sapa:
buildingsystem
ARCHITECTURAL ALUMINIUM SOLUTIONS

Housing

Sapa Building System

Building a home requires careful planning and forethought. It's in Sapa Building System core values to support home owners as well as private and public sector landlords in achieving their goals in the best possible way.

Housing is a key symbol of one's achievement and role in our society and it is also very closely related to quality of life. Condominiums, apartments and houses are places for family harmony, to welcome friends, to relax and socialise. Hence, we can safely say that for most people they are also great sources of security, comfort and satisfaction.

Demographic trends have a strong influence on today's housing construction; against this background, building designers are aiming to provide both home owners and rental tenants with the best living environment. Sapa Building System has developed a complete product offering that combines smart contemporary appearance (or alternatively a sympathetic aesthetic for the renovation of older buildings) with features that ensure optimum transmission of natural light, energy efficiency and physical security. In addition, our products perform well in respect of ventilation, safety and acoustic insulation.

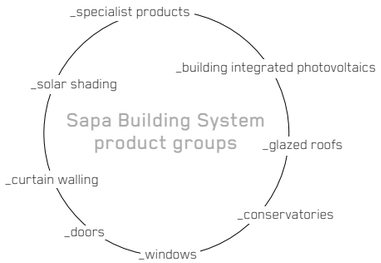
For the construction or refurbishment of condominiums, apartments and houses, Sapa Building System is committed to working closely with key decision makers including developers, social landlords, architects, interior designers, contractors, fabricators and specialist installers. Our Research & Development, 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.

sapa:

Hans Johansson
President Sapa Building System

Sapa Building System's doors and windows have been designed to inspire architects and to contribute to the safety, health and well-being of home owners and tenants.



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

Comfort

Temperature control, ventilation and noise reduction are key features for comfortable and healthy condominiums, apartments and houses. Sapa Building System has developed specialised solutions for:

- Glazing options with outstanding thermal efficiency ($U < 1$)
- Effective acoustic insulation (> 40 db), meeting the most stringent European standards
- Controllable ventilation features incorporated in doors and windows

Natural light

Sapa Building System's glazing solutions allow houses to literally open up to the outside world with large and robust windows, doors or glazed atria and roofs. Our window and door systems provide architects with exciting possibilities for brightening up houses and apartments. At the same time, shutters, solar shading and screens offer efficient solution for light control and protection against solar gain in summer time, with the added benefits of energy savings and increased privacy.

Accessibility

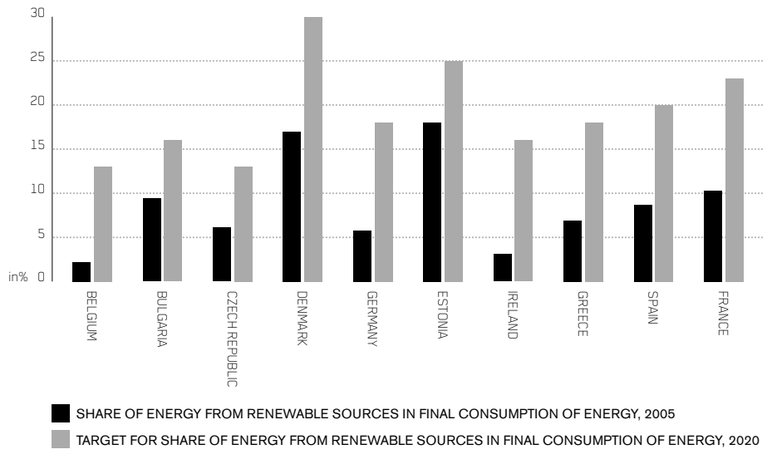
When designing dwellings, architects need to provide easy circulation for the residents and specially adapted access for people with reduced mobility. Sapa Building System provides bespoke access solutions including automatic and powered doors, doors with low or invisible thresholds, access control and safety systems in case of emergency. All of which meet the highest standards of safety and durability.

Safety

Sapa Building System's doors and windows are designed and positioned for easy and safe operation. Windows can be reversed or opened inward for safe internal cleaning, and restrictors guard against the risk of falling. Limiting sharp edges, and the accommodation of safety glazing are further techniques for ensuring the safety of the resident.

Architects aim to stimulate people with creative housing ideas. Sapa Building System provides them with a virtually infinite range of design possibilities from contemporary to more established styles taking into account local environments from urban to countryside.

EU target for share of energy from renewable sources for 2020 vs. 2005 status



source: European Union Committee 2007-2008: The EU's Target for Renewable Energy: 20% by 2020

Design, colours and shapes

Aluminium profiles and accessories offer a virtually infinite range of possibilities. They are available in a vast range of colours and shades including polyester powder coating in gloss or matt finish. Alternatively, anodising provides a subtle sheen of colour to aluminium's natural patina.

Security

We offer fully tested levels of security to recognised standards, and multi-point locking hardware combined with frame reinforcement. Security glazing is all built into our product specifications. Windows and doors can be further equipped with intrusion detectors.

For communal areas Sapa Building System provides full access control solutions and emergency exits are built-in with panic bars. For sensitive areas, we offer a full range of solutions from fire, through anti-burglary to blast resistance.

Robust and functional

Robust design is vital to ensuring that our products function correctly time after time even in the most demanding of environments. Sapa Building System products undergo an extensive testing regime by independent accreditation authorities. The basic premise is consistent: to ensure confidence in performance; CE marking attests to our product quality.

Building sustainability

Eco building is driving housing design to become more environmentally friendly with optimised thermal solutions and solar shading for reduced use of air cooling. Sapa Building System's product range includes solutions for both passive and active carbon emission reduction.

Our integrated photovoltaic solution transforms the condominium and house envelope into an active skin generating electricity. Furthermore, aluminium and glass can be endlessly recycled without degradation of physical properties.

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 housing building projects.

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.

One stop shop

Sapa Building System's teams' expertise provides complete 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 developers, social landlords, architects, contractors and specialist installers.

Site assistance

Field based Project Consultants work closely with our in-house Project Support Team to provide specifiers with specialist advice concerning the correct application of our products for their projects, giving guidance on Building Regulations and other issues such as product specifications, usage, maintenance and safety.

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.

references

Bom Sucesso, Design Resort
Óbidos, Portugal

In an area where the green of the golf course dominates the surrounding landscape, a splendid series of contemporary architectural creations forms the suitable setting for the leisurely and luxurious lifestyle of owners and visitors.

Bom Sucesso Design Resort provides an excellent showcase for what is possible with the Slimslide system developed by Souto Moura. Each of the 20 architects selected to design homes for the Resort, closely collaborated with Sapa Building System to work out suitable solutions for their designs. This has resulted in a series of inventive and convincing applications of the monorail and quadrirail systems.

Systems provided:

Curtain walling
Windows
Doors

Project: Bom Sucesso, Design Resort, Leisure & Golf **Fabricator/Installer:** Maxividro - Inalfer - MetroQuadrado
Architect: Nuno Graça Moura - Gonçalo Byrne - Madalena Cardoso Menezes - Francisco Teixeira Bastos
City: Óbidos - Portugal

Villa, Fjordvej 90
Kolding, Denmark

The home owner's instructions were stringent yet inspiring. He wished for a house that would be framed by white and where the outside and the inside would create one space. He also wanted to have the same view both from the living room or the office on the ground floor and the terrace.

On the basis of this briefing, it was necessary to find a window system which could be installed flush with the floor so that no disturbing steps would ruin the view. In addition the cross-bars and frames would have to be very unobtrusive. And since the home owner attached so great importance to quality, there was no place for compromise anywhere. This led the architect to select Sapa Building System as a supplier.

The front of the house is open towards the Kolding Fjord so that the inhabitants and their visitors can enjoy an unobstructed view over the fjord from the office on the ground floor. Anyone enter the house immediately experiences the great view, unhindered by conventional window frames. This is possible also due to the fact that the terrace balustrade is made entirely of glass, without any handrails. Thus, the view is completely unobstructed.

Systems provided:

Windows

Doors

Project: Villa, Fjordvej 90
Architect: Palle Radik Tegnestue
City: Kolding - Denmark

Fabricator/Installer: ap Facader a/s.

Project: Amesbury and Durrington Towers, Amesbury Estate
Architect: Hunter and Partners
City: London - United Kingdom

Fabricator/Installer: Euro Windows Ltd
Main Contractor: Apollo Group

Amesbury Estate
London, United Kingdom

Lambeth Living is a not-for-profit company, owned by the London Borough of Lambeth. It manages approximately 34,000 tenants' and leaseholders' properties on behalf of Lambeth Council. Recently, Lambeth Living launched a comprehensive window replacement scheme for the Amesbury and Durrington Towers on their Westbury and Mawbey Brough estates. These towers were constructed in 1966 and are each 21 storeys, 62 metres high.

For this project, Lambeth Living availed themselves of the London Housing Consortium's services as a provider of procurement solutions for all public sector buildings. The project convincingly demonstrated the advantages of using an LHC supply chain and was therefore awarded the LHC's first Project of the Year award, as a showcase of outstanding work for the ultimate benefit of residents.

Acting as a one stop shop

The jury praised the window replacement project for delivering dwellings that meet the government's Decent Home Standard efficiently and sustainably without compromising on quality. The fenestration system from Sapa Building System used in the refurbishment of these estates was instrumental in winning the prestigious award.

Adding value as a 'one stop shop' Sapa Building System were able to supply all the products necessary to meet the required criteria of functionality and design. Monaframe vertical sliding-sash windows along with Dualframe casement and fully reversible windows and doors systems were selected because they were most suitable for use with the slim balconies on the buildings. The double glazing together with the thermally-broken, multi-chamber system frames improved thermal insulation for residents on the estate and helped reduce wind noise.

Systems provided:

Windows
Doors
Sliding windows

Militair Hospitaal
Ostend, Belgium

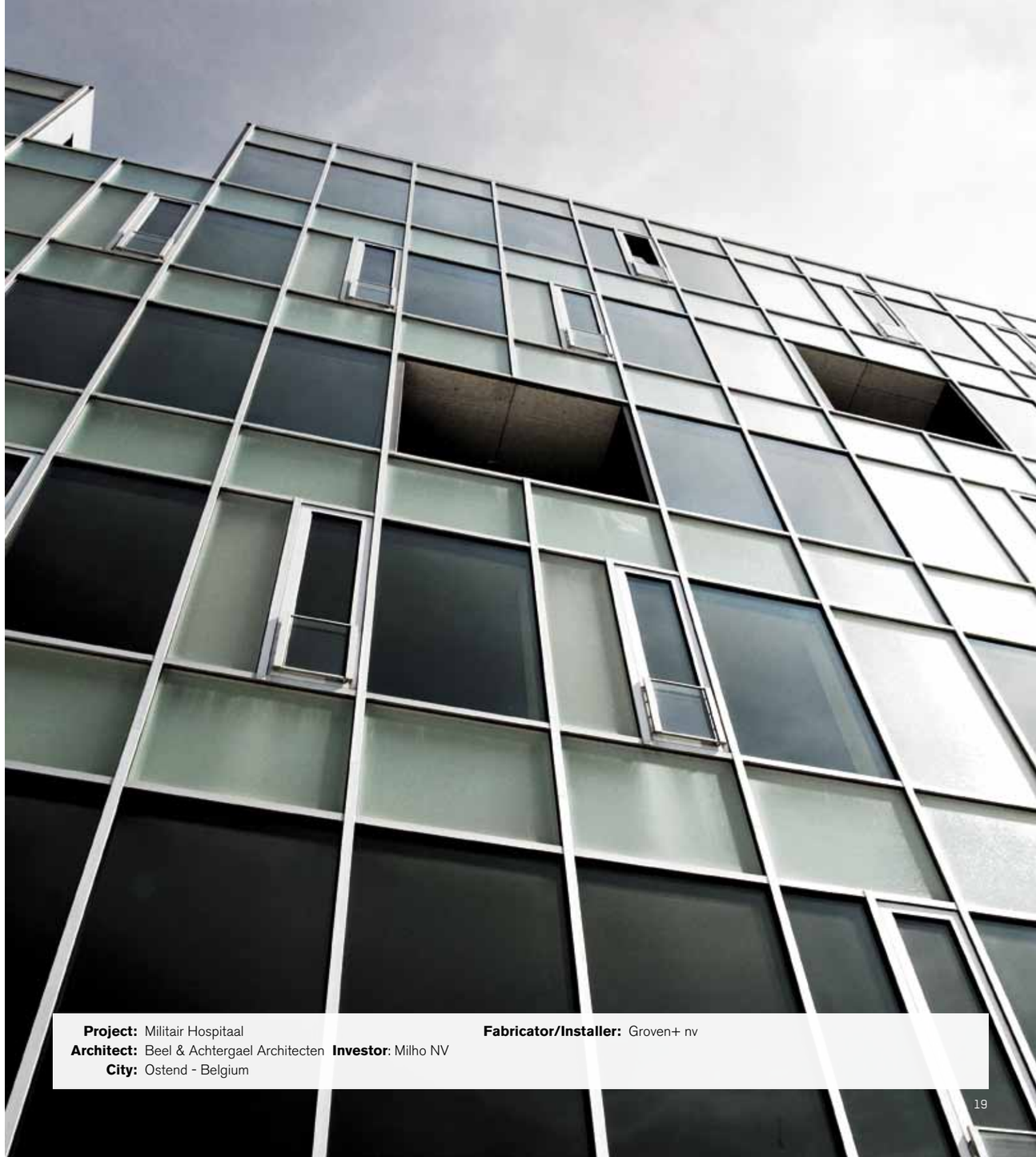
The redevelopment of the Ostend Military Hospital site into a residential area was conducted through a public-private partnership.

The designers chose to emphasise the qualities of the existing buildings and to add some new structures. The most striking features are the staggered indoor terraces, the shadow box design and the use of special types of glass, including cathedral glass. The walls around the site were partially removed to better maintain visual contact with the dune area behind the new housing complex. The open spaces and green areas helped to turn the Military Hospital site into a habitable complex comprising 215 residential units, 22 lofts and 52 apartments.

After the successful renovation of the Ostend Casino, the redevelopment of this Military Hospital site, demonstrates once more the suitability of aluminium for use in coastal areas. In these areas, which have been defined as a 10 kilometres wide strip stretching inland, it is however advisable to (pre-)anodise the aluminium (25 microns).

Systems provided:

Windows



Project: Militair Hospitaal
Architect: Beel & Achtergael Architecten **Investor**: Milho NV
City: Ostend - Belgium
Fabricator/Installer: Groven+ nv

Project: Véranda Rousillon
Constructor: Roussillon
City: Bompas - France

Véranda Roussillon
Bompas, France

This stunning conservatory from Sapa Building System illustrates the countless possibilities that exist for constructing a veranda conservatory tailored to every style of house. Constructed in Bompas (Pyrénées-Orientales), this 35 square metres south-east facing extension represents an astute blend of creativity and high technology. The aluminium construction has been masterfully integrated with the differing slopes of the existing roof. Built into the angle of the house, the conservatory actually forms an L. Particularly successful from an aesthetic perspective, the result is a comfortable and bright living space. What's more, the materials used for this project are among the best performing on today's market.

The small horizontal slats inserted in the double-glazed façade create a pleasant visual separation. The owners have also opted to equip their extension with a reversible air-conditioning system in order to heat the room in winter and cool it in summer.

Systems provided:

Conservatories

Wallworth House
Funchal, Portugal

Walworth House is a very stylish contemporary private residence overviewing the Atlantic Ocean in the heavenly scenery of Madeira Island.

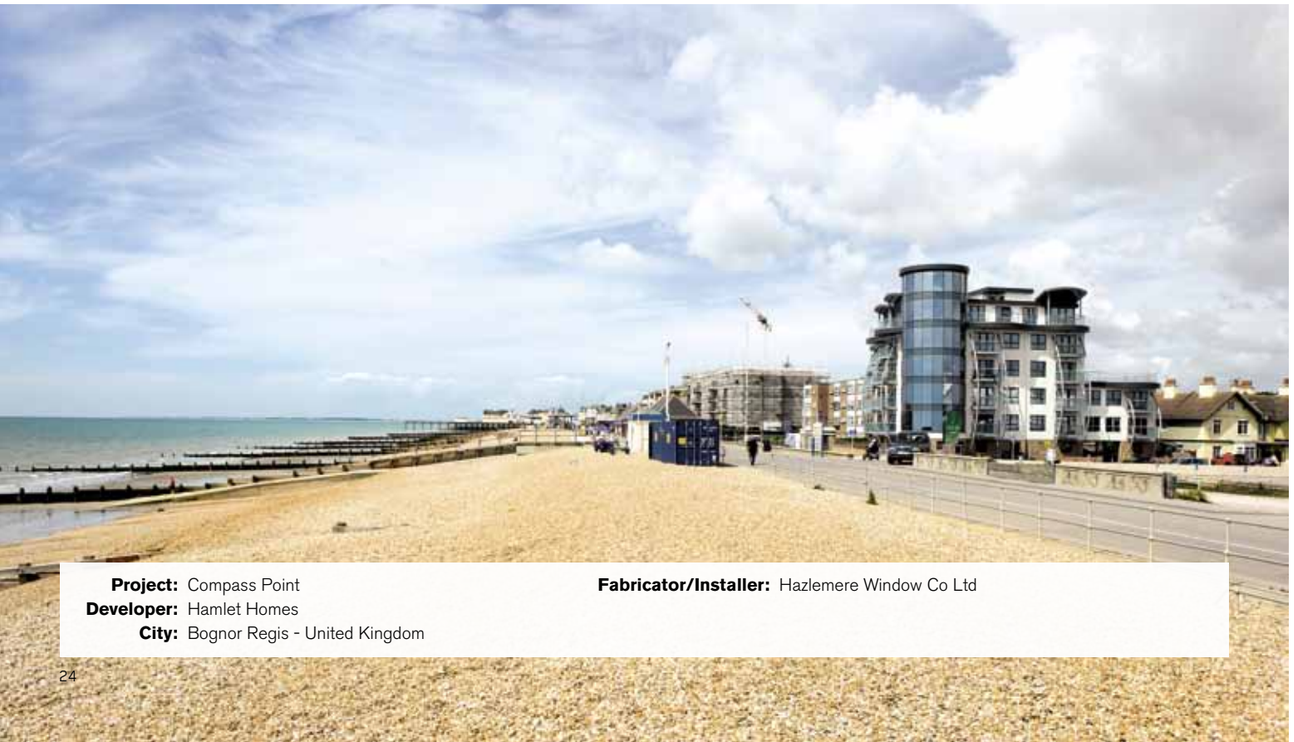
The house is built in a distinctive, modern architectural style typified by wide glazed openings to ensure the natural light keeps flowing through the space. The whole building benefits of breathtaking views provided by the windows and doors based on Souto Moura's Slimslide concept and supplied by Sapa Building System.

Systems provided:

Curtain walling
WIndows
Doors

Project: Walworth House
Architect: MSB Arquitectos, Lda
City: Funchal - Portugal

Fabricator/Installer: Alumiline



Project: Compass Point
Developer: Hamlet Homes
City: Bognor Regis - United Kingdom

Fabricator/Installer: Hazlemere Window Co Ltd

Compass Point
Bognor Regis, United Kingdom

Compass Point is a dramatic new addition to the Bognor Regis coastline. Fronting directly onto the seafront, this five storey building is perfectly sited for enjoying spectacular views across the sea, while its striking design offers plenty for the passer-by to admire.

Each of the 24 luxury two-bedroom apartments has its own balcony or terrace for catching the best of the Bognor sunshine. The balconies are enhanced by distinctive curved profiles, complementing the contours of the eye-catching tower which forms the centrepiece of the development. As well as providing the focal point of the seafront elevation, the tower also houses the living rooms of five of the homes and the master bedroom of the two-storey pent-house apartment.

Dualframe casement and tilt before turn windows and HP entrance doors combine with Elegance 52ST curtain walling to underline the elegant look of the building. Extra peace of mind for the residents comes in the form of the marine warranty available on the powder coat finish of the profiles, a true essential given the seafront location.

Systems provided:

Curtain walling
Windows
Doors

"For this project Sapa Building System developed a specially modified version of its Confort 125 window and door system. The purpose was to make it better withstand high wind load conditions while ensuring that even the largest windows could still be opened and shut by a small child."

DEVELOPING A STRONG ECOLOGICAL IDENTITY

The Çubuklu Valley Homes development is located on a 204 thousand square meters estate in Istanbul and commands a panoramic view of the Bosphorus. It comprises 120 villas of six different types, which take up 214 acres in total. The villas have footprints ranging from 221 to 600 square metres.

Guaranteeing the ecological balance

In order to create high durability, low maintenance surfaces, the architects selected natural stone and wood as the primary raw materials, providing a pleasant natural appearance to the development. They created rich interiors and beautiful landscaped communal areas which enhance the feeling of living with nature.

Comfort, simplicity, functionality, safety and respect for ecological values were the main drivers of the project. In certain respects, the development may even be seen as a manifesto against the

sameness and lack of identity resulting from modern standardised building methods.
The houses, which are set on a gently sloping site, have been placed where they have optimum advantage of the sun. To maintain indoor thermal comfort and save cooling energy, they have also been fitted with a thermal control system, guaranteeing a good ecological balance.

When designing walking trails, parks, parking lots, retaining walls and covered areas, the landscape architects chose to preserve as much as possible of the original topography.

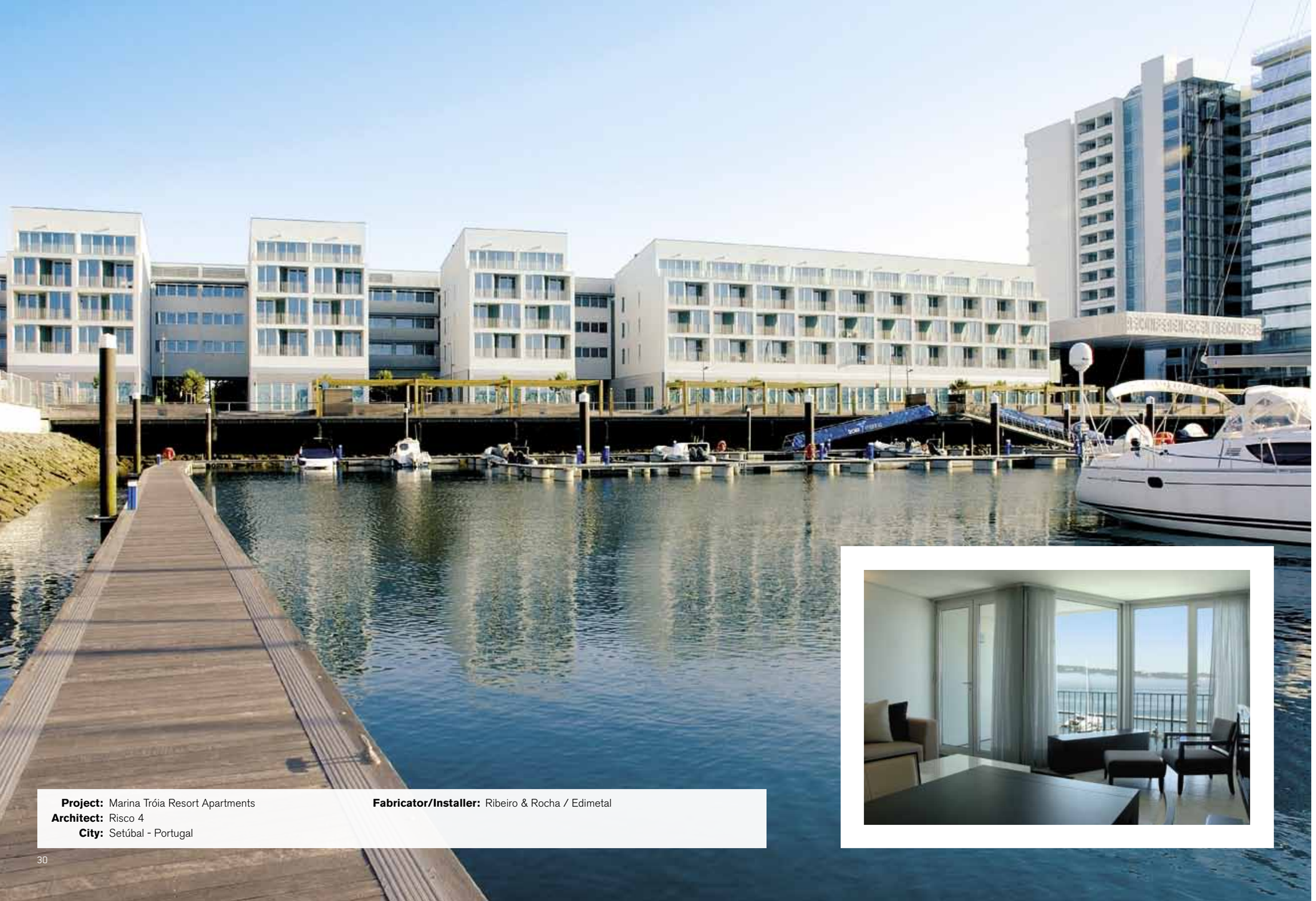
Why Sapa Building System was preferred
Sapa Building System's Confort 125 sliding system, which has amply proved its usefulness and reliability in various projects, was fitted out with special lift and slide latches and packed with custom designed details for this project. In addition, special sealing gaskets and high performance thermal insulations materials were used.

The purpose of many of these modifications was to make the window and door system better withstand high wind load conditions which are not unusual in the Bosphorus strait. Sapa Building System saw to it that even the largest of these reinforced and watertight Confort 125 windows could be opened and shut by a small child.

Systems provided:
Sliding windows

Project: Çubuklu Valley Homes
Architect: Arolat Mimarlýk
City: Istanbul - Turkey

Investor: Yüksel Holding / Fiba Gayrimenkul
Fabricator/Installer: Ser Metal Alüminyum



Project: Marina Tróia Resort Apartments
Architect: Risco 4
City: Setúbal - Portugal

Fabricator/Installer: Ribeiro & Rocha / Edimetal

Marina Tróia, appartments
Setúbal, Portugal

Facing the exclusive waterfront of Tróia Marina, in the tourist area of the Setúbal peninsula, these luxury apartments are designed to provide maximum comfort and relaxation to tenants.

The building occupies an attractive seafront position and offers magnificent views over the Atlantic ocean. Because of its maritime location it also has to withstand the harsh windy and rainy days of winter. Sapa proposed a solution based on BZi casement system to ensure maximum water tightness and noise reduction. An additional advantage of this casement system is that it allows the use of large window panes which offer unhindered views over the magnificent bay area. For ventilation, tilt and turn solutions were applied in the opening vents and aeration grids were embedded in the fixed frames.

The clean and airy architecture of the building fully matches the local building style.

Systems provided:

Windows

Trimaran Residence
Kessel-Lo, Belgium

The Trimaran development is located between the city of Leuven and the rural area of Kessel-Lo. The project consists of three blocks of flats, comprising ten apartments each. Each block has three floors of accommodation and a flat roof. The buildings seem to be casually positioned in a predominantly green area, creating the ambience of a park. The architects specified Sapa Building System's Excellence 65 windows and doors, combined with the Confort 125 duo-rail system.

Systems provided:

Windows
Doors

Project: Trimaran Residence
Architect: Bureau voor Architectuur en Planning bv, bvba
City: Kessel-Lo - Belgium
Fabricator/Installer: Alu2+ bvba

Diplomat Tower
Doha, Qatar

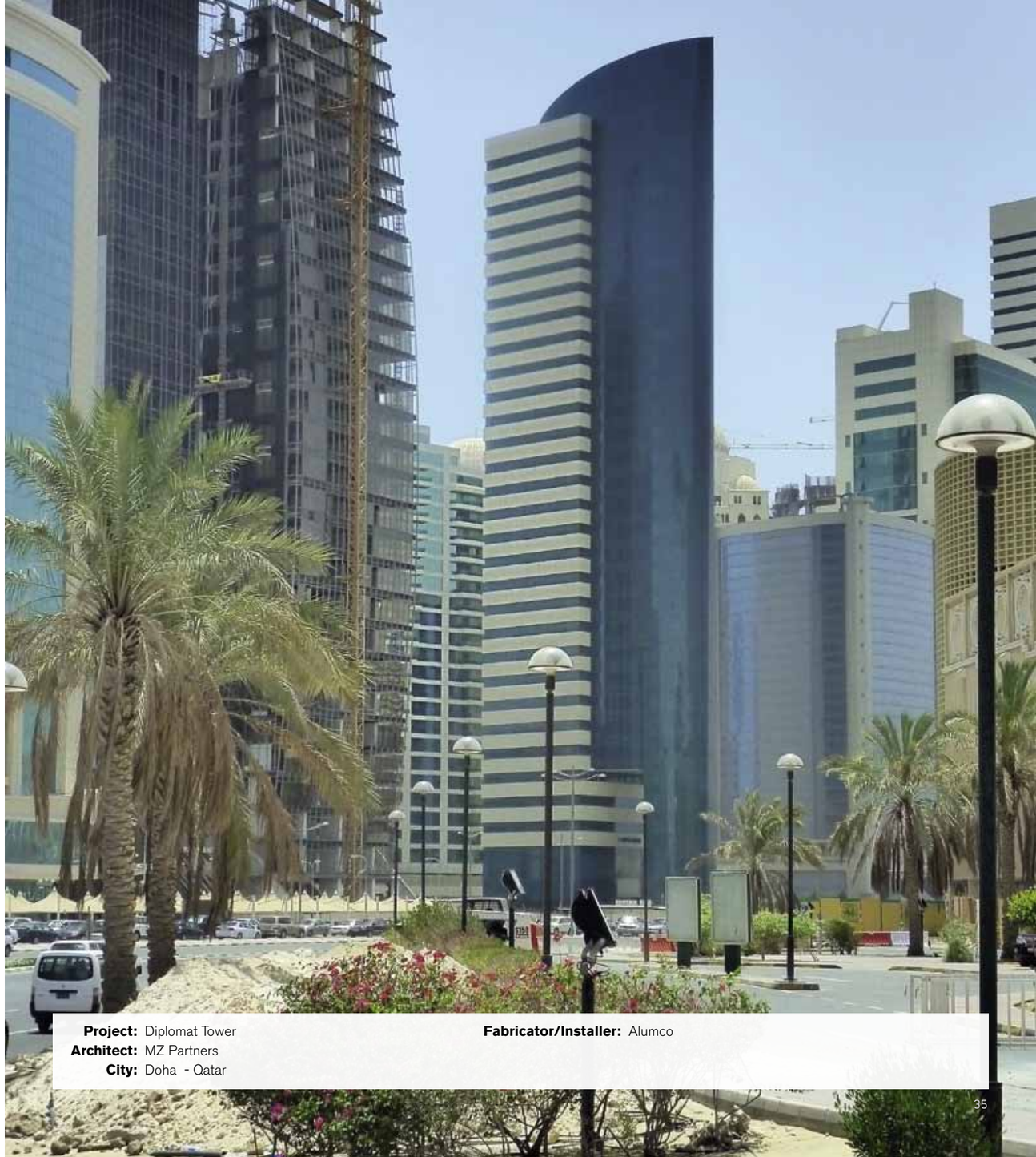
Diplomat Tower is a 29 storey high-rise building in the diplomatic area of Doha.

The Elegance 52 SG Eco curtain wall, used in this building, is a structurally clamped aluminium curtain wall system, where the glass is retained directly towards the standard structure of the Elegance 52 ST without the use of external pressure plates nor cover caps. A special groove in the intercalary profile between the double glazed panes, provides the possibility to insert connection pieces which are directly screwed in the central groove of the mullions and transoms.

This solution is an alternative for the traditional structural glazed systems as it also creates a flush surface aspect

Systems provided:

Curtain walling



Project: Diplomat Tower
Architect: MZ Partners
City: Doha - Qatar

Fabricator/Installer: Alumco

Folkart Narlýdere
Izmir, Turkey

The Folkart Narlidere apartment building was constructed on a piece of land measuring 70,000 square metres and lying at a distance of 1,500 meters from the Aegean Sea. It is definitely the most prestigious housing project in Izmir.

According to the architect, the 168 housing units were carefully designed to provide maximum quality and comfort. And to let the inhabitants experience a real connection with nature, all the apartments' living room areas have a sea view.

Apartments with large sliding windows and a balcony or terrace overlooking spectacular sea views, need to be well protected against the elements, including strong sea wind and the sun's UV-rays. That is why the architect chose the proven quality of Sapa Building System's products.

Systems provided:

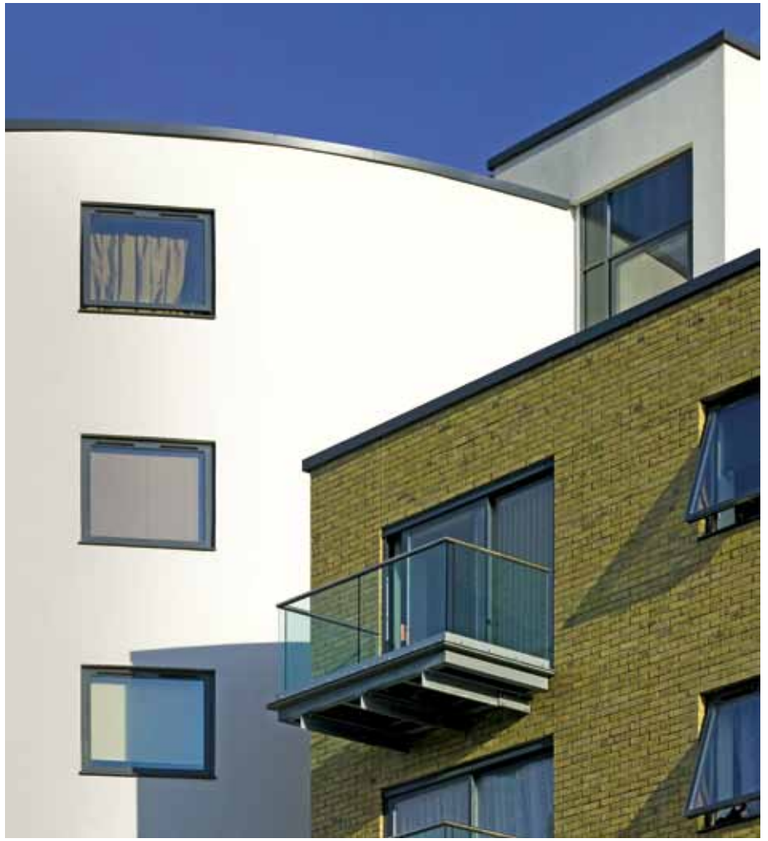
Sliding windows & doors

Project: Folkart Narlýdere
Architect: Emre Arolat Mimarlýk
City: Izmir - Turkey

Investor: Folkart Yapý
Fabricator/Installer: Temiz Metal Alüminyum

Project: Island Gardens
Architect: RMA Architects
City: London - United Kingdom

Investor: Telford Homes
Fabricator/Installer: Lea Valley Windows



Island Gardens
London, United Kingdom

Island Gardens is a high quality residential development on the southern tip of the Isle of Dogs, with views of the adjacent Island Gardens Park to the South and Canary Wharf to the north. It contains both private sale and affordable accommodation in a fully integrated scheme. The concierge service, on-site grocery store, short walk to Greenwich and Island Gardens DLR station across the road means this development has much to offer its residents.

The development is a U-shaped building which sits tight to the footpath around its perimeter. The design brief required a generous pedestrian route to link the DLR station with the riverside gardens and foot tunnel. This route gives access to a central courtyard where residential entrances and overlooking apartments help maintain a safe and active environment. The material palette of the main building is predominantly brick and is typified by calm, ordered window openings with increased scale at street corners. Opposite the DLR station, is a taller seven storey elliptical rendered tower. The architects selected Sapa Building System's window and door solutions for this project.

Systems provided:

Curtain Walling
Windows
Doors

Levent Loft Bahçe
Istanbul, Turkey

The Levent Loft Garden project, located on Maslak-Levent business axis, was designed as a residential block based on a "soft loft" concept. The 23-storeyed building presents itself in a transparent style and some of its striking features are the many interior gardens and the panoramic view of Istanbul and the Bosphorus from the upper floors. The project comprises 82 housing units based on 16 different floor plans and ranging from 100 to 210 square metres.

The architects selected Sapa Building System's Elegance 52 curtain wall system to achieve maximum openness. The horizontal transoms are carefully positioned to allow a clear view of the surrounding area from all floors. True to the original concept of urban lofts the architects decided to leave all ductwork, plumbing, beams, concrete flooring, masonry and corrugated steel elements exposed.

Systems provided:

Curtain wall

Project: Levent Loft Bahçe
Architect: Murat Tabanlýoðlu
City: Istanbul - Turkey

Investor: Akfen Holding
Fabricator/Installer: Milenyum Sistem Evi

Project: Private home Rumst
Architect: Berckmans - Niewold Architecten
City: Rumst - Belgium

Fabricator/Installer: Baeten-Van Es bvba

WITH RELISH AND INSPIRATION

Design full of colour

A closed façade, a close relationship with the garden, an open interior and plenty of direct and indirect light... These were the client's desires for his new house.

The architects approached this project as a significant design challenge and set about their task with relish and inspiration. On the ground floor, from the entrance to the garden, they placed a long wall of cabinets. On the first floor, the circulation space has been transformed into a home office instead of a corridor, which would have been a more mundane solution. The home office overlooks a green roof and the highest part of the roof carries solar panels. The architects also designed the interior decoration, going for simple clean lines which harmonize perfectly with the exterior architecture. Playful colour accents create surprising effects. 'The client had expressed a preference for bright colours, but we felt it was necessary to caution him against overenthusiasm and persuaded him to only apply bright colours to the insides of cabinets and a limited number of walls,' Katrin Berckmans and Sabine Niewold clarify. 'Eventually, when the owners tire of the bright colours, they can easily substitute them with a softer palette.' Architects need to be forward-looking.

Aluminium and insulation

Thanks to the wide choice of colours and surface treatments, aluminium does mesh beautifully with a contemporary architectural style. This is why architects Katrin Berckmans and Sabine Niewold are both partial to aluminum joinery. It lends itself to elegant, durable and maintenance friendly designs. The aluminium sliding windows which were used in this project intensify the relation between the interior and the exterior.

Both architects firmly believe that the benefits of insulating buildings are huge. Consequently, they were happy to use the calculation tool that Sapa Building System has made available to all building

professionals. The application calculates the exact U-value for each window separately. In windows, the size of the glass surface is critical when it comes to reducing heat loss. And although the surface of aluminium window frames is quite small compared to total window surface its share in the total heat loss must not be underestimated. Sapa Building System's Avantis 70 profile has an Uf value ≤ 1.3 W/m²K, making it one of the best in the market.

Systems provided:

Windows

"Thanks to the wide choice of colours and surface treatments, aluminium joinery meshes beautifully with a contemporary architectural style. It lends itself to elegant, durable and maintenance friendly designs."

Villa
Smygehuk, Sweden

This lovely dwelling is located in Smygehuk, by the seaside, close to the southernmost point of Sweden. It was converted into a villa in 2004-2005.

The brief was to establish a small outbuilding as a guest dwelling for the client's adult children, as well as to insulate and convert the as yet unconverted loft of the main dwelling.

After some lively discussions, the home owner revised his initial requirements. The children's guest room was transferred into the extension of the property and a new layout plan of the ground floor was created with improved sanitary accommodation and kitchen/multi-purpose room. The upper storey was made into a single, large room with unlimited views towards all points of the compass. It now houses the sleeping accommodation and a private recreation area. The sleeping accommodation is only screened off with a low screen wall, for the best outlook.

The outbuilding was demolished and replaced with a new, better-positioned storage unit. It was important to preserve the unique characteristics of the site: the views, the light and the contact with the sea and the beach.

The result is a symmetrical dwelling, with white rendering to the eaves, with new chimneys and large gable windows, unobtrusive towards the village, but more open towards the sea. It was given a traditional black felt roof with triangular batten, a common surface in Scania's fishing villages.

In summary, the property now has a modern interior with an abundance of glazing and open aspects. At a late stage, the dormer window was enlarged to make a frontispiece.

Systems provided:

Windows
Doors

Project: Villa
Architect: SAMARK Arkitektur & Design AB
City: Smygehuk - Sweden

Fabricator/Installer: Niba Syd AB

CREATING A NEW URBAN STRUCTURE

Fully integrated urban neighbourhood

The first phase of the Précossy neighbourhood on the outskirts of Nyon, extends itself over a plot stretching from East to West, from the Route de Signy towards the Route de St-Cergue.

This 19,928 square metre plot is bordered by a forest area forming a V-shaped wooded cordon and embellished by the flow of the Cossy. To the North-West of the development, there is a large public recreation area and the area earmarked for Phase 2 of the development, to which Précossy will be linked by a network of pedestrian paths.

Similarly, in order to ensure the neighbourhood's successful integration, pedestrian and cycle paths will permit easy and swift access to the city centre. They will also contribute to the establishment of a coherent urban structure.

The second phase will be commenced upon completion of the first, thereby perfecting the overall identity of the plan.

Typological diversity and uses

The first phase consists of 109 apartments divided over three buildings of four to five floors apiece, depending on the gradient of the terrain.

The development also includes 2,250 square metres of administrative premises convertible according to the wishes of interested parties, although this mixed usage will need to contribute to the desired revival of the neighbourhood.

Intended exclusively for the rental market, the dwellings are primarily of medium size: 46 four-room, 45 three-room, 8 five-room, 8 two-room and 2 six-room. An underground garage accommodates 175 vehicles, with 28 other spaces on the surface set aside for clients and visitors. This system fits in with the statutory habitable surface area coefficient of 0.8.

Project: Précossy
Architect: Cornaz & Associés sàrl
City: Nyon - Switzerland

Investor: CIA Caisse de Prévoyance, Genève
Fabricator/Installer: Stadlin sa + Cometallo sàrl

The typology of the internal spaces has been designed in a deliberately heterogeneous fashion, in response to a demand for diversity: the dwellings are either mono or dual-aspect, or in the case of 17 of them, arranged as duplexes. The result is that the corresponding façades are enlivened by glazed units in a non-repetitive pattern, thereby avoiding any monotony.

Desired structuring effects

The arrangement of the buildings – two parallel twins and one perpendicular situated at the end of these two lines – forms a simple and easy-to-grasp structure. The buildings' design is based on the principle of optimised natural lighting. The overall effect is one of a highly balanced structure and the subtle shades chosen for the buildings, punctuated by vibrantly coloured canvass, contribute to a clearly affirmed character.

These architectural elements are also served by the adoption of façades broken up by cladding formed by large-format fibre-cement sheets or by a protective system formed alternately by vertical bars and translucent frosted glass.

The building located on the Jura side, perpendicular to the other two, houses shop space at ground level and offices on the first floor. 20 metres wide in order to suit this type of use, it required the implementation of special measures to ensure that sufficient light penetrates the upper-floor apartments. Mini-courtyards and light-wells have therefore been included in the central section, providing light for the kitchens in particular.

Systems provided:

Sliding windows

"By orientating the façades favourably to the sun, the architects of this development created a pleasant living environment. The façades are enlivened by glazed units in a non-repetitive pattern, thereby avoiding any monotony."

Project: Ramsdalen Terrasse
Architect: Opus Arkitekter v/ Einar Søvik
City: Haugesund - Norway

Fabricator/Installer: Kraft Glass og Alumium AS

Ramsdalen Terasse
Haugesund, Norway

The Ramsdalen Terrasse housing project was built in 2005-2006. It consists of five residential blocks that are connected to each other, creating a terrace of dwellings. Each block comprises five apartments. The buildings were strictly meant for residential purposes and no commercial activity was allowed. The architect specified the use of high quality materials and took great care to create a pleasant environment in and around the housing units.

The project is located on the south-west coast of Norway, near Haugesund city centre and in close proximity to the sea. This places severe demands on the materials and components used. The window and door system needed to be durable, wind and water tight and maintenance-friendly. All the products supplied by Sapa Building System met all these requirements.

Systems provided:

Curtain walling
Windows
Doors

The Pearl
Doha, Qatar

The Pearl-Qatar in Doha, Qatar, is an artificial island spanning nearly four million square metres. When completed, it will be the first land in Qatar to be available for freehold ownership by foreign nationals. Once completed, The Pearl will create over 32 kilometers of new coastline, for use as a residential estate with an expected 15,000 dwellings by 2010. The island is located 350 metres offshore of Doha's West Bay Lagoon area.

Residential development on the island is intended to incorporate various national and international themes including aspects of Arabic, Mediterranean and European culture. Commercial and educational facilities are also planned to support the various residential precincts.

The name "The Pearl" was chosen because the island will be built on one of Qatar's previous major pearl diving sites. Qatar was one of the major pearl traders of Asia just before the country's oil boom. The Pearl Qatar, which echoes the shape of a string of pearls, will help represent Qatar's rich past in the pearl industry.

There will be over 13 islands when finished. The largest of the islands will feature a large range of luxury villas, apartments, three 5 star hotels and over two million square meters of international retail, restaurants, cafes and entertainment. Eight other private islands will be for sale to private owners with the opportunity to build whatever they may desire.

The client and the architects insisted on the use of thermally broken profiles. Consequently, Sapa Building System's Confort 60 series of products was selected.

Systems provided:

WIndows
Doors

Project: The Pearl
Architect: Callison
City: Doha - Qatar

Fabricator/Installer: AluTec

A NEW VIEW ON VENICE

The Greater London Council developed many housing blocks of architectural merit in the period of the 1950s to the 1970s, indeed some have even become listed buildings, an official confirmation of their role in the UK's architectural heritage.

Located on the western approaches to central London, and visible from the main road and rail routes, the six 20 storey apartment tower blocks of the Warwick and Brindley Estates are well known landmarks to thousands of commuters and local residents.

City West Homes, an arms length management organisation created by Westminster City Council held a competition amongst architects which was won by Kemp Muir Wealleans. The architect has succeeded in a renovation which retains most of the original architectural concept rather than an over cladding which would radically alter the buildings' appearance. The vertical emphasis of the buildings has been retained via the use of profiled aluminium cladding and channel sections.

There are over 700 apartments within the six tower blocks and all of those rented from City West were refurbished internally at the same time as the external transformation and were occupied during the work. This meant that the main contractor, Wates Living hade to liaise with every tenant regarding the work programme and taking care of their property and possessions during the work. This obviously also impacted on the window replacement contractor who had to make sure that each apartment was left watertight and safe both during and after working hours. This ability to deal with work in occupied buildings is a fundamental facet of the business of many Sapa installers and key to a successful refurbishment project.

The replacement of the existing single glazed windows had to achieve a number of objectives; a reduction in maintenance needs, improvements in thermal insulation and weather resistance, and also to insulation against external noise, particularly

Project: Little Venice
Architect: Kemp Muir Wealleans
City: London - United Kingdom

Fabricator/Installer: Marsland and Co. Ltd

at lower levels as a busy motorway runs close to some of the buildings. In addition the window and door design had to blend visually with the overall architecture. Sapa's Dualframe system was not only approved by the Architect and City West Homes but also by the residents as part of a consultation process, whereby a prototype unit was installed in one of the apartments and residents were allowed to inspect it and offer their comments.

Sapa's Dualframe reversible windows have been used throughout the project, offering residents the ability to reverse their windows to allow internal cleaning, without the opening light intruding into the interior space, fouling curtains or blinds, as all of the rotation takes place outside the building line. Safety features include lockable restrictors so that only the key holder can rotate the window in the cleaning mode, and a lockable handle to every window. In addition, when the opening light is in the cleaning position, it is locked in place and completely fills the window aperture, guarding against the risk of an occupant falling through a window whilst cleaning it.

The Dualframe reversible window has been independently tested for both weather and security performance; indeed its ability to withstand wind gusts up to 2400Pa made it particularly suitable for such a high rise application, along with air and water resistance at 600Pa.

In addition to the Dualframe Reversible window, Dualframe Doors have been used to give each resident access to their private balcony, again the weather resistance figures of the Dualframe Door make it eminently suitable for such and exposed location.

The external finish is a sympathetic light grey but Dualframe's ability to be dual coloured means that inside the residents have a clean crisp white appearance, all finishes are polyester powder coated by Sapa to EN12206, and the glazing is with double glazed sealed units comprising a soft coat low emissivity glass and argon filling to the space between the panes.

"Along with the external insulation installed with the cladding, changing from mainly single glazing, to a modern high performance double glazed system has made a huge difference to the warmth of the flats; and being so close to the West Way, the traffic noise is drastically reduced."

To quote Martin Kemp of architect Kemp Muir Wealleans; "Along with the external insulation installed with the cladding, changing form mainly single glazing to a modern high performance double glazed system has made a huge difference to the warmth of the flats and traffic noise is drastically reduced. We opted for Dualframe on the basis of competitive cost, appearance and buildability"

The Dualframe system has helped to improve the living standards and personal comfort of the residents of Little Venice for many years to come.

Systems provided:

Windows

Dockan KV Fyren
in the former docks of Malmö, Sweden

The condominium association Fyren (Lighthouse) manages and maintains 94 homes, two commercial buildings and a series of local accommodation facilities. The development includes underground private parking space for the association's members. The project has been carefully planned to take full advantage of everything the area has to offer. One of the aims was to make sure that all homes have a magnificent view over the Öresund channel or the small boat marina.

The apartments range in size from 35 to155 square metres and have one to six rooms, including kitchen. They all have efficient and functional floor plans and are fully equipped with all the essentials.

The building's outer shell of warm red brick and steel beams nicely enhances the urban appearance of the development.

The inner courtyard is filled with lush greenery and seems to invite lounging and resting. All housing units are airy and bright and most of them offer several breathtaking views of which no-one can ever get tired.

Systems provided:

Curtain walling

Doors

Project: Dokan KV Fyren
Architect: Architects Michelsen AB
City: Malmö - Sweden

Fabricator/Installer: Glas Lindberg Fasad AB

Project: Silvertop Towers - Tower 1
Architect: Tijdelijke Vereniging A33 - ESSA - Constructor
City: Antwerp - Belgium

Silvertop Towers
Antwerp, Belgium

The Silvertop Towers are a prominent feature of the Kiel district of Antwerp. In 2003, the Flemish Minister of Housing approved the renovation of the 608 flats. Only the concrete skeletons of the original structures (erected in 1960) were retained. Despite its considerable cost, renovation was still less expensive than new construction.

Due to the visually repetitive nature of the structure, the challenge was to find a standard solution that could be used everywhere and could also accommodate the variations in the structural skeleton. The living quality of the new units had to be considerably better than previously, also regarding sound damping. Thus, a full study of the window unit construction was carried out to avoid acoustic leaks. Tests using a sample window under realistic conditions yielded good results, despite the fact that the exterior wall was not yet finished. The ultimate acoustic damping will thus be greater than specified.

The selected window frames are Confort 50 from Sapa Building System, a thermally broken, two-chamber system. ($U_f = 2.89$ W/m²K, $U_w < 2$W/m²K with $U_g \leq 1.4$ W/m²K). The windows are flush with the surface of the exterior wall, and the window array aligns perfectly with the grid of the decorative zinc panels and even copies its colour.

The redevelopment of the Silvertop tower was awarded the Housing Idea Prize of the Flemish Association of Housing Companies.

Systems provided:

Windows

HOUSING PROJECT FOR 50,000 LABOURERS

Built on a sprawling 2,7 million square meter land in Musameer, just outside the heart of Doha, Barwa City offers its home owners and investors 128 apartment buildings, 6,000 flats, and 1,024 studio units.

Barwa City was designed to provide the 20,000 families who make it their home a private and contained 'city' that includes schools, a hospital, mosques, parks, shopping complexes, health facilities and all other conceivable amenities.

Barwa City employs the biggest centralised Liquid Petroleum Gas network in Qatar. It also has a District Cooler system which controls the temperature for the whole compound while allowing each individual housing unit to customize its temperature. In addition, Barwa city offers all its inhabitants a WiFi system providing wireless internet access throughout the compound. The project further includes a pedestrian bridge and secured parking spaces. Each housing unit also has telephone and satellite television made available.

Workers' City

According to the Barwa Real Estate Company Chairman Al Saad, the project was part of Qatar's comprehensive development plans which give high priority to the well being of individuals. Consequently, the main objective behind the Barwa City project has been labourers' rights and the improvement of their living and health standards.

The buildings, which will accommodate a total of 49,920 people, are split into four clusters of 16 blocks each. Each cluster is built to international standards and has its own dedicated facilities and landscaping, including a mosque, a football court, basketball and voleyball courts and public restrooms. Residents have all the necessary facilities for their comforts, including eight dining halls serving multi-

Project: Barwa City
Architect: Consult Maunsell Engineering Consultants
City: Barwa - Qatar
Fabricator/Installer: Alumco

cuisine menus three times a day. Facilities also include laundry services through a central collection system, thus providing them with ample leisure time. A total land area of 16,000 square metres has been allocated for a commercial plaza housing 48 service retail outlets and communal areas.

A maximum of six workers are allowed to share a room. In this manner, each worker is provided with 4.25 square metres of space, which is far above the standards applied in some developed countries, where only 3.25 square metres of space is made available.

Systems provided:

Curtain walling
Casement windows
Doors

"Barwa city is a piece of the globe where each and every resident has been given a space that reflects his dreams; a place he can truly call a 'home'."

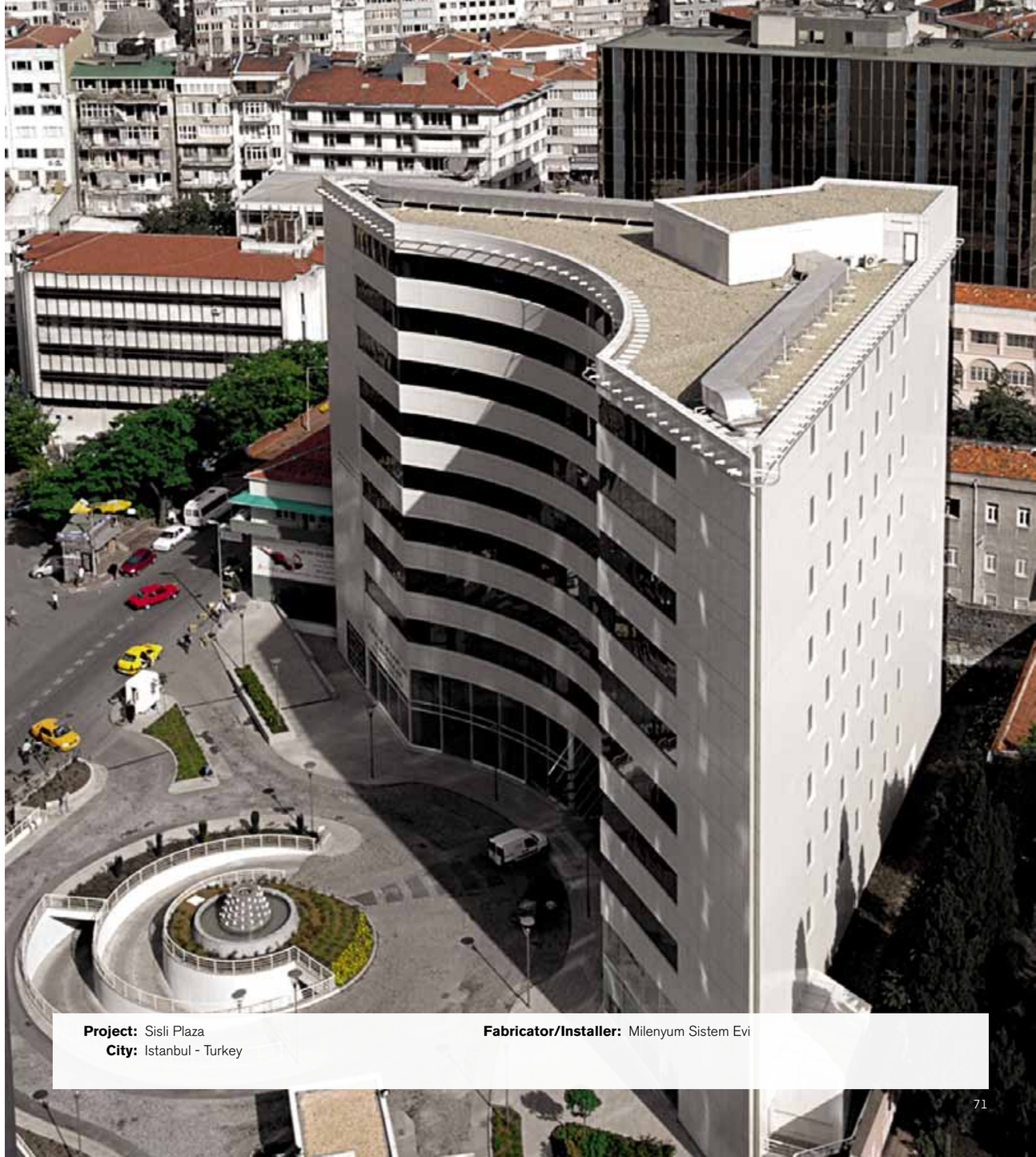
Sisli Plaza
Istanbul, Turkey

Built on a 15.000 square metres plot in the Sisli district of Istanbul, the Sisli Plaza building offers a breathtaking panoramic view of the Bosphorus. The project comprises a ten-storeyed office block and two residential buildings with 9 and 42 storeys

The main tower block is 165 metres in height and has become a landmark building in the Sisli district. To guarantee its long-term use, it was essential to select high performance building products. Sapa Building System instructed its R&D team to modify its Excellence 65 product to meet the specific requirements of this project. The specially modified Excellence 65 system was tested in accredited international testing laboratories who have attested to its excellent resistance to wind, water and light.

Systems provided:

Windows



Project: Sisli Plaza
City: Istanbul - Turkey

Fabricator/Installer: Milenyum Sistem Evi

Family House
Srch, Czech Republic

This family house was designed and built according to the latest European architectural trends. In many ways, however, it is an atypical modern villa. It is modestly dimensioned, its flat roof drains off to one point and it is enclosed by gabions instead of a fence. This house was clearly commissioned by a modern architecture enthusiast who enjoys trying out new design ideas and technologies. Still, it meets all requirements of comfort, convenience, health and sustainability.

The structurally glazed curtain wall system uses the basic substructure of Elegance 52, offering a solution for the combinations of fixed and opening panels in both straight or facetted applications. The structurally glazed curtain wall offers a minimal sightline without having a visual difference between fixed and opening panels.

Systems provided:

Windows
Doors
Curtain walling

Project: Family House
Architect: Ateliér Sporadical, arch. Jakub Našinec, arch. Aleš Kubalík
City: Srch - Czech Republic
Fabricator/Installer: PKS Mont, a.s

Antilia
Mumbai, India

A six-storey garage, a state-of-the art movie theatre and four floors with indoor and outdoor gardens... These are but a few of the many outstanding features of the 27-storey residence that a successful businessman had built for his family in downtown Mumbai. Its name alone - “Antilia” - reflects the magic of this fantastic creation.

The residential part of the Antilla building begins above the six-storey garage. It comprises nine lifts and a double staircase with silver plated handrails leading to a ballroom with chandeliers hanging from the ceiling. A fine art collection, built-in LCD screens and speakers, various stages for entertainment, winter gardens... this unique building has everything it takes to turn it into an exotic and magical resort.

Sapa Building System supplied the 170 door units for this project. With a variety of features. Concealed hardware, colour match between hardware and profiles, and a minimal threshold all contribute to the aesthetics of the solution. Door closers enhance the ease of use. And with 2 500 Pa wind resistance and 450 Pa water tightness most stringent performance requirements have been met, confirmed by extensive testing. A nice showcase of architectural design and building system know-how. Sapa Building System can be proud of this project. Its first in India, and certainly not its last.

Systems provided:

Doors

Project: Antilia
City: Mumbai - India
Architect: Perkins + Will

Sapa Building System International
Leuvensesteenweg 555, Bus 13
1930 Zaventem
// BELGIUM
Fax: +32 2 725 74 18

Sapa Building System Vertriebs GmbH
Pirching 90 - 8200 Gleisdorf
// AUSTRIA
Tel: +43 3112 73 66 - 0
Fax: +43 3112 73 66 - 6

Sapa Building System NV
Industrielaan 17
8810 Lichtervelde
// BELGIUM
Tel: +32 51 72 96 66
Fax: +32 51 72 96 89

Sapa Building System s.r.o.
Veleslavínská 150/44
CZ - 162 00 Prague 6
// CZECH REPUBLIC
Tel: +420 236 161 962
Fax: +420 236 161 969

Sapa Building System
Langhøjvej 1, Indgang A
8381 Tilst
// DENMARK
Tel: +45 86 16 00 19
Fax: +45 86 16 00 79

Sapa Building System SAS
Espace Vernède
4-5 Rte des Vernèdes - 83480 Puget / Argens
// FRANCE
Tel: +33 4 98 11 20 50
Fax: +33 4 98 11 21 82

Sapa Building System
Sinikalliontie 18 A - 02630 Espoo
// FINLAND
Tel: +358 9 8678 280
Fax: +358 9 8678 2820

Sapa Building System GmbH
Anna-Schlinkheider-Str. 7b
40878 Ratingen
// GERMANY
Tel: +49 21 02 70 07 9-0
Fax: +49 21 02 70 07 9-10

Sapa Building System India
p/a Orkla India PVT Ltd
307/308 B Wing, BSEL Tech Park
3rd Floor, Sector - 30A
Vashi, Navi Mumbai - 400 705
// INDIA
Tel: +91 22 67761900
Fax: +91 22 67761999

Sapa Building System s.r.l.
Via Altmann 10 - 39100
St. Jakob - Bolzano/Bozen (BZ)
// ITALY
Tel: +39 04 71 20 06 72
Fax: +39 04 71 202 22 53

Sapa Statybu Sistemos
Kirtimu g.47,
LT-02244 Vilnius
// LITHUANIA
Tel: +370 5 2102587
Fax: +370 5 2102589

Sapa Building System bv
Minervum 7067 - 4817 ZK Breda
Postbus 5647 - 4801 EA Breda
// NETHERLANDS
Tel: +31 76 587 34 00
Fax: +31 76 571 94 85

Sapa Building System
Kjeller Vest 6
Postboks 34 - 2027 Kjeller
// NORWAY
Tel: +47 63 89 21 00
Fax: +47 63 89 21 20

Sapa Building System Poland Sp. z o.o.
ul. Graniczna 60 - 93-428 Łódź
// POLAND
Tel: +48 42 683 63 73, 654 89 30
Fax: +48 42 683 63 91

Sapa Building System Portugal
Sintra Business Park
Zona Industrial da Abrunheira
Edifício 2, 1. °A/D
Sintra 2710-089
// PORTUGAL
Tel: +351 21 925 26 00
Fax: +351 219 25 26 99

Sapa Building System
P.O. Box 19478
1, SoUnited Kingdom Khaled Area
Al Matar Airport Road, Doha
// QATAR
Tel: +974 442 46 90
Fax: +974 412 84 37

Sapa Building System
Soseaua Virtutii 46 A,
Kinnarps Building, 5 th Floor,
District 6,
RO-060783, Bucharest
// ROMANIA
Tel: +40 257 307800
Fax: +40 257 351 5701

Sapa Building System s.r.o.
Stará Vajnorská 37/C, SK-831 04 Bratislava
// SLOVAKIA
Tel: +421 2 20903606
Fax: +421 2 20903611

Sapa Building System Iberia
Edifício MOMA - 2ª Planta - Oficina 7
Ctra. MóstolesVillaviciosa de Odón Km 0,200
28931 Móstoles - MADRID
// SPAIN
Tel: +34 911 277 160
Fax: +34 911 285 016

Sapa Building System AB
Metallvägen - S-574 81 Vetlanda
// SWEDEN
Tel: +46 383 94200
Fax: +46 383 761980

Sapa RC System s.a.r.l.
Z.I. La Guérite - 1541 Sévaz
// SWITZERLAND
Tel: +41 26 663 99 66
Fax: +41 26 663 99 69

Sapa Yapı Sistem
Sanayi ve Ticaret A.S.
EGS Business Park B3 Blok
Kat: 2 No: 140
34149 Yeşilköy İstanbul
// TURKEY
Tel: +90 212 465 76 50
Fax: +90 212 465 76 48/49

Sapa RC System - Abu Dhabi Branch
P.O. Box 34939
Abu Dhabi
// UNITED ARAB EMIRATES
Tel: +971 2 550 44 53
Fax: +971 2 550 44 54

Sapa Building Systems Ltd
Alexandra Way
Ashchurch
Tewkesbury
Gloucestershire GL20 8NB
// UNITED KINGDOM
Tel: +44 1684 853500
Fax: +44 1684 851850

BRFORHOUENG-07 2010

sapa:
buildingsystem
ARCHITECTURAL ALUMINIUM SOLUTIONS

www.sapabuildingsystem.com