ETAP AND LEED

Lighting solutions for sustainable buildings





LEED



LEED (Leadership in Energy and Environmental Design) is one of the most common sustainability certification for building projects. A building is assigned a sustainability score based on carefully established parameters. In this brochure we show you how ETAP can help you to achieve an optimal score in accordance with LEED New Construction v.4, the latest scheme.



.EED

Leadership in Energy and Environmental Design

°1998, USA

> 80,000 certified buildings in 2015

Possible levels: Certified > Silver > Gold > Platinum

Certification takes place through USGBC (US Green Building Council)

Distribution: international

LEED was created in 2000 on the initiative of the US Green Building Council (USGBC). The certification would rapidly become a standard in the area of sustainability: in 2015 more than 80,000 buildings had secured certification. In an increasing number of construction projects, LEED certification has become the obvious choice, if not actually a requirement.

PROCESS

LEED factors in some 50 parameters within nine categories: Integrative Process, Sustainable Sites, Location and Transportation, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation and Regional Priority. Each parameter imposes several sustainability requirements on the building, which results in one or more points. This results in an overall sustainability score of 'Certified' to 'Platinum'.

The process runs as follows: the client registers with the USGBC, who collects and verifies the necessary evidence during the course of the build. After the design stage, this documentation leads to a provisional rating. After completion of the building, USGBC checks whether reality corresponds with the design. Only then will the final rating be assigned.



ADVANTAGES

LEED certification does not come free of charge, but on the other hand it has a number of distinct advantages:

- Contributes to a sustainable society
- Positive impact on wellbeing and health
- Reinforces a business's sustainable image
- Objective instrument to compare buildings with each other
- Lowers energy costs
- Increases a building's market value
- Potential financial incentives from the government

LEED AND LIGHTING

LEED takes into account all aspects of a construction project. Lighting is but one, albeit important component. Well-chosen lighting can lead to points in seven out of the nine LEED categories. Light control also plays an important role.

ETAP: SUSTAINABILITY IN THE GENES

Sustainability has always been an important point of special interest within ETAP's product development. Our luminaires belong to the most energy-efficient on the market. Light control systems, which dim or switch off the light, have been part of our range for a long time. During the production processes and in the choice of materials, sustainability plays an important and sometimes decisive role (*).

ETAP is therefore also your logical partner during the LEED certification process. ETAP will advise and assist you with the lighting component. With the help of an external consultancy we carried out a product analysis on our full lighting and light control range (see also the following pages).

The correct documentation is of critical importance for a smooth process. Incorrect, irrelevant or needless information may lead to delays or even loss of points. ETAP has the expertise to provide you with the correct information for all relevant LEED parameters.

(*) For further information, consult ETAP's sustainability report at www.etaplighting.com



Product analysis







From development over production up to services: each aspect of ETAP's product flow has been examined for this product analysis.



LEED assesses the sustainability of a complete building, but it goes without saying that the materials, products and technologies used play a decisive role in this context. We took a close look at our lighting products and light control systems to determine which lighting solutions are most suitable to score points in the various LEED New Construction v. 4 categories.

Depending on the category, various aspects of our range were analysed: energy-efficiency, specific power, raw materials, etc., including the installation of the luminaires or light control systems. To do so we split our range into nine series: recessed luminaires; surface-mounted and suspended luminaires; downlights; spots; wall luminaires; light line systems; luminaires with high protection factor; modular lighting and light control systems.

In each LEED category we determined which series could contribute points. Furthermore we also checked the suitability for each series: some lighting solutions happen to be more suitable than others.

Recessed luminaires Surface-mounted and suspended luminaires Downlights Spots Wall luminaires Light line systems Luminaires with high protection factor Modular lighting Light control systems

CHARACTERISTICS

	CHARACTERISTICS
-	Not suitable for this credit Product specifications are not in line with LEED requirements Point will probably not be earned
+	Not fully suitable for this credit Product specifications are not fully in line with LEED requirements Unsure whether point will be earned
++	Suitable for this credit Product specifications are in line with LEED requirements Point will probably be earned
+++	Pre-eminently suitable for this credit Product specifications fully in line with LEED requirements Point will be earned in all probability
N/A	Not applicable to this credit

5

LEED categories

The nine LEED categories each have a maximum number of points. Adding up the earned points results in a score that may lead to LEED certification. Depending on the total score the project secures 'Certified', 'Silver', 'Gold' or 'Platinum' certification.









Location and Transport



Indoor Environmental Quality



Materials and Resources



Water Efficiency



Sustainable Sites



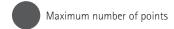
Innovation



Regional Priority



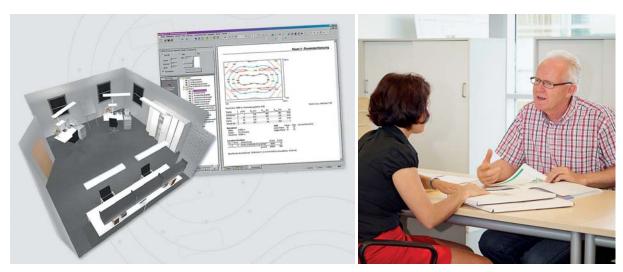
Integrative Process





Points to be earned with ETAP

Integrative Process



ETAP specialists always carry out several lighting studies in advance in order to develop the best possible lighting solution.

IP Integrative process

GOAL

Promoting effective and cost-efficient construction projects by means of a thorough prior analysis of the various technologies and systems.

RELEVANT CRITERIA

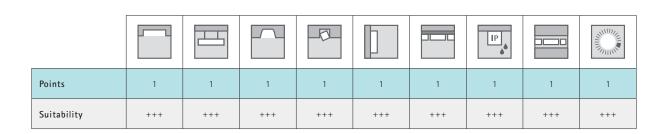
- A prior analysis is made of the lighting installation's energy consumption.
- Lighting study is required.

NUMBER OF POINTS

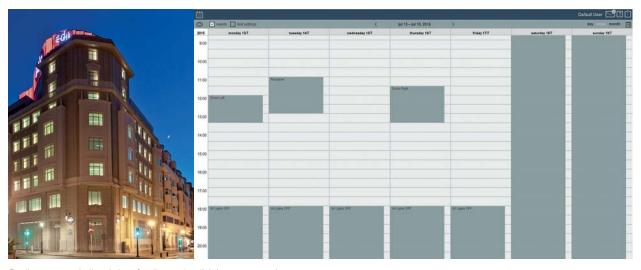
- Maximum number of points: 1
- Points to be earned with ETAP: 1

ETAP SOLUTIONS

ETAP specialists always carry out several lighting studies in advance in order to develop the best possible lighting solution, which will provide you with an accurate assessment of your consumption and will allow you to choose luminaires based on their energy efficiency. We are also able to calculate the impact of a light control system for you.







Excellum2 automatically switches of or dims outdoor lighting at a pre-set time.

SS Light pollution reduction

GOAL

Limiting light pollution for the outside environment by decreasing the impact of artificial light during the night.

RELEVANT CRITERIA

- Decrease in lighting levels for inside lighting between 11 PM and 5 AM.
- Lighting study is required.

NUMBER OF POINTS

- Maximum number of points: 1
- Points to be earned with ETAP: 1

ETAP SOLUTIONS

You can easily adjust the illuminance of your luminaires with ETAP's Excellum2 light control system. Thanks to the intelligent time control with calendar function you can determine exactly when you want the outdoor lighting to be dimmed or switched off.

							IP •		
Points	0	0	0	0	0	0	0	0	1
Suitability	N/A	N/A	+++						

Energy and Atmosphere



ETAP specialists carry out commissioning of the Excellum2 light control system.



Season-based commissioning can be carried out as part of a service contract.

EA Enhanced commissioning

GOAL

Ensuring that water and energy consumption in the building comply with the project's requirements by means of a thorough commissioning plan of the construction technologies.

RELEVANT CRITERIA

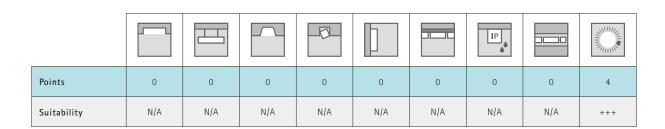
- Commissioning and season-based commissioning of the light control system.
- Detailed documentation on the commissioning.
- Training of building manager and/or building's users.
- Follow-up of performance through monitoring (1 extra credit).

NUMBER OF POINTS

- Maximum number of points: 6
- Points to be earned with ETAP: 4

ETAP SOLUTIONS

- Commissioning of light control systems such as EasyDim and Excellum2 is carried out by ETAP specialists, which can take place in the factory or in the customer's premises. Some settings are not preconfigured and have to be configured in situ.
- Commissioning of lighting and season-based commissioning after completion of the project can be carried out as part of a service contract. Consult your ETAP adviser.
- Excellum2 continuously measures the lighting's actual power consumption. Extensive and detailed reports can be created through the management software.
- ETAP's Services department is VCA-certified. A guarantee that all works are carried out in accordance with the most stringent safety and quality requirements







Simulation software tests reveal that ETAP's U25 recessed luminaires can earn 7 points.

EA Optimize energy performance

GOAL

Promoting the lowest possible power consumption in a building.

RELEVANT CRITERIA

Calculating the building's energy-efficiency compared to a reference building. The greater the savings, the more points. The performance of the reference building may vary depending on national and local regulations.

NUMBER OF POINTS

- Maximum number of points: 18
- Points to be earned with ETAP: from 4 to 7 with lighting and up to 5 points with light control. You can therefore earn a total of up to 12 points with an ETAP solution, which always requires a product-specific analysis.

ETAP SOLUTIONS

- Energy savings are calculated on the basis of the specific power (W/m²/100 lux) for lighting. The most suitable ETAP lighting solution therefore also depends on the type of building. On this basis ETAP lighting can provide up to 7 points for LEED certification.

For example: an external consultancy conducted the test for a lighting solution in a 7-floor reference office building. Our lighting solution with U25 recessed luminaires delivered 18% savings, earning 7 points.

 $\mbox{-}$ The use of a light control system also earns points.

							IP •		
Points	7	7	6	4	4	6	6	6	5
Suitability	+++	+++	+++	++	++	+++	+++	+++	++



Excellum2 informs users continuously of the energy use of their lighting system.

EA Advanced energy metering

GOAL

Mapping out the power consumption in a building as accurately as possible through precise measurement and registration and aimed at detecting additional options in order to save energy.

RELEVANT CRITERIA

- The power consumption of all technologies resulting in more than 10% of total energy consumption is to be measured and recorded.
- Monitoring takes place per functional building section. This can be a complete floor, or a specific zone (conference room, auditorium, restaurant, etc.).

NUMBER OF POINTS

- Maximum number of points: 1
- Points to be earned with ETAP: 1

ETAP SOLUTIONS

 Excellum2 continuously measures the lighting's actual power consumption. Extensive and detailed reports can be created through the management software.

							IP		
Points	0	0	0	0	0	0	0	0	1
Suitability	N/A	+++							

Indoor Environment Quality





ETAP always designs its lighting and lighting control systems with users' comfort in mind.

EQ Interior lighting

GOAL

Promoting comfort, wellbeing and productivity of the building's users by means of quality lighting.

RELEVANT CRITERIA

- For light control: in 90% of individual workstations lighting must be able to be adjusted by means of at least 3 scenarios: on/off/dimmed (between 30 and 70% of the lighting level).
- For lighting: you must satisfy 4 of the 8 principal strategies imposed by the LEED.

NUMBER OF POINTS

- Maximum number of points: 2 (1 for lighting, 1 for light control)
- Points to be earned with ETAP: 2

ETAP SOLUTIONS

- ETAP has designed the Excellum2 system for optimal lighting control. Individual users can adjust the lighting to their own preferences with pushbuttons or on their smartphone or tablet.
- By opting for ETAP lighting solutions you satisfy 5 of the 8 strategies:
- Luminance lower than 2500 cd/m² between 45 and 90° $\,$
- Light sources with a CRI (Colour Rendition Index) of 80 or higher
- At least 75% of light sources have a service life of at least 24,000 hours
- The ratio between illuminance on the walls and on the work surface is 1:10 at the most (to be determined by means of a lighting study).
- The ratio between illuminance on the ceiling and on the work surface is 1:10 at the most (to be determined by means of a lighting study).

							IP		
Points	1	1	1	1	1	1	1	1	1
Suitability	+++	+++	+++	+++	+++	+++	+++	+++	+++







ETAP pays a lot of attention to its luminaires' maintenance factor.

IN Innovation

GOAL

Boosting innovation from the building sector by recognising sustainability solutions not included in the standard LEED categories.

RELEVANT CRITERIA

Providing an innovative solution approved by the USGBC. This approval must be requested separately for each project.

NUMBER OF POINTS

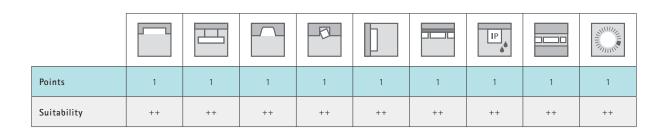
- Maximum number of points: 10. Only 1 credit is possible for each product type.
- Points to be earned with ETAP: 1

ETAP SOLUTIONS

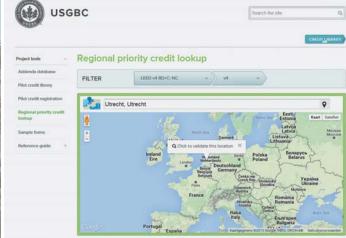
The awarding of an innovation point is project-based and falls under the jurisdiction of the USGBC. ETAP can, no more than any other producer, guarantee that this credit is awarded.

Our suggestions for your innovation point:

- Our luminaires' maintenance factor. In practice we note that ETAP's maintenance factors are for the most part much higher than the generally applied value. Since we focus on two specific aspects. Firstly, in our luminaires we always use LEDs from manufacturers that publish concrete and verifiable data about the light output and service life of their LEDs. Secondly, we pay a lot of attention to our LED luminaires' thermal management: a crucial factor for your lighting's service life.
- Innovative bespoke solutions can also be eligible for an innovation point. With our flexible organisation we are able to capitalise on specific, innovative requests. Consult your ETAP adviser.







RP Regional priority

Regional Priority

GOAL

Boosting sustainable solutions that factor in regional priorities

RELEVANT CRITERIA

The importance of an LEED category is not the same in all countries or regions. The USGBC will emphasise this diversity by giving extra weight to priority categories, which vary from country to country. You can find the categories eligible for an RP credit in your country at http://www.usgbc.org/rpc.

NUMBER OF POINTS

- Maximum number of points: 4
- Points to be earned with ETAP: 1

ETAP SOLUTIONS

The awarding of regional priority points is country-based. For the UK it's SS – Light pollution reduction (see page 7). With the Excellum2 light control system you will earn an extra RP point.

							IP		
Points	0	0	0	0	0	0	0	0	1
Suitability	N/A	+++							

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							IP 6		
NTEGRATIVE PROCESS									
IP Integrative process	1	1	1	1	1	1	1	1	1
SUSTAINABLE SITES									
SS Light pollution reduction	0	0	0	0	0	0	0	0	1
ENERGY AND ATMOSPHERE									
EA Enhanced commissioning	0	0	0	0	0	0	0	0	4
EA Optimize energy performance	7	7	6	4	4	6	6	6	5
EA Advanced energy metering	0	0	0	0	0	0	0	0	1
NDOOR ENVIRONMENTAL QUALITY									
EQ Interior lighting	1	1	1	1	1	1	1	1	1
NNOVATION									
IN Innovation	1	1	1	1	1	1	1	1	1
REGIONAL PRIORITY									
RP Regional priority	0	0	0	0	0	0	0	0	1

Reference projects

ETAP has many years of experience in the certification of building projects. Your ETAP adviser will be happy to assist you with the right solutions for BREEAM or LEED certification, the two most popular systems (*). ETAP has many years' experience in building certification. Below are some examples of reference projects.



Chamber of Commerce,
Dubai, United Arab Emirates
LEED Certified / Completion 2011
ETAP solution with bespoke fluorescent lighting,
D42 LED downlights and Flare LED spots



Regional head office Naturgas Energía, Bilbao, Spain LEED Platinum / Completion 2013 ETAP solution with Kardó modular light lines and D42 LED downlights



Headquarters Majid Al Futaim,
Dubai, United Arab Emirates
LEED Gold / Completion 2014
ETAP solution with Flare spots, D42 downlights,
R7 suspended luminaires with occupancy detection
and U7 recessed luminaires (all LED)



Transavia, Schiphol, the Netherlands
LEED Platinum / Completion 2010
ETAP solution with R4 suspended luminaires with
daylight harvesting and D1 downlights

Coca-Cola offices, Madrid, Spain LEED Gold / Completion 2009 ETAP solution with UT recessed luminaires

Laboratory Red Cross, Mechelen, Belgium BREEAM Outstanding / Completion 2015 ETAP solution with D2 LED, R8, E6, Flare spot, U5, Kardo, E1 LED, E5, US

Education Centre, Utrecht, the Netherlands ETAP solution with D42 LED downlights, Flare LED spots, U1, U5, D1 and D2 downlights, Kardó and R6

Lightline, Zoetermeer, the Netherlands
BREEAM Very Good / Completion 2015
ETAP solution with downlights D1 and recessed
luminaires UT1



ETAP AND LEED Lighting solutions for sustainable buildings

- Maximise the number of credits for your building with ETAP solutions
- Seek assistance from your ETAP advisor
- Choose your lighting and light control in accordance with the LEED v.4 guidelines

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