Solutions for a sustainable world

GREEN SOLUTIONS AWARDS

BUILDINGS
DISTRICTS
INFRASTRUCTURES

DISCOVER THE 2018 WINNERS
GREEN SOLUTIONS AWARDS

With the support of

Green Solutions Awards
The Paris Agreement set a long-term goal: to limit global temperature rise below 2°C. To achieve such an ambitious goal, there is no alternative: we have to radically transform our ways of life and especially how we design, build and manage cities. Why cities? By 2050, 69% of the world population will live in cities.

The good news is, solutions already exist. Beyond the commitment of governments, around the world, companies, local authorities, and NGOs are inventing solutions for zero-carbon cities every day.

The issue? To get the vast majority of city stakeholders to adopt these innovative solutions, in order to generate a significant reduction of greenhouse gas emissions.

With its Green Solutions Awards, the Construction21 network wants to contribute to this immense task, by facilitating the rise of relevant solutions, then by making them known to the largest number of professionals.

Discover the best of the 143 projects competing in the 2018 contest, selected by juries of experts in each country and then at international level. These exemplary buildings, districts and infrastructures, all in use, are already shaping the zero-carbon city.

Candidates, academic and media partners, members of the juries, and sponsors, let me please warmly thank you all for your involvement in the organisation of this competition. Your commitment and mobilisation allow the Construction21 team to accomplish their mission: to show hundreds of thousands of professionals how to build today the city of tomorrow.
Two questions to VALÉRIE DAVID, Transverse Innovation and Sustainable Development Director

Why is your company committed to fighting climate change?

It is clear that, so far, buildings, public works and transports have been heavy consumers of materials, energy and fossil fuels, and emit greenhouse gases. In parallel, a scientific consensus has now been established on climate change and the serious economic and social difficulties it causes.

It is now and today that these issues are emerging. And it is now and today that Eiffage is mobilising its know-how and expertise to offer concrete solutions at the junction of ecological transition and innovation: low carbon construction, use and reuse of bio-sourced materials, modular and mutable buildings, recycled and connected sustainable road, bouquet of renewable energies, ecomobility offer in the heart of the city.

What actions did you put in place regarding sustainable development/CSR?

For many years, Eiffage has taken into account the strong interaction of its activities with the environment as part of an eco-design and circular economy approach: measuring and reducing the carbon footprint, protecting biodiversity and natural environments, and optimising the use of natural resources. We have developed our own sustainable construction standard, HQvie® (High Quality of Life®), and created a carbon-energy arbitrage fund to stimulate the use of low carbon solutions.

The Group’s companies which are specialised in energy production and maintenance design and manufacture many cutting-edge technical solutions in this field, both at a national and international level.

Regarding APRR and AREA, they promote ecomobility. As an example, they have launched several carpooling lines and electric charging stations on their motorway network.

In a context of sociological mutations, Eiffage strives to improve its human capital through four key areas: protecting, training, innovating, inserting. Last but not least, the Group works on contributing to the development of regions, boosting the local fabric through employment and integration policies, fostering dialogue and consultation with local residents, developing philanthropic actions aimed at fragile or excluded people, and improving its purchasing policy.

ABOUT

Eiffage, one of Europe’s leading construction and concession companies, draws on the experience of more than 65,000 employees and achieved a turnover of 15 billion euros in 2017.
Promote innovative climate solutions

Around the world, solutions to build more resource-efficient and more resilient cities already exist. Let’s put them on display!

In 2018, 143 candidates submitted their projects, all delivered, in one of the 9 categories of the contest:

- Sustainable Renovation Grand Prize
- Sustainable Construction Grand Prize
- Sustainable City Grand Prize
- Sustainable Infrastructure Grand Prize
- Energy & Temperate Climates
- Energy & Hot Climates
- Low Carbon
- Health & Comfort
- Smart Building

These projects come from 16 different countries, from Europe, Asia, Africa and America.

An excellent vector to give more visibility to your projects

For the candidates: “The Green Solutions Awards are a great vector to give more visibility to our project and to our experience in building.” With 1.5 million of views generated by an intense international communication plan, both on web and social media, but also with the support of more than 80 partners, the Green Solutions Awards provide candidates with wide visibility and help them to promote their know-how.

“Participating in the Awards offers two valuable assets: networking and opportunities to present your projects at international level […]”, Jane Oyugi, co-founder and CEO of Sustenersol (Tanzania), Sustainable Infrastructure Grand Prize finalist in 2017

“Our participation in the Green Solutions Awards made the project known both nationally and internationally. I also discovered different approaches by observing the other candidates.” Philippe Madec, architect of APM Architecture (France), Sustainable City Grand Prize-France in 2017

“[…] Our participation has given prestige to our company and has allowed us to position ourselves as an example of sustainable practices.” Daniel Dietrich, architect of DMDV Arquitectos (Spain), Building User’s choice-Spain in 2017
Two questions to RODOLPHE DEBORRE, Innovation & Sustainable Development Director

Why is your company committed to fighting climate change?

The Rabot Dutilleul Group places sustainable development at the core of its strategy, “for real”. We want to provide construction and renovation projects that make territories more environmental friendly through specific know-how and techniques. Following that spirit, Rabot Dutilleul chose to support the Green Solutions Awards and in particular the sustainable renovation category.

Construction of buildings does have impacts: energy consumption, greenhouse gas emissions, decline of biodiversity, increase of toxic elements, etc. However, unlike in other sectors like fishery and air transport, solutions exist for most of the issues. We consider it would be a crime not to implement them.

What actions did you put in place regarding sustainable development/CSR?

Rabot Dutilleul structures its development on a strong environmental approach: design and construction of low carbon buildings (BCC), HQE certified projects, and CSR action plans. This approach allows the Group to renew its offer, while always watching its markets and environment.

Sustainable construction requires to manage energy efficiency in buildings. Rabot Dutilleul didn't wait to follow this approach, as many projects can testify. Its mission is to dare committing with benevolence and consistence, uniting, inspiring for all projects to be achieved and to flourish.

The Group deploys many processes, for example (but there are many others!) to push forward the eco-design in the energy industry, without ever losing sight that the best building is the one in which the occupants feel the best.

ABOUT

As an independent international family group in development and construction (France, Belgium, Germany, Poland), Rabot Dutilleul currently counts among the 10 biggest French actors in construction. Founded in 1920, the company developed skills in complementary sectors related to the construction world, hence gaining almost full control over the real estate chain of value. Rabot Dutilleul cultivates values based on collective performance with nearly 1,500 employees and on long-term relationships with its partners.
KTR, a German industrial group specialized in mechanical transmissions, wanted a building reflecting the image and the values of the company for its French headquarters: innovative and offering excellent work conditions for its employees, autonomous especially energy wise. The KTR group has already built very efficient buildings, but for the site of Dardilly, the refurbishment option was chosen. The construction manager oriented the project to aim for even more ambitious goals, with a more comprehensive eco-responsibility involving all employees.

As a result:

• The first positive energy renovation of a tertiary building, including all uses, with thermal energy and electricity storage;
• A reduced carbon footprint by using bio-based (hemp and cork) and recycled materials, but also by teaching the importance of life cycle analysis to the construction workers and artisans on the building site;
• Solar photovoltaic energy production allowing the building to absorb more CO2 than its own emissions (consumptions in all uses, regulatory and office automation);
• Working comfort is very appreciated as a result of an ergonomics study, the implementation of internal mobility for desks, controlled indoor air quality and the creation of recreation spaces (gym, break room, gardens).
Why is your company committed to fighting climate change?

The building sector is responsible for 40% of worldwide greenhouse gas emissions. For this reason, BNP Paribas Real Estate is committed to its stakeholders to integrate climate change issues into its own processes and activities.

Our ambition is to contribute to the development of sustainable cities, by offering products and services that are environmentally friendly, energy efficient and respectful of the health and well-being of its occupants.

We, BNP Paribas Real Estate, consider it is our responsibility to bring to actors of the real estate sector our vision for the future sustainable city. That is the reason why we support Construction21 and the Green Solutions Awards for the third year in a row.

What actions did you put in place regarding sustainable development/CSR?

We develop solutions in our different business areas to anticipate and face environmental challenges, but also to respond to the new demands and habits of our clients (whether they are investors, companies, individuals or local authorities). It allows us to play a key role in the urban transition.

As an example, 100% of the BNP Paribas Real Estate global business real estate production is environmentally certified. Beyond certifications, BNP Paribas Real Estate provides for the implementation, as part of the Ternes project, winner of the Call for innovative urban projects “Reinventing Paris”, of a connected energy system between offices and housings (smart grids), of a car sharing solution allowing electric vehicle pooling, and of urban garden terraces, among other solutions. The Arboretum programme was also unveiled: this new concept of ecological offices, located in Nanterre, will be the largest campus ever built in solid wood in the world.

ABOUT

European leader in real estate services, BNP Paribas Real Estate covers the entire life cycle of a property: Promotion, Investment Management, Property Management, Transaction, Consulting and Expertise. With more than 5,100 employees, BNP Paribas Real Estate locally advises owners, tenants, investors and local authorities in 36 countries (15 via its locations and 21 through its network of alliances) in Europe, the Middle East and Asia. In 2017, BNP Paribas Real Estate generated €811 million in revenue, and, continuing its growth, acquired Strutt & Parker, one of the UK’s leading independent real estate players. BNP Paribas Real Estate is a BNP Paribas Group company.
The construction of the Aulario building for University of Valladolid’s School of Industrial Engineering represents a great opportunity for research and improvement of technics already applied on net zero energy buildings of the campus. The building, while completely new, is already connected to the other buildings and installations of the campus, where a global refurbishment and sustainability intervention is being carried out. Aulario IndUVA aims for the GREEN GBCe, LEED and Well certifications.

The building hosts up to 2,500 students in 34 classrooms, for a total built surface of 5,845 m². It is located on a university campus with workshops, labs, residences, but also gardens, playgrounds and a parking lot.

Aulario IndUVA is also a field of experimentation: on natural lighting by using optic fiber, on phase changing materials implemented in strategic spots of the building, and on circular economy by using recycled construction materials.

Lastly, the project pays real attention to local biodiversity to preserve the gardens and facilitate the development of local species.

**Contractor:** Constructora San-José S.A.

**Designer:** Francisco Valbuena García

**Construction manager:** Constructora San-José S.A.

**Developer:** Universidad de Valladolid - Vicerrectorado de Patrimonio e Infraestructuras

**Consultancy agencies:** Torre de Comares Arquitectos S.L.P, Ana Jiménez / María de la O García, Cristina Gutiérrez Cid, Vega Ingeniería, José Emilio Nogués / Diego Tamayo, Cristina Cano Herreras

**Construction company:** REUQAV Ingenieros
Two questions to LOUIS ENGEL, Safety & Sustainable Development Director

Why is your company committed to fighting climate change?

The building energy consumption represents more than a third of the total consumption worldwide and is responsible for almost a quarter of the greenhouse gas emissions. We believe that all players in the construction chain must be mobilised for the fight against climate change and we have decided to play our part. For several years, we have taken an active role in improving the thermal efficiency of buildings by developing our External Insulation Finishing System (EIFS) offer.

What actions have you put in place regarding sustainable development/CSR?

Our sustainable development programme BUILDING RESPONSIBLY is based on 4 commitments, to meet the environmental, social and societal challenges we face:

- **Innovating** continuously, to contribute to sustainable construction;
- **Reducing** our environmental footprint throughout the life cycle of our products;
- **Acting** for and with our employees;
- **Anchoring** our sites in their territory.

To go further in our commitment to fight climate change, we have deployed our Climate Program over the last two years.

At the end of 2018, we achieved the first part of our goals: measuring greenhouse gas emissions in all the countries where we operate; pursuing action plans with our suppliers and within our industrial units in order to reduce CO2 emissions; participating for 2 years in the planting of 55,000 trees to mitigate some emissions as part of 10 agroforestry projects supported by our partner PUR Project in the main countries where we are present.

This positive momentum encourages us to continue to reduce our emissions while contributing to the development of local communities. Our ambition is to integrate these sustainable development actions into all our activities in order to contribute to the growth of sustainable construction.

ABOUT

Major player in construction chemicals, PAREX is a world leader, specialist of dry mix, providing solutions for the building community and acting in 3 fields: facade protection and decoration, tile setting and flooring systems, waterproofing systems and technical solutions for concrete and civil engineering. We operate in 22 countries with 72 production sites and bring together 4,400 employees worldwide. Our ambition is to be the preferred partner on our markets and in the local economic and social structure around our sites.
Energy & Temperate Climates Winner

HOUSE OF ÎLE-DE-FRANCE

Zero Energy! Zero Carbon! Zero Nuclear Waste! Located in the International University Campus in Paris, the 5,000m² House of Ile-de-France is unprecedented in France. With its 100% solar energy strategy, this student residence features two giant tanks (150,000 liters of water) heated by solar panels, providing the whole building with hot water and heating all year long (through seasonal thermal storage). Photovoltaic panels on the roof produce electricity for all uses in the building (included in the regulation and non-included uses). The House of Ile-de-France already tackles the issues to be covered by the 2020 French building regulation.

With its 142 rooms and its triangular shape, the residence forms a large face to collect solar energy. The facade on the Parisian ring road is composed of 563m² of photovoltaic cells and 260m² of vacuum thermal solar panels associated with 156m³ seasonal storage system. This constitutes the signature of the House.

The storage tanks cover 80% of the thermal needs in winter, heating and hot water using the surplus of energy stored during the summer.

The House of Ile-de-France was born from a collaborative design between ANMA and DEERNS for the Region Ile-de-France, implementing such an innovative solar strategy for the first time in France.

**Paris, FRANCE**
**Student residence**

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**CLT multi-comfort office building**
**Office Building**
**Covasna, ROMANIA**

**Contractors:** Nizar Construction, Bavaria Ecosystem
**Designer:** Tecto Architettura
**Construction manager:** Tecto Architettura

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**The Towers of Bolueta**
**Collective Housing**
**Bilbao, SPAIN**

**Contractor:** Visesa
**Designer:** VArquitectos
**Construction manager:** Construcciones Sukia

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**MENTION**

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The building sector is the world’s main energy consumer. It is responsible for most of the greenhouse gas emissions, in particular in tropical areas. By 2060, two thirds of the world population will live in these regions and emissions could be multiplied by four because of the energy consumption related to an increased use of air conditioning. **Sustainable construction and the deployment of energy-efficient buildings in emerging and developing countries** is therefore a major lever to achieve the goals of the Paris Agreement.

Faced with this challenge, **we are convinced that improving skills among the building industry is critical.** In order to support the players of this sector, we conduct, with our public and private partners, **various training actions.** And, alongside with the Plan Bâtiment Durable, we have set up an online training platform: the **MOOC platform for Sustainable Buildings.**

The first session of the MOOC **“Sustainable buildings in humid tropical areas”,** that we launched in February-March 2018, was a **success with 500 trained professionals.** Also, a new session was conducted in the fall and **the contents will be translated in English** to expand to other priority countries. We are very happy to support once again the Green Solutions Awards. This contest aims to promote the existing best practices in the building industry, with a **category specifically dedicated to exemplary buildings under hot climates.**

**ABOUT**

ADEME participates in the implementation of public policies in the environment, energy and sustainable development fields. In order to enable progress in environment-friendly approaches, the Agency provides companies, local authorities, public agencies and the general public with expertise and advice. ADEME also funds projects from research to implementation, in all its areas of intervention.
The Wild South Media Library, on the Reunion Island, is based on a specific sustainability approach to the tropical and subtropical climates and interrogates contemporary architecture of the Reunion Island. The library creates a progression from public space to the intimacy, providing a true connection to the outside and blurring the limits with the inside of the building. In order to achieve that result, the project was oriented toward passive, but open building requiring no air conditioning thanks to complementary solutions:

- Over-insulation and protection against solar rays;
- Light wood façades to reduce the inertia of the walls;
- Natural ventilation with the addition of a low-pressure chimney;
- Greenroofs and planted exteriors to create a cool island effect;
- Maximal permeability for water management;
- Reused rainwater in bathrooms;
- Focus on the acoustic comfort of users, by multiplying sound absorption systems on walls and ceilings;
- Healthy materials and important natural ventilation air flow to ensure optimal indoor air quality.

Contractor: City of Saint-Joseph  
Construction manager: Co-Architectes  
Consultancy agencies: TRIBU, Gui Jourdan, Héliotropic + EFITEC, Intégrale Ingénierie  
Economist: ABTEC  
Landscaper: Adhoc
Why is your company committed to fighting climate change?

Since the foundation of the company, 50 years ago, we became aware of the conservation and respect of the environment. In the heart of the Hardt forest, in Alsace (France), our head office is surrounded by green areas that we strive to preserve.

Respect for the environment is one of Barrisol's priorities. Today, it is one of our main vectors to convey our company policy. Participating in the Green Solutions Awards enables us to assert that it is possible to combine tradition with innovation, technology and protection of our natural resources.

The Barrisol® system was imagined to use 20 times less raw materials than a standard product. All the Barrisol® sheets and profiles made of aluminium are 100% recyclable.

As a member of the English, Canadian and American Green Building Councils, Barrisol® started to commercialise the Barrisol Recycled® line in 2007. We combined innovation and respect for the environment: Recycled® sheets are manufactured from old Barrisol® sheets.

We use recyclable materials and encourage our partners and customers to join us in this endeavour.

What actions did you put in place regarding sustainable development/CSR?

We take different actions to preserve the planet, likes:
- Setting up a process to recycle old sheets,
- Recycling waste of sheets and aluminium profiles,
- Providing employees with carpool vehicles and shuttles,
- Setting up a waste collection system for recycling,
- Installing time switches and presence detectors to ensure proper management of our power consumption.

ABOUT

The Barrisol® Normalu® company, founded in 1967, is the world leader of stretch ceiling. It combines tradition, innovation, respect for the environment and technology to offer you the best walls and stretch ceilings. Our products are rated A+ (very low pollutant emissions), guaranteed phthalate free, arsenic free, cadmium free and mercury free, and conform to the highest European and international standards. They are also certified “French Origin Guarantee”. Barrisol® products are 100% recyclable. Our know-how was recognised in 2015 by the label “Living Heritage Company” (Entreprise du patrimoine vivant - a French government label), in 2014 by the Décibel d’Or, a prize received for our “Acoustic Light®”, and in 2017 by the Janus prize in industry for our “Barrisol® Clim” line of products.
The Beehive is a social experiment born from the will of the city of Bègles to have an exemplary participative project on its territory. After a 4-year human adventure, 11 families enjoy a collective residence with 7 housings and 4 contiguous houses built on the parcel of an old single house.

This first participative housing owes its success to the project team - who followed the project from the origin - and its very committed inhabitants, who participated also from the very beginning. Biweekly meetings and participative sessions on the construction site helped making the project grow and brought the group together around sharing values and knowledge.

The structure of the building, in concrete on the ground floor, supports the timber frame higher floors and attic. The timber frame is insulated with straw, wood fibers and cob (straw and raw earth), favoring bio-based materials. The calculated carbon footprint of this participative project demonstrates a lower environmental impact than a classical collective housing built under the current French thermal regulation: 22 tons of CO2 per housing in construction phase and 3 tons of CO2 per housing and per year of use. This low carbon performance and the high-level energy efficiency allows the Beehive to reach the Effinergie+ standard and the French experimental E+C- label for low carbon buildings.

The Beehive participative habitat carries the wish for transformed cities, for a human-sized urban village, to create differently and together housings of tomorrow.

Contractor: Axanis
Constructive manager: Dauphins Architecture
Consultancy agencies: 180 degrés ingénierie, Éco Etude
LANDSEA NEW MANSION

Shanghai, CHINA
Collective housing

The Landsea New Mansion project is located in the west suburbs of Shanghai and covers a 13,433m² area, with three 5-storey residential buildings. This project capitalizes on the construction manager’s years of experience in healthy and comfortable buildings, notably by following the approach of international standards.

In order to offer optimal living standards to the inhabitants, the Landsea New Mansion has been refurbished to find balance between health, comfort, energy savings, preservation of the environment and smart building.

Comfort and health in these three buildings are provided through innovative technologies: intelligent furniture, “Landleaf” formaldehyde control technology & “Ultra-Clean Fresh” air renewal technology.

For thermal comfort, the buildings fully use passive construction principles with envelope heat preservation system, super seal doors and windows, louver shadings, heat pump and a capillary radiation system.

Acoustic comfort was thoroughly worked on, by using vegetal screens and creating a ceramic facade absorbing noise pollution, and with solid sound insulation and seal doors for indoor acoustics.

With this comprehensive refurbishment, the Landsea New Mansion project becomes a revitalized low carbon residence meeting the current higher customer demand and leading the green residential model.

Contractor: Landsea Green Group Co., Ltd.
This passive house demonstrates that connected building can go hand in hand with sustainable housing. Beyond the work for a very efficient and eco-responsible envelope, the contractor wanted to install the EnOcean technology for its ecological values. The CLK witness house thus becomes an intelligent connected home.

This house’s intelligence is invisible, it warns and allows also to control the data, without spending any energy and with the least possible wave emissions. This technology requires less raw materials (no batteries, less cables) and facilitates great modularity: the house evolves with the needs of its inhabitants. EnOcean technology enables energy savings by managing overheating and room temperatures. The data collected by the system allows a better understanding of the inhabitants’ lifestyle.

Among the implemented features in the CLK passive witness house:

- **Energy savings:** temperature management, energy consumptions and production monitoring, smart shading, consistent lowering of blinds, systematic extinction of lights;
- **Security:** control of window and doors openings, simulation of presence, alarm;
- **Comfort:** central visualization and control of the entire electrical installation, timed lighting control, automatic shading, scene control, programmable positions for blinds and shutters;
- **Operability:** on PC with or without touch screen, on tablet and smartphone apps, remote control, voice commands.

**Technopole**
Office building
Grenoble, FRANCE

- **Contractor:** Schneider Electric
- **Designer:** Arche 5
- **Construction manager:** Arche 5
- **Developer:** GA Promotion
- **Consultancy agency:** Artelia

**Contractor:** CLK Constructions
**Designer:** Bureau d’Architecture Urbaine SARL
**Construction manager:** CLK Constructions
**Manufacturer:** rms.lu
The Tianjin eco-city stands in the new Tianjin Binhai area and covers a 30km² total area. In 2007, the Sino-Singaporean framework agreement included the integration of the eco-city into a "conservation of resources, environmental protection and social harmony" approach, to "become the model of sustainable development". Since its launch in 2008, and after 10 years of construction, 95% of the southern district has been built to accommodate 110,000 inhabitants.

In terms of quality of life, all residential areas have free sports and recreational facilities within a 500m range. Customized systems and services are also available to serve the maximum number of people in the same 500m radius: for example, hospitals, health centers, sports fields, popular arts with the preservation of regional culture and local services.

To favor economic development, the district will establish a platform for technological innovations and their applications in the areas of environmental protection, energy conservation and emissions reduction, green buildings and circular economy.

The Tianjin Eco-city is a demonstrator of ecological restoration and construction on saline-alkaline soil through its water resources management plan and advanced technologies for remediation of contaminated soil.

Biodiversity is a very important focus of the Tianjin Eco-city project: favoring local plant species, restoration and construction of bird habitats in the ecological succession areas of Parrot and Egret Islands and Yongding. The biodiversity plan allows the Tianjin Eco-city to foster 469 animal and plant varieties as of 2013, including 332 animals and 137 plants.

Project holder: Construction Bureau China-Singapore
Technical consultancy agency: Tianjin Eco-City

Sustainable City Grand Prize Winner
ECO-CITY SOUTHERN DISTRICT
SINO-SINGAPORE TIANJIN

Tianjin, CHINA
Urban sprawl

Eco-District Cœur de Ville-La Possession
Urban sprawl / La Possession, Reunion island, FRANCE

Project holder: City of La Possession
Construction manager: Leu Réunion
Developer: Semader
Investor: Real Estate Cœur de Ville

Pasapas
Urban reconversion
Barcelona, SPAIN

Project holder: Sant Cugat City Council
Association of residents: Asociación espacio eco Les Planes

Mention
Mention

Green Solutions Awards
Beyond representing up to 40% of a city’s energy budget, lighting is also a way to improve its safety and aesthetics. Produced by Citelum, the EDF Group’s intelligent lighting subsidiary and related connected service, the renovation of the Copenhagen public lighting is the largest public lighting project in the capital.

The work carried out is in line with the city’s goals of achieving carbon neutrality by 2025 by reducing energy expenditure, improving the safety of residents, improving mobility, increasing local identity and its attractiveness.

In 3 years, 18,800 light points, half of Copenhagen’s lighting park, have been replaced by LED luminaires. Consumption monitoring, maintenance and interventions planning over the next 9 years and communication with the city services are based on the MUSE® digital platform.

The project also helped to establish a city-wide communication network to adjust lighting levels according to Copenhagen areas, traffic and identified needs. For example, the intensity of lighting has been increased on the roads to make users, especially pedestrians and cyclists, more visible.

In addition, the new lighting network offers many opportunities to connect new services in the future: video protection cameras, noise and air quality sensors can further improve the safety and quality of life of citizens and transform Copenhagen into a real “Smart City”.

Project holder: City of Copenhagen (Københavns Kommune)
Builder: Citelum
INTERNATIONAL JURIES

President of the Grand Prizes jury
SUSTAINABLE RENOVATION & SUSTAINABLE CONSTRUCTION

MAJIDA EL OUARDIRHI
Ministry of National Planning, Urban Planning, Housing and City Policy
Global Alliance for Buildings & Construction (GABC)

Jurors

CÉDRIC ANBERGEN
BSolutions

FERRAN BERMEJO
Catalonia Institute of Construction Technology (ItECC)

FRANCESCO DE FALCO
Independent Engineer

PHILIPPE MADEC
Philippe Madec Architect Workshop

YORK OSTERMEYER
Chalmers / Climate-KIC

JUN WANG
China Academy of Building Research (CABR)

President of the Grand Prize jury
SUSTAINABLE CITY

MAITA FERNANDEZ-ARMESTO
UNHabitat

Jurors

NATHALIE ABRASSART
University of Mons
St.Ar.Tech Management Group

YOUSEF DIAB
École des Ingénieurs de la Ville de Paris (EIVP)

LUCIENNE KROSSE
InnoEnergy

XUN LI
China Academy of Urban Planning and Design (CAUPD)

President of the Grand Prize jury
SUSTAINABLE INFRASTRUCTURE

NANCY THOMAS
Inspiring More Sustainability Luxembourg (IMS Lux)

Jurors

DAVID ALBERTANI
R20 - Regions of Climate Action

JOSE ANTONIO TENORIO
Eduardo Torroja Institute of Construction Science (IETcc)
Spanish National Research Council (CSIC)

OLIVIER ORTEGA
LexCity avocats

President of the jury
LOW CARBON
HEALTH & COMFORT
SMART BUILDING

MIRIAM BADINO
ICLEI
Global Alliance for Buildings & Construction (GABC)

Jurors

ARTURO ALARCÓN
Spanish Institute of Cement and its Applications (IECA)

MARCO D’EGIDIO
Independent Engineer

PETE WALKER
University of Bath

QINGQIN WANG
China Academy of Building Research (CABR)

President of the jury
ENERGY / TEMPERATE & HOT CLIMATES

OLIVER RAPF
Buildings Performance Institute Europe (BPIE)
Global Alliance for Buildings & Construction (GABC)

Jurors

MOHAMMED AHACHAD
Cluster EMC/Faculty of Science and Techniques of Tangier

FLORIN ANDRONESCU
Alba Local Energy Agency (ALEA)

JEAN-MARIE HAUGLUSTAINE
University of Liège

ZHIBING MAO
China Construction Group Co.,Ltd

BRAHMANAND MOHANTY
Asian Institute of technology / ADEME

ARLIN MORALES
Green Planet Architects

ANTOINE PERRAU
Antoine Perrau architectures (APA)
NATIONAL JURIES

### Belgium
- Nathalie ABRASSART - University of Mons / St.ArTech Management Group
- Aymé ARGELÈS - Confédération Construction Wallonie (CCW)

### China
- Deci DAI - Architectural Design and Research Institute of Tsinghua University
- Xun LI - China Academy of Urban Planning and Design (CAUPD)
- Yanhui LIU - China Architecture Design Group

### France
- Alexandre ARÈNE - J3E
- Nathalie AUBURTIN - Cadre de Ville
- Anne-Gaëlle BAPTISTE - City of Paris
- Benoît BLANCHARD - Aérodynamique Eiffel / CSTB
- Nicolas BOFFI - Arcadis
- Cédric BOREL - French Institute for Building Efficiency (IFPEB)
- Morgane COLOMBERT - École des Ingénieurs de la Ville de Paris (EIVP)
- François DANIC - EVEA Conseil
- Marie DARUL - CD2E
- Sonia DELOUCHE - Atelier A3
- Alain DUBRUILLE - Sustainable construction consultant
- Christophe DUMAS - Sogeprom
- Julie FERNANDEZ - National Council of Architects (CNOA)
- Pascal GANTET - National Institute of Solar Energy (INES)
- Cristina GARCEZ - Scientific and Technical Center for Building (CSTB)
- Cécile HANIER - Association Les Écomaires
- Mathilde HENRY - Greenflex
- Philippe HERBULOT - AICVF / NEPSEN
- Périne HUGUET - Atelier I3
- Franck JANIN - Heliasol / French Network for Straw

### Italy
- Francesco DE FALCO - Independent Engineer

### Luxembourg
- Julien L'HOEST - Énergie et Environnement S.A.
- Alexis SIKORA - Institut de Formation Sectoriel du Bâtiment (IFSB)

### Morocco
- Mohammed AHACHAD - Cluster EMC/Faculty of Sciences and Techniques of Tangier
- Mohamed BERRADA - Cluster EMC/Architec ARPIO

### Spain
- Arturo ALARCÓN - Spanish Institute of Cement and its Applications (IECA)
- Teresa BATLLE - Picharchitects/Pich-Aguilera
- Ferran BERMEJO - Catalonia Institute of Construction Technology (ITEc)
- Maïta FERNANDEZ-ARMESTO SANCHEZ - UNHabitat
- Patxi HERNANDEZ - TECNALIA Research & Innovation
- Ignasi PEREZ ARNAL - WITS Institute / Alghero School of Architecture
- Paula RIVAS HESSE - Spanish Green Building Council (GBCe)
- Bruno SAUER - Spanish Green Building Council (GBCe)
- Josep SOLÉ BONET - URSA Insulation, S.A.
- Jose Antonio TENERIO RIOS - Institute of Construction Science (IETcc) / Spanish National Research Council (CSIC)
- Gerardo WADEL - Spanish Green Building Council (GBCe)
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Régis LE CORRE
External relations and Partnership Development Manager
Higher College for the Real Estate Professions (ESPI)

“

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Laëtitia YÉ
Project manager, Energy Environment and College for jobs division
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