

#### NATURAL LIGHT AND ARCHITECTURE

06	CARTWRIGHT GARDENS LONDON   ENGLAND	38	LITTLE BERKLEY LINGFIELD   ENGLAND	70	SCHOOL BUILDING RØDOVRE   DENMARK
10	PLYMOUTH SCHOOL OF CREATIVE ARTS PLYMOUTH   ENGLAND	42	ELWILL WAY BECKENHAM   ENGLAND	74	FGS CAMPUS BONN   GERMANY
14	THE FORUM SOUTHEND-ON-SEA   ENGLAND	46	POST MERCIER LUXEMBOURG   LUXEMBOURG	78	MGF SECONDARY SCHOOL KULMBACH   GERMANY
18	SHEFFIELD HALLAM UNIVERSITY SHEFFIELD   ENGLAND	50	BORY MALL BRATISLAVA   SLOVAKIA	82	INTERNATIONAL SCHOOL BONN   GERMANY
22	IPSWICH SCHOOL IPSWICH   ENGLAND	54	ZALTECH MOOSDORF   AUSTRIA	86	HOTEL 4 JAHRESZEITEN MUNICH   GERMANY
26	UNIVERSITY OF LEICESTER LEICESTER   ENGLAND	58	XXXLUTZ VIENNA, WELS, KREMS   AUSTRIA	90	AIRPORT FRANKFURT FRANKFURT   GERMANY
30	POTTON SHOW HOMES ST NEOTS   ENGLAND	62	DON CARLOS LEISURE RESORT & SPA MARBELLA   SPAIN		
34	EZ1 – MILTON PARK ABINGDON   ENGLAND	66	SPORTS CENTRE GYÖR   HUNGARY		

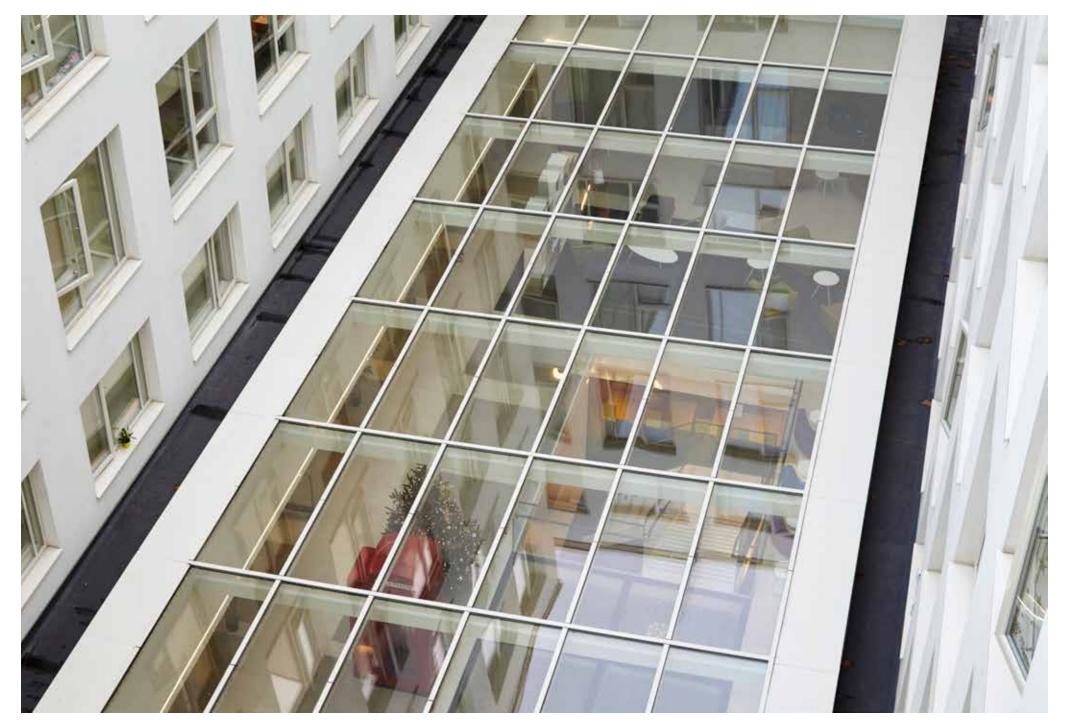
#### CARTWRIGHT GARDENS LONDON | ENGLAND

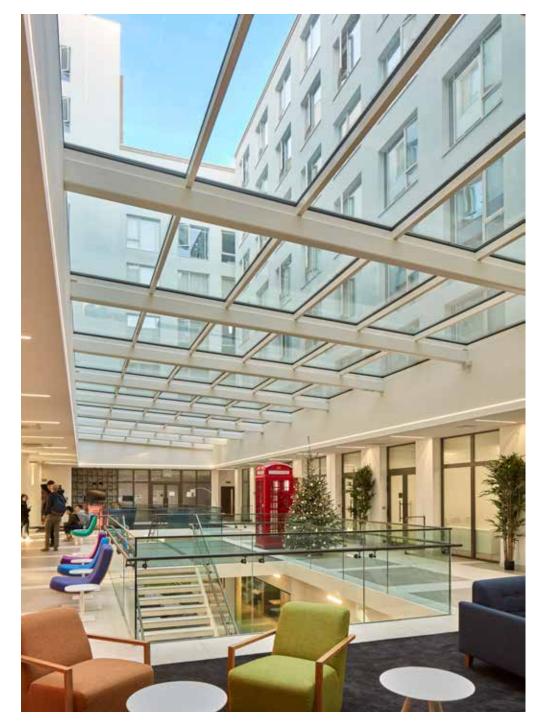
LAMILUX designed, supplied and installed a seven metre wide by twenty-nine metre long PR60 shallow pitched glass roof. The centrepiece was located at the central courtyard atrium of the flagship 1,200 bedroomed student accommodation halls at Cartwright Gardens.

The 3° shallow pitched glazed roof consists of sixty equal glass panels and features a sound reduction index of 38dB, alongside a horizontally installed  $U_g$ -value of 1.1W/(m²K). The thermally broken aluminium framework, expertly coupled with the double layered heat protection glass provides exceptional control over the inside temperature.

Working closely with the architect to achieve a class two roof for safety of maintenance personnel, the glazing specification used was heat soak tested 8mm toughened outer and 11.5mm laminated inner pane. This gave an improved glass strength so that it was CWCT TN92 class two non-fragile.









# PLYMOUTH SCHOOL OF CREATIVE ARTS PLYMOUTH | ENGLAND

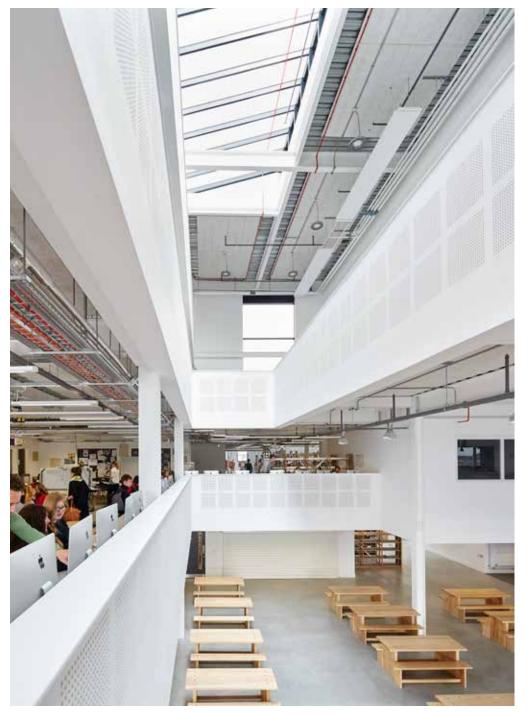
The building required two design-oriented glass roofs, to provide ventilation and natural daylight into the schools large lounge area as well as in the library with working stations. LAMILUX installed two PR60 glass roofs, with ventilation easily integrated within each system, at 15° angles onto the existing wooden frame structure of the roof.

The PR60 glass roofs, one with twenty-nine glass panes, and the other with nineteen glass panes, met the criteria of high energy levels. The 4,000 and 3,000 kilogram constructions can withstand a snow load of 0.75 kN/m². The glass roof structures each provide a significant amount of daylight into each area.

In addition to its concentration and health-promoting effect on the students ranging between four and sixteen years old (and their teachers), the daylight system also meets all the design and economic requirements set by the architect. A precise plan and detailed design work in the initial stages of the project guarantees air tightness, precise compatibility of elements as well as a harmonious overall appearance.











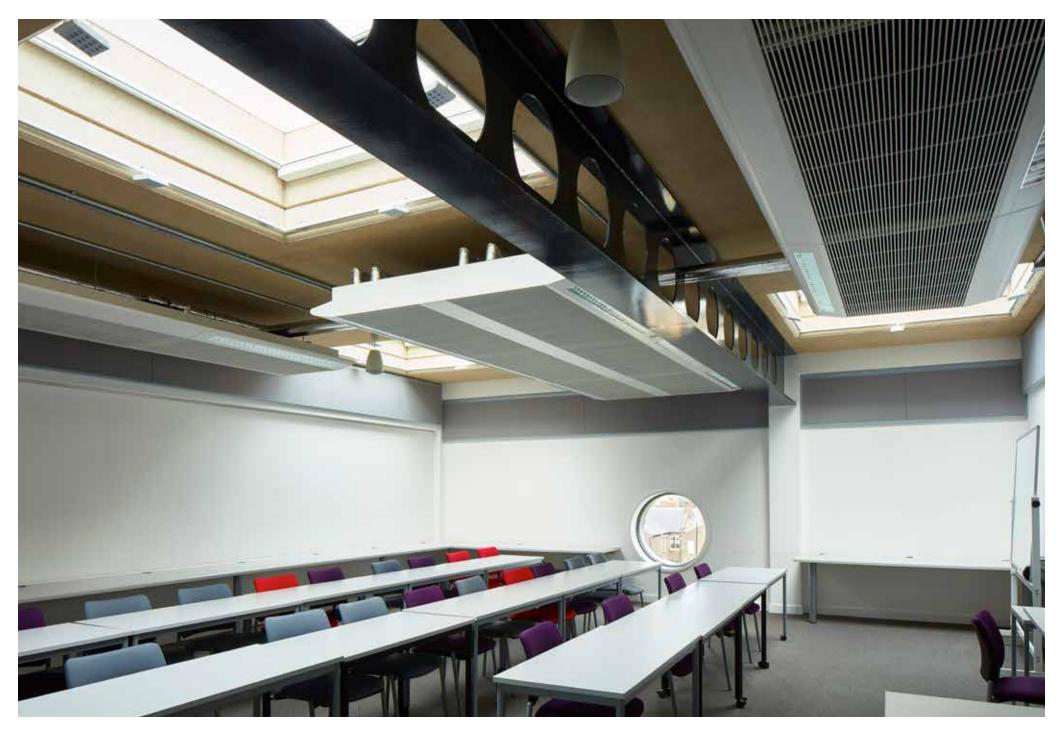
# THE FORUM SOUTHEND-ON-SEA | ENGLAND

Situated in the coastal area of Southend-on-Sea, the newly built library and community resource centre was one of the coastal towns several major sustainable regeneration projects. Known to the locals as 'The Forum,' the modern award winning building was designed and developed as part of a plan to rejuvenate the run down area. LAMILUX supplied and installed thirty FE 3°, aluminium framed rooflights, each at a roof opening size of 200cm x 200cm.

The local environment contained high chloride levels, due to the nearby sea, which meant that careful consideration to possible corrosion of the rooflight framework had to be considered. To eliminate this possibility, the aluminium frames were coated in a special anti-filiform treatment which was additionally powder coated to Anthracite Grey – RAL 7016.

Pre-assembled to the 300mm high GRP upstands, each rooflight was simply fixed directly to the concrete sub-construction. The single-ply membrane connection detail to the upstands meant that the roofing contractor was able to easily terminate the roofing membrane at the foot of the upstands. The upstands featured its seamless internal white construction, which therefore meant no dry-lining or decoration was required.











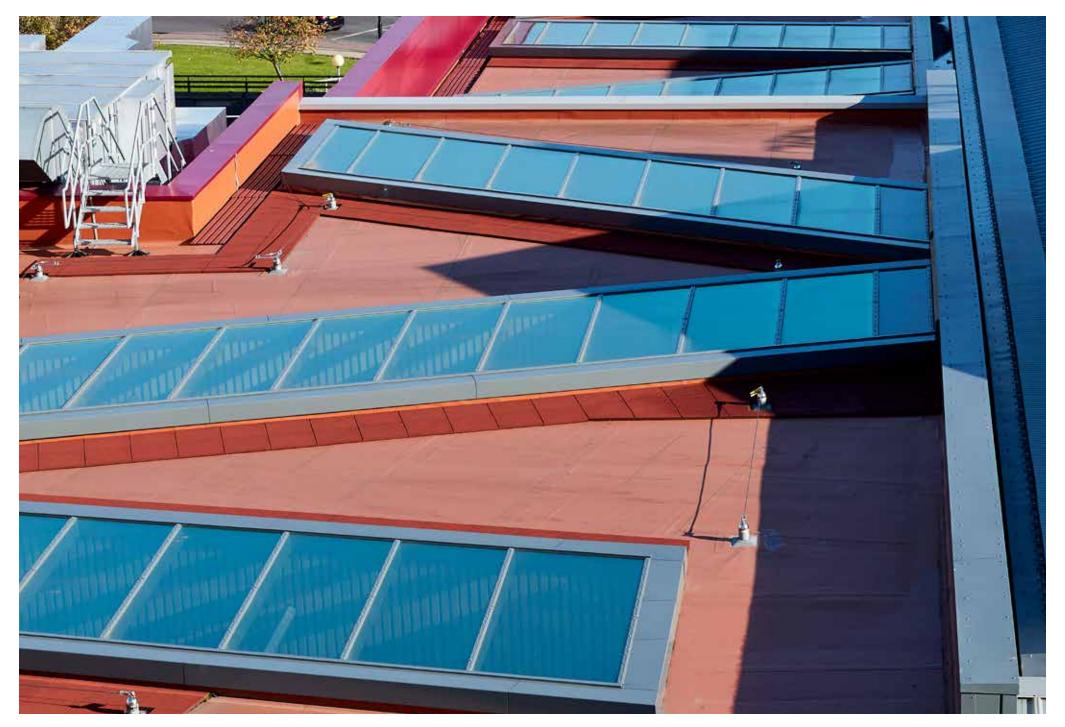
# SHEFFIELD HALLAM UNIVERSITY SHEFFIELD | ENGLAND

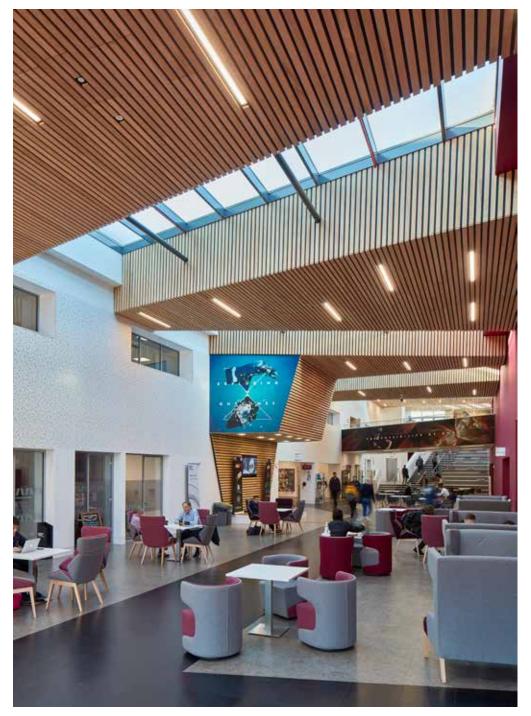
LAMILUX products were specified by the architect from the pre-planning stage. Careful communication and discussions therefore took place, between LAMILUX U.K and the architect, from an early stage of the project, to ensure key requirements were met.

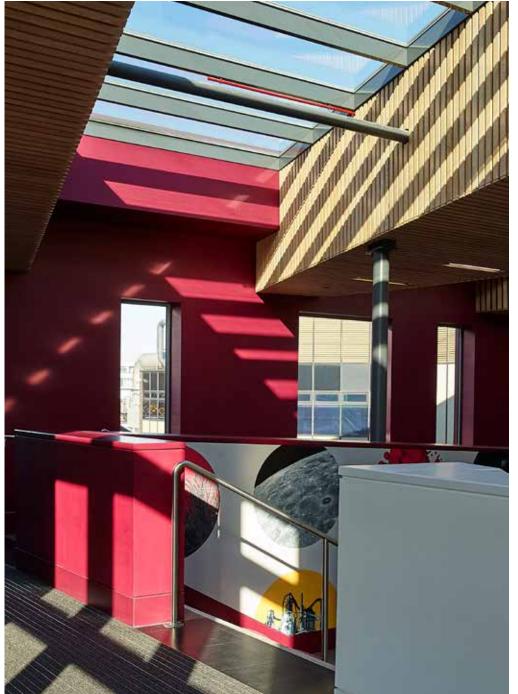
The roof location was overlooked by much higher, additional university architectural buildings. For this reason the architecture and geometry of the roof glazing design was vitally important. Fulfilling the specification, LAMILUX designed each glass field within each rooflight to a bespoke shape, offering an aesthetically pleasing solution, whilst maintaining the high quality requirements. High performance solar control glass was used to achieve the specified low  $U_g$ -value of 0.29. Each PR60 bespoke rooflight incorporated a panel of special back painted glass to match the RAL 7012 – Basalt Grey framework to suppress the unapt ventilation duct work.

The installation of the rooflights faced challenges due to the location of the University itself. Located in the City Centre, and within close proximity to the train and bus station, meant that essential equipment such as cranes could not be used at all times. This made the installation of the project extremely time sensitive and careful attention to these time restraints were adhered to.









# IPSWICH SCHOOL IPSWICH | ENGLAND

A combination of fixed and electrically opening LAMILUX Glass Elements FE 3° were installed within a new state of the art, three-storey music block, located in Ipswich. The new construction offered students a dedicated music technology suite, designed to raise the bar of music provision at the school.

The architect specified continuity of detailing, and for aesthetic reasons, did not want the rooflight frame to be visible internally, when looking up, out of the rooflight. As standard, LAMILUX access hatches are pre-assembled to the GRP upstand, therefore a special lipped kerb was designed, to enable the contractor to complete the roof and seal the upstands before our upstands were installed. Grey frames (RAL 7047 – Telegrey 4) were chosen to tie in with the theme of the grey roof membrane.

It was imperative that all rooflights met specific acoustic and thermal performance requirements, specific to their location on the roof. The rooflights supplied, featured effective glazing sound insulation values of up to 45dB. This performance, which is certified to EN ISO 140-3, was tested and approved by an acoustic consultant.











#### UNIVERSITY OF LEICESTER LEICESTER | ENGLAND

LAMILUX designed, supplied and installed two Passivhaus certified glass roofs for the University of Leicester's Centre for Medicine – the largest non-residential Passivhaus building in the UK. Each measuring 6.5m x 15.6m, the two glass roofs utilise the well proven LAMILUX Glass Architecture PR60<sub>energysave</sub>, installed with a surface inclination of just 3°.

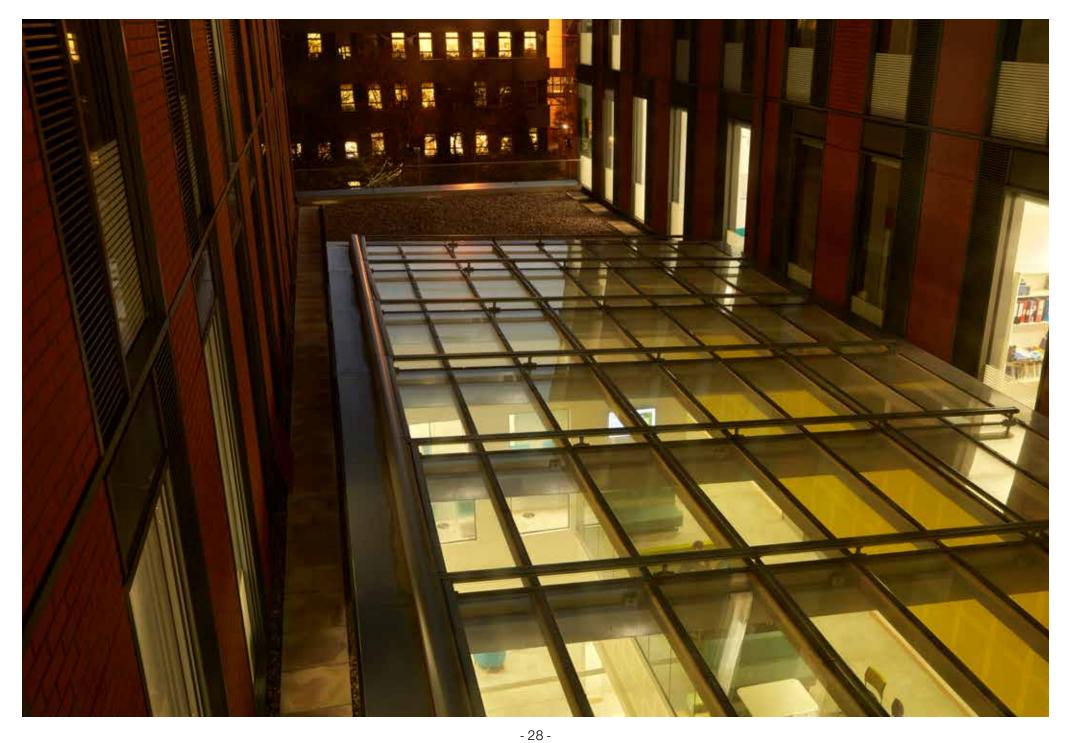
The PR60<sub>energysave</sub> sets the benchmark for energy efficiency standards for atrium glazing. It has been independently assessed by the Passivhaus Institute and awarded the highest efficiency rating, the phA Advanced Component classification. The system features a  $U_{cwi}$ -value\* for the complete skylight of  $\leq$  0.82 W/m²K, utilising warm edge triple layer glazing with SuperSpacer, as standard. The aluminium extruded mullion/transom glazing bar system allows for designs of any shape, inclination and size and can be supplied in any RAL colour.

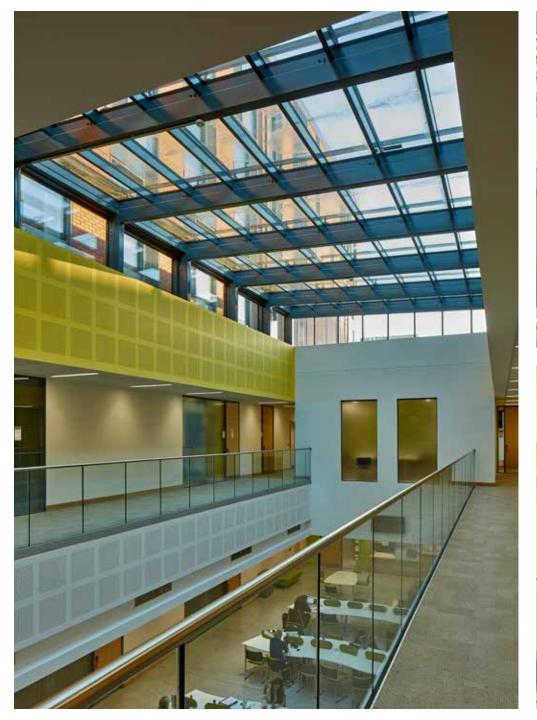
At the University of Leicester Centre for Medicine, the two atria feature glazed vertical sections with six opening vents in addition to the glass roofs, bringing high levels of daylight and natural ventilation to public areas within the building.

The Centre provides a new home for the University's Medical Education, Health Sciences and Psychology departments with approximately 12,000m² of teaching rooms, academic offices, dry lab research facilities and support spaces capable of accommodating more than 2,350 staff and students.

\*U<sub>cwi</sub> is a thermal coefficient created by the Passivhaus Institute to a strict criteria, and therefore only Passivhaus certified sloped glazing systems can use, and be compared by this coefficient.











#### POTTON SHOW HOMES ST NEOTS | ENGLAND

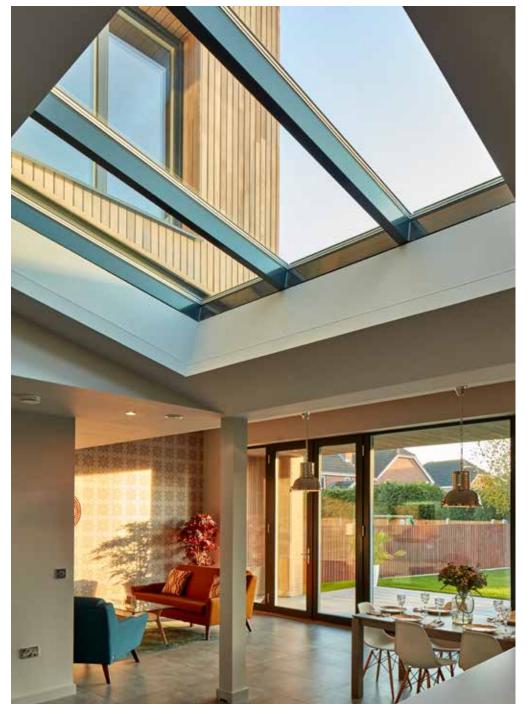
The Potton Self Build Show Centre in St Neots hosts LAMILUX's PR60<sub>energysave</sub> Passivhaus certified roof glazing systems within one of the five stunning show homes. The Self Build Show Centre was designed to inspire self-builders with the design of their project and is used to showcase a series of high end products.

The development of the new show house required a product that could have a wall abutment both to the side, and head of the roof glazing. Only high end products are showcased within the self-build show centre, therefore the PR60<sub>energysave</sub>, which holds energy saving qualities was installed.

The LAMILUX PR60<sub>energysave</sub> holds certification for the highest Passivhaus efficiency class – phA component. With a  $U_{cwi}$  (U-value for installed system) of  $\leq 1.00~\text{W/m}^2\text{K}$  and a glazing sound insulation value of 38dB, the high end glazing system compliments the modern show home injecting panache, elegance and of course natural daylight.











#### EZ1 – MILTON PARK ABINGDON | ENGLAND

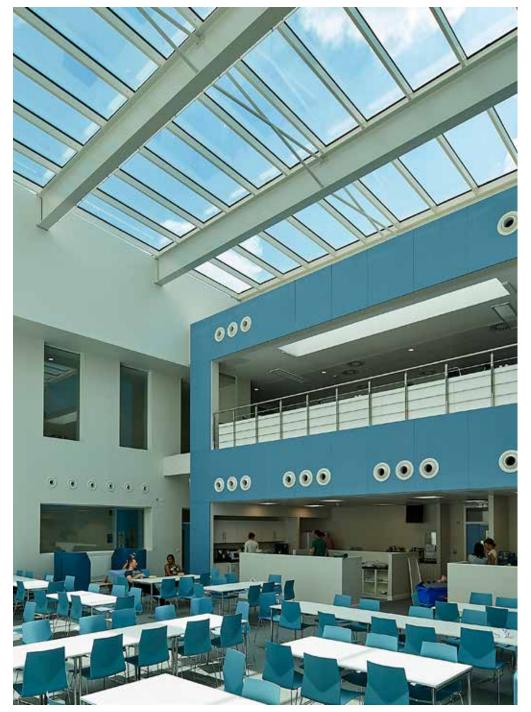
This pre-let contemporary, high end commercial building on Milton Park, Oxford is home to a prestigious office and laboratory headquarters. The LAMILUX Glass Architecture PR60 3° continuous atrium rooflight was carefully designed and installed, complete with framing detail, to ensure a seamless transition to the wall abut at the head, whilst sitting onto perimeter supports at the verge and cill.

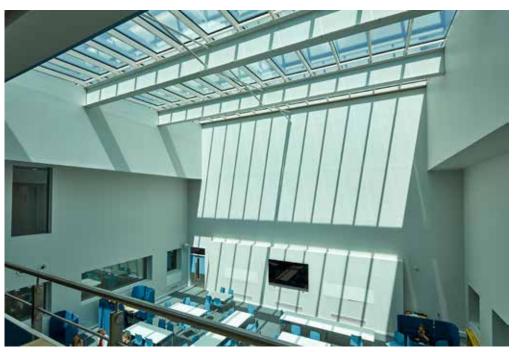
Covering a space of fourteen metres wide by fifteen metres long, each of the sixty panes of glass measured approximately 1,000mm x 3,500mm. LAMILUX were able to provide a better solution, with bigger panes, than the original concept, with the panes arranged in four flush tiers with three transom mullions fitting onto the I beams.

To prevent overheating in the summer, a high performance glazing, with a silver coating was used, which was designed and installed to be walked on for cleaning and maintenance purposes.











# LITTLE BERKLEY LINGFIELD | ENGLAND

An arrangement of various sized LAMILUX Glass Element FE modular rooflights were installed in this residential home in the village of Lingfield, Surrey. Bespoke sizes were sought after, so that the four new rooflights could be installed within the existing openings. Whilst the FE range of rooflights offers a selection of over forty standard sizes, LAMILUX were able to work outside these parameters, using fit adapters to fix the rooflights to timber substructures. This enabled minimum disruption to the home owners and demonstrates the diversity of the FE range of rooflights.

Each of the rooflights surrounding frame profile has an integrated 3° incline, which ensures improved self-cleaning, thus reducing the effort required for cleaning. Featuring a discreet appearance from the inside and outside, the home owner requested dual powder coating to the framework, the interior pure white – RAL 9010, and the exterior Anthracite Grey – RAL 7016.









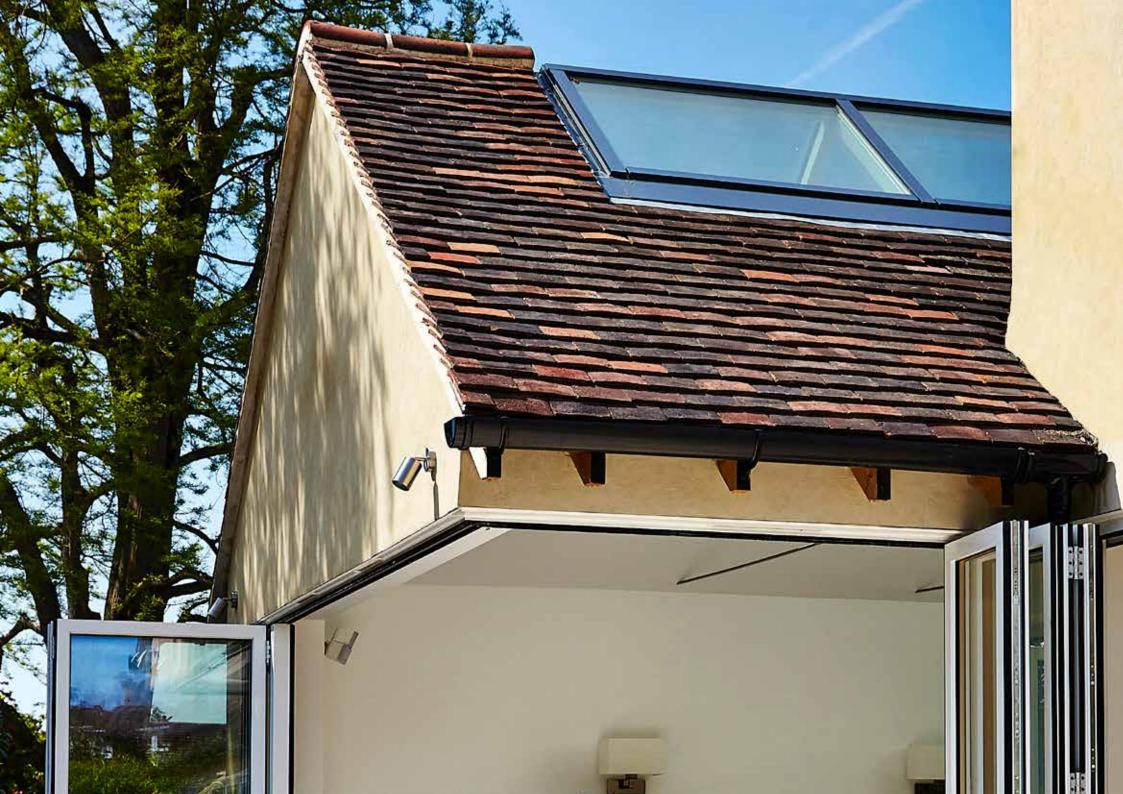


# ELWILL WAY BECKENHAM | ENGLAND

The Beckenham residential project, located in Kent, required a bespoke roof glazing solution for the home owners' kitchen extension. The LAMILUX Glass Architecture PR60, which is available with customised shapes and design, was constructed and installed to encompass the 38° ridge, along a clear length of 3.8 metres, for maximum light intake.

With dual powder coating to the framework, the interior exhibits sophistication with pure white RAL 9010, and the exterior, a classy and fitting Anthracite Grey (RAL 7016).

The home owners required high aesthetic standards while still enjoying first-class energy efficiency and assurance of no indoor environment problems such as condensation or overheating. The installed high performance PR60 glazed roof features properly thermally separated and insulated framework preventing such problems. The glazing, made up of 6mm toughened outer and an 8mm VSG safety inner pane, holds a  $U_{\rm q}$ -value of 1.1W/m<sup>2</sup>K.











# POST MERCIER LUXEMBOURG | LUXEMBOURG

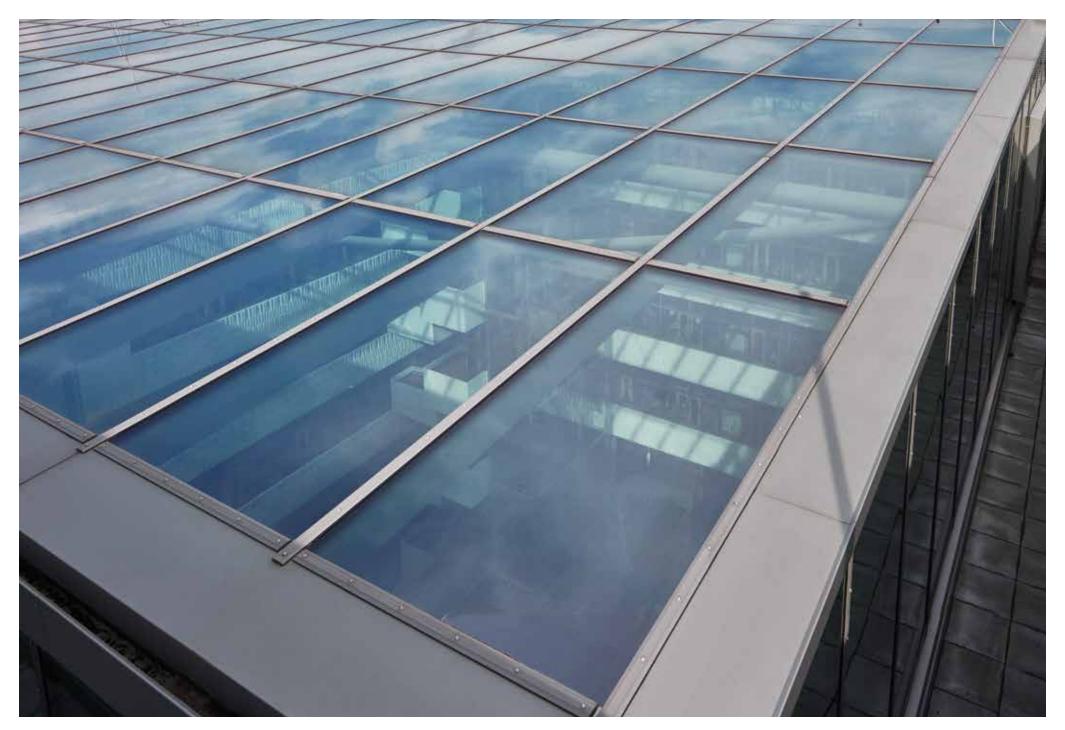
One of the key concepts for the administration and service building of the Post Luxembourg was a sustainable design. The key aim of the project was to be certified to DGNB Platin (German Sustainable Building Council) which is why LAMILUX's Passivhaus certified solution was chosen.

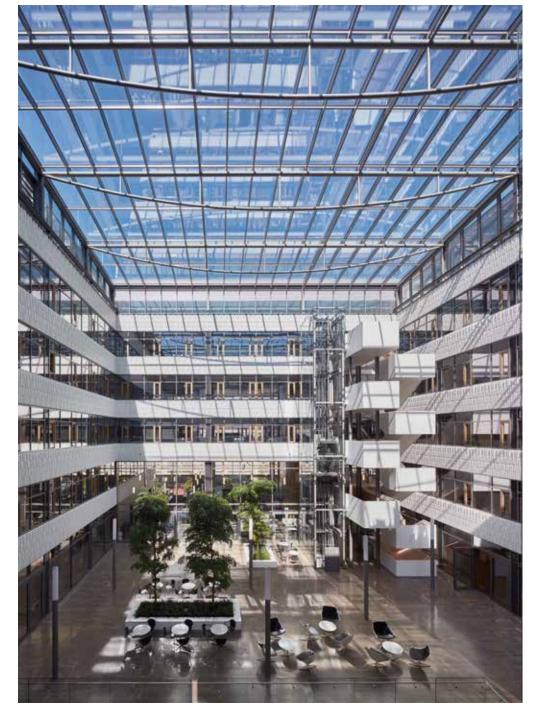
The inviting design of the atrium achieves the main function of entrance and access, through the sculptural main staircases and panoramic lifts. In addition, the spectacular construction functions as a charming meeting point in the foyers of the two-story canteen, as well as overlooking the meeting and event rooms.

Through the subtle selection of lights and the staging of several large trees, a characteristic charm and feeling of an inner-city square is achieved. This bright and daylight-flooded atrium is created by a 27.35m x 24.35m Passivhaus certified LAMILUX Glass Architecture PR60<sub>energysave</sub> in saddle roof design with a height of 27 metres, which is divided into 180 glass panels. The vertical glazing of the atrium incorporates ventilation louvres for natural ventilation and conditioning of the atrium.

The LAMILUX Glass Architecture PR60<sub>energysave</sub> sets benchmarks in the energy standards of glass roofs and is an illustration of LAMILUX's high energy efficiency intentions.









# BORY MALL BRATISLAVA | SLOVAKIA

The Bory Mall shopping and entertainment centre, built primarily for families, accommodates 190 stores, restaurants, cafés and children's' attractions. LAMILUX installed 86 Glass Element FE rooflights distributed throughout the roof of the mall.

A particularly distinct architectural appeal was created by the unique construction of the rectangular LAMILUX Glass Elements, installed directly above a circular device. This gave the illusion, from a visitor's perspective inside the building, that the elements were circular.

The modern design of various sized circular skylights, paired with the Skim Downlights-lighting, create an atmosphere that is simultaneously pleasant and energizing. The arcade is subsequently even more inviting and every visit becomes a unique shopping experience.

The frame profile of each installed rooflight features an integrated 3° incline of the elements in order to decrease the need for cleaning and to guarantee a smooth watercourse thus prevent ponding.











## ZALTECH MOOSDORF | AUSTRIA

In April 2017, Zaltech, was ready to celebrate the opening of their headquarters in Moosdorf, Austria. The company's product range includes mixed spices, flavours and marinades for the food industry, all of which are natural, pure and healthy. The assembly of the new headquarters was designed to be a modern, low-energy construction which required a connection to nature, mirroring the products that the company stands for.

The daylight illumination of the new building presented not only planning but also aesthetic challenges, due to the curved shapes of some of the corridors and rooms. LAMILUX's solution was to integrate nine LAMILUX Glass Elements F100 with top roof edge sizes of 100cm x 100cm to 120cm x 120cm, as well as twenty-five LAMILUX Glass Elements type F in round design with diameters of 100cm to 120cm into the roof. Both shaped versions complimented each room they were installed above, offering not only stylish lighting accents but also excellent energy values.

In addition to the aluminium framed rooflights, LAMILUX supplied over 100 Rooflight Domes F100 with top roof edge sizes of 120cm x 120cm and 120cm x 180cm. Some of these domes were installed with an opening function and are used for daily ventilation within the building. Furthermore, they increase the safety at the workplace by serving as smoke and heat exhaust ventilation systems.











## XXXLUTZ VIENNA, WELS, KREMS | AUSTRIA

As one of the leading suppliers in the furniture trade, XXXLutz offer home furnishing products with high standards of quality and design. In order to reflect this philosophy in the building envelope, LAMILUX elements were installed into the Wels, Krems and Vienna branches.

For the refurbishment of the XXXLutz Centre in Wels, LAMILUX specified a PR60 glass roof measuring 6.5m by 45.45m. Smoke Lifts type M were integrated into the system to ventilate the room and ensure safety in the event of a fire.

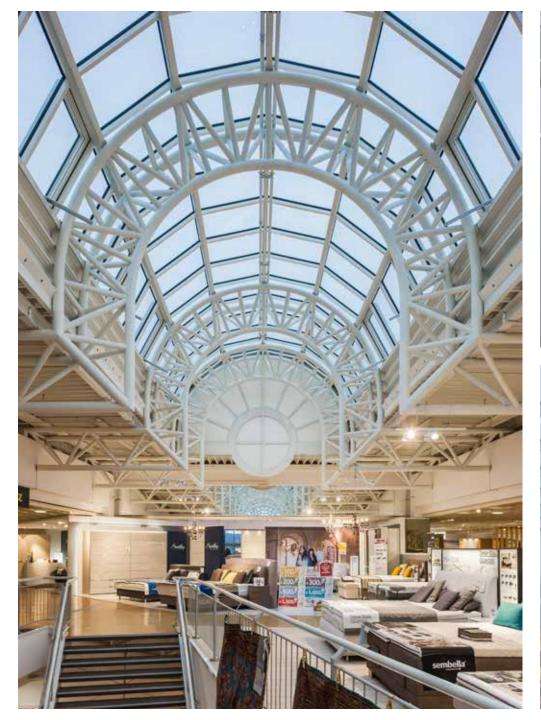
A particular challenge of this project was the assembly of the elements on the barrel roof during daily operation. However, with preliminary planning, and expert knowledge, LAMILUX supported the customer to ensure an effortless installation. The successful cooperation was also evident in the XXXLutz construction projects in Krems and Vienna.

The striking glass roof structure of the XXXLutz shopping centre in Vienna is a real eye-catcher. On an area of 24m x 33m, the barrel roof was architecturally restored with a daylight system. After a complete renovation and expansion, the branch now presents itself in double size. In order for the conversion of the roof to run smoothly, the functional and energy requirements for the new systems were defined together with the customer.

In Krems, LAMILUX also installed a PR60 shed roof with a 15° surface slope for refurbishing the store during daily operation.











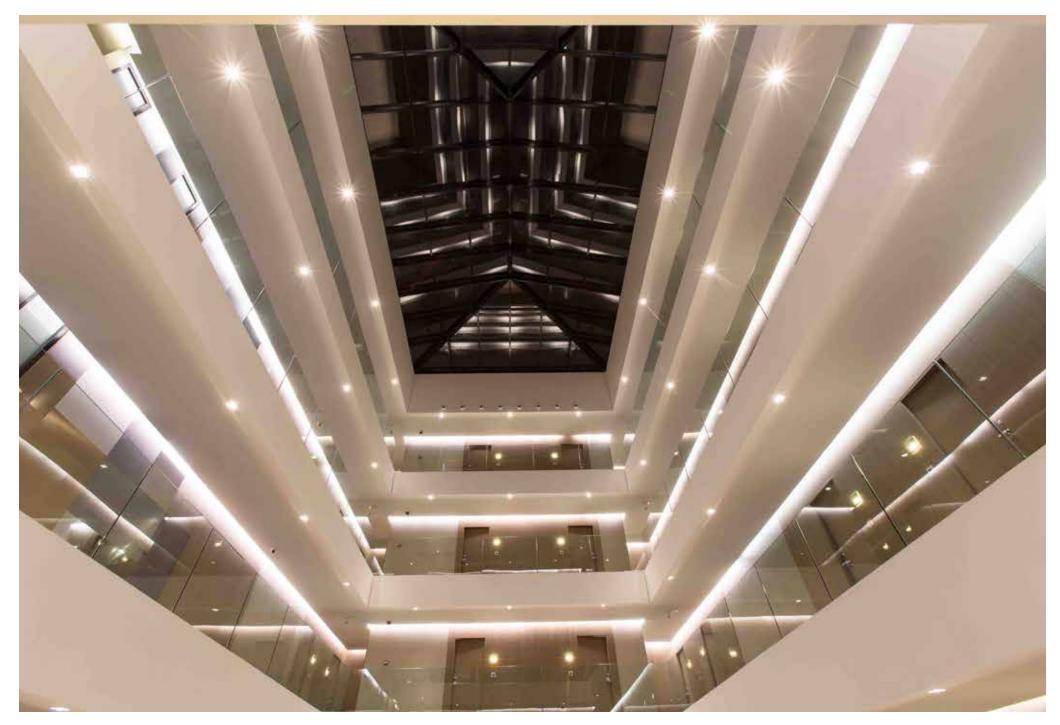
#### DON CARLOS LEISURE RESORT & SPA MARBELLA | SPAIN

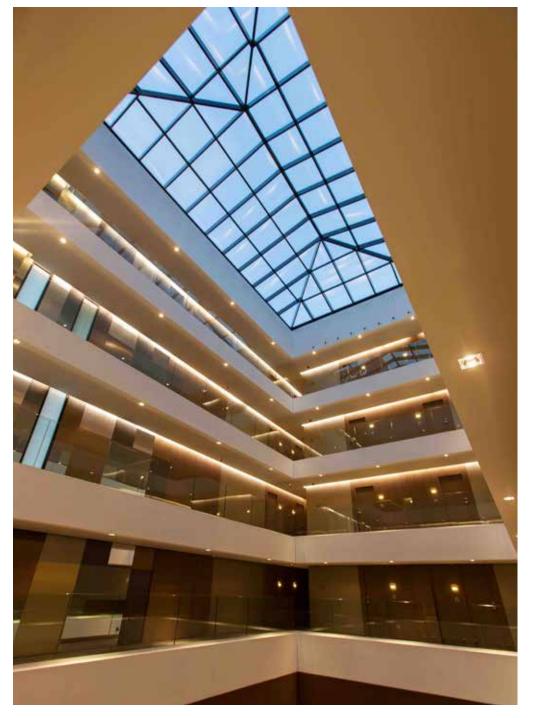
The Don Carlos Leisure Resort & SPA is the only five-star Resort in Marbella. It is a perfect place for a relaxing and luxurious break whilst offering exclusive wellness to its guests.

To turn the wellness complex in a real eye-catcher for all visitors, LAMILUX installed – in cooperation with Prefire – a LAMILUX Glass Architecture PR60 system in hipped roof design. The construction was built in the atrium of the main building with a top roof edge size of 7.5m x 13.2m and 15° inclination.

LAMILUX offers an optimised and innovative sealing and drainage system, the 60mm thin profiles ensure advantageous light transmission for daylight, whilst offering excellent thermal properties. The variety of benefits combined with unique aesthetics were tailored to the needs of the luxury resort.









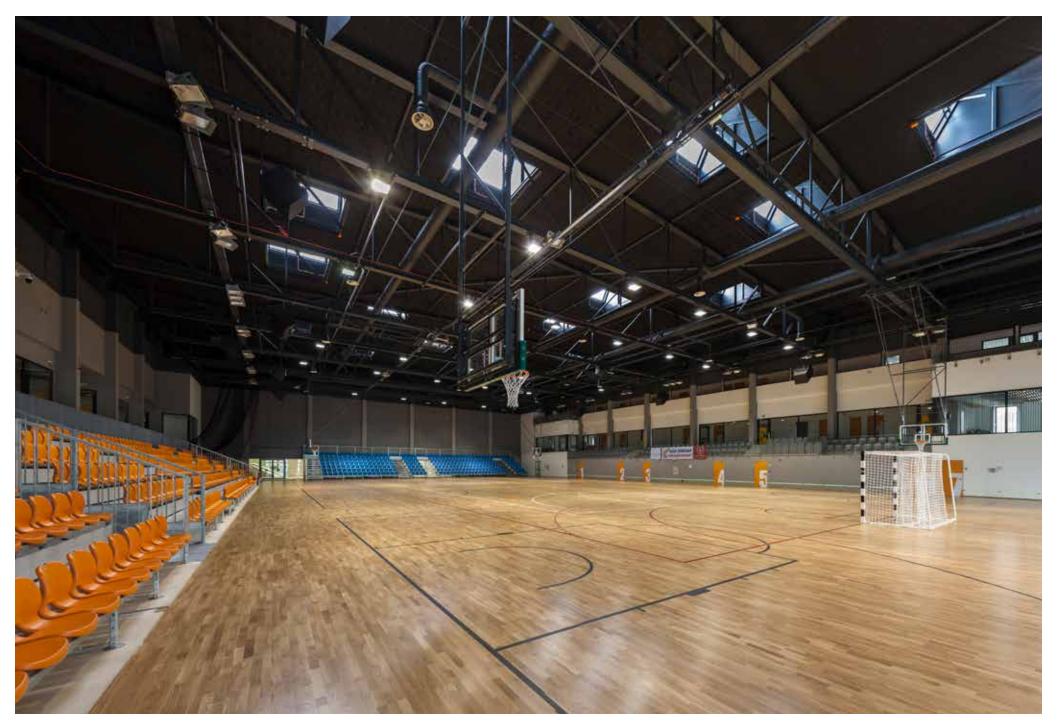
## SPORTS CENTRE GYÖR | HUNGARY

The new Sports Centre in Györ was designed and built with the undertaking of hosting the 2017 Olympic Youth Games. With 3,000 athletes between the ages of 14 and 18 competing, it was imperative that the specification of all materials used within the new build were optimal. For this reason, LAMILUX products were used to supply the Sports Centres with daylight and ventilation.

A special focal point of the flat roof is the thirty-two LAMILUX shed roofs. Each shed roof was installed facing north to ensure that daylight is distributed into the building at a perfect angle. These 60° inclined northern lights guarantee a smooth watercourse, preventing dirty edges and thus avoiding time consuming cleaning work. A total of sixty-four LAMILUX Smoke and Heat Exhaust Ventilation Flaps (SHEV Flaps) were installed in the shed roofs to ensure safety in the event of a fire. The integrated SHEV Flaps are made of thermally separated, extruded aluminium profiles with optimised wind deflectors and are certified to EN 12101-2.

LAMILUX additionally installed a total of thirty-one Rooflight Domes F100 and five Continuous Rooflights B, both equipped with smoke and heat exhaust ventilation systems to furthermore increase the safety of the athletes and public in case of a fire. LAMILUX also developed and installed the complete electric control kit to complement the rooflights.











## SCHOOL BUILDING RØDOVRE | DENMARK

The new construction of the Vestegnen HF & VUC building, which encompasses 64m<sup>2</sup> of LAMILUX Glass Architecture PR60, is a facility for adult education. The five story building harbours approximately 3,500 pupils aged between 17 and 30 years.

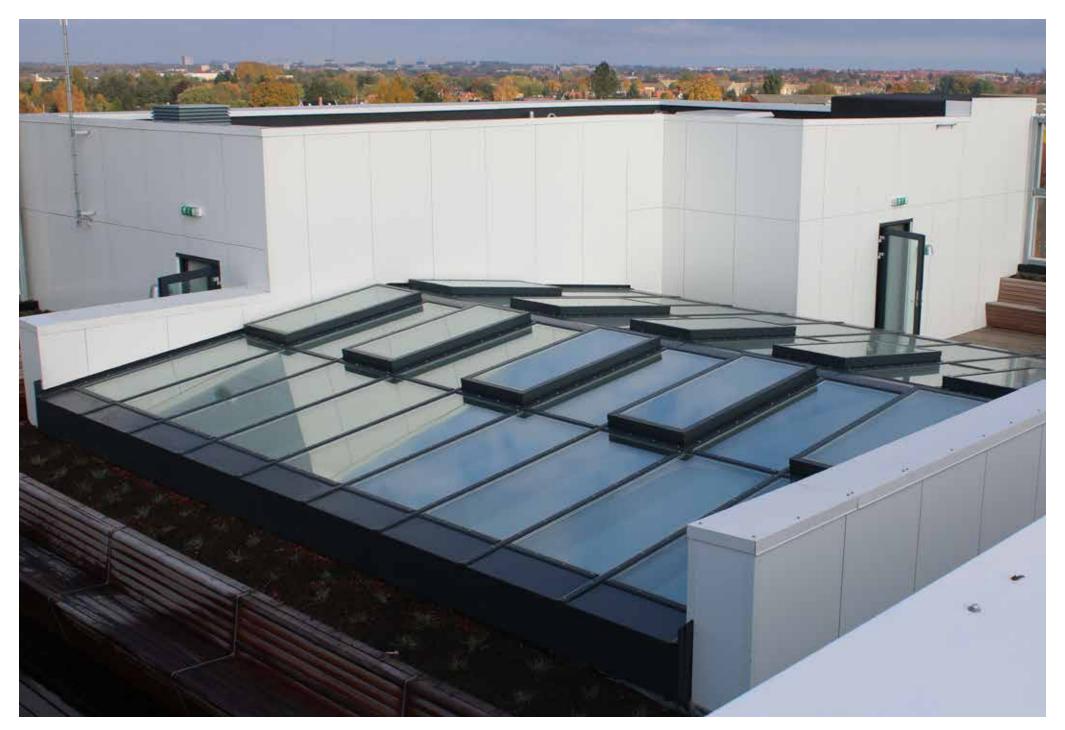
On a total of 2,800m² divided within the five floors, the pupils have space for both learning and recovering. The fifth floor in particular serves as a place of relaxation. In order to ensure that the students can have a sense of well-being and benefit from natural daylight inside the building, LAMILUX installed a 7.9m x 8.2m PR60 glass roof in the form of a saddleback roof.

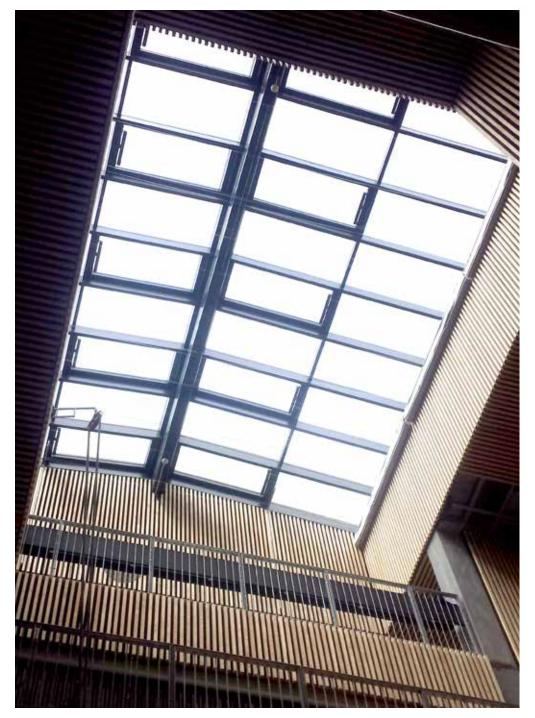
Through the glass construction, natural light floods daily into the atrium below and is also distributed into the other floors of the building. The façade is a real eye-catcher and a fascinatingly beautiful roof terrace.

The 64m² glazed roof can carry loads of up to 400kg per square metre, which offers a great safety advantage especially in the winter months of Denmark. The 7° inclination of the saddleback roof ensures continuous water drainage and prevents dirty edges.

In addition, a total of ten LAMILUX Smoke Lifts type M were installed for daily ventilation. Those also serve as a further safety aspect for smoke extraction in case of fire.











## FGS CAMPUS BONN | GERMANY

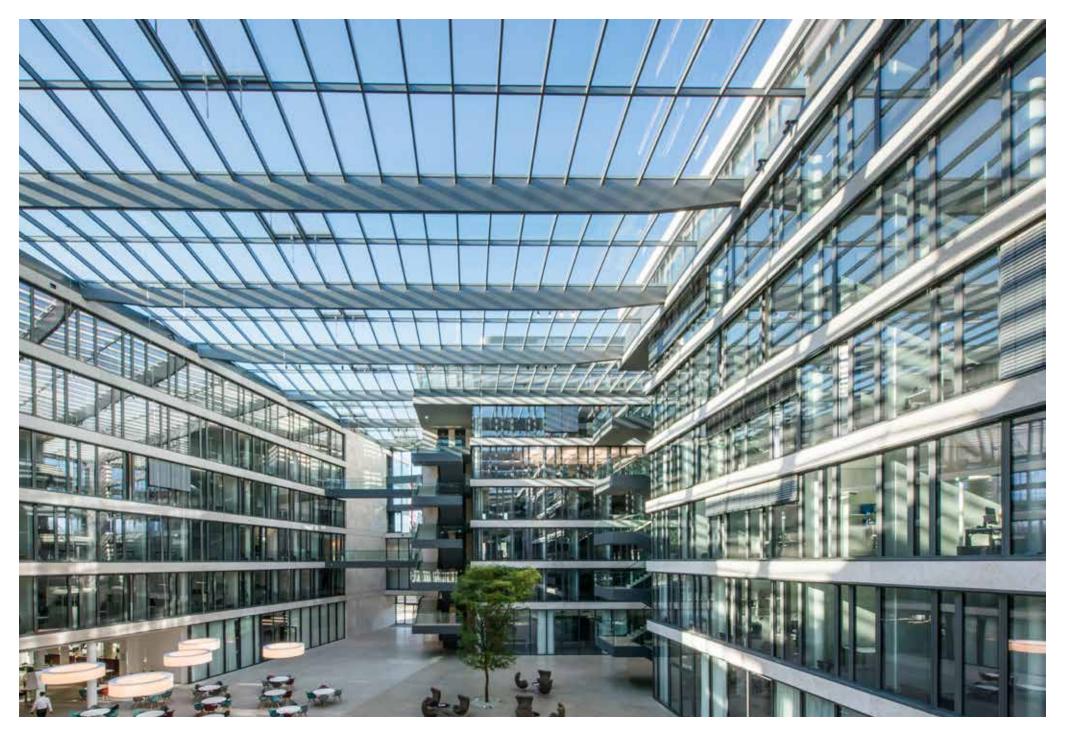
The impressive glass roof construction of the FGS Campus in Bonn is a real eye-catcher. On an area of 1,700m², the inner courtyard of the building complex was architecturally impressively covered with a LAMILUX Glass Architecture PR60 system.

Twelve saddleback roofs of various sizes were installed above the FGS Campus at a height of 22m. The saddleback roofs now provide the inner courtyard with a large incidence of pleasant daylight.

The roof also includes nine double flaps with an aerodynamic smoke extraction area of  $3.39 \text{m}^2$  per unit, which are part of a smoke and heat exhaust ventilation system. The flaps can be raised up to 90° for ventilation purposes. The PR60 system offers very efficient ventilation of the glazing rebate and controlled water and condensate drainage. With an overlapping multi-stage sealing system in the inner sealing plane, which is designed without direct impacts, reliable secondary dewatering is made possible.

Due to the combination of MIROTEC's steel structures used within the PR60 system, the close cooperation between the steel construction expert MIROTEC and LAMILUX was a great advantage during the design and installation of the project.











# MGF SECONDARY SCHOOL KULMBACH | GERMANY

The new construction of the MGF Secondary School, which is occupied by LAMILUX's aluminium framed rooflights, was designed to amalgamate two existing building. The purpose of the schools adaptation was to create a design led extension, whilst simultaneously contributing function.

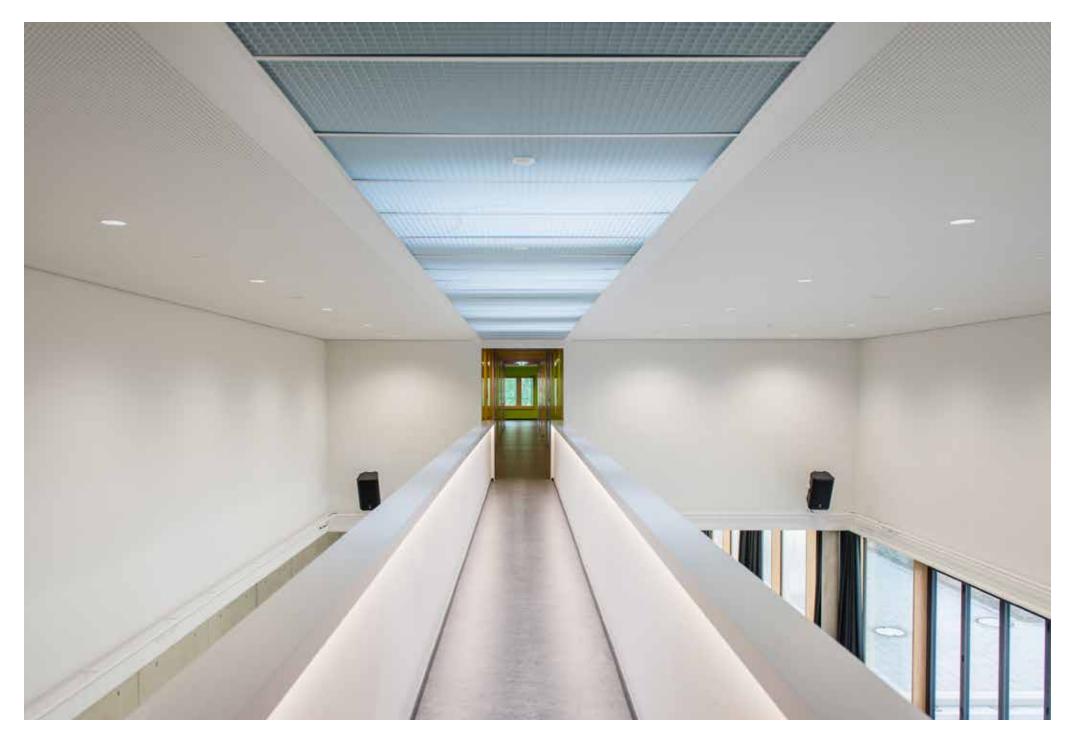
The customer faced aesthetic challenges in terms of daylight illumination, however LAMILUX's solution was to channel the daylight in the break hall, library and the meeting rooms by installing eleven LAMILUX Glass Elements FE. The modular rooflights were distributed in a way that maximized daylight into the required areas whilst also serving as adept design highlights.

LAMILUX Glass Elements, that are directly visible from the inside, are equipped with chain drive motors hidden in the skylight base with concealed cable routing. The unsighted motors create a seamless interior adding elegance to the room.

A bridge on the first floor, above the open break hall, connects the two building parts of the annex. Above it are four suspended daylight elements that create a bright, light-flooded ensemble.

Two of the glass elements are fixed and nine open for daily ventilation purposes, which in case of fire also take over the function of smoke and heat extraction. The 3° inclined upstands of the elements ensure continuous water drainage, preventing dirty edges and ultimately avoiding costly cleaning work.











# INTERNATIONAL SCHOOL BONN | GERMANY

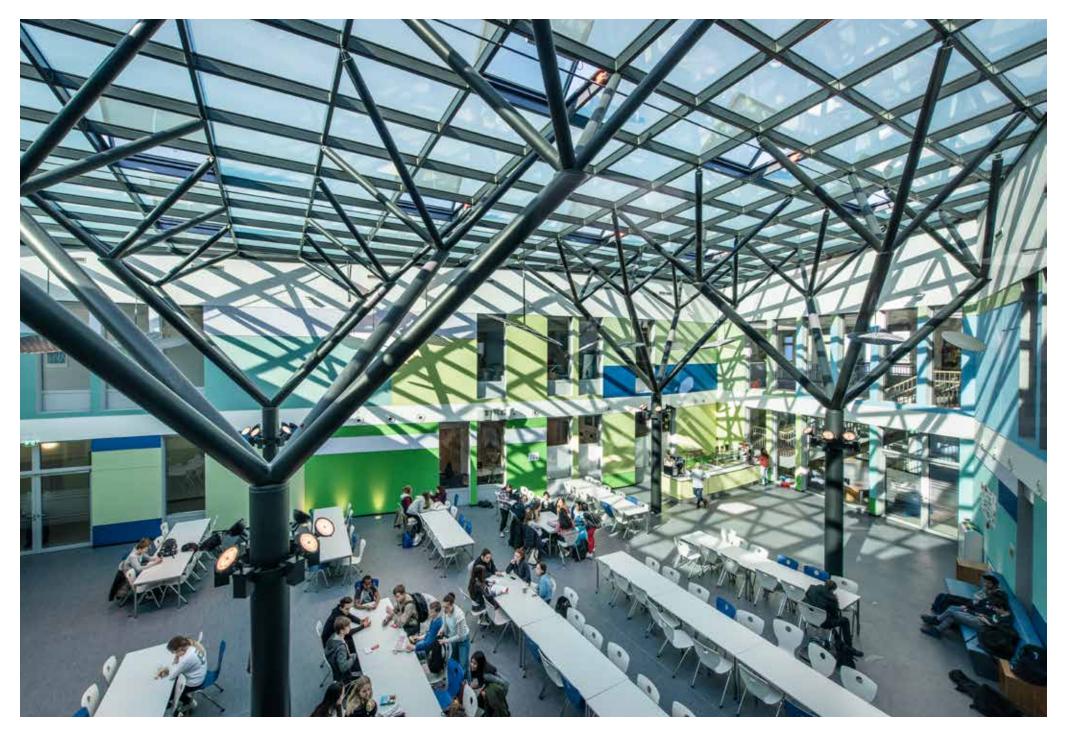
At the canteen roof of the International School in Bonn LAMILUX elegantly combines design and security. A large tree, which had to give way for the glass roof construction above the dining room in the International School Bonn, inspired the design of the new roof. Four steel beams with four branches each carry the construction with elegantly shaped contours.

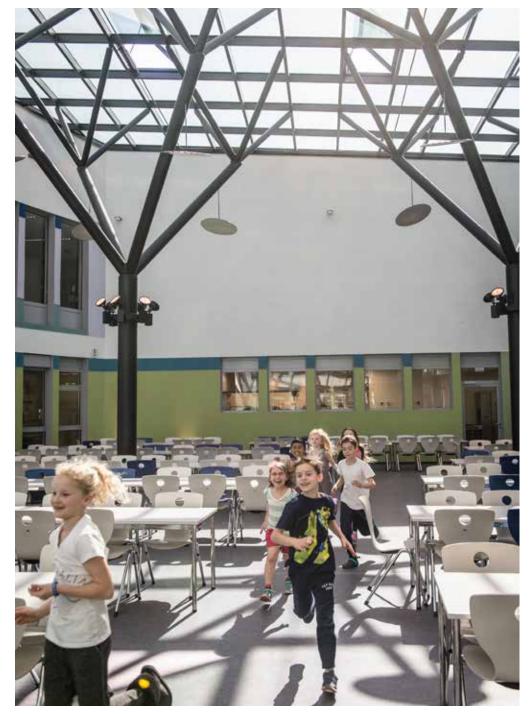
For the construction of the glass roofs, the requirements of the DIN EN 1201-2 had to be fulfilled. Accordingly, at least 3%, i.e.  $10m^2$  of the total  $350m^2$  roof area, must be infinitely open for smoke extraction. For this purpose, ten LAMILUX Smoke and Heat Exhaust Ventilation (SHEV) Flaps were integrated into the steel post-and-beam construction of the glass roof. Below the grid-like steel construction, a rounded fire alarm system is installed, which triggers the smoke and heat exhaust ventilation system via an interface to the SHEV system. The windows open by means of an electrically controlled chain drive motor.

Irrespective of fire protection, the smoke and heat exhaust ventilation elements can also be controlled manually. The roof flaps can be opened 25%, 50% or completely via a ventilation button on the ground floor. A rain and wind sensor connected to the SHEV system allows the windows to close automatically if necessary.

The steel beams were supplied with an F30 primer for fire protection, providing thirty minutes of fire resistance. To ensure that the layer does not show any scratches, a final coating was added at the end of the construction work to ensure a clean, unified finish. This ensures that the steel does not lose its stability and load-bearing capacity even at temperatures above 500°C.









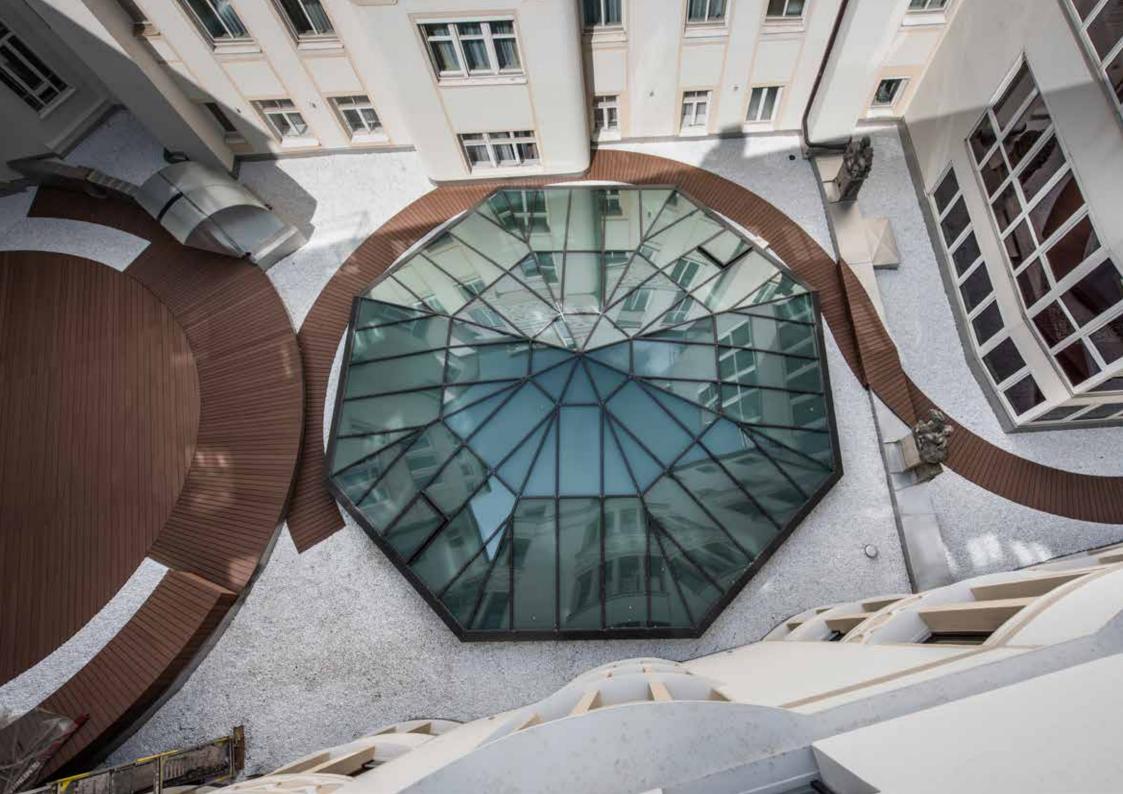


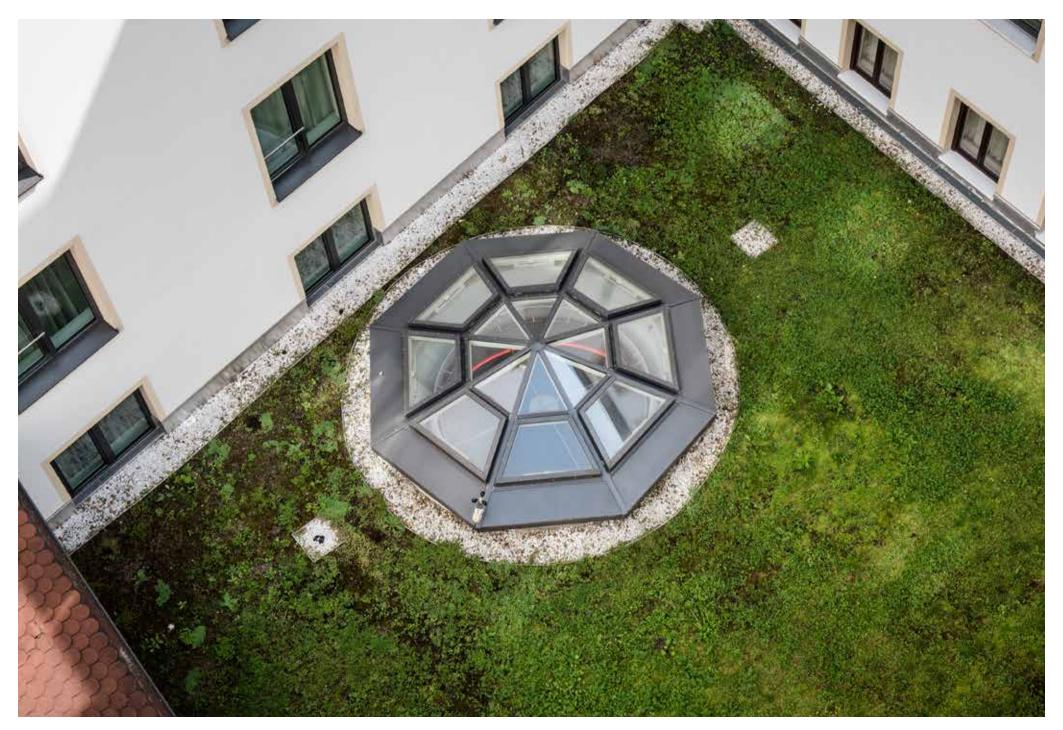
### HOTEL 4 JAHRESZEITEN MUNICH | GERMANY

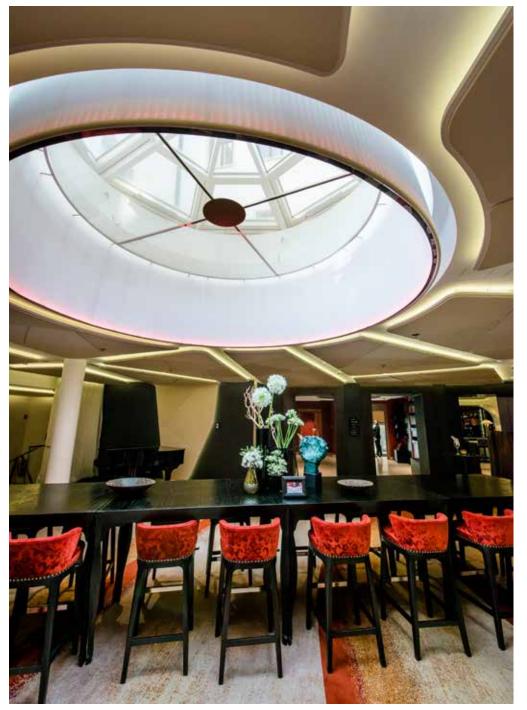
The newly refurbished, pyramid shaped glass roof above the inner courtyard of the luxurious hotel 'Vier Jahreszeiten' in Munich elegantly combines design and daylight. The LAMILUX Glass Architecture PR60 in the shape of an octagonal pyramid, mounted above a roof-mosaic construction, ensures sufficient daylight in the lobby. Simultaneously, the 12m x 12m wide and 15° inclined construction is the eye-catcher of the inner courtyard of the hotel.

The pyramid shaped roof structure features double layered sun protection glazing with a matt foil. Two ventilation flaps type M for the daily ventilation were integrated into the construction, as well as two entrance flaps to allow for the internal cleaning of the glass roof construction.

Due to the location of the hotel in downtown Munich and the limited space available in the inner courtyard, this project placed high logistical demand on LAMILUX. In order to dismantle the existing roof and install the new glass roof on top of the steel structure, a weather protection roof had to be constructed.











# AIRPORT FRANKFURT FRANKFURT | GERMANY

At the PTS railway station of Frankfurt Airport, two new LAMILUX glass roofs, each measuring 12m x 47m, were supplied and installed to provide ample daylight and smoke ventilation. The two LAMILUX Glass Architecture PR60 systems were created in the form of a barrel shaped roof to compliment the re-design and phased expansion of the station.

Due to its location of the railway station being situated in the security area, and close to the air traffic, this project was coupled with pronounced logistic expenditure. Careful planning ensured that the installation of the project ran smoothly to cause as little disruption to the working railway station as possible. The entire equipment had to undergo a comprehensive security check before the start of the construction and high safety requirements throughout the construction work by LAMILUX had to be met. Furthermore, the assembly could be carried out only at night, as one of the railway platforms at a time had to be closed for the works undergone.

The barrel shaped glass roof PR60 systems were expertly installed on a steel construction provided by the customer. On the side of the barrel roofs sun protection glazing was used, to ensure comfort within the building, whereas for the curvature, insulating panels were used.

For safety measures, within the busy station, sixteen LAMILUX SHEV Flaps Smoke Lift type M were integrated within the rooflights to extract smoke and heat in the event of a fire. Below the steel construction, a fire alarm system was installed, which triggers the SHEV plant via an interface and opens the flaps with the help of a 230 volt electrically controlled chain drive.













#### LAMILUX Heinrich Strunz GmbH

Zehstraße 2 · P.O. Box 1540 · 95111 Rehau · Tel +49 (0) 92 83 / 5 95-0 · Fax +49 (0) 92 83 / 5 95-29 0 information@lamilux.de · www.lamilux.com