

sapa:

Architectural Aluminium Solutions



abc

Education

Sapa Building System

Education



Educational buildings must facilitate the transfer of skills and knowledge and improve the experience of teachers and students alike. They should also bear witness to a community's ambition and belief in itself. Sapa Building System provides architects and builders with first rate materials that are geared to achieve these aims.



sapa:

Education empowers people with knowledge and culture and is therefore a nation's most priceless asset. Consequently, by investing in the construction and expansion of their teaching and training facilities, nations and communities fulfil the necessary prerequisites for their intellectual development and international competitiveness.

Inspirational university campuses, pleasant schools and welcoming training centres all play their role in the effective transfer of skills and knowledge to pupils, students and professionals in all walks of life. In their constant attempt to attract promising students from all over the world, major universities provide innovative and modern facilities to enhance the student experience and distinguish themselves from the competition.

Design and architecture have a defining influence on today's educational establishments. They aim to provide students and teachers with the best possible learning environment. Sapa Building System has developed a complete product offering that combines smart, contemporary appearance with features to ensure optimum incidence of light, easy accessibility and proven safety and security. In addition, our products perform well in respect of energy efficiency and sound proofing.

For the construction of schools, universities and educational facilities, Sapa Building System is committed to working closely with key specifiers including architects, public authorities, main contractors, fabricators and specialist installers. Our Research & Development, Sales & Marketing and Supply Chain teams set the standard for delivering added value architectural aluminium solutions.

For the future, Sapa Building System's core values of loyalty, quality and innovation together with our entrepreneurial approach will drive our processes towards continuous improvement for specifiers and our customers across all of the markets we serve.

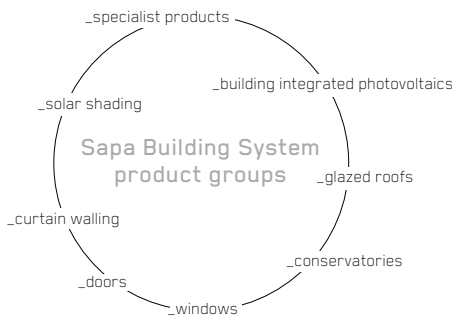
I am convinced that this approach to working closely with our customers is the key to long term, mutually profitable growth.



Hans Johansson
President Sapa Building System



From primary to secondary schools through to colleges, academies and universities, Sapa Building System offers a vast choice of design, finish and performance. Our products and solutions lend lustre to everything from small school buildings and modular student accommodation to entire campuses.



Sapa Building System product ranges provide design solutions in new build and refurbishment for a vast range of educational projects.

Natural light

Natural light is a vital prerequisite for creating an efficient learning environment for students and teachers. It helps concentration and reduces fatigue. Optimising the entry of natural light contributes to teachers' and students' well being and leads to energy savings. Sapa Building System's glazing solutions allow buildings to literally open up to the outside world. Our window, door and curtain walling systems provide architects with exciting possibilities for brightening up their building design. At the same time we can provide control of excessive natural light levels, for example when teaching requires the use of computer screens, white boards and projected images.

Comfort

Classroom ventilation and temperature control are essential for creating an ideal studying environment. To ensure highest performances, Sapa Building System has developed glazing solutions with outstanding thermal efficiency ($U < 1$). When combined with solar shading, they provide optimum energy management conditions, capturing day light in winter and protecting from sun heat in summer. Adapted ventilation systems ensure healthy air at all times.

Acoustic

Sapa Building System's acoustic insulation is very effective (> 40 db) and meets the most stringent European standards. Our aluminium profile solutions exclude unwelcome noise and we tailor custom solutions to the specific needs of the project. We screen off noise from nearby roads and provide noise abatement around playgrounds and between classrooms.

Accessibility

When designing schools, architects need to find ways to facilitate large circulation flows of students around the site. They also have to provide easy access for people with reduced mobility. Sapa Building System provides bespoke access solutions including heavy traffic doors, patio doors with invisible thresholds, automatic doors, and access control and safety systems in case of emergency. All of which meet the highest standards of safety and durability.

100,000 Chances, 1 Solution



People's safety and environmental protection are absolute priorities for the construction of public buildings. Sapa Building System's product offer comprises a great variety of advanced systems that can be adapted to any given situation.

Safety

Universities, schools and nurseries must provide consistently high levels of security and safety and must be designed to withstand the onslaught of literally thousands of personnel movements every day.

Sapa Building System offers specific product ranges designed to optimize children and student safety ranging from anti-finger trap stiles and anti-ligature hardware to sliding window systems with limited opening for ventilation and low threshold doors for easy access.

Sustainable development

Sapa Building System's product range includes solutions for both passive and active carbon emission reduction. Elegance SC (Solar Control) combines a reduced transmission of radiation with a lower solar gain inside the building, reducing cooling needs and resulting in a more carbon efficient building. Double skin façades also contribute to this goal by providing natural ventilation. Sapa Building System's building integrated photovoltaic solution transforms the building envelope into an active skin generating electricity. Furthermore, aluminium and glass can be endlessly recycled without degradation of physical properties.

CE Marking

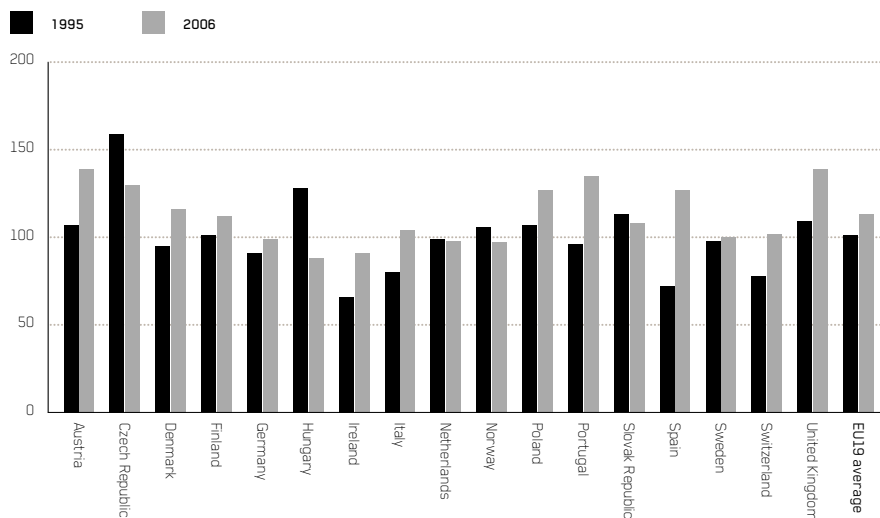
Sapa Building System offers solutions for doors, windows and facades which conform to specified criteria for CE marking according to EN 14351-1 valid as of 1 st February 2010.

Fire rated solutions

Fire rated constructions save our lives, our property and environment. Sapa Building System provides certified solutions for windows, doors and facades.

- » Extensive range of fire resistance performance from EW 15 to EI 120.
- » Possibility to incorporate a wide range of glazing and opaque panel specifications.
- » Simple accommodation of an additional feature – smoke tightness.
- » Many types of surface finish including a wide scale of colours.
- » Visual compatibility with non-fire resistant systems.
- » Ability to use different types of locking systems as well as self-locking and door closers, panic bars and door operators.

Change in expenditure on educational institutions for all services per student



The expenditure per student on educational institutions systematically rises in almost all of the European countries.

source: OECD (Index of change between 1995, 2000 and 2006 (GDP deflator 2000=100, constant prices))

24 Countries, 1 Solution



When it comes to engineering support and planning, the experience of Sapa Building System and its partners is a guarantee for a timely execution of your school, university or other educational building project.

Cross-border cooperation coupled to our determination to succeed means you are always supported by Sapa Building System's support network. Advice, assistance and problem solving are never far away no matter where your project is.

Maintenance

Robust design is key to ensuring that our products function correctly time after time even in the hardest of environments. In the event of glass breakage, our window systems allow fast reglazing ensuring minimal disruption without compromising security. Sapa Building System's hardware policy guarantees locksmith availability through our dealer network.

One stop shop

The skills and expertise of Sapa Building System's teams guarantee effective project support from initial design to installation on site. Fabrication and installation are handled by our network of specialist contractors, covering every geographic area.

01. Concept Consultation
02. Concept Design
03. Project Costing
04. Thermal, PV Calculations
05. Wind Loading Calculations
06. Engineering System design
07. Supply
08. Installation

Efficiency

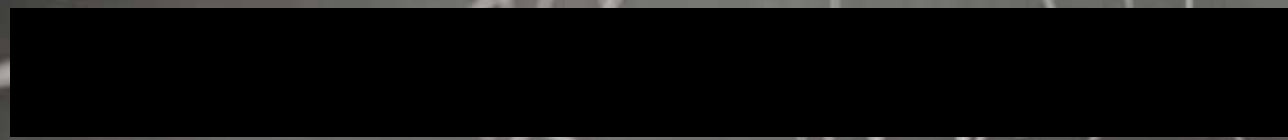
Professional advice is always available from Sapa Building System's sales and project teams who provide the link between our fabricating customers and architects, contractors and specialist installers.

Fabricator network

Present in more than 24 countries, Sapa Building System's fabricator network provides advice and assistance for specifiers right through the supply chain. We work closely with our authorised fabricators and installers to ensure that they have the latest product details to hand and they have the correct systems and procedures in place to handle all sizes of installations. It literally is true that our customer base can cope with anything from a small scale refurbishment to a high profile, high cost new build development. Cross-border cooperation coupled to our determination to succeed means you are always supported by Sapa Building System's support network. Advice, assistance and problem solving are never far away no matter where your project is.

Vorticity

$$\frac{\partial}{\partial t} + \sum_{j=1}^n v_j \frac{\partial v_i}{\partial x_j}$$



$$u \cdot \nabla_x \varphi \text{ div } u = 0$$

formal integration

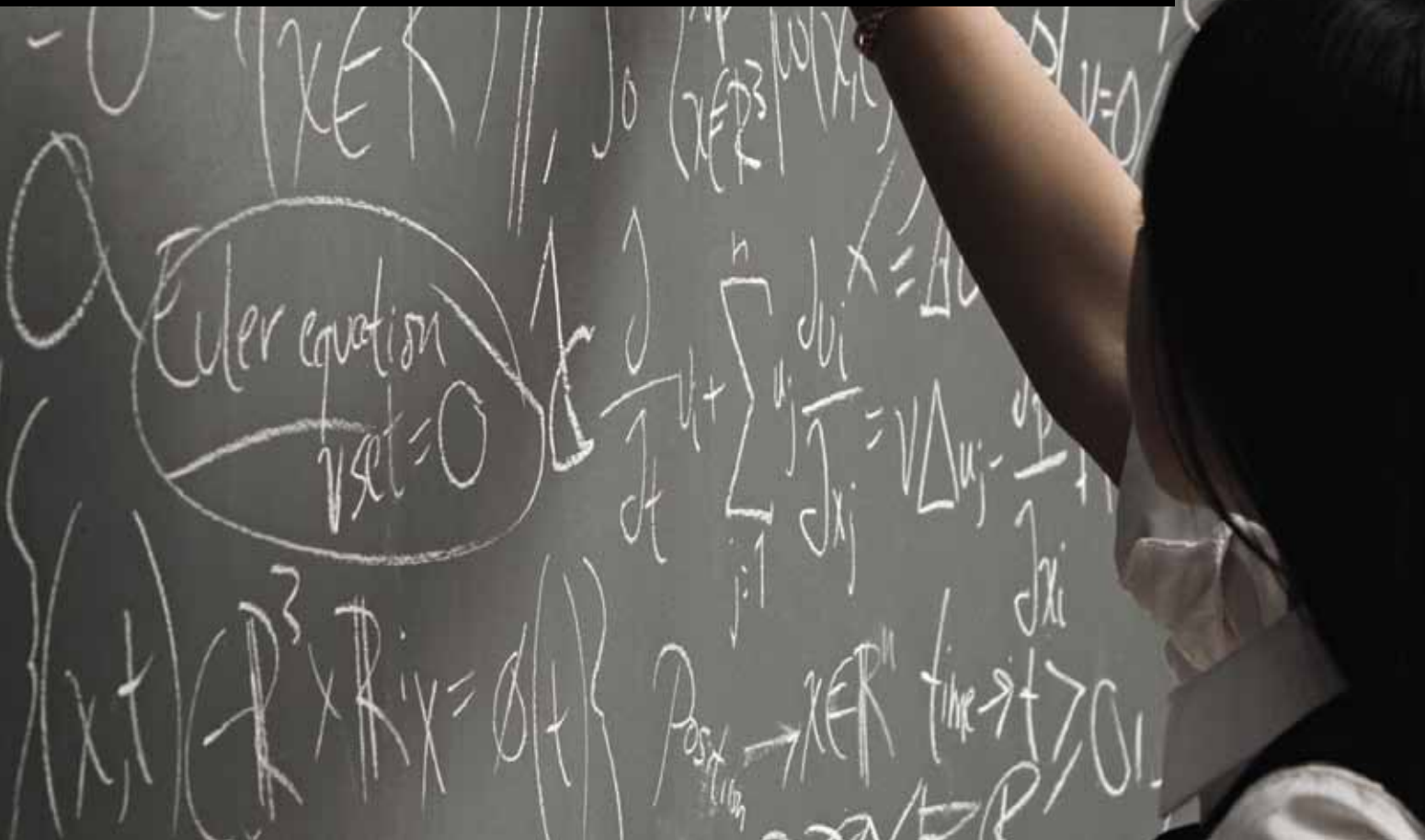
gravity
viscosity
Laplacian

$$\mathbb{R}^3 \times \mathbb{I} \subset \mathbb{R}^3 \times \mathbb{R}$$

$$\mathbb{R}^3 \times \mathbb{I} = \mathbb{R}^3 \times \mathbb{I}$$



references



Preserving historic and architectural integrity

In 1994 the College of Europe acquired a 17th-century Jesuit college that had been converted into an Athenaeum after the French Revolution and, in more recent years, had housed a comprehensive school. The site, which is located in the heart of the Medieval city of Brugge, measures 5000 square metres and comprises several building structures dating from various historical periods. The oldest building was completed in 1607 and was used as a school by the Jesuits. Another building was first occupied in 1700 and served as a convent. Nearby there is a brewery building dating from the same era.

Apart from twelve new build classrooms and two lecture theatres, all equipped with fully integrated IT systems, the College of Europe's redevelopment plan for the site proposed a reception room, an underground bicycle shed and several amenities.

In renovation projects the preservation of the original appearance of the building is generally a key requirement. The Historic Buildings Trust of the Flemish Community did indeed impose strict rules on the use of building materials. The appearance of the external joinery turned out to be a critical factor in the preservation of the historic and architectural integrity of the site.





Project: Europa College

City: Brugge - Belgium

Architect renovation: Arch. Michel Van Langenhove

Architect new build: Xaveer De Geyter Architecten

Phased execution of the works

Before the works could begin, the site had to be opened up to ensure access for fire brigade appliances and while the grounds were being cleaned up, 13th-century foundations and remains of dye shops were uncovered. Everything had to be investigated by archaeologists, which caused some delay, but also yielded valuable information about the crafts and trades of the medieval period.

The architects first focused on the 17th-century monastery building, whose façade was plastered over during renovation works in 1850. They largely restored the original floor plan and although they opted for a phased approach, they treated the building as an indivisible entity, precluding a phased occupation of the premises. The first phase was terminated in 2007.

The choice of profiles

The windows and doors in the original buildings exemplified all architectural styles and fashions of the last 400 years. This prompted the architects to specify Sapa Building System's contemporary and unobtrusive aluminium profiles. More specifically, they chose the Excellence 65 Reko three chamber sections with anodised (natural colour) finish. In addition to providing improved thermal efficiency the slightly beveled off profiles bring an airiness to the façade.

Traces of dormer windows were found in the truss of the monastery building, but it could not be established whether or not they were part of the original design. Still, the architects decided to add electrically operated dormer windows.





"In addition to providing improved thermal efficiency the slightly beveled off Excellence 65 Reko profiles bring an airiness to the façade of the old monastery building housing the College of Europe."



Project: Karlstad Universitet
Architect: Christian Frisenstam, NFR Arkitektkontor
City: Karlstad - Sweden



Karlstad Universitet

Karlstad, Sweden

At the request of Akademiska Hus, the architects have designed a new building with a striking profile and an imposing presence for the Karlstad University. The building houses research and teaching facilities for the Technical and Engineering Sciences Faculties.

The university strives to implement new teaching and learning approaches that mesh well with developing technologies. Therefore, one of the designers' main goals has been to shape the physical environment so as to support the learning process. In doing so, they have translated the university's high ambitions into an open and multifunctional building with a range of innovative solutions.

Apart from accommodating technical research and teaching facilities, the building provides conditions for multidisciplinary co-operation and contributes significantly to the urban character of the area. The design connects semi-private teaching zones and private office areas with the open public area.

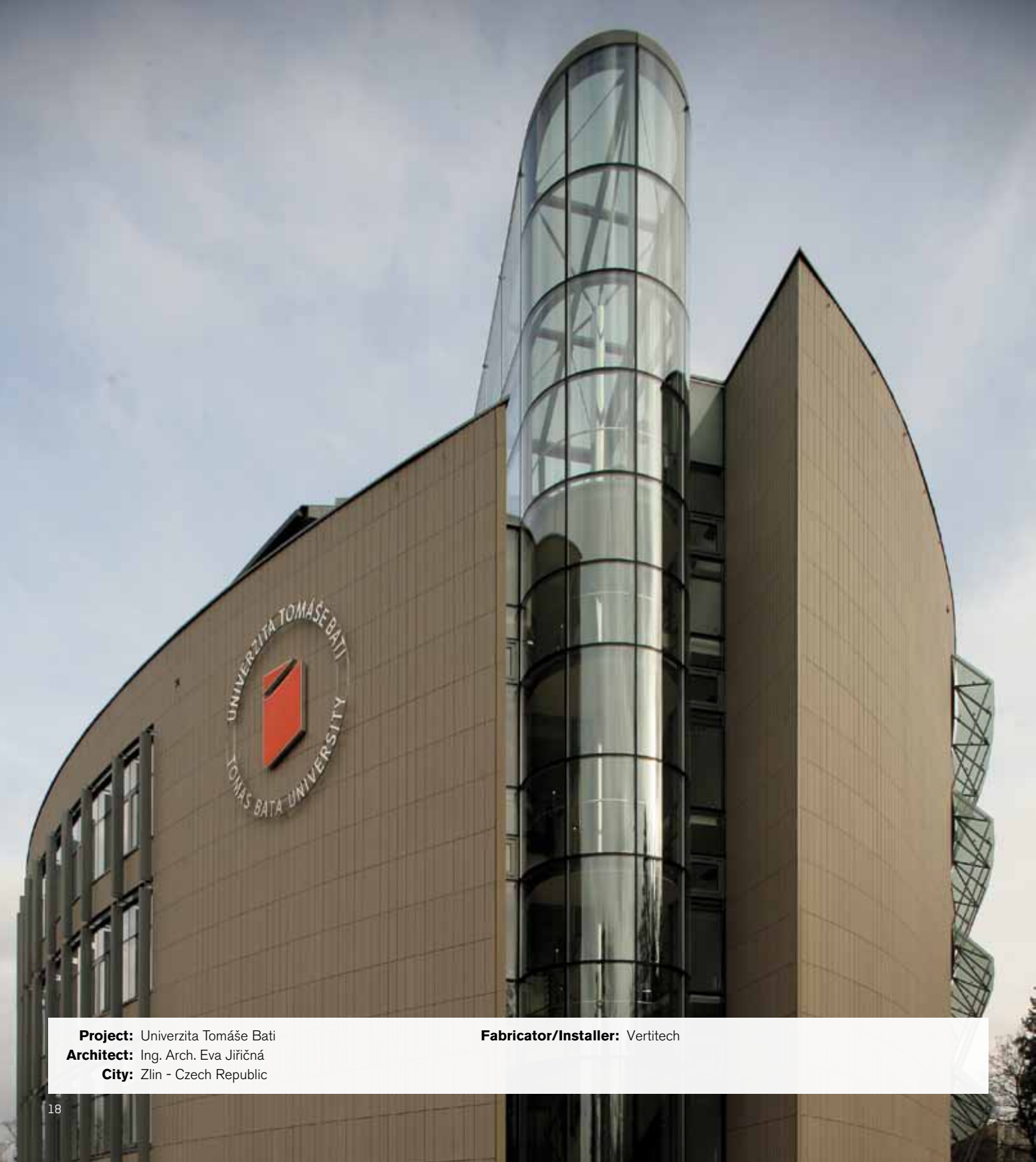
The building has a central indoor passage which opens to a square in the south. An open glazed façade, supplied by Sapa Building System meets the visitors. Above the glass façade a roof structure protrudes ten metres over the pedestrian passage. At the point where the passage opens to the square, there is a café and an auditorium. The latter is shaped as a spherical body which seems to hover inside the building.

To the east of the indoor passage the teaching facilities have been laid out as four transverse ribs. They have flexibility built into them so as to accommodate ever-changing teaching requirements. The building has a footprint of approximately 15,600 square metres.

Systems provided:

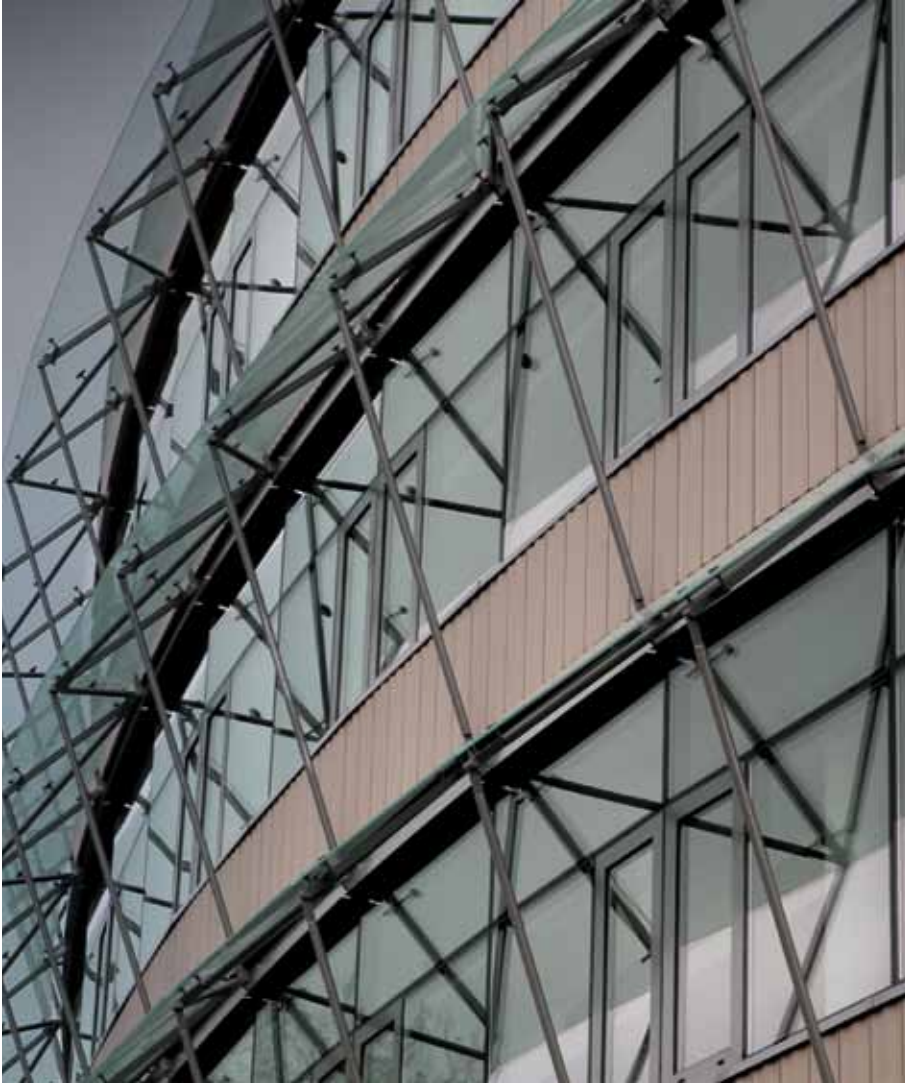
Curtain walling

Windows and doors



Project: Univerzita Tomáše Bati
Architect: Ing. Arch. Eva Jiříčná
City: Zlín - Czech Republic

Fabricator/Installer: Vertitech



**Univerzita Tomáše Bati
Zlín, Czech Republic**

The Tomáš Bafa University in Zlín, situated in the south-east of the Czech Republic, incorporates six teaching faculties which cover courses in humanities, arts, natural and technical sciences.

The university brings together many leading scientists and researchers both from the Czech Republic and abroad. With its 13,000 students the Tomáš Bafa University is a medium-sized institution fostering contact between students and professors and encouraging interdisciplinary work.

The university provides on-campus residential accommodation for 1050 students as well as a restaurant seating 225 people. In addition, there is a sports and wellness centre comprising a swimming pool and squash and bowling facilities. Sapa Building System is proud to have contributed to the realisation of this new and prestigious university complex.

Systems provided:

Curtain walling

Windows and doors



Peter Wust Gymnasium

Merzig, Germany

The Peter-Wust-Gymnasium (PWG) was named after the Rissenthal-born Saarlandish philosopher Peter Wust (1884-1940). The school teaches modern languages, mathematics and natural sciences and has on average more than 850 pupils.

Because of the intensive use of the windows and doors in the new school building, it was decided to use aluminium profiles with sufficient wall thickness for all public areas. The architects opted for Sapa Building System's super-insulating, thermally broken aluminium system Excellence 75 SI, combined with high performance glazing. Together, these products meet the strictest thermal requirements as laid down by the German Government.

Sapa Building System's Elegance 52 system proved to be the best solution for creating the building's subtly bended façade. The system's excellent thermal insulation qualities tipped the balance.

Systems provided:

Curtain walling

Windows and doors





Project: Peter Wust Gymnasium
City: Merzig - Germany

Fabricator/Installer: Alu Bau Klees

Hall of University of Economics Bratislava, Slovakia

The new lecture hall of the University of Economics in Bratislava was designed to host the key events of the academic year, ranging from graduation ceremonies to guest lectures delivered by renowned foreign professors.

The university was established in 1940. In 1983 it was decided to alter and extend the existing buildings to improve the facilities for students and academic staff. Since then the number of students has risen considerably and at the beginning of the third millennium it was deemed necessary to build a completely new lecture hall.

The main goal of the architects was to design a truly multipurpose building. They used a Sapa Building System's curtain wall façade to open up the building to its surroundings and to let in maximum daylight. All window actuators are connected to a fire prevention system.

Systems provided:

Curtain walling





Project: Hall of University of Economics
Architect: Arch. Kálay ml., Ing. Arch. Bolčo
City: Bratislava, Slovakia

Fabricator/Installer: STUDIAL s.r.o.



Project: Internat de Diekirch

Architect: bsarc

City: Diekirch - Grand Duché de Luxembourg



Combining the functional with the aesthetic

The Diekirch boarding school, located in the heart of the Bamertal quarter, had lain derelict for many years until it was included in a comprehensive redevelopment scheme launched in the 1980s. The aim was twofold. On the one hand, it was necessary to re-establish contact between the town centre and the Bamertal quarter, which was built on the site of a former brewery. On the other hand, it was equally important to integrate the boarding school in the urban fabric.

Accommodating resident and non-resident students
The boarding school was built in a contemporary style and has a 13,000 square metres footprint. It consists of two separate sections. The facilities for non-resident students are grouped together on the former brewery site. They are leaning against a hill which they seem to visually extend with their sedum roofs.

The section for the resident students consists of three identical wings which are separated from each other, but connected by an enclosed street which is used as a public space where pupils and teaching staff can walk and ride their bikes. Apart from the contemporary furnished private rooms and bathrooms the three wings also comprise nine communal spaces. The architects specified concrete floors and large glazed façades allowing all the rooms to bathe in light.

Windows and aesthetics

Sapa Building System's Excellence 75 SI profiles accentuate the buildings' austerity of line. The architects played with the rhythm of the rooms' windows by combining a narrow opaque panel with a large transparent panel in each casement. The small panel is made of aluminium for easy maintenance and is used for ventilation only. It can be opened a few centimetres to the outside when unlocked. Thanks to the use of special espagnolette locking bolts the large glazed panel opens to the inside for easy cleaning.





Sapa Building System suggested using a special type of casement profile to ensure that it is not visible from the outside that the windows can be opened. In addition, Sapa Building System also advised using a bespoke profile to accommodate for the fact that the window panels open in different directions. The architects considered this to be a functional as well as aesthetic solution and adopted it.

Systems provided:

Windows

"Sapa Building System's Excellence 75 SI profiles accentuate the buildings' austerity of line. And the use of bespoke profiles made it possible to meet all functional as well as aesthetic requirements."



Project: Academy Of Physical Education
Architect: Autorska Pracownia Architektury
City: Katowice - Poland

Fabricator/Installer: Norma Śląska Fabryka Okien I Drwi



Academy Of Physical Education Katowice, Poland

Since the early nineteen-fifties the training of physical education teachers and sport instructors has become a real tradition in Upper Silesia. The new complex of the Academy of Physical Education in Upper Silesia comprises a multipurpose hall that can accommodate an audience of over 600 people, a gym, a squash court, bowling and fencing alleys, a 25-meters long swimming pool and a smaller warm-up pool. All facilities are approved for international-class competitions.

Almost 95% of the construction was financed by the Ministry of National Education and Sport. To ensure the safety of all users and visitors of the building, the designers took extra care when selecting a supplier of window and door systems and fire-resistant partitions. Sapa Building System won the tender by proposing its Thermo74 FR system, which easily meets all European requirements and local standards.

Systems provided:

Windows

Internal partitions and doors

**Faculdade de Ciências da Saúde,
Braga, Portugal**

The School of Medical Science is situated in the centre of a quiet though animated University Campus and has rapidly gained landmark status in the northern Portuguese city of Braga.

The light open design allows plenty of daylight into the building, whose most striking feature is a curtain wall. The architects designed casement windows with the anodized champagne coloured profiles which have a distinct sheen to them.

Systems provided:

Curtain walling

Windows and doors





Project: Faculdade de Ciências da Saúde
Architect: JSTC Arquitectos
City: Braga - Portugal

Fabricator/Installer: Martins , Ferreira e Cerqueira , Lda



Project: Broadcasting Place
Architect: Feilden Clegg Bradley
City: Leeds - UK

Fabricator/Installer: North Cheshire Windows Ltd



Broadcasting Place

Leeds, UK

Winning praise from the Commission for Architecture and the Built Environment (CABE) for its elegant simplicity, Broadcasting Place is revitalising a complex conservation site in the centre of Leeds. The £50 million (€ 57 million) scheme, designed by Stirling Prize Winning architects Feilden Clegg Bradley, features a 23-storey tower, containing 240 student residences, and 130,000 square feet (12,000 square metres) of new teaching space which has been entirely pre-let by Leeds Metropolitan University.

The development safeguards the preservation of the historic Grade II Listed Broadcasting House, as well as creating a new Baptist Church for the local community.

Systems provided:

Windows and doors

Curtain walling

Roof glazing





**Kadir Has University
Istanbul, Turkey**

The original building, which was built in 1884, had long been used as a cigarette factory. In recent years it was acquired by the Kadir Has University, which had development plans for the site. Architect Mehmet Alper was commissioned for the development and conversion of the building. The extensive alterations took four years and were completed in 2002.

Although new building was enlarged with several additions, the site retains much of the original architecture and character. The architect strived for simplicity and purity and let in as much daylight as possible. He opted for Sapa Building System's Elegance 52 curtain wall system and decided to put a very pleasing glass roof over the atrium. The project was awarded "Diploma Award" by the European Federation for Cultural Heritage in 2004.

Systems provided:

Curtain walling





Project: Kadir Has University
Architect: Mehmet Alper - Tures Mimarlık
City: Istanbul - Turkey

Fabricator/Installer: Art Aluminium

Ecole de Beausorbre Morges, Switzerland

This school is located in the midst of a recreational park on the east side of Morges, a village near the Lake of Geneva, facing the beautiful Mont-Blanc Mountain. With its 14,000 habitants Morges is the ideal home base for more than 800 students.

For this renovation project Sapa Building System developed a special solution by combining a standard window system with integrated sliding door modules. The base frame uses Sapa Excellence 65 profiles. These are the basic components of a thermally broken three-chamber window and door system with a building depth of 65 mm. They ensure a high standard of stability and thermal insulation.

The core of the solution is based on the Maestro slim frame sliding door system. For the Beausobre school an insulated version of the system was used and a very appealing profile design was combined with a wide range of design handles that were ideally suited to specific applications.

Special frame profiles were used which combine the conventional frame rabbit with grooves for fixing finishing plates. The Maestro series is compatible with other Sapa Building System products such as curtain walls, conservatories and insect screens. A combination of multipoint locking and filling plugs with additional security features assure a higher safety.

Systems provided:

Curtain walling

Windows





Project: Ecole de Beausorbre
City: Morges - Switzerland



Project: Santral Istanbul University
Architect: Emre Arolat, Nevzat Sayin
City: Istanbul - Turkey



Santral Istanbul University Istanbul, Turkey

The Silahtaraga power plant was in operation from 1911 to 1983. After it was closed down, it was decided the site would be redeveloped to house the Bilgi Üniversitesi-Santralistanbul Campus. Works commenced in May, 2004. Three of Turkey's leading architects cooperated closely on the project which involved the creation of totally new high-quality teaching and learning facilities and the design of a museum.

The former power plant buildings were thoroughly converted and refurbished and several new extensions were added. Sapa Building System's Elegance 52 curtain wall system was specified to allow maximum entrance of natural light. While making it easier to read the building's internal structure from the outside, the glazed, transparent façade also testifies to the university's openness to society. The renovated and enlarged building was first occupied in 2007.

Systems provided:

Curtain walling

Windows





Project: Videregående skole
Architect: Christensen og Søberg
City: Lier - Norway



Videregående skole

Lier, Norway

The Lier Secondary School is the result of the merger of the Jensvoll State Gardening School with the Linnsvollen Secondary School on 15 August, 1998.

The two schools had a lot in common. They were founded at about the same time and their respective buildings were designed by the same architect. The architect in charge of the new construction was especially concerned about preserving the style and character of the original architecture.

The new building is a showcase for modern and purposeful school architecture. The choice of materials and craftsmanship is wholly in line with the overall concept.

The Lier Secondary School has now become an exciting and all-round school offering four lines of study. It even has a resource centre for autistic students and a competence centre for gardening.

Systems provided:

Curtain walling

Windows and doors

Solar-shading

‘The Learning Village’ heralds the regeneration of a deprived area

This project comprises new and upgraded accommodation for a recently created federated School for 1700 students, combining on an inner city campus the existing and successful Girls’ School with a failed Boys’ School, all under a single leadership. It includes Boys’ and Girls’ secondary Schools, a sixth form centre for 16-18 aged students, and a community centre. At £29 million construction value, it is one of the largest projects funded by the Department for Children, Schools and Families (DCSF).

The federated status involves boys and girls being taught in separate buildings from 11-16 years, but sharing specialist facilities, teaching staff and senior management. The wider concept is for a ‘learning village’ comprising the neighbouring parish church, the adjacent primary and the local community operating in partnership with the School, the Local authority and other stakeholders to provide education from the age of 3-18 and beyond. The project represents a significant regeneration initiative bringing many economic, environmental and planning benefits to this deprived area in the East End of London. Shared community use of the new School facilities is a key ingredient to the ongoing regeneration of the area.

The design solution

Perkins Ogden Architects were appointed by the Archdiocese of Westminster in Summer 2004, following competitive selection. Initial master plan and design options were appraised to develop an integrated development on the tight inner city site. This avoided the need to purchase an alternative detached site for the new Boys’ School. It made possible the replacement of the existing Girls’ School buildings, which were mainly poor quality 1960s/70s blocks.





Project: Bishop Challoner Catholic Collegiate School
Architect: Perkins Ogden
City: Tower Hamlets, London, UK

Fabricator/Installer: Fleetwood Windows Ltd

The resulting design succeeds in resolving a number of significant and potentially conflicting design constraints, by:

- » adopting a phased programme of construction, with four main phases, to maintain School operations;
- » bridging the building over a residential street to unite the divided site;
- » locating buildings above hard play areas, allowing an integrated campus for all parts of the federated school within a constrained available site area, (significantly below DCSF guidelines);
- » using passive attenuated ventilation systems to achieve satisfactory environmental conditions on a site bounded to the north by the busy A12 Commercial Road (the main route into the City from the East) and to the South by railway viaducts carrying the London-Southend line and the Docklands Light Railway;
- » planning arrangements to keep 11-16 aged girls and boys separate whilst sharing specialist facilities.

The preferred design solution comprises approximately 13,500m² of new-build accommodation and 2,500m² of existing refurbished and adapted facilities. The development was tendered using a two-stage process with the resulting design taking advantage of the opportunity for collaboration with the building contractor (albeit within the constraints of a traditional building contract).

Building a new school while teaching carries on as normal

A major challenge facing both the School and the Design Team was to maintain the operation of the existing School whilst constructing the new building over four phases. The zinc clad elevated teaching blocks perched on dramatic inclined columns provide sheltered playground areas, maximizing the use of the tight urban site whilst creating a strong identity for the School and neighbourhood.



"The zinc clad elevated teaching blocks perched on dramatic inclined columns provide sheltered playground areas, maximizing the use of the tight urban site whilst creating a strong identity for the School and neighbourhood."



The inner city site is extremely constrained. The new building responds to this by bridging a public highway to access further available land. This zinc-clad elevated block forms an 'inhabited bridge' containing general teaching accommodation. Shared specialist facilities are arranged at the street level frontage, reinstating the historic urban grain using a traditional London Stock brick.

The building programme commenced in 2005 with the adaptation of the sole existing retained building. This was converted to a sixth-form centre for 350 students and has been occupied since September 2005. The first new building was occupied in autumn 2007, with the last major construction phase completed in late 2009.

Systems provided:

Windows

Curtain walling





Höskolan Gävle **Gävle, Sweden**

The university in Gävle is located in old military buildings, which have been joined together with some newer additions. The new library, with a gross area of 5,155 m², is situated in the middle of the old barrack square and its round form and inclined walls contrast with the austere barracks. The north side of the building is plastered in white. The south façade is covered with oiled larch wood and glazed towards an inner yard. The access of sunshine is moderated by means of external silk-screen printed glass sheets and internal sun curtains. The roof is covered with sedum in order to reproduce the green area of the barrack square. The round form expresses the idea of the library being an important social meeting place, "an arena of knowledge". The reading places are located on three levels along curved terraces, facing the inner yard. It is easy to catch eye contact and the visibility factor is high. More peace is offered by the quiet reading room in the low building on the other side of the yard. Out in the yard one can lose oneself in a book or listen to the purling of water.

Systems provided:

Curtain walling

Windows and doors

Solar-shading





Project: Högskola Gävle
Architect: Tirsén & Aili Arkitekter.
City: Gävle - Sweden

Fabricator/Installer: GlasLindberg Fasad AB

Stendhal Liceo

Milano, Italy

The new Stendahl Lyceo was erected in a typically French style, so you would be forgiven if you situated it in a fashionable quarter of Paris. And yet, the building stands in the San Siro quarter of Milan, a residential district in the western part of Lombardy's capital.

The new complex consists of four homogeneous sections which fulfill different functions but share the same communal areas. The first section comprises the entrance hall and all public spaces (library, polyvalent room, administrative area and lecture theatres for art teaching). It is considered as 'the face' of the school. The second section encompasses the teaching and learning facilities and extends the entrance hall eastward while bordering a southern-oriented playground. The third section is a one-storey building housing the nursery and primary school. It has two western-oriented playgrounds. The fourth section includes all sport facilities.

The supporting façade structure is made of varnished steel pillars and crossbeams. Sapa Building supplied all aluminium window frames. The silk screen printed glazing of the entrance hall reveals the internal structure and organisation of the building.

Systems provided:

Curtain walling





Project: Stendhal Liceo
Architect: Atelier Neuf
City: Milano, Italy

**Högskolan Halmstad,
Halmstad, Sweden**

This new building was designed in a pure and clear form language, which gives it a modern, high class appearance. The façade of the IQ house, which consists of two buildings and a through entrance hall, is made of white and black polished concrete. Aluminium sun shades and some judiciously integrated wood elements and yellow-coloured surfaces add a warm and playful touch to the construction.

The interior of the building is dominated by white, light grey and oak structures. Sapa Building System's solar protection is integrated in the façade elements.

Systems provided:

Curtain walling

Solar-shading





Project: Högskolan Halmstad
Architect: Fredblad Arkitekter AB.
City: Halmstad - Sweden

Mexborough School

Mexborough, Yorkshire, UK

Frank Shaw Associates designed this 1200-place Secondary School in Mexborough, which has been occupied since January 2009. The school has specialist science status and incorporates a post-16 centre.

The school is designed to promote community engagement and extended learning and has been invested with a sense of drama and dynamism in order to create an environment where pupils want to be, and where they will find learning an exciting and rewarding experience.

This school is part of a £45m Private Finance Initiative (PFI) project and achieved a "Very Good," Environmental Assessment rating.

Systems provided:

Windows and doors

Curtain walling





Project: Mexborough School
Architect: Frank Shaw Associates
City: Mexborough - UK

Fabricator/Installer: QG Architectural Aluminium



Project: VUT Brno
Architect: Ateliér 2002
City: Brno - Czech Republic

Fabricator/Installer: Megamont



VUT Brno

Brno, Czech Republic

The Brno University of Technology (abbreviated VUT) was founded in 1899 as the first University in Moravia. Today, it has become a major Czech university with over 20,000 students and 8 faculties.

According to the prestigious international assessment published in The Times Higher Education Supplement every year, the Brno University of Technology is counted among the 400 best universities in the world.

The University's Centre of Computer Graphics is located in the premises of a reconstructed brewery and a historical monastery.

Systems provided:

Curtain walling

Windows and doors

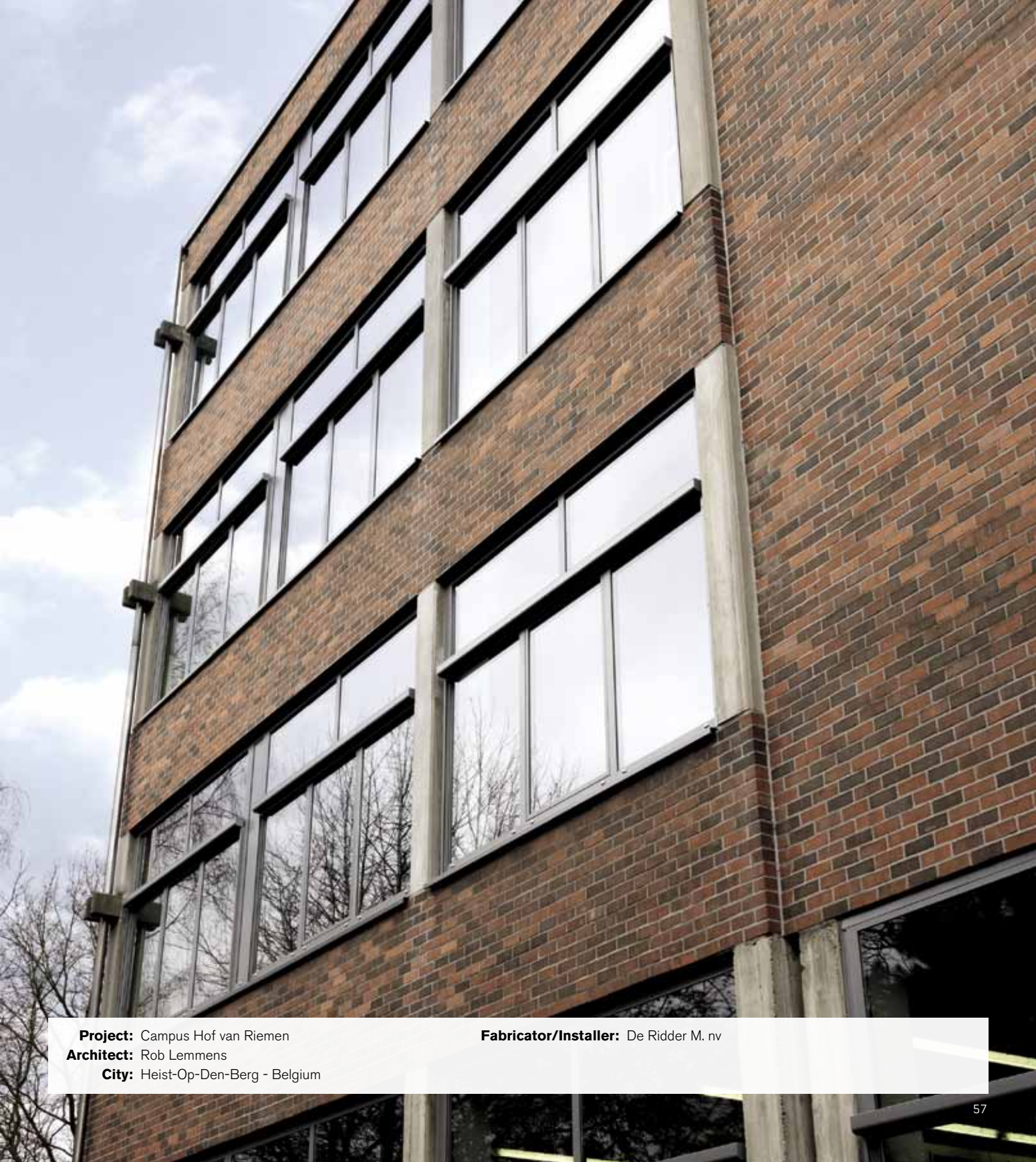
Campus Hof van Riemen
Heist-Op-Den-Berg, Belgium

The Hof van Riemen Campus in Heist-Op-Den-Berg, Belgium, accommodates infants aged 3 months upwards, pupils to 18 years and students in adult education. For the new building the architect specified Sapa Building System's Confort 50 thermally insulated two chamber system for aluminium windows and doors with a building depth of 50 mm. Tilt-turn windows with concealed fittings were used to keep the hinges completely invisible. This allowed for the use of uninterrupted gaskets which ensures airtightness.

Systems provided:

Windows





Project: Campus Hof van Riemen
Architect: Rob Lemmens
City: Heist-Op-Den-Berg - Belgium

Fabricator/Installer: De Ridder M. nv



Project: HTL-Braunau
Architect: Kaufmann-Wanas ZT GmbH
City: Braunau am Inn



HTL-Braunau

Braunau am Inn, Austria

As many old schools in Austria do not comply with legal requirements for fire safety and environmental performance, the government has launched a large-scale renovation campaign. The redevelopment of Braunau's school in Oberösterreich fits in with this campaign. Two of the main objectives were to improve safety and lower heating costs.

In the entrance, the decades-old wooden structures had to be replaced with the Excellence 75 SI thermally insulated multi-chamber window and door system and the Elegance 52 comprehensive curtain wall system. The architects chose Sapa Building System's Elegance 52 façade because it allows plenty of daylight into the atrium and corridors and because it totally rejuvenates the building. All doors are fitted with a panic system (EN 1125) and meet all the client's requirements. Security and safety have been greatly improved and heating costs have been drastically reduced.

Systems provided:

Windows

Curtain walling

Haagse Hogeschool

Den Haag, The Netherlands

The Hague University of Applied Sciences presently accommodates 15,000 students and offers more than 170 different courses, trainings and master classes in various fields of study, including 'Economy and Market', 'Health and Sport', 'ICT and Media', 'Management and Organisation', 'Technology and Design', 'Law, Security and Society' and 'Work, Welfare and Education'. The university offers bachelor, master and postgraduate training programmes.

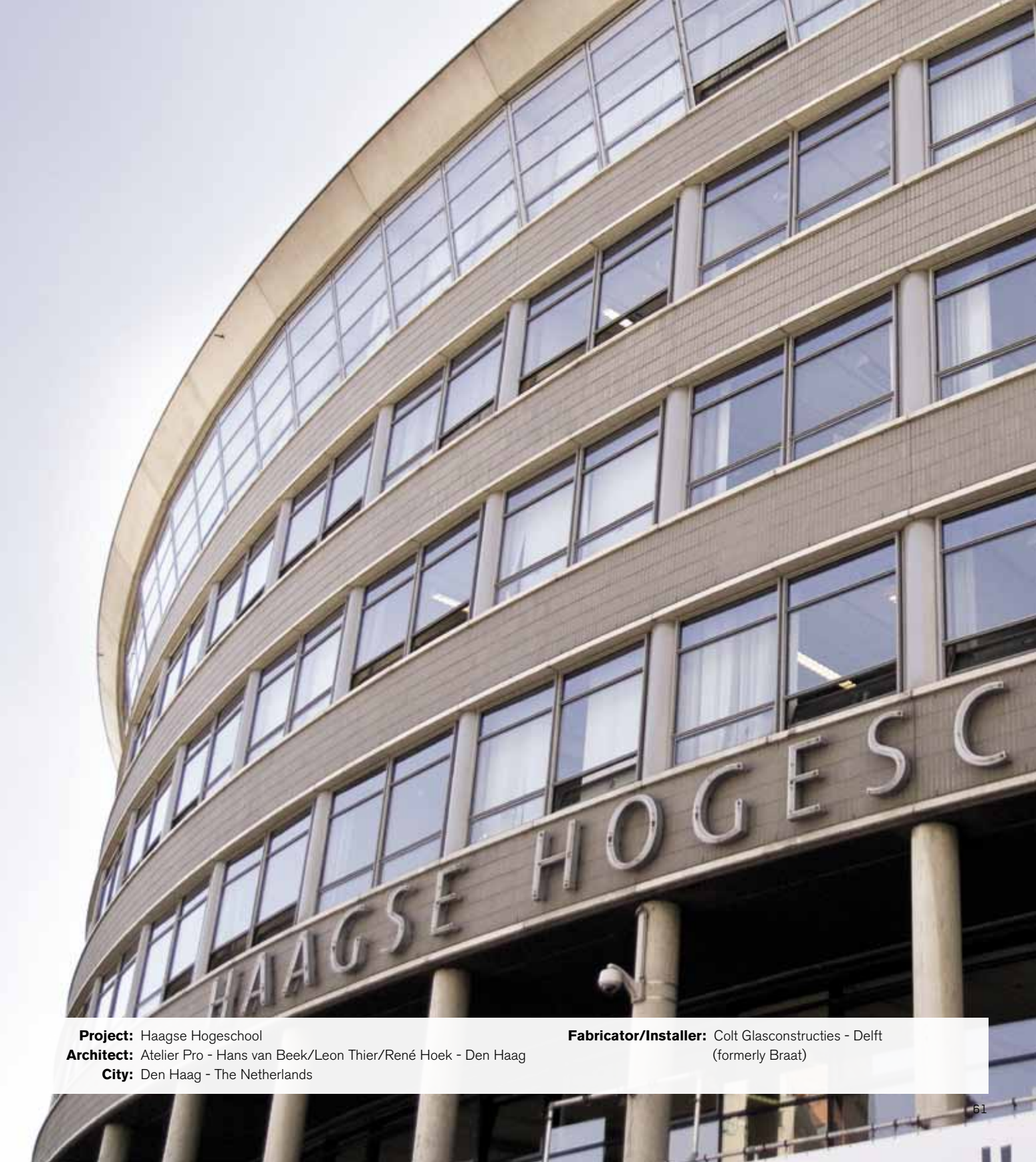
The university building is located behind an NS railway station and is imposing and welcoming at the same time. It presents itself as a small metropolis where each faculty can be compared to a separate quarter having its own character.

To allow the natural light to flood in and to open up the building to its surroundings, the architects used a large glass roof construction over the oval central atrium. Thanks to the fact that the Sapa Building System's Alure series has 'adjustable' angle settings, it was possible for each glass element to have a different trapezoid shape. The Alure skylight system has thermally broken aluminium frames which can be operated manually or electrically. The construction was designed to withstand great water pressure, which was a prerequisite for use on a high building.

Systems provided:

Skylight





Project: Haagse Hogeschool
Architect: Atelier Pro - Hans van Beek/Leon Thier/René Hoek - Den Haag
City: Den Haag - The Netherlands

Fabricator/Installer: Colt Glasconstructies - Delft
(formerly Braat)

IPL - Instituto Politécnico de Leiria

Leiria, Portugal

In an effort to provide the best teaching and learning conditions to its students, the Polytechnic Institute of Leiria (IPL) has invested in modern, well-equipped facilities. The new technical college building has become a distinctive landmark in a new development area in the city of Leiria.

The architecture relies on elegant geometric forms and clear sightlines. The building provides comfort to students and staff and its spacious halls are flooded with natural light through the curtain walling and the finely proportioned aluminium framing of windows and doors.

Systems provided:

Curtain walling

Windows and doors





Project: IPL - Instituto Politécnico de Leiria
Architect: MECH
City: Leiria - Portugal

Fabricator/Installer: Manuel Oliveira Marques



Project: Koninklijk Atheneum Arthur Vanderpoorten **Fabricator/Installer:** De Ridder M. nv
Architect: Grondmij - Zaventem
City: Lier - Belgium



Koninklijk Atheneum Arthur Vanderpoorten Lier, Belgium

The Royal Atheneum Arthur Vanderpoorten in Lier, Belgium, is part of the public school system of the Flemish Community. The architect had specified Sapa Building System's Confort 50 thermally insulated two chamber system for aluminium windows and doors with a building depth of 50 mm.

The 24 mm thick omega-shaped glass-fibre strengthened polyamide strips in the Confort 50 profiles strongly reduce heat conduction. This helps to cut energy consumption, which is good for the environment. For the colour the designers chose RAL 9007 from Sapa Building System's Colorama colour pallet. Tilt-turn windows with locking handles were used for added security.

Systems provided:

Windows



Hull College

Hull, UK

The newly built Faculty of Media and Performing Arts is one of a number of buildings at Hull College that has become a dramatic and exciting showcase for Sapa Building System's (SBS) New Gridframe Elegance 52 curtain walling, windows and doors.

The signature building features a full height curved-on-plan glass wall that creates a strikingly light and spacious interior environment. SBS's fabricator, Commercial Systems International worked closely with the architects for the project, DLA Architecture of Wakefield, to design a new feature cap. This was extruded by SBS and used exclusively on the curtain walling throughout the project.

The windows were fabricated from SBS's Proframe C50, a cost-effective dual chamber polyamide system that allows large opening vents to be constructed. A special feature common to all SBS window ranges is a frame adaptor that integrates directly with the Kingspan cladding that was specified to the sides and rear of the building.

A number of the buildings at Hull College exemplify Sapa Building System's solutions for exterior walls, windows and doors. The newly-constructed faculty for media and the performing arts is one of them. The façade of the main building comprises a curved glass wall from the ground to the roof, giving a light and airy indoor environment.

Sapa collaborated closely with the architects behind the project to design and extrude a new décor-profile for the entire exterior wall. The windows are made from Confort 50 components – a double-glazing system that allows for large ventilation windows. The system also includes a cladding mount, allowing the sides and rear of the building to be clad with panels to achieve a harmonious overall impression.

For the entrances, doors were chosen of the type used in shops for their ability to cope with large amounts of traffic, while being easy to handle and maintain.

Systems provided:

Curtain walling



Project: Hull College
Architect: DLA Architecture, Wakefield
City: Hull - UK

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