THORN
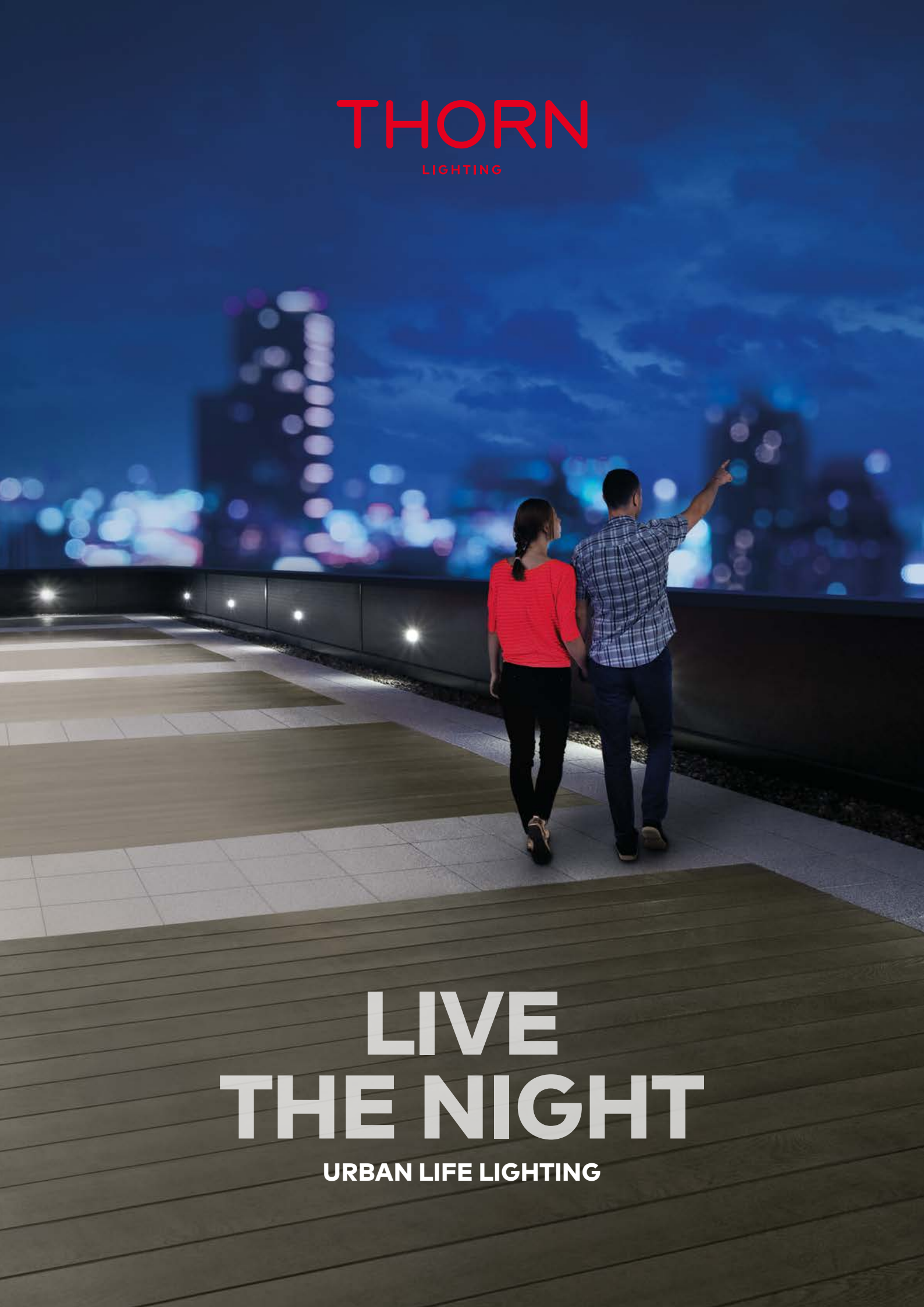LIGHTING

LIVE THE NIGHT

URBAN LIFE LIGHTING

BETTER LIGHT BETTER LIFE

LIVE
THE NIGHT

Urban lighting is about respecting the feel of the city by day, and inspiring people to explore and enjoy it at night. Whether it's a welcoming public plaza, a thoughtfully lit landmark facade or streetlights that show the way clearly and comfortably, Thorn lighting solutions define and open up urban spaces after dark, providing the right light for people, places and the environment.

The following guide provides an overview of key aspects to consider when planning and designing a lighting installation for urban spaces with careful design, quality lighting and future-proof solutions.
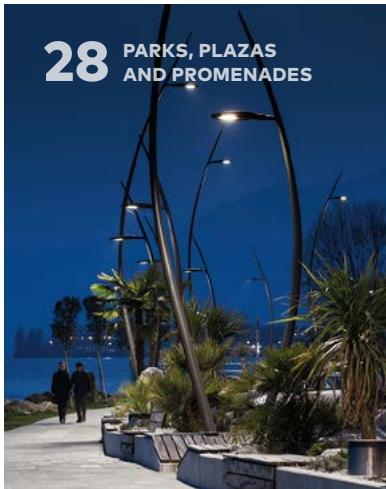
INSIDE

SET THE CITY FREE

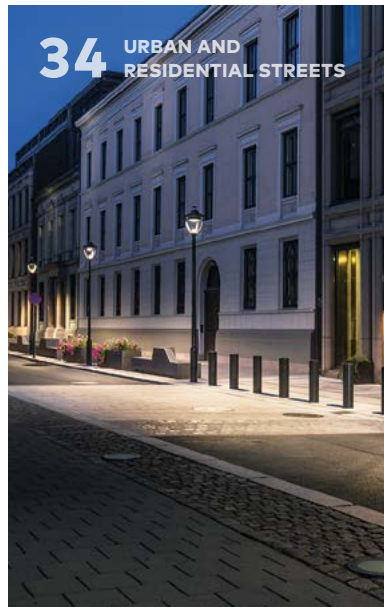**The right light can transform how cities feel after dark,
setting people free to explore.**

**Appropriate lighting designs are crucial – for safely guiding people to
their destinations, highlighting buildings and places, also for reducing
costs and protecting the environment.**

LIGHT
FOR PEOPLE

Light should provide clear, low-glare illumination for pedestrians, drivers and cyclists. Light can give people the safety and confidence to explore the city after dark, and create new night-time experiences.

LIGHT
FOR PLACES

Lighting should be ready to adapt to the full variety of outdoor situations. With the right balance of horizontal and vertical illumination, as well as the possibility of colour, scene creation and dynamic effects, light can reinvent the identity of a space.

LIGHT FOR THE
ENVIRONMENT

Light has a big impact on the nocturnal ecosystem. It should not only avoid disturbing nature and the night sky, but should also be energy-efficient, to save resources and support sustainability. Careful control of the luminous flux makes sure light is only used when and where it is needed.

LAYERS OF OUTDOOR LIGHTING

A complete Outdoor Lighting solution is composed of layers
which are combined and fine-tuned to meet the needs of people,
places and the environment.

FUNCTIONAL LIGHTING
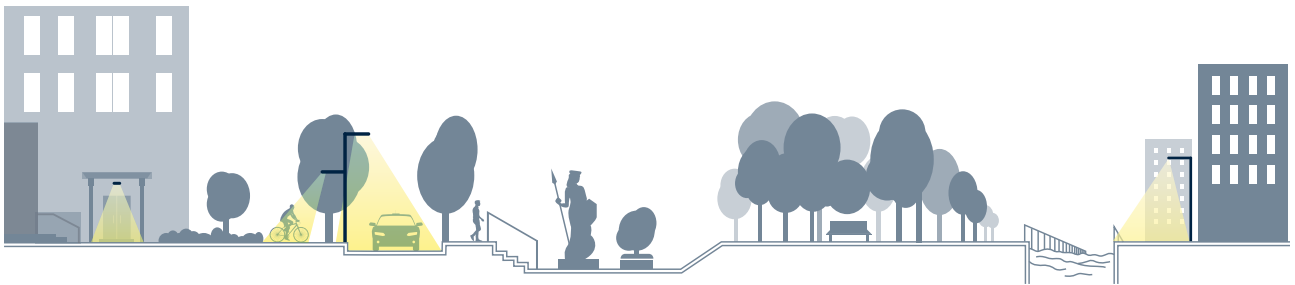
URBAN LIGHTING

ARCHITECTURAL LIGHTING

Focused functional lighting supports people's visual performance, especially in demanding or critical activities. Fulfilling lighting requirements ensures safety and guidance.
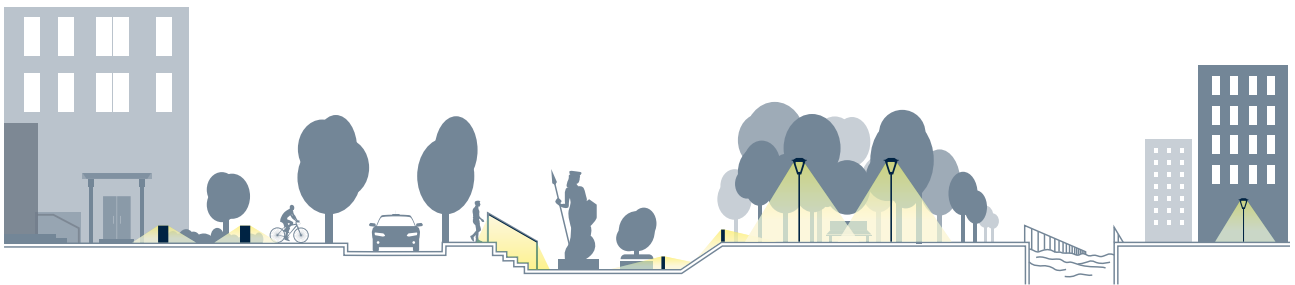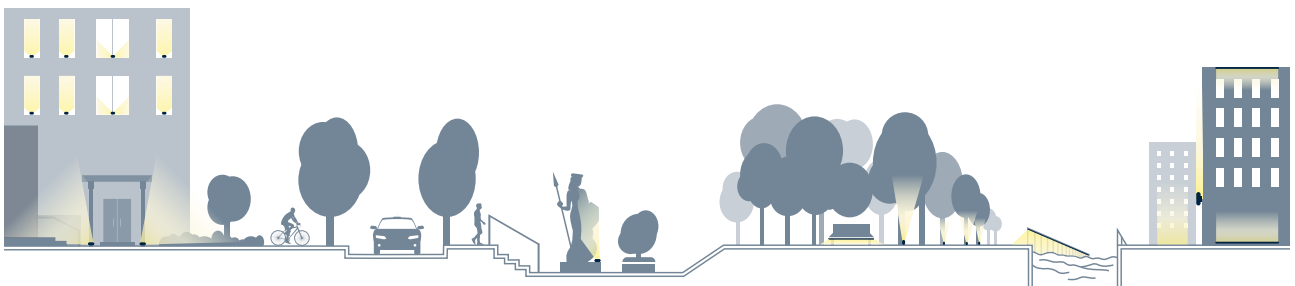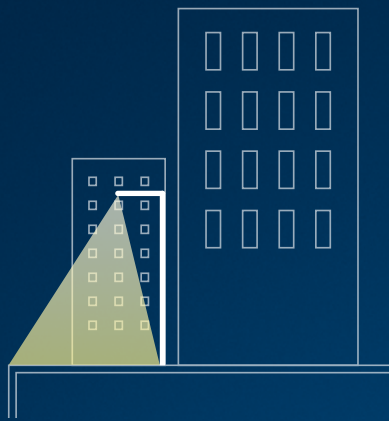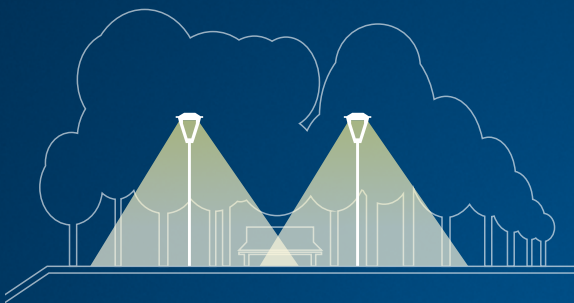
The functional lighting layer is usually delivered by luminaires designed specifically to satisfy precise tasks and functions, respecting lighting norms. Their key features are high performance and ease of installation and maintenance.

Urban lighting supports people's wellbeing in urban areas, with a high level of comfort and full integration with the aesthetical language of the space. At the same time it provides safety and increases the liveability of the urban surroundings.

Generally urban lighting is provided by decorative luminaires integrated in environments with high aesthetic needs both by day and by night. Key features are low-glare, good uniformity and aesthetic quality.
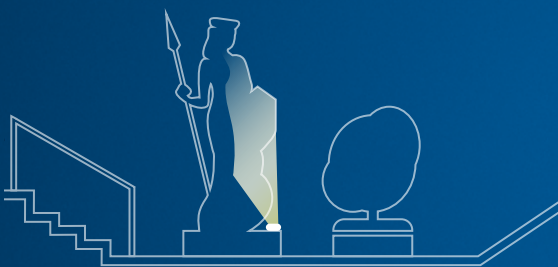
Architectural lighting supports people's perception of a space. It provides orientation points and landmarks within a city but also enhances and revitalises social interactions. Creatively it can make a building speak, and reveal architectural details for a unique outdoor experience.

Luminaires in this group focus on the perception of materials, architectural details, objects shape and spaces. Their key features are high mechanical and optical flexibility, variety of mounting options, controllability, minimalistic forms and aesthetic quality.

01

Facades,
Monuments
and Bridges

Reveal the night-time
character of landmark
exteriors

04

Urban and
Residential Streets

Comfort, safety and style for
city streets

URBAN
LIFE
LIGHTING

Thorn offers a wide range of long-lasting, futureproof solutions
that provide the right light for people, places and the environ-
ment. Our solutions are backed up by expert advice, dedicated
after-sales service and ongoing support.

02
Building surrounds
Define and open up
urban spaces after dark

03
Parks, Plazas
and Promenades
Create stunning spaces for
people to share

05
Parking
Efficient, sharp lighting
that guides the way
for drivers

FACA

MONUMENTS AND BRIDGES

UNFORGETTABLE LANDMARKS,
ILLUMINATED BY THORN

CASTELLO CECONI DI PIELUNGO, VITO D. ASIO, ITALY

ILLUMINATION BRINGS LANDMARKS TO LIFE, WITH CHARACTER AND CREATIVITY

ARCO DELLA PACE, MILAN, ITALY

Architecture makes our cities what they are – and its impact doesn't have to be lost at night. The latest lighting technology allows facades, monuments and bridges to take on a new character after dark and become even more dramatic. Powerful, precise, low-energy fittings and smart controls can reveal structures in ways they've never been seen before, revitalising well-known landmarks and redefining urban spaces.
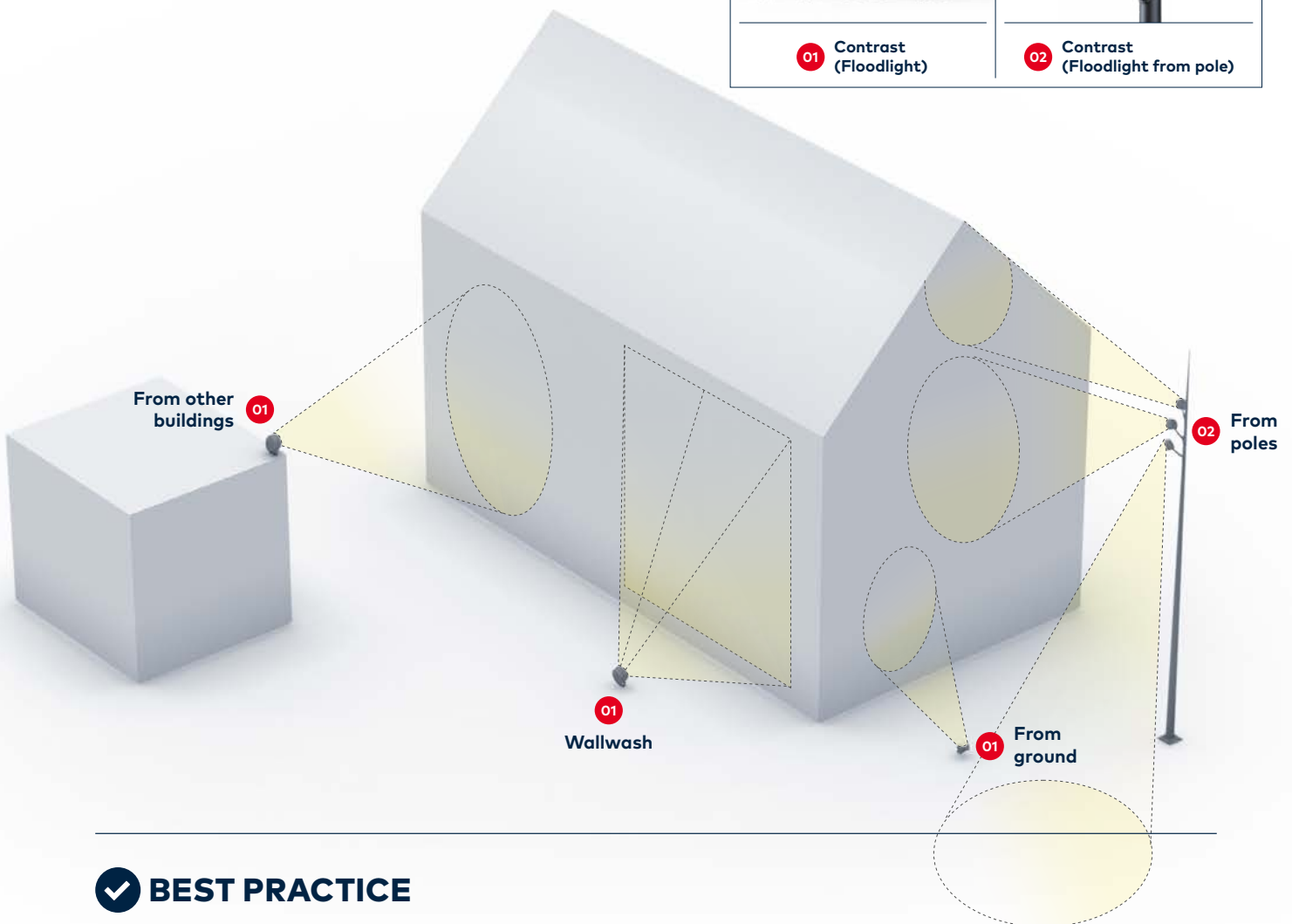
GYMNASE LA FARE-LES-OLIVIERS, FRANCE

KEY LIGHTING TECHNIQUES

01 PROJECTING
Powerful luminaires can illuminate vertical or horizontal surfaces from a distance.

PRODUCTS

01 Contrast
(Floodlight)

02 Contrast
(Floodlight from pole)

01 From other buildings

02 From poles

01 Wallwash

01 From ground

✓ BEST PRACTICE

1. CONTEXT
Contextualise the building and facade before starting the design concept.

2. FLEXIBILITY
Consider using different optic options to cover different architectural situations.

3. INSTALLATION
Analyse the building facade to make sure you use the right installation option.

4. GLARE
Control the intensity and direction of light to minimise unwanted illumination and glare.

5. MATERIALS
Consider the properties of the surface material. The final visual result will be based on luminance values.

6. LUMINANCE CONTRAST
Check the luminous environment and balance the luminance contrast.

02 GRAZING

One of the most effective outdoor lighting techniques: illuminating a surface at an angle from close by can create a dramatic effect.

Wall grazing
08

03
Recessed linear

04
Recessed point source

05

Up-down light
06

07 Flat Beam® grazing

PRODUCTS

03 Satin 2 Recessed	**04** E/Fact	**05** Mica	**06** Cesar

07 Raze Surface-mounted Small	**08** Raze Wall-mounted Large

03 DETAILING

Accent lighting can bring out architectural details, adding depth and character.

Spotlight on building 02

01 **Window framing**

03 **Accentuation**

04 **Backlighting**

PRODUCTS

| 01 Vioo | 02 D-CO | 03 Contrast (Floodlight) | 04 Satin 2 |

04 USE OF COLOUR

A splash of colour immediately transforms the appearance of any structure at night-time.

05 Detailing the tension cables

03 Projecting underneath

05 Grazing pillars

PRODUCTS

05 Contrast (Floodlight)
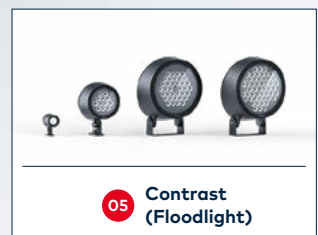
BUILD
SURROUNDS

ILLUMINATION THAT BALANCES
STYLE AND SAFETY IN THE SPACE
AROUND YOUR BUILDING

DING

MAKE URBAN SPACES AS SAFE AND WELCOMING BY NIGHT AS THEY ARE BY DAY
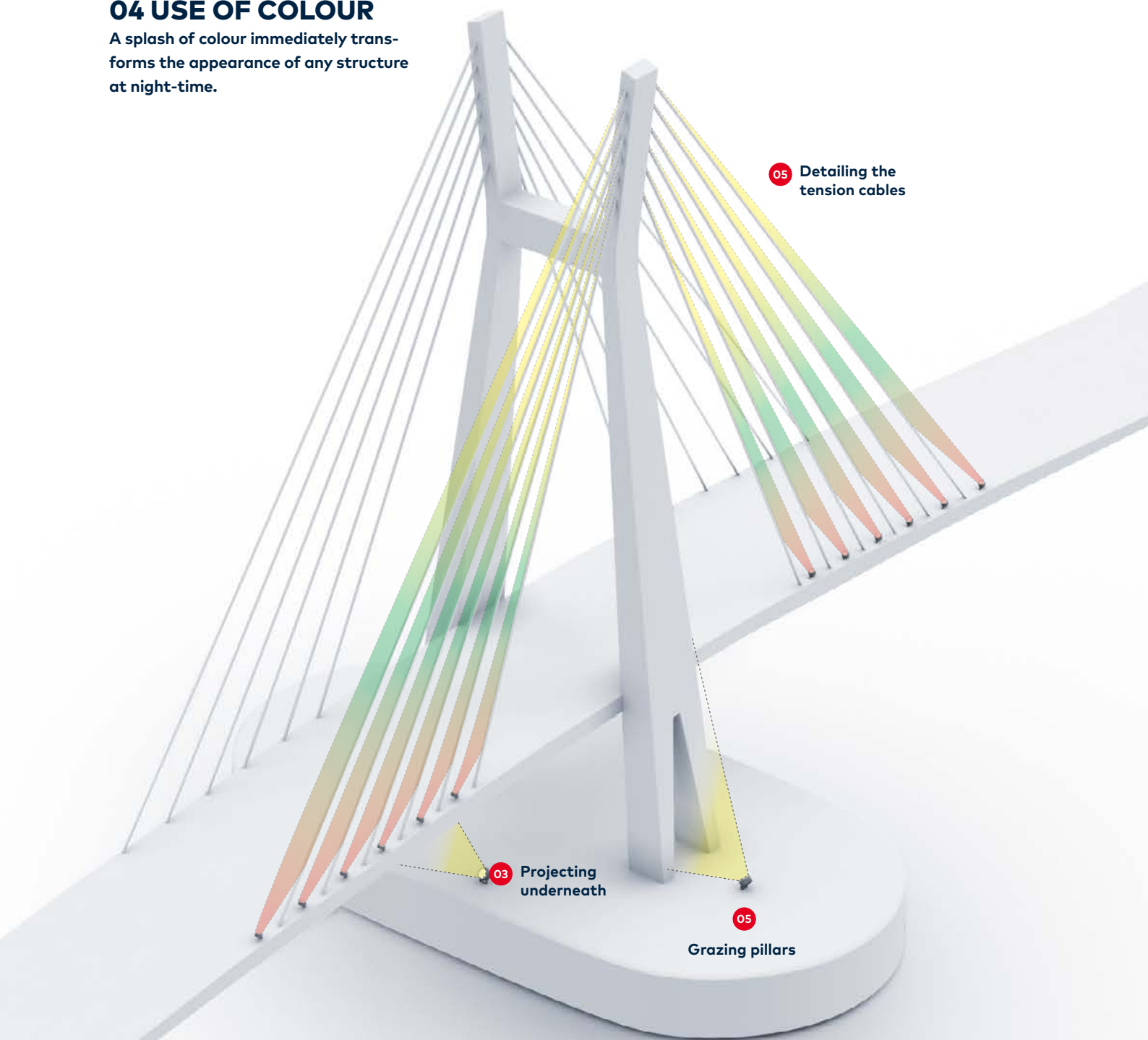
SEICHEBRIÈRES, FRANCE

Landscaped areas around buildings are not only functional, they are also decorative. And there's no reason they can't be just as beautiful after dark. Lanterns, bollards, and even lights built into hand-rails or into the ground can keep these important parts of the cityscape safe and inviting, while helping to lift the appearance of building exteriors at night.

LINCOLN BOOLE UNIVERSITY, UK

KEY LIGHTING TECHNIQUES

01 DETAILING

A little light makes a big difference to the feel of the area around a building at night.

PRODUCTS

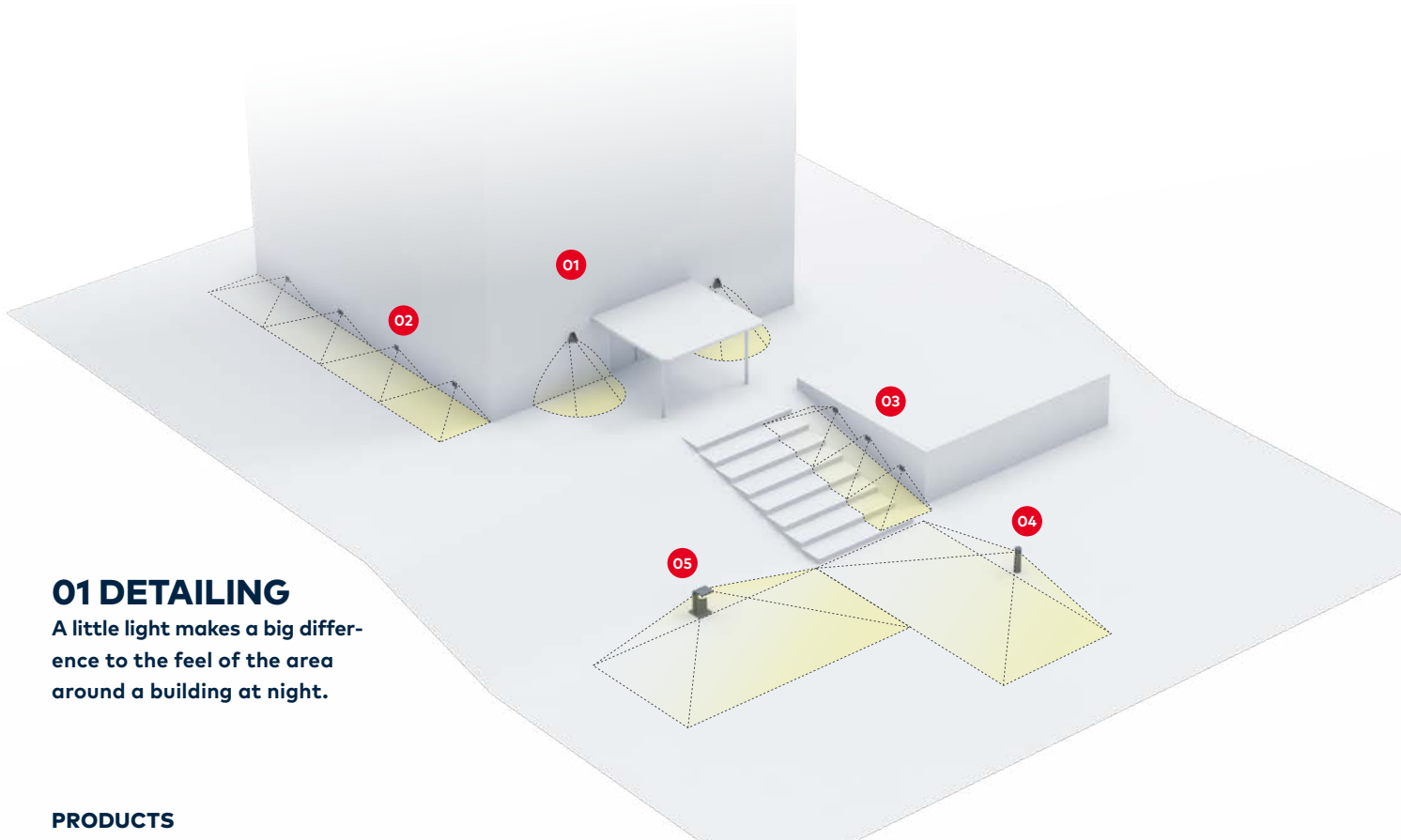|				
01 Piazza II	**02** Jalon	**03** Linn	**04** Urba Bollard	**05** Raze Bollard

✓ BEST PRACTICE

1. VISUAL COMFORT
Avoid glare and high luminance contrast in the near visual field.

2. CONSISTENCY
Using luminaires with a consistent aesthetic language will help fit in with the architectural language.

3. COLOUR TEMPERATURE
Use the right light colour temperature to create a pleasant atmosphere.

4. ORIENTATION
Provide focal points to better orientate people around the building.

5. CONTROL
Switch or dim lights to provide the right illumination at the right time.

6. SAFETY
Clearly mark potential obstacles to provide a safe environment.

02 WELCOMING

Light is the perfect way to make visitors feel comfortable and welcome, and guide them safely to and from the building entrance.

PRODUCTS

06 Urba	**07** Cesar	**08** Eyekon	**09** Similo	**10** Raze	**11** Olsys

03 CREATING DRAMA

A little contrast and creativity go a long way to making the space around a building distinctive and dramatic.
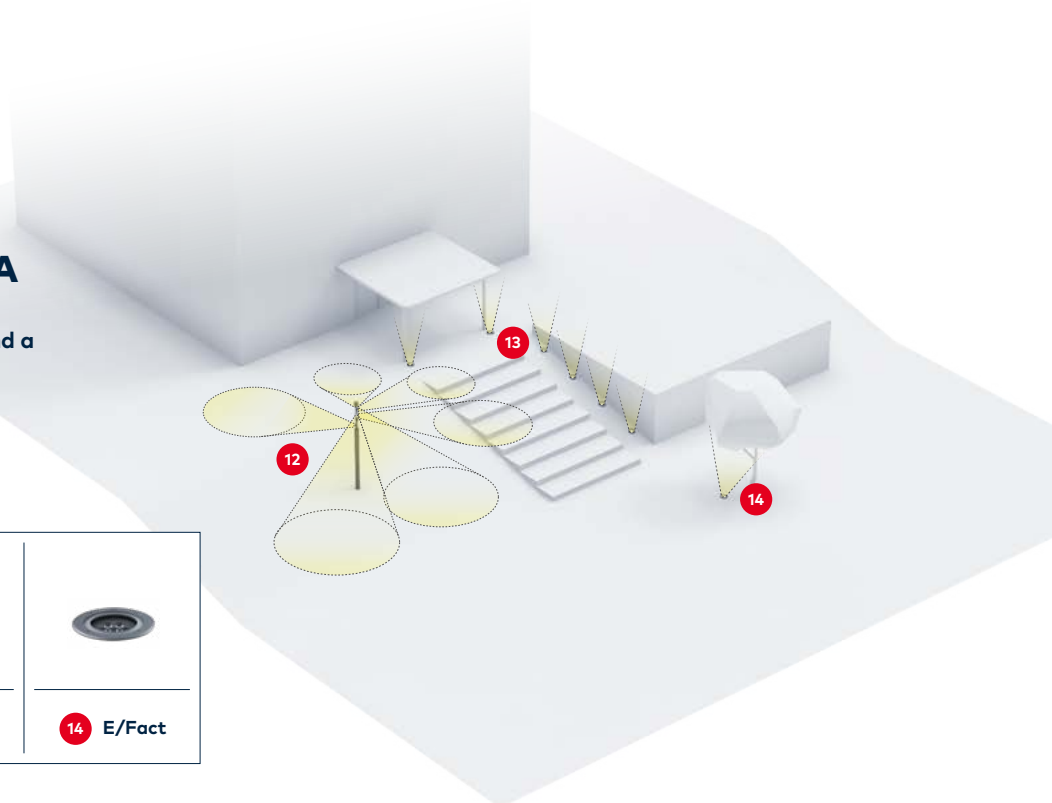
PRODUCTS

12 Alumet Stage II	**13** D-CO Recessed	**14** E/Fact

PAR

PLAZAS
AND PROMENADES

GREAT ILLUMINATION HELPS TO
KEEP OPEN SPACES OPEN AT NIGHT

BRING DEFINITION AND CHARACTER TO KEY PUBLIC SPACES

PLAZA KONTXA ETXEBERRIA, SAN SEBASTIÁN, SPAIN

Spaces dedicated to bringing people together, deserve to be lit to best effect. Lighting can help to define these spaces at night, encouraging people to use them, and giving a feeling of safety. Even by day, the best fittings enhance the space with their design. Lighting solutions must balance performance with energy savings, and use smart controls to make sure light is only deployed when and where it is needed. The more people are able to enjoy the outdoors, the healthier our cities become.
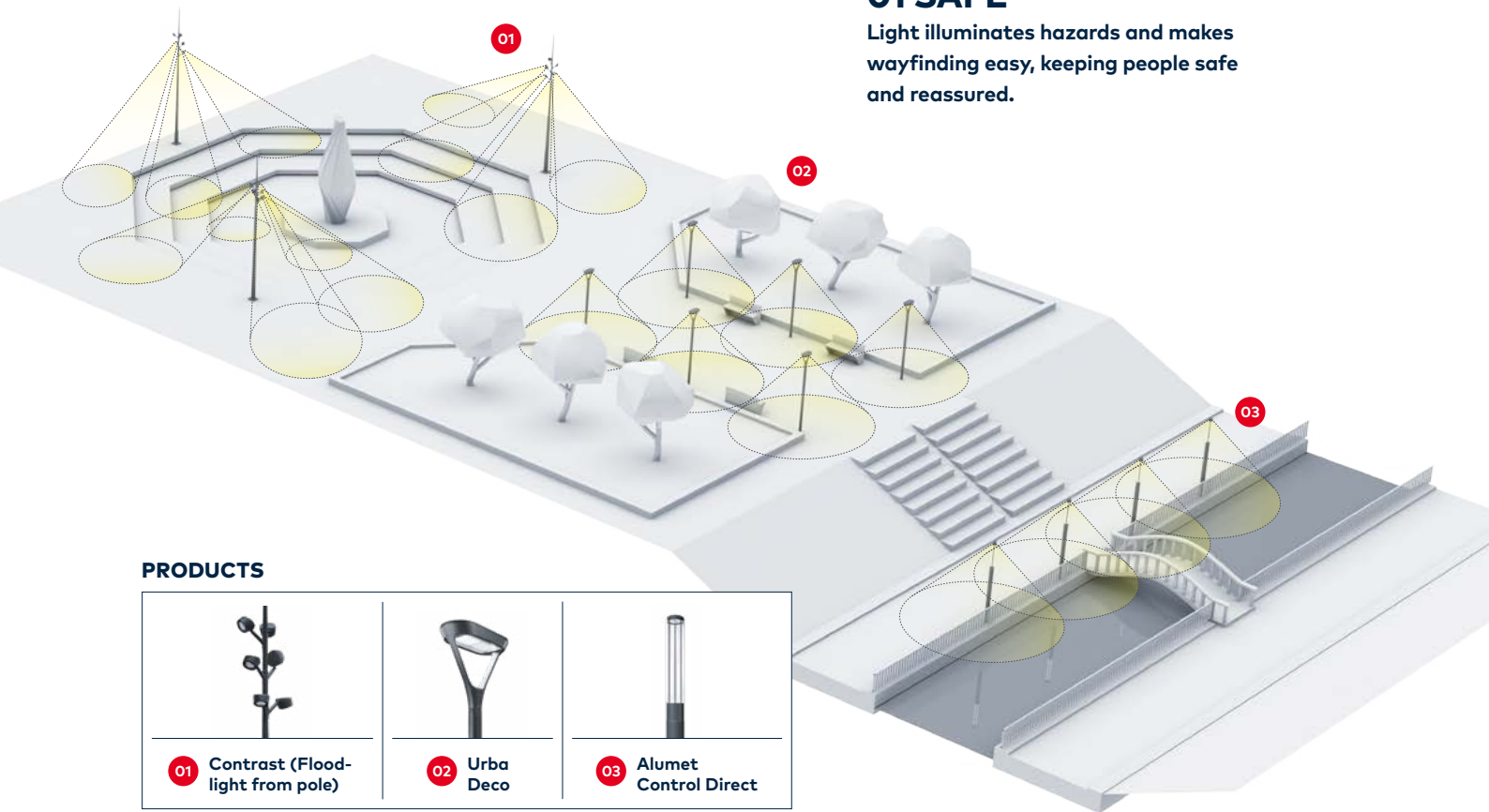
PROMENADE IN KLAGENFURT, AUSTRIA

KEY LIGHTING TECHNIQUES

01 SAFE

Light illuminates hazards and makes wayfinding easy, keeping people safe and reassured.

PRODUCTS

01 Contrast (Flood-light from pole)	**02** Urba Deco	**03** Alumet Control Direct

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✓ BEST PRACTICE

1. 3D PERCEPTION
Balance horizontal and vertical illumination for better orientation and visual comfort, always taking into account the context.

2. SAFETY
Highlight potential obstacles and integrate light within the architecture.

3. COLOUR
Don't be scared to subtly use coloured light.
These are places to socialise and to experience the night – and the light!

4. LANDMARK
Provide focal points to orientate people through the space.

5. CONTROL
Control the lighting system around people activities during the nighttime. Consider seasons and behaviours.

6. ECO-SUSTAINABILITY
Preserve the nocturnal ecosystem directing the light when and where it is needed and with the right quantity.

02 SUBTLE

Understated, carefully considered illumination provides enough light while maintaining a sophisticated feel.
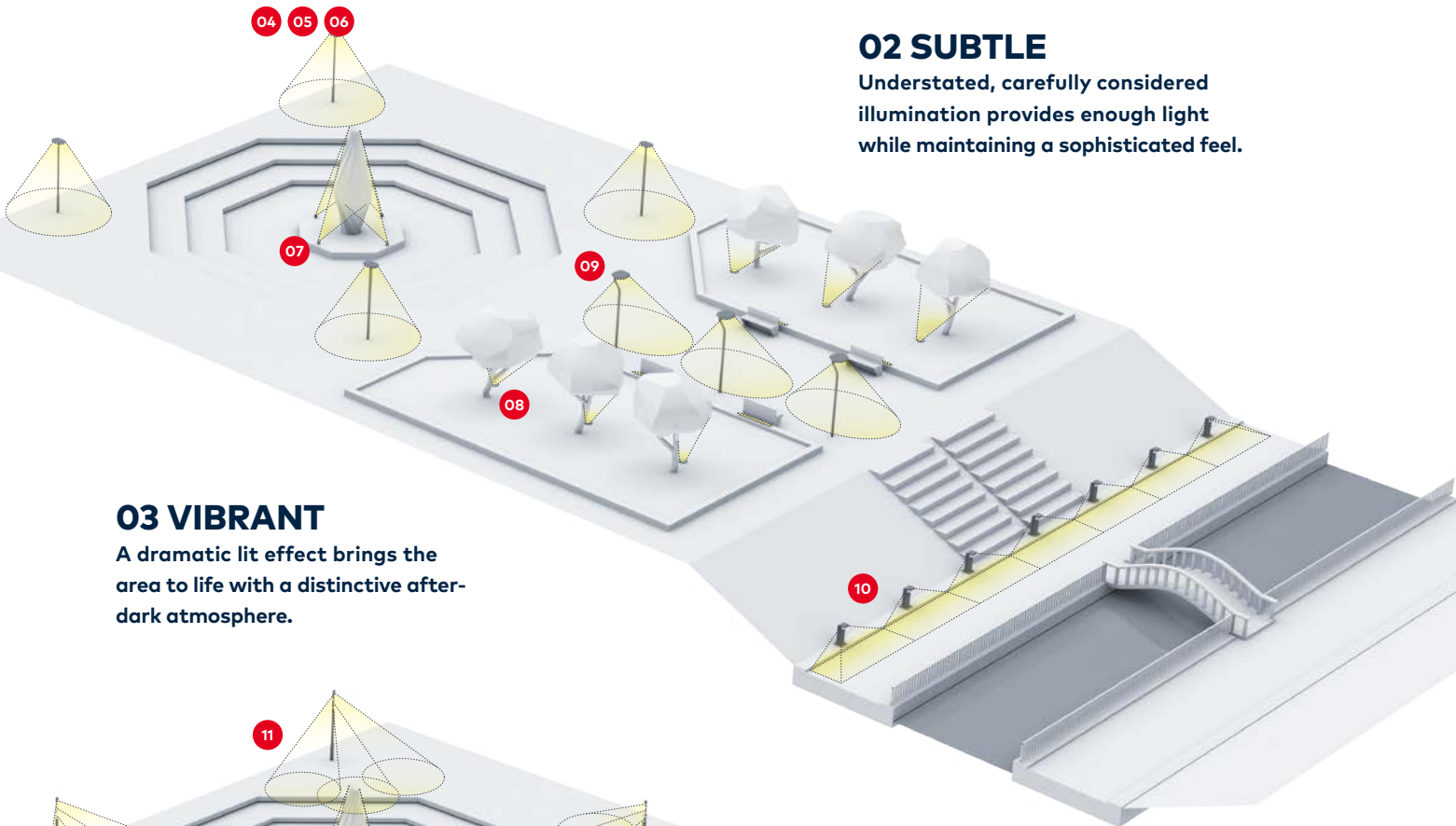
03 VIBRANT

A dramatic lit effect brings the area to life with a distinctive after-dark atmosphere.

PRODUCTS

04 FleXity	05 Volupto	06 Aerie	07 Contrast (Floodlight)	08 Mica
09 Flow	**10 Raze Bollard**	**11 Alumet Stage II**	**12 Thor Bollard**	

URBAN AND RE

STR

KEEPING THE CITY
MOVING SAFELY AT NIGHT

SIDENTIAL
HITS

COMFORT, SAFETY AND STYLE FOR CITY STREETS

CITY OF COPENHAGEN, DENMARK

Safety will always be the foremost concern when lighting streets. This means clear light with minimal glare so all road users can see each other and move around safely. Our solutions achieve this with low energy consumption and minimal spill of light to other areas, while contributing to creating pleasant urban spaces.
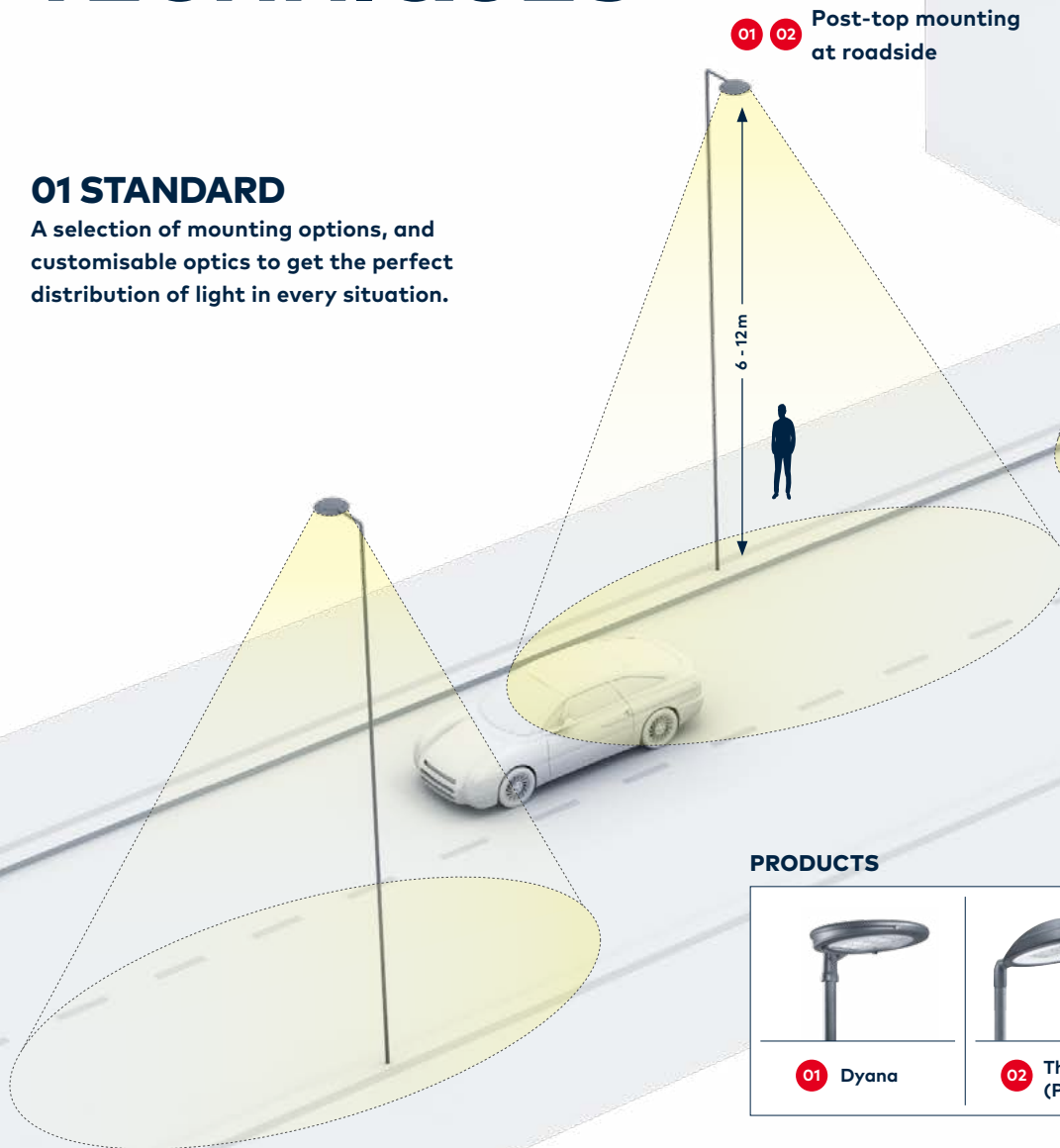
AVENIDA NAFARROA, SAN SEBASTIAN, SPAIN

KEY LIGHTING TECHNIQUES

01 STANDARD

A selection of mounting options, and customisable optics to get the perfect distribution of light in every situation.

Lateral mounting at roadside
03

Post-top mounting at roadside
01 02

6 - 12 m

PRODUCTS

01 **Dyana**

02 **Thor (Post top)**

03 **Flow (Lateral)**

✔ BEST PRACTICE

1. THINK NIGHT AND DAY
Consider both daytime and nighttime aesthetic.

2. CONSIDER LOAD ON COLUMNS
Additional street furniture like banners may cause weight problems with columns and increase the windage loading.

3. CHOOSE THE RIGHT HEIGHT
Double-headed luminaires can be used at different heights to light roads and footpaths.

4. DEFINE DIFFERENT AREAS
Conflict areas, such as junctions, can be reinforced by the use of different lamp colours to distinguish a change of road classification or area definition.
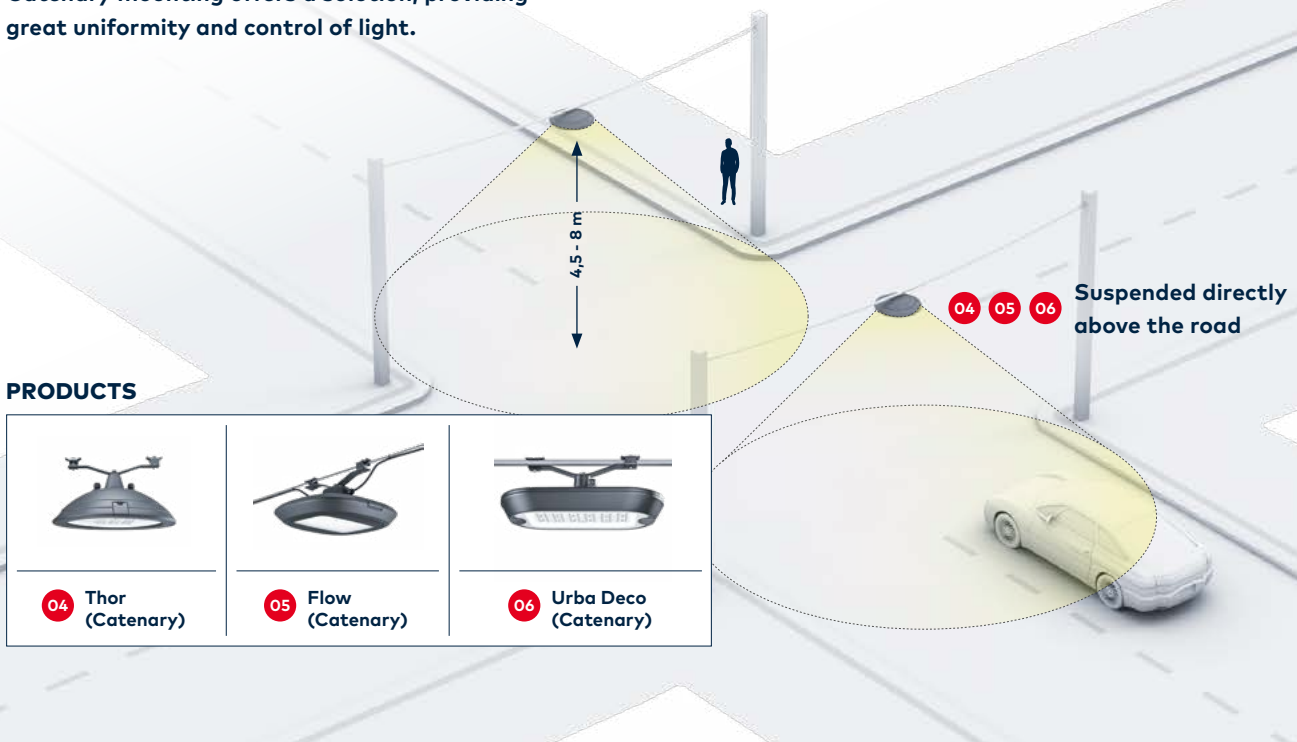
5. USE CONTROLS
Use lighting controls to reduce power consumption, increase lifetime of installation and optimise maintenance operations.

6. SHOW COLOURS CLEARLY
Improve visual perception by providing good colour rendering conditions for road users and residents.

02 CATENARY MOUNTING

Narrow city streets and historic areas can't always accommodate lighting poles. Catenary mounting offers a solution, providing great uniformity and control of light.

4,5 - 8 m

04 **05** **06** Suspended directly above the road

PRODUCTS

04 Thor (Catenary)	**05** Flow (Catenary)	**06** Urba Deco (Catenary)

03 DECORATIVE

Add visual interest to a space, highlight particular features, or create light that fits with the existing architecture and style.

Accents, framing and ambience

08 **09**

4,5 - 6 m

07 **09**
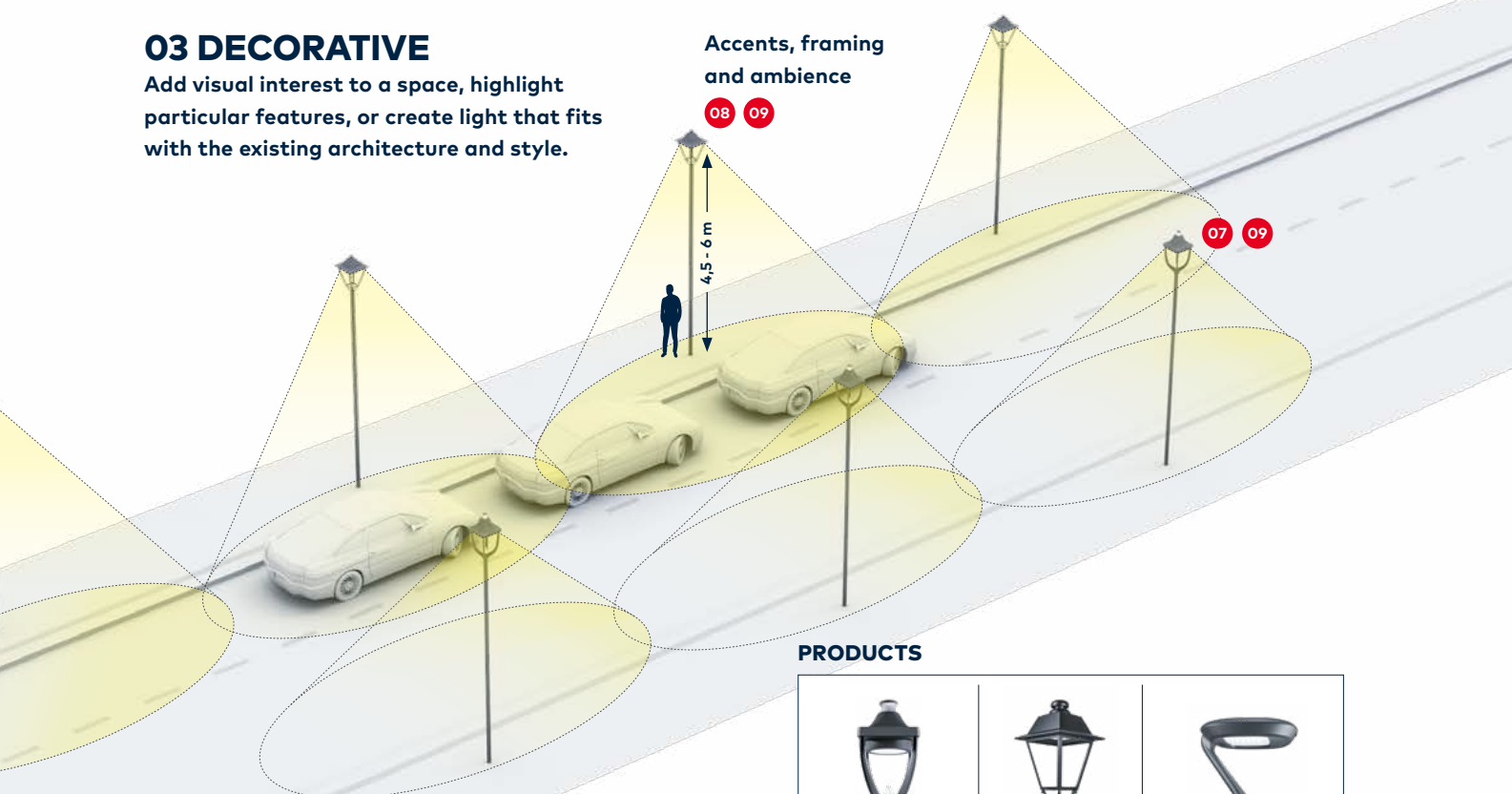
PRODUCTS

07 Legend	**08** EP445	**09** Flow (Amenity)

PARK

THE BEST LIGHT AND CONTROLS TO
KEEP DRIVERS AND PEDESTRIANS
SAFE AND COMFORTABLE

KING

SMART, EFFICIENT LIGHTING THAT GUIDES THE WAY FOR DRIVERS

ZUMTOBEL GROUP HEADQUARTERS CAR PARK, DORNBIRN, AUSTRIA

With vehicles and pedestrians moving among each other, it's vital that car park lighting is clear and safe. It's also one of the applications where there are significant opportunities to reduce energy consumption and to use the latest technology to unlock new benefits. Smart controls can dim or turn lights off when no one is there, while guiding the way safely when vehicles or pedestrians enter, and even helping drivers find spaces.

BAUHAUS CAR PARK, CZECH REPUBLIC

KEY LIGHTING TECHNIQUES
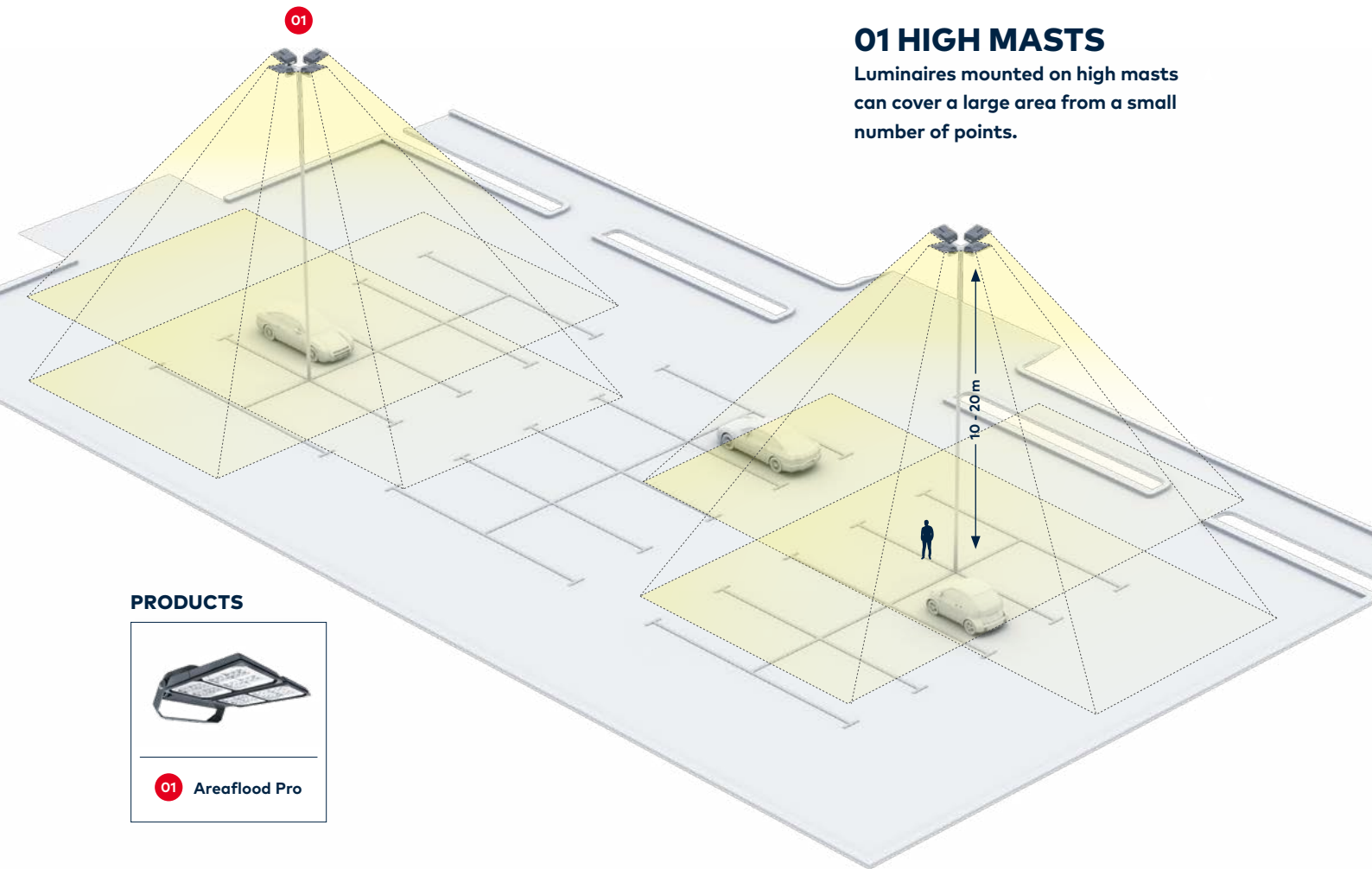
01 HIGH MASTS

Luminaires mounted on high masts can cover a large area from a small number of points.

10 - 20 m

PRODUCTS
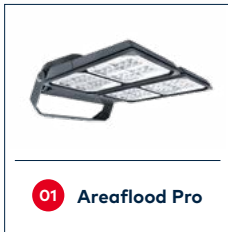
01 Areaflood Pro

✔ BEST PRACTICE

1. GET THE RIGHT LIGHT LEVELS
Average light levels of around 20 lux are recommended for urban car parks.

2. CONSIDER UNIFORMITY
Uniform light levels help people move around safely without their eyes having to adjust. A ratio of at least 0.25 is recommended.

3. KEEP GLARE LOW
Choose good-quality optics and consider the position and angle of light sources to avoid glare, which can be dangerous for drivers.

4. MAKE IT FEEL SAFE
Well-designed lighting can help eliminate shadows and support wayfinding, giving car park users a sense of reassurance and safety.

5. POSITION COLUMNS CAREFULLY
A common approach for lighting is to use 6–8m lighting columns, either on the edge of the car park or centrally mounted using double asymmetric low glare flat glass luminaires to provide a good level of horizontal and vertical illuminance at ground level.

02 COLUMN MOUNTED

Column-mounted luminaires can provide precision lighting with minimal light pollution.

PRODUCTS

02 Urba

03 Isaro Pro
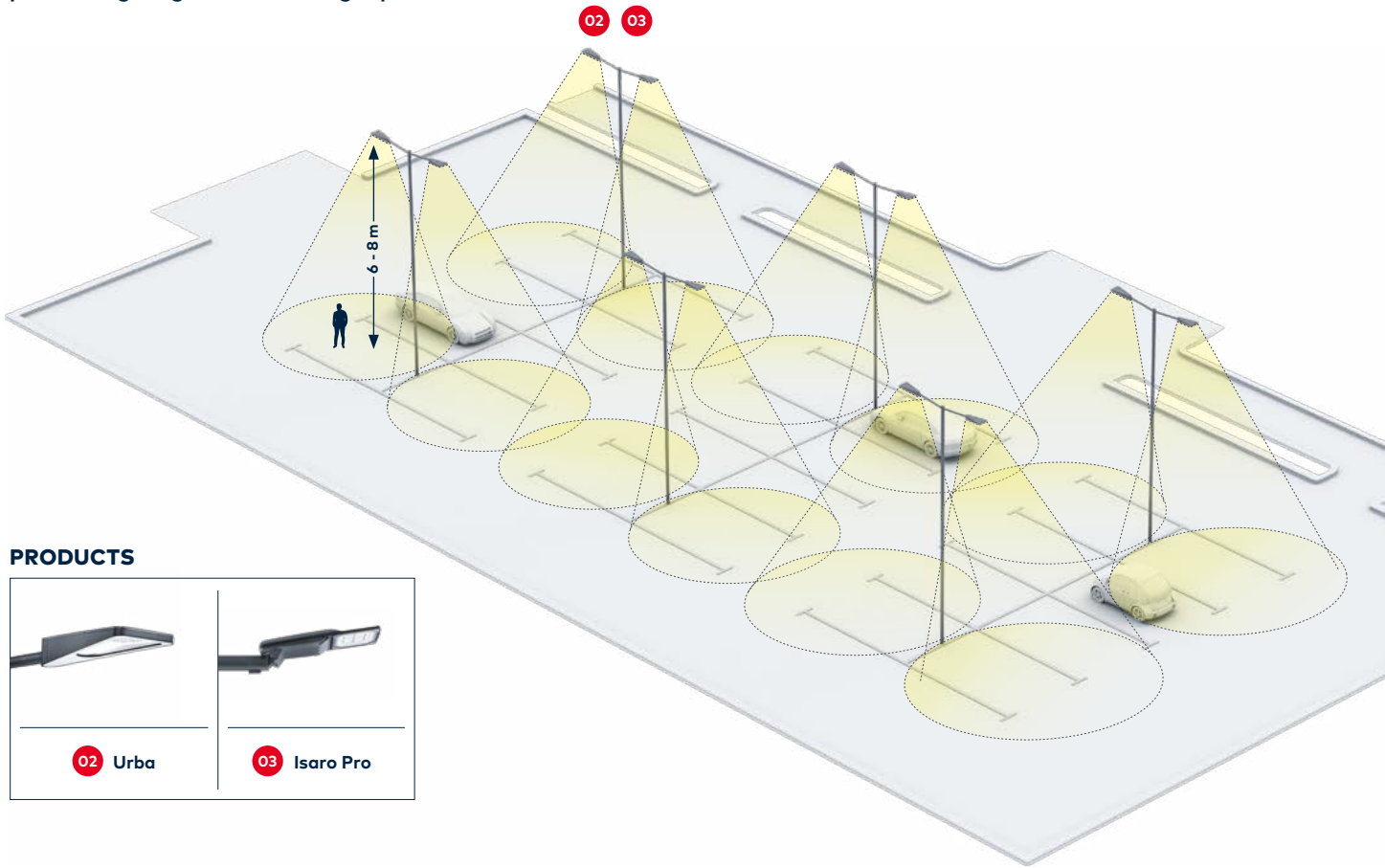
03 DECORATIVE

Decorative lighting gives an area a more distinctive atmosphere and character.

PRODUCTS

04 Thor Bollard
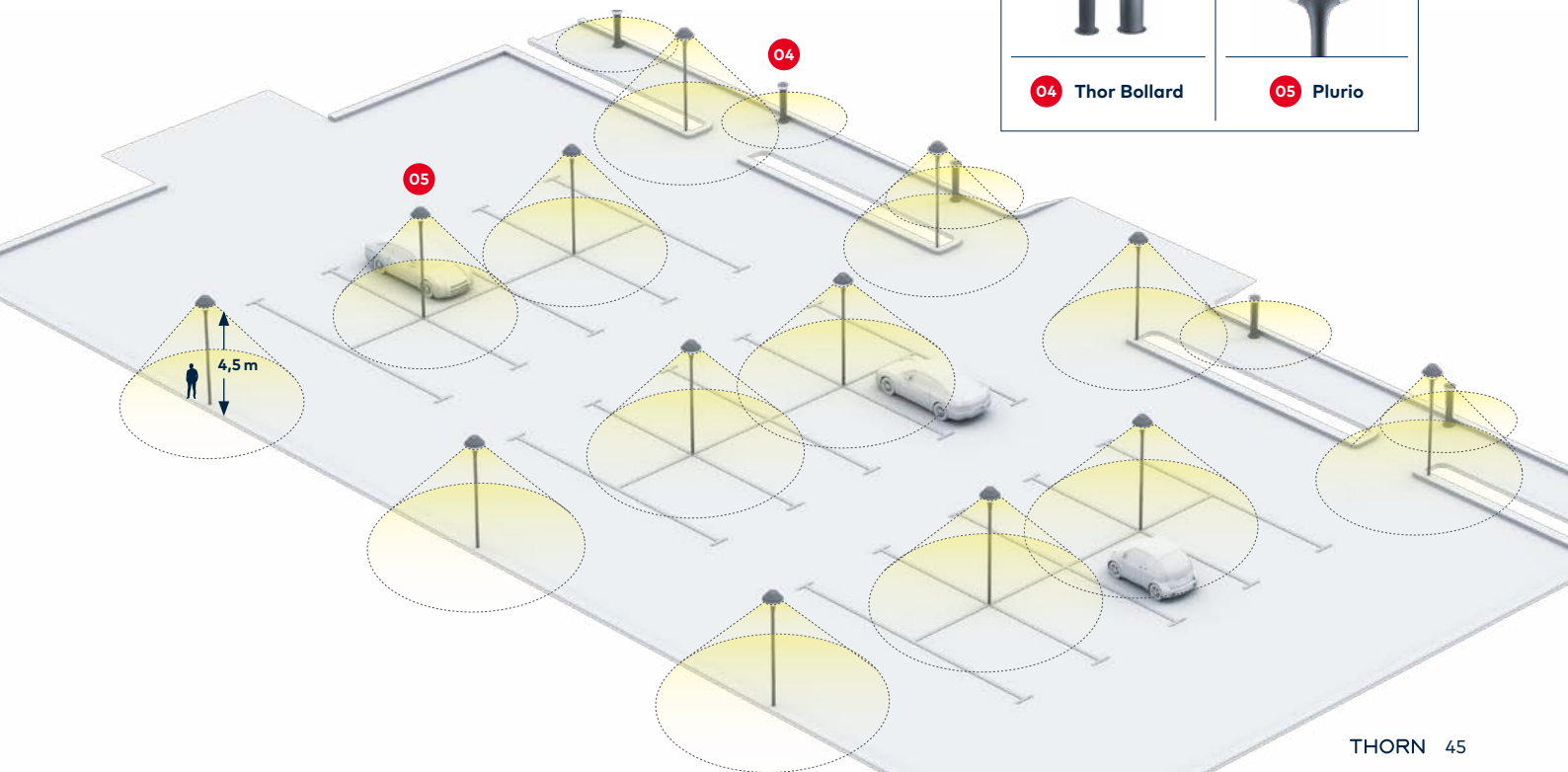
05 Plurio

PLURIO

VISUAL COMFORT, PRECISION, ADAPTABILITY DRIVEN BY OPTICAL EXCELLENCE

Plurio minimises light pollution and prevents the light from radiating upwards. It is available either with a direct optical module or with an indirect reflector unit, enabling users to achieve the ideal light distribution and a safe, comfortable ambience.

4 AVAILABLE CANOPY SHAPES

Original   Round   Flat   Disc

INDIRECT VERSION

Pressed aluminium reflector

Possibility to chose between:
Black heatsink for ULOR = 0
White heatsink for ULOR < 1%

NightTune solution:

12 LED 4000K
12 LED 2200K

For a perfect color mixing

Ø 60 & Ø 76

NIGHTTUNE SCENARIOS

The indirect version of Plurio is the first luminaire that can be equipped with Thorn's NightTune technology, which tunes the colour of light to support wellbeing and protect the night ecosystem.

| 3000 K 100 % | 2700 K 75 % | 2200 K 50 % | 2700 K 75 % | 3000 K 100 % |
| 17:00 | 22:00 | 00:00 | 05:00 | 06:00 |
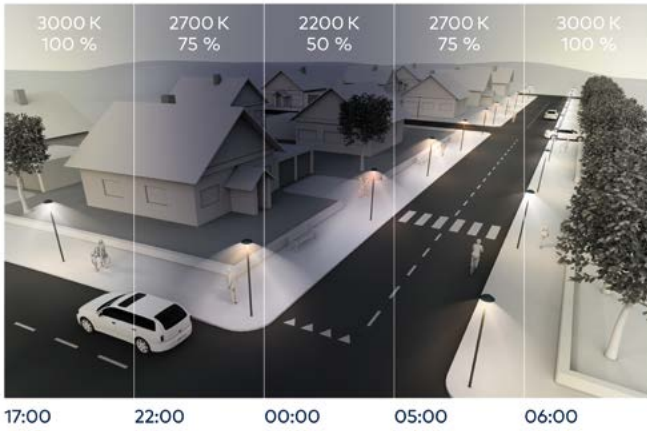
During the early night-time period, luminous flux is set to a higher level, providing a moderately warm colour temperature by mixing light from warm and cool coloured LEDs. For the mid-night-time period, the output of the cool LEDs decreases in line with lower traffic needs. The warmer colour temperature creates a more comfortable atmosphere while saving energy, enhancing safety perception and respecting the nocturnal ecosystem.
As we come to the early morning hours, cool light is again mixed with the warm light, meeting the higher demands for attention and traffic safety.

DIRECT VERSION

CONTRAST

SEE ARCHITECTURE AND THE URBAN ENVIRONMENT AT ITS VERY BEST

From super-compact spotlights to powerful floodlights, Thorn's new Contrast is a single, unified series of architectural luminaires that meet the needs of different applications. A wide variety of beams, colour temperatures and optical accessories makes Contrast highly versatile. A range of mounting options including column mounting increases its flexibility.
This enables users to create high-impact designs and displays.

LARGE (36 LEDs)
Ø 360 mm

MEDIUM (12 LEDs)
Ø 210 mm

SMALL (4 LEDs)
Ø 70 mm

SMALL SIZE, BIG PERFORMANCE

The small Contrast features a multichip LED combined with a single lens, for great colour mixing output on nearby surfaces. Even with an integrated power supply, it remains highly compact.

INTEGRATED ACCESSORY DESIGN

Contrast's clean design approach has also been applied to all accessories, to maintain the elegant aesthetic. Louvres, visors, honeycomb and film diffusers all complement the look of the luminaire itself.

Visor   Film diffuser   Honeycomb   Louvre

BALANCED WHITE:
FLUID LIGHT FOR DYNAMIC SCENES

Projects no longer need to settle for a static colour temperature. With Contrast's Balanced White solution, colour temperature can be tuned from the warmest 2200K all the way to 4000K, to suit the needs of the time and place, and enhance the nighttime experience.

| 2200K | 2700K | 3000K | 4000K |

LARGE (52 LEDs)
Ø 360 mm

ARCHITECTURAL
URBAN FURNITURE

Contrast's pole-mounting interface is designed to complement its identity. When mounted on a pole, Contrast not only illuminates public areas and landmarks, but becomes a distinctive architectural element of the urban environment in itself.

SMART LIGHTING

Using the latest technology to create liveable cities and unique experiences.

Thorn offers a wide range of control options, from simple local setups right up to the latest smart lighting systems. For monuments and facades, the ability to control light opens up the possibility of creating dynamic light displays, and turning structures into living works of art.

With changes in the level, distribution and colour of light, landmarks come alive. For larger installations, radio frequency (RF) wireless control allows light fittings to be controlled and monitored remotely, giving lighting managers the power to check for faults, respond immediately to changing lighting needs, and make sure light is only used where needed. Luminaires can be grouped or controlled individually, and sensors can be integrated to respond to stimuli such as light levels or presence of people.

At the same time, energy and maintenance costs can be drastically reduced, while providing an improved service to city dwellers, and minimising environmental impact.

BENEFITS OF LIGHTING CONTROL

1. **GET THE RIGHT LIGHT LEVELS**

2. **EXTEND LUMINAIRE LIFE**

3. **REDUCE MAINTENANCE CYCLES**

4. **MINIMISE LIGHT POLLUTION**

5. **CUT COSTS**

6. **FINE-TUNE LIGHTING LEVELS**

7. **ENABLE DYNAMIC LIGHT DISPLAYS**

8. **INTELLIGENT CONNECTION TO SMART LIGHTING APPLICATIONS**

9. **REMOTE ACCESS FROM ANY-WHERE IN THE WORLD**

10. **ENHANCED SAFETY**

ADJUSTING LIGHT
TO SUIT YOUR NEEDS

Thorn's control solutions are ready to control the largest, most complex installations – and the smallest, simplest ones. Our solutions fall into three groups based on scale and complexity: single luminaire controls, local group controls and remote/centralized group controls. Here's what we offer.

Our solutions for single luminaire controls:

basicDIM Wireless: Control luminaire individually with Bluetooth®, to easily change colour temperature and light intensity.

switchDIM: Manually dim the light directly at the fitting.

Our solutions for group controls:

Integrated motion sensor in the luminaire with Radio Frequency (RF) technology and with Master/Slave possibility.

MovU lateral or Post top – external motion sensor with Radio Frequency (RF) and with Master/Slave possibility.

Wireless communication, wide zone motion detection via Zhaga down + detector.

Wireless communication, daylight sensor etc. via Zhaga up.
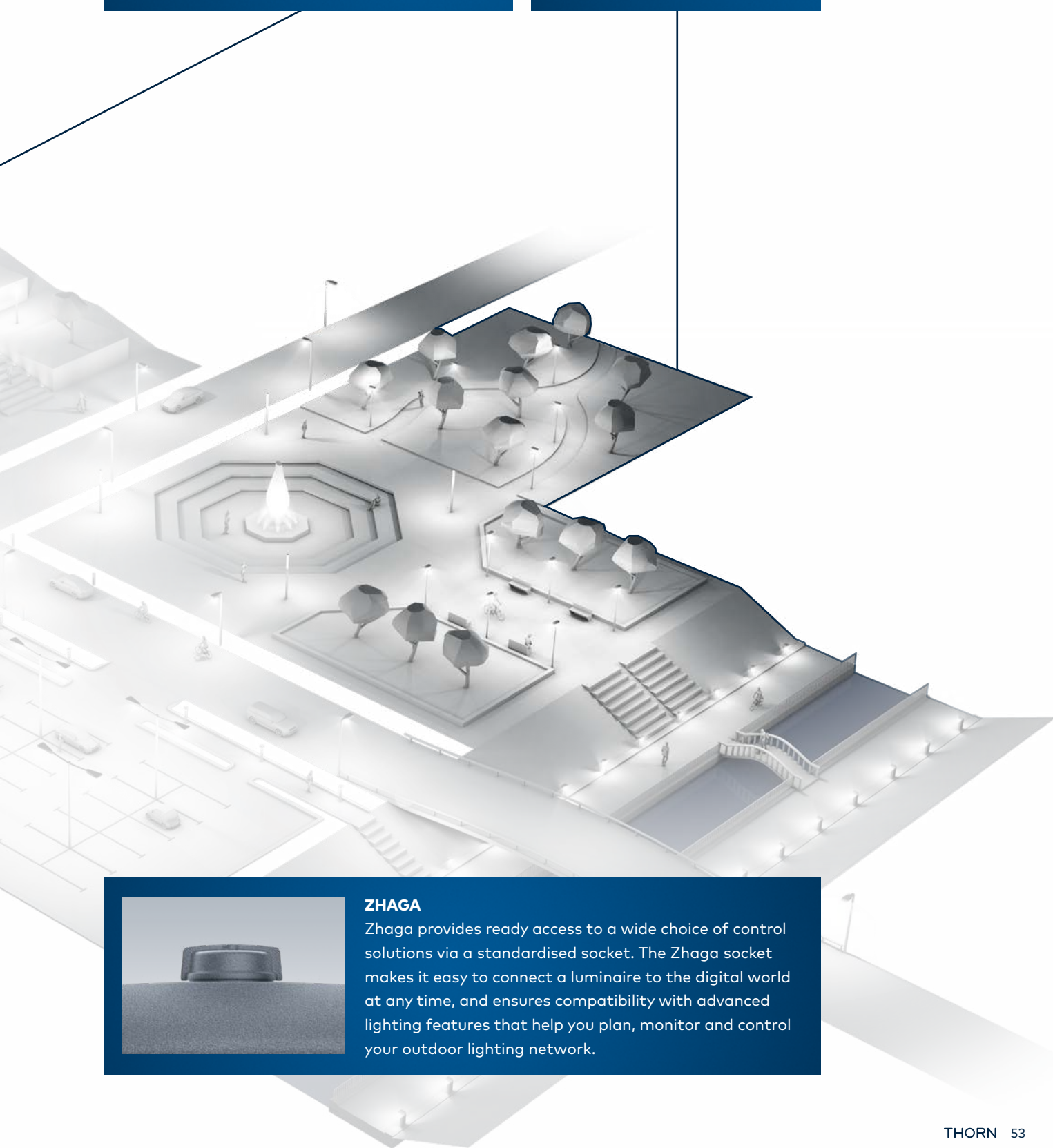
DMX RDM: Create dynamic scenes.

DALI2: Control the light intensity and the colour (suitable for NightTune and Balanced White technologies).

Our solutions for remote controls:

Thorn´s remote central management system via radio frequency. Control can be individual or group, based on sensors, time, calendar or astro clock.

ZHAGA

Zhaga provides ready access to a wide choice of control solutions via a standardised socket. The Zhaga socket makes it easy to connect a luminaire to the digital world at any time, and ensures compatibility with advanced lighting features that help you plan, monitor and control your outdoor lighting network.

THORN

LIGHTING

GET IN TOUCH

www.thornlighting.com/contacts

WE
MAKE
LIGHT
WORK