

BETTER BUILDINGS FOR A BETTER WORLD



mBank

YAFIKALIN

ISSUE 1

**BETTER
BUILDINGS
FOR A
BETTER
WORLD**

KINGSPAN IS THE
GLOBAL LEADER IN
ADVANCED INSULATION
AND BUILDING
ENVELOPE SOLUTIONS.

OUR MISSION IS TO
ACCELERATE A NET
ZERO EMISSIONS
FUTURE BUILT
ENVIRONMENT WITH
THE WELLBEING OF
PEOPLE AND PLANET AT
ITS HEART.



FOREWORD

by Jessica Mairs, a London-based journalist and editor specialising in architecture and design. Jessica contributes to publications including Wallpaper* and Icon, and was previously an editor at Domus and Dezeen.



The way we build is evolving dramatically, with new materials, systems and technologies making it possible to create architecture that is more energy efficient, resilient and sensitive to the needs of its inhabitants than ever before. Building better is the single most important action we can take against our present environmental emergency. Where prowess was once measured in tonnes of concrete and steel, today's stand-out architecture boasts of how little the toll of its construction has weighed on the environment.

There has been huge innovation in combining new building materials like cross-laminated timber, graphene and carbon fibre with emerging digital technologies to challenge ingrained processes, and of creating experimental smog-eating, floating and passive buildings that work with, not against, the environment. But there has also been a quiet revolution in upgrading the workhorse components most buildings will in reality be constructed from.

Researchers are finding less wasteful ways to use traditional materials, developing recyclable formwork for building structures, creating paints that deflect heat, and incorporating recycled raw materials into hidden products like insulation to keep waste out of oceans and landfill. Smart water management is helping

conserve this scarce resource, and high-performing envelope systems are reducing the reliance on artificial heating and cooling with benefits for both the environment and the pocket. A surge of interest in off-site and modular building has been spurred on by the possibilities afforded by advances in digital design, and the ever-present pressure to build quickly and with accuracy.

The environmental activism of Greta Thunberg and Extinction Rebellion, and the ensuing Global Climate Strike, has given a renewed impetus to these developments, and rallied architects and construction experts to find solutions. Collectives like Architects Declare have taken up the baton, committing to "meeting the needs of our society without breaching the earth's ecological boundaries" by changing the way they work. Among the signatories are Foster + Partners – the designer of Bloomberg's European headquarters in London, one of the world's most sustainable office buildings, which is featured later in the book.

Buildings such as this, and others featured in the book, maximise natural sources of energy and light, not only to reduce energy consumption, but to provide an enjoyable working environment. Standardised components that give clarity to their design can also

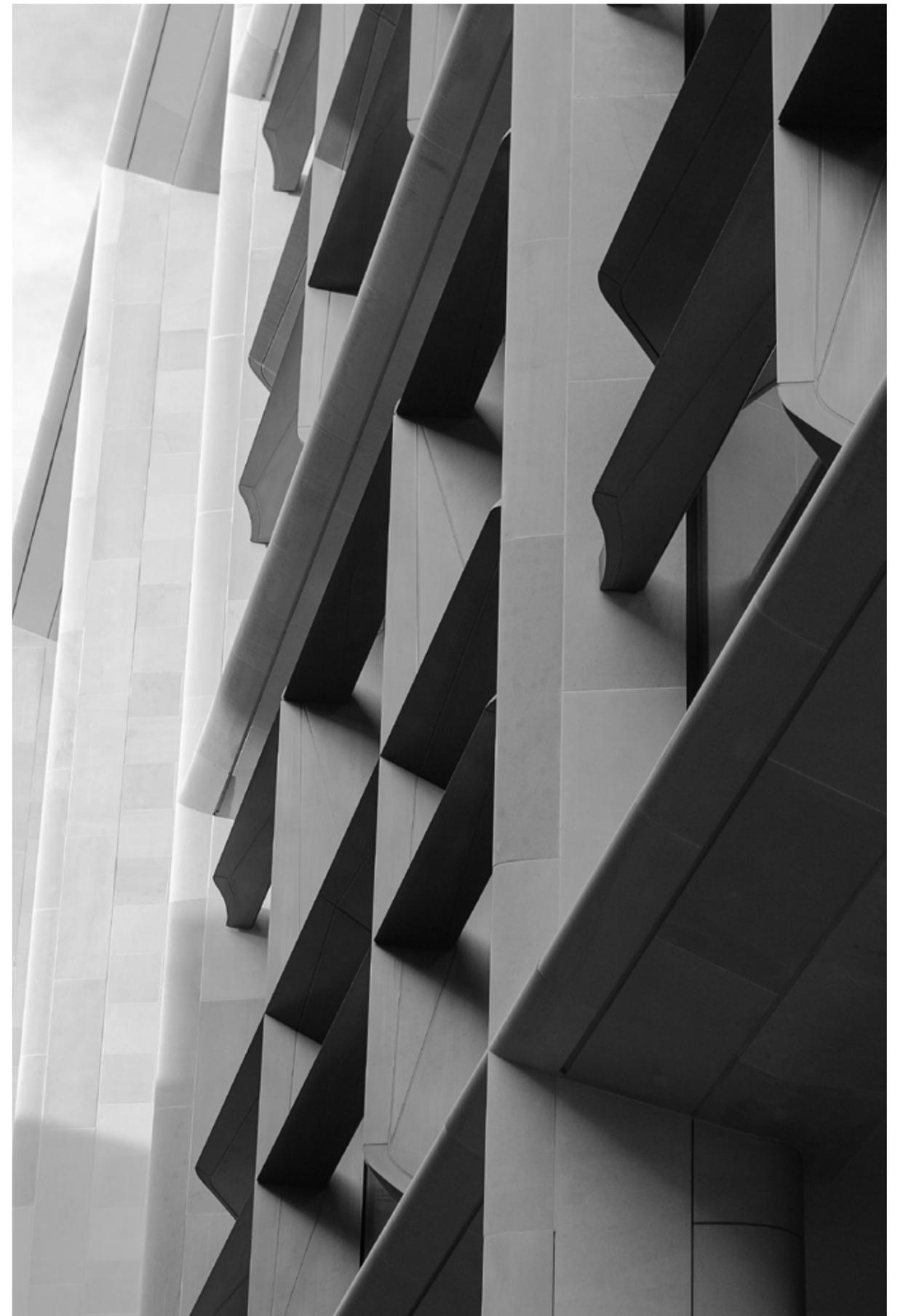
hasten construction times and will eventually help future proof them against adaption and damage.

It is clear that responsible manufacturing has a weighty role to play in architecture achieving its sustainability credentials. The shift towards adopting a circular economy is seeing suppliers reintegrate materials previously considered waste in the production process, develop ways to elongate the lifespan of their products and come up with ways to divert materials from landfill on demolition.

The projects that follow exemplify innovative and future-proofed design thinking, using some of the most advanced materials and technologies available to us today. They are stepping stones towards tackling the issues that the buildings of tomorrow must solve – lowering carbon emissions and creating spaces that support wellbeing for everybody.

Jessica's favourite five projects can be found on the following pages:

Brae Guest Suites	84
SNØ	108
Charlie Bigham's West	120
Jewel Changi Airport	148
Haus Gables	224



CONTENTS

Community and Amenity

Äänekoski Fire Station	14
Bunjil Place	16
Calgary Central Library	18
Forum Groningen	20
Marrickville Library and Pavilion	22
Maryland Heights Community Centre	24
Mill Woods Library	26
PCYC North Beaches	28

Culture and Heritage

Art for Art's Sake	32
The Box	34
Canal Dock Boathouse	40
Dunfermline Carnegie Library and Galleries	42
Eglise Notre Dame de Beaugard	44
Louvre Abu Dhabi	48
V&A Dundee	50
Western Australian Museum	52
Windermere Jetty	54

Education

6 Great Marlborough Street	58
Biskupiec Primary School	60
Jätkäsaari School	62
Newquay Tretherras School	64

Health

Erasmus University Medical Centre	68
Eyescan Oogzorgkliniek	74
HealthPartners Neuroscience Center	76
Karratha Health Campus	78
Victorian Comprehensive Cancer Centre	80

Hotel and Leisure

Brae Guest Suites	84
Center Parcs Longford Forest	86
Croke Park National Handball Centre	90
Entertainment and Sports Arena	92
De Grote Boel Oosterhout	94
Hotel Indigo	96
IMC Cinema	98
International Convention Centre Wales	102
Mullum Mullum Stadium	104
Optus Stadium	106
SNØ	108
The Dixon	110

Industrial

Aico Headquarters	114
Astellas ARK	116
Binder	118
Charlie Bigham's West: Phase 1	120
Dalmunach Distillery	122
eins Energy Storage	124
Hell Energy High Bay Warehouse	126
Ipsen Biopharm Limited	128
Komatsu Headquarters	130
Pilz Software Development Centre	132
Poco Loco	134
Project Showrooms N3	136
Rhenus Logistics	138
Stockhabo ICE	140
Techno-Trade	142

Infrastructure and Airports

Autóipari Próbatálya Zala Kft. Test Track	146
Jewel Changi Airport	148
London Bridge Station	152
San Francisco Airport	154

Mixed Use

1 Finsbury Avenue	158
AFI Karlin Butterfly	160
"B³ Gadamerplatz"	166
Espace Boissin	170
Here East	172
Municipal Fish Market at The Wharf	176

Offices

350 Mission Street	180
Airport Square	182
Bloomberg European Headquarters	184
British Sugar Headquarters	190
CSC Headquarters	194
Goede Doelen Loterijin	196
Herman Teirlinck Building	198
Kingspan IKON innovation centre	200
Kingspan Light + Air Headquarters	202
Microsoft Headquarters	204
Nicoletta Headquarters	206
Post X	208
Provinciehuis Antwerp	210
Rijnstraat 8	212
Squibb Building on 5th Avenue	214
UpCycle Office	216

Residential

Amaryllis House	220
Haagbeuk	222
Haus Gables	224
Hope House	226
Martizt Residence	228
New American Remodel	232
Piet Boon Residences	236
St. Vincent Embankment	238
Twist	240
Wambacherhof	242

Retail

Carrosserie Jean Lain	246
Gova Meubelplezier	248
Hoog Catharijne	250
Speciality Supermarket	252

Project Spotlights Map





“ The buildings of the future need to deliver more than ever before.”

The buildings of the future need to deliver more than ever before. They must combat climate change by maximising energy efficiency through superior thermal performance while incorporating products that are lower in embodied carbon across their entire lifecycle. Using less energy is not enough; buildings should generate their own energy too.

Buildings should be healthy and inspirational, optimising the benefits of daylight and fresh, clean air. They should be designed, constructed and operated to protect natural resources and conserve water as much as possible. Above all they must be safe, protecting people and property from fire and other natural hazards.

At Kingspan, we believe all of this is possible and that, with advanced products and digitalisation, buildings can also deliver more value.

This belief underpins our Planet Passionate sustainability programme and the work we are doing at our IKON Innovation Centre. These two initiatives, along with our advanced insulation and building envelope solutions, will deliver our vision of Better Buildings for a Better World.

Gene M. Murtagh
CEO, Kingspan Group

10 DRIVERS FOR SUSTAINABLE BUILDINGS

At Kingspan, we believe that, in order to achieve truly future-proofed, sustainable built environments, all buildings must be designed, constructed and operated to deliver benefits for the wellbeing of people and our planet.

We are committed to innovation in our products and our business to deliver the below 10 key drivers, with the ultimate goal of meeting the IPCC 1.5° climate change scenario.



Energy Efficiency



Embodied Carbon



Circularity



Fire Performance



Occupant Wellbeing



Water Conservation



Healthy Materials



Digitalisation



Property Value

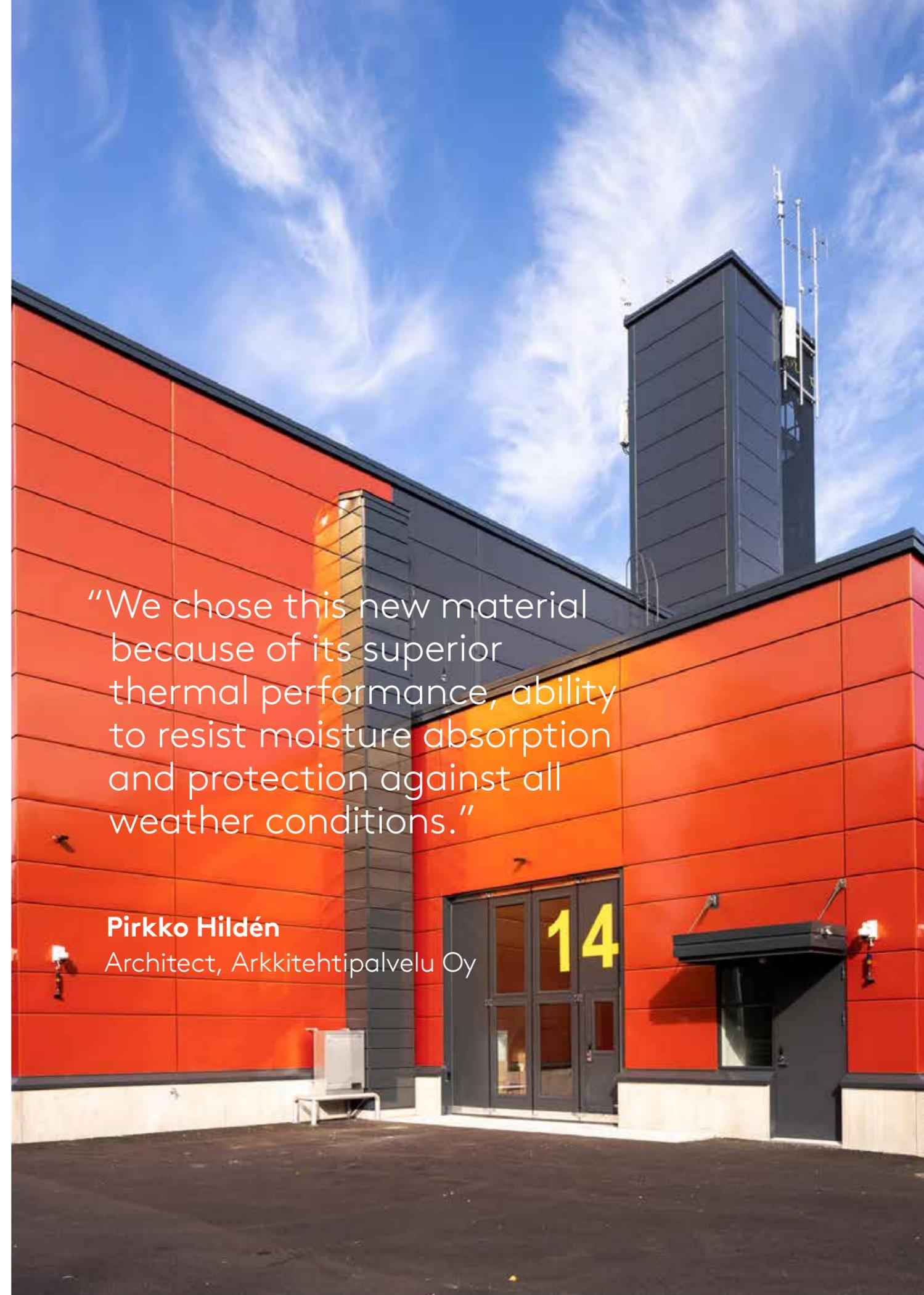


Construction Efficiency

COMMUNITY AND AMENITY



ÄÄNEKOSKI FIRE STATION



"We chose this new material because of its superior thermal performance, ability to resist moisture absorption and protection against all weather conditions."

Pirkko Hildén
Architect, Arkkitehtipalvelu Oy



Location
Äänekoski, Finland

Architect
Arkkitehtipalvelu Oy

Kingspan Products
Evolution insulated wall panel

Äänekoski Fire Station facilities needed updating to meet modern-day requirements, specifically a need to allow space for a dirty-to-clean fire station concept. The modular Kingspan Evolution insulated panels, in a metallic surface that shimmers in red and orange, were used to insulate the complete facade.

The combination of excellent U-value, fire performance and moisture resistance, with a structural thickness of only 150 millimetres, made the insulated wall panels a perfect fit.



BUNJIL PLACE



Location
Melbourne, Australia

Architect
fjmt

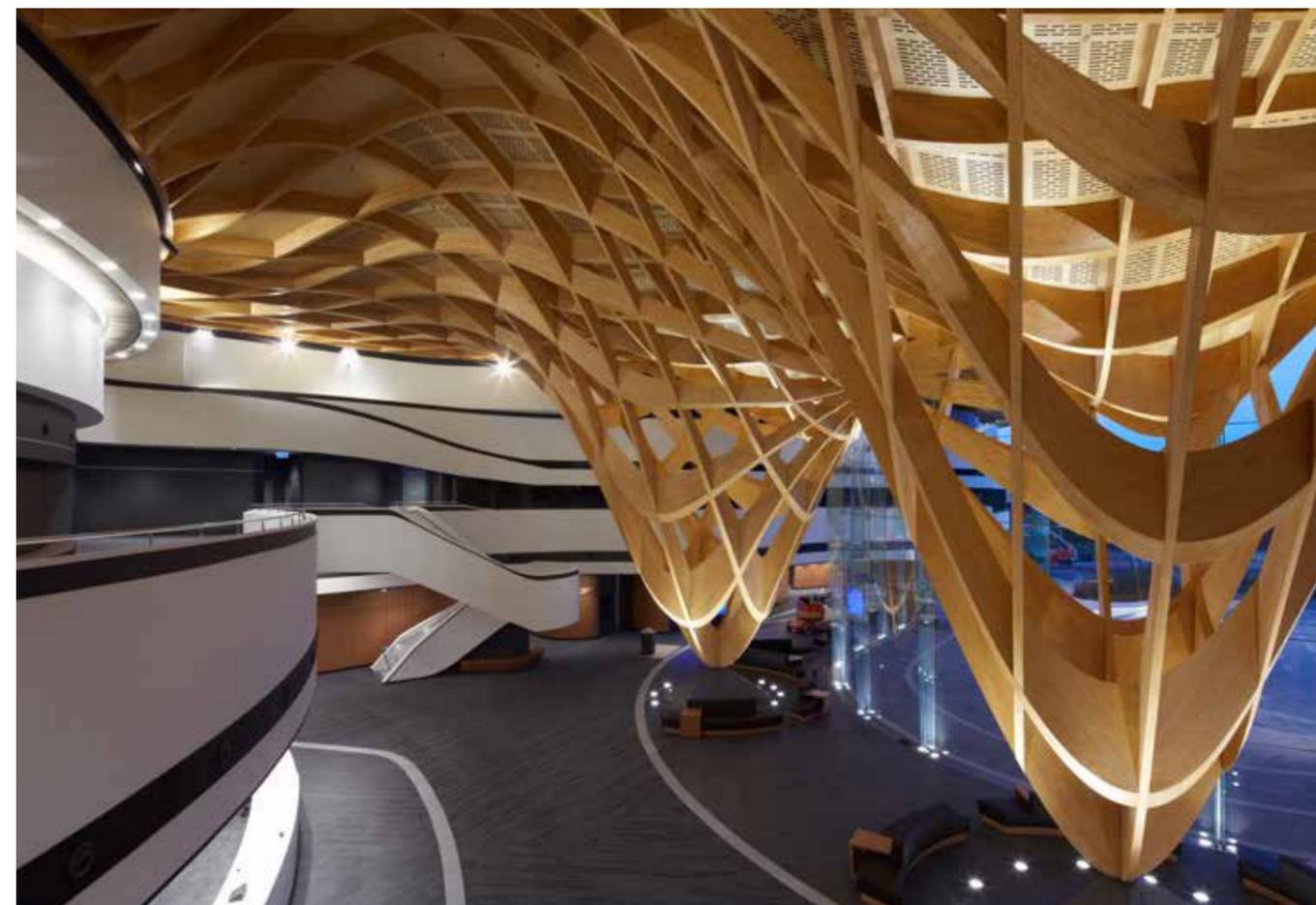
Kingspan Products
KingZip Linea standing seam system

The \$125 million multipurpose arts, civic and community facility in the outer Melbourne suburb of Narre Warren holds a library, 800-seat theatre, gathering and meeting spaces, council offices, an art gallery, a flexible event space and an outdoor plaza.

Inspiration for the building's name, Bunjil Place, was derived from stories of the area's traditional landowners, the Boon Wurrung and Wurundjeri people. The building's namesake, Bunjil, is an eagle figure that appears in Boon Wurrung creation myth, which

is expressed in the arrangement of the building's two wings and slender roof.

"The roof design looks complicated but is actually made up of a small number of very simple shapes," explains John Perry at fjmt. "What the Kingspan KingZip product offers is that it can form conical and curved surfaces very readily. The sheet itself, which is essentially a U-shaped trough, can be tapered. Because it is relatively thin, you can 'spring' it, so you can get the curvature in the other direction."



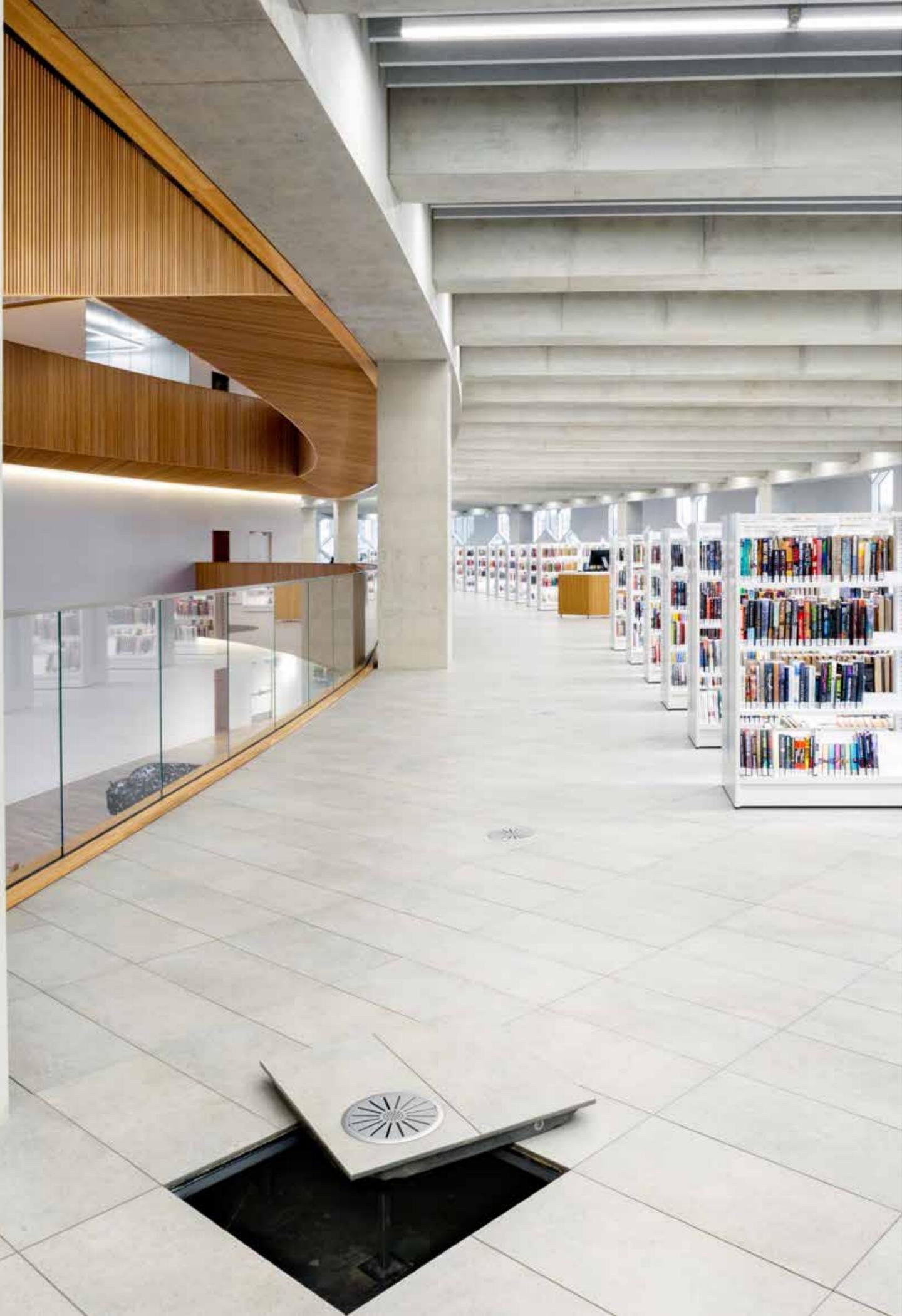
CALGARY CENTRAL LIBRARY



Location
Calgary, Alberta, Canada

Architects
Snøhetta
DIALOG

Kingspan Products
ConCore® 1250 access floor panel
ConCore® 1500 Two Piece
Porcelain access floor panel



Calgary Central Library encompasses the spirit of culture, learning and community in Calgary. Created for, and inspired by, its diverse inhabitants, Calgary's new Central Library aims to welcome over twice as many annual visitors to its expanded 240,000 square foot facility.

Along perimeter corridors, the window frames create shifting shadows throughout the day. At night, the exterior appears to disintegrate towards the prow, where the panes become increasingly transparent and the glow from inside gets more intense.

A raised access flooring system was used throughout the inside of the library to supply and connect the four main floors with power, data and air, whilst creating an interior that blends hyper-modern touches with traditional wood at almost every turn. The raised floor was designed to feature some unique finish applications and customised transition details, allowing the architects to balance the flexibility of the raised floor with the overall aesthetic goals of the library.

FORUM GRONINGEN



Location
Groningen, The Netherlands

Architect
NL Architects

Kingspan Products
Kingspan Kooltherm® K15
Rainscreen Board

With its sharp lines, the striking building stands out against the historic city centre, standing 45 metres high with ten floors and a rooftop terrace. The building, designed by NL Architects in Amsterdam, consists of two 'towers' which are connected by escalators that run crisscross through the building. It is a spectacular and controversial structure in which many cultural functions such as auditoriums, cinema theatres, museums and exhibition halls come together.

The basic construction consists of two concrete cores that are connected to each other with a steel "bridge". The building is finished in natural stone and has sloping and tapered surfaces. The thermal and seismic requirements, as well as the requirements regarding fire performance, water load and limited space in the facade, proved a challenge. In addition, each individual component of the facade's surface consisted of different dimensions, leading to Kingspan producing customised insulation boards for the building.

Kingspan Kooltherm® K15 Rainscreen Board was applied to the two concrete building cores. To ensure a tight juncture for the many anchor points that were required for mounting the natural stone facade panels, the boards were customised with a layer of synthetic mineral fibre (MMMF). Due to the different sloping surfaces and therefore taking into account the water load, the boards were finished with an additional water-retaining film.

MARRICKVILLE LIBRARY AND PAVILION



Location
Sydney, Australia

Architect
BVN

Kingspan Products
Made to Measure
Round Water Tank

The new library precinct, BVN's winning design in a competition commissioned by Marrickville Council, embodies modern design and state-of-the-art technology while preserving the history of the original listed hospital building.

In the gardens of this stunning library, six Kingspan Made to Measure Round Water Tanks significantly add to the overall architectural design of the landscape whilst providing up to 57,000 litres of rainwater storage.

Rainwater from the roofs of the new building and the western side of the old hospital is piped into the largest tank and then overflows to fill the remaining tanks.

When full, the tanks overflow to the basement water retention storage tank. Excess water is discharged to the street after flowing through a stormwater 360 filtration system.

The harvested rainwater is used for the flushing of all toilets in the building and also for irrigation, significantly reducing mains water use. When there is insufficient stored water, the supply automatically switches to mains water.

The water management system installed here helped the project design achieve one of the 47 Environmental Sustainable Design Criteria.

MARYLAND HEIGHTS COMMUNITY CENTRE



Location
Maryland Heights,
United States

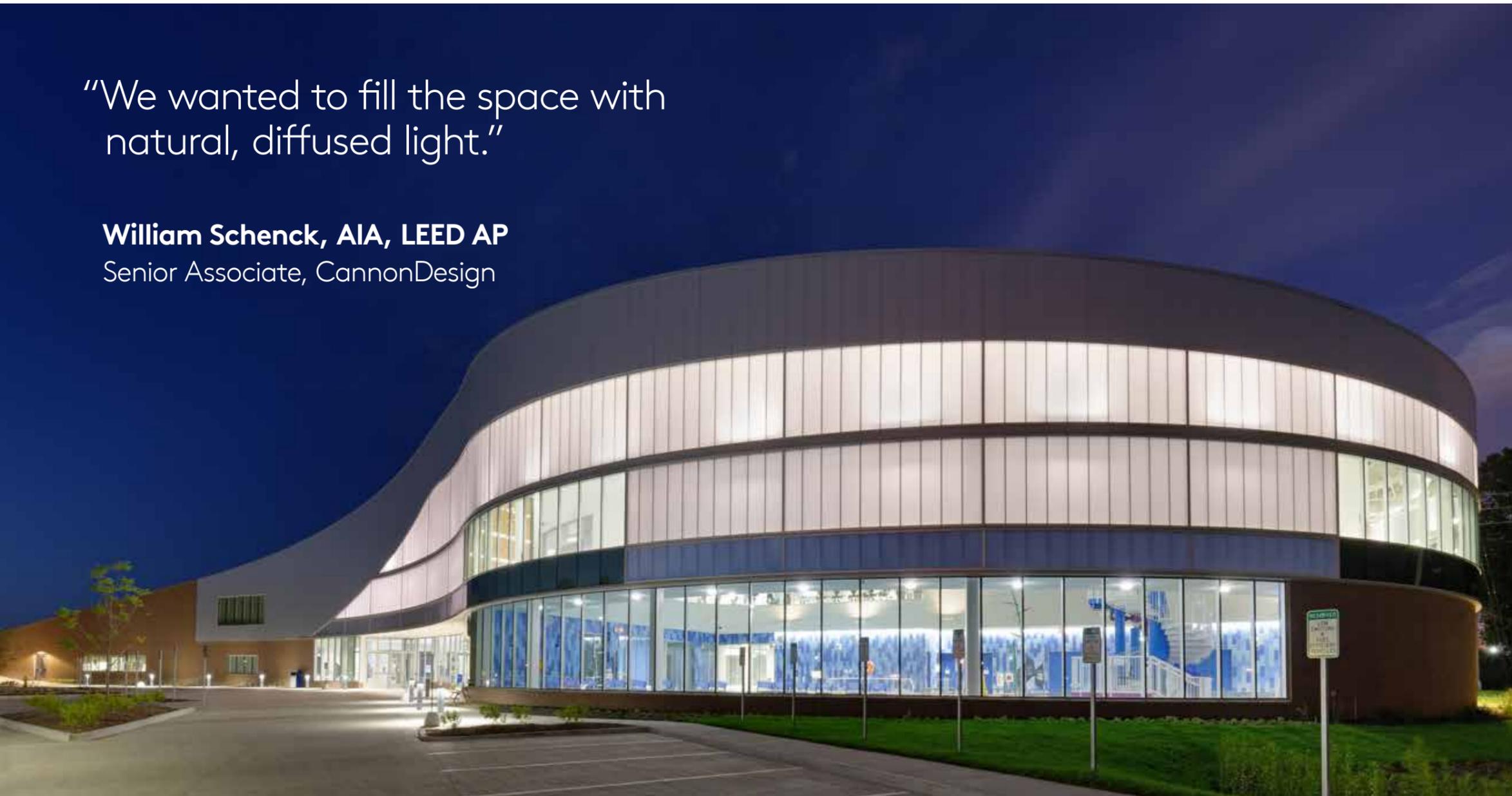
Architect
CannonDesign

Kingspan Products
UniQuad® translucent
wall system
Designwall 2000 insulated
wall panel

The City of Maryland Heights had big aspirations for the new community facility with a variety of design goals including finding a translucent facade that could meet the aesthetic needs of the building's curved and tapered walls. A significant challenge for the project's facade was that it required a product that would diminish unsightly views, glare, heat and noise, all without compromising the amount of daylight in the building.

"We wanted to fill the space with natural, diffused light."

William Schenck, AIA, LEED AP
Senior Associate, CannonDesign



The UniQuad® panels were selected due to their scalability and additional sound reduction capabilities. Specified with an STC acoustical interlayer for the eastern facade, the UniQuad® panels were a "critical component" in masking the noise coming from the neighbouring highway.

It was important to allow natural daylight into the space while being able to control what aspects of the nearby landscape were visible from inside the facility. CannonDesign incorporated clear glass in conjunction with the 9,280 square feet of UniQuad® panels, specified in clear over white matte colours, to provide the appropriate views necessary to achieve this feat.

The building was designed to offer a similar aesthetic between the translucent system and metal panels during the day, while at night the facade is transformed by a glowing ribbon of translucent panels as they are backlit by the interior lighting. The resulting aesthetic is noticeably unique, and helps to establish a large presence within the community.

MILL WOODS LIBRARY



Location
Edmonton, Alberta, Canada

Architects
HCMA Architecture
Design Dub Architects Ltd

Kingspan Products
Dri-Design Tapered
and Flat cassettes

The building gives an open feel, allowing visitors to view interior spaces from the outside. When glancing inside, the public areas of the library appear to emerge from within the larger structure, and the support spaces of offices and meeting areas are hidden within.

Sustainability drove many design decisions to serve as an example of a thoughtful public space and the building is LEED Gold certified. Dri-Design Tapered cassettes can be angled in any direction with varying depths and degree of slope.

The freedom to design each specific panel offers an unlimited capacity to create a dynamic, one-of-a-kind surface on nearly any facade without the need to modify the substrate or weather barrier.

Darryl Condon, Managing Principal at HCMA, explains that these metal panels brought the familiar with material and colour and the unexpected with modularity and texture. "Our strategy was focused on creating a bold form that asserts itself on the context. We wanted the public spaces of the library to be read clearly upon approach and for those spaces to have a strong visual connection with the site."



"We love the way the pixelated building catches the sun differently at different times of the day. Especially when it seems to dissolve into the sky at dusk."

Michael Dub
Principal, Dub Architects Ltd

PCYC NORTH BEACHES

Completed in 2017 following two years in development, the Police Citizens Youth Club community centre is a distinctive, sustainable and innovative architectural landmark, and a standing testament to the versatility of the KingZip Linea system.

“When you analyse it, it is not a rational shape. The geometry of the building is quite special. The curved portal frame shape starts as a wall, becomes the roof and goes back down the other side and becomes a wall again, so it’s all one structure. The portal frame shapes are the ribs at the centre of the building. It is parallel sided then twists and tapers, and there is also a fall on the roof. One of the wonderful things about using KingZip Linea is you can taper it, twist and bend it or curve it without losing the strength as a consequence. You can make irrational shapes very easily,” explains John Perry, Associate Principal at fjmt.



Location
Dee Why, Australia

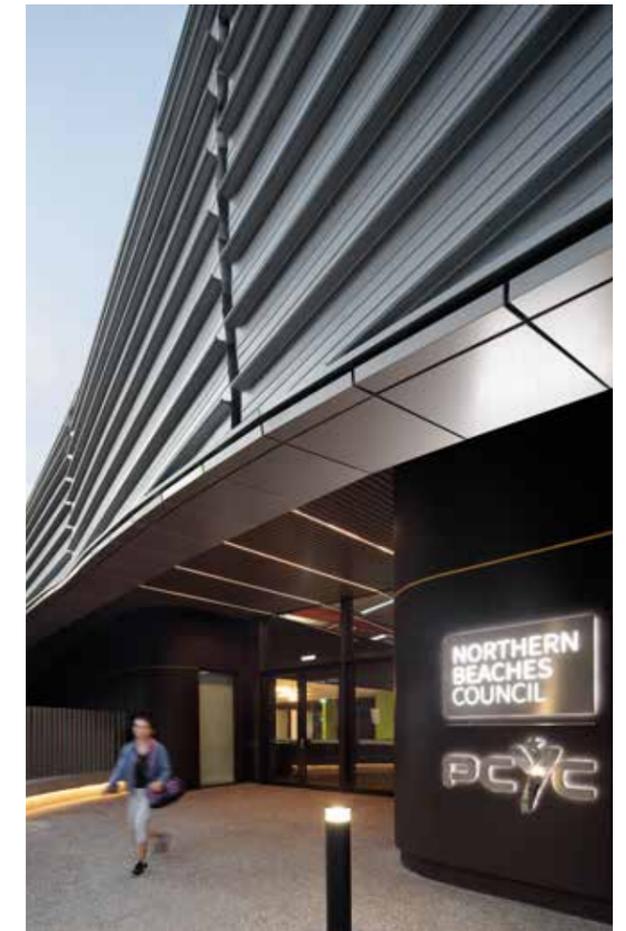
Architect
fjmt

Kingspan Products
KingZip Linea standing seam system



“The soft light curved dynamic profile minimises the perceived building bulk, blending with the sky and bouncing light behind the canopies of the existing street trees. The curve draws the eye across the building in a seamless arc.”

Damian Campanella
Senior Architect, fjmt



CULTURE AND HERITAGE



“This building could have been all glass, but it wouldn’t have had the uniqueness or the creative quality that we wanted it to have. For us, UniQuad® was the perfect material.”

Adam Sebastian, AIA

Architect, STITCH Design Shop



Location
Winston-Salem,
United States

Architect
STITCH Design Shop

Kingspan Products
UniQuad® translucent
wall system

Winston-Salem, the City of Arts and Innovation, has a new facility for artists. Designed to be an economic catalyst for neighbourhood growth, the 14,500-square foot Art for Art's Sake (AFAS) building features two galleries, an art centre for community education, artist studios for rent, an AFAS board room, event space, leased office space and an outdoor sculpture garden on the building's front lawn. Together, the unique campus provides a new indoor/outdoor venue for the city, furthering the non-profit AFAS mission to "build, educate and celebrate" community through art.

Stitch Design Shop chose a material that would promote energy savings and minimise the use of artificial light inside the artists' studios during daylight hours. The architect wanted to create an illuminated cube sitting on top of a glass box.

By cladding the building with UniQuad® panels in ice white matte over ice white matte, the UniQuad® system met Stitch Design Shop's energy performance needs and desired look – all in a single panel design.

**ART FOR
ART'S SAKE**

THE BOX



Location
Plymouth,
UK

Architect
Atkins Design & Engineering

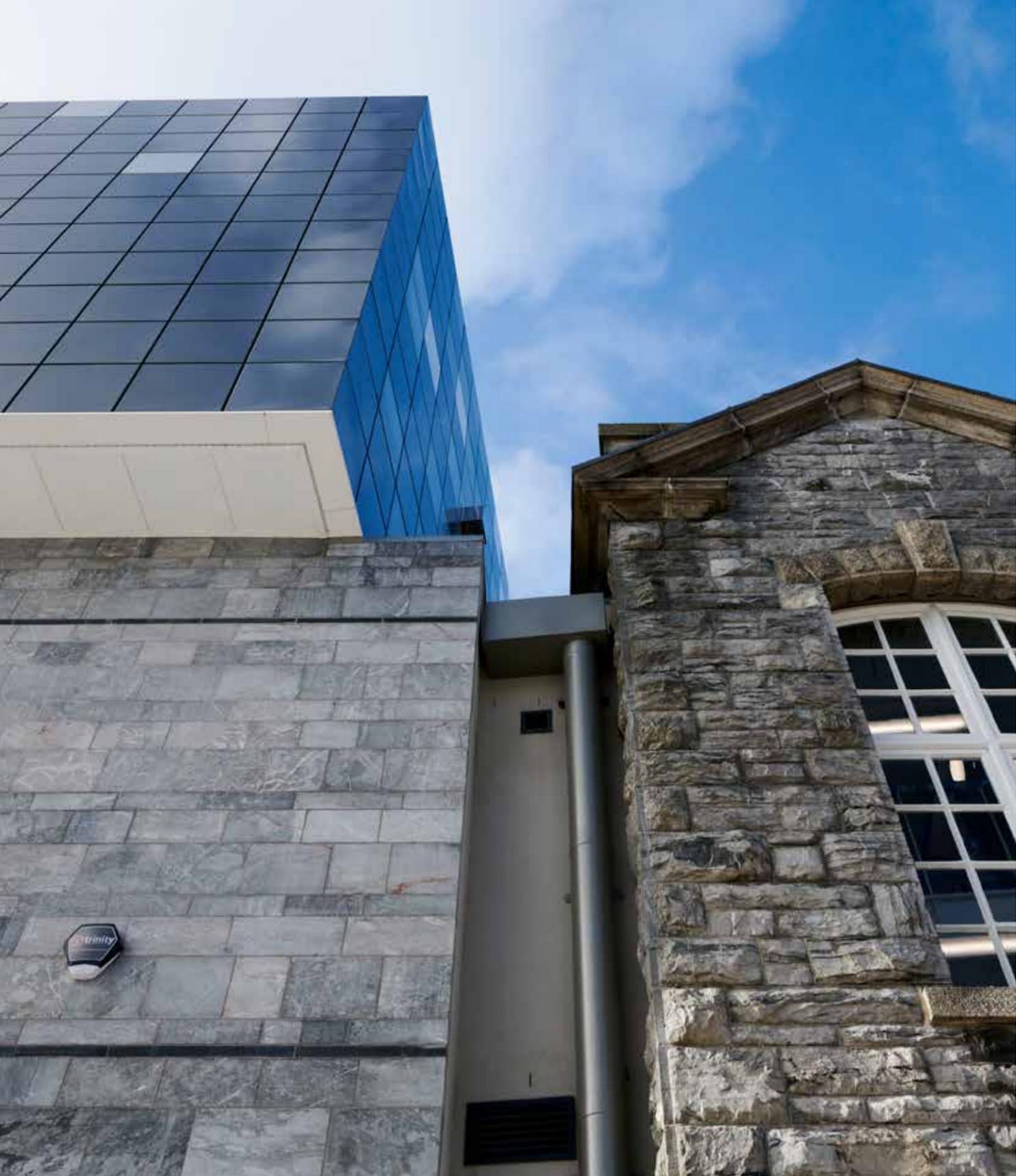
Kingspan Products
QuadCore™ Karrier Panel
rainscreen substructure
Hook-On Cassette facade system

The top of a pixelated box peeks just above the mottled stonework of the Plymouth City Museum and Art Gallery. Known fittingly as The Box, this new cubic extension is part of a £46m project by Atkins that unifies Plymouth's Grade II listed museum with the city library and an adjacent church to create a new cultural complex. For the first time, six of the city's heritage collections are being housed beneath one roof.

Described by the British architects as an "archive in the sky", the concept gives the archives the unusual honour of being placed on the uppermost, rather than lowest, of floors. The patterned facade acts as a beacon for these accessible archives, and hints at the new galleries and exhibition space set within.

Kingspan Hook-On Cassettes in a palette of white, grey, black and mirrored stainless steel are applied to the surfaces to create the subtle pixelated effect. The small rectangular panels of powder coated aluminium are intended to suggest the pages of documents stored within the archive, while the stainless-steel accents reflect and distort the historic buildings surrounding it.





"The architects selected quite a small format which gives a sort of chunky look, with a range of different colours intermingled with stainless steel mirror," says Brian Travis, part of the Kingspan technical team that worked on the project.

"The play of light and reflection in The Box's design is one of my favourite features," adds Kevin Pressland, senior architect at Atkins, "the ever-changing appearance and colour of the cladding reflecting the weather; the passage of the morning sun across the South Hall defined by the curtain walling mullions and the figureheads; and the afternoon sun reflected onto St Luke's from the glazed facade."

The composite panels were affixed to Kingspan's thermally-efficient substructure, the QuadCore™ Karrier Panel rainscreen substructure system. Designed to allow the cladding panels to be quickly and easily installed, using this system meant the building became weathertight early on in the project timeline and work could begin promptly on the internal finishes.

The archive floors cantilever over a ground level made from a combination of limestone, concrete and glass, contributing to a contemporary appearance that sets the extension apart from the Edwardian facades of its neighbours. A large atrium spatially separates new and old parts of the complex, and provides a new entrance, with a cafe and shop as well as a first-floor study area.

A piazza now linking The Box with the restored St Luke's Church (1828) and museum is planted with American elms – a hint at Plymouth's links to North America. It was from here that the Mayflower set sail in 1620, taking the Pilgrims to Massachusetts. An opening exhibition will commemorate the city's maritime history as part of the 400th anniversary of this important voyage.

The Box, has already been heralded as a must-visit attraction by cultural correspondents for both the BBC and the Guardian.





“The sympathetic transformation of the Grade II listed buildings into a cutting-edge interactive centre is a great demonstration of how the old and the new can so beautifully blend together.”

James Harrison

Atkins Design & Engineering

CANAL DOCK BOATHOUSE



Location
New Haven,
Connecticut, USA

Architect
Gregg Wies &
Gardner Architects

Kingspan Products
Designwall 2000
insulated wall panel
Designwall 4000
insulated wall panel
Karrier Panel barrier
wall system

What happens when builders need to harness the traditional look of a New England landmark, but also want to create a modern design by using durable and energy-efficient materials that make a bold and visionary statement? The culmination of this unique juxtaposition of aesthetics resulted in the Canal Dock Boathouse in New Haven, Connecticut.

This building honours the rich history of the historic George Ade Memorial Boathouse landmark by incorporating original antique elements salvaged from the old boathouse, including displaying

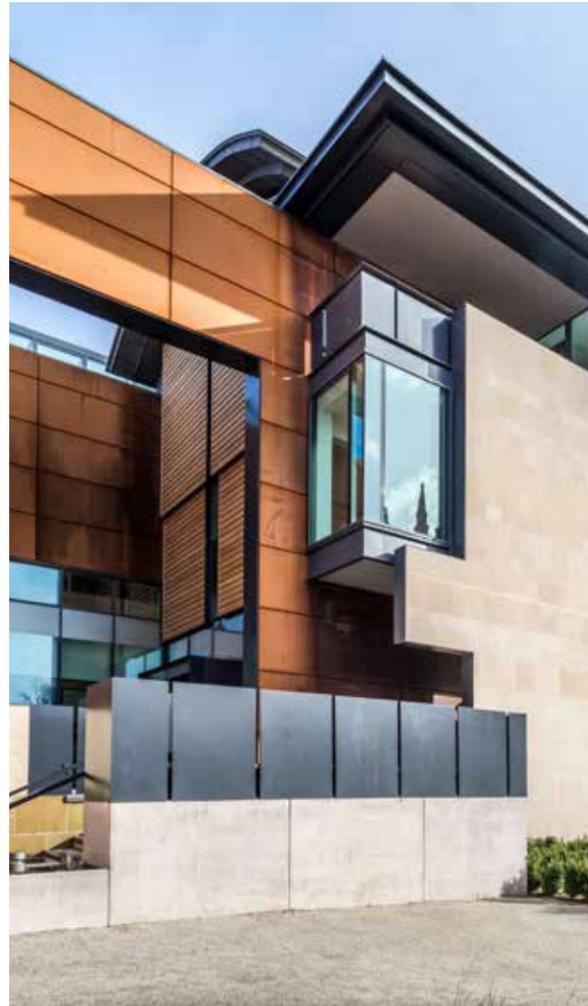
the original front facade behind a modern face of metal and glass.

Buildings like the Canal Dock Boathouse are quickly dispelling the notion that insulated panels have their limits when it comes to architectural design. Kingspan's Designwall series is perfect for custom designs, offering a variety of finishes and colours. And there's no trade-off when it comes to performance.

DUNFERMLINE CARNEGIE LIBRARY AND GALLERIES

“We wanted to create a space that embraced both the rich history of the building and the expectations of visitors both now and in the future. We chose Kingspan Kooltherm® for this project as we knew it would help us to deliver the target U-values.”

Martin Lambie
Architect, Richard Murphy Architects Ltd



Location
Dunfermline, UK

Architect
Richard Murphy Architects Ltd

Kingspan Products
Kingspan Kooltherm® K15
Rainscreen Board
Kingspan Kooltherm® K110
Soffit Board

A £12.4-million extension to the 19th century Dunfermline Carnegie Library is helping it to become a local attraction and cultural hub. Its exciting new local history Reading Room, Museum and Children’s Library are both engaging and entertaining a wider number of visitors at Dunfermline’s Heritage Quarter.

Ashlar sandstone, oak and Corten steel cladding have been installed on the new extension of the library building as part of a rainscreen cladding system. Kingspan Kooltherm® K15 Rainscreen Board was fitted within the steel frame cladding system of the regenerated external facade. The angular features of the building also have overhanging structural ceilings which required the installation of Kingspan Kooltherm® K110 Soffit Board insulation.



EGLISE NOTRE DAME DE BEAUREGARD



Location
Orgon, France

Kingspan Products
Kingspan Klargester BioDisc® sewage
treatment plant 25EH

A new wastewater system was required to treat water from the restaurant, artisan pottery and leather ateliers currently housed inside this beautiful church overlooking the valley just outside Orgon.

The system needed to withstand large fluctuations in flow and be capable of treating water for up to 25 people. The project also required a quiet system that would have minimal impact on the natural environment whilst being compact enough to be transported by helicopter to the stunning location.

PRODUCT SPOTLIGHT

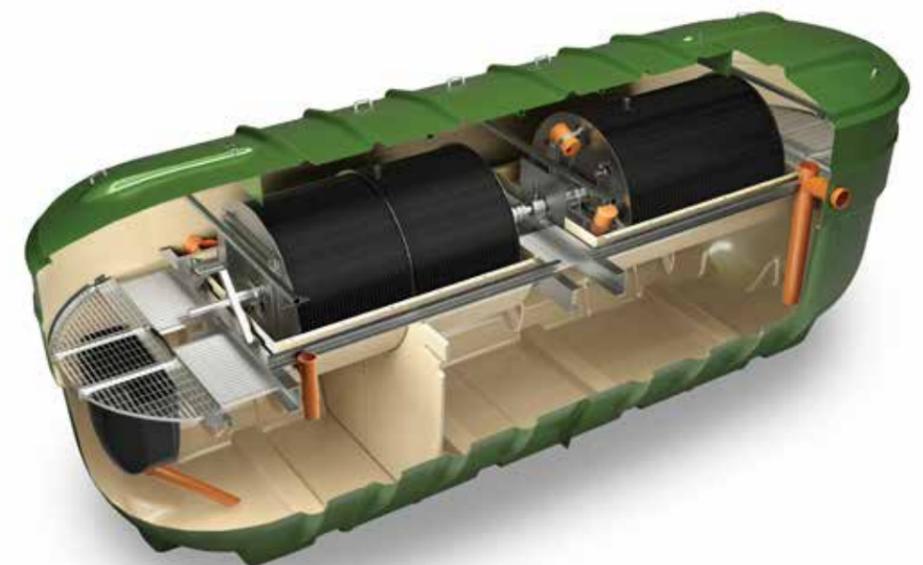
KINGSPAN KLARGESTER BIODISC®

The Kingspan Klargester BioDisc® BD-BM large sewage treatment plant models offer proven wastewater management solutions for a range of commercial applications and deliver high-quality performance and superior reliability with low operational costs.

- Significant reduction in energy consumption and operational costs compared with traditional aerated systems
- Zero noise pollution and minimal environmental impact
- Odour free - no requirement for air pumps, resulting in minimal odour emissions
- Patented flow management system
- Proven and tested technology

The system does not require a manual air blower, instead relying on a proven and patented rotating biological disc which drives the wastewater treatment process in a highly efficient way, resulting in low energy consumption and running costs.

For technical details, or to discuss wastewater management solutions for your project, contact us at: better.buildings@kingspan.com



LOUVRE ABU DHABI



Location
Abu Dhabi,
United Arab Emirates

Architect
Ateliers Jean Nouvel

Kingspan Products
Kingspan Thermaroof
TR27 flat roof insulation
Kingspan Greenguard GG300

The museum was born out of an intergovernmental agreement between Abu Dhabi and France and is only the second in the Louvre family to be built. Appointed architect Jean Nouvel designed a museum that combined regional traditions with modern architecture, with the aim of bringing a universal museum to life.

Similarly to its sister, Musée du Louvre, the roof of Louvre Abu Dhabi is the feature most recognisable by its visitors.

Sections of the flat roof were required to be landscaped with crushed stone laid within screed. This feature aimed to represent Arabian architecture whilst also controlling light and temperature within the building. The only flat roofing insulation available in the local market to wholly match the requirement for an FM Approved solution with zero Ozone Depletion Potential and low Global Warming Potential, that met Estidama regulations, was Kingspan Thermaroof TR27.

V&A DUNDEE

Scotland's first dedicated design museum blends architectural expression with energy-conscious design. Commissioned by Dundee City Council, the iconic landmark is the first building in the United Kingdom to have been designed by Japanese architect Kengo Kuma.

The building also celebrates the best in energy-efficient design, utilising air source heat pumps in combination with geothermal energy from thirty 200-metre deep boreholes to heat and cool the building. To maximise the fabric performance of the external building envelope, Kingspan insulation board products were installed on the floor and roof of the building.

To ensure rainwater is effectively channelled off the flat roof, Kingspan's tapered roofing design team created the detailed layout and specification for the final roof insulation scheme. These solutions address the potential heat loss from the museum's expansive flat roof and provide drainage management to prevent long-term maintenance issues. Careful calculations were also completed to ensure the design U-value

"The raised and timber flooring systems were chosen to provide flexibility, especially to the gallery spaces which might need to be reconfigured for different exhibitions."

Maurizio Mucciola
Director, PiM. studio Architects



Location
Dundee, UK

Architects
Kengo Kuma & Associates
PiM..studio Architects
and James F Stephen Architects

Kingspan Products
Kooltherm® K103 Floorboard
Kingspan Therमारoof® TR26 flat roof insulation
Kingspan Thermataper® TT46 tapered flat roof insulation
RMG600 raised access flooring system
Attiro magnetic engineered timber flooring



was met with the slimmest possible insulation thicknesses, minimising the weight of the final construction.

On the second-floor circulation, foyer and galleries, Kingspan supplied an RMG600 medium grade raised access flooring system for the museum. Finished with Attiro magnetic engineered timber flooring, this provides a high specification overlay finish with the benefits of a functional design which allows for easy access to the service void below. With 500,000 visitors expected in the first 12 months, the flooring solution also ensures durability.





WESTERN AUSTRALIAN MUSEUM



Location
Perth, Australia

Architects
Hassell
OMA

Kingspan Products
Karrier Panel
rainscreen substructure
Hook-On Cassette
facade system

Located in the heart of Perth's cultural centre, the new museum is a contemporary addition to the existing heritage-listed building, creating a grand entrance to the civic space that integrates classic and modern architecture.

Kingspan's Hook-On Cassette facade system was chosen for use on the scheme due to its ability to provide a bespoke, project-specific and engineered, architectural 'through wall'

solution. The Karrier Panel provided a lightweight, thermally efficient and fast-to-construct alternative to the previously considered pre-cast concrete walls. Given the significant cantilever over the existing heritage building, lightweight construction was extremely important. Airtightness and thermal efficiency were also key, given the important artefacts housed within the building. The insulated panels comfortably met and exceeded these requirements.

WINDERMERE JETTY

Windermere Jetty – Museum of Boats, Steam and Stories offers a unique visitor experience, combining a diverse collection of historic boats, live conservation workshops and high-quality architecture. To reduce the scale of the large museum, it is separated into a cluster of pitched roof buildings which align with the shore.

The museum is designed to be both climate resilient and highly energy efficient. To minimise heating demand, Kingspan Kooltherm® K15 Rainscreen Board has been fitted behind the copper facades of the clustered buildings. With a thermal conductivity of 0.020 W/mK, the insulation board provides a thin, lightweight solution which could be rapidly installed in the sometimes-challenging lakeside conditions.

The pitched roof elements, which echo the form of many local boat houses, have been insulated with Kingspan Thermapitch® TP10. Specifically designed for using in a variety of pitched warm roof constructions, this product offers a thermal conductivity of 0.022 W/mK.

The building has been designed to minimise operational energy usage via a number of means including natural ventilation and a highly insulated building envelope. Heating demand is met via a water source heat pump in the lake, and rainwater runoff from the roof is channelled through adjoining reed beds which provide pre-filtering and attenuation before it is discharged into the lake. The buildings have also been carefully oriented to maximise natural light whilst an intelligent control system monitors the internal air quality and temperature to maintain comfortable internal conditions.



Location
Windermere, UK

Kingspan Products
Kingspan Kooltherm® K15
Rainscreen Board
Kingspan Thermapitch® TP10
pitched roof insulation



EDUCATION



6 GREAT MARLBOROUGH STREET

6 Great Marlborough Street forms part of Manchester's rich industrial heritage. The five-storey, red-brick building was once part of the city's thriving textile industry and sits within Little Ireland, the earliest area of Irish settlement within Manchester. Sheppard Robson's sensitive restoration plans make a feature of the historic building fabric, exposing the original brickwork and beams internally, whilst incorporating more contemporary elements such as building services and modern windows.

The design team prepared the fit-out using the Royal Institute of Chartered Surveyor's SKA Rating environmental assessment method – targeting a Silver rating certificate. As part of this process, they identified an opportunity to upgrade the thermal performance of the poorly insulated pitched roof. To minimise heat loss through the roof, Kingspan Kooltherm® K7 and K107 Pitched Roof Board was installed.

As the original roof slates had been retained, the boards were cut to size by hand and fitted between and below the existing roof rafters from inside the building. This premium specification allowed the target U-value to be met with the slimmest possible construction – maximising floor to ceiling heights in the top-storey spaces.



Kingspan Kooltherm® K7 and K107 Pitched Roof Board can achieve thermal conductivities as low as 0.020 W/mK and 0.018 W/mK respectively



Location
Manchester, UK

Architect
Sheppard Robson Architects

Kingspan Products
Kingspan Kooltherm® K7
Pitched Roof Board
Kingspan Kooltherm® K107
Pitched Roof Board

BISKUPIEC PRIMARY SCHOOL



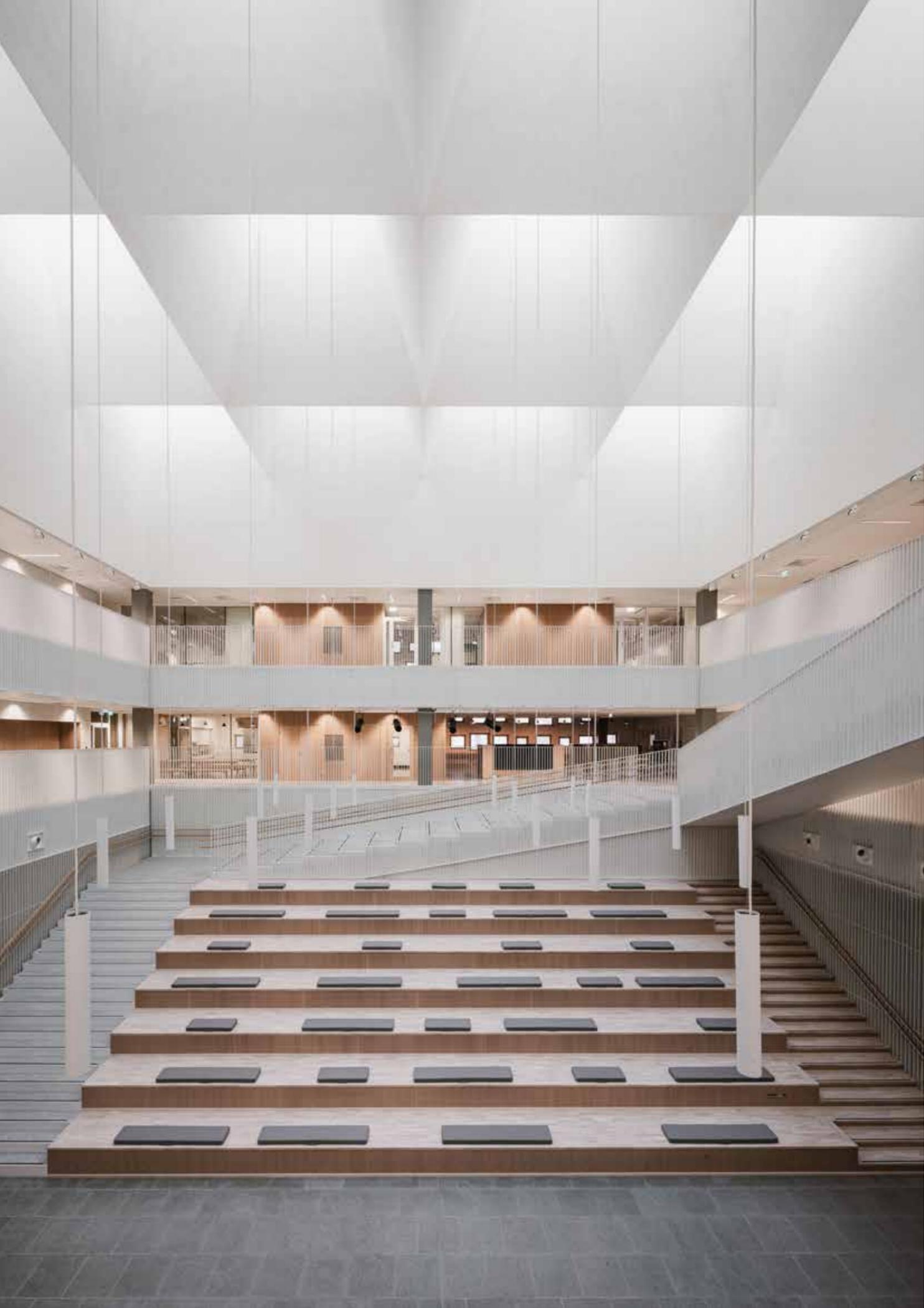
Location
Biskupiec, Poland

Architect
Andrzej Krajewski

Kingspan Products
Kingspan Kooltherm® K17
insulated plasterboard

Biskupiec primary school has undergone significant refurbishment. The historical school building was insulated from the inside to achieve a compromise between preserving the character of the building and achieving the optimum levels of thermal comfort for pupils and staff.

Energy efficiency was at the heart of this project, with a clear focus on reducing the energy consumption and operating costs of the building.



JÄTKÄSAARI SCHOOL

The new three-storey "School of the Future" in Jätkäsaari, Finland, is an 8000-square-metre compact building for 800 pupils with excellent space efficiency. The design differs from that of a "regular" school and offers more open and flexible rooms.

Energy efficiency and reasonable construction costs were achieved and the design also took into account the need for long lifecycle flexibility. Thermal resistance of structures, tightness of joints, adjustments of building systems and building automation positively impacted the energy efficiency.



Location
Helsinki, Finland

Architect
Aarti Ollila Ristola
Arkkitehdit Oy

Kingspan Products
Kingspan Kooltherm® K15
Rainscreen Board

The building's distinctive appearance is highlighted by the relief pattern on the facade which was created with innovative use of different rectangular elements, some of which function as windows.

Jätkäsaari School was constructed based on a winning competition entry "Nemo" by Erkki Aarti, Arto Ollila and Mikki Ristola from AOR Architects.



NEWQUAY TRETHERRAS SCHOOL

This modern learning environment has been designed to sit harmoniously in its surroundings, with regards to both its eye-catching aesthetic redolent of Cornwall's seaside heritage and its focus on operational efficiency. This led to the specification of a Kingspan Shingle rainscreen facade system to frame the main entrance, and elevations of Mini-Micro insulated wall panels in a coastal colour palette.

The Cornwall Local Plan requires that any new developments have clearly considered the existing local context. A thoughtful design was therefore developed for the front elevation, which references Newquay's fishing industry heritage through a feature 'fish scale' cladding and 'net' of curtain walling.



Location
Newquay, UK

Architect
Stride Treglown

Kingspan Products
QuadCore™ Karrier Panel
rainscreen substructure
Shingle rainscreen facade
AWP, Mini-Micro
insulated wall panel

The QuadCore™ Karrier Panels provide high-performance insulation that will improve the building's energy efficiency. The factory-engineered tongue and groove jointing achieves excellent levels of airtightness, whilst the QuadCore™ insulation core delivers U-values as low as 0.08 w/m²K. The energy-efficient design will significantly reduce the operational costs of the school and contribute to the sustainability of the local area.



HEALTH



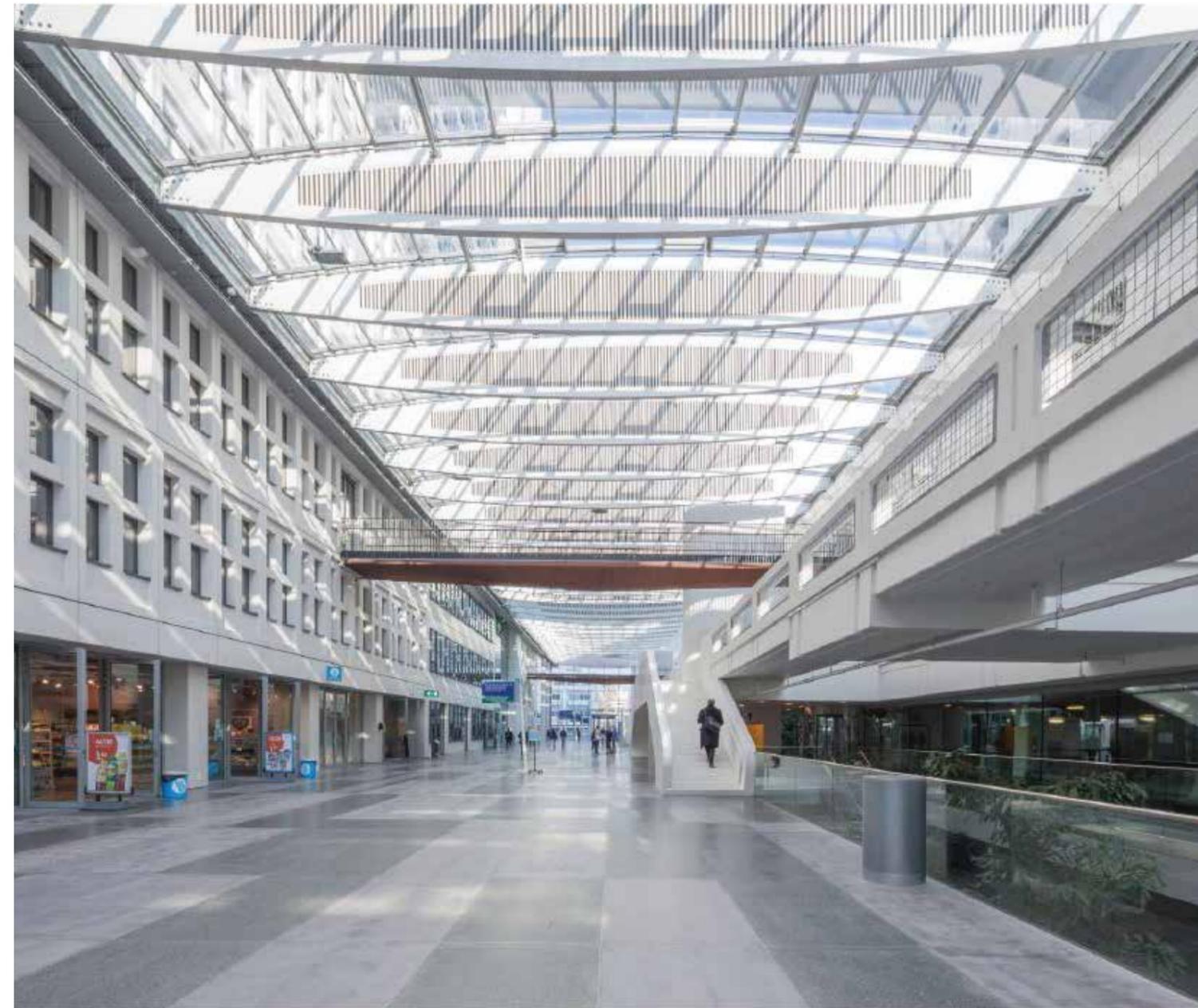
ERASMUS UNIVERSITY MEDICAL CENTRE



Location
Rotterdam,
The Netherlands

Architect
EGM architecten

Kingspan Products
4S structural glass system
BA-CG point-fixed glass
system
BA-4 glass rod system
4RS rubber/steel glass facade
system
Estra glass louvre
Estra Top glass louvre
Ventria ventilation window
Mechanical ventilation



The extension, completed in 2018, turned Erasmus MC Rotterdam into the largest university hospital in the Netherlands, complete with two large atria to the outer facade, several internal atria and a glazed passage (a “glass zipper”) which now connects the hospital with the Sophia Children’s Hospital, the renovated education centre and the research tower.

“The passage and the atria are the spatial carriers of the plan. They bring in daylight and ensure transparency to the outside. The experience inside out is maximum - creating distraction and inviting you to move.

As a result, people experience this large building of 207,000 square metres as pleasant and they can easily orient themselves. Family members can retreat for a moment without having to leave the building,” explains lead architect Willemineke Hammer.

Everything about Erasmus MC is designed to create and foster a healing environment; a pleasant, healthy and safe building that promotes the wellbeing of patients, staff and visitors. Natural daylight and fire safety are huge contributors to this, and Kingspan was able to support this vision through the use of glass roofs and facades, ventilation systems and smoke and heat extraction facilities.

140 Estra glass slat systems were included in the facade structure to ensure both fire safety and daily ventilation. For smoke and heat dissipation, 82 Ventria top-hung windows and seven mechanical fans were included in the glass roof of the passage.



“From the first day, the building was being used as we imagined. When I hear people say, “this doesn’t seem like a hospital at all”, then I know we have all done something good.”

Willemineke Hammer
Partner, EGM architecten





EYESCAN OOGZORGKLINIEK



Location
Utrecht,
The Netherlands

Architect
Architektenburo Guido Bakker

Kingspan Products
QuadCore™ AWP, Micro-Rib
insulated wall panel
QuadCore™ Karrier Panel
rainscreen substructure



In October 2019, Eyescan opened the doors of its new state-of-the-art ophthalmology centre in Utrecht. What is unique about the 4000-square-metre building is that the facade does not reflect what is going on inside, a request by the client which was translated by the architect into the design.

"The Kingspan elements are "stacked" on top of each other in a playful way in various widths of 60, 90 and 100 centimetres. In this way we manage to break through the legibility of the floors below."

"Contrary to usual, daylighting through the facade was of secondary importance for this project. In fact, the consultation rooms and ORs benefit from as little daylight as possible. In order to give the facade a bit of life, despite its closed character, we have devised a horizontal section with Kingspan panels in varying heights," explains architect Hoeshmand Mahmoed.



HEALTHPARTNERS NEUROSCIENCE CENTER



Location
Minnesota, USA

Architect
BWBR

Kingspan Products
Dri-Design cassette

The HealthPartners Neuroscience Center in St. Paul, Minnesota is a freestanding neuroscience facility with an exterior that gently curves to evoke the idea of a spine, designed to be highly visible and at once memorable.

Dri-Design was chosen by architect BWBR for its wide variety of colour and pattern options, its modular ability to create interesting patterns and simulated curved surfaces, and its capacity to create an energy-efficient ventilated facade system. The four-storey, 130,000-square-foot facility is the largest of its kind in the upper Midwest, with laboratories and patient-care areas.

The needs of the patients are met with design features that aid in care and navigating the building, such as large wall-mounted monitors and textured walls and graphic elements that are easier to remember than numbers. 24,000 square feet of aluminium Dri-Design cassettes were installed by MG McGrath with smaller ones chosen for the curved surfaces because of the radius and to help simplify the framing structure. The cassettes can be recycled in their entirety at the end of life.

“In order for us to achieve the look the architect wanted, we needed to split the cassettes into two and reduce the standard vertical joint, so they appeared more like one large panel. If we didn’t do this the building would have looked more segmented. This worked well and we were able to achieve the desired look,” explains Jono Semlak, Director of Project Management at MG McGrath.



KARRATHA HEALTH CAMPUS



Location
Karratha, Australia

Architect
Hassell

Kingspan Products
Kingspan Kooltherm® K10
Soffit Board
Kingspan Kooltherm® K18
insulated plasterboard

At \$207 million, Karratha Health Campus is the biggest health project in regional Western Australia's history. WA Country Health Service involved the local Aboriginal communities and Elders in a consultation to ensure the design of the health campus and the surrounding landscaping were culturally appropriate. The design was inspired by the local flora, with the project featuring shades of blue, green, silver and gold in a nod to the native wattle and cassia shrub.

The Campus project features Kooltherm® K10 Soffit Board underneath the concrete roof and concrete floor slab, as well as Kingspan Kooltherm® K18 insulated plasterboard in the steel framed walls to achieve high thermal efficiency and provide the best possible environment for patients.

When it comes to health and age care buildings, ensuring that the building envelope is thermally efficient can have a major impact on the health and wellbeing of the occupants.



VICTORIAN COMPREHENSIVE CANCER CENTRE



“Careful consideration of all materials and their origin is more important than ever before. Compliance and measurable performance are equally critical. Kingspan Kooltherm® K10 Soffit Board CodeMark Certification provided that assurance.”

Melina Thomas
Director and Architect, STH



Location
Parkville,
Victoria, Australia

Architect
STHD+MCR

Kingspan Products
Kingspan Kooltherm® K10
Soffit Board

The Victorian Comprehensive Cancer Centre heralds a new era in cancer treatment, research and education. This landmark building houses world-leading cancer research, clinical services and a variety of training and education facilities. To meet such a challenging design brief and demanding specifications, high-performance building materials were installed throughout.

Kingspan's Kooltherm® K10 Soffit Board was installed on each of the four basement levels of the VCCC, and in 12 levels of ceiling throughout the building. This high-performance board's slimline profile makes it an impressive space saver, which is ideally suited to these applications. Specifically designed to insulate concrete roofing and flooring, this insulation board provides an attractive and thermally-efficient protective barrier.

HOTEL AND LEISURE





Location
Birregurre, Australia

Architect
Six Degrees Architects

Kingspan Products
RT-80 Rhino Rural
water tanks

Located 130 kilometres south-west of Melbourne, the Brae Guest Suites are an extension of the number one restaurant in Australia (as rated by Australian Financial Review in 2018 and 2019). With only six self-contained rooms available, the suites offer an exclusive experience in a quiet part of Victoria.

Sustainability was the main driver of the design and construction of the restaurant and suites, respecting the beautiful natural surroundings. By using a combination of solar energy, a worm farm wastewater system and harvested rainwater, the building has proudly achieved net zero emissions.

Kingspan installed two Rhino steel rainwater tanks which offer a total capacity of 160,000 litres. Captured rainwater is used for cooking, washing and drinking in both the restaurant and guest suites.



BRAE GUEST SUITES

CENTER PARCS LONGFORD FOREST



Location

County Longford,
Ireland

Architect

Holder Mathias

Kingspan Products

Kingspan Klargester
Pumping Station
Kingspan Thermaroof® TR26
flat roof insulation
Trapezoidal Wall
insulated wall panel
AWP insulated wall panel
Karrier Panel rainscreen substructure
Kingspan Classic Skylight Dome

A Subtropical Swimming Paradise – the hallmark of a Center Parcs resort – sits beneath a swooping roof within 400 acres of woodland in Ireland’s County Longford. It is the centrepiece of the first resort of its kind in Ireland, designed by Holder Mathias Architects.

The pool house, complete with rapid simulator, slides and verdant planting, is one of nine main buildings that congregate around a six-acre lake in the “village centre” of the €233 million development, while 466 self-catering cabins are dispersed throughout the woodland.

Kingspan’s involvement in the project was twofold, supplying both the insulated panels that form the elevations of the buildings and a pair of water pumps vital to the running of the water park.



Forgoing traditional wet trades such as blockwork walls, contractor John Sisk & Son opted for a panel and frame construction that would allow the buildings to become weathertight as quickly as possible. This meant the internal fit-out could proceed simultaneously with the over-cladding of the facades, helping the project keep within its 18-month timeline.

The precision in this construction method also helped in “de-risking” the process by minimising non-optimal labour conditions and keeping cut-off waste to a minimum, explains John Sisk & Son regional manager James Maloney. “The original specification called for more wet trade and more on-site work, but the greatest element of sustainability in this project is that it’s manufactured in a factory,” he says. “You’re eliminating human error – and if you’re eliminating human error, you’re eliminating waste.”

The facades are faced in a combination of stone and tile slips, render and Western Red Cedar to give each building its own distinct identity, and reflect the traditional feel holidaymakers have come to expect of Center Parcs resorts. “There is a very bespoke approach to the facades of each unit to reflect their use, yet behind each of these materials is a Kingspan Karrier Panel substructure that allowed the building to be built quickly and efficiently,” says Maloney.

“This form of construction provided Holder Mathias the architectural freedom to break-up the elevations of what are large buildings with a palette of different materials.” This outer cladding is designed to be easily removed for future refreshes of the finishes.

During the preparation of the site, the Kingspan Water & Energy team also provided two high-performance Klargester Pumping Stations that deal with both the area’s high-water table and the wastewater produced by the resort.

Challenging environmental conditions at the Center Parcs premises meant that a specialist technical solution was needed. Kingspan Klargester’s own inhouse technical team produced the necessary robust and bespoke solutions and provided support throughout the project – from the sizing and manufacture of the pumps, through to the installation, commissioning and on-site maintenance.

A Klargester foul pump located near the village amenities such as the food court and shops manages wastewater at a speed of eight litres per second, while a second bespoke Klargester pump dealing with surface water is situated beside the pool, where it continually pumps water to the lake at a speed of 10 litres per second.

Written by Jessica Mairs.



CROKE PARK NATIONAL HANDBALL CENTRE



Location
Dublin, Ireland

Architect
SSA Architects

Kingspan Products
QuadCore™ Karrier Panel
rainscreen substructure Dri-
Design Perforated cassette



The Gaelic Athletic Association's new 2915 square metre National Handball Centre provides an iconic monument to the fast-growing sport as well as a welcoming space for the larger local community. The contemporary facility, which also contains a bar and café, will serve as a prominent community hub and the inclusion of Kingspan's elegant perforated Dri-Design facade makes it a distinctive addition to the landscape of the area.

Specified in aluminium with a Corten colour finish, the vibrant facade is a fitting reflection and celebration of both the sport and the Gaelic Athletic Association.

The option to create a bespoke perforated design on the Dri-Design cladding meant that a truly unique aesthetic could be established for the new centre. SSA Architects supplied images to contractor PJ Quinn Ltd., who compiled the final size and location of the perforations to create distinctive silhouettes of handball players in varying, animated stances.

These designs were then engineered into the Dri-Design cassettes by Kingspan. The QuadCore™ Karrier Panel System,

which encapsulates an internal liner sheet, insulation and external weather sheet in a single panelised system, was fixed directly to the supporting steel work enabling the building to be made weathertight before the external works were finished and allowing internal fit-out to begin earlier in the process.

The perforated metal facades were then installed over the top using a simple, interlocking fixing method. These cassettes can also be easily removed for repair or recoating, maximising longevity and ongoing safety.

The specification of Kingspan Dri-Design helped to create an iconic aesthetic for this ambitious new centre through the combination of the bespoke perforated design and attractive varied Corten colour.

In addition, inclusion of QuadCore™ Karrier Panel enabled the National Handball Centre to achieve high levels of thermal efficiency and airtightness, ensuring the new centre will benefit from excellent, long-lasting performance.



ENTERTAINMENT AND SPORTS ARENA



Location
Washington D.C., USA

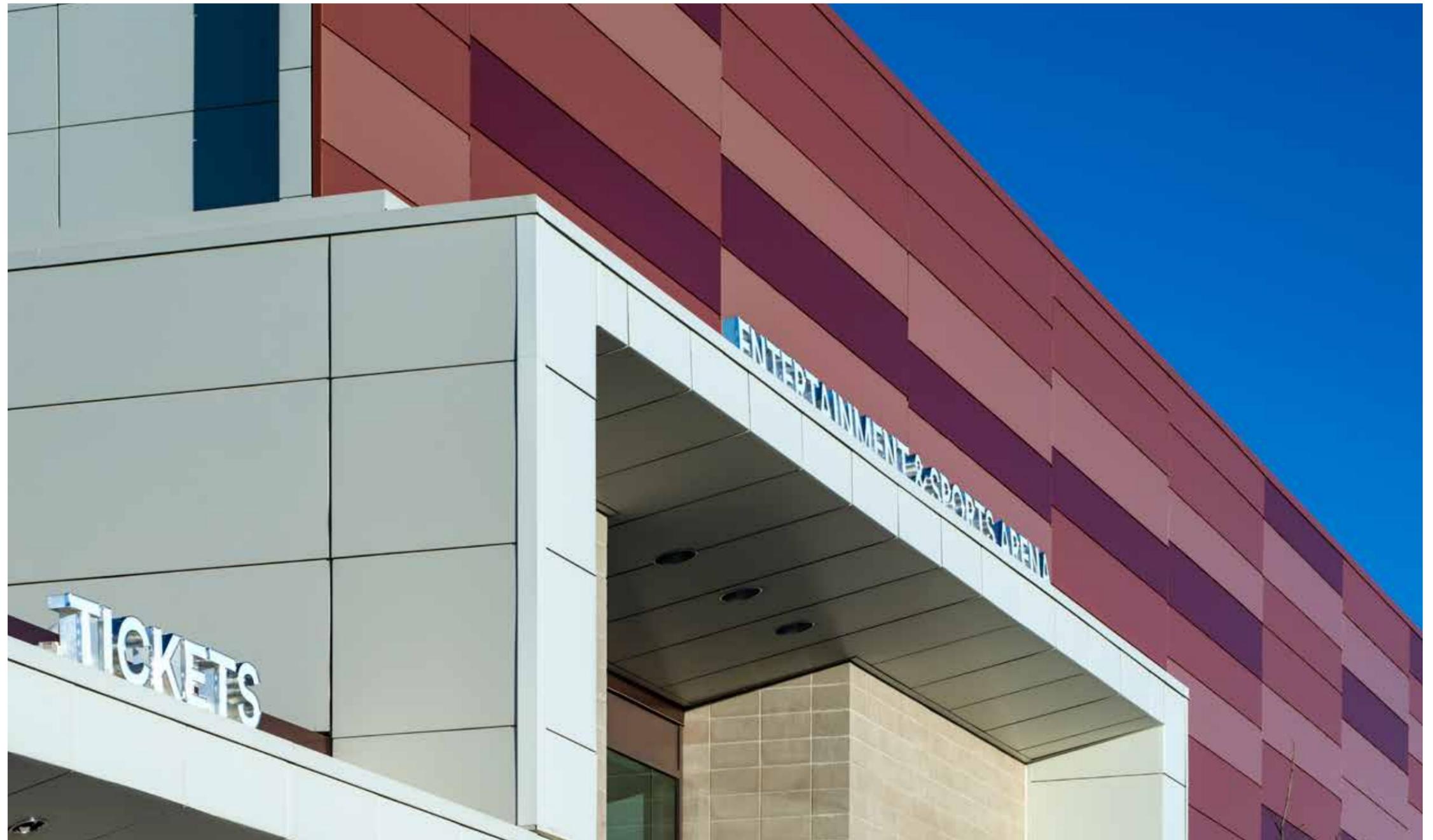
Architect
ROSSETTI
Marshall Moya Design

Kingspan Products
Optimo insulated wall panel

Washington D.C.'s Entertainment and Sports Arena (ESA) serves as the practice facility for the NBA's Washington Wizards and is also the home arena for both the WNBA's Washington Mystics and the NBA G League's Capital City Go-Go.

The project specification for the ESA called for an envelope that did not show any visible fasteners. This was no small task, as the arena has more than 53000 square feet of insulated panels.

Kingspan met the challenge by engineering a concealed fastener solution that delivers a smooth, flat appearance without the need for exposed trim at the base, corners or openings.



DE GROTE BOEL OOSTERHOUT

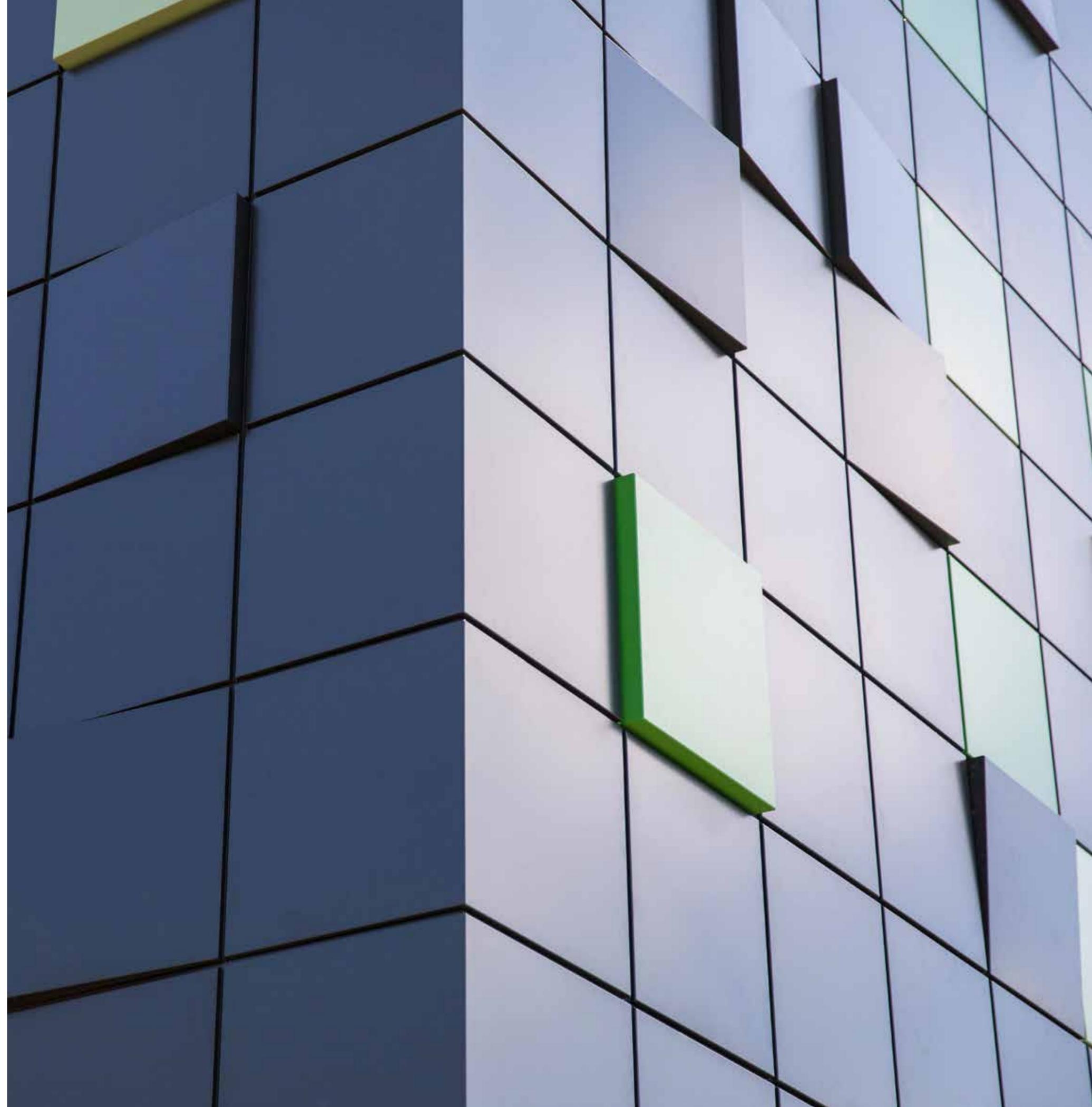


Location
Nijmegen,
The Netherlands

Architect
Croonen Architecten

Kingspan Products
Dri-Design Tapered, Flat
and Shadow cassettes

In the newly-built neighbourhood Grote Boel in Nijmegen, a new childcare centre and adjoining gymnasium have been completed. The new gymnasium is in a class of its own with a stunning Dri-Design cassette facade. When designing the building, the architect was inspired by the leaves of the trees that surround the site.



HOTEL INDIGO



Location
Chester, UK

Architect
Franklin Ellis Architects

Kingspan Products
QuadCore™ Karrier panel
rainscreen substructure
Recess Fix cassette

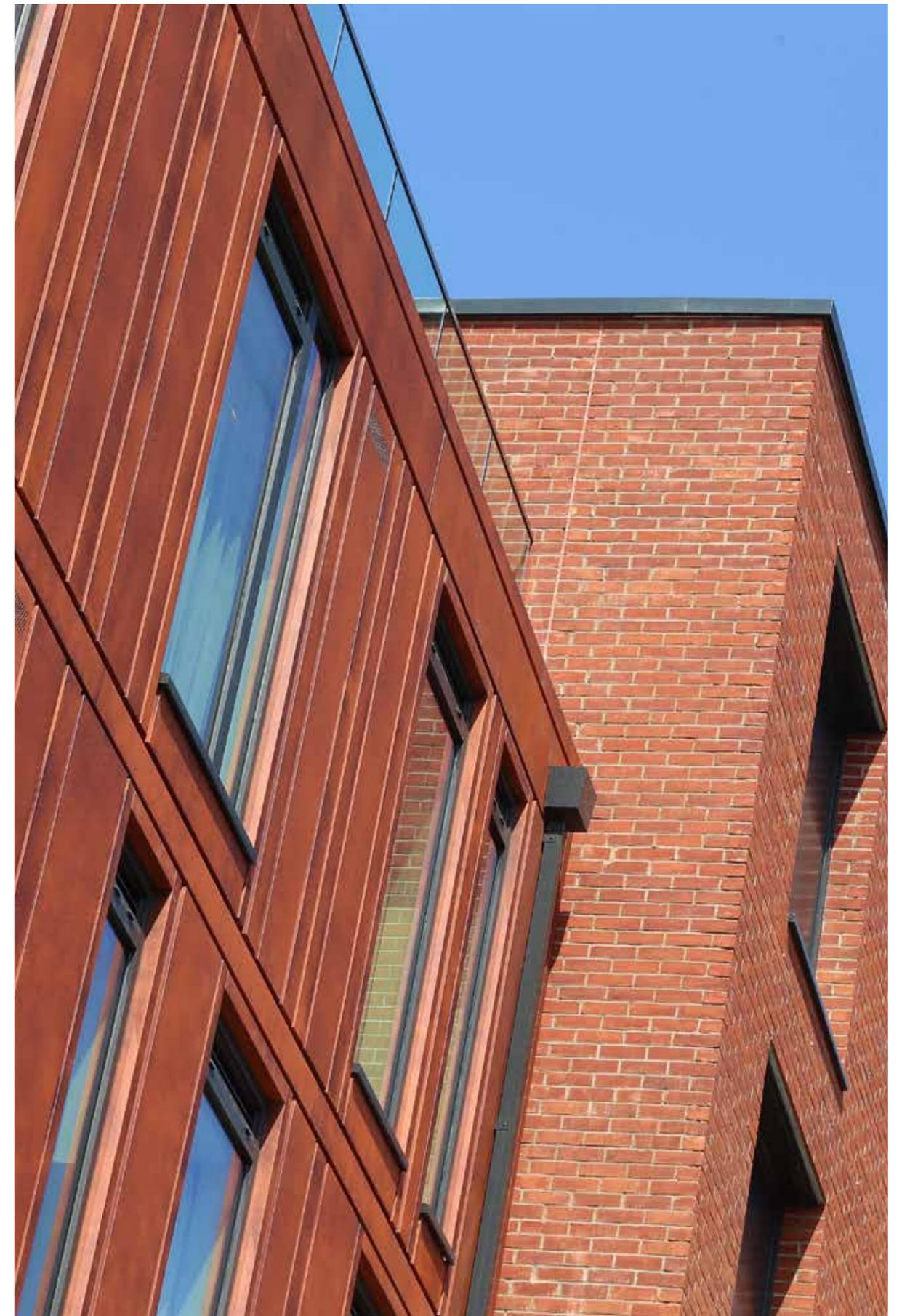
To inspire the building's form and finish, architects Franklin Ellis looked to the surrounding 19th century listed buildings, including a former Baptist church and row of terrace houses designed by renowned local architect John Douglas.

The resulting bookended design, with a striking central facade section clad with intricately detailed recess-fixed cassettes in varying Corten shades, stands as testament to this sensitive commission and design process, giving the new destination a strong sense of place and permanence.

The way in which the surrounding historic architecture has been drawn from and translated into a modern hotel design is encapsulated using a PPC facade to reference more traditional building materials, coming together to create a new asset for the conservation area.

"The building has been designed to carefully respond to its historic context to create a unique development that is deeply rooted to Chester and will enhance the character of the conservation area it sits within.

The PPC-coated cassettes were selected as part of a sympathetic palette of facing materials, echoing the shades of the weathered red ruabon brick of the local architecture without any of the inherent material issues of using a naturally variegating material such as Corten," explains Ian Burgess, Associate Architect at Franklin Ellis Architects.





IMC CINEMA



Location
Kilkenny, Ireland

Architect
Brian Dunlop Architects

Kingspan Products
QuadCore™ Karrier Panel
Steel Framing System
Dri-Design Shadow cassette
Shingle rainscreen facade
Evolution Axis insulated wall panel

As a building with no requirement for windows except for in the foyer area, the combination of facade treatments allowed the design team at Brian Dunlop Architects to visually break down the volumes of the 13.5 metre high elevations.

The Dri-Design Shadow cassettes, selected in a classy yet contemporary Aluminium Copper, were used to create a stepped-in effect on the facade, complementing the curved first-floor foyer glazing and cantilevered entrance. This contrasts with the simplicity of the flat-profile grey and black Evolution panels, giving each individual volume a material and texture definition.



PRODUCT SPOTLIGHT

DRI-DESIGN

Dri-Design is a rainscreen facade that installs at least twice as fast as comparable systems, providing a weathertight envelope in a fraction of the time of traditional built-up systems.

With Dri-Design cassettes, available in Flat, Tapered and Shadow, a multitude of patterns can be achieved - from stack and stretcher bond to horizontal and vertical orientations.

Dri-Design is compatible with Kingspan Karrier Panel rainscreen substructures comprising either advanced insulation QuadCore™ or more traditional K-Roc™, delivering thermal conductivities of 0.018 W/mK and 0.043 W/mK respectively.

The cassettes can be direct fixed, or form a ventilated cavity, and are easily interchangeable without the need for complicated rail and bracket systems.

The range is available in a wide range of colours, finishes and textures and offers a choice of natural metals including Aluminium. Aluminium cassettes can be coated in any RAL colour, with coatings that can replicate more expensive metal options.

"The Dri-Design shadow facade system allowed us to deliver a high-quality finish and landmark aesthetic to the steel-framed construction, while still enabling us to use a variety of materials and finishes," explains project architect Brian Dunlop.

All Dri-Design cassettes can be perforated in any image or design to provide enhanced and unique aesthetics, airflow and shade.

For technical details, or to discuss Dri-Design rainscreen facade solutions for your project, contact us at: better.buildings@kingspan.com



INTERNATIONAL CONVENTION CENTRE WALES



Location
Newport, UK

Architect
Boyes Rees Architects

Kingspan Products
QuadCore™ Karrier Panel
rainscreen substructure
Dri-Design Flat cassette
Evolution Axis insulated wall panel

Whilst it draws inspiration from the best conference centres around the world, the ICC Wales is firmly rooted in the spirit of its homeland.

The building's design embraces the contrast between the strong local heritage and the modern requirements of the project with a sensitive and adventurous design featuring versatile Dri-Design cassettes.

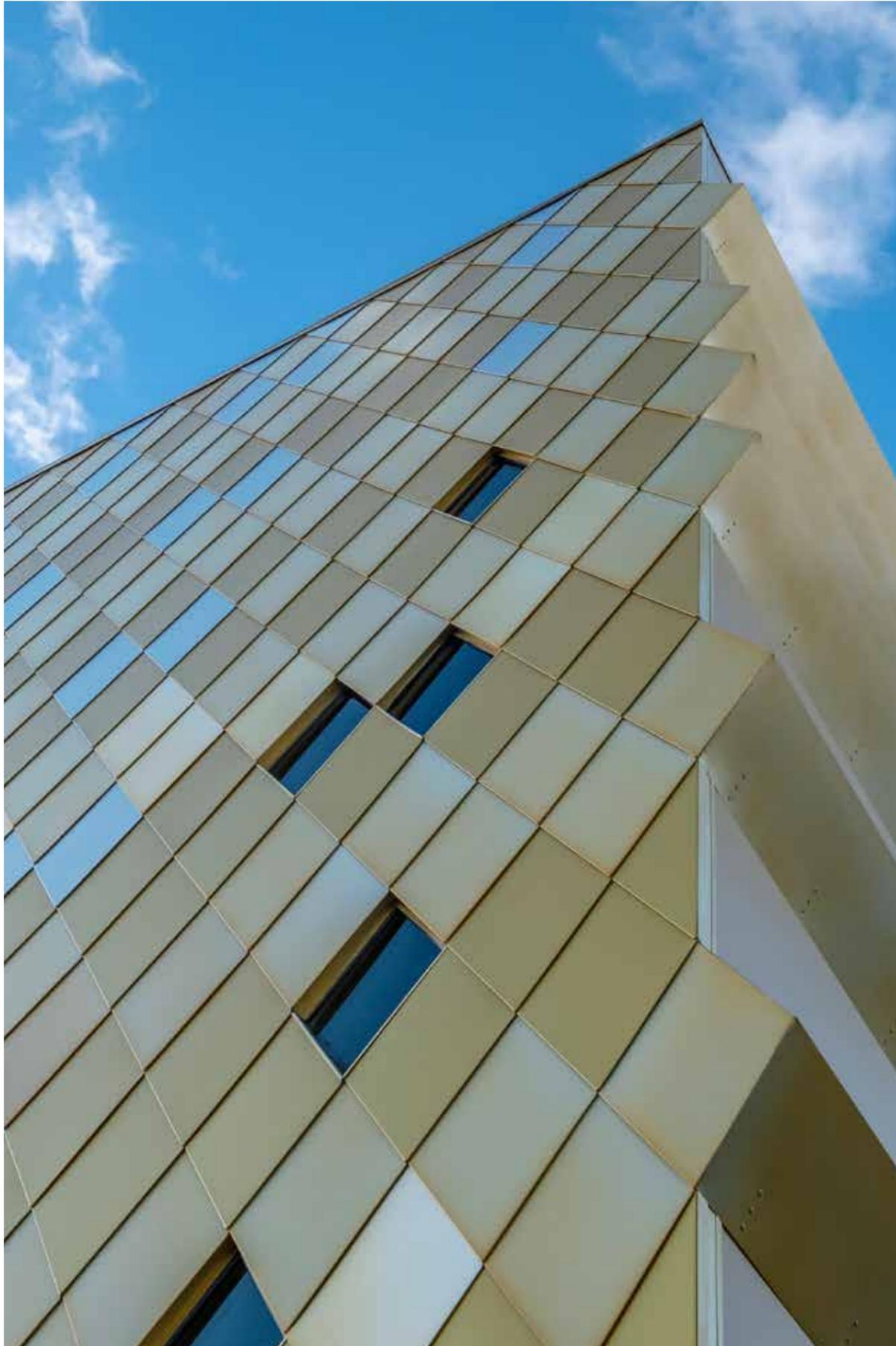
The energy efficiency and airtight attributes of the QuadCore™ Karrier Panels enabled the building designers to far exceed the requirements of the building regulations, achieving a final wall U-value of 0.2 W/m²K.



“The Dri-Design cassettes helped us to preserve the look and feel of the original design intent of having slate cladding, with a much simpler and lighter construction that is much quicker to install.”

Robbie Hyde
Associate, Boyes Rees Architects





MULLUM MULLUM STADIUM



Location
Manningham,
Melbourne, Australia

Architect
Mantric Architects

Kingspan Products
Evolution Axis insulated wall panel
Aluminium Shingle rainscreen facade



Mullum Mullum Stadium is the jewel in the crown of Manningham sporting venues. Located in the Victorian suburb of Donvale, the 6,000-square-metre stadium is one of the largest community sporting facilities in Melbourne's east, featuring five multi-use indoor courts and seating for up to 500 spectators.

Evolution Axis panels provided the smooth finish and aesthetic appeal of a traditional aluminium facade with the value of insulated panels to finish the external walls of the stadium and support the venue's sustainable outcomes.

The Aluminium Shingles, in three striking shades of gold, are fixed directly to the substructure with discrete stainless-steel clips and rivets, folding into interconnecting tile-like shapes to create a distinct pattern. The unique powder coated surface of the shingles delivered the desired aesthetic finish at a fraction of the cost of traditional anodised solutions.

OPTUS STADIUM



Location
Perth,
Australia

Architects
Hassell
COX
HKS

Kingspan Products
Kingspan Kooltherm® K10
Soffit Board
Kingspan Kooltherm® K10
White Soffit Board
Kingspan KoolDuct®
pre-insulated ductwork
system

The highly anticipated Optus Stadium (originally named Perth Stadium) has long been considered a major part of the capital city's regeneration programme. The unique design - a collaboration between Hassell, Cox and HKS - called for a slim-profiled thermal solution capable of meeting the limited space allocation while still delivering on the high energy efficiency requirements of the project.

The facility's bronze facade is made of anodised aluminium and reflects the state's unique geology. LED lighting to show the home-team colours is woven through the structure and is a testament to the "fan first" approach.

Kingspan Kooltherm® K10 Soffit Board was the perfect choice. Its slim profile and high thermal performance allowed it to fit into the enclosed soffit areas, but still deliver compliance with the high thermal requirements of the building. Where the insulation was exposed, Kingspan Kooltherm® K10 White Soffit Board was used to offer a more aesthetically pleasing result.



SNØ



Location
Lørenskog,
Norway

Architect
Halvorsen & Reine AS

Kingspan Products
QuadCore™ AWP, Tramline
insulated wall panel
*image is an artist's impression

The architect's vision was a melting glacier. The new ski arena is eco-friendly, with the structure allowing natural light transmissions without any heat from the sun, while the heat generated from refrigeration will be reused to power the rest of the Winter Village.

The 50,000-square-metre building has exterior walls that lean inwardly and combined facade elements of metal panels, polycarbonate, dry stone wall and glass fields. With an indoor

ski slope with a 500-metre long hill, up to 100 metres wide and with an elevation difference of 90 metres, Snø is one of the biggest of these types of centres in Europe. The building is divided into two parts, a so-called cold zone which is the ski hall itself of 37,000 square metres - and a warm zone which is the commercial part. The use of QuadCore™ sandwich panels with outstanding thermal performance keeps the cold zone chilled and the warm zones comfortable.



THE DIXON



Overnight stays at the Tower Bridge Magistrates' Court have taken on a rather different meaning since the court and adjoining police station were transformed into a luxury 193-bedroom hotel.

Dubbed "The Dixon" in reference to the original architect John Dixon Butler, the hotel forms part of Marriott's Autograph Collection.

The completed hotel is expected to achieve a 'Very Good' rating under the BREEAM 2014 New Construction Non-Domestic Building standard, with the new extension designed to achieve the 40% improvement in ADL2A criterion required by the London Plan.

To raise the thermal performance of the building's flat roof, whilst also providing effective drainage, Kingspan Thermataper® TT47 and Kingspan Thermaroof® TR27 were installed.

Kingspan Thermataper® TT47 combines high-performance insulation and drainage in a single board which can be fixed with a dry installation process, avoiding the time lost waiting for wet trades to dry. The lightweight boards can also be as little as 1.5% or less of the weight of a screed-to-fall solution, minimising the structural support requirements for the roof surface.



Location
London, UK

Architects
Consarc Design Group
Dexter Moren Associates

Kingspan Products
Kingspan Thermataper®
TT47 tapered flat roof insulation
Kingspan Thermaroof®
TR27 flat roof insulation

INDUSTRIAL



AICO HEADQUARTERS



Location
Oswestry, UK

Architect
DGA Architects Ltd

Kingspan Products
AWP, Micro-Rib insulated wall panel
Evolution Axis insulated wall panel
Topdek insulated roof panel



A landmark new UK headquarters and distribution centre for Aico Ltd, the market leader in domestic smoke and carbon monoxide alarms, opened in October 2019, housing Aico's state-of-the-art Centre of Excellence which offers training to a wide range of audiences including students from local schools, housing associations, numerous industry bodies and electrical and gas contractors.

The six-acre site also includes a purpose-built, glass-fronted building providing office space, auditorium and warehouse facilities, as well as an inviting outdoor landscape complete with 'trim trail' that can be used for recreation and exercise.

Employee health and wellbeing was a key consideration for the project and, as well as the outside space, the building was designed to provide a comfortable, yet stimulating, environment to work in.



"Due to the building containing such a large glazed frontage, we needed to achieve a significant gain in the thermal performance of the rest of the building envelope. By specifying Kingspan insulated roof and wall panels, we were able to achieve this whilst still maintaining the desired aesthetic."

Barry Prince, MCIAT
Director, DGA Architects

ASTELLAS ARK




Location
 Kilorglin, Ireland

Architect
 DPS Group

Kingspan Products
 QuadCore™ Karrier Panel
 rainscreen substructure
 Dri-Design cassette
 Evolution insulated wall panel
 Kingspan Day-Lite Kapture rooflight

Two bands of distinctive curved glazing and a smattering of skylights draw sunlight deep inside the workspaces of this manufacturing plant for Astellas Pharma Ireland in Kilorglin, County Kerry. This strong daylighting is designed not only to benefit those who work inside the facility, but to offset the energy demands of the building by reducing the need for artificial light.

Kingspan worked on both the facades and roof of the Astellas ARK building under the design direction of DPS Group to maximise the overall thermal efficiency of the envelope, in line with the pharmaceutical company's own efforts to reduce its carbon emissions.

Sunlight is brought down into the spaces through a series of Day-Lite Kapture rooflights, an innovative skylight design comprising three

intersecting polycarbonate hemispheres. The curvaceous surface draws in low-incident daylight from any orientation, helping to make the most of even the late afternoon sun.

The Day-Lite Kapture rooflights were developed in Kingspan's IKON innovation centre in Ireland, with data about their performance collected during a year-long trial to help inform optimal placement in the Astellas Pharma project.

Written by Jessica Mairs.



Location
Süßen,
Germany

Architect
Hufschmied Architektur

Kingspan Products
Dri-Design Tapered, Flat and
Shadow cassettes

The Binder studio for artistic bronze design in Süßen had a design aim of reflecting the individuality and creativity of the craftsmanship that would take place inside it. The facade has been designed with three-dimensional Dri-Design aluminium cassettes to create a living surface, echoing the artistic nature of its purpose.

BINDER



CHARLIE BIGHAM'S WEST: PHASE 1



Location
Wells, UK

Architect
Feilden Fowles

Outgrowing his London production facility, ready-meal producer Charlie Bigham cast his eye outside the M25 to picturesque Dulcote Quarry in Wells, Somerset.

Kingspan Products
AWP, Micro-Rib insulated wall panel
Sinusoidal insulated wall panel
QuadCore™ UltraTemp insulated panel
Trapezoidal Roof insulated roof panel
Kingspan Day-Lite Trapezoidal rooflights
Multibeam purlin system
Multibeam cladding rail system
Safeside guard rail system
Highline Gutter Flashings

Eschewing the anonymous language of the modern industrial estate, the building by Feilden Fowles appears as an assemblage of pitched-roofed structures, reminiscent of old quarry structures with their exoskeletons, patchwork of cladding and add-ons.

Despite the scale of the site, the architects made the decision to build up rather than out, stacking back-of-house areas such as a cafe and meeting rooms above production facilities. This meant that only half the quarry site would be developed, allowing the remainder to be turned over for the enjoyment of staff and wildlife.

Tonnes of topsoil were brought in to anchor the roots of hundreds of new trees and a blanket of wildflowers, boosting the habitat of

the peregrine falcons and newts that had come to call the quarry home in the 20 years since its closure.

“One of the primary environmental approaches was to build as little as possible in footprint,” explains Feilden Fowles co-founder Edmund Fowles.

“We were quite drawn to the Kingspan panels in that we were able to use a timber cladding in conjunction with the panels to contextualise the building a bit more. We wanted to use natural timber on the outside of the building so that it would weather down and make the building feel more vernacular.”

Kingspan insulated panels were slotted into a gridded steel frame to quickly and efficiently create the walls. The variety in the scale of the panels and bays breaks up the bulk of the facility, while the modularity opens up the possibility to expand as the business grows.

Written by Jessica Mairs.

DALMUNACH DISTILLERY



Location
Carron, UK

Architect
NORR

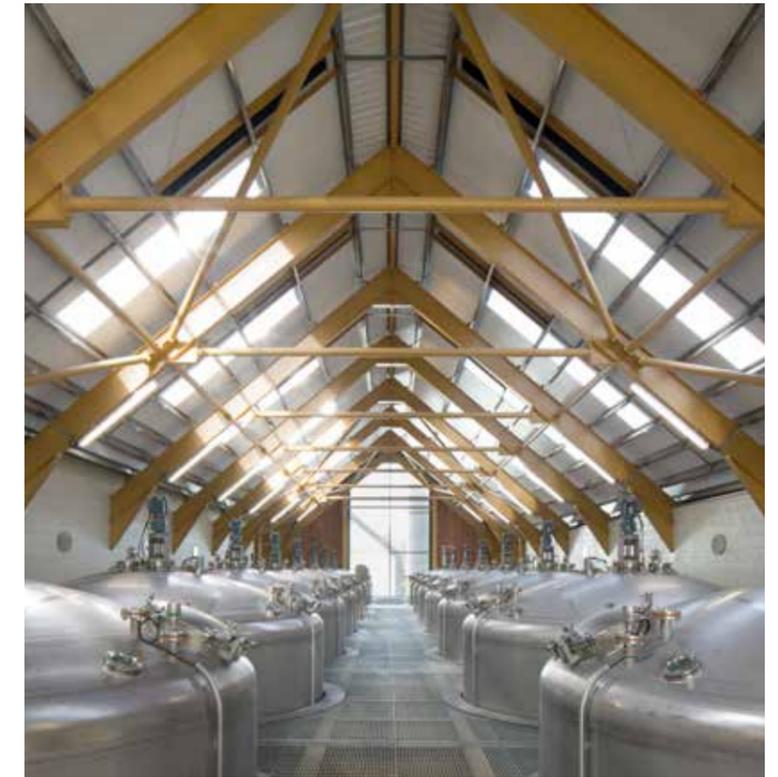
Kingspan Products
AWP, Micro-Rib insulated wall panel
Trapezoidal Wall insulated wall panel
Trapezoidal Roof insulated roof panel
Kingspan Day-Lite Trapezoidal rooflight

The new distillery sits along the bank of the River Spey, reflecting the natural beauty of the surrounding landscape and producing up to 10 million litres of spirit annually. Formed in the shape of a leaf of barley, NORR's design was inspired by the locally-sourced ingredients used to make traditional scotch whisky.

The insulated roof and wall panels produce an interesting blend of materials whilst simultaneously providing an airtight, watertight and weatherproof inner skin support system.

Since the distillery is home to highly flammable products, installing panels with excellent fire performance was an essential requirement for the project. All the insulated panels installed on the distillery are FM Approved, providing high levels of fire safety measures for the building.

The rooflights allow a high level of natural daylight to flow into the building, whilst also providing superior resistance to UV degradation, illuminating the rooms inside the building, eliminating the need for traditional electrical lighting and allowing the business to operate in a more energy-efficient manner.



EINS ENERGY STORAGE



Location
Chemnitz, Germany

Architect
ADOBE Architekten
+ Ingenieure GmbH

Kingspan Products
QuadCore™ AWP, Micro-Rib
insulated wall panel

The battery storage facility in Chemnitz compensates for fluctuations with the aid of energy control and thus ensures a stable distribution network. It is housed in a building whose architecture and construction carries the idea of sustainability to the outside world. Particular emphasis was placed on energy-efficient building materials.

The 850 square metres of QuadCore™ AWP wall panels, in RAL 9007, ensure that the thermal transmittance of the building envelope is low. In addition, the panels enable sophisticated architecture with interesting alignment and edges.



HELL ENERGY HIGH BAY WAREHOUSE



Location
Szikszó, Hungary

Architect
Peka Bau 2000
Construction Ltd

Kingspan Products
AWP IPN wall panel
AWPflex IPN wall panel
FH wall panel
T150 trapezoidal
structural sheet

Hell Energy is one of the world's most dynamically evolving FMCG brands. This Hungarian-owned brand is a market leader in Eastern Europe and offers a variety of products such as the well-known Hell energy drinks, sugar-free drinks and vitamin enriched sport drinks. The new warehouse was needed to extend the storage capacity of finished goods.

The building is fully automated and its structure is based on a truss-girder shelf system, on which the wall and roof panels are mounted. In its 31-metre-high warehouse space, the company can store 31,000 pallets.





IPSEN BIOPHARM LIMITED



Location
Wrexham, UK

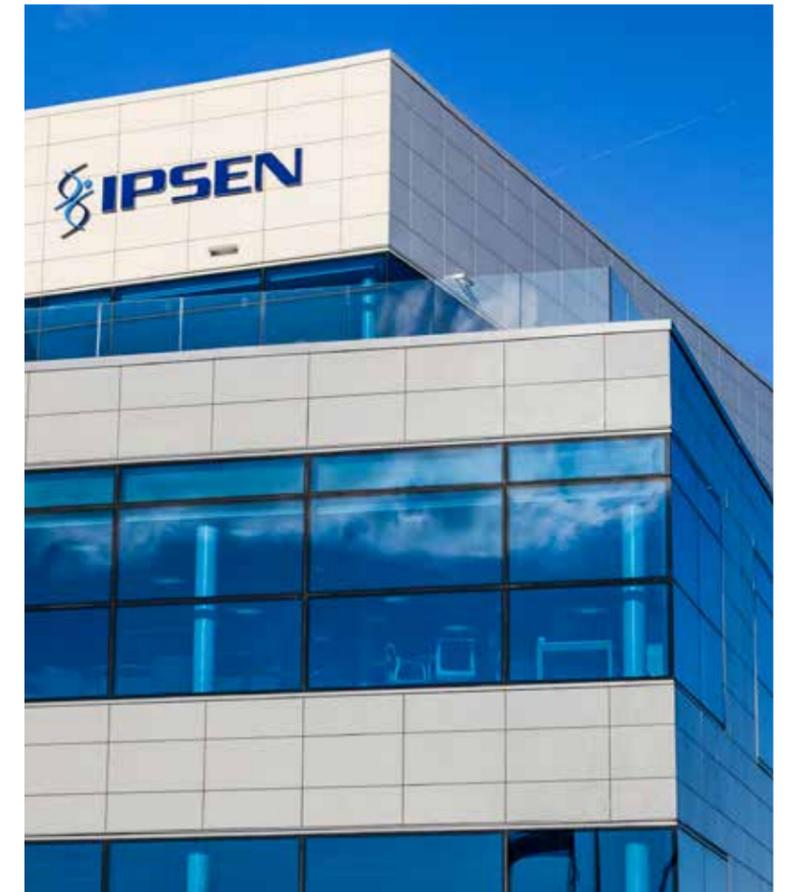
Architect
Lovelock Mitchell Architects

Kingspan Products
QuadCore™ Karrier Panel
rainscreen substructure
Ceramic Granite rainscreen facade

The building needed to reflect the advanced science and innovation that Ipsen is known for, while maintaining the corporate colour palette of the Ipsen brand and achieving a cohesive aesthetic with the existing buildings.

The design combines interesting geometry with clean, smooth and light-reflecting surfaces to articulate the advanced science and innovation at the heart of the occupier's brand and the prestige of the development.

While most of the new Ipsen office, reception and packing building follows a traditional rectangular layout, there is a large cantilevered section that extends from the front elevation and wraps around the side of the building. This key design feature is part three-storey, part two-storey and creates both interesting geometry and an active frontage, with excellent visibility into and out of the building due to extensive curtain walling.





Location
Dubai,
United Arab Emirates

Architect
Bradbrook Consulting

Kingspan Products
QuadCore™ AWP,
Flat insulated wall panel
QuadCore™ Trapezoidal
Roof insulated roof panel

Komatsu, one of the world's largest manufacturers of construction, mining and industrial equipment recently established its regional headquarters in Dubai to service the MENA region. The project is one of the most aesthetically pleasing facilities in the logistics hub of JAFZA with a facade that matches Komatsu's corporate identity guidelines.

The project had a tight delivery programme of only 12 weeks, which was achieved with the use of single-component, easy-to-install AWP and Trapezoidal Roof insulated panels. Both systems installed meet and exceed the thermal insulation requirements of Dubai Municipality, providing a sustainable and thermally efficient space for Komatsu to operate.

KOMATSU HEADQUARTERS





Location
Cork,
Ireland

Architect
Cook Architects

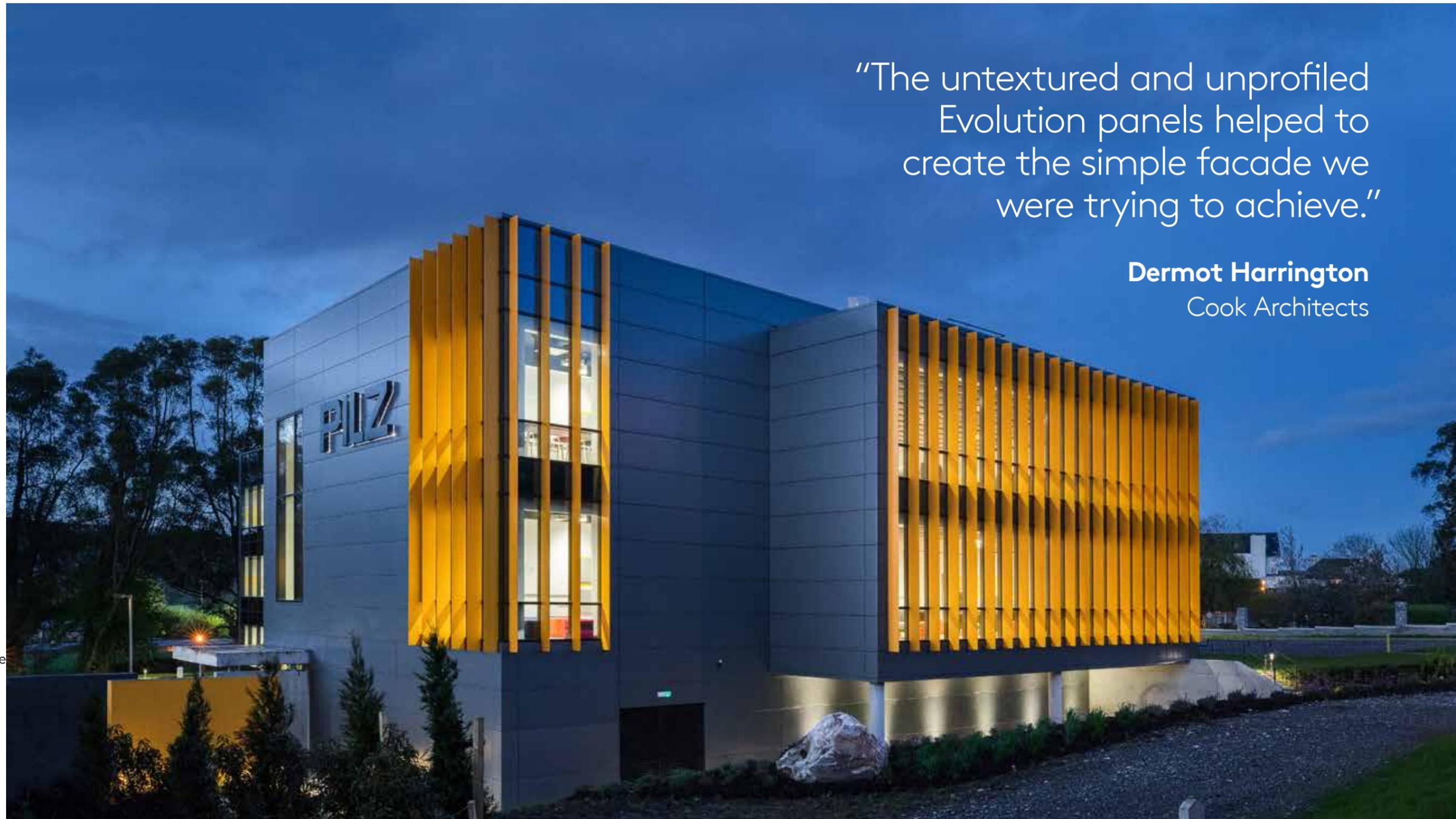
Kingspan Products
Evolution Axis
insulated wall panel
Evolution Recess
insulated wall panel

On the 20th anniversary of the company's presence in Ireland, Pilz decided to cement its position as a global provider of automation products, systems and services and its commitment to Cork with the development of a new custom-built development site.

The sleek profile and hidden fixings of the Evolution panels create a contemporary, minimalist edge that complements the large glazing areas on the project and is befitting of the groundbreaking work that will take place inside the building. This overall clean effect was maintained at the edge joints of the facade with aluminium corner details.

"The untextured and unprofiled Evolution panels helped to create the simple facade we were trying to achieve."

Dermot Harrington
Cook Architects



PILZ SOFTWARE DEVELOPMENT CENTRE



POCO LOCO



Location
Roeselare,
Belgium

Architect
Bureau PARTNERS Architecten
& Ingenieurs NV

Kingspan Products
QuadCore™ IND wall panel



An expansion of 15,000 square metres has enabled accommodation of 42,000 pallets at a new automated high-bay warehouse for Poco Loco, a division of the Paulig Group with more than 20 years' experience in the production of Tex-Mex products.

The new high-bay warehouse makes it possible to largely centralise the distribution activities and the supply of raw materials. The logistics building has

been built in the immediate vicinity of the production site and is connected to it by a bridge over the road. Via automatic transport conveyors in this bridge, the warehouse and the production halls are connected saving 25,000 truck journeys each year, saving an estimated CO₂ reduction of 365 tonnes a year.





PROJECT SHOWROOMS N3



Location
Dublin, Ireland

Architect
de Siún Architects

Kingspan Products
Trapezoidal Roof insulated roof panel
Trapezoidal Wall insulated wall panel
Kingspan Day-Lite Trapezoidal rooflight

This new showroom and warehouse for Project Tile, an Irish tile wholesaler, uses standard materials expressed in an inventive way, with colour to provide accented and eye-catching design as well as brand fidelity.

RHENUS LOGISTICS



Location
Son,
The Netherlands

Architect
Heembouw Architecten

Kingspan Products
AWP, Mini-Micro
insulated wall panel
Kingspan Day-Light
Architectural
wall light
Evolution Axis
insulated wall panel
Evolution Recess
insulated wall panel

In 2017, Rhenus Logistics completed their 75,000-square-metre sustainable distribution centre, equipped with the latest lighting and smart technology. For building owner DOKVAST, this focus on sustainability played a key role in the design. When developing the property, care was made to ensure that all parties, from architect to supplier, collaborated in their efforts to choose the best options for insulation, lighting, process and location.

Based on the desired insulation values, light output and appearance, Kingspan advised which facade panels, wall panels and daylight panels were the most suitable. Kingspan supplied BIM files and supported the installer during the build stage. The insulated wall panels and wall lights are designed to fully integrate, offering a quick and easy-to-install system.

Energy-efficient lighting was a key consideration for the design of the distribution centre. The 1,100 square metres of Kingspan Day-Light Architectural wall panels, which offer a U-value of 1.3 W/m²k and a light transmission of up to 55%, flood the building with optimum levels of natural daylight.





STOCKHABO ICE



Location
Moeskroen,
Belgium

Architect
AAVO Architects

Kingspan Products
QuadCore™ IND wall panel

In April 2019, Stockhabo, a new fully automated 15,500 square metre warehouse for frozen products, was built in Moeskroen, Belgium.

Optimised temperature conditions and hygiene were crucial for the cold store warehouse, so the design focused on creating an architecture based on optimised energy efficiency, constant temperature environments and sustainable technology.

“The reduced risk of fire spread and smoke damage, in the event of a fire, has resulted in lower insurance fees which saves a few thousand euros a month.”

Xavier Haspeslagh
Owner, Stockhabo

TECHNO-TRADE



Location
Debrecen, Hungary

Architect
Megalit '90 Kft.

Kingspan Products
X-dek Membrane flat roof panel
QuadCore™ TL wall panel
TF wall panel

Since Techno-Trade was founded in 1996, it has been a strong market leader in the distribution industry with multiple businesses across Hungary. The new distribution centre was built to extend its capacity.



INFRASTRUCTURE AND AIRPORTS



AUTÓIPARI PRÓBAPÁLYA ZALA KFT. TEST TRACK



Location
Zalaegerszeg, Hungary

Architect
M-Teampannon
Építészmérnöki Kft

Kingspan Products
Dri-Design Flat cassette

In Zalaegerszeg, at the APZ Vehicle Testing complex, a phenomenal Z-shaped building graces the skyline. The building acts as the main entrance to the vehicle test track complex in addition to other rooms and spaces used for public events.

It provides a workspace for test track users, serving as a specially designed base for test activities. A wide range of office and workshop spaces are located within.

The Dri-Design cassettes were modified to their unique shape during production in the factory prior to arrival onsite. This method keeps onsite shape modification to a minimum. The result is a more subtle, modern look and an increased installation speed.



JEWEL CHANGI AIRPORT



Location
Singapore,
Singapore

Architects
Safdie Architects
RSP Planners & Engineers

Kingspan Products
Lumera ventilation windows

Jewel is a new entertainment and retail complex which acts as the central hub connecting airport terminals 1, 2 and 3. It has a gross floor area of about 134,000 square metres that comprises a mix of retail, leisure and commercial partners and also a striking five-storey waterfall.

One of the most impressive project features is the distinctive dome-shaped facade, made entirely of glass and steel. Kingspan worked with the architects and project team to specify and install over 100 Lumera ventilation windows, designed specifically for structural glass roofs with concealed controls to support the desired design aesthetic.

The Lumera ventilation windows also operate as an integral element of a wider Smoke and Heat Exhaust Vent (SHEV) system, which Kingspan also worked with local partners to design and install. To ensure the maximum levels of safety, the windows will open automatically upon detecting smoke, expelling it out of the building as quickly and safely as possible.

PRODUCT SPOTLIGHT

LUMERA

Lumera is a high-quality, aesthetic roof window that provides both natural ventilation and removal of smoke and heat in the event of a fire.

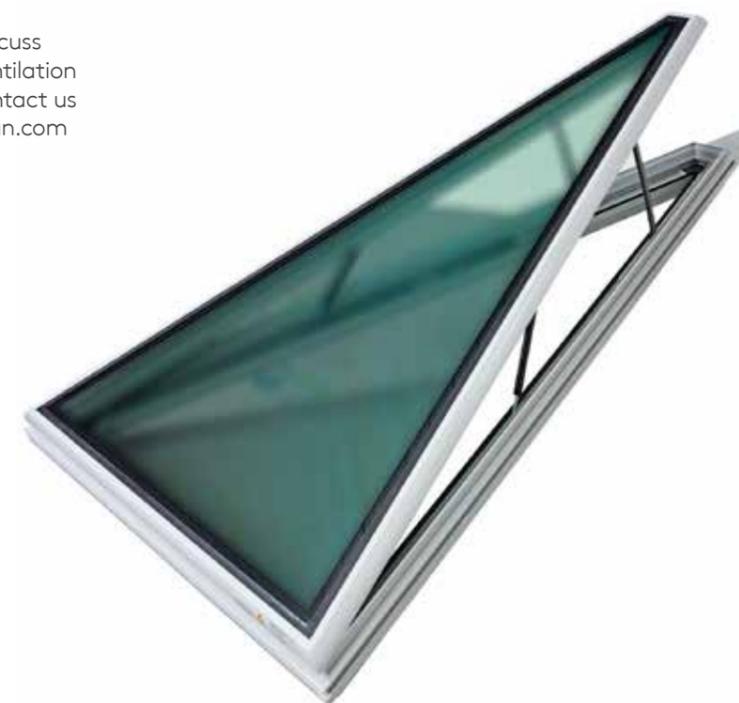
Elegantly engineered, Lumera ventilation windows are typically specified for use in the atria of airports, hospitals, shopping centres and museums.

Designed with slightly-inclined structural glass roofs in mind, Lumera features innovative controls that are cleverly hidden within the frame itself.

Lumera windows offer a stylish, glazed casement with slim, thermally-broken aluminium profiles and are available in rectangular, triangular and trapezium frames that can be specified in any RAL colour.

For technical details, or to discuss smoke management and ventilation solutions for your project, contact us at: better.buildings@kingspan.com

- Suitable for all types of glass, up to 40mm thick
- Operating at angles of up to 70° from the base structure
- Provides both natural ventilation and extraction of smoke and heat



LONDON BRIDGE STATION



Location
London, UK

Architect
Grimshaw Architects

Kingspan Products
Kingspan OPTIM-R®
Flooring System

London Bridge Station, one of the oldest stations in the world, sees approximately 56 million travellers passing through every year. To meet rising passenger numbers, the station building was redesigned by Grimshaw Architects and the new building now contains the largest concourse in the UK.

Some of the retail units constructed on the lower concourse were situated directly above uninsulated platform space. As such, specifiers required an insulation solution which could provide the required thermal performance in a slim thickness — avoiding the need for a step-up from the outer concourse.



SAN FRANCISCO AIRPORT CONSOLIDATED ADMINISTRATION CAMPUS

San Francisco International Airport serves more than 55 million passengers annually. Running an airport that size takes an army of people, and the different operational teams had been working out of multiple buildings that were nearing the end of their life cycle. The airport commission built the Consolidated Administration Campus to put all the teams under one roof.

The airport has plans to become a net zero energy campus by 2021; if successful it will be the world's first net zero energy airport. The Consolidated Administration Campus building is an important part of that effort. The building was awarded LEED Gold status by the United States Green Building Council and is net zero energy capable.



Location

San Francisco, California, USA

Architects

Perkins and Will
Mark Cavagnero Associates

Kingspan Products

Designwall 2000 insulated wall panel

"Insulated panels provided an ideal exterior cladding to meet a very high-energy conservation target for this project," explained Kang Kiang, Partner at Mark Cavagnero Associates.



MIXED USE



1 FINSBURY AVENUE

1 Finsbury Avenue, a prestigious office space, is the cornerstone of the commercial district of Broadgate - London's largest neighbourhood community development.

The refurbishment and reimagined design of this Grade II listed building ensures modern performance standards are met while providing a diverse and vibrant mixed-use destination, offering retail, leisure and office space.



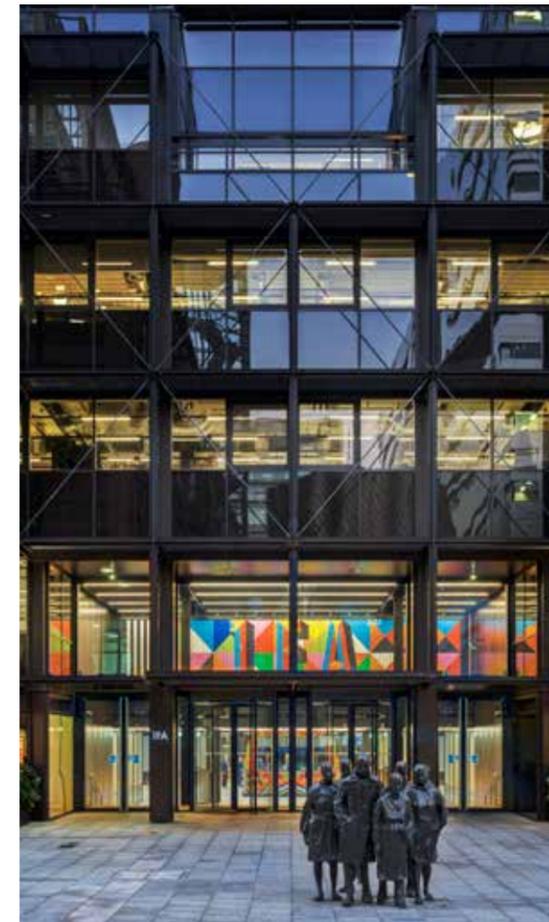
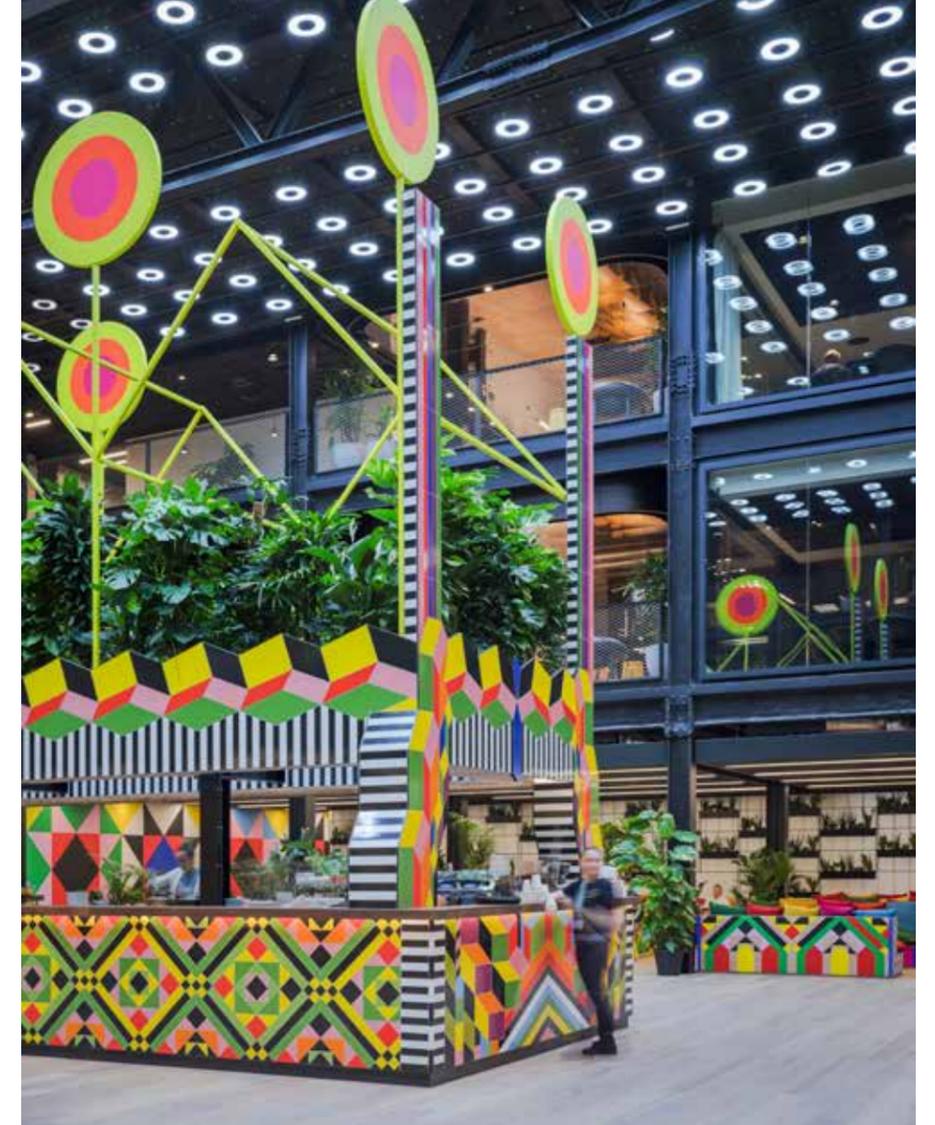
Location
London, UK

Architect
Allford Hall
Monaghan Morris

Kingspan Products
RMG600 raised
access floor system

Part of the refurbishment included moving the HVAC units from beneath the floors to the ceiling, which resulted in each of the seven levels requiring new access floors and a reduction of floor voids.

A total floor space of 23,000 square metres was fitted, to a tight Christmas deadline, in just 3 months. The RMG600 access floor systems were installed with a specialist granulated cork adhesive, designed to reduce sound levels.



AFI KARLIN BUTTERFLY



Location
Prague,
Czech Republic

Architect
CMC Architects

Kingspan Products
KS1150 NF IPN panels

The AFI Karlin Butterfly building stands in Prague's Karlin neighbourhood, a former industrial area bound by the Vltava River to the north and Zizkov Hill to the south. The area has seen significant regeneration over the last decade and the offices designed by CMC Architects cater to its changing clientele. The building cuts a contemporary form against the backdrop of industrial and art nouveau architecture, with its four floors of open-planned office space sitting atop a glazed level containing shops and cafes, and a double basement for car parking.

Aspects of the surroundings seep into the design. Pockets of greenery and glazing set into the aluminium-framed facade mirror the foliage on the adjacent hillside, and the undulating, butterfly-like form from which the building takes its name, responds to the existing architecture of the site. "The butterfly theme evolved as an accident of design," explains architect David Richard Chisholm. "We first assimilated the diagonals of the school nearby, then morphed that into memory of the machine factory which previously occupied the site and eventually pulled the green down from Zizkov Hill behind to make it a living organism. It is in fact a product of the phenomenology surrounding it." The result is a grouping of four ovoids connected by concave walls, and it is precisely these contours that made cladding the building one of Kingspan's most challenging projects to date.



Fitting a standardised product to a non-standard design was a puzzle left to lead technician consultant, Frantisek Tauchman, and the contractor to solve. In the end, over 3,700 insulated panels were used for the facade, and 1,500 of these required completely unique dimensions – a daunting undertaking for the fabricators responsible. “I think that normally we would decline such a solution for any project. But the architecture of the building was so beautiful that all the people who participated on this project were enthusiastic,” remarks Tauchman. “Everybody involved in this project, from production to customer service, did much more than expected. The architecture and the spirit of the building was the point which convinced them to go far beyond the standard limits.”

An eagle eye on the complex cutting lists, as well as the idea to create specialised packaging to allow different sized elements to be shipped together, helped keep the project on track for tight installation timelines.

On site, the 60mm KS1150 NF IPN panels were slotted into an aluminium frame alongside triple glazing to create a highly insulated facade, with plant boxes installed across their surfaces to form the ‘vertical garden’. “We implemented the Kingspan panels as the backing system to the vertical garden components, which worked perfectly,” says Chisholm. “The Butterfly is a living organism with layers and complexities of its skin, so bringing all the sensory, aesthetic, technical and economic aspects together into

an award-winning, beautiful building where people enjoy working and visiting was an unbelievable challenge.”

The some 40,000 plants that cover the facade are watered with recycled rainwater – one of numerous sustainability measures that gained the building a BREEAM rating of ‘Excellent’. The high thermal performance of the walls coupled with the orientation of windows helps to reduce the need for artificial temperature control and lighting. Automatic sunshades and a computer-controlled heating, cooling and lighting system adjust the interior environment to the conditions when needed, while metal panels in the glazing system provide natural ventilation.

At the foot of the building, four seasonally themed gardens with indigenous planting create a new piece of public space for the area.

“Thanks to the green facade it is a very nice transition from the old residential buildings to the green hill,” notes Tauchman. These gardens offer a moment of respite during the working day, from which to enjoy the greenery that grows across the facades and Zizkov Hill.

Written by Jessica Mairs.



Project Spotlight: AFI Karlin Butterfly

"B³ GADAMERPLATZ" SCHUL- UND BÜRGERZENTRUM



Location
Heidelberg, Germany

Architect
Datscha Architekten

Kingspan Products
Kingspan Kooltherm®
K8C cavity board

The "B³ Gadamerplatz" school and community centre is located in the former freight depot southwest of Heidelberg's Bahnstadt district. The "3-in-1" building consists of a primary school with a gymnasium, day care centre and community centre with a cafe and event hall.

The building complex is one of the world's largest Passivhaus developments and was realised through a public-private partnership between the city and the construction company Bau- und Servicegesellschaft mbH

Heidelberg (BSG). The aim of the project was to create a cultural and educational location for the new district, which enables encounters between different age groups.

PRODUCT SPOTLIGHT

KINGSPAN KOOLTHERM®



With a fibre-free rigid thermoset phenolic core, and a thermal conductivity of 0.018 - 0.023 W/mK, the Kingspan Kooltherm® K-range offers the thinnest, most thermally-efficient commonly used insulation solution for a variety of new build and refurbishment applications.

The use of Kingspan Kooltherm® insulation allows for a thinner envelope construction when compared to traditional insulation materials, resulting in improved levels of natural daylight entering the building and adding value by increasing internal space.

"The extraordinarily compact and slim nature of the Kingspan Kooltherm® K8C Cavity Board reduces the distance between the outer and inner shell, which makes the masonry overall more stable and leads to more usable space," explains Peter Donn of Datscha Architekten.

For technical details, or to discuss insulation solutions for your project, contact us at: better.buildings@kingspan.com



ESPACE BOISSIN



Location
Le Mans, France

Architect
ARES Architecture

Kingspan Products
Evolution Axis insulated wall panel

Following a major renovation, Espace Boissin now offers a mix of contemporary office and commercial spaces totalling 10,000 square metres for a range of businesses.

Work to the existing building, which was constructed in the 1960s, has resulted in improved thermal performance and energy efficiency as well as high-quality aesthetics thanks to the use of Evolution Axis insulated panels and co-ordinating flashings.





HERE EAST

The vision for Here East was to reimagine the former Olympic press and broadcasting centre and place it at the heart of a new digital tech quarter at Queen Elizabeth Park.

By refurbishing, the project team made effective use of the existing infrastructure whilst designing facilities which met sustainability targets for a BREEAM rating of 'Excellent'. With a total estimated project value of £90 million, this award-winning project has rapidly become a dynamic working environment for the creative and digital industry.



Location
London, UK

Architect
Hawkins Brown

Kingspan Products
RMG600 raised access floor system
Kingspan OPTIM-R® Roofing System

The Here East design team wanted to ensure materials used on the refurbishment minimised the embodied impact of construction. The strategy for the project involved the use of materials from sustainable sources, including Kingspan's access floor system within the building and Kingspan OPTIM-R® Roofing System insulation to the recessed balconies, to help them achieve credits towards a BREEAM target rating of 'Excellent'.



PRODUCT SPOTLIGHT

KINGSPAN OPTIM-R®

Kingspan OPTIM-R®, which is over 90% (by weight) recyclable, is an optimum performance rigid vacuum insulation panel (VIP) for a number of applications with a declared thermal conductivity of just 0.007 W/mK, outperforming traditional insulation materials by up to five times.

Kingspan OPTIM-R® is designed for applications where there is a requirement for low thermal transmittance and the thinnest possible built-up construction.

In retrofit applications, Kingspan OPTIM-R® VIPs provide a solution for areas that would previously have remained uninsulated due to insufficient space or impractical material excavation.

For technical details, or to discuss insulation solutions for your project, contact us at: better.buildings@kingspan.com



MUNICIPAL FISH MARKET AT THE WHARF



Location
Washington D.C., USA

Architect
StudioMB

Kingspan Products
Optimo insulated wall panel
Karrier Panel barrier wall system



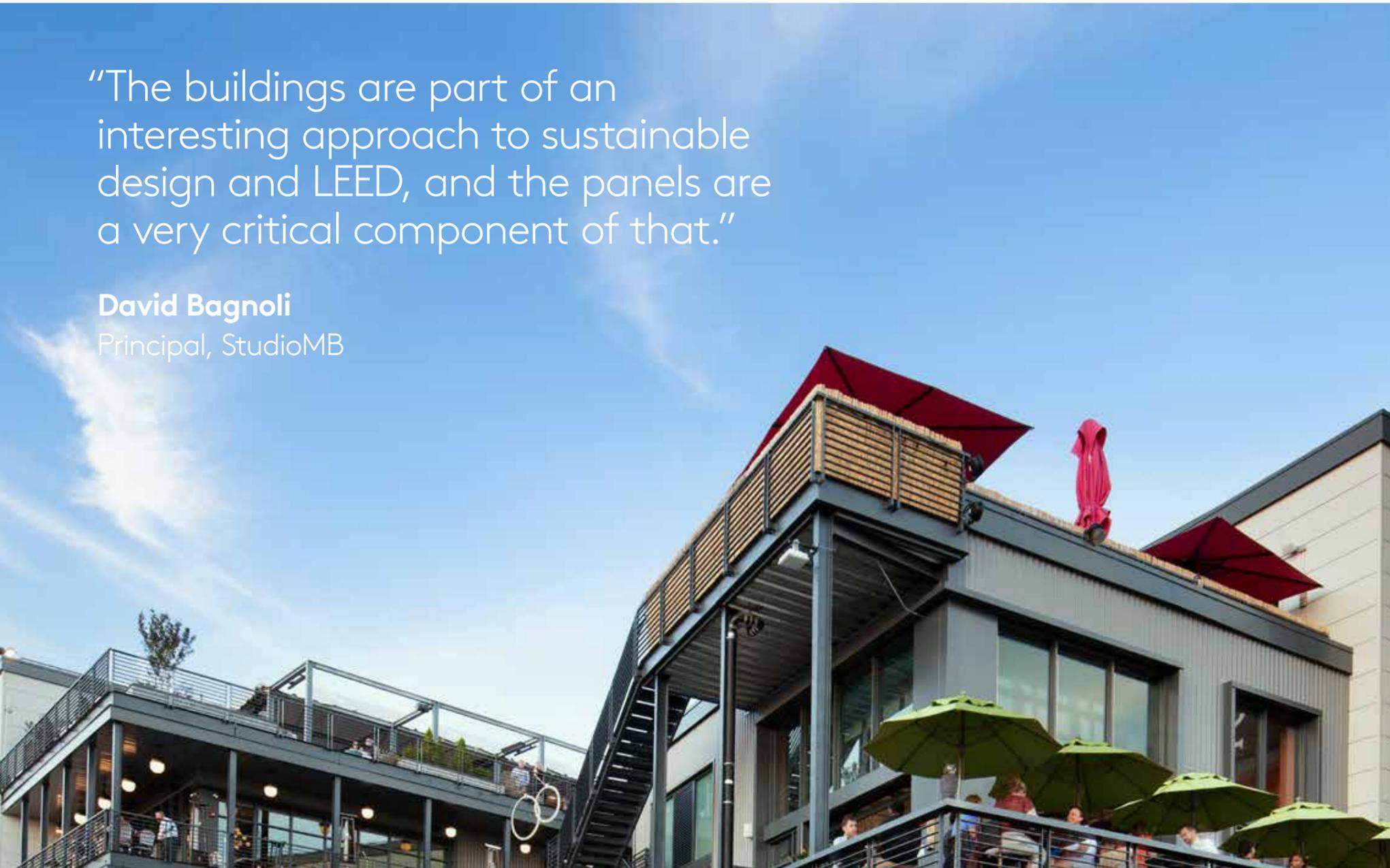
“The buildings are part of an interesting approach to sustainable design and LEED, and the panels are a very critical component of that.”

David Bagnoli
Principal, StudioMB

One of the main attractions at The Wharf is the Maine Avenue Fish Market, which dates back to 1790 and is the oldest continuously operating fish market in the United States. A challenge faced by StudioMB was incorporating new construction into a historic site.

The design team needed a material that would unify the metal barges with the sole remaining buildings and decided that insulated metal panels were the best option for five of the new buildings - a distillery and bar, a doughnut shop and coffee shop, two restaurant buildings and an operations building.

Steel columns from one of the historic sheds were refurbished, and together with the metal panels, define the architectural character of the new structures, connecting the old and new in an understated manner.



OFFICES



350 MISSION STREET



Location
San Francisco, USA

Architects
Core & Shell:
Skidmore Owings & Merrill
Interior: Gensler
Executive Briefing Center:
Mark Cavagnero Associates

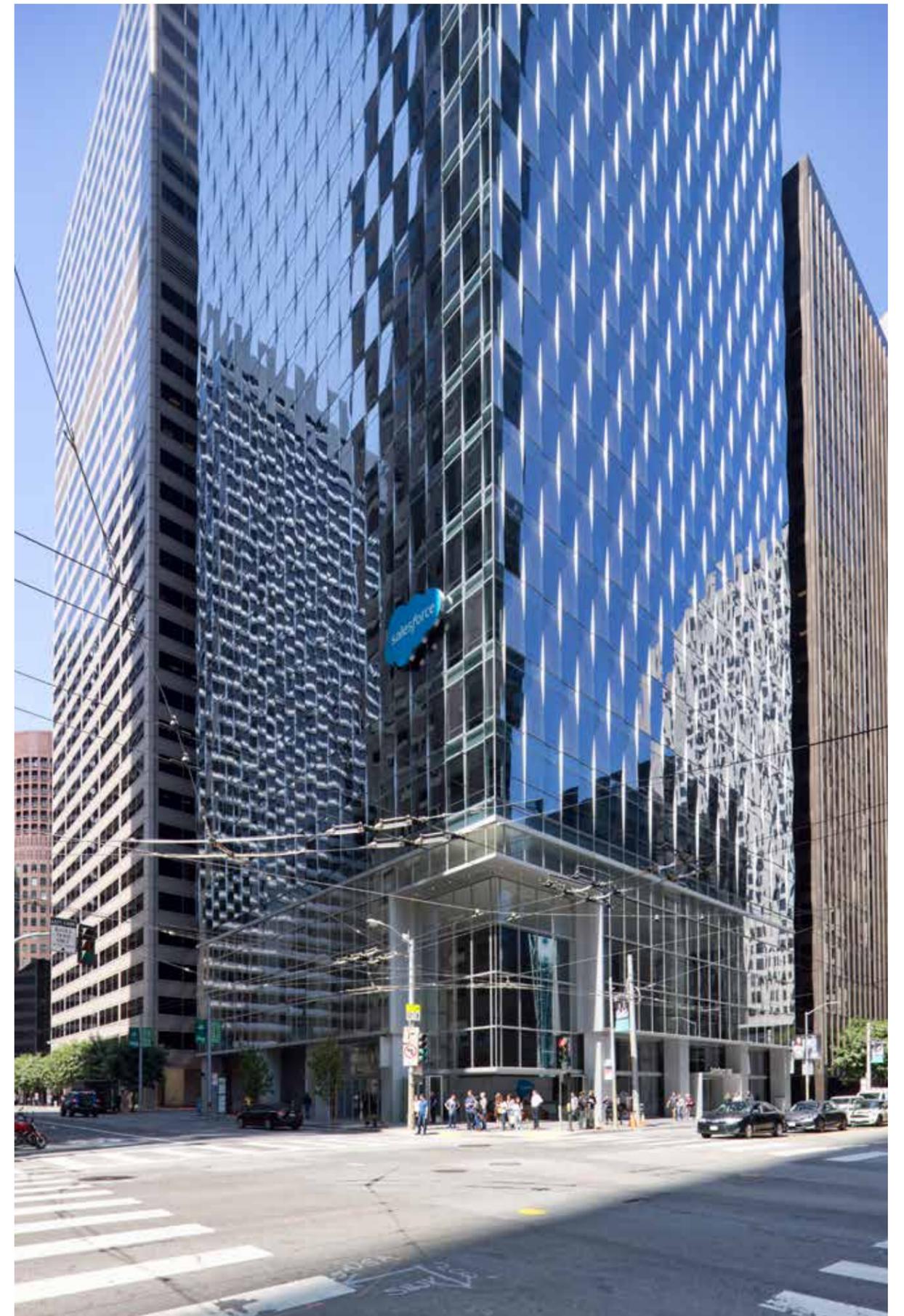
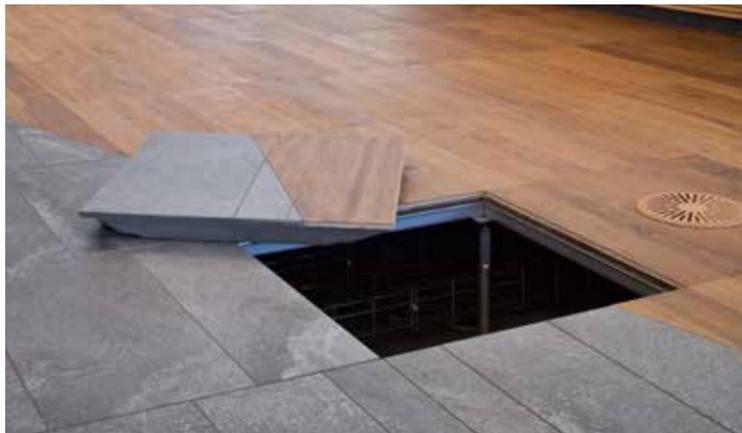
Kingspan Products
ConCore® 1250 raised
access floor panel
ConCore® 1250 Plank Wood
raised access floor panel
ConCore® 2500 Multi-piece Porcelain
raised access floor panel

350 Mission Street represents the new headquarters of cloud computing giant Salesforce.

At 492,000-square-feet, 350 Mission Street is San Francisco's first LEED Platinum high rise, and that focus on sustainability was the driving factor behind every decision made on this project. Chris Heimburger, Senior Vice President of Development for developer Kilroy, describes the goal of the project as the creation of a "high-performance work environment" in every aspect from employee performance to optimised operating costs.

One of the key factors in achieving these goals was the utilisation of underfloor service distribution (UFAD). Using UFAD allowed for 100% filtered outside air to be brought into the building and distributed in an energy-efficient method. Running power and cable through the plenum allowed for the creation of a greater floor-to-ceiling height which increased overhead space for employees and allowed larger windows for improved daylighting.

Tate, part of the Kingspan Group, took Mark Cavagnero Associates' free-flowing conceptual design, and material requirements of teak plank wood, multi-piece porcelain and carpet, and utilised custom engineering and manufacturing capabilities to produce a factory-laminated hybrid panel solution featuring a curved transition. This allowed for a seamless transition from one finish to the other on a single panel without losing accessibility to the underfloor services.



AIRPORT SQUARE



Location
Holland, Michigan, USA

Architect
Gensler

Kingspan Products
Dri-Design cassette

In today's competitive market, tenants can choose from a plethora of properties. The owners of Airport Square were well aware of this when they recently renovated this four-storey office building and contrasting Dri-Design cassettes transformed the 30-year-old building into a modern lease option with curb appeal.

Gensler worked with the developer to make this building the signature spot of Airport Square, a 200-acre corporate campus. Surrounded by retail, restaurants and new office developments, Airport Square 13 can now compete because of its interior and exterior renovations, which have made the space more attractive.



BLOOMBERG EUROPEAN HEADQUARTERS



Location
London, UK

Architect
Foster + Partners

Kingspan Products
TLM26 access floor system
Attiro magnetic engineered
timber flooring

The European headquarters for Bloomberg is one of the world's most environmentally-friendly office buildings.

Designed by Foster + Partners for a 3.2-acre site in the heart of the City of London, the scheme comprises a pair of connected 10-storey stone volumes linked by aerial bridges. It hosts some 1.1 million square feet of office space – as well as a new entrance to Bank Underground station, cafes and restaurants, two public plazas, and a museum dedicated to the Roman archaeological site it stands upon.

With a BREEAM rating of 'Outstanding' at a score of 99.1%, the building has been designed to deliver significant savings in water and energy consumption. Bronze fins set into the stone facades open and close in accordance with weather conditions to ventilate the space, while a smart device controls air distribution in accordance with the number of people using the building at any one time.



Rainwater is collected from the roof, basins and showers to service vacuum flush toilets, and ceilings are covered in 2.5 million polished aluminium 'petals' that regulate acoustics, as well as temperature and light. A 210-metre bronze ramp winds through six floors of the open-plan office furnished with sit-stand desks, encouraging staff to walk rather than use the lift and perhaps meet a colleague on the way.

When the Royal Institute of British Architects awarded the building its prestigious Stirling Prize in 2018, then-president Ben Derbyshire said the scheme had "not just raised the bar for office design and city planning, but smashed the ceiling". Kingspan was commissioned to create a bespoke American red oak-topped flooring system that would meet the demands of the design and its sustainability targets.

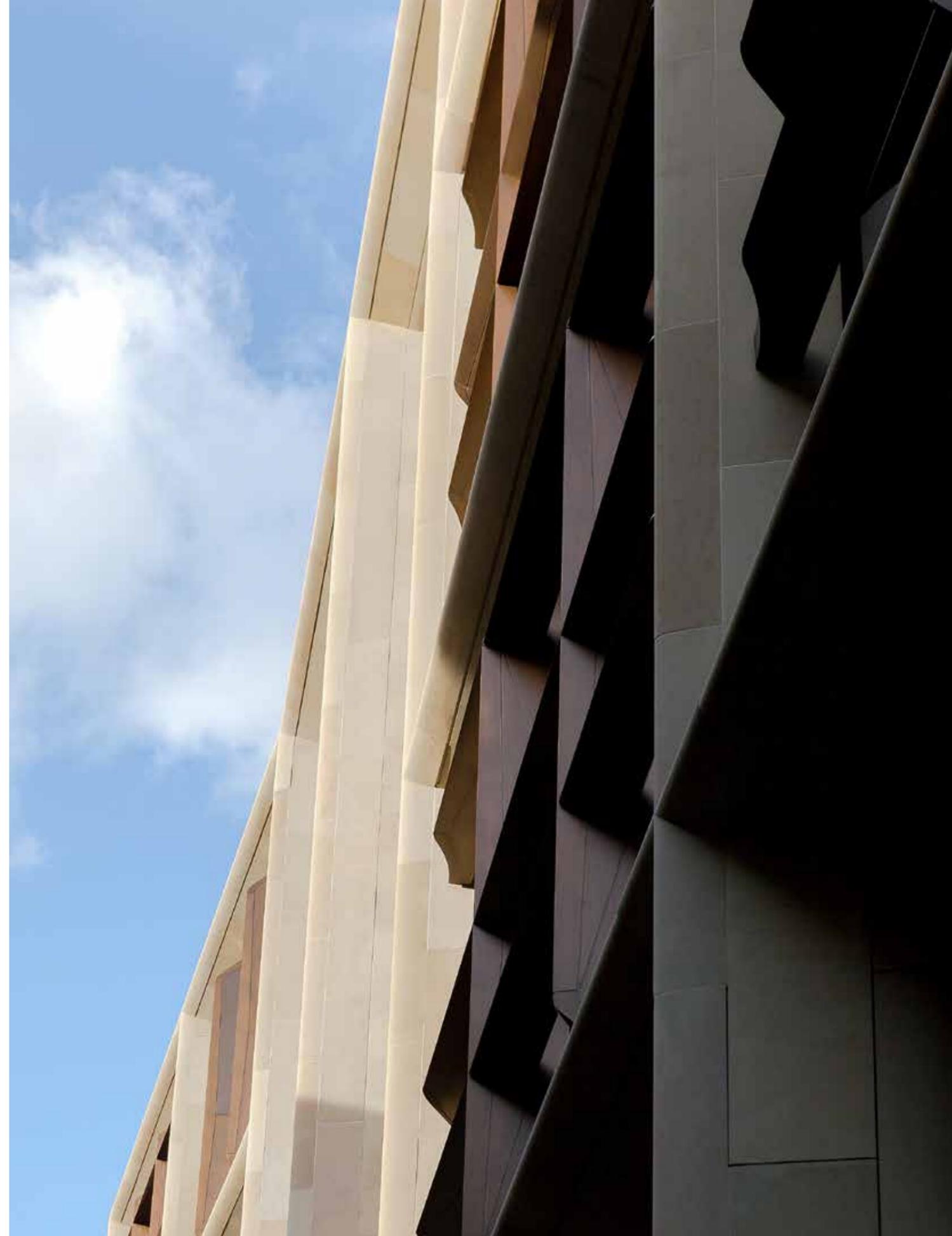
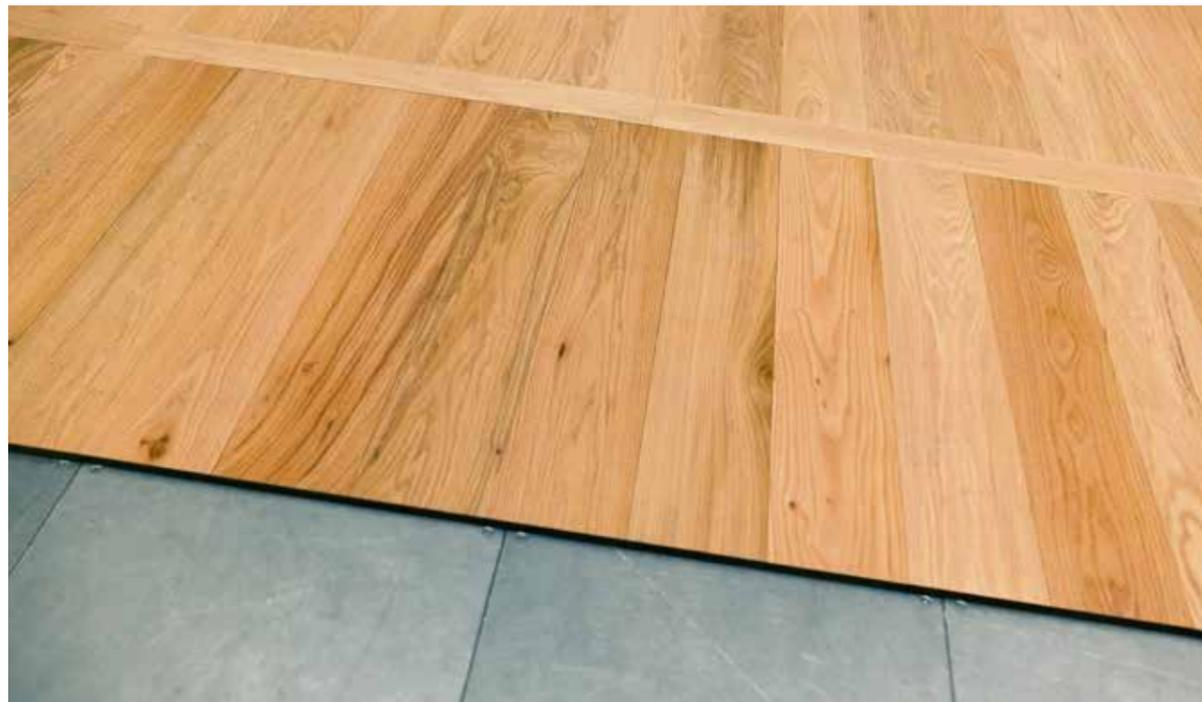
The starting point was the existing TLM6 access floor system, which creates an accessible void for services beneath. But due to the building's open floor plate, the design called for much larger, 576 x 1334mm panels than the standard 600 x 600mm dimensions of the product, and with this increase in scale came fragility – presenting the team with its first opportunity to innovate.

The team needed to 'think outside the box' to create a more robust panel that would reduce waste through damage during installation and cost less to replace because of wear and tear in the future.

After rigorous testing, the technicians eschewed the typical solution of bonding timber veneers onto the boards altogether. Instead, they settled on using two separate systems – using the standard modular TLM26 access floor system below a newly-developed magnetised timber covering. "It provided everything the designers and client wanted – a timber floor finish with a homogenous aesthetic, ease of access into the floor void, ease of replacement in the event of damage and a reduction in construction phase and long-term waste," says Devereux.

Some 34,000 square metres of this Attiro magnet-backed engineered timber overlay was laid over 37,000 square metres of the TLM26 access floor system to create floors throughout the building. On-site cutting of the materials – all FSC certified – meant offcuts could be used elsewhere in the project, reducing waste in the installation process. "If one timber stave on a pre-bonded panel was damaged, 0.77 square metres of timber plus the panel would have to be replaced and disposed, whereas with the magnetic Attiro only 0.23 square metres would have to be replaced," says Devereux.

Written by Jessica Mairs.





BRITISH SUGAR HEADQUARTERS



Location
Peterborough, UK

Architect
Allford Hall
Monaghan Morris

Kingspan Products
RMG600 raised
access floor system

Attiro magnetic engineered
timber flooring

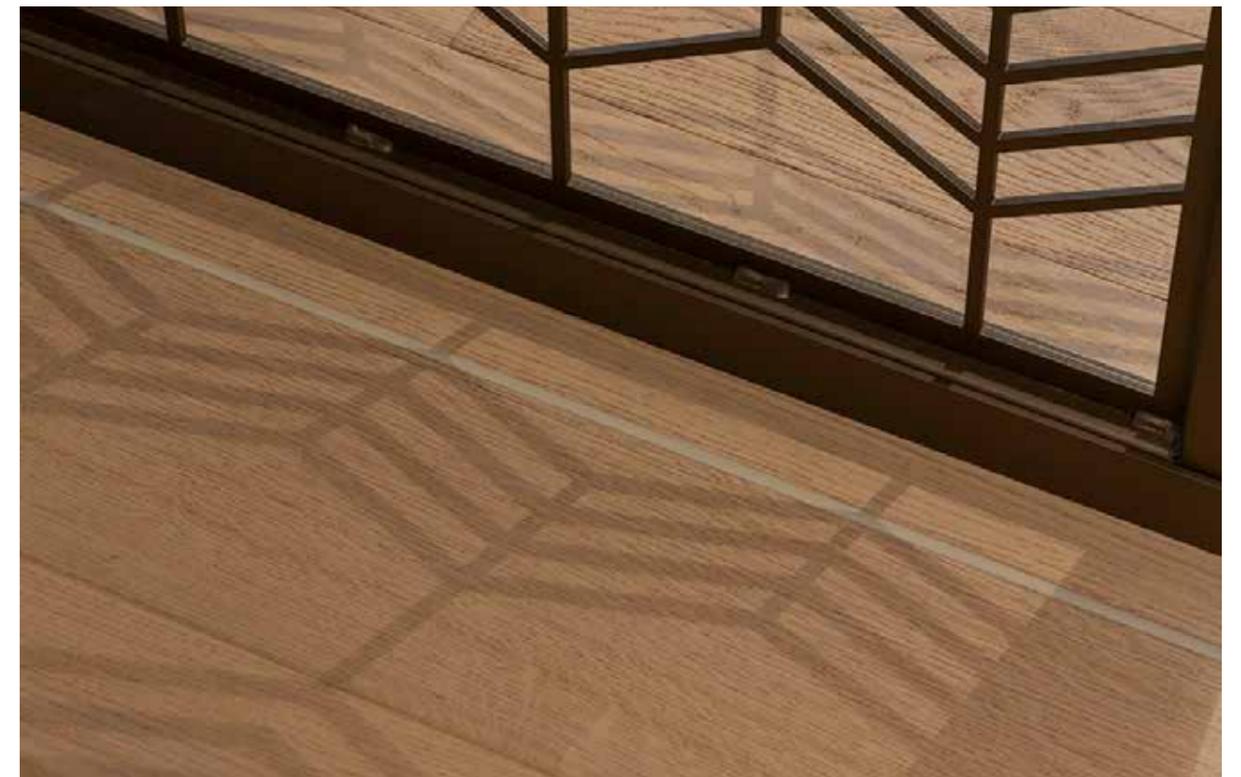
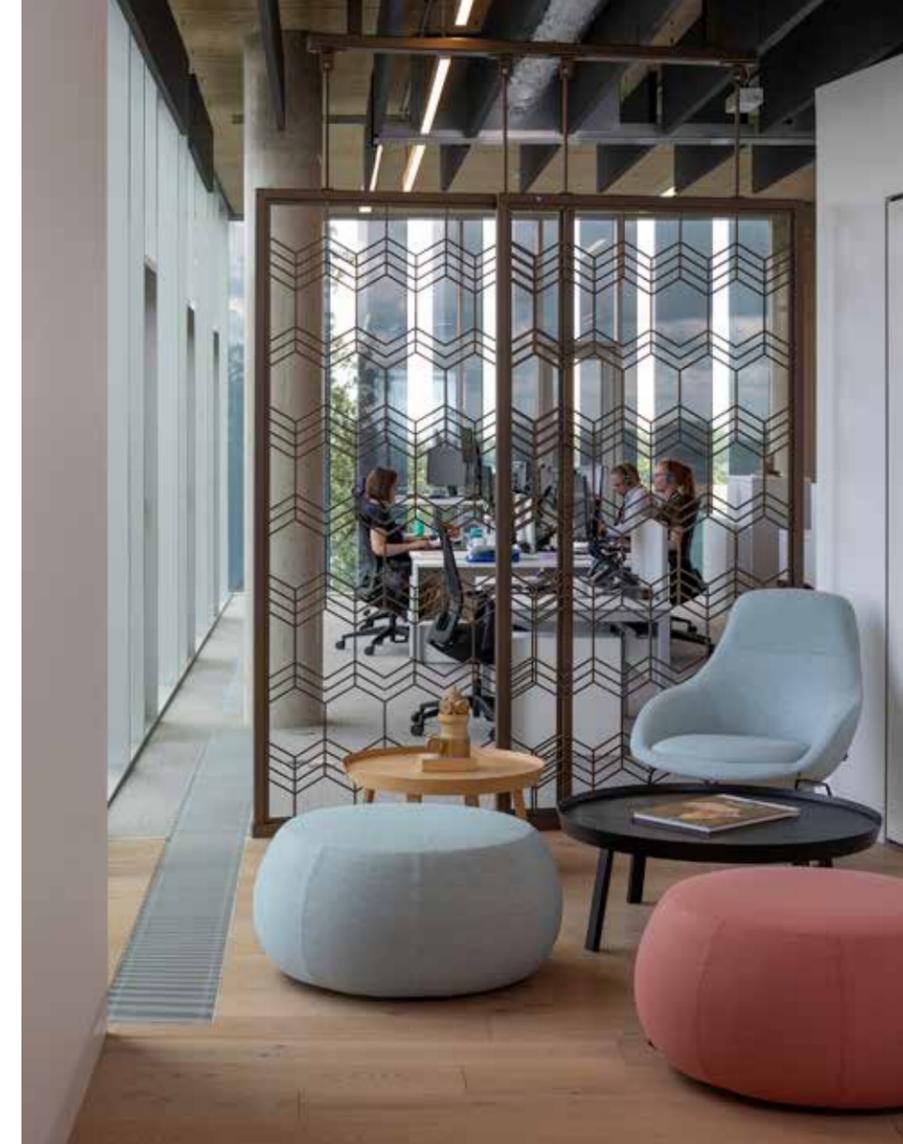
The two-storey office building was designed in accordance with Passive House principles - a set of five rigorous guidelines employed to help new build projects achieve maximum energy efficiency.

Because this approach dictates the use of minimal space conditioning, British Sugar decided to house their heating, ventilation and cooling (HVAC) units under the RMG600 raised access floor system.

A range of flooring finishes were specified throughout the building. The Comms Room was fitted with bonded resilient finishes, taking advantage of the anti-static qualities, while the offices were carpeted.

In the main entrance, a decorative porcelain finish was installed with screw-down panels to ensure no movement or cracking.

The real innovation in finishing can be seen in the building's central atrium, a space designed to harness natural daylight and minimise the need for powered lighting, where Attiro European Oak veneer engineered timber flooring was chosen.



PRODUCT SPOTLIGHT

ATTIRO

Attiro magnetic engineered timber flooring delivers an innovative simplicity with which designers can create beautiful, traditional engineered timber floors without compromising access to the underfloor void.

- Available in 16 shade options in either a 'brushed', 'sawmill' or 'rustic hand scraped' finish
- Can be laid in various options including staggered joint, herringbone, border and diagonal running bond
- Magnetic backing for easy lifting to access any part of the service void
- Micro bevel and protective banding protect the surface edge from damage
- Standard width: 200mm
- Random lengths range from 1200mm to 2200mm



For technical details, or to discuss raised access floor solutions for your project, contact us at: better.buildings@kingspan.com

CSC HEADQUARTERS



Location
New Castle,
Delaware, USA

Architect
NORR

Kingspan Products
ConCore® 1250
access floor panel
STONEWORKS®
Classic Concrete Honed
access floor panel
ConCore® 1250 Stacked
Wood access floor panel
PosiTile® carpet module

A focus on employee health, collaboration and sustainability resulted in a workplace that fosters the vibrant, team-based environment promoted by CSC and creates a best-in-class global headquarters.

The importance of creating a healthy and sustainable building that benefited both CSC's employees and the company's bottom line was the driving force behind architecture firm NORR's decision to utilise a raised access floor system with underfloor air distribution (UFAD). This contributes to increased employee health and satisfaction while also lowering ongoing operational costs through decreased energy consumption.

Raised access floors with high-end finishes and the use of UFAD allowed CSC to create a stunning, future-proof environment for their new headquarters which will remain a model of sustainability for years to come. The seamless transitions between multiple floor finishes allowed zones for employee collaboration to be created while still maintaining the open office feel.





Location
Amsterdam,
The Netherlands

Architect
Bentham Crouwel
Architects

Kingspan Products
BA-4HR glass rod system
Ventria ventilation window

After a period of great growth, Goede Doelen Loterij had spread over 15 houses near the Vondelpark in Amsterdam and wanted to move to one building that provided a comfortable and sustainable space. The choice fell on a 1978 building in Beethovenstraat which was neglected and had been empty for eight years and all 600 employees were allowed to submit their ideas for the renovation.

“The atmosphere of the houses and the location to the park, to which employees had become attached, were mentioned very often. That is why we wanted a building in which everyone felt at home and that also brought back the atmosphere of Vondelpark,” explains architect Jan Bentham.

The renovation saw a new building being constructed over the existing shell with an entrance and an atrium over which a Kingspan glass roof has been installed on wooden substructures, consisting of 184 glazed panes in three different dimensions.

There are no solid walls round the atrium; the wish was to have all office spaces open to the atrium creating a lively central “living room” for the building, which of course places high demands on the climate technology. Because of this, Kingspan’s Ventria windows were integrated in the atrium to allow natural ventilation at night.

Goede Doelen Loterij supports many initiatives in the field of sustainability, so naturally a wish of the employees was for the building to be as sustainable as possible. It is quite unique for a renovated building to achieve a BREEAM rating of ‘Outstanding’!

“The glass roof from Kingspan is ingenious. It was essential for us to spread the light well to allow optimum levels of daylight to enter the building – a wish of the employees.”

Jan Bentham
Architect, Bentham Crouwel Architects

GOEDE DOELEN LOTERIJIN



HERMAN TEIRLINCK BUILDING



Location
Brussels, Belgium

Architects and Consultancy
Neutelings Riedijk Architects in
cooperation with CONIX RDBM
Architects
Boydens Engineering

Kingspan Products
Kingspan Kooltherm® K8
cavity insulation board
Kingspan Kooltherm® K10
Soffit Board
Kingspan Kooltherm® K3
floor insulation board
Kingspan OPTIM-R® vacuum
insulated panel

The Herman Teirlinck building, completed in 2017 and occupied by the Flemish Government, is the largest passive office building in Belgium. The basic thermal comfort in the office building is achieved using Concrete Core Activation (CCA) in combination with an envelope of Kingspan Kooltherm® insulation boards for facade, floors and ceilings.

Over 90% of the energy requirements for heating and cooling are supplied by the geothermal system for cold and heat storage. The building is a smart building too, offering unlimited control over temperature, environment, acoustics, air quality and natural lighting. In collaboration with CONIX RDBM

Architects and Boydens Engineering, Neutelings Riedijk Architects designed six building layers focusing on sustainability and comfort with large horizontal floor areas around four green gardens. The 60-metre tower with eight extra building layers makes the building a recognisable element in the skyline of Brussels.

With 1,800 flexible work places, it accommodates over 2,700 employees for the Flemish Government.

“We were able to achieve a very high-performing envelope with an excellent K-value of 23, which contributes greatly to the passive story. Large windows were integrated and the envelope was kept as compact as possible. This would not have been possible with traditional insulation.”

Trees Verhoogen
Senior Project Manager, Flemish Government

KINGSPAN IKON INNOVATION CENTRE



Location

Kingscourt, Ireland

Architect

Niall Smith Architects

Kingspan Products

Dri-Design cassette
QuadCore™ Karrier Panel rainscreen substructure
UniQuad® translucent wall system
QuadCore™ Topdek insulated roof panel
Rooftop Solar PV Panel
Kingspan Klargester below ground rainwater harvesting system
Kingspan KoolDuct® pre-insulated ductwork system
Kingspan Kooltherm®
Kingspan OPTIM-R®
Raised Access Floor
ATMOS 38W LED panel
Multideck floor decking
Multibeam purlin system
Kingframe SFS steel framing system
Membrane lined insulated gutter system
SafePro2 railing cable system

IKON is embedded in Kingspan's future and represents its heritage. Based where it all began at the Kingspan Group headquarters in Ireland, it is a physical manifestation of a continued commitment to innovation that has underpinned every phase of the business's growth. IKON will truly enable the business to continue to challenge the big industry questions that will lead the built environment to a more sustainable, circular and healthy future.

IKON has been built to the highest standards of sustainable design and is a showcase for high-performance, low-carbon envelope design using a plethora of Kingspan products and systems. The building itself is a living research project, containing multiple IoT devices, that helps inform an understanding of how the performance of Kingspan's products and the building can impact on the wellbeing of its occupants.

Global challenges such as climate change, circularity, wellbeing and digitisation are transforming how we design, build, operate and dispose of buildings. IKON

contains state-of-the-art innovation, prototyping and testing labs, and is home to a team of people dedicated to research and development in advanced material science. Kingspan's most urgent priorities at IKON are to broaden the end-to-end recyclability of its products and find ways to dramatically reduce carbon emissions in buildings all the way through their lifecycle.

Furthermore, IKON aims to have the world's first level 5 maturity digital twin. A dedicated digital team is also leading research into how the business should bring more intelligence into its product set, making them ready for Industry 4.0, IoT and a 'Model First' approach to the built environment.

"At IKON we have a relentless focus on improving the thermal and space-saving performance of our advanced insulation while finding innovative technologies and models to enhance their circularity," explains Mike Stenson, Global Head of Innovation at Kingspan Group.

IKON is LEED v4 Building Design + Construction: New Construction Gold Certified.



Location
Saint-Priest, France

Architect
Novelige

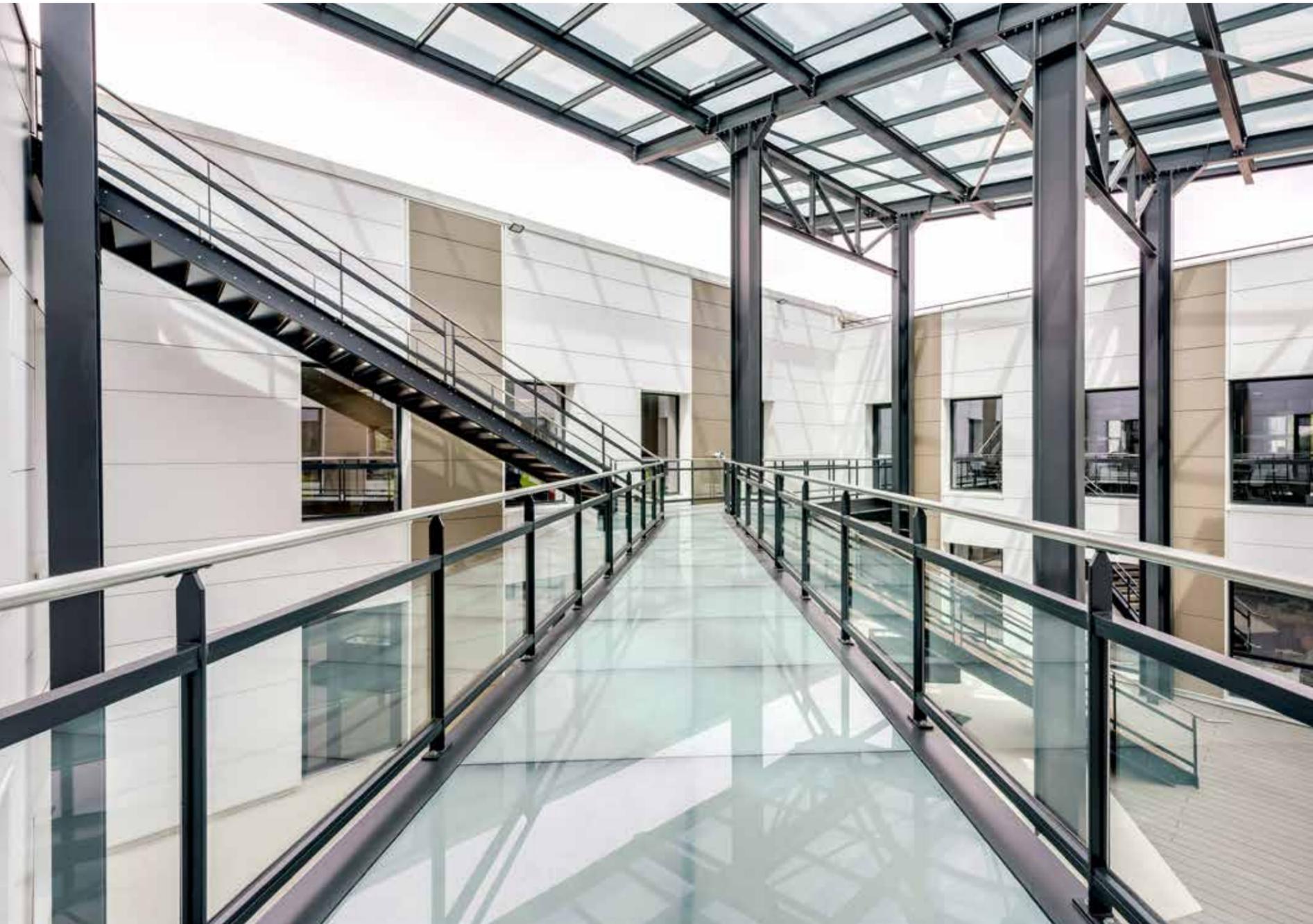
Kingspan Products
QuadCore™ Evolution
Recess insulated wall panel
Dri-Design cassette
QuadCore™ Karrier
Panel rainscreen substructure
Kingspan Smart-Lite Kite LED lighting
Ecolux Premium Alu skylight
Ecolux Spot skylight
Kingspan Kooltherm® K15
rainscreen board

KINGSPAN LIGHT + AIR HEADQUARTERS

The new headquarters of Kingspan Light + Air is a true showcase of Kingspan Group's expertise in delivering high-performance building envelope systems.

Providing a comfortable and productive work environment for its employees was a priority for the growing business, and so each space in the new headquarters benefits from natural light, optimal levels of thermal and acoustic comfort and ergonomic workstations.

The BREEAM certification process guarantees respect for the environment from the design phase and throughout the building's life cycle. Nine themes are taken into account: management, health & well-being, energy management, water and waste management, access to sustainable means of transport, materials used, impact of the project on its location and pollution in the surrounding environment.



MICROSOFT HEADQUARTERS



Location
Dublin, Ireland

Architect
RKD

Kingspan Products
RMG600 raised access flooring system
RHG SImploc raised access flooring system

Drawing inspiration from Dublin's landscape and featuring an expansive central atrium that has a digital waterfall as a centrepiece, the open-plan spaces combine to create a truly unique, inspirational workplace.

Set across a three hectare site that has become home to 2,000 employees from over 72 countries, this contemporary building, designed by RKD architects and delivered by BAM construction, exhibits the latest concepts in healthy building construction whilst embodying the Microsoft flexible workplace culture.

This 35,000-square-metre office facility incorporates over 25,000 square metres of Kingspan access floor systems, including a range of medium and heavy grade solutions to meet the different loading requirements of the varied operational areas that include flexible office spaces, five restaurants, a wellness centre, Microsoft Technology Centre and DreamSpace.

Access floors provide the perfect solution to meet the flexible demands of the open plan "neighbourhoods" that are at the heart of the concept. Bringing a new dimension to collaborative working, these neighbourhoods benefit from easy access to the under-floor void, where data and power supplies can be re-routed as required to ensure communal workspaces can be reconfigured efficiently.



NICOLETTA HEADQUARTERS

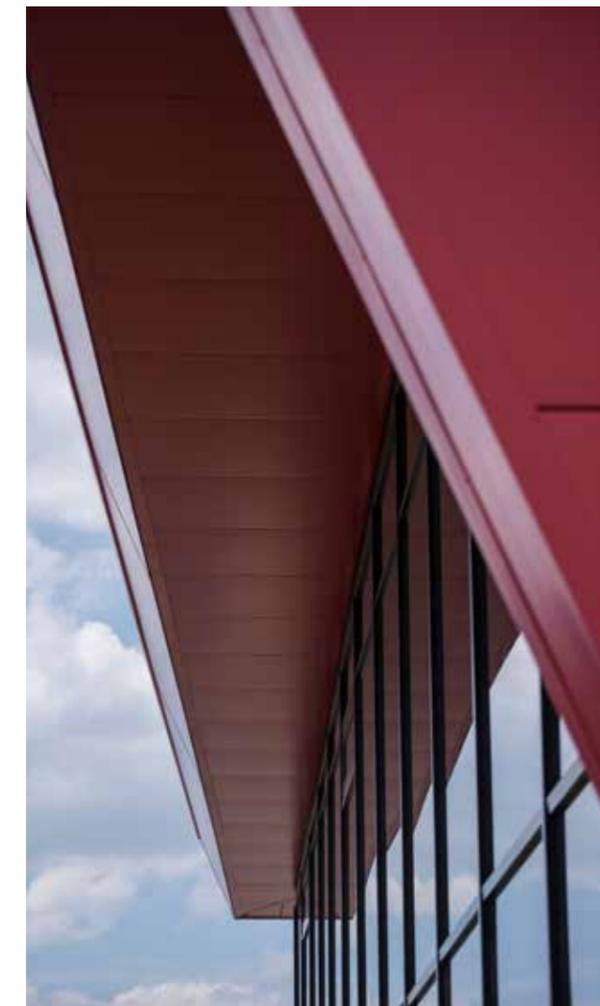


Location
Augny, France

Architect
Omhover Réalisations

Kingspan Products
Evolution Axis insulated wall panel
Louvre insulated wall panel

The combination of smooth Evolution Axis panels and profiled Louvre panels creates a stark contrast in both colour and texture on the new headquarters of Nicoletta Groupe, resulting in a contemporary finish.



POST X



Location
Antwerp, Belgium

Architects
Stéphane Beel Architects
Jaspers-Eyers Architects

Kingspan Products
Kingspan Kooltherm® K15 Rainscreen Board

Post X is part of a 130,000 square metre transformation building project of nine buildings around one central yard with office, educational, retail and recreational use. With large-scale projects like these, the demands around spatial planning are extremely high and the architecture must be of an enormously high quality.

To insulate the ventilated facade, Kingspan Kooltherm® K15 Rainscreen Board was chosen. Advantages to such a thin facade construction include an increase in habitable space and optimised levels of daylight, providing a greater sense of comfort and wellbeing for occupants.

The Kingspan Kooltherm® K15 Rainscreen Board was delivered to the yard in optimised lengths of 270 centimetres, tailored to the project. Due to the fact that the rainscreen boards are equipped with a water-repellent foil, installation was fast and easy.



PROVINCIEHUIS ANTWERP



Location
Antwerp, Belgium

Architect and Consultancy
XDGA Architecten
Boydens Engineering

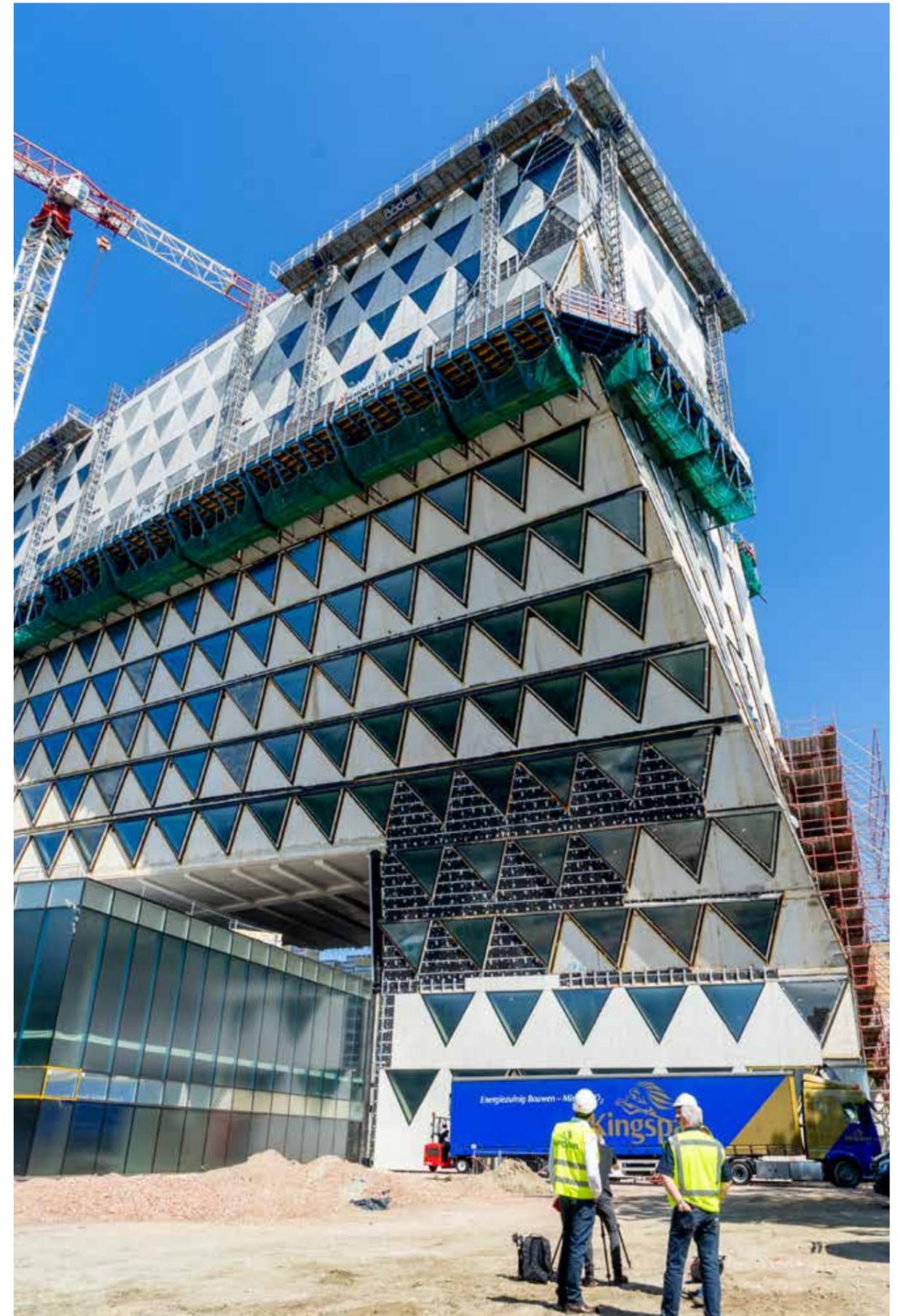
Kingspan Products
Kooltherm® K15 Rainscreen Board

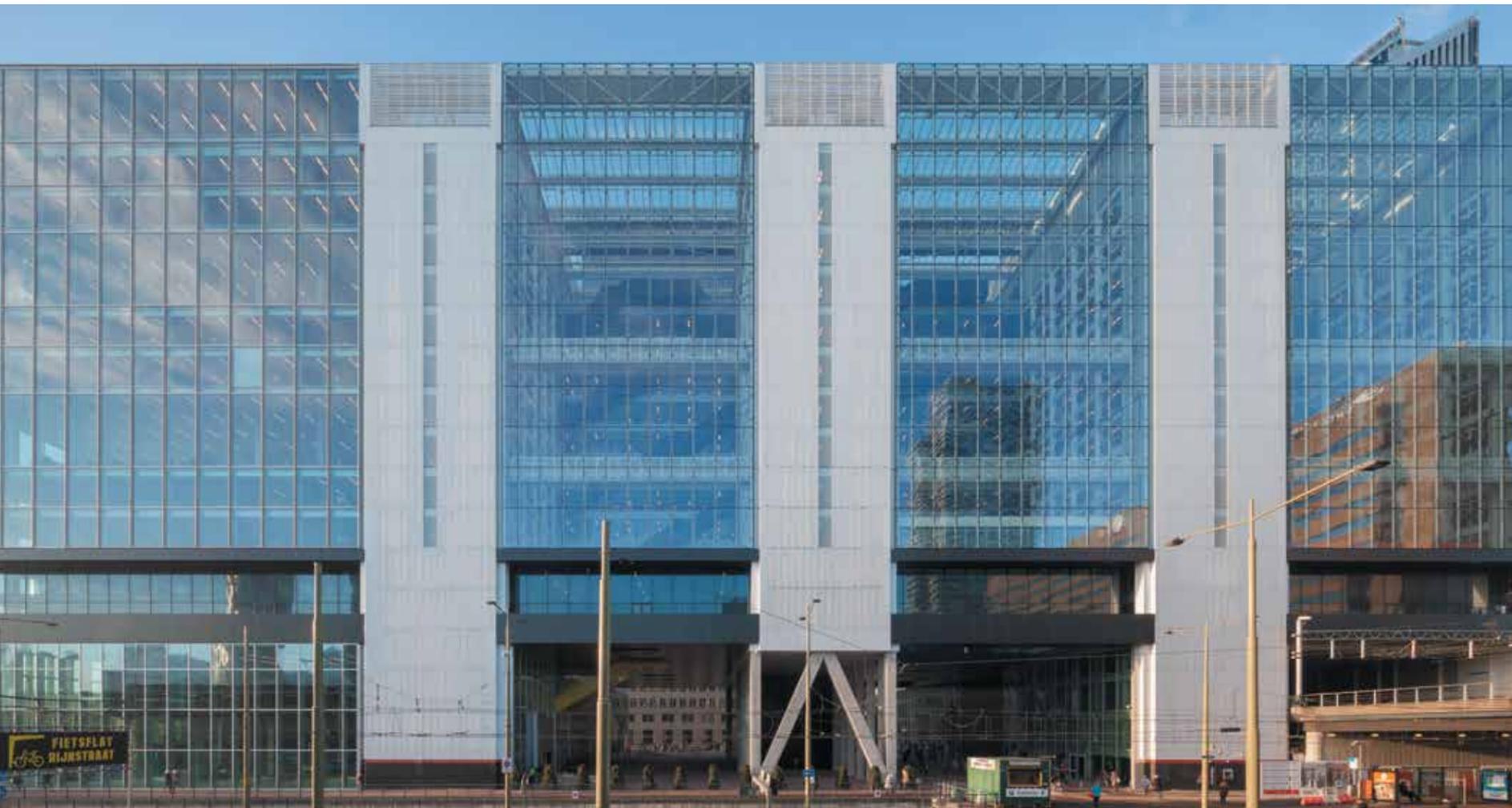
In 2018, the new striking provincial government office in Antwerp opened its doors. Characteristic of the design is the tilt in the 58-metre high tower building. This shape is also functional: by tilting the building, there is no shadow on the neighbouring buildings. This means less sun, but more light from the north shining into the large open floors. The triangular windows give the building a distinct touch.

The building had to meet all modern requirements in terms of energy, comfort, safety and accessibility. It accommodates 760 employees and houses a public congress centre. The heating and cooling of the building is done by means of borehole energy storage and concrete core activation. The offices have individually programmable LED-lighting and on the roof 134 solar panels were installed.

Provinciehuis Antwerp is one of the largest passive buildings in Belgium.

The insulation contributed to the energy efficiency of the building helping to achieve a BREEAM rating of 'Excellent' and contributing to higher levels of comfort and wellbeing through increased natural daylight.





RIJNSTRAAT 8



Location

The Hague,
The Netherlands

Architect

OMA

Kingspan Products

BA-2 glass rod system
BA-4 glass rod system
BA-CG point-fixed glass system
Facade glass system
Lumera structural ventilation window
Eura louvred system

Rijnstraat 8 in The Hague, the former Ministry of Housing, Spatial Planning and the Environment, has undergone a major renovation. "The building was designed in the 1990s for one organisation, which was quite introverted and closed" says architect Bart Nicolaas. "Now it has been transformed into an open, flexible government office."

The client wanted to replace the glass roofs, while doing justice to the original architectural style. "A kind of retrofit has been carried out, while they are actually completely new glass roofs. Together with Kingspan we have meticulously simulated the old construction. The look and feel have been retained, but the roof is now a lot more sustainable" explains Nicolaas. Kingspan has the entire building equipped with new gable roofs: 4,545 square metres in total.

Rijnstraat 8 owes its characteristic profile to the spider facades. The task here was at least as complex as with the gable roofs. Kingspan delivered a new spider system that is attached to the existing steel construction. The weight of one pane - 350 kilograms - "hangs on" two points. The diamonds are approximately 3.2 metres by 1.75 metres. The joints were another piece of art.

Meeting the aesthetic requirements - a 10-millimetre joint and optimal transparency - was a challenge. "It is awfully difficult to maintain the minimum joint without the glass becoming skewed or breaking, but together with Kingspan we engineered and developed a solution. The spider facades have no profiles, only sealant joints and edge strips that absorb movement in the floors. Despite the double glass, the sealant joints have remained minimal with optimal transparency," explains Nicolaas.

A sustainable system with natural ventilation was also part of the transformation and Kingspan delivered that based on heat load calculations. Air extraction is done via structurally implemented Lumera top-hung windows with hidden controls based on temperature. The indoor climate has improved as a result of this. Now the climate is much more pleasant, which means that the atria can now also be used for events and meetings.

"It was more than making use of sustainable materials and reducing energy consumption. The client also wanted as many existing materials as possible, such as glass and profiles, to be reused or preserved in the building."

Bart Nicolaas
Architect, OMA

SQUIBB BUILDING ON 5TH AVENUE



Location
New York, NY, USA

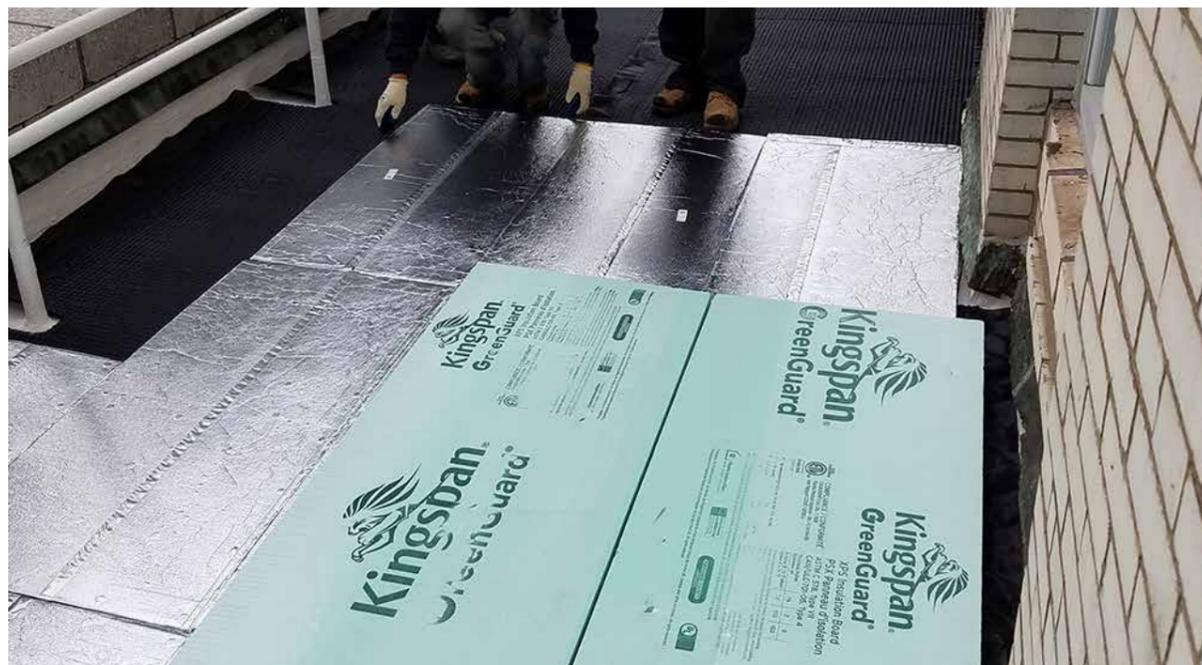
Kingspan Products
OPTIM-R® Roofing System

The high rise building on Fifth Avenue was built in 1931 as an art deco style office building and was designed by Ely Jacques Kahn to look as if it was leaning away from the viewer in order to make the building seem taller.

In 2017, the historic skyscraper was due for a roofing remodel, however updates to energy efficiency standards meant that the building would need to be retrofitted in order to meet new requirements. Data from 2015 indicated that New York City buildings were responsible for 67% of citywide greenhouse gas emissions. In a citywide effort to combat further environmental damage, the New York City Energy Conservation Code updated their energy efficiency standards to also apply to existing buildings. All new

roof applications would need to meet stringent local codes for the building's energy performance but adding on layers of insulation to the building envelope posed considerable challenges and costs to the building owner.

Kingspan OPTIM-R® panels offer outstanding R-values and an ultra-thin insulation solution, perfect for retrofit applications where a lack of construction space or depth is an issue. By insulating the building with Kingspan OPTIM-R®, the only update needed to get the building's roof to code was adding on Kingspan's product. Because Kingspan OPTIM-R® was so thin, the client saved weeks in construction time as the insulation wouldn't affect the railing details or raise the roof pavers which would require replacing the flashing or thresholds of the doors.



UPCYCLE OFFICE

In the heart of East Austin, Texas, on the site of a former recycling centre, a new type of shared office space is utilising elements from the former warehouses of the neighbourhood. UpCycle repurposes almost all of the original 1972 warehouse building.



Location
Austin, Texas, USA

Architect
Gensler

Kingspan Products
Karrier Panel barrier
wall system

The design reuses 95% of the existing structure, even the building skin which is turned inside out to reveal its natural finish and industrial exhaust fans that were used for decorative details. The building becomes energy efficient by using Kingspan Karrier Panel under this skin, insulating the building envelope. The ethos of the building seeks to highlight its industrial past, and even includes a repurposed train car which serves as a front porch lounge equipped with seating, WiFi and music.



RESIDENTIAL





AMARYLLIS HOUSE

Grønttorv, on the grounds of the former wholesale vegetable market, has been transformed into a new, modern district with the addition of sprouting greenhouses and a 23,000 square metre park inspired by Central Park, New York.

These amenities help preserve the area's historical DNA by creating a homage to the district's past whilst also looking to the future.

Part of the redevelopment includes Amaryllis House, a 9,300 square metre residential building featuring four different heights and a tower that covers 15 floors. Special attention has been given to the palette of red/brown bricks that highlight the best traditions of Danish architecture and its detailing combined with Corten balconies.

The tower and building body integrate the history of the vegetable market with the buildings by creating a vernacular of clear-cut, well-detailed volumes of bricks and plants.



Location
Copenhagen,
Denmark

Architects
Tegnestuen LOKAL
Mangor & Nagel A/S

Kingspan Products
Kingspan Kooltherm® K8
cavity board
Kingspan Kooltherm® K12
cavity board



HAAGBEUK



Location
Lokeren,
Belgium

Architect
Jaspers-Eyers Architects

Kingspan Products
Unidek Aero insulated
pitched roof elements



The Haagbeuk is a residential project of 120 apartments in the heart of Lokeren. Each building consists of five floors and all apartments have direct access from the basement floor to their apartment.

The architect has strived to provide all apartments with as much light as possible. The clever orientation and large windows offer unique views of the Dekenij garden and the beautiful church tower of Lokeren. Furthermore, the project ensures the renewal of the surrounding public squares and realises a smart new passage between the Cultural Center and the Dekenij garden that forms a direct connection to the heart of the city.

Because of the simple installation and fast build speed, the Unidek Aero pitched roof elements were chosen instead of the originally intended traditional, multi-component built-up method.



HAUS GABLES



Location
Atlanta, Georgia, USA

Architect
Jennifer Bonner/MALL

Kingspan Products
Kingspan Kooltherm® K20
concrete sandwich board

Haus Gables is a residential, single-family home designed by Atlanta and Boston-based architect, Jennifer Bonner/MALL. The 2,200-square-foot home has an exaggerated gabled roof structure consisting of a cluster of six gable roofs combined to form 87 unique panels that make up the exterior and interior walls, floors and roof. It is one of a handful of houses built out of this type of construction in the United States.

On the home's exterior, a synthetic stucco was used as a finish material and inscribed with a custom brick stamp. The faux brick wraps the entire house and a series of faux finishes clad the interior.

Kingspan Kooltherm® K20 boards with a glass tissue facer were chosen to help the home meet the desired levels of durability, thermal resistance and fire performance. Kooltherm® K20 is a premium performance insulation product that resists both moisture and water vapour ingress. The product has excellent fire performance characteristics with an ASTM E84 rating of 5/5 (flame-smoke) and an R-value of up to 17 per two inches.





HOPE HOUSE



Location
Bath, UK

Architect
Nash Partnership

Kingspan Products
Kingspan Kooltherm® K108
Cavity Board
Kingspan Kooltherm® K7 Pitched
Roof Board

Situated in the Bath Conservation Area, the stunning grade II listed building has been renovated and expanded by Acorn Property Group to create a series of luxury apartments and homes.

The main building, which previously served as an all-girls high school, has been carefully converted into apartments. The grounds were divided into four residential quarters and several new build homes were constructed around the main building to offer a variety of accommodation options.

Architects, Nash Partnership, were mindful to ensure that the additional properties would be in keeping with the area. The building exteriors reference Bath's famed Georgian aesthetic whilst internal spaces include all the benefits of modern construction.

To optimise space within the properties whilst ensuring they meet modern thermal performance standards, Kingspan Kooltherm® K108 Cavity Board was specified for the walls of the new buildings whilst Kingspan Kooltherm® K7 Pitched Roof Board was chosen for the pitched roofs - minimising heat loss whilst maintaining head height in the top floor rooms.

MARTITZ RESIDENCE



Location
Oldenburg,
Germany

Architect
Susanne Duhme-Spilker

Kingspan Products
QuadCore™ AWP, Micro-Rib
insulated wall panel
QuadCore™ Trapezoidal Roof
insulated roof panel

Interior designer Susanne Sudholz (née Martitz) set out to design an unconventional, eye-catching and energy-efficient home for her family. With extensive experience in interior design and prior use of Kingspan products, Sudholz opted for a visually appealing alternative to conventional cladding and roofing by using Kingspan QuadCore™ insulated panels to design her home, which is located in the small town of Ofenerdiek in Germany.

With a passion for sustainable building design, Sudholz selected the Kingspan insulated roof and wall panels for both their aesthetics and their environmental credentials.

Opting for the premium metallic Grey Rock colour for the building facade, characterised by its gentle matt appearance and a noble shimmer, the end result is a modern and visually striking exterior. It captures the attention of passers-by and also delivers a comfortable family home with excellent fire protection and thermal performance.

“We wanted to break new ground with the construction and focus on an energy-efficient, sustainable and economical construction method.”

Susanne Sudholz
Building Owner



PRODUCT SPOTLIGHT

QUADCORE™

The class-leading guaranteed thermal performance of QuadCore™ insulation results in thinner, lighter insulated panel solutions with the potential for significant energy and space savings.

QuadCore™ is a new advanced insulation core for a range of Kingspan insulated panel systems, the Karrier Panel rainscreen substructure, and Kingspan insulation boards.

Unlike synthetic mineral fibre insulation (MMM), QuadCore™ is not at risk of sagging or significant movement, meaning that it retains its superior thermal performance for its guaranteed lifetime.

It is not associated with any health issues linked to airborne fibres or toxic mould.

For technical details, or to discuss the benefits that QuadCore™ can bring to your project, contact us at: better.buildings@kingspan.com

- Thinner building envelopes that can allow more natural daylight to enter a building, enhancing the health and wellbeing of occupants
- Contributions towards the material efficiency credits of BREEAM and other green building rating systems
- Insulated products and systems that have been subjected to multiple national, international and insurance industry fire performance tests
- Solutions that are typically up to twice as thermally efficient as synthetic mineral fibre (MMM), delivering leading lifetime thermal performance



NEW AMERICAN REMODEL



Location
Las Vegas, USA

Architect
Luxus Design Build

Kingspan Products
Kingspan Kooltherm® K12 framing board
Kingspan GreenGuard® RainDrop® 3D building wrap
Kingspan KoolDuct® pre-insulated ductwork system

When architect Michael Gardner of Nevada-based Luxus Design Build bought a tumbledown, 1950s ranch house on the outskirts of Las Vegas, he saw an opportunity, rather than the “neighbourhood dump” others could see. The challenging desert conditions meant the thermal performance of this major renovation project would be key, and so Gardner called on the expertise of energy consultant Drew Smith and Kingspan’s North America Technical Director Craig Lynch.

The house would become the National Association of Home Builders case study for 2019, and instead of just bringing the house up to modern standards, the group decided to aim much higher. “The ultimate goal was to attain the net

zero energy rating,” recalls Lynch, who specified a range of Kingspan insulation products to help achieve a high thermal performance for the modified envelope of the house.

Increasing the floorplan from 2,300 square feet to 6,000 square feet, Gardner created a generous living space surrounding a pool with an outdoor bar, a master suite on a new upper floor and garages with space for three cars and an RV.

But to do this he had to cut through the existing concrete masonry walls of the house, raising the ceiling height and extending outwards into the 1.3-acre site.

To ensure this new envelope was efficient, a thin, two-inch layer of Kingspan Kooltherm® K12 framing board insulation was applied over the water-resistant GreenGuard® RainDrop® 3D building wrap, while the KoolDuct® pre-insulated ductwork system installed within the house offers an airtight and precise cooling system to help avoid energy wastage. “A major goal of the house was to really reduce the thermal bridging that occurs in everyday construction,” explains Gardner. “By using innovative products like the insulated metal panels, we were able to reduce our mechanical air conditioning load. Dollars that would have been spent to cool have been used to enhance the architecture.” Other aspects of the design such as clerestory glazing and the overhanging roof allow indirect sunlight to brighten the living spaces, without the worry of overheating them.

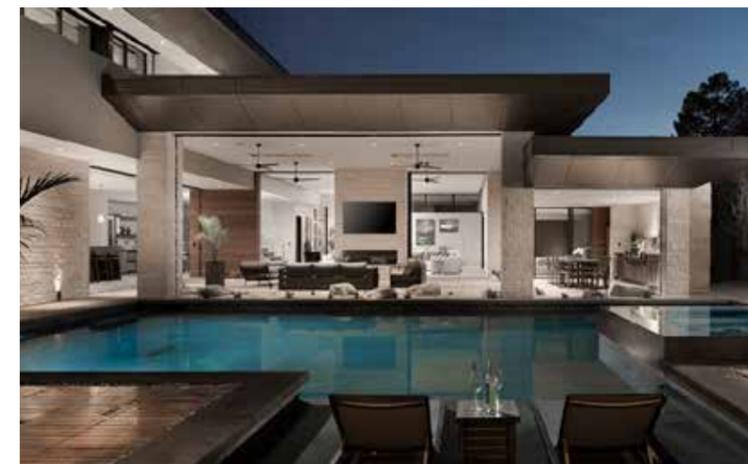
The original property was formerly owned by a Union Pacific railroad engineer and a collection of railway sleepers once used as the driveway have been repurposed as fencing and planters in an orchard in the backyard. The sleepers contribute to the palette of wood, stucco and metal used on the house and its garden as a nod to the neighbourhood – a collection of homes built between the 1950s-1970s.

Another quirk of the property, a huge dug-out once destined to be an underground garage and shooting range, now hosts the naturally irrigated citrus orchard thanks to a nearby spring.

“We found out that water was, with that hole, no more than two or three feet below. So even though we’re irrigating the citrus, we have an onsite well so we’re able to pump our own water, use it for the orchard and then we know it goes right back into the aquifer because it’s literally directly below us,” explains Gardner.

These water and energy saving measures meant the project achieved the National Green Building Standard’s Emerald certification – its highest designation for sustainability. “So much of living in the desert is about using resources as sparingly as possible,” says Gardner. “When you’re in the desert and you’re building these larger homes, it’s inherently the thing to do – every project we go into now is a discussion of sustainability.”

Written by Jessica Mairs.







Location
Alblasserdam,
The Netherlands

Architect
Studio Piet Boon

Kingspan Products
Kingspan TEK
building system

PIET BOON RESIDENCES



Studio Piet Boon is known for its harmonious combination of functionality, aesthetics and individuality to create unique design experiences. For the five new-build residences, sustainability played an important role, which led to the choice for the Kingspan TEK building system with a high insulation value and high-quality materials.

Studio Piet Boon designed two types of homes, that could be personalised to the residents' own taste and wishes. The homes combine luxury

and contemporary living pleasure with an authentic rural atmosphere. The location close to a small river is characterised by panoramic views, green surroundings and lots of space.

The energy-efficient homes deliver an insulation value of almost RC 7.0, and more internal space was achieved due to the insulation being so thin.



ST VINCENT EMBANKMENT



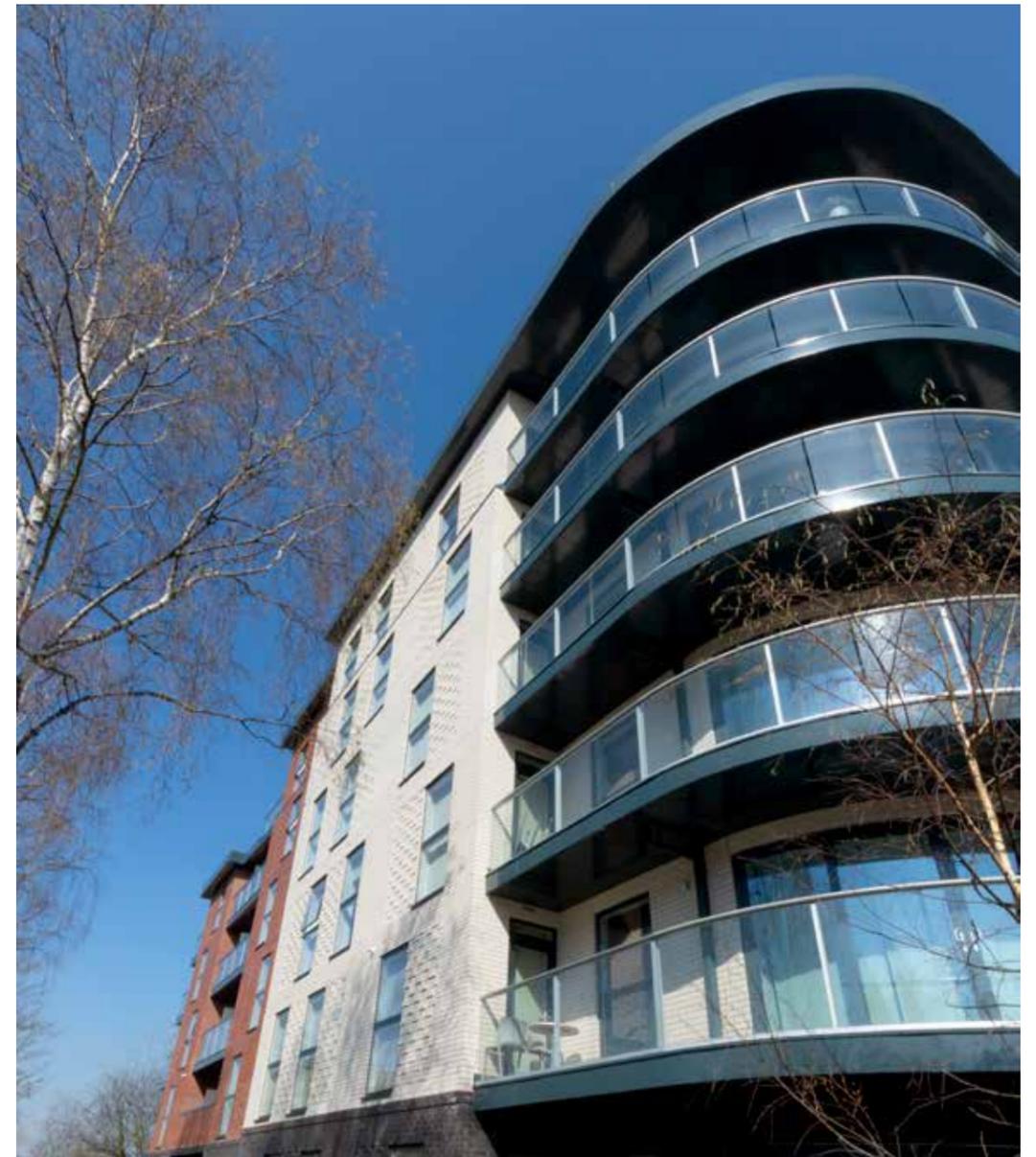
Location
Birmingham, UK

Architect
BM3

Kingspan Products
Tribune Xe
hot water cylinder

The Embankment comprises 92 private rental sector apartments located in the heart of Birmingham.

The in-built thermal expansion ('bubble-top') design of the Tribune Xe hot water cylinders negates the need for a separate expansion vessel meaning the cylinder takes up less cupboard space without compromising capacity or performance.



TWIST



Location
Leuven,
Belgium

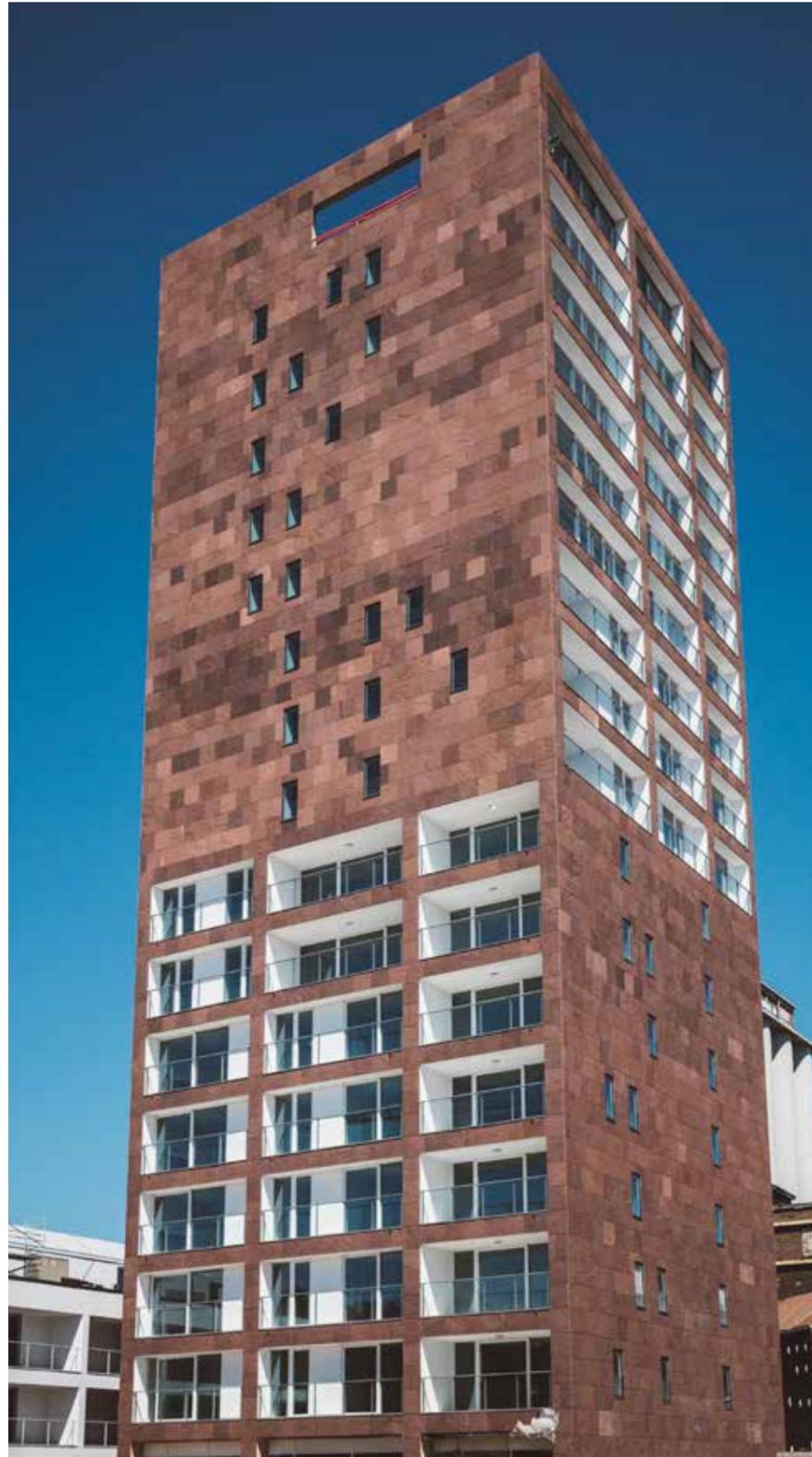
Architects
Stéphane Beel Architects

Kingspan Products
Kingspan Kooltherm® K15
Rainscreen Board
Kingspan Kooltherm® K5
external wall board

Twist is the second of four buildings that were completed in 2017 within the Tweewaters project. A former abandoned industrial zone is now transformed into a new district and an exemplary ecological project.

The building is characterised by the design, but even more by the way the sustainable measures were put into practice combined with maximal comfort for the residents. The architects created a balanced design with open and closed parts of the building, while ensuring the building regulations were met and optimal natural daylighting was brought in without leading to overheating.

Stéphane Beel searched for an insulation material that could create as high an energy value as possible with as thin a package as possible. For the insulation of the ventilated facades, Kingspan Kooltherm® K15 Rainscreen Board with a lambda-value of 0.020 W/m.K was used.



“Because the insulation is so thin, we gained more interior space. We calculated the difference, working with 14 centimetres of Kooltherm® insulation versus 21 centimetres with other materials. For each level in the Twist, we gained 6.5 square metres. For the total tower, it’s about 100 square metres.”

Sophie Deheegler
Architect and Project Lead, Stéphane Beel Architects





Location
Tegelen,
The Netherlands

Architect
Vissers & Roelands

Kingspan Products
QuadCore™ Trapezoidal
Roof insulated roof panel
KingZip IP standing
seam system
Rooftop Solar PV panels

WAMBACHERHOF

The Wambacherhof, a neighbourhood from the 1980s, is located in Tegelen, near the German border. Outdated due to the sober materials and overdue maintenance, it has led to an unattractive neighbourhood. Architect Vissers & Roelands came up with a plan to revitalise the homes and public spaces.

The architect chose a timeless colour scheme of a white facade with anthracite frames and an anthracite metal sandwich panel roof with full-black solar panels on the sunny sides. At the rear of the house the balconies were given new balustrades with a modern design.

The 42 apartments have undergone a complete upgrade to net zero energy from floor to cavity to roof.



RETAIL



CARROSSERIE JEAN LAIN



Location
Seynod, France

Architect
Atelier Inextenso

Kingspan Products
Ecofeu Premium Alu 160 PN
smoke outlet

Previously installed in old and cramped buildings, the move to new premises was an opportunity to optimise the thermal insulation of the building and improve the supply of natural daylight to improve the visual comfort of the technicians.

Assembled with aluminium thermally-broken profiles, delivering a Urc of 1.3 W/m².K, this new generation of skylights provides a combination of daylighting, natural ventilation and natural smoke and heat extraction, while respecting the insulation continuity of the building.

Kingspan's Ecofeu Premium Alu 160 PN system is a smoke and heat exhaust unit (SHEV), CE certified according to EN 12101-2, with pneumatic controls. Supplied in a choice of multiwall polycarbonate or insulated glass, the innovative system is equipped with a four- or six-point patented locking system which improves airtightness and resistance to strong winds.



GOVA MEUBELPLEZIER



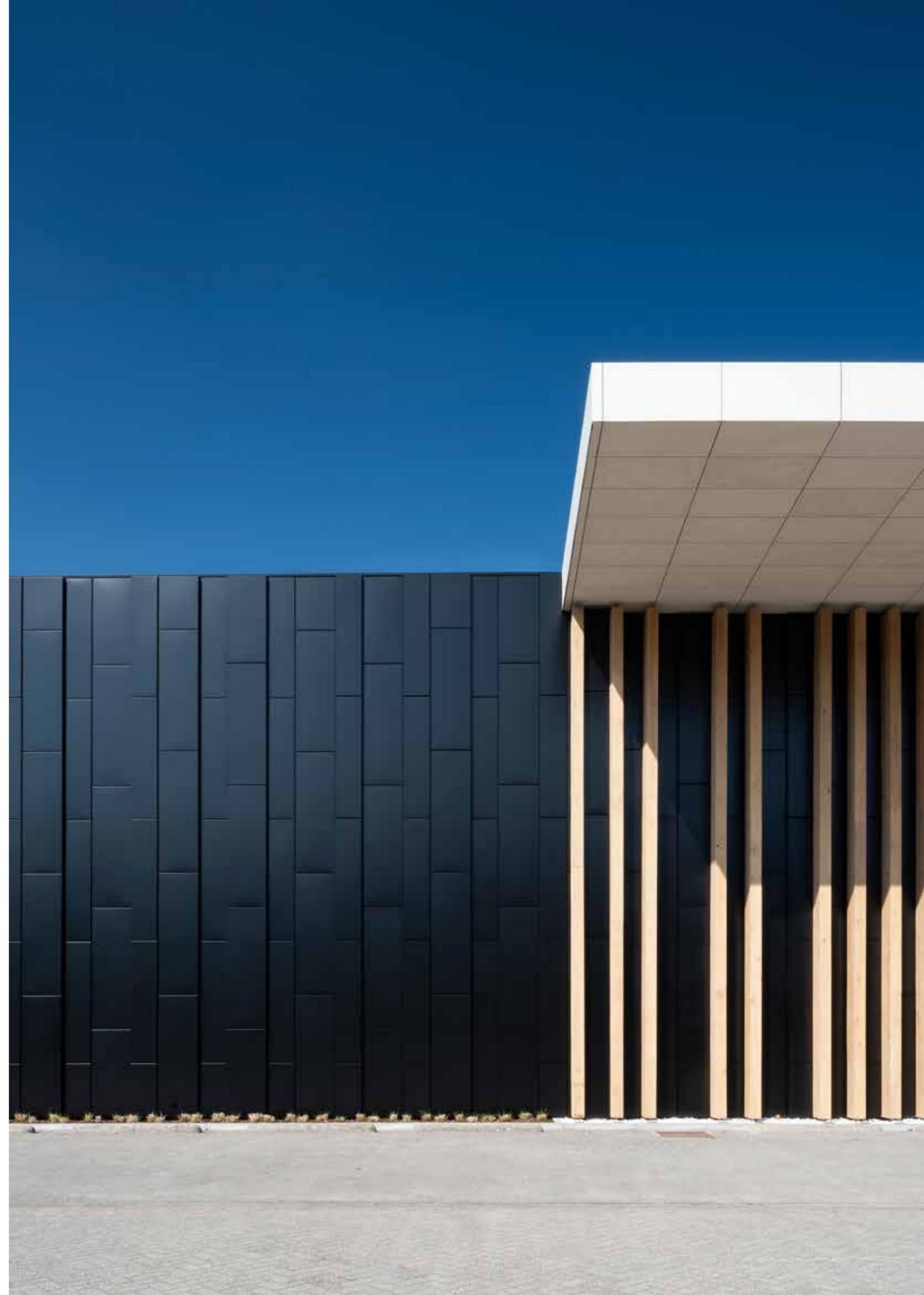
Location
Lier, Belgium

Architect
Dieter Peeters
Architecten bvba

Kingspan Products
Dri-Design Shadow
cassette
QuadCore™ Karrier Panel
rainscreen substructure

The facade of Gova Meubelplezier in Lier was outdated and needed an upgrade. In order to give the building new special features, building owner Yves Govaert wanted to bring in some texture by using Kingspan Dri-Design Shadow cassettes in various depths, heights and widths. This design led to a versatile and flexible facade.

At least 100 different cassettes were applied to cover 1100 square metres of facade surface. Led by contractor Mathieu Gijbels NV, the result is an impressive facade with a combination of glass, white concrete, black Dri-Design cassettes and wood.





HOOG CATHARIJNE



Location
Utrecht,
The Netherlands

Hoog Catharijne, a major component of one of northern Europe's largest urban redevelopment projects, re-envisioned the most visited shopping centre in the Netherlands as part of a grand transformation of Utrecht's city centre.

Architect
STIR Architecture

The design opens up the existing retail centre to its dynamic urban setting, connecting the train station and the convention centre to the historic medieval square.

Kingspan Products
BA-4 glass rod system
BA-4 semi-structural glass system
BA-4 glass fin facade system

The project celebrates the confluence of commerce, culture and the newly re-opened canal with the introduction of a "City Room", a large-scale glass box from Kingspan that serves as a public gathering space. The project links the new and the old by reintroducing a Dutch sense of scale and restraint, and is destined to become the new heart of the community.

"Daylight and transparency are the biggest contrasts between the old and new Hoog Catharijne and all other shopping centres. Most shopping centres are all very much the same. You enter a closed box that could be located anywhere. You only see shops and brands," explains Joost Hulstof, Associate Partner at STIR Architecture.

"The areas in the new Hoog Catharijne are very pleasant and you feel as if you remain part of the outside world. You are aware of the weather conditions: dark and bright days. Experiencing the outside and connection with the environment: that is the future for many shopping centres."

SPECIALITY SUPERMARKET



Location
Vernon Hills,
IL, USA

Kingspan Products
Kingspan Kooltherm® K8 Cavity Board

Given the wide variety of foods and products on display in the store and its location in a climate where extreme cold weather conditions are common, insulation was an especially important consideration for this project. Kingspan Kooltherm® K8 Cavity Board was installed in the cavity of the 48,000 square-foot metal framed, brick veneer retail structure to build a highly thermally-efficient and moisture-resistant barrier along the structure's exterior.

"Because of the cold Chicago climate during the winter months, Kingspan Kooltherm® K8 was the only solution that could meet requirements with limited air space in the cavity. This project called for an R-value of R-20 in the wall but using K8 in the structure's cavity exceeded requirements and provided a higher performing wall of R-22," explains Kingspan's Jonathan Cobb.



PHOTOGRAPHY CREDITS

Community and Amenity

Bunjil Place
John Gollings Photography

Calgary Central Library
Klassen Photography

Forum Groningen
Bart van Hoek Architectuurfotografie

Marrickville Library and Pavilion
Philip Noller Photography

PCYC North Beaches
Rodrigo Vargas Architectural Photographer

Culture and Heritage

Canal Dock Boathouse
Mark Kempf Photography

Dunfermline Carnegie Library and Galleries
Chris Humphreys Photography

Louvre Abu Dhabi
Department of Culture and Tourism - Abu Dhabi
Photo by Mohamed Somji

V&A Dundee
Hufton+Crow

Western Australian Museum
Brian Smyth - Shades of Light Photography

Windermere Jetty
Christian Richters

Education

6 Great Marlborough Street
Photos courtesy of Manchester
Metropolitan University

Jätkäsaari School
Photos courtesy of Aarti Ollila Ristola Arkkitehdit Oy

Health

Erasmus University Medical Centre
Ossip Architectuur Fotografie
Rob van Esch: Architectuur Fotograaf

Eyescan Oogzorgkliniek
Bonte Fotografie

Karratha Health Campus
Douglas Mark Black

Victorian Comprehensive Cancer Centre
Peter Bennetts

Hotel and Leisure

Brae Guest Suites
Colin Page Photography

Entertainment and Sports Arena
Mark Kempf Photography

De Grote Boel Oosterhout
Bonte Fotografie

Optus Stadium
Osprey Creative

SNØ
Artist's impression courtesy of Halvorsen & Reine RS

Industrial

Aico Headquarters
Richard Stonehouse

eins Energy Storage
Simon Wegener Fotografie

Komatsu Headquarters
Photos courtesy of McLaren Construction

Poco Loco
Photos courtesy of Poco Loco

Rhenus Logistics
DOKVAST

Stockhabo ICE
Photos courtesy of Stockhabo

Infrastructure and Airports

San Francisco Airport
Mark Kempf Photography

Mixed Use

1 Finsbury Avenue
Timothy Soar

Here East
Guy Archard Photography

Municipal Fish Market at The Wharf
Mark Kempf Photography

Offices

British Sugar
Martine Hamilton Knight

CSC Headquarters
Don Pearse Photographers, Inc

Goede Doelen Loterij
Jannes Linders

Provinciehuis Antwerp
Matthias Van Rossen

Rijnstraat 8
Bart Van Hoek Photography

UpCycle Office
Dror Baldinger FAIA Architectural Photography

Residential

Amaryllis House
Grønttorv

Haus Gables
Timothy Hursley, NAARO

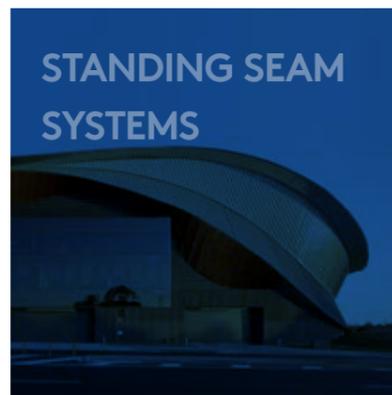
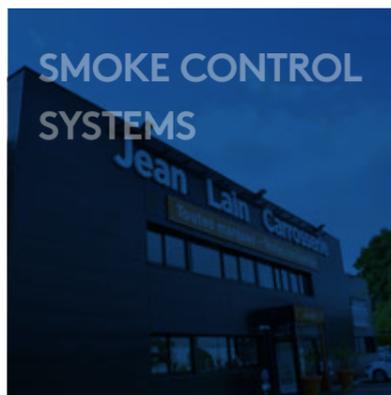
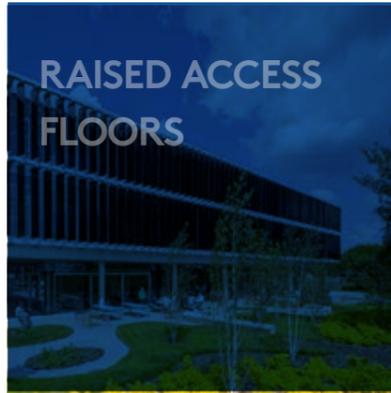
Hope House
Acorn Property Group

Martitz Residence
Simon Wegener Fotografie

Wambacherhof
Bonte Fotografie

Retail

Gova Meubelplezier
Koen Van Damme



This book is published by Kingspan Holdings (Ireland) Limited. The information provided is for educational purposes and inspiration only.

Any form of reproduction of any content in this publication without the written permission of the publisher is strictly prohibited.

The names and performance, including fire classification and certification, of our products may vary from country to country.

For details of the fire performance of our products, please consult the relevant technical team in your country. Visit www.kingspan.com and choose your country.

Follow our journey



kingspan.com/betterbuildings

#BetterBuildingsforaBetterWorld





mBank

YAFIKALIN

SEPTEMBER 2020