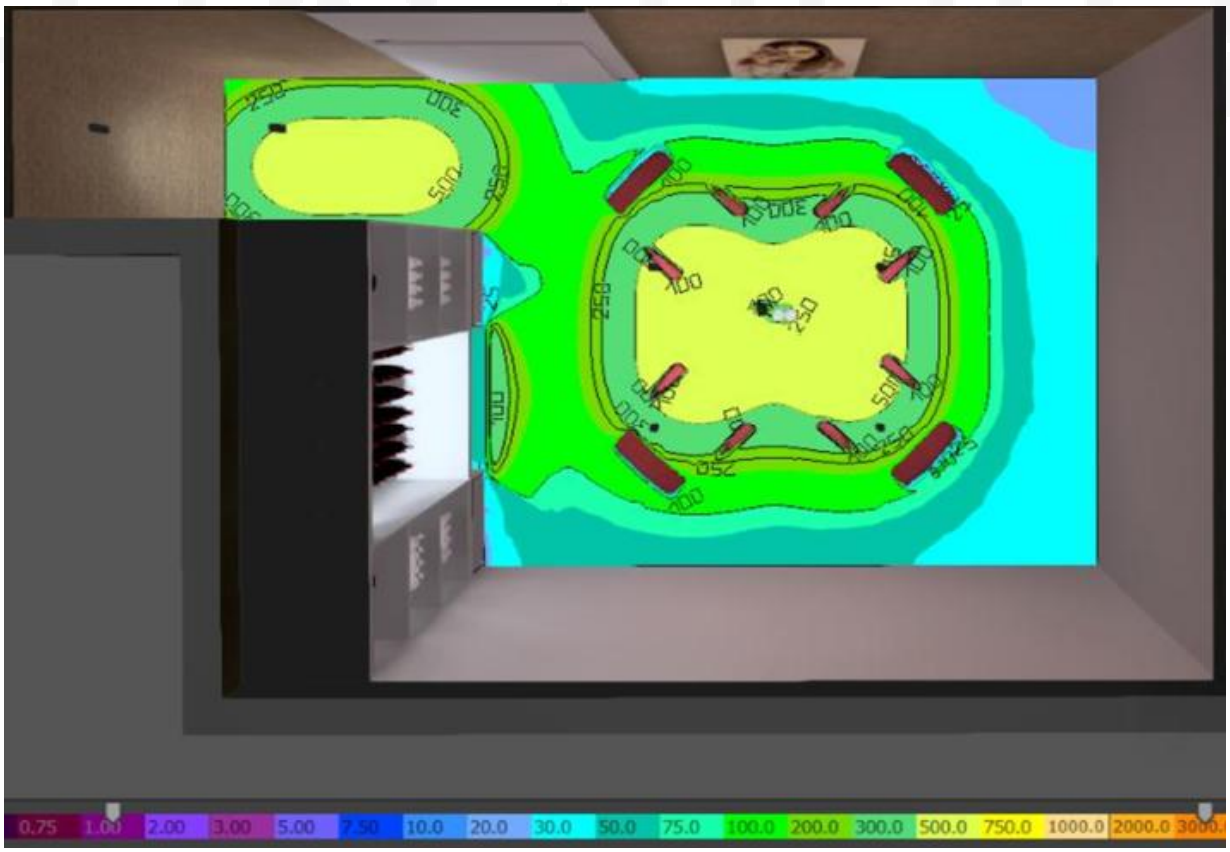
- Visual tasks
- Spatial hierarchy
- Emotional & aesthetic experience

**Type of Artificial Lighting**

- Ambient (General illumination)
- Task lighting
- Accent lighting
- Decorative lighting




Ambient
Task
Accent


0.75
1.00
2.00
3.00
5.00
7.50
10.0
20.0
30.0
50.0
75.0
100.0
200.0
300.0
500.0
750.0
1000.0
2000.0
3000.


BEER
WHEAT
ALE
HOPS