LEGRAND, ACTEUR DE LA PERFORMANCE ENERGETIQUE

Building Management & Energy Efficiency

Worldwide Green Building Standards

Worldwide trend towards **sustainable buildings** since the 1990s, accelerated by recent **climate change** and **energy issues**

► Green Building certifications developed first at **national level** based mainly on **national construction codes** and building practices with adaptations to international context

Other solutions and ratings for existing buildings: Energy Star, Green Rating, Energy Audits…

Leed projects overview

Industrial

Industrial

Mixed Use

Commercial Interiors

SUSTAINABLE BUILDINGS 3 main Requirements

01 Reduce impact on ENVIRONMENT

- Energy use : -30-50%
- CO2 emissions : -35%
- Waste output : -70%
- Water usage : -40%

02 BUSINESS benefits

- Operating costs : -8-9%
- Building value increases : +7.5%
- Occupancy ratio up 3.5%
- Rent ratio : +3%

03 HEALTH & WELL-BEING benefits

- Natural light increases worker productivity
- Reduces noise
- Reduced absenteeism
- improved concentration

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Building Management & Energy Efficiency

The main issues

Buildings have an economic, environmental and human impact

5 % design

20 % construction

75 % building operation

→To reduce maintenance costs

→To offer scalables solutions

→To reduce energy consumption

→To ensure maximum confort for end users

Energy management in the building

Distribution of consumption

- 34 % heating, HVAC, hot water
- 27 % Lighting
- 29 % Sockets loads
- 10 % Others (e.g.: lifts, motors…)

Distribution of lighting consumption

- 58 % Offices
- 24 % Circulation areas
- 14 % Outbuildings
- 4 % Toilets

LEGRAND INNOVATION | LIGHTING MANAGEMENT PHILOSOPHY

BE SMART WITH YOUR LIGHTING CONTROL

→ Maximize Day lighting

Day light is by far the best light source. It's free, sustainable and can give a sense of energy and well being.

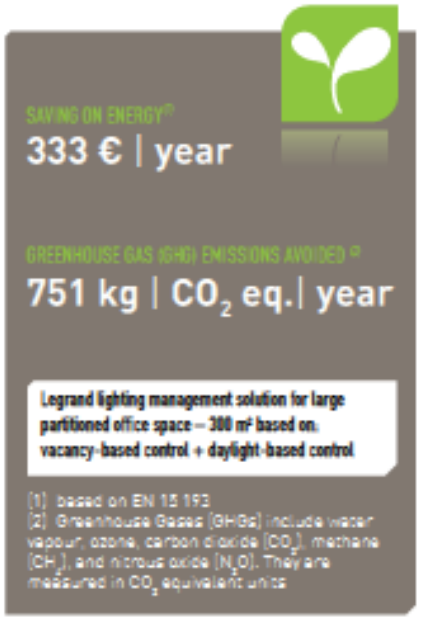
→ Keep control

Combine automatic control with manual, scene & time-based control to offer the desired light when where required.

AND PUT A STOP TO ENERGY WASTE

LEGRAND INNOVATION

4 FUNDAMENTALS



Note: A vehicle with an average consumption of 4.5 l/100 km emits 11.8 kg of CO_2/100 km i.e. 0.118 g of CO_2/km

- Day Light level control
- Occupancy & Vacancy-based control
- Dimming control
- Scheduled control

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LEGRAND OFFER

Stand alone sensor
Optimize natural lighting

Occupancy Sensors
Ideal for corridors & intermediate areas

Vacancy sensor with brightness threshold

Energy saving

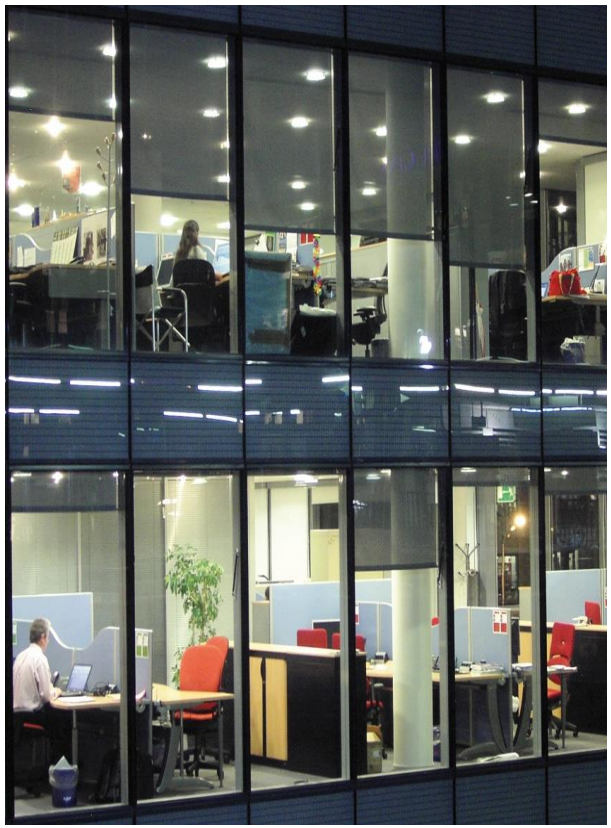
Up to **40 %** energy saving

According to EN 15 193 standard

Confort & accessibility

LEGRAND OFFER

Stand alone sensor
Optimize natural lighting



Vacancy sensors

Ideal for presence area

Vacancy sensor with brightness control

+

Manual on/off pushbutton

Energy savings

Up to **55%** energy savings

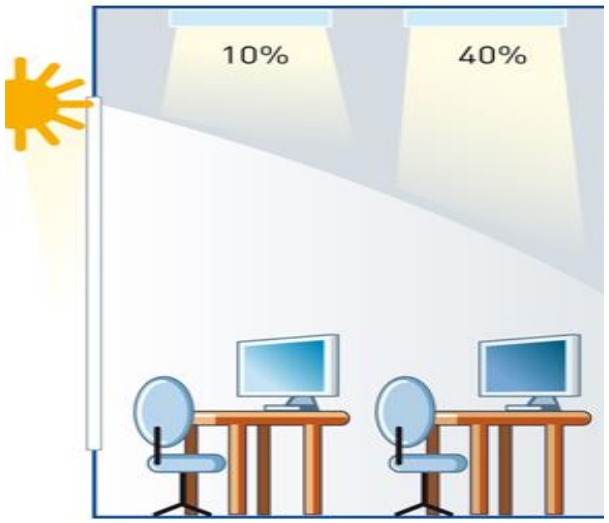
According to EN 15 193 standard

Visual confort

LEGRAND OFFER

Stand alone sensor
Optimize natural lighting

2 circuits solutions &
Daylight dimming solutions



sensor
with brightness
control

Manual on/off
pushbutton

Energy saving

Up to **60 %** energy saving

According to EN 15 193 standard

Visual confort

SUSTAINABLE BUILDINGS

Potential energy saving

In commercial buildings
27% of total site energy is consumed by lighting
29 % by sockets loads

These significant costs can be managed more effectively through the energy measuring program

Program Energy Management …

- Lighting management

- Socket Load

- Energy Consumption Manager

- Load Shedder

11 % 21 % 26 %

http://wsmeasure.grpleg.com/wsmeasure/bigfr

Energy consumption management

http://wsmeasure.grpleg.com/wsmeasure/bigfr

LEGRAND, ACTEUR DE LA PERFORMANCE ENERGETIQUE

Building Management & Energy Efficiency

➔Available solutions:

- Energy Management
- Communicating Systems

01. ENERGY METERING

Measurement, display, management and correction of electrical loads.

Installation of 3 meters and 1 measurement control unit combined with corrective actions

Potential savings for a set of offices 300 m²
- € 799 a year
- Payback period 16 months

+ Integration of other system trough KNX

02. LIGHTING MANAGEMENT

Lighting accounts for 30% of the energy consumption of commercial buildings.

Lighting management system and presence sensor.

Savings:
- € 1,780 a year
- Payback period less than 2 years

03. GREEN SOCKET

Office equipment represents the third highest energy consumption item in a commercial building. Many items of equipment remain operational outside the times when the building is not occupied.

Installation of desktop multi-outlet extensions with sockets linked to a time switch.

Savings for a department of 100 people equipped with computers.
- € 500 a year
- Payback period 4 years

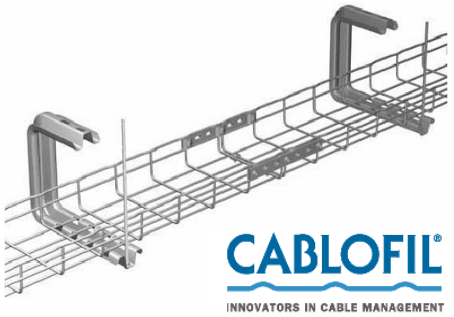
04. EMERGENCY LIGHTING

Lower energy consumption LED units

Potential savings for a set of 250 emergency lighting units:
- € 600 a year

The interface for Sati addressable blocks can easily control the entire installation.

04. Wire canalization solutuins



Energy efficiency solution for cable management

Thank you