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Case Study Monterrey Airport Mexico

Officially known as General Mariano Escobedo International Airport, it is an international airport located in Apodaca, Nuevo León, Mexico.

Along side the Del Norte International Airport, it handles both international and domestic travel for the city of Monterrey and its metropolitan area. It is the fifth busiest airport in Mexico's and twelth in the whole of Latin America.

Background:

Despite recent issues with overheating, Monterrey International Airport's Terminal B remains a state-of-the-art facility that's designed to provide a seamless travel experience.

The terminal, which opened in September 2010, is considered the second-most modern air facility in Mexico and boasts an impressive range of features and amenities.

With eight gates, the terminal can handle up to 2 million passengers per year. It's also home to all operations of the SkyTeam member airlines

Challenges

The most clear and impactful challenge was the terminal overheating with internal temperatures reaching well over 40° C. This meant an uncomfortable and unpleasant experience for travellers and staff alike.

The airconditioning was woefully inadequate and with the exorbitant costs continuing to grow a non-mechanical, but completely effective solution was required.

An additional challenge was to deliver a solution with no interruption to the daily activities of this very busy airport.

The Problem:

Architecturally beautiful, in its design aesthetic, the General Mariano Escobedo International Airport was lacking in its function due to insufficient climate control in the busiest thoroughfares.

Downtime caused by redesign or installation of additional mechanical methods of cooling was unimaginable and would have proven extremely costly.

So what could be done about a 40+° C airport?

KoolShade®
The Ultimate In Passive Solar Shading

Undertaken in phases, Kapra devised a solution that fully hit the brief using KoolShade from Smartlouvre Technology.

Solar Shading is Koolshade's® primary application and it has been specifically designed for high-performance sun control as an external passive system for the thermal management and glare reduction of sun-exposed glazing. It is proven to:

- Block Solar Heat Gain
- Not interrupt daily activity
- Slash aircon requirement /costs
- Provide Essential Shade

It continually dissipates the sun's heat and energy whilst not blocking views, daylight or ventilation. It allows perfect outward vision, is eco-friendly and drastically reduces the need for mechanical cooling.

PHASE 1

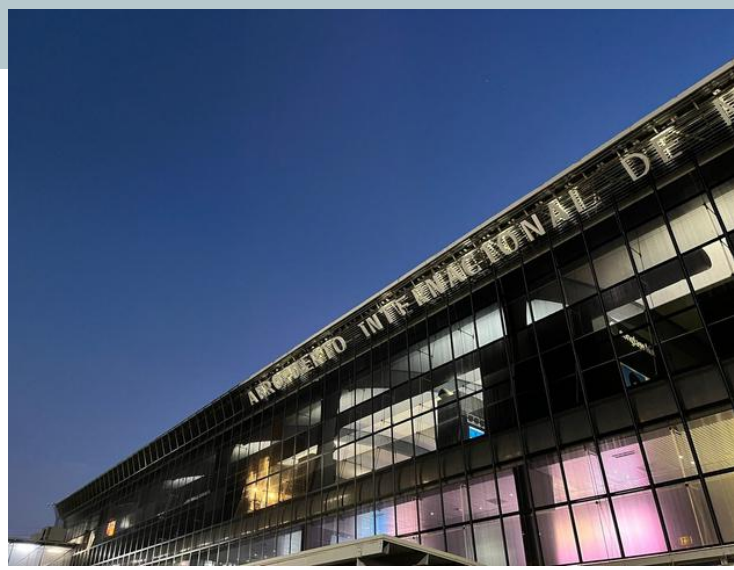
The first phase commenced in February 2023. 132 screens were manufactured, quality checked and processed before being shipped directly to site.

On arrival in Mexico, the assembled Kapra team unpacked the shipment and got to work.

The glazed arches that allowed light into Terminal B were completely covered in Koolshade® and an immediate drop in internal temperature of over 10° C was measured.

The Angular Selective Nature of Koolshade® meant that whilst the sun's heat is stopped, 100% pure, full colour rendered (CRI) daylight still floods through for the occupants.

PHASE 2



The second phase, consisting of 554 screens, commenced in June 2023 and involved the air-side elevation that contained the shops, restaurants and waiting areas of the airport.

Using the cable-stayed fix, the vast area of glazing, that was causing the unmanageable overheating, was cured with Koolshade®.

The installation has become an architectural feature with incredible benefits to the travellers, staff and financial stakeholders of this airport.

RESULTS

- 100% solar heat block
- 100% internal shading
- Hurricane wind resistant at 100+mph
- Clear outward vision
- 60+-year maintenance-free life span
- Massive energy saving and ROI
- Green, sustainable building solution
- Temperatures reduced by up to 26°F (15°C)


MAGNÍ

Case Study Huu-ay-aht First Nations

Background:

Huu-ay-aht First Nations is a self-governing, modern treaty Nation whose lands are in the Barkley Sound region on the west coast of Vancouver Island, at the entrance to Alberni Inlet.

Microlouvre Koolshade® screens were implemented to prevent solar glare nuisance and ensure visual comfort with the outside.

The lands and waters making up their traditional territories have been occupied by them since time immemorial. As a leader among First Nations, Huu-ay-aht First Nations will create certainty for its people and generate wealth for financial independence by providing economic opportunities, social, cultural, and recreational programs for all Huu-ay-aht people.

The Problem:

When the designers at the architectural firm of David Nairne + Associates located in North Vancouver, first developed a design for this multi-purpose building on the Huu-Ay-Aht First Nations reserve in Bamfield, BC. they assumed that the generous overhang would be sufficient to shade the sun-facing windows.

However, when they put the design through a software program that tracked the profile and azimuth of the sun's path throughout the year, they discovered otherwise.

The low angled sun in the early morning, late afternoon in the summer, and well always in the late Fall, Winter, and early Spring would cause some discomforting glare to the occupants.

The native band's building committee had made several important requests.

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The First Nation's building committee wanted the building to be orientated to the South-West, to offer a view of the Pacific Ocean.

They requested that the building have a lot of natural daylighting and that the windows would not require any form of interior shades that would obstruct the view outdoors. They also requested that there be opening windows and that it would be possible to have potted plants, next to the interior of the glazed walls.

huu ay aht

ANCIENT SPIRIT, MODERN MIND

The designers contacted Bill Newman of Newman Architectural Products to discuss a possible solution. Mr. Newman reviewed the design requirements and suggested that Microlouvre Koolshade® would meet all the requirements.

SOLUTION

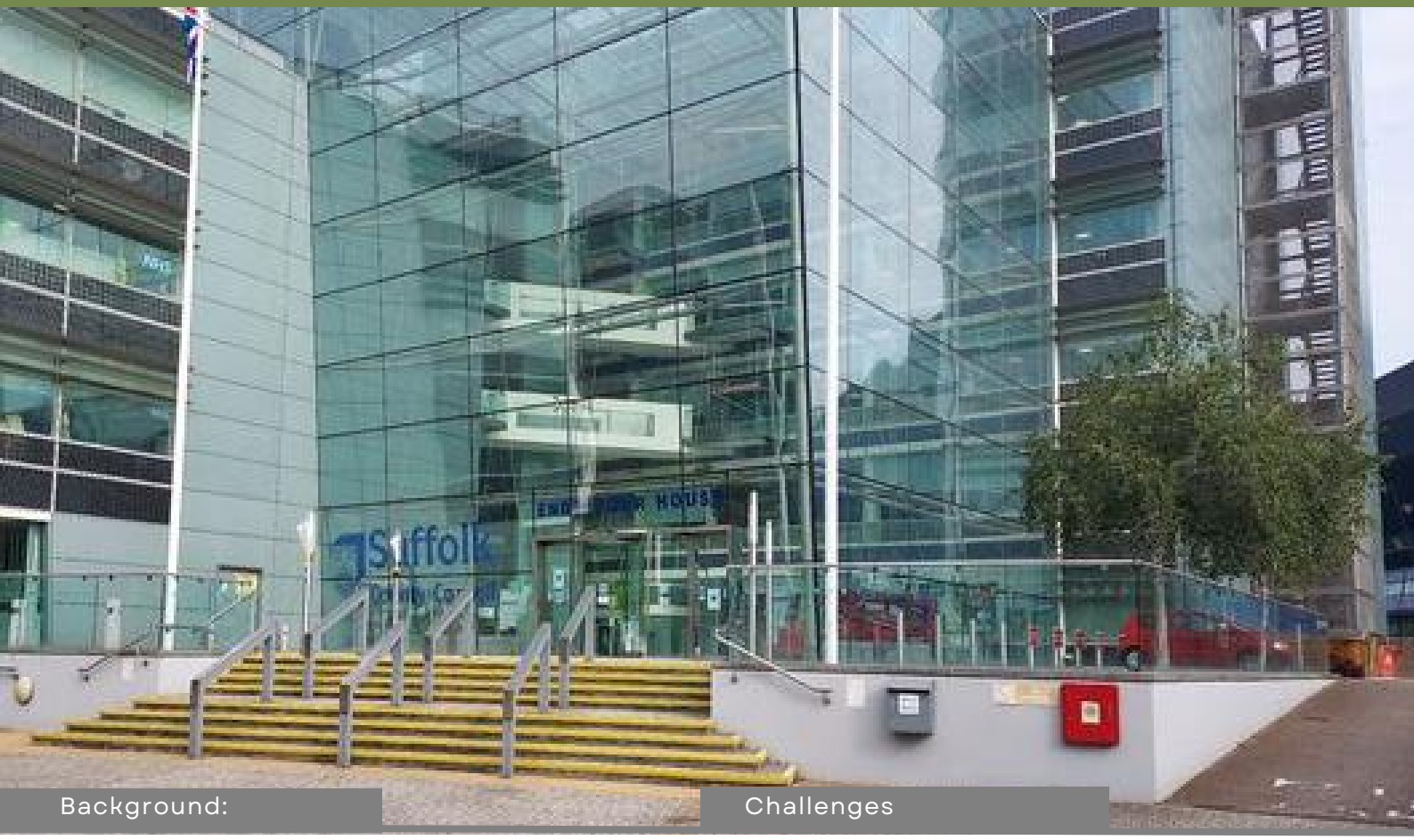
A reduction in the amount of solar gain was one of the reasons why Microlouvre Koolshade® was specified. Our Microlouvre Koolshade® screens were quickly and easily fitted on the outside of windows thus lowering the amount of direct sunlight whilst still allowing clear views through the large windows.

After the installation of the Microlouvre Koolshade® screens and after several months of sunny and warm weather, it was reported that all the design requirements had been met to the satisfaction of both the architects and the owners.

RESULTS

- Significant reductions of solar heat gain
- Permanent unobstructed views of the Pacific Ocean
- Perfect natural daylight with 100% CRI
- 80% Natural ventilation
- Blocked up to 100% direct glare

Case Study Endeavour House - Suffolk County Council



Background:

The building had an original construction cost of £28 million (Suffolk County Council paid £16.75 million for the building) and is one of the most energy efficient office buildings in Europe.

However, the use of horizontal shading fins was woefully inadequate against the summer sun, and as experienced in 2022, simply ineffective against temperatures above 40°.

KoolShade stops Solar Heat Gain and dramatically lowers internal building temperatures and stops glare from the sun.

Challenges

With no mullions a non-invasive, non-disruptive and cost-effective solution was required.

KoolShade® is very simple to fit. Retrofitting to buildings, using either frames, cable systems or outriggers can enhance the aesthetic of any building and proven to last many decades.

Suffolk County Council

The Problem:

Stunning, modern, but fundamentally flawed.

Endeavour House has a modernist, glazed exterior that looks amazing, but the large area of glass has no opening windows, so the building has become like a greenhouse, even in winter months.

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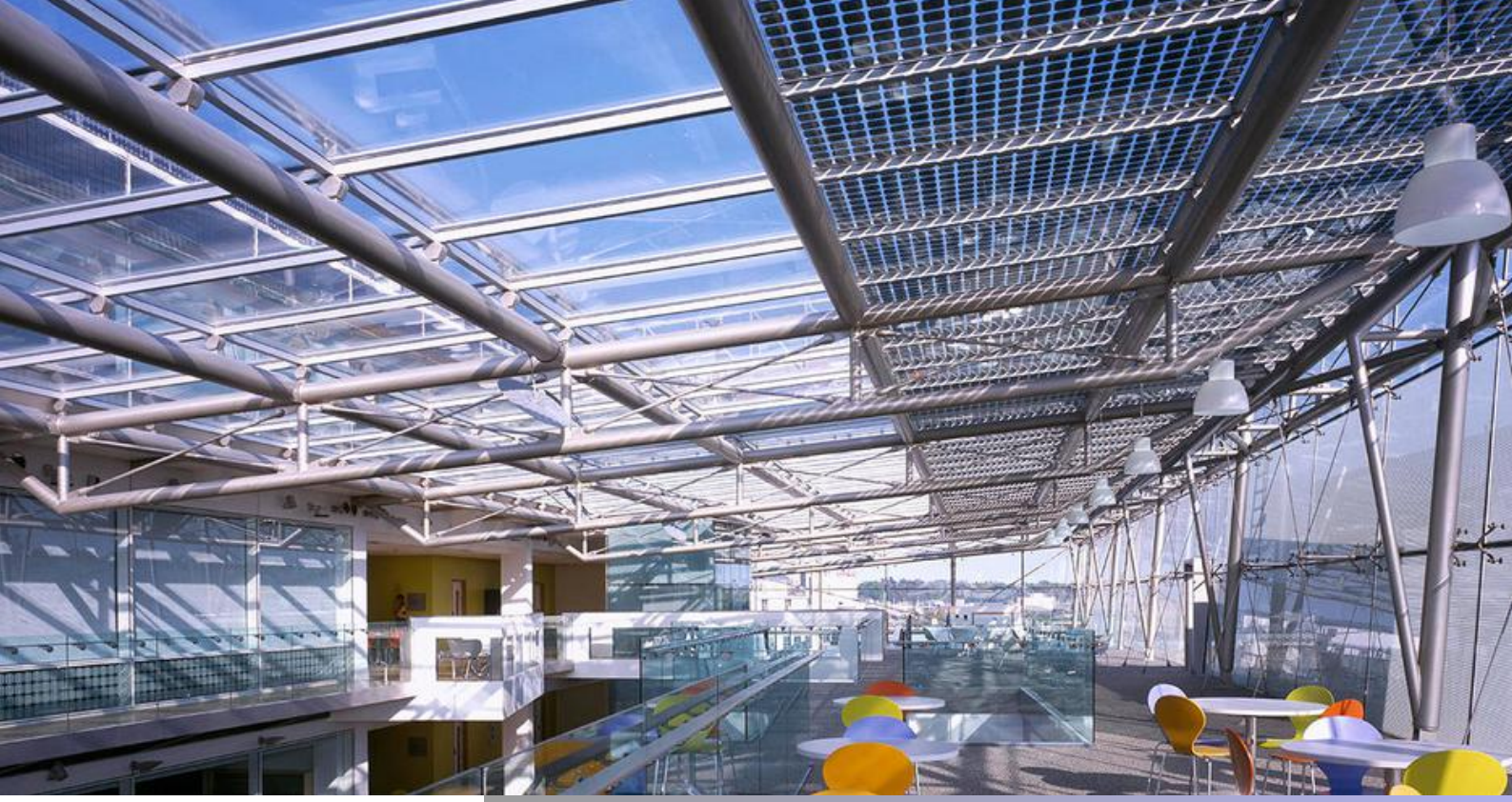

THE SOLUTION

"The massive atrium has no opening windows and no ventilation; when the sun shines it is uninhabitable," Mr Chiverton said.

He said there was no air conditioning in the central area - and it was very uncomfortable on fine days ....

"It's going to be hellish in the summer,"

As reported in the IPSWICH STAR

The use of KoolShade® has added a stylish envelope to a section of the building which brings thermal comfort to those inside. The areas that are protected by MicroLouvre® are glare-free, but more importantly, aren't made unbearably hot and kept cool by blocking Solar Heat Gain.

Daylight through is maximised and vision out, and a connection to the outside of the building remains.

RESULTS

- 100% solar heat block
- 100% summer shading
- Hurricane wind resistant at 100mph
- Clear outward vision
- 40-year maintenance-free life span
- Massive energy saving and ROI
- Green, sustainable building
- Temperatures reduced by up to 20°C

Case Study ION Science

Background:

ION Science has over 30 years of expertise designing, manufacturing and supplying PID gas sensors, gas detection equipment and leak detectors for a variety of industries and applications.

Smartlouvre worked with ION Science to implement Microlouvre Koolshade® over the skylights to ensure control over work environment temperature and thus reduce energy costs.

Requirements

- Short period installation
- Roof glazing
- Easy installation using non mechanical fixing
- Need to have perfect outward vision
- Need to have pure natural light (100% CRI)
- Zero heat transmission essential

The Problem:

Since ION moved into their stunning, ultra-modern, cedar-clad 'Passive' complex building, there has been a problem with heat passing through the glass roof where their gas leak and sensing equipment is designed has proved problematic.

The ION Science team struggled with solar heat gain pouring through workshop skylights because temperature regulation for sensitive testing equipment was essential.

Typical air conditioning was both difficult to balance and inadequate, causing many problems for personnel and equipment.

Other methods to reduce internal temperature whilst maintaining natural light and vision out, like window films, had been tried but these solved none of the problems.

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THE SOLUTION

Microlouvre Koolshade® Screens have now been quickly and easily fitted to the skylights, using 3M Griplock tape thereby avoiding the need for any drilling or mechanical fixings whilst maintaining an essential air gap between screen and glass to allow heat dissipation. Griplock allows the screens to be easily removed for window cleaning.

Microlouvre Koolshade® provides up to 100% perfect solar shading but with an incredibly 80% open area for near perfect vision, daylighting and natural ventilation.

How can this be possible? It's simple, well not so simple, because there are up to 700 angled paper-thin micro louvres only 1.25mm wide and 0.3mm thick woven into every metre of ION screen.

RESULTS

- Heat block and temperature reduction
- Views out
- Air Conditioning reduction
- Controlled glare
- Passive solar shading

"*Microlouvre Koolshade® is a good product and does exactly what we needed it to do. Fair price compared to other estimates we received for alternative methods*" Adam Wyeth - ION Science.

Case Study Hazendal Wine Estate

HAZENDAL

Background:

Hazendal Wine Estate in Stellenbosch is one of South Africa's most famous wine producers and Premium Lifestyle Estates.

Their beautiful venue 'The Glasshouse', suffered from excessive heat and glare due to the all-glass construction. Temperatures had to be reduced whilst maintaining contact with the beautiful surrounding gardens.

Challenges:

An internal aluminium louvre system inside the glass roof was both ineffective and blocked natural daylight and vision.

The Glasshouse has to be used for all-year-round; weddings parties, and business functions, therefore, a solution had to be found. The Estate's Project Managers, recommended that Microlouvre Koolshade® solar shading would significantly benefit their building with an integrated solution.

Results:

- Significant reduction in internal temperatures and air conditioning costs
- Perfect external vision and contact with the outside
- Light and easy to install and maintenance
- Long life, durable and sustainable
- 100% recyclable

KOOLSHADE®
The Ultimate In Passive Solar Shading

THE SOLUTION

Microlouvre Koolshade® K700-17, woven with miniature tiny paper-thin, angled copper louvres was quickly and unobtrusively installed with brackets attached directly to the glass using the 3m VHB tape system.

Direct-to-glass fixing is possible because MicroLouvre® is so light and windproof because its 87% open area provides negligible and resistance.

We finished the new installation on 24th March 2021 during a peak solar heat gain period and immediately, significant reductions in temperature were experienced, such that air conditioning was not even needed at that time.

The client agreed that no other product could have given the same aesthetics and solar heat block together with natural ventilation, natural light, and perfect vision out.

Case Study NISSAN

Background:

Lionel Motors Nissan in Rustenberg, is South Africa's largest vehicle dealership, serving the Rustenburg community and nearby areas since 1942.

Smartlouvre was contacted by Super Group Dealerships to prove, with a practical demonstration, Microlouvre Koolshade®'s performance claims and test results from top German and American laboratories

Challenges

- Unbearably high solar heat gain temperatures
- Excessive air conditioning energy costs
- Hot and cold air conditioning zones
- Customer hostile environment to promote sales
- Zero heat transmission essential

The Problem:

The Dealership office and showroom temperatures were unbearable due to massive heat gain through the large showroom windows, essential to showcase the cars.

This was not a customer friendly environment. Typical solutions of internal blinds and solar control films had been tried and failed and only succeeded in blocking vision and distorting the natural daylight.

Smartlouvre's Peter Murray was contacted by Super Group Dealerships to prove, with a practical demonstration,

Microlouvre Koolshade®'s performance claims and test results from top German and American laboratories. This practical demonstration quickly proved the product's performance claims.

THE SOLUTION

Microlouvre Koolshade® screens were quickly and smoothly installed, with no internal disruption to the activities of a very busy showroom and offices.

Within 10 minutes, internal temperatures dropped by 10°C and the once too hot to touch glass was cool to the touch. You could certainly feel the difference when touching the glass on the inside before and after the screens were fitted.

Staff and customers were delighted to be cool and comfortable, with a balanced air conditioning system now possible enabling workstations to be placed close to windows that had previously been unusable and unbearable hot spots.

Uninterrupted visual contact with the outside enables sales staff to see visiting customers and natural daylight created the ideal working environment.

RESULTS

- Massively reduced internal temperatures
- Thermal and visual comfort
- Natural daylight with high visual contact on the outside
- Reduction in air conditioning costs
- Made from +90% recycled copper scrap
- Highly sustainable
- 100% recyclable

NISSAN

LIONEL MOTORS NISSAN

Case Study Mercedes Benz Orbit Commercial Vehicles

Smartlouvre Technology

Background:

Smartlouvre worked with Mercedes and ARCA Unlimited Architects to integrate Microlouvre Koolshade® Screens to protect Mercedes showrooms and offices.

Clients and employees alike were complaining continuously throughout the day, that the temperature and glare were unbearable.

Requirements:

- Reducing solar heat gain and internal temperatures
- Removing direct solar glare nuisance
- Maintaining clear contact with the outside
- Maintaining 100% pure Natural Daylight
- Protecting Clients and Employees
- Sustainable and energy saving

Solution:

With large areas of glazing along with visual discomfort caused by the glare, clients and employees alike were complaining continuously throughout the day, that the temperature and glare was unbearable.

Understandably this thermal and visual discomfort negatively affected Mercedes employees' daily performance.

After extensive market search, Mercedes decided that Microlouvre Koolshade® provided the most comprehensive solution to these severe problems.

And subsequently the Microlouvre Koolshade® solution has made a huge difference to the Client Reception area with a cool pleasant environment both the clients and employees.

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The architects, ARCA Unlimited, recognised the benefits of Microlouvre Koolshade®'s AST (Angular Selective Technology) for low sun angle protection from heat gain and glare.

Microlouvre Koolshade® is now specified in their Generic Standards, for Daimler Trucks and Buses, for dealership buildings with sun protection issues caused by large glazed areas.

A decision endorsed by Mr Graeme Watson, CEO of Super Group Automotive who is keen more dealerships benefit from the protection from damaging, overheating sun.

Results:

- Significant reduction in internal temperatures
- Balanced and pure, undistorted daylighting and full 100% CRI
- Compliant with all standards and regulations
- Elimination of glare
- Unobstructed vision out for building occupants

Case Study The Huntington & Langham Estate

Background:

Smartlouvre worked with The Huntington & Langham Estate care home to stop intense solar gain through ground and first floor windows.

The challenges were:

- A curved building
- Upward laminar air circulation
- Very high internal temperatures

The Managing Director of this care home, spent years looking for a solution to the excessive solar gain from the ground and first-floor windows.

The problem:

It all started in 1978, when Marilyn Hoare, the founder and owner, launched Huntington House, one of the country's first nursing care facilities.

Marilyn was a nurse living in Surrey at the time, and she was so enthusiastic about providing high-quality nursing care for the elderly that she decided to make her dream a reality by offering inexpensive, luxurious 24-hour nursing care.

On the ground, he put a 700mm projection Brise soleil that did not work and cost a fortune. The majority of the day, they only covered 20% of the ground windows.

They needed to save cooling expenses and make the interior spaces usable, which were mostly inaccessible due to the increased heat.

The Solution:

Since the building is curved and the wind may whip around it, we had to adjust the Lift In / Lift Out (LILO) to accommodate for the nature of the inclement weather.

We have installed end stops, locking pins, and bump pads. Microlouvre Koolshade® was the only option as they the building required ventilation and uninterrupted vision out.

They had looked at all film and external blind options and trialled film, but soon realized that MicroLouvre® was the best and most cost-effective option.

Results:

- Thermal and visual comfort
- Solar heat reduction
- Pure, natural daylight in
-

And of course, the ability to now rent out all of the rooms on the estate, with no overheating, hot-spots or closed windows.

Case Study Wesley Taylor Village

Background:

The Wesley Taylor Village offers independent retirement living; accommodation, social activities, services and assistance as required. The building design features an external glass elevator shaft to support residents and maintain the views of their stunning beach location on the Narrabeen Peninsula.

Overheating of the lift shaft caused the management to abandon the use of the lift in summer due to both personal welfare of the tenants & mechanical operational issues due to the material heat mass.

Requirements

As a result, low mobility tenants were confined to the ground floor levels.

Solving the problems caused by the glass elevator shaft in this retirement village reaching internal temperatures of 50°C.

- Overheating issue
- Need to have pure natural light (100% CRI)
- Zero heat transmission essential

The Problem:

Post occupancy, it was found that the internal temperatures of this elevator rose to over 50°C.

The management abandoned the use of the elevator during the summer months due to both the welfare of the residents and mechanical operational issues caused by material heat mass.

As a result, low mobility residents were confined to the ground floor levels.
Architects Maitland and Butler were engaged to find a solution to the overheating issue.

They approached Greene Fire (our Australian distributor) who worked together with them to model the impact on the solar heat gain which was achievable by installing Microlouvre Koolshade® screens.

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THE SOLUTION

Prior to considering Microlouvre Koolshade®, the architects had completed a sun study which showed how large, fixed horizontal louvres could provide enough shading through the hottest part of the summer day to keep the internal temperature in the lift shaft to a tenable level.

However, when the sun angle was below 33 degrees (up to 11am at the height of summer), there would be no protection and therefore the early morning sun would heat the elevator before the horizontal louvres could have any effect. by more than 10°C too.

In comparison tests with the building's design tolerances, Microlouvre Koolshade® proved to deliver 35% shading at 0 degrees sun angle and full shading when the sun angle was at 40 degrees, therefore it was selected by the architect as the optimum shading solution.

Following install, further tests showed that MicroLouvre® had reduced the midday summer temperatures inside the elevator by as much as 50% and the lobby area it was housed in, reduced

THE RESULTS

- Improved comfort levels inside the building by more than 10 degrees celcius
- Did not need to perform major works like repalcing glass windows or installing heavy louvres needing structural supports
- Improved the aesthetics of the building by creating a uniform look from the outside
- Still have near perfect vision through the glass from the inside
- Provides screening the internal lift mechanism, adding to the aesthetic quality of the surrounding garden
- MicroLouvre is easily removed for ongoing cleaning & maintenance as well as allowing access to the lift shaft structure

Case Study 4. Private Customer - Camberwell

On this quiet residential street in Camberwell, SE London, the inter-war houses are solid, with wonderful large windows and glazing.

Smartlouvre Technology

Background:

As beautiful as the architecture is, with longer and warmer summers, keeping internal temperatures cool is an increasing challenge.

A forward thinking resident, knew a solution would exist to block the sun's heat but wouldn't obscure his views out and not need electricity to operate or be effective.

The problem:

The solar heat gain made Intensely hot rooms at the front and back of the house.

Air conditioning, blinds and awnings were considered, but the cost, structural work and short life span meant they were poor options.

When Koolshade® was considered, it ticked ALL of the boxes.

Results:

KOOLSHADE®
The Ultimate In Passive Solar Shading

- provides 100% shade even at the hottest parts of the day
- removes 100% of the sun's directly transmitted heat before it reaches your window
- is made from recycled metal, the frames and fabric are 100% recyclable at the end of decades of life
- saves over 68% of air conditioning need and costs, the financial benefit can be huge

THE SOLUTION

Using VHB Tape from 3M to secure extruded tracks, over 40 pre-fabricated screens were installed in under 2 hours. And where possible, like on the patio doors, fixed directly to the glass. The frames were colour matched to the patio door frames to ensure a seamless and stylish installation.

Before:
30°C sunny day temperature on ground floor would be 30°C, temperature on top floor would be 33°C.

Large windows (in particular patio doors) radiated a lot of heat inside and you could feel it as you got close.

After:
30°C sunny day temperature on the ground floor was 21°C, temperature on the top floor was 23°C. The large windows now don't radiate heat on sunny days.

Case Study Private Residence Golden Drive

Background:

The Clients were experiencing serious heat gain in the bedroom and stairway and they were also complaining about glare nuisance throughout the day. Therefore, they decided to look for a solution for the unbearable internal temperatures and glare discomfort.

The homeowner sought the assistance of an air-cooling professional to recommend techniques that would solve the problems solar heat gain. The customer additionally requested that the solution must allow for natural sunny daylight and views out. After researching the market, the only product the professionals could identify to meet the criteria of performance, quality and price was Microlouvre Koolshade®.

The problem:

This existing building, was designed with large and impressive areas of glass as a feature. However, the client also tasked the architect to also give the property a technological aesthetic.

- Overheating in the residence
- Glare discomfort
- Sun facing windows
- Need 100% Natural daylighting
- Uninterrupted outward vision to the exterior was essential

Results:

The owners can now enjoy pleasant temperatures in their house, as well as views out via the Microlouvre Koolshade®'s 80% open area, with full natural daylight still streaming in.

- Significant reduction in internal temperatures
- Balanced and pure, undistorted daylighting and full CRI
- Maintained unrivaled views out
- Compliant with all standards and regulations
- Elimination of glare

KoolShade®
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In order for glare to be eliminated, the screens were installed outside, on the roof top terrace as the primary protection.

One of the complaints was that the overheating issue was occurring in every room inside the residence.

Furthermore, Microlouvre Koolshade® fixed and sliding screens were used in the all the bedrooms, utility room and the stairway.

The screens were successfully integrated as direct fixing with rubber anti vibration, thermal break grommets.

Case Study Binary House

Background:

The Client gave his architect the task of transforming an existing stepped terrace house of very basic character and located in a dull context of no significant architectural value.

They wanted to turn it into a completely revitalised property with a modernistic aesthetic and technological feel.

The problem:

Along with the aesthetic and technological feel that the home-owner needed, the client also specified that the solution must also allow for natural daylight and views out to be maintained.

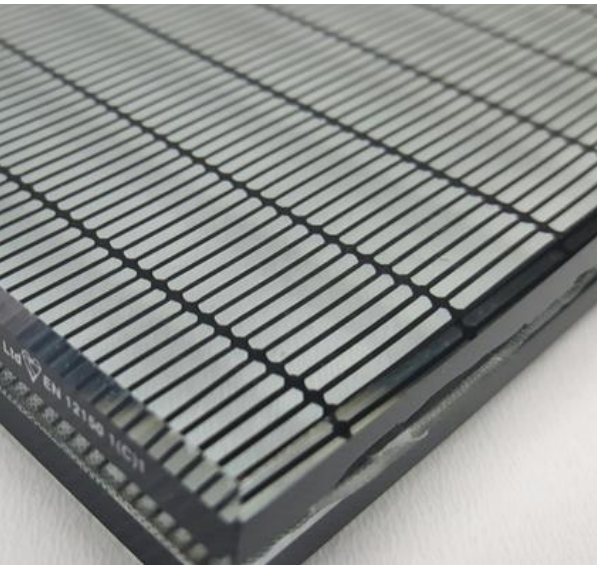
Furthermore, the uncontrollable heat gain was causing crucial issues and nuisance inside the residence.

Results:

- Significant reduction in internal temperatures
- Balanced daylighting and full CRI
- Maintained unrivaled views out
- Compliant with all standards and regulations
- Easy to clean and durable

This new rear elevation deployed bronze Microlouvre Koolshade® laminated within the wrap-around glass panels across the roof and rear glazing.

Microlouvre Koolshade® was chosen because, as with any highly glazed structure, glass alone cannot effectively control solar heat gain, whilst simultaneously maintaining unobstructed views out and pure, natural daylighting.



THE SOLUTION

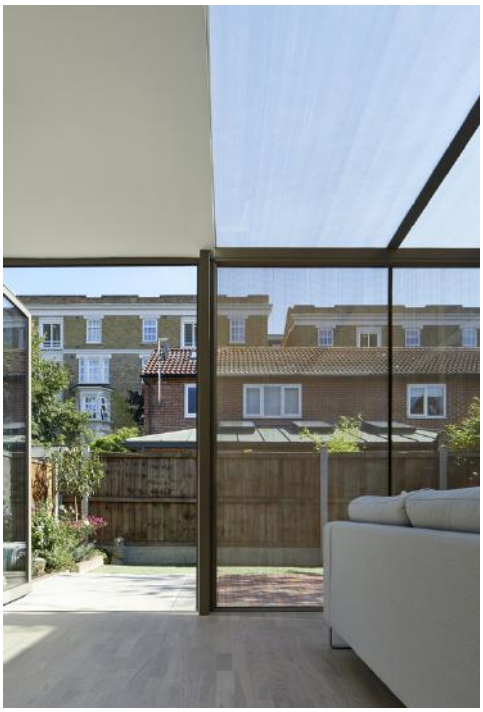
The new rear elevation contains a central fixed glazed panel that is seemingly wrapping up and over to become a skylight. The architect used uncoated brass Microlouvre Koolshade® fabric laminated into the glass as a means of solar gain control, enabling views whilst reflecting sunlight. The customer also specified that the solution must also allow for natural daylight and views out to be maintained.

The micro fine louvres laminated within the glass panels are now ensuring the majority of the sun's rays and the ensuing heat gain are blocked from radiating into the house.

Microlouvre Koolshade® has 17 paper thin miniature louvres only 1.25mm wide in every 25mm of the bronze fabric, adding a mere 1.55mm of thickness and only 1.1 kg per square metre weight, to the laminated glass. The Microlouvre Koolshade® interlayer was used in the traditional horizontal orientation inBinary House but can be positioned vertically or at any angle. Microlouvre Koolshade® can have a natural bronze patina or polyester powder coated any colour.

Microlouvre Koolshade® Lamination combines all of the advantages of the MicroLouvre® metal fabric into a comprehensive, high-performance glazing system with impressive aesthetic effects. Moreover, it is truly sustainable as Microlouvre Koolshade® metal fabric is woven from 90% recycled copper scrap, with a proven 60 year lifespan and is 100% recyclable.

The owner can now enjoy comfortable temperatures in their modern, new home, as well as the views out through MicroLouvre's 80% open area with full natural daylight continuing to flood in.



"MicroLouvre is a really effective solar control product not only pleasing to the eye, but you can really feel the difference when standing behind and its cooling effects.The nature of this dense metal louvre fabric creates very interesting halo effects when hit by light giving it an animated and yet very technological feel."

Martin Gruenanger,
Space Group Architects

Case Study Ursuline Convent High School

Background:

The St John's Block of the Ursuline Convent High School in Brentwood houses the dining facilities and food preparation areas for the school. Built in 1939, it is a traditional brick building which had new uPVC double glazed windows installed.

Protection for the food preparation area, stopping the penetration of solar radiation and insects entering, whilst ensuring good ventilation.

Challenges

- South facing food preparation areas overheating in summer
- Area required total solar heat block
- Acute glare from the sun
- Insects and pests through windows

The Problem:

As the food preparation area is south facing, during the summer months the rooms were suffering from unbearable solar heat gain through the glazing, together with acute glare from the sun. By its nature, a food preparation area requires a cool environment otherwise it risks a potential food hygiene hazard.

Therefore, a solution was needed which would stop the penetration of solar radiation into the building in the first place. In addition, such an area requires good ventilation, however, previously windows could not be opened without the risk of ingress of insects and airborne contaminants.

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THE SOLUTION

The solution was to install Microlouvre Koolshade® screens to the outside of the windows thereby solving all of the problems with an easy-to-fit, cost effective solution.

Microlouvre Koolshade®'s powerful shading capabilities, even at the hottest points of the day, eliminate hotspots allowing the space near the glazing to be fully utilized.

The building now benefits from a reduction of up to 100% in solar heat gain, glare is minimized, and due to the 80% open area, occupants benefit from high daylighting and a clear view to outside.

Microlouvre Koolshade® has up to 700 paper thin louvres in ever metre, making it an excellent barrier for insects, so windows can be left open without the risk of pest entry.

THE RESULTS

- Microlouvre Koolshade® installed and reduced heat gain by up to 100%
- High daylighting levels due to 80% open area
- Area free from insects and pests even when windows left open

Case Study Christ The King College

Background:

Christ the King College in Newport, Isle of Wight, UK, was built in 2008 and extended using built-off-site modular construction in 2013/2014.

Microlouvre Koolshade® screens were installed providing pupils with a cool, shaded, glare free study environment throughout the classrooms

Challenges

- Glare nuisance for pupils
- Pupil privacy and security
- Overheating in the classrooms
- Natural ventilation was essential
- Insects enetring the classrooms

The Problem:

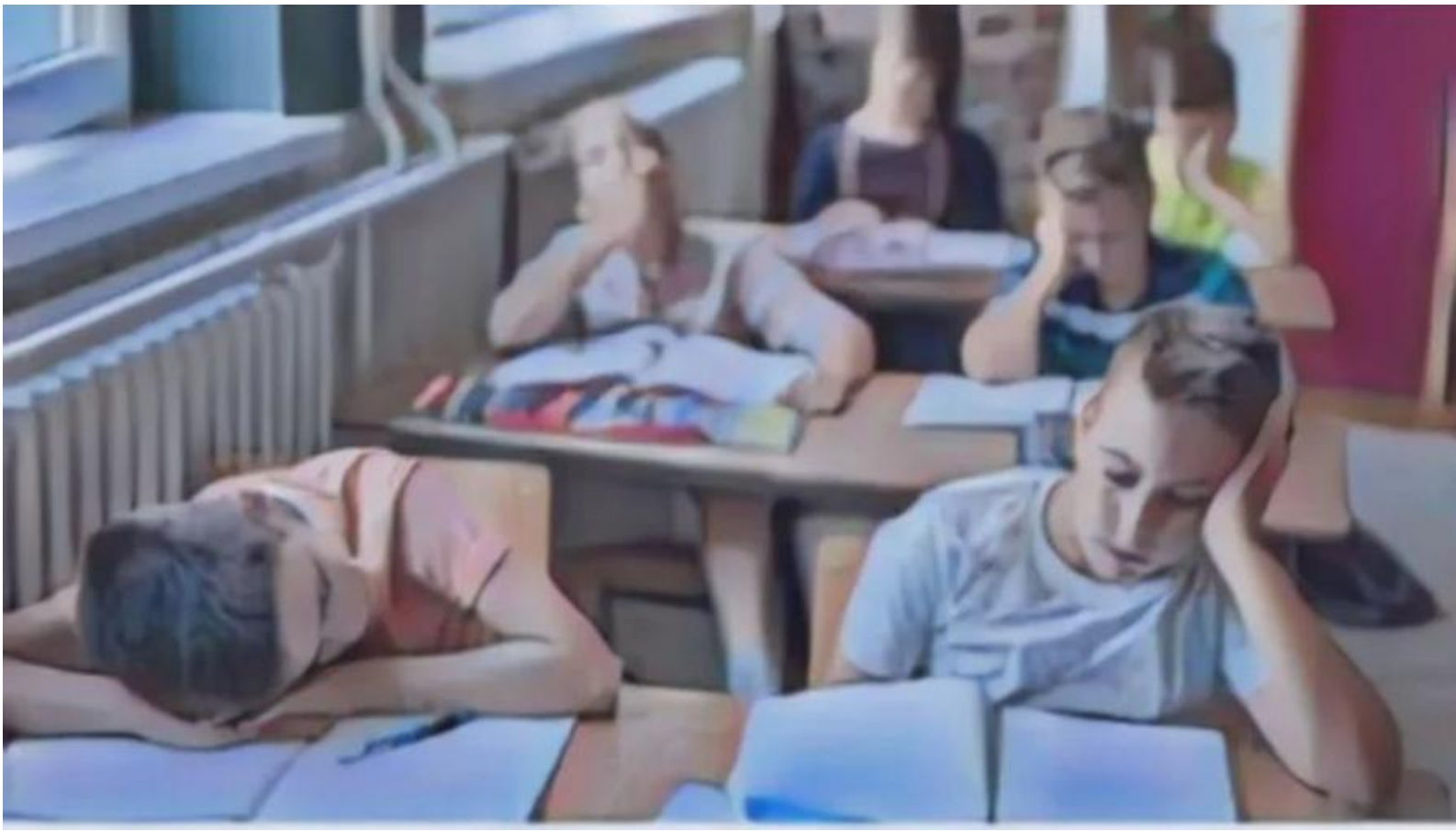
Hot spots near windows were causing overheating in the classroom, and the pupils were struggling with flies coming through the window when opened.

KOOLSHADE®
The Ultimate In Passive Solar Shading

THE SOLUTION

After a trial Microlouvre Koolshade® screens in 2013, a significant improvement with heat gain and glare was proven. In 2014 Microlouvre Koolshade® screens were installed providing pupils with a cool, shaded, glare free study environment throughout the classrooms, with localised hotspots near windows eliminated.

Valuable natural ventilation was possible due to the 80% open area provided by the screens, when the air conditioning was not in use. (Latest tests by LBNL in California have proved that air conditioning equipment can be switched off for 68% of the time, even in spring, if Microlouvre Koolshade® screens are fitted).



When windows were opened, the pupils were protected from flies and other insects by the paper-thin louvres.

Although the screens have taken heavy punishment from footballs and other typical school projectiles, the classroom windows have remained protected and intact.

This is an essential Health & Safety benefit for pupils protected from flying glass. Also, because the screens have stopped breakages, valuable classroom time has been saved.

RESULTS

- 100% solar heat block
- 100% summer sun shading
- 80% free air flow natural ventilation
- Perfect outward vision
- Privacy and security
- Wind and rain protection (100mph winds)
- Health & safety broken glass protection

Case Study Pacific Wildlife Research Centre

Background:

The Pacific Wildlife Research Centre (PWRC) is located on Westham Island, Delta,British Columbia, and is on a site of 720 acres surrounded by inland water and dikes.

Environment Canada (EC) acquired the property from the Reifel Family in1972 which currently houses 48 staff consisting of EC employees and research associates from Partners, NGO's and Simon Fraser University, Burnaby, British Columbia.

The Problem:

During summertime, the windows were not protected from the high solar heat levels causing discomfort in the workstations.

For this project, the sunlight was elevated causing the radiation to hit the windows from an indirect angle to the building. Therefore, a different method of installation was required for some windows on the building.

KoolShade®
The Ultimate In Passive Solar Shading

The subject project replaced an existing one storey structure with a new two storey building consisting of a main floor library and meeting rooms and a second storey with twenty new workstations for scientists, biologists, planners and technicians.

The addition is visually distinct by designing the building using green features. The new building utilizes a narrow depth office floor plate for superior daylighting and an efficient naturally ventilated space with opening windows.

The window pattern and structural grid are generated from the planning module for workstations in the open office offering a direct connection between users and the sanctuary.

SOLUTION

During summertime, the windows were not protected from the high solar heat levels causing discomfort in the workstations.

For this project, the sunlight was elevated causing the radiation to hit the windows from an indirect angle to the building.

Therefore, a different method of installation was required for some windows on the building.

RESULTS

- Thermal comfort
- Reduced room temperature
- Controlled glare nuisance
- Optimised solar heat gain control
- Bird protection
- Made from +90% recycled copper scrap
- Highly sustainable
- 100% recyclable

Case Study HRL Laboratories

Background:

State of the art research facility which uses excessive air condition loads. In order to meet stringent fire safety standards they required a retrofit shading solution.

High energy consumption was significantly reduced through installation of Microlouvre Koolshade® whilst maintaining occupant comfort and building compliance

Challenges

- Long durability 60+ years
- Maintenance free
- Excessive air conditioning loads
- Stringent fire safety standards are required
- Need perfect outward vision
- Natural ventilation was needed

The Problem:

The key reason for the high-energy consumption in laboratory facilities, is their high ventilation rates and the associated air conditioning loads.

To ensure a comfortable and practical environment within the labs, a consistent building temperature of 24 degrees Celsius was defined.

Post-occupancy, the buildings required 240 ton of refrigeration to be applied to maintain this temperature of 24 degrees.

Alternative solutions to reduce the cooling load through minimising solar heat gain had to be found, and without infringing on Malibu's rigid legislation on reflective glass and window films.

HRL LABORATORIES

THE SOLUTION

What was then known as KoolShade®, a name we have returned to, was installed throughout, ensuring 87% of the sun's rays and its effects were blocked.

The reduction in refrigeration tonnage was recorded at over 17% due to the screens alone.

That was installed in 1960 and 60+ years later, the screens are still in place, performing as they did on day 1, and remain aesthetically pleasing, without any maintenance.

The building management have confirmed that they are simply pressure washed (in-situ) just twice a year and are still 'in great shape'.

THE RESULTS

- 17% reduction in cooling load
- Balanced daylighting and full CRI
- Maintained ability to view out
- Compliant with all standards and regulations
- Easy to clean and durable

KoolShade®
The Ultimate In Passive Solar Shading

Case Study Alexandra Hospital, Redditch

Unhealthy dangerously high internal temperatures; poor natural or high energy use mechanical cooling spreading viruses.

Smartlouvre Technology

Background:

Alexandra Hospital was facing the same problems that most Healthcare buildings and occupants encounter; unhealthy dangerously high internal temperatures; poor natural or energy-guzzling mechanical cooling spreading viruses.

Extreme overheating was experienced inside the wards and sash-style opened windows were needed for ventilation purposes.

Traditional internal blinds just did not work as now proven by Government Legislation.

Internal systems are also not conducive to clean sanitary conditions.

The problem:

- Zero heat transmission essential
- Stop very high internal temperatures
- Patients and Nursing Staff suffering from overheating
- Poor, unhealthy air quality
- Natural ventilation was essential
- Energy efficient zero maintenance product needed
- Good outward vision needed
- Pure natural daylight light (100%CRI) essential

Results:

- Heat block and temperature reduction
- Natural ventilation
- Views out
- Energy saving

THE SOLUTION

Worcester Trust adopted an energy-saving drive strategy demanding a highly efficient barrier to solar heat gain, which protected patients and staff, saved or even removed the need for air-con, and provided all the recognised environment comforts. Microlouvre Koolshade® ticked the boxes in terms of leading to a lower internal temperature and reducing the HVAC load by at least 68%.

A straightforward, quick, and importantly non-intrusive installation with Lift in / Lift out screens was the method used for integration, resulting in overheating elimination, natural ventilation, unobstructed views to the outside, and a massive cut in mechanical cooling costs. With zero maintenance and 60+ year life span this was exactly the right medicine for any hospital.

Case Study Optoelectronic Room Southampton University

Background:

Southampton University is one of the largest universities in the UK, with a leading Optoelectronics Research Centre and Clean Room.

This Integrated Photonics Cleanroom (IPC) is designed for scientific experiments and for planar processing of a very wide range of materials not normally found in silicon processing facilities.

Acceptable ambient temperatures are crucial to maintain an acceptable working environment.

The problem:

Due to the high rate of air exchange, air conditioning as a retrofit solution was completely impractical.

The view to the outside was considered a critical design feature of the lab and could not be altered.

The design that covered the glazed façade also holds special significance to the lab as it reflected a significant milestone in the lab's history.

A solar control solution was needed to be complimentary and not obscure the design from view.

Results:

- Significant reduction in internal temperatures
- Light and easy to install
- Compliant with all standards and regulations
- Maintained ability to view out

KoolShade®
The Ultimate In Passive Solar Shading

he Project Managers recommended Microlouvre Koolshade® solar shading in order to significantly benefit their building with an integrated solution which was quick, non-intrusive and did not interrupt work inside.

Microlouvre Koolshade® screens were quickly and easily installed direct onto the glass using the famous 3M VHB adhesive tape to fix the tracks, top and bottom, directly to the glass panels.

University of Southampton

Immediately, significant reductions in temperature were experienced, such that you could feel the difference when touching the glass on the inside before and after the screens were fitted.

Case Study Peckham Police Station

Background:

Originally built in 1893, by 1988, Peckham Police Station had become a typical listed and ageing Victorian building.

Requirements

- Long durability 30+ years
- Maintenance free
- Environmental control
- Remove overheating
- Privacy

The Problem:

Its tired sash windows and irregularly opened or closed window blinds presented a messy and disorderly facade. With no environmental control, the building overheated in summer and was difficult to heat in winter.

Due to open windows, and the ability to view inside from out, privacy and security was massively compromised.

The Metropolitan Police Service (MPS) is the territorial police force responsible for law enforcement and the prevention of crime within the ceremonial county of Greater London.

In addition, it is responsible for some specialised matters throughout the United Kingdom, including national counter-terrorism measures and the protection of specific people, such as the monarch and other members of the royal family, members of the government, and other officials.

THE SOLUTION

In 1988, Peckham Police Station was modernised with Microlouvre Koolshade® screens , and the results are as effective now, as they were on installation. Microlouvre Koolshade® is the ideal solution for heritage or listed buildings as it can replicate any window shape and appearance, and as such the station was given a sleek and uniform exterior that is still visible today.

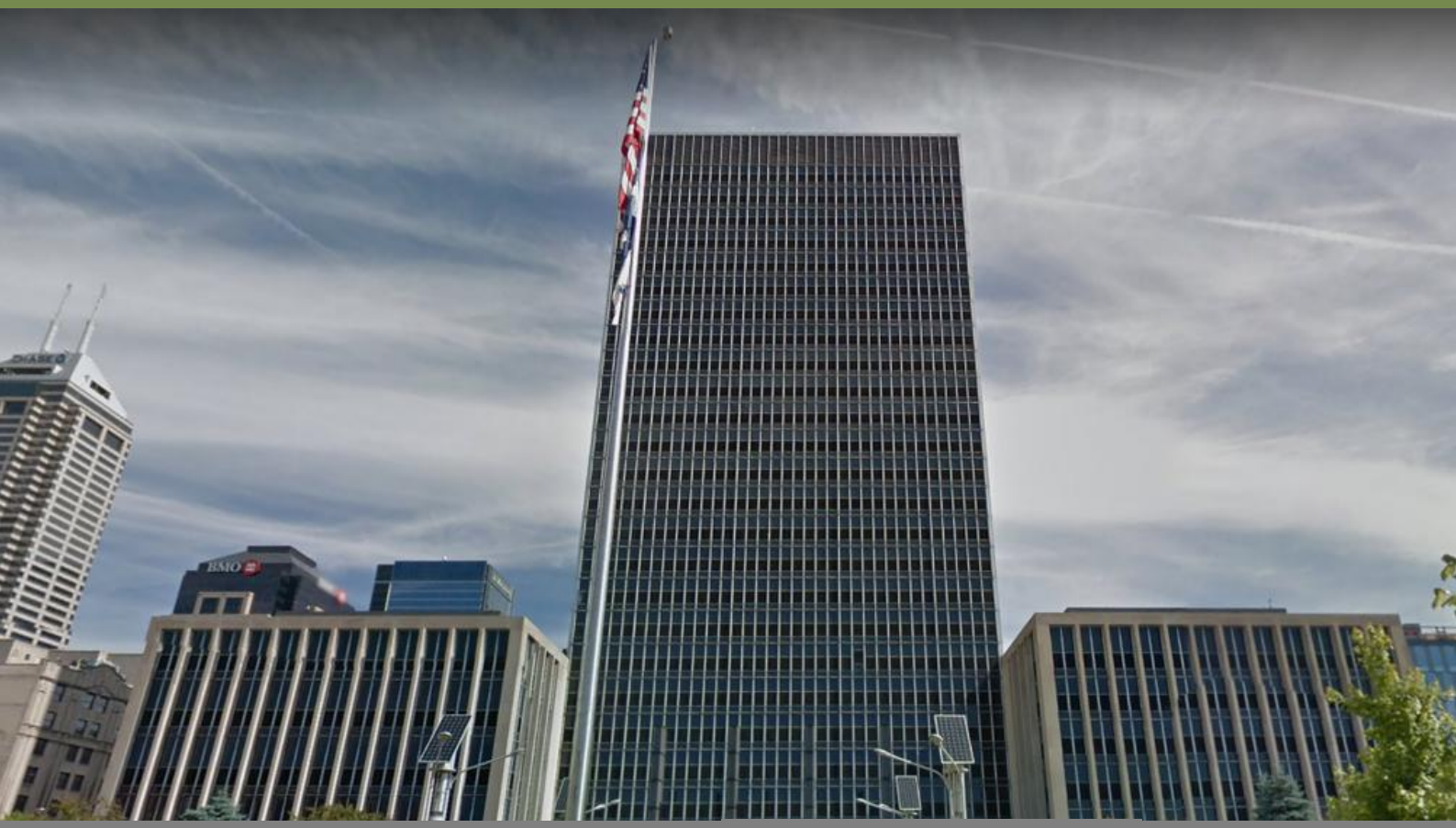
The problems of huge summer heat gain and winter heat loss were instantly solved as Microlouvre Koolshade® is able to block up to 100% of total solar heat gain. Microlouvre Koolshade®'s 80% open area gave occupants natural ventilation and perfect outward vision. Yet due to the screens' directional privacy capabilities, views inside the building were restricted. The windows were shielded from direct ingress of rain and had added protection against intentional window damage.

30 years later, the building's appearance remains uniform and uncluttered. The occupants continue to enjoy both thermal and visual comfort and annual energy savings are being made due to decreased HVAC requirements. The annual cost of this maintenance-free installation spread over the 30 years, even at 2018 values, equates to less than £400 per year and energy savings can reach up to 68%.

THE RESULTS

- Window frontage unchanged and made clean and uniform
- 100% heat blocked
- Up to 68% energy savings
- 80% free airflow natural ventilation
- 80% open area for clear outward vision
- Directional privacy & glazing security
- Durability and longevity
- 60-year maintenance-free lifespan

Case Study Indianapolis County City Building



Background:

The Indianapolis City County Building was built in 1962 with 3,400 windows, the majority facing due South, and subjected to wind speeds of over 80mph (130kph).

Over 40 years after installation, the Microlouvre Koolshade® screens on the Indianapolis City County Building are still operational and continue to provide thermal and visual comfort to occupants whilst making substantial energy savings, all with minimal maintenance.

Challenges

With 28 storeys, 2 wings each with 7 storeys, 1 million square feet of space, 3,400 windows, solar heat gain was a big problem.

Offices were overheating and cooling energy usage was tremendous.

The Problem:

Internal temperatures were reaching an impossible 100°F (39°C) requiring three massive refrigeration units of 1,000, 1,350 and 1,500 tons each. Energy costs were a problem and there was increasing pressure for green, sustainable buildings.

In 1978, after six years of problems, the Chief building Engineer searched for solutions including solar control films, sunscreens and shading devices to reduce solar radiation. Vinyl coated woven fibre glass external fabrics were quickly rejected because of poor visibility and life span.

KoolShade®
The Ultimate In Passive Solar Shading

The City-County Building is a 28-story building at 200 East Washington Street in downtown Indianapolis, Indiana, that houses the offices of the consolidated city-county government of Indianapolis and Marion County, Indiana, known as Unigov.

THE SOLUTION

The chief opted for Microlouvre Koolshade® (then known as Koolshade®) which had shown in tests to be nearly three times as effective as window film, reducing temperatures by up to 26°F enabling an unobstructed view out, and with 500% better life span.

Immediately after the installation of the Microlouvre Koolshade® screens in 1976, during a four-month period, the electricity consumption of the three chillers was down 11.8%, and during the year it was down a total of 21%.

40 years after installation, the Microlouvre Koolshade® screens on the Indianapolis City County Building are still operational and continue to provide thermal and visual comfort to occupants whilst making substantial energy savings, all with minimal maintenance.

RESULTS

- 100% solar heat block
- 100% summer shading
- Hurricane wind resistant at 100mph
- Clear outward vision
- 40-year maintenance-free life span
- Massive energy saving and ROI
- Green, sustainable building
- Temperatures reduced by up to 26°F (15°C)

Case Study Campus Pictet de Rochemont

Background:

The conurbation around Geneva is undergoing a stunning transformation. It is a re-invention of Urban and City spaces, conceptualised with the benefit of hindsight, and planned for a conscious future. The goal is to construct a symbiotic space for living and nature, with the benefits this will bring. At the heart of the Campus Pictet de Rochemont will be a showcase building.

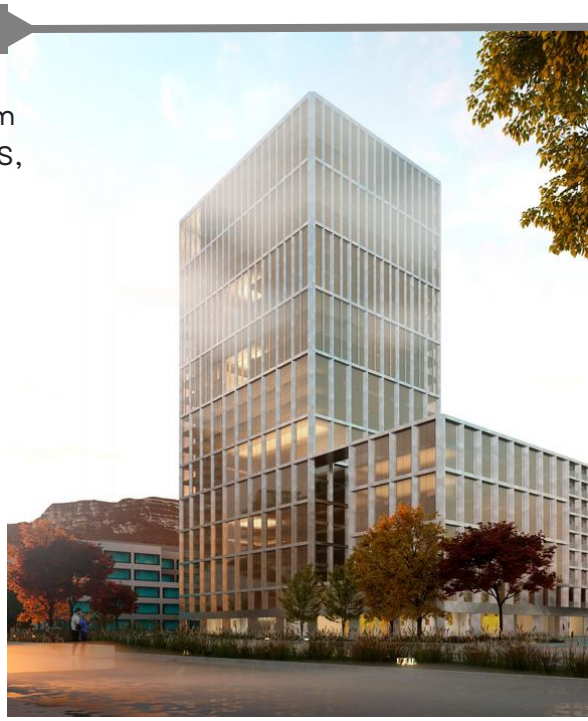
A place to live, work and thrive in the knowledge that they are part of the remedy to the Global Warming Crises.

The Problem:

The Pictet Group's ambition was to achieve Platinium rating for the new building. The highest level of SNBS, LEED and WELL certification possible.

Sustainability and economic viability for **SNBS**
Environmental and energy protection for **LEED**
Assessment of occupant well-being for **WELL**

It needed to be one of the **most environmentally conscious** buildings in Europe.



The Solution? KOOLSHADE® The Ultimate In Passive Solar Shading

Innovation is expected when the Architect's name is revealed as Inès Lamunière, the founder and head of designlab-architecture, designers of exceptionally modern and sustainable, buildings.

From concept to design & specification, no leaf was left unturned in the search for a sustainable, carbon-neutral, environmentally sound construction. There are some material elements that are breaking new ground, not least of all, the dynamic, multifunctional building 'skin'.

The requirements were to:

- Provide effective Solar Shading
- Control Light & Glare
- Ensure energy saving
- Be manufactured from, and in, a sustainable way

The angular selective, 3D, Copper Bronze material will be added externally remove solar heat gain, allow ventilation to flow and remove glare whilst meeting LEED visual contact with the outside, critera.

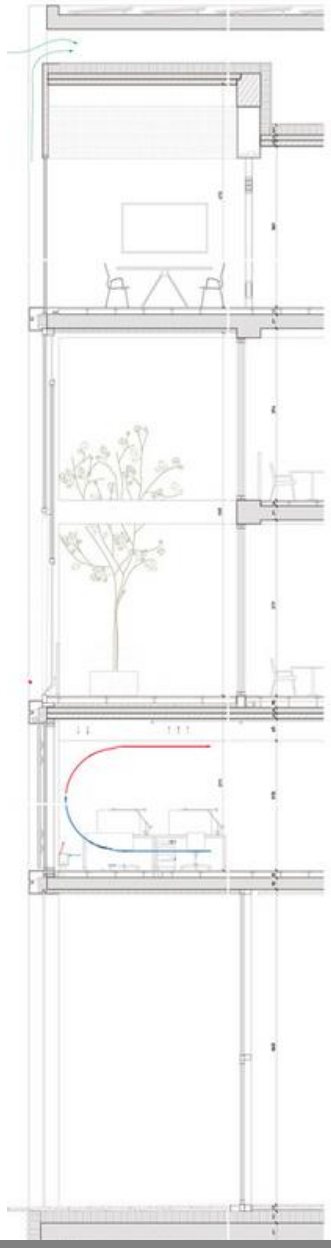
PICTET 1805

The building facade design is using a unique woven louvre material, known as KoolShade from SmartLouvre Technology.

It will bring immense benefits to the occupants of the building and to the environment itself.

STATS

- Inauguration of the building **2025**
- Office Space **55,000 m2**
- Number of workspaces **2,500**
- Area of KoolShade Fabric **12,000 m2**



Case Study Victory Park, in the city of Omsk

Background:

Having become an emblem of the city, the complex was opened on 7 May 1985 with Victory Boulevard on the eve of the 40th anniversary of the Soviet Union's victory in the Second World War. The park is still a place where fallen heroes are celebrated.

There are imposing statues in various areas of the park which pay tribute to their daring loss, without distinction of age and type, accompanied by sculptures including "Glory to the Heroes", which bring light to the incontrovertible symbol of the communist party: the five-pointed star.

Outcome:

Victory Park, in the city of Omsk, which is one of the biggest monuments of Eastern Russia and an awe-inspiring war memorial, underwent a recent restoration where a sympathetic change in the lighting theme was vital.

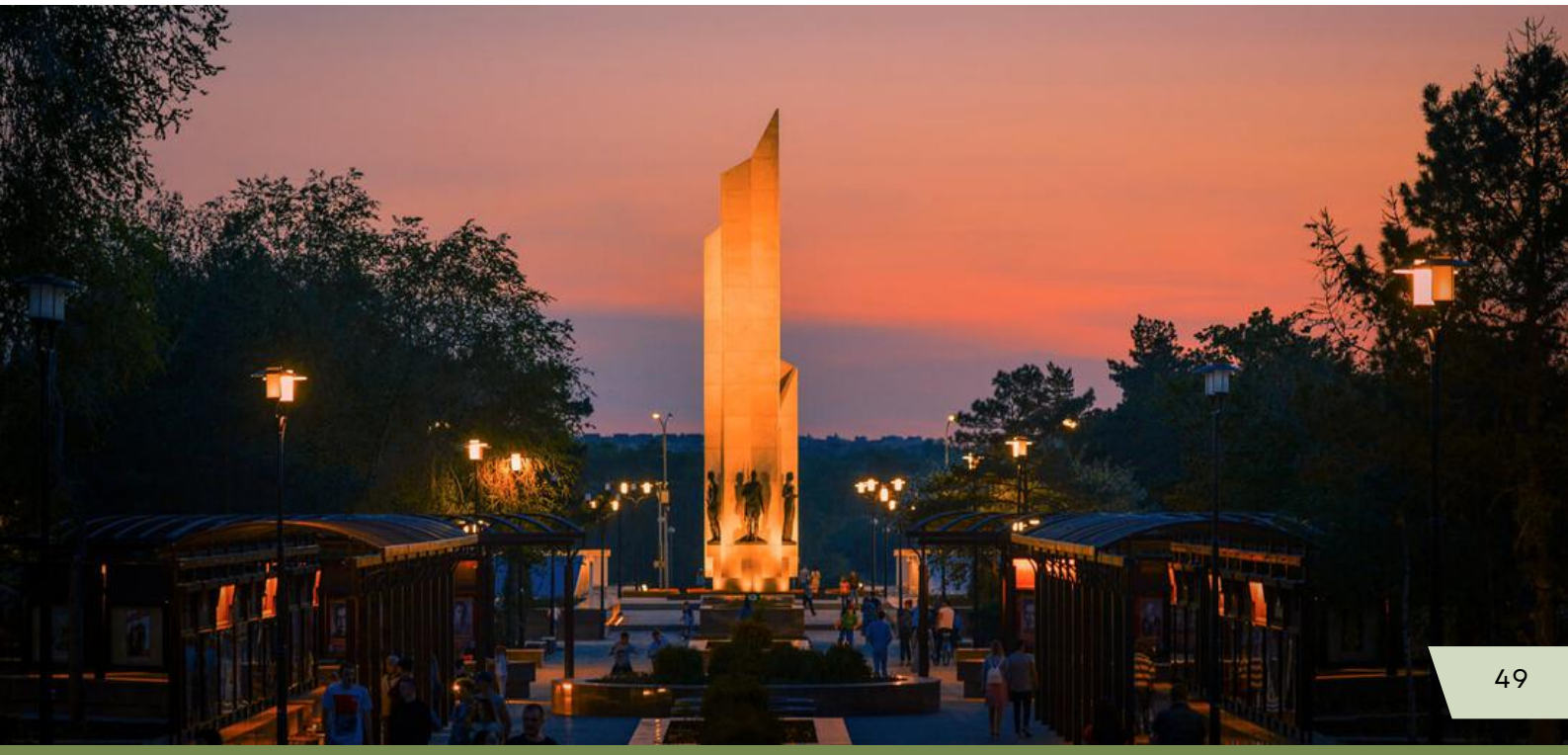
The restoration included an entire technical lighting system revamp in order to give the park new lustre through fundamental lighting, suitable for highlighting the project in its entirety.

Proceeding down Victory Boulevard, the visual opens up to the “Glory to the Heroes” monument, where Linea Light Group lighting plays a key role in highlighting the imposing sculpture complex. The pondered selection of products with narrow, clear and efficient optics was born out of a desire to create the right lighting to emphasise the entire monument.

Therefore, Archiline_twin units were also chosen, professional projectors for outdoor use, and four Prolamp units, projectors dedicated to industrial and urban lighting. The latter was supplied in a custom version and enhanced with the addition of directional blades and a beam shaper that allows the excess light to be contained.

What truly sets Victory Park apart is the designer lighting that illuminates the park at night. This stunning work of art is a testament to human creativity and innovation, and it's an experience that you won't want to miss.

As the sun sets over Victory Park, a magical transformation takes place. The designer lighting comes alive, illuminating the surrounding area with a warm and inviting glow. Its unique design creates a mesmerizing display that captivates every visitor.



Case Study The Exchange, in Dubai

Smartlouvre Technology

Built to provide services to Dubai's bustling financial hub,The Exchange is designed to create a relaxed, stress free and intimate oasis in the luxurious city. Along with the numerous banks, financial institutions and offices, it was created to be a 'hub of ideas'.

It has also become a culturally vibrant and active community, thanks to the presence of art galleries, excellent restaurants, and high calibre commercial establishments. A correct lighting design was absolutely essential to continue this atmosphere into and through the night.

Background:

Sustainability was a major factor in completing this project as the lighting designers were keen about implementing a product that would meet all the sustainability requirements set for the building's façade.

Furthermore, light pollution was a concern that needed to be eliminated when applying Linea Light's product with our Microlouvre Koolshade® fabric.

- Facade lighting
- Modern architecture
- Meeting stringent health and safety regulations
- Sustainable product required
- Dubai International Financial Centre

Outcome:

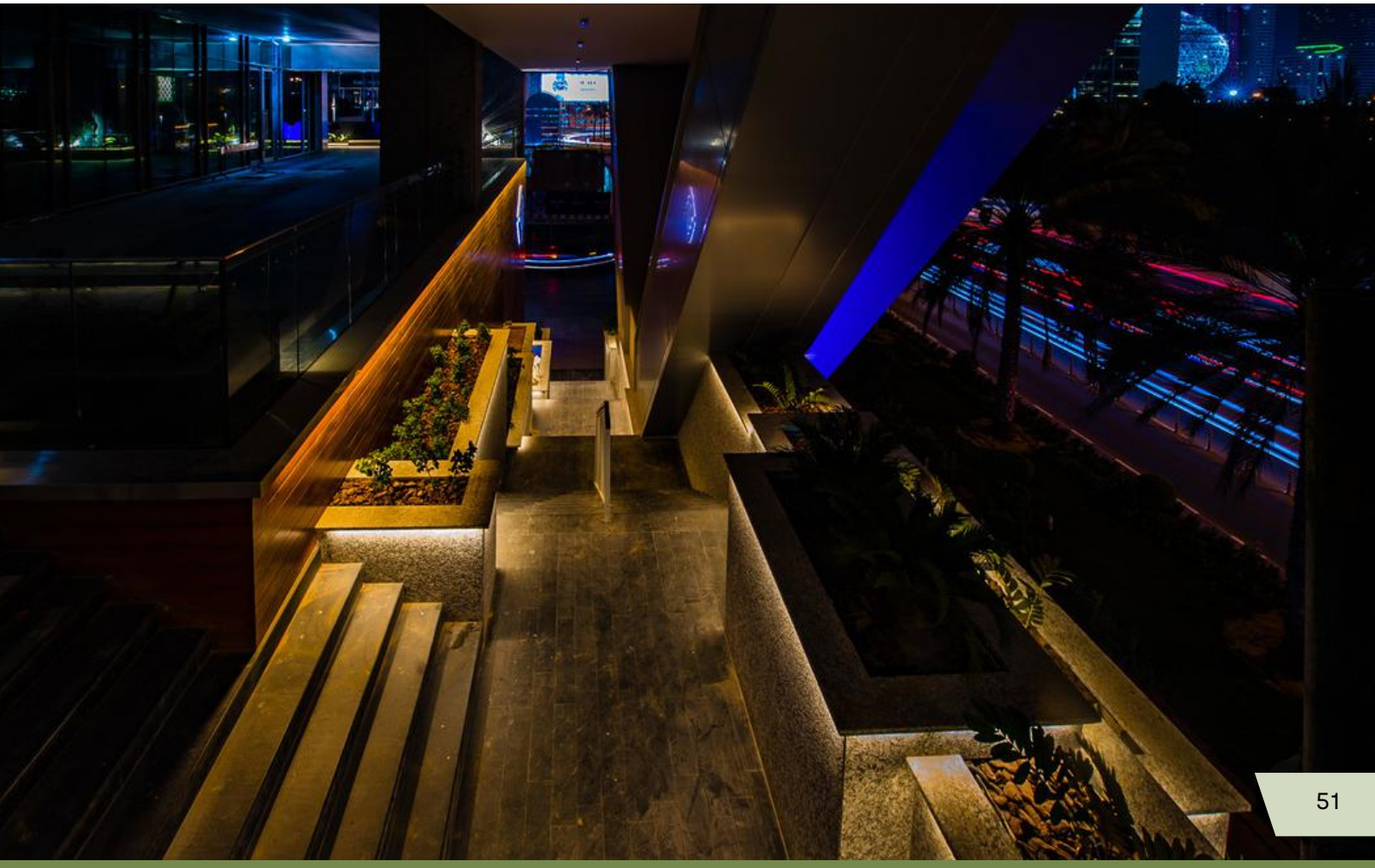
- Directional light control
- Nonexistent light pollution
- Made from +90% recycled copper scrap
- Balanced glare control

MICROLOUVRE®

helps remove light pollution with it's ability to hide the light source

On the main façade, delineating the external views, the metal tiny paper thin louvres were integrated into Linea Light's Xenia and positioned with 8-degree optics, chosen to not impair the internal function of the spaces with any light reverberation.

To tackle the light pollution issue, Microlouvre Koolshade® concentrated the light source in the intended direction, solving the problem of unwanted light trespass and reducing light spill and glare. This essential to protect passers-by from unwanted and hazardous glare from outdoor lighting units.



Case Study Osijek Bridge Drava River, Croatia

Background:

Osijek pedestrian bridge spans the Drava River and is one of the city's most iconic landmarks which originally opened in 1981. In 2017 the bridge underwent a spectacular full colour transformation funded by a Coca-Cola marketing campaign, which required citizens to collect more than 100,000 bottle caps.

Coca-Cola launched the campaign to mark 50 years of production in Croatia and to share its success as an active member of the local community by supporting projects that enhance the lives of citizens.

Outcome:

- Balanced and directional glare
- High lumen transmission
- Strong colour saturation
- 100% CRI
- Nonexistent light pollution
- Fire and heat resistant

Compared to other landmark bridges around the world, the Osijek pedestrian bridge was quite literally, left in the dark.

Dynamic, full-colour lighting was required to highlight the bridge's beauty and reinforce its iconic status, as well as enhance the city's recognizability and attract tourists. It was important for the lighting to become integral to life in Osijek, and to be the backdrop for many memories and important life moments.

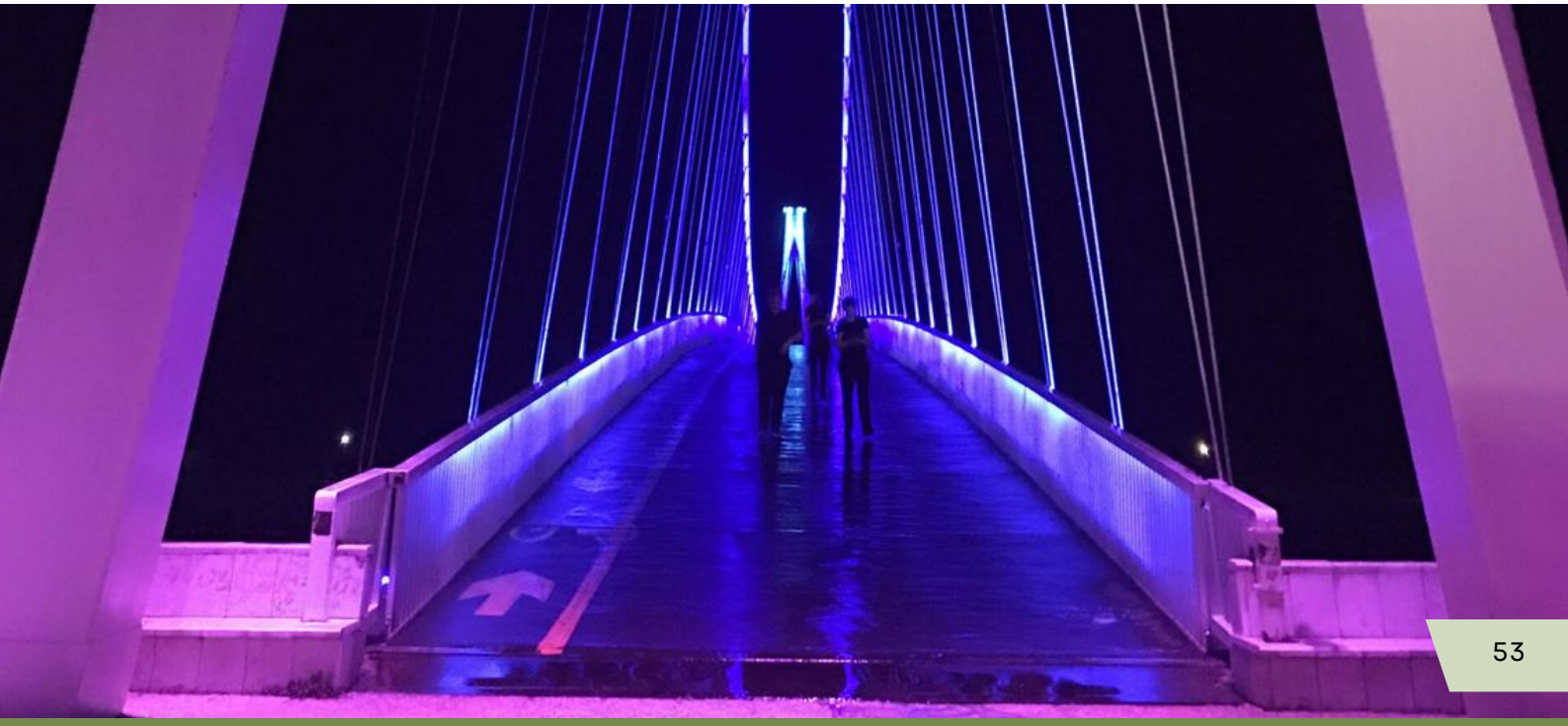
acdc's parent company, Zumtobel Group, was invited to design, supply, install and commission a new lighting solution. The brief needed the bridge to accommodate the bespoke lighting requirements of any future events and special occasions, which has been delivered through a lighting scheme that offers a multitude of scenes and in infinite colours.

The installation of the new bridge lighting had a tight timeframe of just 1 week. More than 20,000 people attended the ceremony to celebrate the switch-on of the lights, which were set to red to reflect the Coca-Cola brand.
The Blade range of LED luminaires from acdc was ideal for this project: a mains onboard linear wall wash luminaire designed to evenly wash distances up to 8 metres in height and to ensure that minimal additional mains cables are required. This was especially beneficial given that it is used along the full length (210 metres) of the bridge.

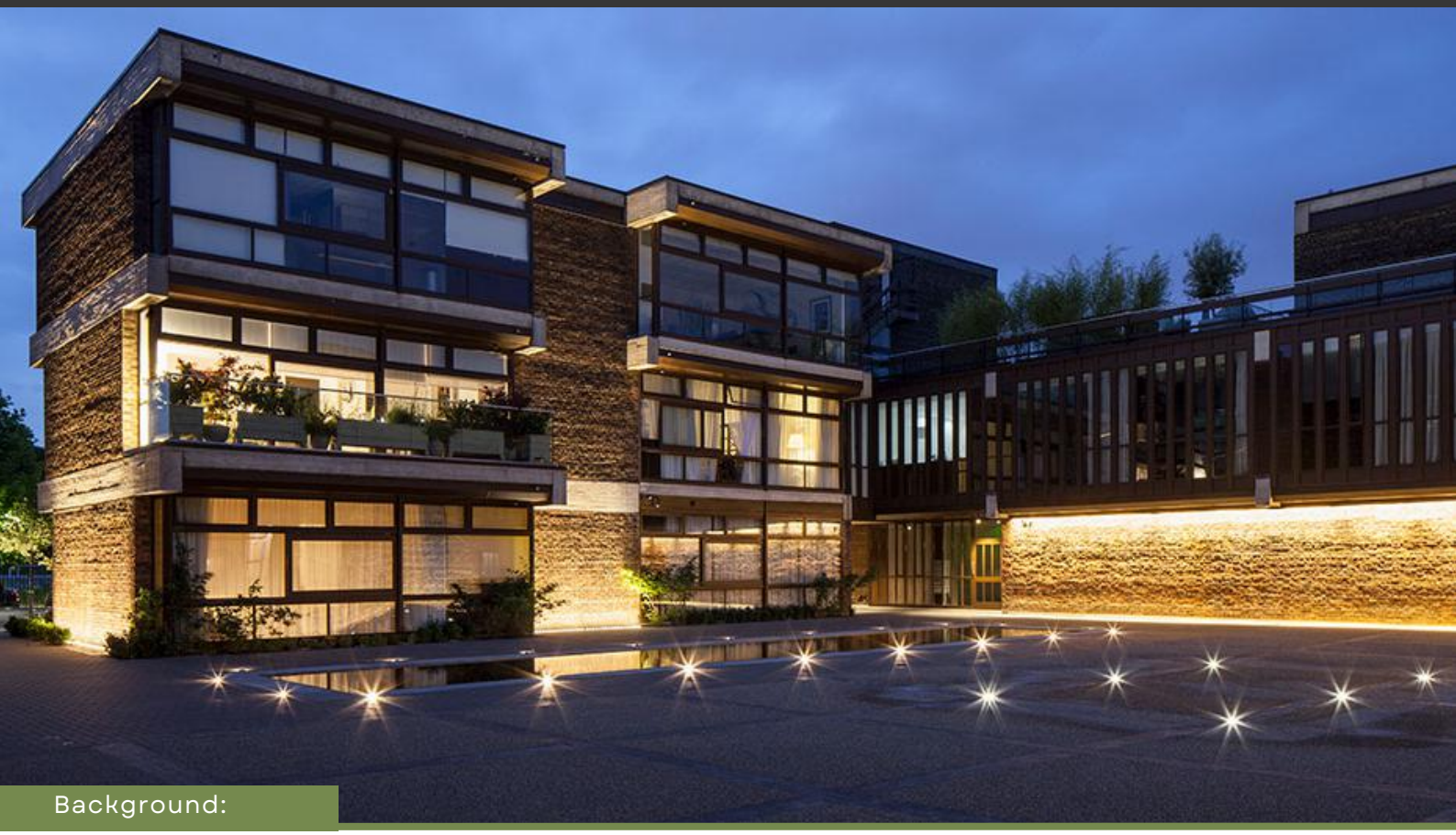
Smartlouvre worked closely with acdc to enable the integration of the Microlouvre Koolshade® fabric into the luminaires to hide the light source whilst maintaining a directional balance of glare control and high lumen transmission.

The long length and the nature of the use of the bridge as a public space restricted Zumtobel from using any external fittings to the lights regarding the health and safety regulations. The internal integration of the metal louvred fabric, into the luminaires, therefore, allowed acdc's luminaires to perform as intended whilst meeting the desired effect.

acdc's powerful Fusion LED floodlights were used to graze down the pillars that dominate the skyline at either end of the 35 metre tall bridge. Fusion is an intelligent, highly efficient, IP66 architectural floodlight, which delivers 2000lm in a single colour, colour change, or dynamic white. Despite its small size, Fusion offers high output, and with the introduction of Microlouvre Koolshade® fabric within each unit, the light can be sharply focused, with strong colour saturation, consistency, and with very little light pollution.



Case Study Lilian Baylis, Kennington, London



Background:

The former Lilian Baylis Secondary School building, a prominent example of 'Brutalist' architecture has been renovated and refurbished to become an award wining residential complex.

As an essential part of this transformation, an aesthetic exterior lighting scheme was essential to create a serene and welcoming ambiance for the building. Exterior lighting now envelopes the raw architecture blending with it and giving it a new lease of life rich in atmosphere.

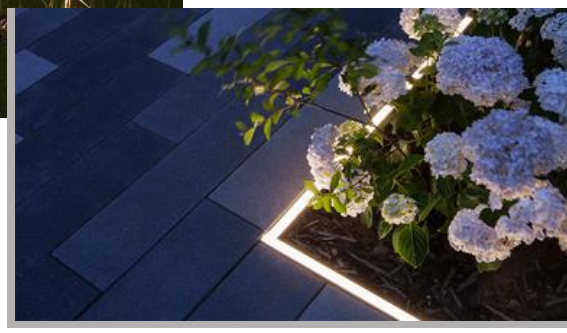
Outcome:

Linea Light group and the Lighting Design Studio were looking to create a new feel for the architecture that was built in the 1960s with intense architectural characteristics such as bare concrete and sculptural contours.

Lighting had to be installed in a way that would reduce the tension caused by the construction's sharp lines.

The project required a choice of architectural lighting that would result in both; an aesthetic environment and eliminate any visual discomfort and that's where Microlouvre Koolshade® came in play.

Xenia with Microlouvre Koolshade® takes all the advantages of the Xenia family, but was able to guarantee even more visual comfort for the customer, applying an anti-glare screen to the product that sections the beam into microcells.

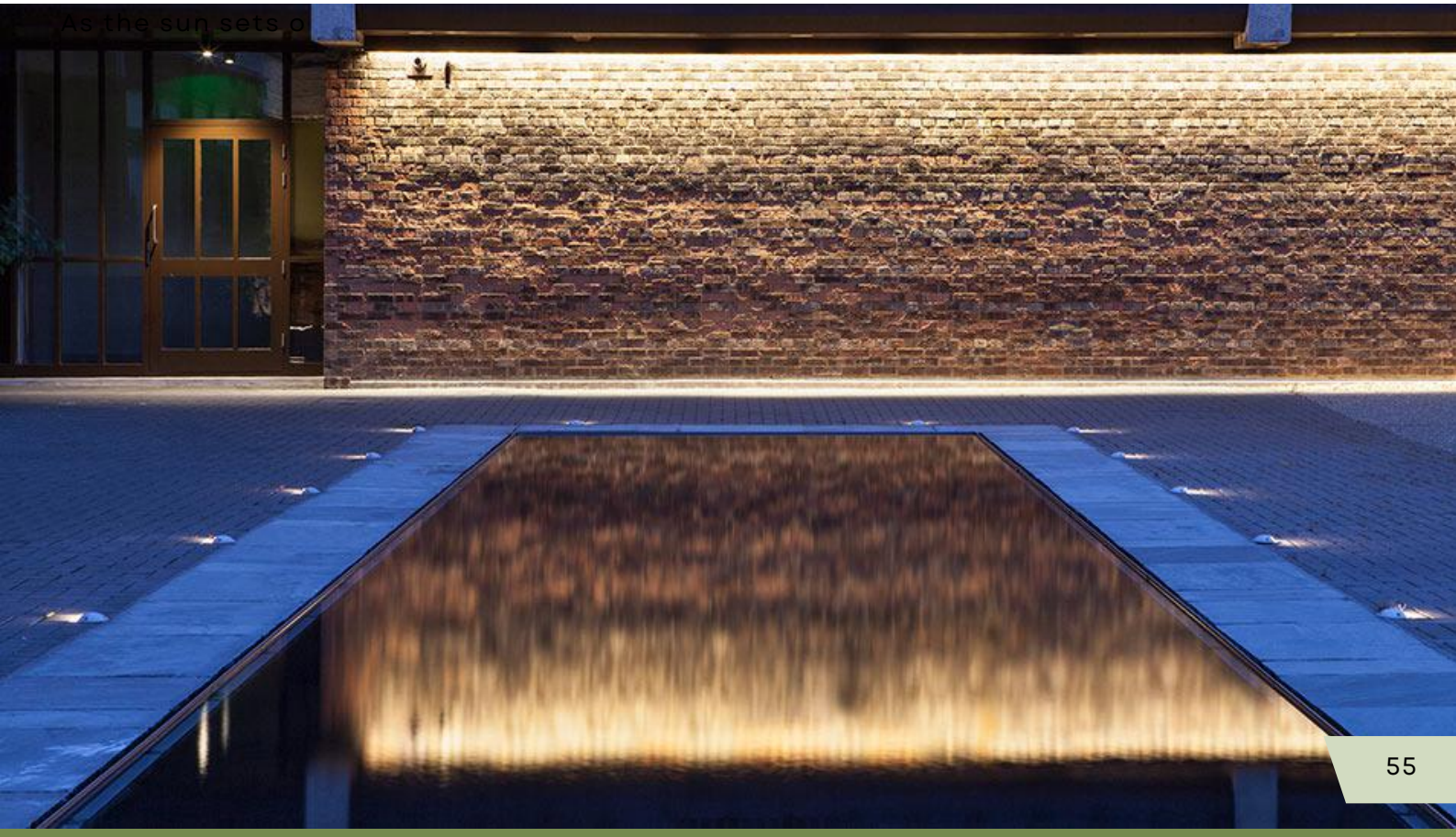


The screen, extremely thin, does not affect the quality and uniformity of the light emitted, but allows part of the glaring to be shielded.

Resulting in:

- Balanced and directional glare
- Nonexistent light pollution
- Visual comfort

As the sun sets o

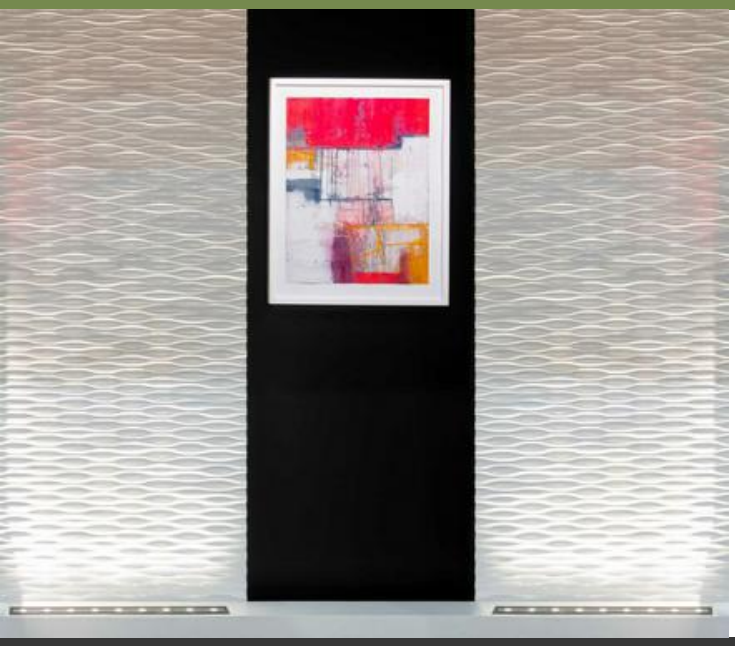


Case Study John Cullen Lighting

Background:

John Cullen Lighting is an award winning lighting specialist who has pioneered architectural lighting for over 40 years, creating high-end, miniaturised luminaries that deliver premium quality light without compromise.

Outcome:



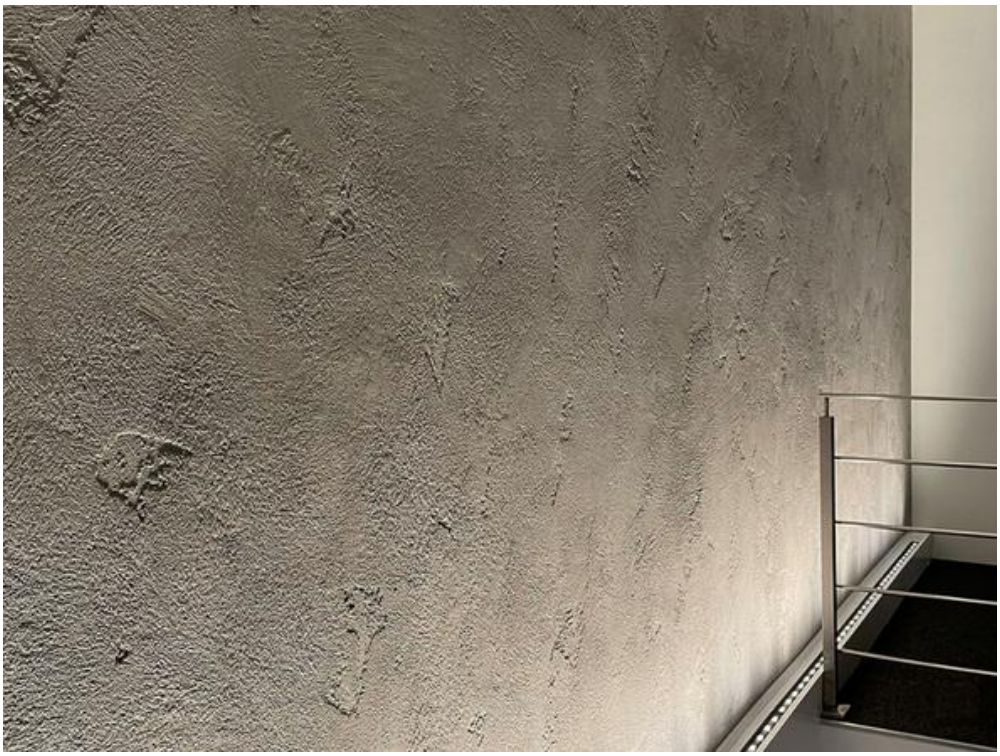
Their latest offering, the Contour Edge, is an in-ground, recessed wall 'grazer' designed to glide light gracefully along vertical surfaces, picking out and emphasising architectural textures and features – in both interior and exterior applications.

Due to the nature of its intended use, it's highly likely that the Contour Edge will be situated in positions where sideways glare could be problematic for the end user, for example when placed parallel to corridor walls.

The use of Microlouvre Koolshade® K700/0° fabric integrated into the luminaires effectively neutralises all sideways glare, without disturbing the light projected forwards onto the illuminated surface.

Combined with screen-printed glass to protect the viewer from bounce-back glare, Contour Edge is one of the most visually comfortable in-ground recessed luminaires on the market, without compromising output or quality.

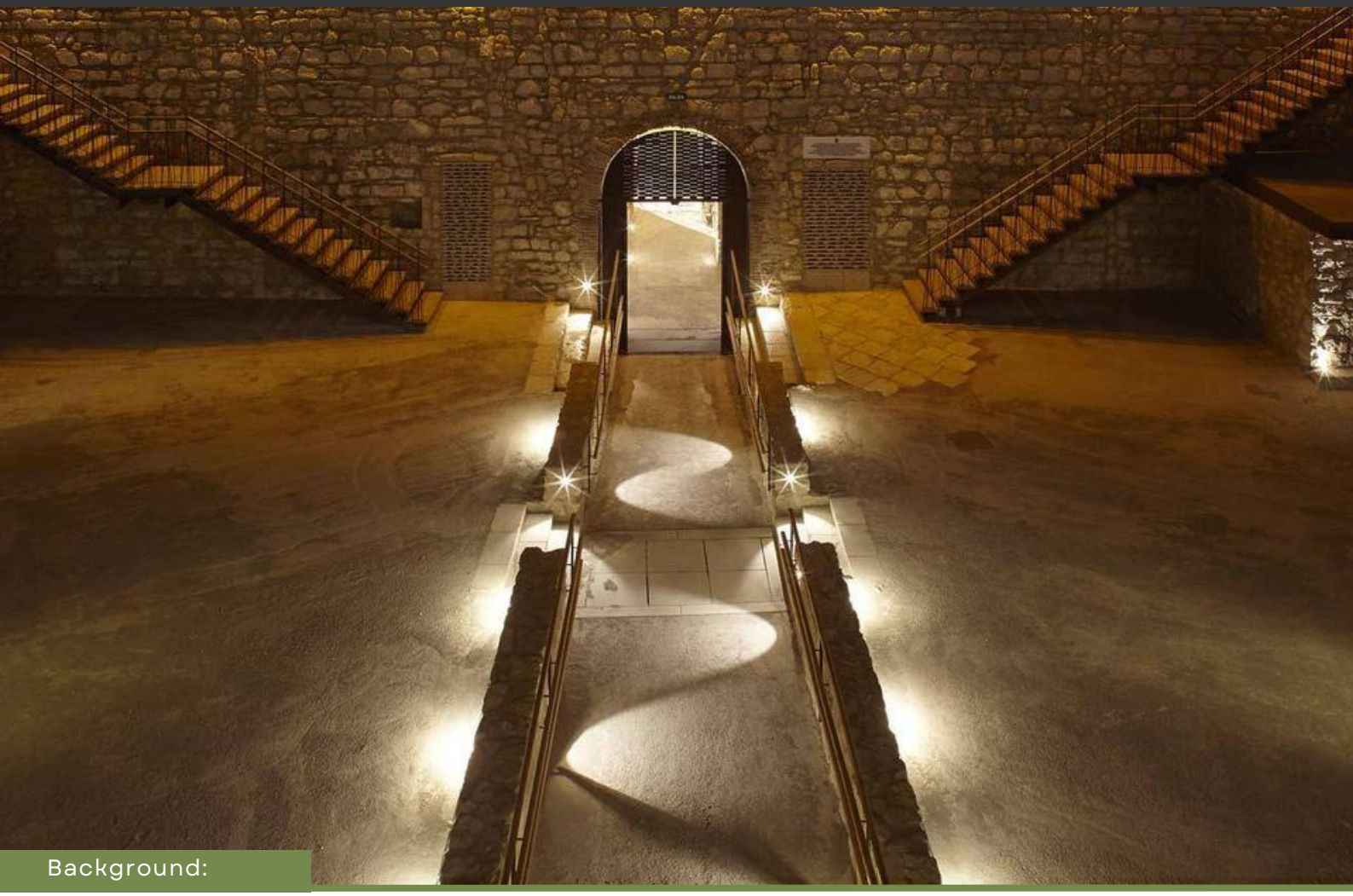
JOHN CULLEN



Resulting in:

- Neutralised glare
- Non-existent light trespass and pollution
- A sustanable answer made from +90% recycled copper scrap

Case Study Fuerte De Victoria Grande



Background:

Smartlouvre worked with Linea Light to integrate Microlouvre Koolshade® anti-glare into their high-power LEDs.

With the integration of our Microlouvre Koolshade® metal Fabric, Linea Light enabled their unique product for this truly historic architecture, built in 1736.

Outcome:

The Fuerte De Victoria Grande fortress was on the verge of being abandoned but this historical architecture was rediscovered and totally restored as a public space for visitors.

Linea Light were the obvious choice with their well proven ability to embrace the unique character of this unique construction, illuminating and creating a perfect harmony between architecture, engineering and lighting design.

They created an innovative lighting scheme bathing the fortress in warm light but this same light had to be focused on the fortress and not the visitors and so directional anti-glare ability was needed for their unique product.

The solution:

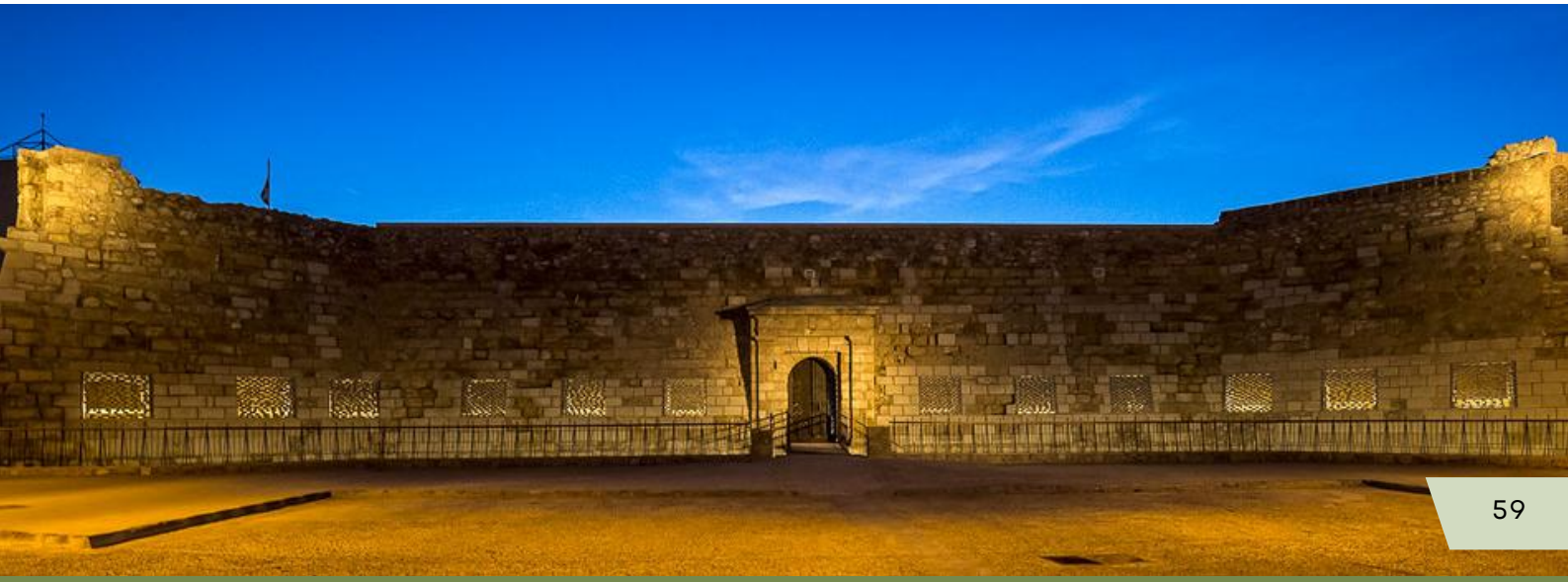
Our Microlouvre Koolshade® anti-glare, light directing fabric was incorporated into their exceptional product.

The Xenia anodized extruded aluminium profiles with high power LED and polycarbonate linear optic were subtly integrated into the historic architecture enabling the powerful illumination to not visually interfere with the magical atmosphere of the environment or the enjoyment and comfort of visitors.

Microlouvre Koolshade® ability to hide the light source whilst maintaining an integrated balance of glare control and high lumen transmission made it the ideal solution for any high-powered light and especially, when combined with Linea Light's unique product.

The results:

- Neutralised glare
- Mitigate light migration and pollution
- Made from +90% recycled copper scrap
- Highly sustainable
- 100% recyclable



Case Study STADKAMER City Hall

Background:

This lighting project brief required the designers to create a striking and exciting exterior; bright, luminous, and colourful.

Grazing linear luminaires created an even light up the facade. The use of Microlouvre assisted with the control of light to be directed to the intended target only, minimizing light pollution and glare.

The requirements were for:

- Facade lighting
- Wall wash effect
- Changing colour schemes
- Meeting stringent health and safety regulations

Stadkamer is a City Hall office building which has been transformed into a contemporary hub. Providing information and education, art and culture in the heart of Zwolle, Stadkamer is home to performances, good food, and community spirit.

A sociable space made for studying and working, socializing and relaxing.

The Problem:

acdc are part of the Zumtobel Group and global lighting application experts in outdoor architecture, plazas and landscapes. acdc design groundbreaking luminaires which integrate market-leading technologies. acdc were invited to work with architects, JHK, on the transformation of the entrance building which connected the other building parts.

It has a closed façade covered with translucent skin with refined vertical lines. The lighting project brief required the designers to create a striking and exciting exterior; bright, funky, and colourful.

The intention was for this event space's facade to share what is happening inside. Using colour, the theme of the function would be portrayed for visitors arriving. The translucency and the changing colours show that the space is full of life.

The acdc Blade Linear Luminaire, with its powerful light output, were mounted at a height of 7.7 metres end-to-end for a continuous wall wash effect.

The grazing linear luminaires' narrow elliptical beam created an even light with the help of reflecting surfaces at the bottom of the concrete wall and façade sending light upwards. The use of Microlouvre Koolshade®, integrated into the units assisted with the control of light to be directed to the intended target only, minimizing light pollution and glare.

Two DMX CueCore solid-state controllers also meant that unique lighting scenes could be created through dimming and individual LED control.

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RESULTS

- Directional light control
- Balanced glare control
- Strong colour saturation
- 100% CRI
- Nonexistent light pollution
- Fire and heat resistant
- Made from +90% recycled copper scrap
- Highly sustainable
- 100% recyclable

Case Study King's Cross Square

Background:

Public realm project on a historic listed building. Lighting designers realised their ambition for this historic piece of architecture, using Microlouvre Koolshade® fabric to neutralise the glare from the in-ground luminaires.

Architectural lighting specialists StudioFractal and its partners, worked on a project to create the first new public square in London for 150 years, a functional space with heaps of character at King's Cross Square, St Pancras.

Challenges:

StudioFractal worked with lighting designer acdc to realize its design for this historic piece of architecture, and we supplied Microlouvre Koolshade® fabric to neutralize the glare from the in-ground luminaires.

- Historic building
- Maintenance free
- Neutralizing glare
- Public realm project

The result has been a cleverly designed (and expertly hidden) LED lighting scheme that defines the furniture and structures in the square at night.

In fact, a perfect blend of functional and accent lighting!

The light grazes up the ground floor of the building to reveal the brickwork. Microlouvre Koolshade® is integrated into the luminaires and works to hide the light source whilst maintaining an integrated balance of glare control and high lumen transmission.

The varying lengths of the space and the nature of use of the historic building as a public space restricted the designers from using any external fittings to the lights, because of health and safety regulations.

The internal application of the metal louvred fabric therefore allowed acdc's BLADE LRi to perform and to meet the desired effect.

Chris Sutherland, Design Director at StudioFractal explained: 'As well as highlighting the broad expanse of the façade, we wanted to gently pick out the small niches and cornices with the same lighting effect. The product we used needed to be available in a range of lengths to suit the variation in space available. Also, being grade listed meant that the luminaire fixings had to be located in existing mortar lines to ensure no damage was done to the façade.'

RESULTS

- Hidden light source
- High lumen transmission
- Fire and heat resistant

Smartlouvre Technology

Case Study Mirabella V

Background:

Mirabella V (MV) is the World's largest single-masted yacht.

The mast is so high, it means the superyacht is unable to pass under any bridge in the world, even the Golden Gate Bridge.

Challenges

Providing free air flow within a narrow profile whilst also acting as an insect barrier

- Salted water tested to ISO 9227
- Accelerated weather tested to ASTM G154
- Humidity tested to ISO 6270
- Lightweight (only 1.1 kgs/square metre)

The Problem:

Modern technologies in spars, rigging, sailmaking, powered winches and electronics enable rigs with larger sail areas, higher aspect ratios, larger loads and simpler handling, which enabled Mirabella V to be constructed.

KoolShade®
The Ultimate In Passive Solar Shading

IMO: 8979374

Name: M5

Vessel Type - Generic: Pleasure Craft

Vessel Type - Detailed: Yacht

Navigational Status: Active

MMSI: 319191100

Call Sign: MDJS3

Flag: Cayman Is [KY]

Gross Tonnage: 1017

Summer DWT: 66 t

Length Overall x Breadth Extreme: 84.7 x 16.7 m

Year Built: 2004

Microlouvre Koolshade® was installed in the critical areas of air handling ventilation, providing the necessary free air flow within a narrow profile whilst being very light and durable. The fine louvres also act as an insect barrier and are able to withstand corrosion from the elements.

RESULTS

- 80% open area for free airflow
- 80% open area for outward visibility
- Heat and fire-proof
- Hurricane force 12 wind resistant
- Light and durable