ETAP

Architecture & daylight

# Enhancing building performance and saving energy through intelligent lighting design

Wim Sliepenbeek

Sales and marketing director, ETAP

www.etaplighting.com

ETAP

# ETAP lighting

interior lighting

emergency lighting

lighting controls

ETAP

# innovation

started 1949

turnover:
$ 90 million

investment in R&D:
7 % of turnover

innovation

sustainability

ETAP

## What have I seen?

Often:

Poor finish/quality

Poor energy performance

High power density

Why?

in the end it seems to be only the investment that counts

ETAP

## Energy efficiency

Energy efficiency is born during the design stage but commissioning is an absolute must

- use of daylight
- sustainable energy on site

-> 

- less installed power
- less air conditioning
- energy reduction >50%

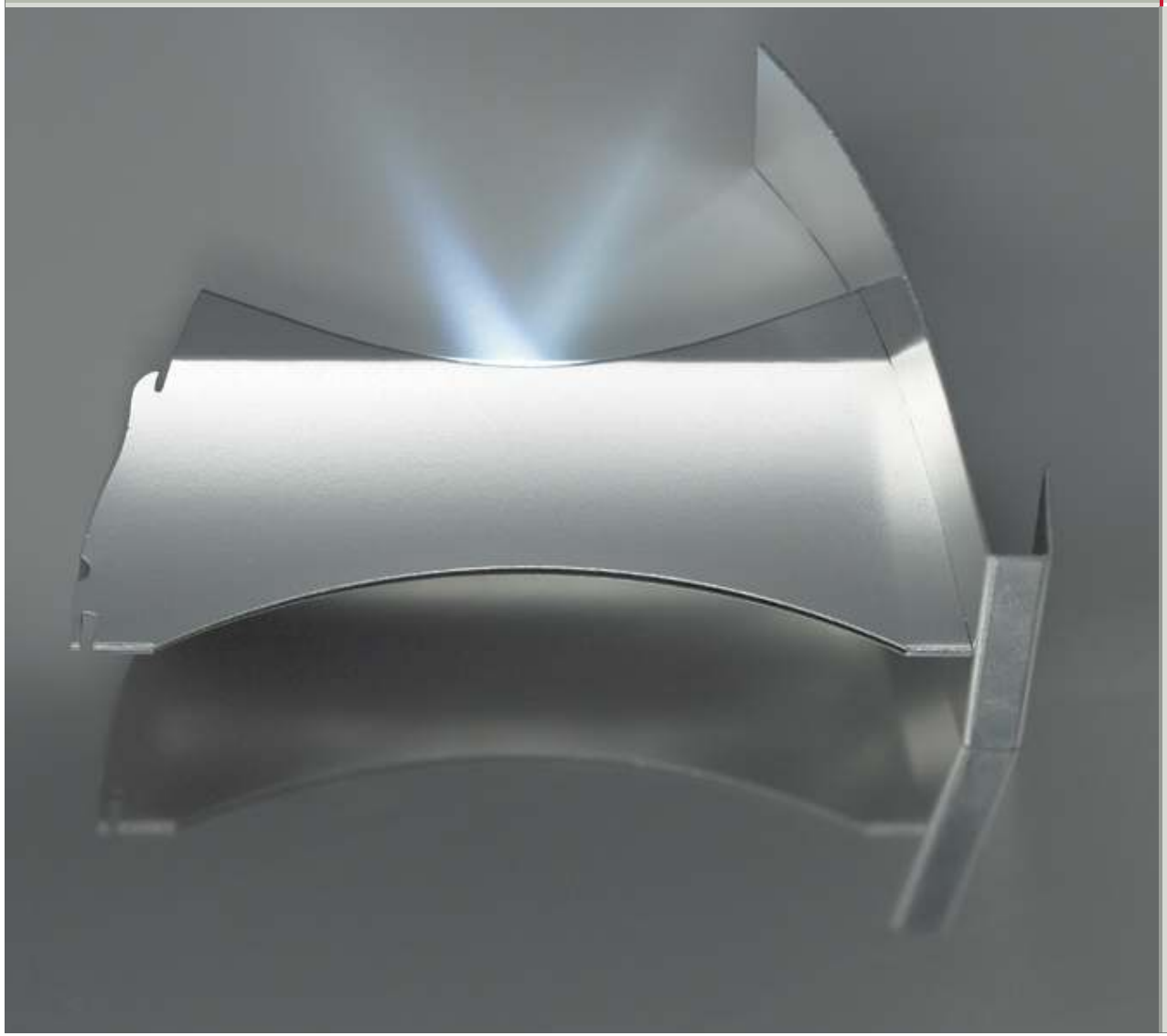
ETAP

We want to provide comfortable lighting while saving >50% energy by:

1. highest Performing luminaires
2. optimised lighting schemes
3. intelligent luminaires
4. control strategies on building level

ETAP

## Design step 1



Highest performing luminaires

High performance reflectors

Glare control

High reflectance silver

LOR 70% - 95%

ETAP

## Design step 1

Highest performing luminaires

Innovative diffusors with mesooptics

6-nm microstructures

Diffusor luminaires with light control

ETAP

## Design step 1

Highest performing luminaires

Innovative diffusors with mesooptics

6-nm microstructures

Diffusor luminaires with light control

LOR upto 82%

ETAP

## Design step 1

Choose state of the art luminaires:

Softlights with Halo-optics covers

LOR upto 84%

ETAP

## Design step 1

Highest performing luminaires

IP65 luminaires for cold storage based on LED's

Lights can be switched of in cold storage warehouses

Energy savings upto

90%

ETAP

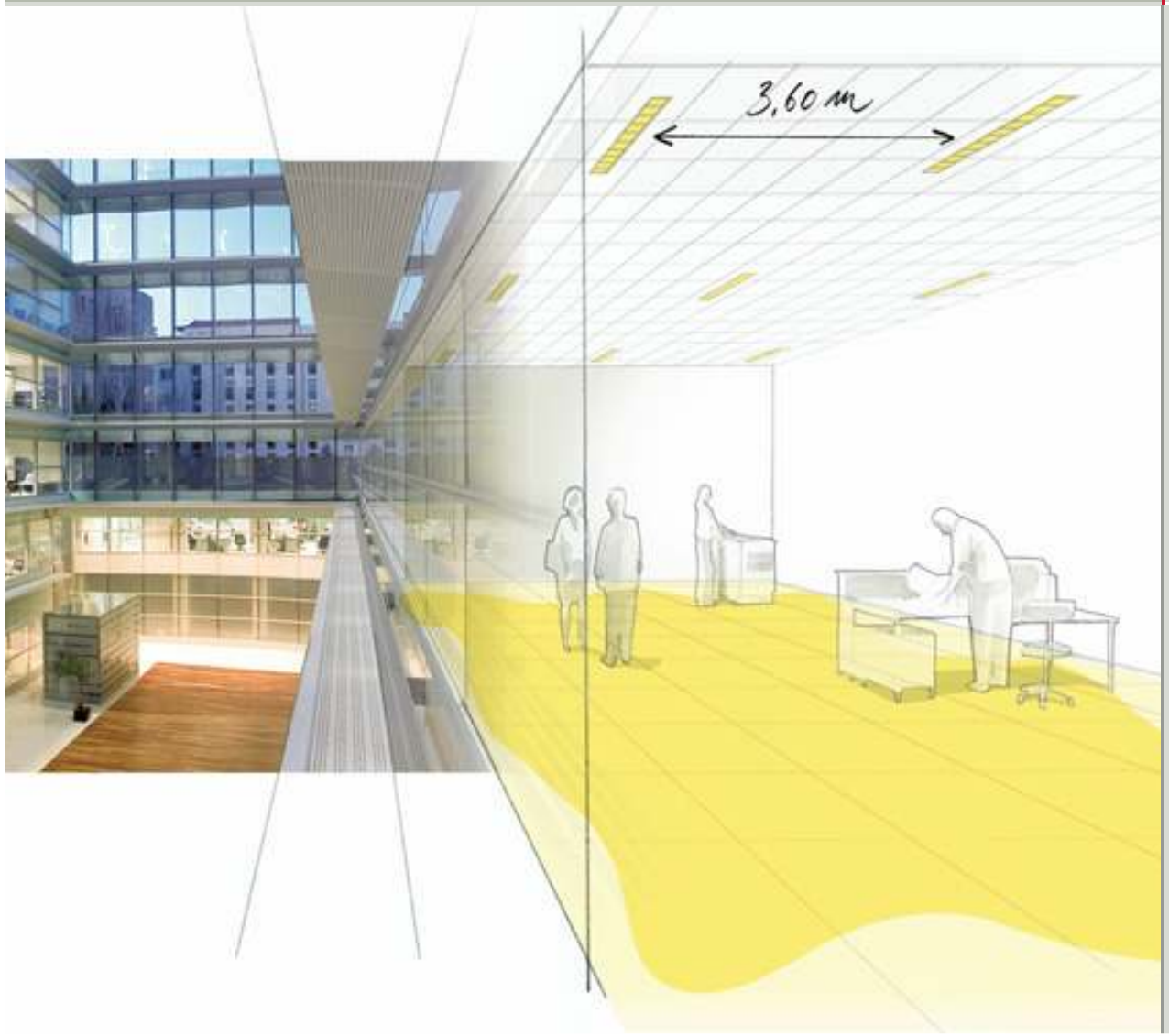
## Design step 1

Highest performing luminaires

High tech emergency LED Luminaires

ETAP

## Design step 2




Optimise lighting

Design

Optical system with highest spacing

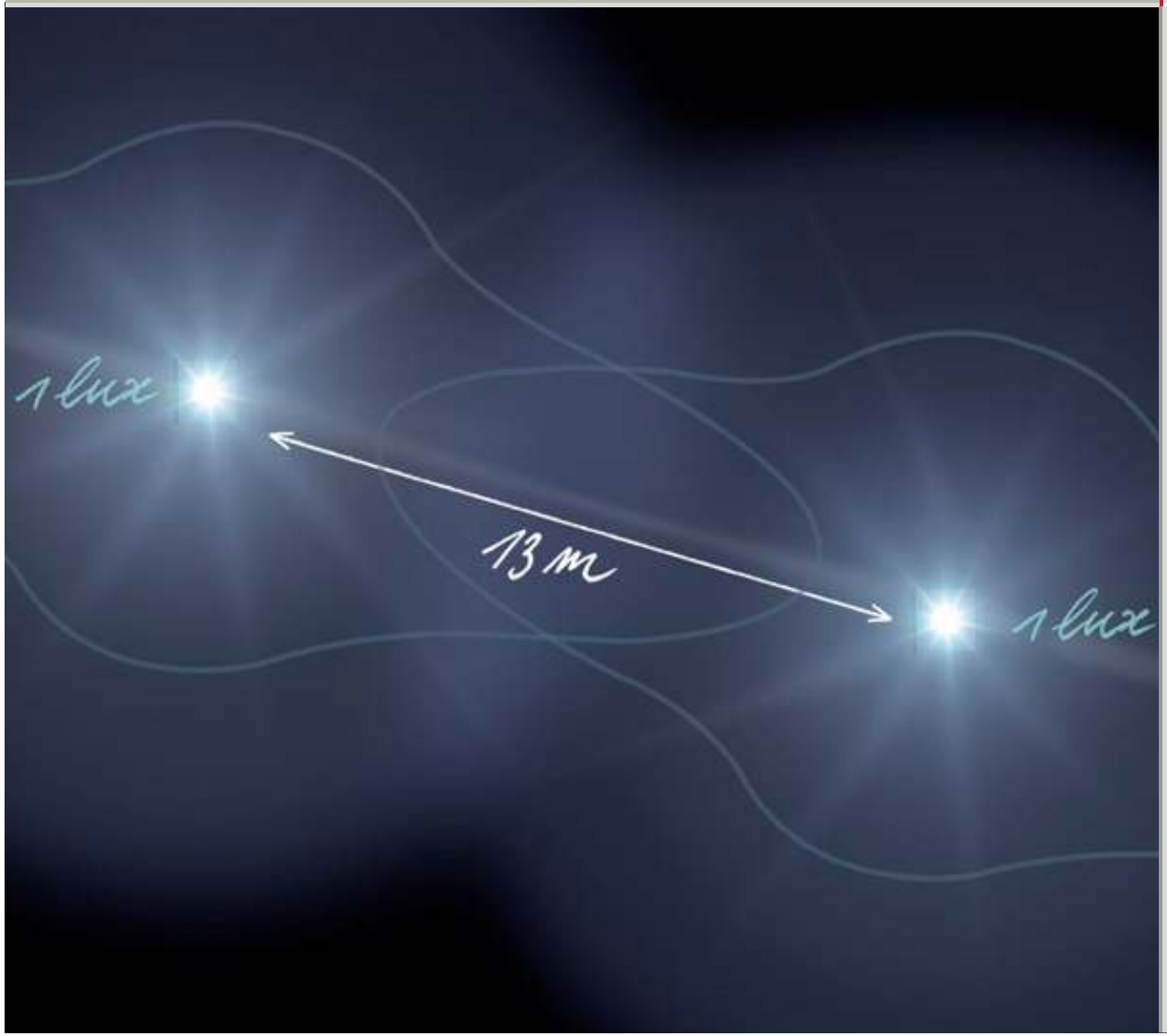
Lighting

7 W/sqm feasible

todays practice 15-20 W/sqm for 500 lux

ETAP

## Design step 2




Optimise lighting

Design

Emergency Lighting:

Optical system with highest spacing upto 13 meter instead of 7 meter

Energy consumption LED luminaire <50% of fluorescent for the same performance because of lighting technique

ETAP

## Design step 3

Intelligent luminaires

Daylight linked Controls: ELS

Movement dependent control

1-10V or DALI

ETAP

## Design step 4


Lighting control on building level:

Adjust individual light levels

Daylight controlled

Occupancy controlled

Time controlled

Individual controlled

Reduce peak demand

Measure energy consumption

ETAP

## Case

Ernst & Young
Brussels, Belgium

2008

10.000 Sqm

Green building

ETAP

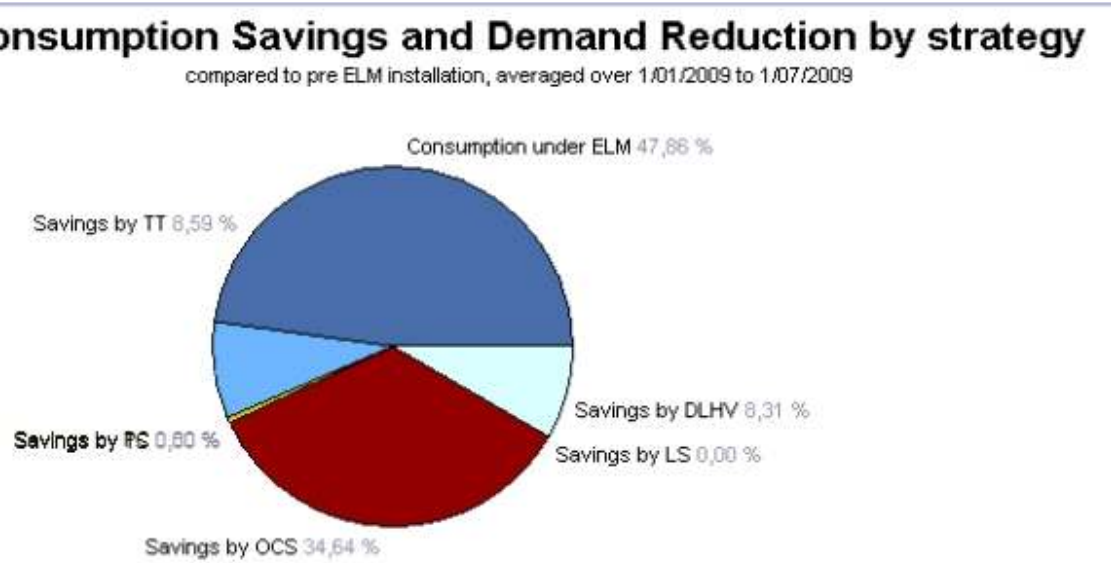
## Case

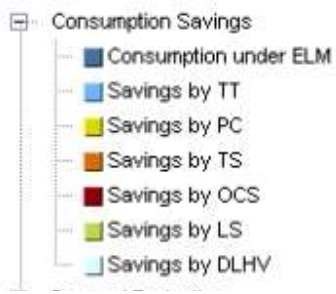
Needs:

- Green building
- Daylight harvesting
- Occupancy detection
- time zoning
- meeting room scenes
- combine with HVAC

ETAP

## Case




| | |
|---|---|
| Task tuning | 8,5% |
| Personal control | 0,8% |
| Occupancy control | 34,5% |
| Daylight harvesting | 8,3% |
| | 52% |

Energy saving

High performant reflector luminaires: spacing from

2,4 meter to 3,6 meter:

30% energy saving.

Light control system

52% energy saving:

Total saving: 68%

ETAP



Can we do it?

Yes we can!

Enhancing building performance through intelligent lighting design

ETAP

Architecture & daylight

Enhancing building performance through intelligent lighting design

Questions?