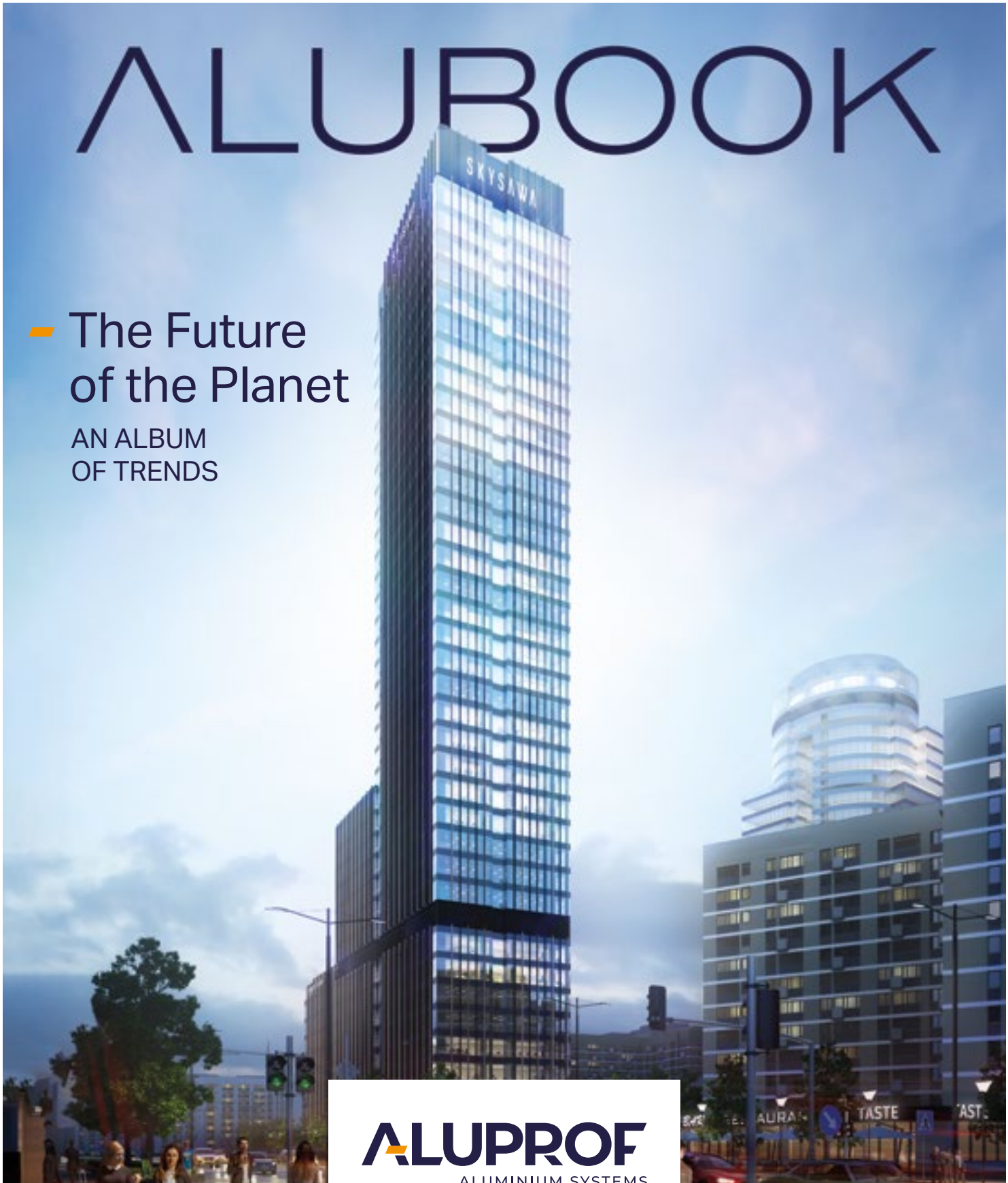


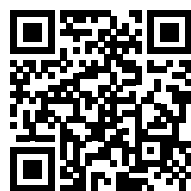
ALUBOOK

— The Future of the Planet

AN ALBUM
OF TRENDS

ALUPROF
ALUMINIUM SYSTEMS





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ALUBOOK

AN ALBUM OF TRENDS

No. 3 / 2021

Graphic design and typesetting

Wills Integrated Sp. z o.o.

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Translated from the Polish by Caryl Swift for Schindler Language Services Sp. z o.o.

<https://schindler-language-services.com/>

Dear Reader,

It is with great pride that we present this publication, our third AluBook album of innovations and trends. This time, our theme is the future, in two forms. There is the future we move into from day to day and there is the longer-term future we are building as we go. We are well aware of just how serious the planet's condition is and of the fact that decisions concerning it cannot be postponed.

For years now, one distinctive feature of ALUPROF's activities has been respect for nature, people and their quality of life. We believe that, for the sake of future generations and the environment, industry has to join the battle for a better tomorrow. Ecological thinking and a sustainable approach to business are the new reality and they influence our relationships with our partners and the form of what we offer our clients. This is why we are fighting both to reduce greenhouse gas emissions and to increase energy efficiency in the construction industry. It is also why we attach enormous value to the role of recycling and to using energy from renewable sources. We are steadily increasing the quantity of secondary raw materials we use. We plan a 15% reduction in our carbon emissions by 2025 and aim to achieve carbon neutrality by 2050.

Everyone wants to live in well-designed cities and towns, with greenery and services in close proximity. Everyone wants to breathe clean air. All of this makes education vital, along with the search for solutions which will enable us to tackle contemporary problems such as excessive carbon emissions, the climate crisis and urban overcrowding. In order to delve into those issues and create a space for discussion, ALUPROF launched a **project this year. Entitled 'Future Builders', it is addressed to architects and urban planners. Future Builders is a space for**

exchanging opinions on the future of cities and towns, the development of their neighbourhoods, the design of new buildings and green zones and the renovation of existing buildings, all of which should work to create friendly places to live. The guests joining us to discuss the future are architects from Poland and abroad who work on the most progressive of international projects, along with other professionals involved in the construction industry.

This, our third AluBook, is a wide-ranging catalogue of trends and achievements in that sector. It offers an overview of solutions which demonstrate that ecology, economy and aesthetics can go hand in hand. The pursuit of ecological optimisation can bear fruit in the form of beautiful solutions, while the pursuit of aesthetic satisfaction can be justified both ecologically and economically. I thus hope that reading this book will be inspirational, in every sense of the word. That indeed, is what I wish for you and myself alike.



Warm wishes,
Tomasz Grela
Chief Executive Officer
President of the
Management Board
ALUPROF SA

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A new strategy, a new vision and a new logo. ALUPROF steps into the future.

We began implementing our new five-year strategy in 2021, which has meant plenty of hard work for us recently, since our goals have been ambitious. Our plans include intensive activities designed to strengthen our position on foreign markets and highlight ALUPROF's ruling idea, namely, sustainable development as a socially and environmentally responsible company.

For the future of the planet

Data published by the European Commission in 2020 tell us that buildings account for almost 40% of the European Union's energy consumption and 36% of carbon dioxide emissions. Together with the ongoing implementation of further innovative and technologically advanced solutions, ALUPROF has introduced a series of initiatives aimed at reducing the company's impact on the environment. At this point, it is worth mentioning our participation in events organised by the Polish Green Building Council and the World Green Building Council, as well as our work on obtaining further Cradle to Cradle certificates and Environmental Product

Declarations for our products. We are fighting for increased energy efficiency and reduced CO₂ emissions in the construction industry and we are well aware of just how vital it is both to recycle and to use energy from renewable sources. In line with our strategy, we are steadily implementing procedures designed to increase the use of recycled materials for our products. This topic is addressed in greater depth on the pages of this AluBook.



Technological development

Developing innovative solutions which drive the entire sector is both the foundation and pillar of ALUPROF's business. Our talented designers work to solve problems and challenges facing the construction industry and, in particular, to obtain the best possible durability and energy-efficiency parameters for our products. A few years ago, we opened the ALUPROF Research and Innovation Centre. One of the facilities we created there is Central and Eastern Europe's largest chamber for testing the physical properties of curtain walls. It can handle items up to 10 metres high by 10 metres wide. However, in our search for innovation, we also look beyond our own circle of experts, collaborating with scientific and academic communities and independent research institutions in Poland, Germany and a number of other countries.



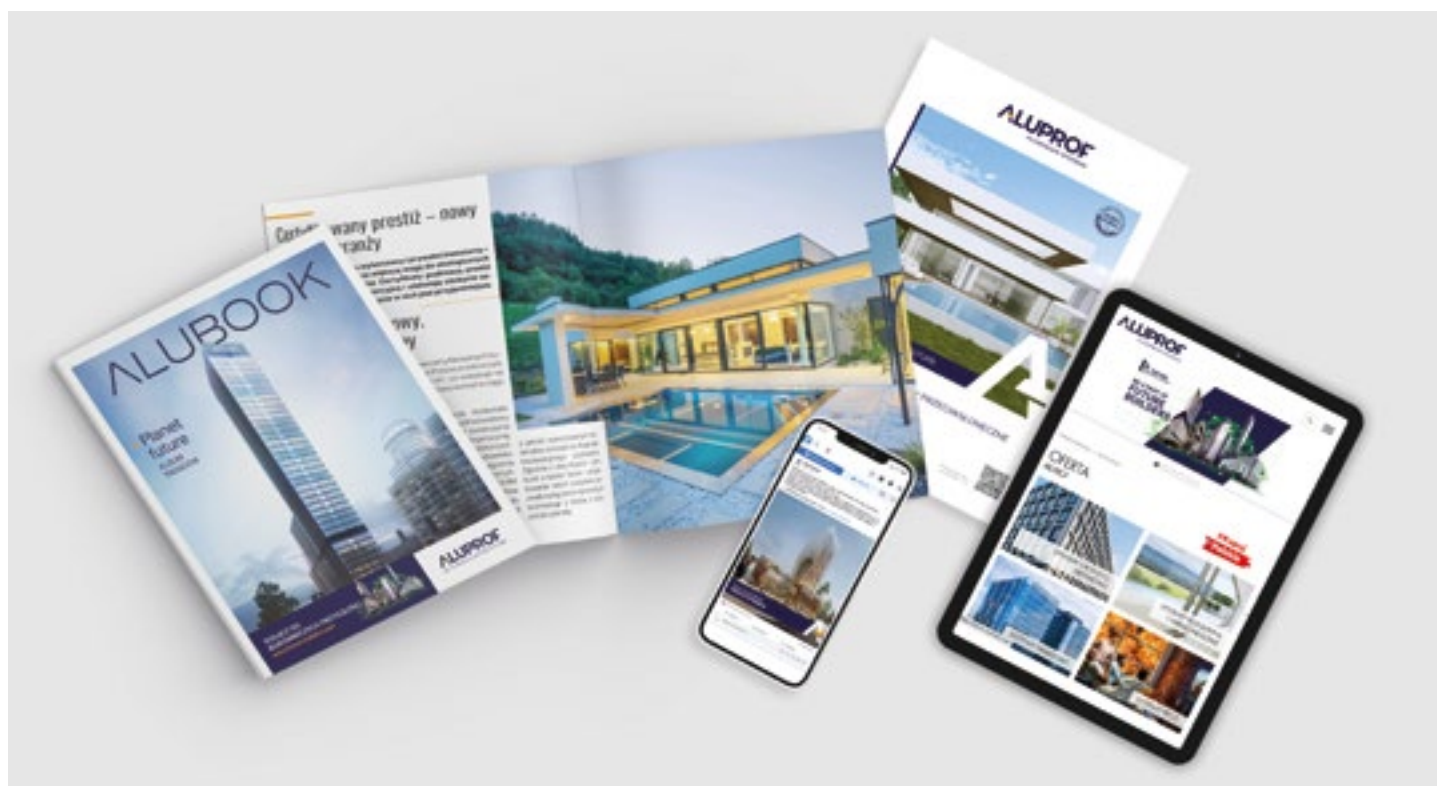


The new company logo

The ALUPROF brand and logo celebrated their fifteenth anniversary in 2021. Over the course of those years, we have increased the company's turnover severalfold and developed its position as leader of the aluminium systems for the construction industry segment in Poland. Every year, we introduce numerous innovative technologies onto the market and, as a global supplier of aluminium solutions, we are a presence in several dozen countries. Above all, though, by providing top-quality products, we and our partners are changing the

architecture of the cities and towns we live in. Our new logo, which has been updated and adapted to contemporary trends, is an expression of this and underscores our innovativeness, experience and concern for the environment. Complementing the graphic design is our new, primary motto, which demonstrates our readiness to continue developing and inspiring the entire sector. We firmly believe that we will succeed in building a better future!

ALUPROF
LET'S BUILD A BETTER FUTURE





ALUPROF's new visual identity reflects our strategy and vision. We want to create the world of the future, where buildings and infrastructure are environmentally friendly and self-sufficient in terms of resources and energy. People will enjoy health, comfort and a sense of security in cities and towns like that. Every innovation brings us closer to attaining all the dreams that our motto presents so beautifully. We've entered the new decade enriched by the experiences of the preceding years, filled with enthusiasm and still with the sense that we're responsible

for the future of international architecture.



Tomasz Grela

Chief Executive Officer
President of the Management Board
ALUPROF SA



Responsible solutions

Finding the right joinery is one of the most crucial aspect of constructing a new building or modernising an existing one and the decision is determined by product performance. Aluminium windows, doors, sun-protection blinds and façades are the optimal solution. Choosing systems by ALUPROF also provides a guarantee that the materials used have been produced with the future of the environment in mind.





Press Glass Sp. z o.o. headquarters, Konopiska Architects

Architects: Konior Studio

Photo: Nate Cook Photography

ALUPROF systems: ***MB-SR50N EFEKT*** semi-structural façade system, ***MB-77HS*** lift and slide door system, ***MB-86 SI*** window and door system

Responsibility

Aware consumers often take a company's eco-friendly credentials into account. They look for products which not only stand out for their quality, prestige and the awards they have won, but also feature documented benefits for the environment and local communities. In a goodpurpose® study conducted by Edelmans, 68% of the respondents declared their loyalty towards a brand which is socially engaged.

At ALUPROF, in line with our strategy, we have declared a goal of becoming completely carbon neutral by 2050. By 2025, we intend to have reduced our global footprint by 15%. When it comes to our company, which is part of Grupa Kęty Capital Group, the calculation of carbon dioxide emissions per ton of products reveals the very low parameter of 2.79 tCO₂e for low-carbon billets manufactured by the group for the LOW CARBON KĘTY line. In comparison, the production of one ton of primary aluminium somewhere in the world is connected with an average emission of 16.7 tCO₂e; in other words, almost six times higher. The low level of emissions was achieved thanks both to the use of the company's cutting-edge plant for the manufacturing process and to the high content of secondary raw materials in the form of recycled aluminium scrap at an average level of 65%.





In Grupa Kęty operations, we not only utilise our own waste, but also reclaim aluminium scrap from the market and process it. This includes products that have reached the end of their life cycle.

The process of purchasing the scrap is governed by rigorous quality control requirements. This ensures that the aluminium designated for secondary smelting is contaminant-free. It also means that no harmful compounds which could pose a danger to the environment are released into the air. When we reutilise aluminium scrap, we save approximately 95% of the energy needed for the initial production of aluminium. Recycling aluminium also enables us to reduce air and water pollution by 95% and 97%, respectively.

This series of activities is a continuation of our ESG strategy. The acronym stands for environmental, social and corporate governance, three key factors in assessing modern companies in terms of responsible operations. Companies should not only look after their own economic interests, but should also provide an environment which creates conditions for sustainable development and stability on a dynamic market. For years now, our in-depth analyses have also focused on these aspects of our business, which have been parameterised in our operations strategy.



The Bridge Hotel Wrocław – MGallery

Architects: Forum Architekci

ALUPROF systems: *MB-SR50NEFEKT* semi-structural façade system,
MB-86SI window and door system, *MB-78EI* fire-rated partition system



Cradle to Cradle and environmentally certified products

Aluminium façade, window and door systems by ALUPROF have been awarded a Bronze Cradle to Cradle Certified® certificate. This is yet another achievement for the company in terms of sustainable product solutions and a further step along the road to climate neutrality. At the same time, we are developing a range of products with global Environmental Product Declarations.

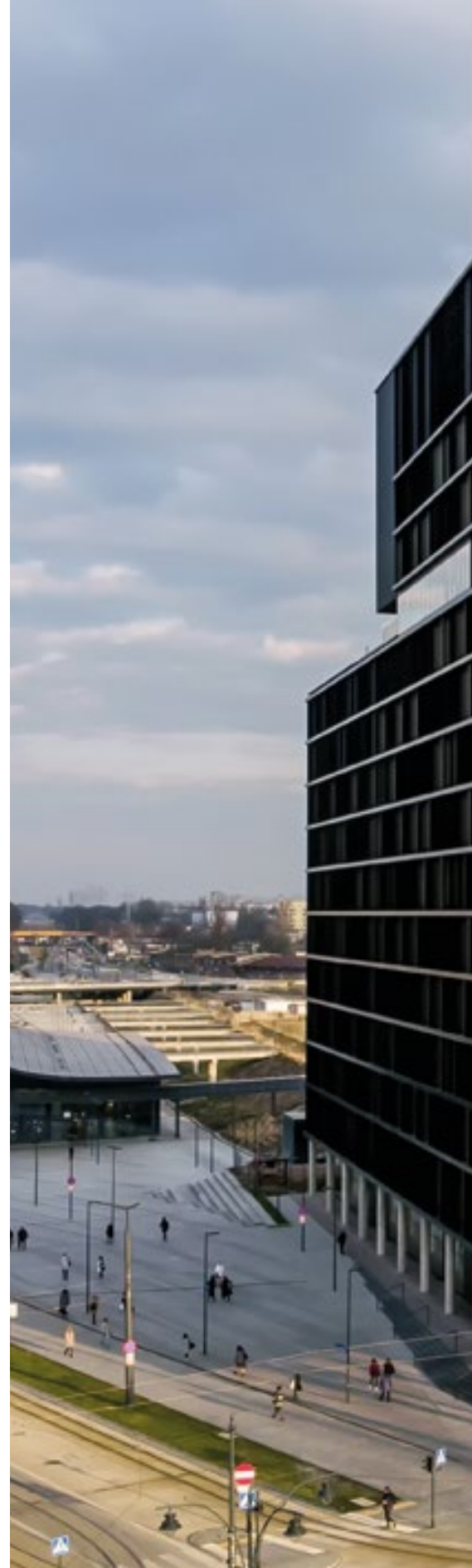
The Cradle to Cradle (C2C)

The certification process is carried out by the Cradle to Cradle Products Innovation Institute, and its main purpose is to encourage innovativeness and the design of products which have a positive impact on people and the environment. Cradle to Cradle Certified® is a globally recognized measure of safer, more sustainable products made for the circular economy.

The underlying concept is for every part of every product to be recyclable. The principle was set out by architect William McDonough and chemist Michael Braungart, in *Cradle to Cradle: Remaking the Way We Make Things* (2002).

The authors present the idea of moving away from the industrial model of cradle to grave, where a product's life cycle ends with the removal of the waste that it leaves, in other words, production > use > waste removal. The new doctrine posits the reuse of materials previously used in products and a shift to a circular economy. C2C suggests that industry should protect and enrich ecosystems and nature's biological metabolism. At the same time, it should maintain

a safe and productive product life cycle.





Brama miasta, Łódź

Architekt: Medusa Group

ALUPROF systems: *MB-86 SI* window and door system, *MB-SR50N EFEKT* semi-structural façade system, *MB-70HI* window and door system, *MB-SR50N OW* tilt and slide, outward-opening window system



Manufaktura, Łódź

Architects: Sud Architectes

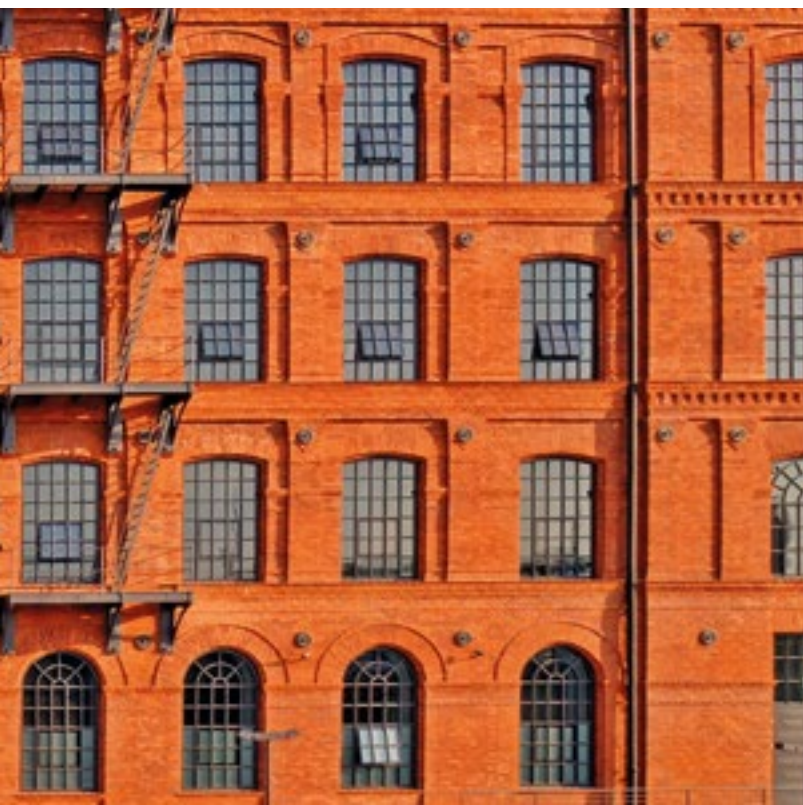
ALUPROF systems: **MB-60** window and door system with thermal break, **MB-60 Industrial** window and door system

Cradle to Cradle Certified® Bronze

The C2C certification process is not obligatory. However, ALUPROF carried out the necessary audits, which not only encompassed our production process and management methods, but also subjected our system design process and suppliers to detailed analysis. The assessment was conducted by experts from SGS, “the world’s leading inspection, verification testing and certification company”.

In order to obtain a Cradle to Cradle certificate, a product is evaluated in terms of its environmental and social performance under five crucial categories, which the organisation identifies as material health, product circularity, clean air and climate protection, water and soil stewardship, and social fairness. An achievement rating of Basic, Bronze, Silver, Gold or Platinum is assigned in each of the five categories. The standard encourages continuous improvement over time by awarding certificates which are based on rising levels of achievement and require renewal every two years.

The ALUPROF systems which are Cradle to Cradle Certified®, with a classification of Bronze, include our **MB-SR50N HI+** façade and our **MB-86 SI, MB-86 Casement, MB-86 ST, MB-70, MB-70 HI** and **MB-70 Casement** window and door systems.



C2C certification areas

The Cradle to Cradle Certified® (C2C) standard assesses how a company's value and supply chains are managed in terms of innovation and optimisation of materials and products in line with the most advanced, science-based measures available for material safety, product cycles, renewable energy, climate, water and soil management and social justice.

- **The material health category** serves to ensure that our products, created by leading designers and manufactured using chemicals which are as safe as possible for people and the environment, are produced taking into account the process for listing, evaluating and optimising the chemical composition of the material. When pursuing full certification, manufacturers can apply for separate certificates for products which meet the Cradle to Cradle Certified® requirements for material health.
- **The product circularity category** is intended to eliminate the concept of waste. In line with this principle, a product is continually recycled and reused. It does not become waste, its state simply changes.
- **The clean air and climate protection category** ensures that products are manufactured using renewable energy in order to reduce or eliminate the impact on climate change caused by the greenhouse gases generated during the manufacturing process.
- **The water and soil stewardship category** assigns water the status of a valuable resource, watches over the protection of watersheds and monitors the availability of water for people and other life forms.
- **The social fairness category** category assumes that businesses should run their operations with respect for the people and natural systems affected by the manufacture of a given product.

Environmental Product Declarations

Environmental Product Declarations (EPDs) are independent certificates which are recognised all over the world. An EPD is issued on the basis of a Life-Cycle Assessment of a product and its impact on the environment from the production stage to recycling. In Poland, assessments related to the construction industry are carried out by an independent panel from Building Research Institute. An evaluation and verification based on ISO 14025 and EN 15804 is performed on all the processes. The aspects taken into consideration include the quantity of waste produced during production and the water and energy consumption for the entire process.

Nimbus Office, Warsaw

Architects: BOSE

Photo: Nate Cook Photography

ALUPROF systems: *MB-70HI* window and door system, *MB-70US HI* window with concealed vent and thermal break, *MB-SR50N EI* mullion and transom façade system *MB-SR50N HI+* mullion and transom façade system

“

EPDs express the fact that the sustainable development of our company is particularly important to us, which is why we've applied for Type III certificates for our aluminium profiles and more products, our window, door and façade systems. This is a major change for the better for our clients because their developments have a greater chance

of receiving green building certificates like BREEAM or LEED, for instance.



Małgorzata Wojtasik

Chief Sales Officer

Member of the Management Board

ALUPROF SA

”

Waterfront, Gdynia

Architects: FORT Architekci

ALUPROF systems: *MB-70HI* window and door system, *MB-78EI* fire-rated partition system, *MB-SR50N HI* mullion and transom façade system, *MB-SE70 HI WFG* façade system



ALUPROF's operations are grounded in international standards for the effective implementation of environmental management systems. This is designed to maintain the delicate balance between continuing the company's growth but minimising its impact on the environment. EPDs and certifications make it easier for consumers to make informed decisions. When we choose products which carry the relevant markings, we are able to reduce the negative environmental impact of buildings. In Poland, the construction industry is responsible for

38% of CO₂ emissions.

Green building certificates

The trend for certifying buildings in terms of their environmental impact has been gaining momentum in the construction world for several decades. Multi-criteria certificates for green buildings are templates for design solutions to be used voluntarily. They form the basis for different buildings of the same type to be assessed by an independent organisation.



Neuca, Toruń

Architects: Ferma Kresek Sp.k., Tacakiewicz Sp. z o.o.

ALUPROF systems: *MB-86 SI* window and door system, *MB-SR50N HI+* mullion and transom façade, *MB-SR50N EFEKT* semi-structural façade



Certificates of responsibility

Standards set out by the various institutions serve to establish the credibility and transparency of their methodology and the assessment as a whole. Each multi-criteria certification system has several levels of rating, from the lowest to the highest. The level of certification awarded is dictated by the grand total of all the points scored across all the categories. The categories themselves cover environmental impact, use of recyclable materials and how the entire construction process affects the local infrastructure and the life of the community. These systems have been developed at different times and in different countries, but several of them are used all over the world.

The BREEAM system is more widely recognised in Europe, while the principles for the environmental assessment of buildings in the USA have been developed under the LEED certification programme. Both systems have functioned in Poland since 2010. They were introduced by the Polish Green Building Council. Our country also recognises assessments made by the German Sustainable Building Council (DGNB), the French Haute Qualité Environnementale (High Quality Environmental) standard and the WELL Building Standard®, which is run by International WELL Building Institute.

The most important evaluation systems

Certification is an objective confirmation of a building's energy efficiency and the fact that it is both as environmentally friendly as possible and has been planned to suit the local community in terms of aspects such as good transport connections. Certificates are also proof that it has been built or modernised using environmentally friendly materials, with the use of raw materials, energy and fuel carried out in line with the principles of waste management and clean air.

BREEAM certification (*Building Research Establishment Environmental Assessment Method*) is the most popular system in Poland. It was launched in Great Britain by BRE Global in 1990 and is present in seventy-seven countries. It consists of ten categories, each of which contains a range of requirements and critical points which have to be met in order to receive a mark.

The number of green buildings in Poland is growing by almost 30% annually.

Scores above 30% receive a Pass certificate; >45% is rated as Good; >55%, as Very Good, >70% as Excellent and >85% as Outstanding. One of the buildings which has received the highest rating, in other words, Outstanding, is **Posejdon** in Szczecin.

LEED, which is to say, *Leadership in Energy and Environmental Design*, was introduced by the U.S. Green Building Council in 1998. Again, the conditions for certification depend on categories which relate to environmental impact and are awarded a specific number of points; 40 to 49 points are needed for the Certified level, 50-59 for Silver, 60-79 for Gold and 90 to 110 for Platinum. One example of a building which boasts a Platinum LEED certificate is the **Alchemia office building in Gdańsk**.

Other noteworthy, multi-criteria certification documents include those issued by *Deutsche Gesellschaft für Nachhaltiges Bauen* e.V (the German Sustainable Building Council; **DGNB**) the French Haute Qualité Environnementale standard (High Quality Environmental; **HQE**). The USA's **WELL Building Standard** was developed so that it can be used in conjunction with other assessments, primarily BREEAM and LEED.

It is worth emphasising that a growing number of buildings represent Poland's certificate, the Green Building Standard (**GBS**), which was approved by way of WELL Building Standard certification in 2016.



Kompleks Alchemia w Gdańsku

Architects: APA Wojciechowski

ALUPROF systems: *MB-SE75* unitised façade system, *MB-SR50N EI* and *MB-SR50N HI* mullion and transom façade system, *MB-SR50N OW* tilt and slide window system, *MB-70HI* window and door system, *MB-118EI* fire-rated partition system



Elektrownia Powiśle, Warsaw
Photo: Marcin Czechowicz



Trends and directions of growth for the sector

Despite the pandemic, the recent development of certified buildings in Poland can be evaluated positively. The most crucial parameters, namely, the increasing number of new buildings and growing amount of usable area, are better than a year ago. However, only an analysis of forthcoming years will reveal the full extent of the impact COVID-19 has had on building certifications in Poland.

We have gone beyond the figure of one thousand 'officially' green buildings, though, and the annual increase is almost 30%. BREEAM has held its position at the fore as the most popular certificate and has now achieved a market share of almost 79%. LEED accounts for 17% of all the certified buildings, while the share of each of the other certificates, in other words DGNB, WELL and so forth, averages 1%.



For years now, the certification of green buildings has been setting the course for the development of the entire sector, including ALUPROF. At present, we are aiming to achieve a 20% increase in the share of our aluminium systems in energy efficient and passive developments by 2025. International environmental certificates like BREEAM, LEED, DGNB, HQE and WELL confirm the growing awareness of the climate crisis and the impact the construction industry is having on it. Developers, investors and other actors are more and more readily choosing ecological materials and solutions that

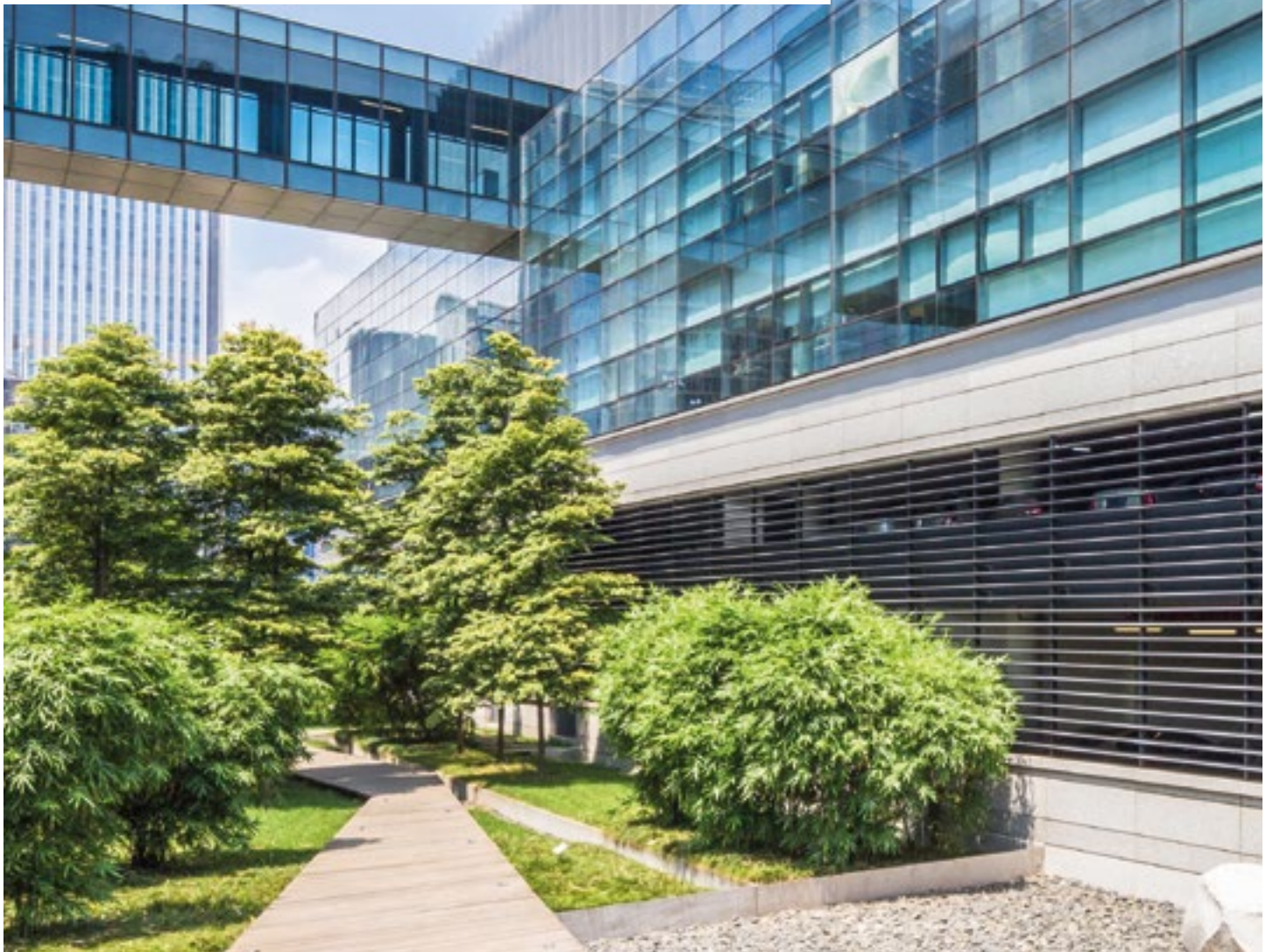
significantly improve the quality of developments and the life cycle of the buildings being designed. Progress in this area is heartening and every project featuring our systems that receives a green building certificate is a source of pride for us and motivates us to forge ahead with further improvements to our processes and products.

Aleksandra Baksik

brand & sustainable development manager
Aluprof SA



Modern business development sets us a host of environmental challenges. Pollution and other threats to people and the environment mean that it is essential to create new protective capabilities. Awareness not only of pollution, but also of other hazards, including those presented by noise, is steadily growing in the construction industry. Standards for the management of space, and not only commercial and urban, either, should be clear and unambiguous, while the sustainability of development itself should remain the essential value. One way of making this possible is through multi-criteria environmental assessment certificates.





Obtaining a green building certificate is a lengthy process. The key to industry-wide changes is awareness, in turn, on the part of developers, architects, contractors and clients. But certificates are slowly becoming a must-have for newly built and regenerated buildings.

Dorota Bartosz

project expert at the Polish Green Building Council (PLGBC)



It's still too soon to talk about how the pandemic has actually affected green building in Poland, but the trends and rate of growth are satisfactory. For example, there's a high growth in residential building, but we're still talking about individual green residential buildings. Yet they're not more expensive, given how they subsequently reduce running costs.

At this point, I'd like to emphasize that the PLGBC has introduced its own certificate, Zielony Dom (Green Home), which increases a development's prestige and confirms its sustainable

credentials. More about this can be found on our website, at www.plgbc.org.pl/certyfikacja-zielony-dom/

To sum up, the number of certified buildings is going to increase and so is the speed it happens at. Several things support this. The tools that the European Union gives us are instrumental and so are climate neutrality goals. Above all, though, it's the growing awareness among consumers and along the manufacturing and supply chain that helps.



Certified prestige, the new industry standard

Architects, developers, contractors and private investors are all attaching more and more importance to the ecological aspect of assessing buildings. Certificates enhance the prestige of a development and its commercial value, making it easier to attract tenants. Daily work and life is pleasanter in those buildings.

A prestigious building is a certified building

According to the WHO, we spend 90% of our lives in buildings. In the past year, we have all felt this most particularly. Buildings that have received certificates for their first-class properties are the future of the construction industry. Obtaining a rating from one of the institutions which issue multi-criteria certifications is becoming a standard on Poland's commercial property market and the trend has increased since the introduction of the new Technical Conditions at the beginning of 2021. According to data provided by the PLGBC, the usable area of

certified buildings in our country has now exceeded 23 million square metres, which indicates an increase of 35% over the course of the year.

Constructions of this kind fall right into line with the global and European trends for increasing energy efficiency and for reducing waste and adverse environmental impacts. Developments created in accordance with the standards of certifying organisations like BREEAM and LEED are less of a burden on the environment, cheaper to run and more comfortable for users, while the



quality of the materials makes for many years of problem-free use. As encapsulated in ALUPROF's concept, 'Let's Build a Better Future', designing buildings of this kind makes it possible to combine state-of-the-art technologies with concern for the future of the planet.







How to obtain a certificate?

The decision to apply for a multi-criteria assessment certificate should be taken at the building design stage. This makes it possible both to establish the appropriate materials, supply chain and logistics and to plan other work in order to meet the requirements of the institution in question. Collaboration between the developer or developers and all the subcontractors is crucial to the process at every stage of the project.

At ALUPROF, we have spent decades developing a range of systems which enable buildings to attain the highest parameters for energy self-sufficiency and for thermal and acoustic insulation. Aluminium is a material which fits in perfectly with current ecological building trends. Our range offers a multitude of energy-efficient window, door and façade systems. These solutions are also used in passive buildings, be they small, private projects or commercial skyscrapers and luxury hotels. Our aluminium products stand out for their superb properties and, at the same time, they enable architects to bring even their boldest ideas to life.

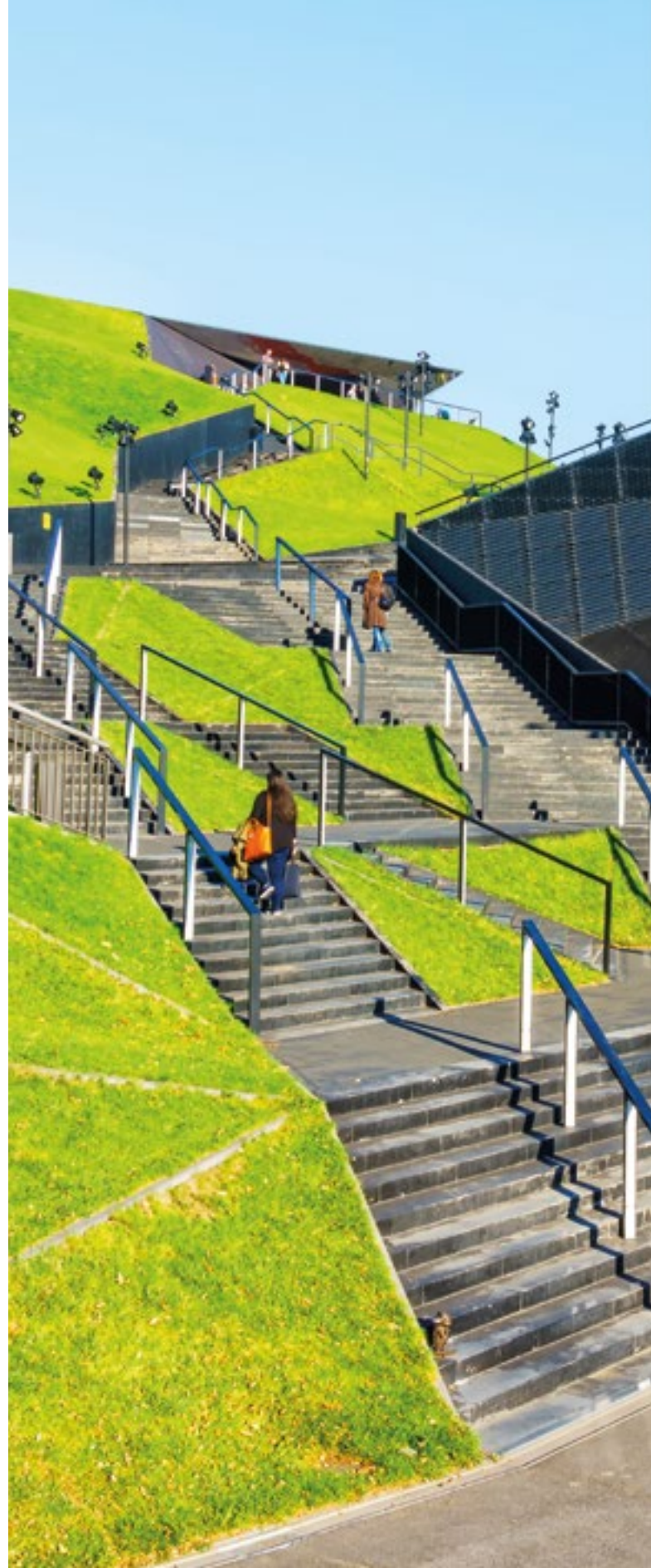
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Contemporary building isn't just about increasingly high standards in terms of profitability and environmental impact. It's also about interesting forms and bold ideas that often require custom-designed solutions. It's because we work closely with designers and contractors that we're able to supply solutions tailored to the particular needs and technical requirements of a building in design and under construction.



Zbigniew Poraj
commercial sales
director ALUPROF SA

”





In pursuit of zero emissions

The current agenda of the World Green Building Council is for the construction industry to be completely decarbonised by 2050. However, experts agree that building a property with zero energy requirements and the absence of CO₂ emissions that goes hand in hand with that is usually unfeasible. As a result, passive or energy-saving buildings which draw energy from renewable sources at every stage of the construction stage are an optimal means of achieving the goals. Carried out on a global scale, this kind of action will make it possible to have an environmental impact, but this time, in a positive way.

MCK International Conference Centre, Katowice

Architects: JEMS Architekci

ALUPROF systems: *MB-70HI* window and door system, *MB-SR50N* mullion and transom façade system, *MB-78EI* fire-resistant, mullion-free partition system

Bringing former glories to light

The regeneration of former architectural gems presents contemporary architects with an enormous challenge. They are faced with reconciling respect for history and the principles of historical design with the demands made of modern buildings. The choice of material is crucial. ALUPROF's innovations set new standards for renovation.

Using aluminium systems for modernisation projects means that architecture which is modern and atmospheric at one and the same time can be created thanks to the construction potential of this material. It includes the option of creating curves and the possibility of giving aluminium profiles the unusual shapes typical of old buildings. The result is windows and doors which are deceptively similar in form to those made decades ago.

In addition to their aesthetic qualities, ALUPROF systems offer the best possible thermal insulation, energy efficiency and resistance to water, wind and noise. One example is

the **MB-SLIMLINE**, which can be used to replace old windows, providing a similar appearance on the outside, while increasing the thermal insulation.

The **MB-FERROLINE** features even more construction potential. It can be used to produce fixed, outward- and inward-opening windows and there are several variations on the appearance of the exterior profiles. The system is ideally suited to buildings protected by conservation orders.

Our INDUSTRIAL solutions are used to produce operable and fixed windows with vertical, horizontal or diagonal muntins. Using thermal insulation systems

for modernised buildings provides greater protection against heat loss via windows, while the malleability of the window profiles allows a range of curved structures to be created. The INDUSTRIAL series offers two thermally insulated systems, the **MB-60 Industrial** and the **MB-70 Industrial**.



Hard Rock Hotel w Budapeszcie

Architects: Studio 100

ALUPROF systems: *MB-86 FOLD LINE* bifold door system, *MB-86 SI* window and door system, *MB-SR50N EFEKT* semi-structural façade system, *MB-SR50N HI+* mullion and transom façade system

HALA GOING

A photograph of an industrial facility under a blue sky with scattered white clouds. On the left, a tall, dark, cylindrical brick chimney stands prominently. To its right, a large, horizontal, cylindrical metal tank is supported by a complex steel framework. The tank has a corrugated metal surface and is surrounded by various pipes, ladders, and structural beams. The overall scene depicts a large-scale industrial or manufacturing site.

A new take on industrial architecture

The regeneration of post-industrial areas is a challenge for architects and designers, who are continually outstripping each other in dreaming up not only new forms, but also more functional adaptations of old buildings. In Ostrava, in the Czech Republic, on the site of the former Dolní, or Lower, Vitkovice ironworks, stands a monumental gasholder which has now been transformed into a arts, educational and conference centre known as the Gong.

The Gong, Ostrava

Architekt: Josef Pleskot

ALUPROF systems: *MB-SR50N A* aluminium profile overlay system, MB-SR50 façade system, *MB-70HI* window and door system, *MB-SR50N* mullion and transom façade system

The Dolní Vitkovice industrial complex, which operated for more than two centuries, also included a coal mine and there was no other place like it in Europe. The gasholder, which was adapted in 2013, was built in the 1920s. A cylindrical structure almost 32 metres high, it remained in service with no major problems until 1998.

The architect responsible for transforming the gasholder into the multifunctional Gong is Josef Pleskot. In line with the design, the original, steel structure was preserved, leaving the historical value of the gasholder intact. Inside, many of the old features have been retained, such as the original, iron floor

with its distinctive riveting. The auditorium at the centre seats up to 1,500. The Gong also offers two concert halls, an art gallery, catering outlets and conference facilities. The design has won international recognition and a number of awards. One such honour came at the BAU Trade Fair in Munich, where the Gong was listed as one of

the world's top ten buildings.



A venerable building with state-of-the-art glazing

The design was for a built-in facility which, to all intents and purposes, leaves the original gasholder construction intact. The elevation is perforated in just four places. The visitors entrance is situated in the eastern section. The sheet metal was cut open and functional, modern glazing was installed. To the west, at the level of the stage, a massive opening was cut and then fitted with a large-scale window looking out over a view. The roof of the Gong is glass, giving a sense of space by filling the interior with natural light. To achieve the architect's vision for the glazing, ALUPROF's **MB-SR50** façade system, **MB-70HI** window and door system with increased thermal isolation and **MB-SR50N A** mullion and transom curtain wall system were used.





During the renovation of historical buildings, preserving the original character is of the essence. The choice of solutions is pivotal; they need to correspond to the original elements of the building and, at the same time, they have to provide twenty-first century functionality. The ALUPROF MB-SR50N A aluminium profile system can be installed into wood and steel, making it possible to combine construction materials

of various material, functional and aesthetic properties. It's ideal for developments involving the regeneration of post-industrial sites, where a particular décor has to be preserved. In the case of the Gong, this meant the interior steel profiles. What's more, our MB-SR50N A meets the highest technical requirements in terms of both thermal and acoustic insulation, as well as air- and watertightness.

Marek Šišolák

sales director

ALUPROF System CZECH s.r.o.





The ALUOPROF **MB-SR50N** A mullion and transom curtain wall in aluminium and wood or aluminium and steel can be used for a number of purposes, including glass roofs and conservatories. The aluminium profiles can also be customised to meet the requirements of a given design. This is achieved by shaping the masking profiles accordingly..

The use of ALUPROF's systems played a major role in creating the secure, aesthetic and functional space of that unique centre which is Ostrava's Gong.



CONCORDIA DESIGN

Concordia Design, Wrocław

Architects: Q2Studio

ALUPROF systems: *MB-SR50N Efekt* semi-structural façade system, *MB-SR50N EI Efekt* fire-rated curtain wall system, *MB-86 SI* window and door system



Bringing former glories to light

In south-west Poland, where the Odra River flows through the city of Wrocław, lies Wyspa Słodowa (Malt Island). There, at the very heart of the Lower Silesian regional capital, stands the Concordia Design Wrocław building. A place where modernity and history meet, it was designed by MVRDV, the renowned Dutch practice co-founded by Winy Maas.

History and modernity meet

Concordia Design Wrocław, which was built on the site of a four-storey apartment house dating from 1845, was the only building on the island not completely reduced to rubble by the air raids of the Second World War. The ruins have been partially restored and extended, uniting the old and the new in the recently completed development. MVRDV and Wrocław-based QStudio were inspired by the head of Janus, the Roman god of beginnings, transitions, duality and ends, who is usually depicted with two faces, one looking to the past and the other, to the future.

It proved possible to save the historical elevation of the apartment house and its outbuilding, which had retained some windows, and to create a flowing transition to the new, minimalist section of the building. Both the renovation of the old section and the design of the new took place in close collaboration with the city's conservation officer and the Wrocław urban architect. The demolition work and digging of the foundations was accompanied by an archaeological excavation.

Creative space

The developer's main concept was to maintain the open nature of the island as it was and to build the Concordia Design community in symbiosis with the surroundings. The third floor houses office and co-working space designed for start-ups, IT and companies connected with the creative sector. There is room for around four hundred work stations. Part of the office hub has been made available in the form of art studios with special rental conditions. The idea is to integrate and stimulate the local community and the city's artistic community.

Entertainment and gastronomy are also an important aspect of the building's use. The lower storeys of the modern section is home to pubs and a catering zone. The sweeps of glazing create a sense that the boundaries between the interior and the surroundings have dissolved. The fifth floor is the highest. It features an open terrace surrounded by an aluminium and glass balustrade, with views over the historical centre of the city spreading out below it.

It is also home to Poland's largest green wall. Measuring 360 square metres, it contains 10,000 plants.





I've always loved coming to the Island. First as a student and then for a stroll with my wife and child. It's my favourite part of the city and Wrocław is my home town.

I'm aware of how unreasonable the whole city's expectations of the building were and of how important it was for it to be open to the residents. The use of aluminium joinery in the new and old sections alike means that the design of the Concordia design won't age. The window modules, which are based on aluminium profile and increase in size to end in panoramic glazing on the new side, are the element that unites the entire design.



Jarosław Kowalski

deputy commercial sales director
ALUPROF SA







The glazed walls of the building were created using the **MB-SR50NEFEKT** semi-structural façade system, making it possible to obtain the impression of a uniform sheet of glass divided by a grid of slender, twenty-millimetre lines. A custom-designed variant of the system, the **MB-SR50N EI EFEKT**, was used to delineate the fire compartments. This solution, which provides a lightweight, fire-resistant, suspended or infilled curtain wall, is available in fire-resistance classes EI 30 to EI 60 and can be used to build flat and staggered walls. Another of its major advantages is that the exterior appearance of the fire-resistant façade is identical to the standard **MB-SR50N EFEKT** system. This means that, visually, there is no divergence between the fire-rated façade and our standard mullion and transom curtain wall.

The windows and doors for Concordia Design Wrocław were designed on the basis of the **MB-86 SI** system. Large-scale glazing was installed throughout the building's façade and it proved possible to use it in both the modern and restored sections of the building, creating classic windows with muntins. Other strengths of the **MB-86** system include the excellent thermal insulation and high durability of the profiles, meaning that they lend themselves to creating large-scale, heavyweight structures while maintaining superb airtightness parameters.

A place for building a community

This building, which is located in the London Borough of Southwark, close to the major railway terminus of Waterloo, represents almost 3,000 square metres of top-end office space. 1 Valentine Place was formerly a bakery dating back to the Edwardian era. The design for its new lease of life, which is the work of Stiff + Trevillion Architects, involved retaining the façade of the building, which stood on the corner of what was once Valentine Row and Webber Street.



1 VALE NTINE PLACE

1 Valentine Place, London

Architects: Stiff + Trevillion Architects

ALUPROF systems: *MB-70* and *MB-70HI Industrial* window systems

Business and pleasure

The estate is located in a conservation area established by the local residents to protect the historical bakery and other industrial and warehouse buildings in the area. The architects at Stiff + Trevillion were therefore faced with a difficult task as they set about designing a modern office building in central London. The development was created against the backdrop formed by the surviving façade of the former flour mill and bakery. High up on the elevation, a date can be seen,

1907, the era of King Edward VII.

1 Valentine Place is a seven-storey, Grade A office building. Located on a bustling corner of Blackfriars Road, it is distinctive for its striking exterior appearance and an interior which is both stylish and functional. It was designed to create a harmony between the minimalist work spaces and the cosy communal areas. The building is not only a hub for businesses, but also a place for the local community. The third and fourth floors feature terraces, providing exclusive relaxation areas and superb views of the vibrant neighbourhood and the entire City of London.





Aluminium façades where the centuries meet

Like Concordia Design Wrocław, the façade of the existing historical building at 1 Valentine Place has been combined with contemporary solutions. The design was based around the surviving walls of the bakery, which date from the first decade of the twentieth century. The exposed concrete frame is clad in aluminium and high-performance glazing and it features industrial-style aluminium windows produced using ALUPROF's **MB-70HI Industrial** and **MB-70** systems, both of which provide increased thermal and acoustic insulation.

Our aluminium systems have proved to be ideal for the renovation of historical buildings since they make it possible to create places which are modern and atmospheric at one and the same time. Thanks to the almost unlimited construction potential of the material. Our MB-70HI Industrial windows replace old steel structures without changing the external appearance of the building. An essential advantage of the system is the fact that the profiles can be bent, affording the opportunity of creating arched structures.

A host of awards and certificates

1 Valentine Place has received numerous prestigious architectural accolades, including the Office Buildings category of the New London Awards and the Office Architect category of the bd Architect of the Year Awards, both in 2013. However, it is not only the compelling volume and interior design that make the space so exceptional. The requirements for reducing CO₂ emissions in Southwark are extremely rigorous. In terms of energy efficiency and environmental friendliness, 1 Valentine Place not only falls within those standards, but actually meets even stricter ones.

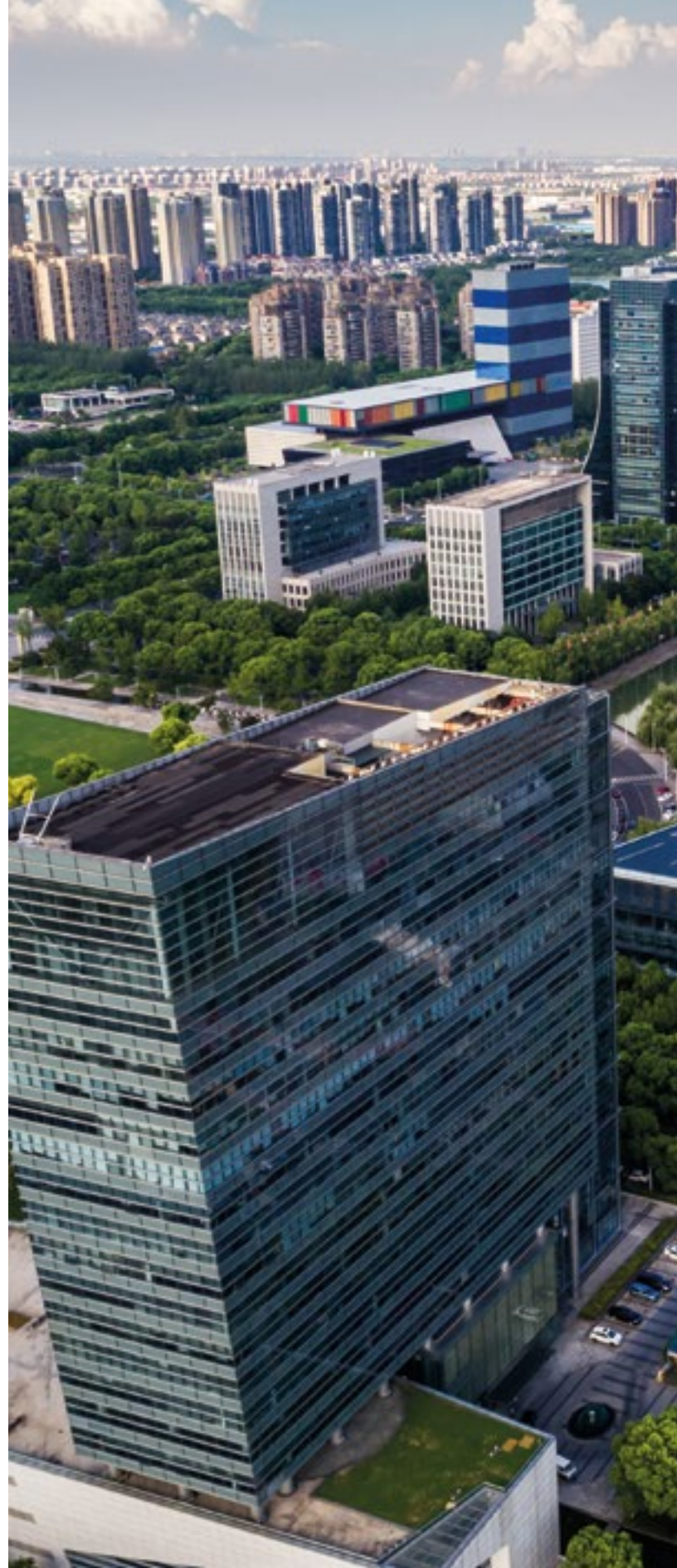
The use of green materials and technologies mean that the development has been awarded a BREEAM certificate with a rating of Excellent. From the design stage, via the transport of materials and the construction process, to the running of the building, the developers never forgot the principles of sustainable development. The building features solutions such as exposed thermal mass, air source heat pump technology and extensive photovoltaics, all with the intention of keeping its carbon footprint as low as possible.



Sustainable development

At ALUPROF, we consciously take the sustainable development route. In addition to operations related to growing the company and introducing innovations, we are also committed to social and environmental activities and we treat all these objectives equally.

Like any business, we strive to meet economic growth targets, but the key is being aware of the consequences of our actions and pursuing sustainable development. At the root of our strategy are the seventeen sustainable development goals which were adopted by United Nations General Assembly in 2015. They relate to strictly social objectives such as standards of living and environmental and economic issues. Our activity and positive impact in these spheres are reflected in our work on shaping a culture of corporate social responsibility.





Society

As one of the Grupa Kęty Capital Group companies, at ALUPROF we put the concepts of corporate social responsibility and sustainable development into practice by creating multifaceted relationships with the widest possible stakeholder group, encompassing our shareholders, personnel, clients, business partners and the local community, and we keep their needs and requirements at the forefront of our minds. Forging dialogues like this is a guarantee of our company's harmonious development and the way forward when it comes to building a positive image.

ALUPROF and Grupa Kęty Capital Group have also launched numerous initiatives and played a part in the establishment of organisations. For instance, the Grupa Kęty Children of the Podbeskidzie Region Foundation works with children's homes and young people's centres in the region, taking those in their care under its wing. It also promotes the idea of foster families.

Another of ALUPROF's activities which is worth highlighting is its collaboration with the Green Hands campaign, which is organised by the ARKA Ecological Foundation. Through the campaign, the foundation is tackling some very real problems related to the climate crisis and providing education on forms of supporting ecological action. Workshops, happenings, and events are held for children and young people under the 'Green Hands' banner. The participants come from all over Poland.





Economy

ALUPROF's commitment to sustainable development has influenced every area of the business. Developing a 'green accountancy' model has enabled us to conduct a thorough analysis of the costs of environmental protection and to reflect those aspects in our company reports. Our analyses cover a number of areas, including capital expenditure on environmental protection, the maintenance and running costs of protective equipment and the costs of environmental impact charges, product charges and certification. This means that decision-making connected with our pro-ecological activities is easier and the evaluation of their economic and environmental efficacy provides a basis for optimal decisions about subsequent moves. As part of Grupa Kęty, ALUPROF is following the Global Reporting Initiative (GRI) path. The GRI is an independent, international organisation and the pioneer of sustainable development reporting. It helps companies and governments all over the world to comprehend and communicate their impact on crucial environmental economic and social questions.

The environment

Our activities are based on our new strategy and the aspirations it enshrines. We have already succeeded in reducing the pollution generated during primary aluminium production to a minimum and we have declared our intention of being completely carbon neutral by 2050. Our use of recycled materials is also increasing, leading to a reduction in air and water pollution of around 95%.

We also attach great importance to the performance of our products and to obtaining international certification for our systems. This includes Cradle to Cradle certification and environmental product declarations discussed earlier in this AluBook. We have introduced the internationally recognised TÜV NORD ISO 14001 standard, which sets

out methods for implementing an effective environmental management system.

It was developed in order to define the principles for organisations to maintain the delicate balance between remaining profitable and minimising the impact of their operations on the ecosystem. Those which apply the requirements set out in the standard are capable of doing just that. The ISO 14001 and other standards defining the requirements for various management systems were constructed taking the Plan-Do-Check-Act/Adjust (PDCA) method, also known as the Deming Circle/Cycle/Wheel, into consideration.



We've been working with ALUPROF for years on PLGBC membership projects to broaden knowledge about sustainable building.

Aluminium is a good material for recycling and ALUPROF's products meet stringent requirements for providing buildings with high thermal insulation.

They reduce energy consumption, the release of CO₂ into the atmosphere and negative environmental impacts.

Sustainable, contemporary buildings are often designed on the basis of the multi-criteria assessment systems which are pointing the way in terms of changes in the modern construction industry.

When it comes to our joint activities with ALUPROF, it's worth mentioning the annual activities associated with the World Green Building Week campaign and the company's support during the organisation of our events. ALUPROF is a long-term partner of the PLGBC's Earth Day, which is regular event focused on the potential and development of cities in the context of sustainable building. October 2020 saw the tenth PLGBC Green Building Symposium.

Every year we can count on the participation of ALUPROF's

experts in talks, presentations and discussion panels.

We're also delighted that one of the ambassadors of the World Green Building Council's #BuildingLife programme is a representative of ALUPROF. The company has joined the organisations which have supported the decarbonisation route, as well.

The materials produced as part of the project indicate the changes that will have to occur at the local level if Europe is to become the first climate-neutral continent.



Monika Kmera
marketing manager
PLGBC



An aerial photograph of a city skyline. In the foreground, there are lush green trees and a paved area with yellow markings. In the middle ground, there are several modern buildings, including a prominent one with a yellow facade. In the background, there are more skyscrapers, including a very tall one with a yellow top. The sky is clear and blue.

BuildingLife is a project set up by the World Green Building Council (WGBC) with a view to creating a plan of action for decarbonising the construction industry and supporting the European Green Deal. The WGBC is a global network of around seventy national councils dedicated to ecological building. The #BuildingLife initiative is led by ten of them and selected leaders from the private sector. The councils spearheading the #BuildingLife project represent Croatia, Finland, France, Germany, Ireland, Italy, the Netherlands, Poland, Spain and Great Britain.#

The tasks being carried out by the ten organisations include not only creating regional roadmaps relating to decarbonisation, but also establishing and expanding a database of construction materials containing information about their full environmental impact. The plans being formulated are a response to the current situation in the sector. At present, buildings are responsible for around 40% of the EU's energy consumption and 36% of its CO₂ emissions, while 75% of its building stock is energy inefficient.







The nature of technology

Development is technology. Creating new solutions and materials improves work and increases the user's comfort and potential. While our forebears gave no real thought to the negative consequences of their pursuit of development, people today are well aware of the possible consequences of their actions and are choosing other paths to civilisational progress.

This chapter is proof that technology need not harm the environment. Quite the opposite, in fact! It can take inspiration from nature and work in harmony with it. In the construction industry, technology includes the efficient use of organic raw materials and the recycling of those which have already been previously used. It is the generation of energy from natural sources and the design of buildings in visual harmony with their surroundings.

Technology in the construction industry is innovation drawn from nature.

Are climate neutral buildings actually possible?

The strategy announced by the European Commission, which aims to achieve climate neutrality by 2050, has influenced the actions of countries, companies and organisations working for the public good public in key economic sectors around the world. This includes the construction industry. As the sector implements the European Green Deal, it is also stepping up its green building efforts. This involves both creating energy-efficient and climate neutral buildings and modernising those which have a negative environmental impact.





The most powerful economic sector. Who is setting the trends? And why?

The construction industry has the greatest impact on the decarbonisation process and increasing levels of energy efficiency. Why? According to the 2020 report compiled by the Global Alliance for Buildings and Construction, the sector accounts for 38% of annual carbon dioxide emissions worldwide. It should therefore come as no surprise that it is actually this industry which is successfully creating pro-ecological trends, blazing a trail and setting an example for other branches of the economy to follow.





Climate neutral buildings. A necessity and the future of building

NAchieving climate neutrality is affected by every stage of a building's life cycle and, as a consequence, by every actor involved in constructing and running it. Current trends and developments indicate that new developments and modernisation or regeneration projects are aiming for zero emissions.

Buildings which do not require substantial reserves of energy to heat, cool or light a given space are being designed. These energy-efficient projects rely wholly or partly on renewable energy sources. During the construction phase, low-emission materials are used. In modernisations, the focus is on adapting existing elements.





We're well on the way to designing and creating nothing but zero-emission and energy-efficient buildings. Our experience shows that the concept of climate-neutral building isn't a dream any more. It's a reality within reach. There's a range of proof, including recent developments that feature ALUPROF's cutting-edge aluminium systems. One example of that would be Sara Kulturhus in Sweden. Another would be the regeneration of the Posejdon building in Szczecin. The historical section has been preserved and it's been

transformed into a building with almost zero energy consumption.

The unprecedented ecological solutions mean that CO₂ emissions have been reduced by 76% and it is capable of generating the energy it requires for heating and cooling. Our portfolio is full of projects like that and every subsequent undertaking moves resolutely closer to the ideal of a climate neutral building.



Małgorzata Wojtasik
Chief Sales Officer
Member of the
Management Board
ALUPROF SA



SARA KULTUR HUS

Architectural rendering of the Sara Kulturhuset building in Sweden. The building is a tall, modern structure with a glass and wood facade. The ground floor features a prominent glass and wood structure. The upper floors are primarily glass, with some wood paneling. The building is surrounded by trees and a paved area with people sitting on the ground.

Sara Kulturhuset, Sweden

Architects: White Arkitekter

ALUPROF systems: *MB-SW55* system, *MB-SR50N HI+* mullion and transom façade system, *MB-86 SI* window and door system



One of the tallest wooden buildings in the world

One of the world's tallest wooden and aluminium buildings has been built in the Skellefteå municipality in northern Sweden. Designed by White Arkitekter, the twenty-storey structure, which houses facilities including a concert hall, a spa and a hotel, is a textbook example of the concept of green building put into practice.

Construction work began in autumn 2018 and the building has now become a symbol and landmark of region. It was named after one of Sweden's foremost authors, Sara Lidman, who came from the region. The gesture reflects the designers' ruling idea, which was to create a building that would bring culture, entertainment and leisure together. Inspiring encounters, exhibitions, concerts, performances and banquets will all take place there. Sara Kulturhus is a dynamically developing space for the city's residents and visitors from all over Sweden and the world.

The building consists of two sections, a lower and a higher. The lower, four-storey section showcases six spaces which can be used as conference and performance spaces seating 3,200 people. The taller section takes the form of an eighty-metre tower housing two hundred and fifty luxury hotel rooms, a restaurant, complete with panoramic view, and a spa.

One of the tallest wooden buildings in the world

The aim of the companies working together on the development was to create an environmentally friendly, energy-saving building. It is an example of the Skellefteå municipality's wooden building strategy brought to life, with the other main materials being aluminium and glass. Here, the Scandinavian tradition of constructing with wood is juxtaposed with cutting-edge engineering solutions, making the development a model of sustainable design and green building.

The lower section, which houses the cultural facilities, was built using prefabricated wooden elements attached to concrete slabs, spreading the load of the tower. The glazing was produced using ALUPROF's **MB-SR50NHI+** system, which was customised to accommodate the requirements of the development.



The hotel section was constructed from prefabricated, wooden room modules featuring panoramic glazing which reflects the firmament, giving the impression that the tower is soaring above the culture centre. The construction of the façade differs in that it features double-skin technology, which increases the building's energy efficiency. Double-glazing was used for the elevation of the cultural section, creating a sense of its melding with its surroundings. The basis for the outer cladding was provided by the ALUPROF MB-SW55. A system custom-designed for the development, it has obtained a BREEAM-SE GOLD rating certificate issued by Swedish business association Byggvarubedömningen (Building Material Assessment, BVB). The triple-glazing of the interior was produced using our MB-86 SI system, which features a highly durable profile and excellent thermal insulation, with a U_f from 0.92 W/(m²K). For this project, we worked with Lithuanian façade contractors Lignas UAB and Trevita UAB, longstanding ALUPROF partners.



In 2018, the Skellefteå Kulturhus design won the Civic and Community category at the Architectural Review Future Project Awards, which are held during the MIPIM, an international property event hosted in Cannes. It was also nominated for the Best Futura Project at the same event.

Future Builders

Our understanding of the world and its complex system of interconnections is steadily improving. Climate crises, food crises, health crises and raw materials crises are impelling us to promote the idea of sustainable development. It is more crucial than ever for technological progress to interact with respect for today's resources, while the global economy needs to start taking non-obvious costs into account. This is why ALUPROF created Future Builders, a forum for construction industry experts, architects and urban planners who care about a better tomorrow, for which, after all, we are all responsible.

When we visit the cities and towns of antiquity, we marvel at the breadth and completeness of their planners' vision. The works created by the architects of the time still inspire admiration and prompt discussions about the paradigm of good living, functional space and the use of natural resources. The cities and towns they built are still standing and, thanks to the work of scholars, we know how people lived in buildings and public spaces designed in ancient times.





JOIN THE BUILDERS OF THE FUTURE

at www.future-builders.com

Posejdon, Szczecin

Architects: Federacyjne Biuro Architektoniczne
ALUPROF systems: ***MB-SR50N HI+***, façade system,
MB-SR50N OW tilt and slide system, ***MB-86 SI***
window and door system

There are also examples of fallen civilisations, abandoned locations and ruined buildings where the people were victims of the great movements of the wheel of history. Perhaps this begs the question as to how resistant the sketches, designs and plans they sprang from were to future crises.

ALUPROF's Future Builders initiative aims to guide architects and urban planners so that their cities, towns and buildings can be enjoyed by future generations of citizens. It is intended to raise awareness of harmonious coexistence and sustainable development. The work of planners should ensure that new buildings, residential estates, cities and towns fit in with their social and natural surroundings and create no tensions and conflicts. On the contrary. They should relieve and dissolve them.



Everyone who cares about the future of cities and, as a result, of civilisation, is welcome to join us and discuss directions, visions, ideas and doubts. We have created a new platform for knowledge and discussion and made it available to architects, urban planners, government and local government officials and construction industry entrepreneurs. It offers the opportunity of taking part in online interviews and provides access to a database of factual material produced in collaboration with luminaries from the world of architecture, design, urban planning and town planning. The concept and the initiative it gave rise to already have the support of highly influential organisations and media.

Achieving major market success brings obligations in its wake. The future prosperity of us all depends primarily on those who are thriving in present times. It is thus hardly surprising that it is the companies blazing the trail in terms of innovative technologies and advanced knowledge which are the most supportive of corporate social responsibility. The construction industry of the future, with its objective of reducing greenhouse gas emissions by more than 35%, has been embraced by ALUPROF, a brand and a company which has good cause to use the motto

**LET'S BUILD
A BETTER FUTURE**

Innovation for the benefit of people and the environment

All the newly built buildings in Poland must now meet the conditions set out in the 2021 Technical Requirements energy standard, which came into force on 1st January 2021. This is another step towards the European Green Deal, greater energy efficiency and care for the environment.

However, the ALUPROF brand does not view the 2021 Technical Conditions purely in terms of standards to be met. Underlying the new regulations is a concept which is primarily concerned with users' comfort, their savings, a healthy environment and the future of the planet. ALUPROF is bringing those ideas to life. The company's systems feature all over the world in developments which place a premium not only on prestige, but also on ecology, as evidenced by green building certificates issued by organisations like BREEAM, LEED, DGNB and WELL. 61 Ninth Avenue in New York, Mennica Legacy Tower in Warsaw, 110 Cannon Street in London, Concordia Design in Wroclaw and the Hard Rock Hotel in Budapest are just a few of the many examples worth citing. In addition, ALUPROF forecasts that, by 2050, the share of its aluminium solutions in buildings with environmental certification will have increased by 20%.





Energy-efficient solutions

Our commitment to ecology is not only evident in our custom-designed solutions for unique projects. We also introduce environmentally friendly solutions into the ALUPROF catalogue of products for individual clients. Over the past few years, we have conducted analyses and tests in order to develop cutting-edge technologies which ensure that every solution in our portfolio meets the more rigorous energy efficiency standards set out in the 2021 Technical Requirement.

Our **MB-TT50** façade is one example of a system which enjoys a great deal of interest. It is constructed from a set of matching insulators, guaranteeing a high level of protection against heat loss, which has been confirmed by tests carried out by the Building Research Institute. The solution provides thermal isolation from U_f od 0.5 W/(m²K), a result which makes the **MB-TT50** the aluminium façade with the best insulation parameters. ALUPROF not only reaches for state-of-

the-art technologies in the construction of its products, but also uses innovative materials with properties which make it possible to attain previously unheard-of effects in window and door joinery. The **MB-104 Passive** window and door system is an example of this. The parameters of the windows and doors produced using this system go beyond the requirements set out in the strictest of the currently applicable regulations and standards. This includes the standards of the 2021 Technical Requirements. One unquestionable advantage of the system is high thermal insulation, with a U_w from 0.53, W/(m²K), for the operable window. This is obtained by using a custom-designed thermal cavity. In the AERO version, this is enhanced by the use of aerogel, an innovative material. ALUPROF's solutions of this kind are designed for energy-efficient and passive buildings, which is confirmed by the fact that they have been awarded certificates by the Passive House Institute in Darmstadt, Germany.



Research, testing and innovation

When it comes to developing our cutting-edge solutions, support is always at hand from the Research and Innovation Centre (R&IC) set up by ALUPROF. It was audited by the Polish Centre for Accreditation and received a certificate confirming the high level of independence, impartiality and competence of its staff. The centre also collaborates with the Polish Institute of Building Technology and ift Rosenheim. Its equipment includes the largest chamber in Central and Eastern Europe for testing the physical properties of curtain walls. It can handle objects up to ten metres high and ten metres wide. In addition, it can be used for tests conducted in line with the American ASTM and AAMA standards, including seismic and thermal tests. The R&IC also has five furnaces for testing fire-resistant systems and equipment for running tests on the mechanical properties of windows and doors.

We're living in the era of BIM.

AN interview with **Magdalena Płocica**

BIM manager and head of the ALUPROF SA BIM technology section

How does BIM technology serve your company's clients?

Our clients are primarily architects. BIM technology makes for more efficient design and reduces the number of errors on a building site by uncovering conflicts at the design stage. It also reduces the cost of construction, facilitates optimisation thanks to the possibility of using a model to simulate various solutions and their impact on the overall cost of construction, for instance, changing the material and thickness of internal walls. It's possible to carry out a range of analyses... insulation, thermal, construction staging and so on, in a BIM model, as well.

Why are most companies in the industry starting to use BIM technology?

Unlike the automotive sector, the construction industry has been the slowest to digitalise. For several years now, BIM technology has been systematically introduced in numerous countries for public procurement above a particular sum and expectations are that it'll become a requirement for most developments before long.. The main benefits for contractors are reduced construction time and bringing the job in within budget. At present, around

2% of the construction sites around the world meet both those conditions.

As for developers, they mainly benefit from the advantages of BIM during the building management phase or in the event of a future need to carry out renovations or reconstruction. The BIM model is a single, centralised database of the development. The possibilities it affords include compiling lists of materials like windows and doors, for instance, with the types, the manufacturer's name and the technical parameters, several years after the building has been handed over. In contrast to documentation on paper, where parts have often go missing, the BIM model prevents the loss of information in subsequent phases of the building's life.

BIM technology brings order to the design processes and improves the quality of documentation provided. Above all, though, it facilitates the flow of information between all the stakeholders in the development process and reduces the number of design documentation errors. Designers are provided with a tool that allows them to test out a host of ideas on the virtual construction site which is the BIM building. They can analyse issues with shade and wind directions and calculate the





consumption of construction materials and the quantities of earth. They can easily make lists of window and door joinery, mullions, transoms, façade panels, glass and much, much more.

In order to take full advantage of the potential that BIM offers us, it's essential to get all the stakeholders involved in learning the new technology, and introducing new procedures and changes their approaches to design. And this is still a problem. A great many people have a negative attitude to change. The cost, not only of the software, but also of the training and time required to adopt the changes, is also a factor inhibiting the development of BIM.

How do ALUPROF's BIM libraries stand out from systems run by the competition?

Our libraries are created entirely in the BIM Technology Section at ALUPROF and that's rare among our competitors. It ensures that the libraries comply with our BIM Standard and that they meet the parameters required by architects. In addition, our libraries are developed for five different platforms; Revita, Archicada, Sketchup, 3DsMax and Autocad. And that's a standout in the industry. They're used as models for other manufacturers by the large portals that maintain BIM libraries, like BIM Object or Archispace.

How does using BIM benefit the environment?

By reducing wastage on the construction site and improving delivery planning. When it's used

properly, BIM technology significantly reduces a project's carbon footprint.

How does BIM technology affect our competitiveness?

It means that we meet architects' expectations not only with a good product, but also with tools to facilitate design. Given a choice between well-made, project-ready BIM objects or a collection of random, incompatible models, an architect will opt for the manufacturer that provides him with the best libraries. As a result, our brand is becoming increasingly recognised and valued in the architectural community, regardless of the software they work with. Ever since we centralised our operations at our headquarters, the feedback on our libraries has been very positive. And that's not only because of the high quality of the objects created. Above all, it's because of their consistency. Although they're created in parallel in five programmes, we try to keep things similar in terms of the layout and type of the structures we create. We've harmonised the parameters and added a welcome page so that immediately after opening the programme... Revit, let's say... the designer can see at a glance the types of structure available, the ways in which the objects implemented in the file can be used and their types. We've also added a tutorial for more complex structures, showing their functions, like the selection of handles, for example, and the types of operable doors and windows, how to install windows and doors into façades, and so on.

611 WEST 56TH STREET

611 West 56th Street, New York

Architekt: Álvaro Siza

ALUPROF systems: *MB-86 WW* (Window Wall) system

Less is more

A new, ultra-luxurious apartment building has emerged in the New York cityscape. It is the first design by internationally renowned architect Álvaro Siza to be built in the USA. 611 West 56th Street, which stands out from the neighbouring buildings with its minimalist design and white, limestone façade, is a jewel on the bank of the Hudson River

Quality, not quantity

Portuguese architect Álvaro Siza has won multiple awards, including the Pritzker Architecture Prize (1992) and the Golden Lion for a Lifetime's Achievement at the Venice Biennale (2012). He redefines the meaning both of creating urban residential buildings and of their function. The inspiration for 611 West 56th Street was the vision of the home as a sanctuary. This is also reflected in the interiors, which are the work of Michael Gabellini and Kimberly Sheppard, a seasoned duo who have projects for the Rockefeller Center and Armani to their name. As conceived by the architects, the new building in the Hell's Kitchen neighbourhood of Manhattan will be an enclave of comfort, privacy and simplicity.

611 West 56th Street is an example of the 'poetic modernism' which is typical of Siza. The reinforced concrete structure consists of a podium several storeys high with a thirty-seven floor tower set on it. Tucked away inside are eighty luxury apartments with one, two, three or four bedrooms. They include penthouses and two-storey apartments with private indoor terraces. In terms of form, the primary design features are the considerable height, the slender profile from the east and west and the white cladding of the elevation, created in limestone. This means that 611 West 56th Street makes it mark against the background of the surrounding buildings, most of which are completely glazed. The work of developers Sumaida + Khurana and LENY, it has been spoken of as a breakthrough construction on a citywide scale.

A room with a view... in luxurious comfort

It is not only the subtle and refined detail of the façade that draws the eye, but also the dramatic sweeps of glazing which provide residents with phenomenal views of the Hudson River, the entire Hell's Kitchen neighbourhood to the south and a panorama of Midtown to the east.

The development features window and door joinery with aluminium profiles by ALUPROF. One of the systems is our **MB-86 WW** (Window Wall), which takes the concept of a unitised system and bases it on the well-known and highly appreciated **MB-86** window and door system. The result is an innovative solution with increased thermal insulation.

The Window Wall version brings together the properties of our very popular MB-86 system clad in new starting,

side and compensatory profiles, making it possible to install the segments produced on the basis of the MB-86 in the spaces between the ceilings.

This, in turn, means that they can be installed from the inside. And that optimises the installation process and reduces the costs of scaffolding and mobile scaffold towers.

Solutions like our Window Wall augment classic unitised curtain walls and are being used with increasing frequency not only in buildings in the USA, but also on other dynamically developing markets. We offer an abundant range of products based on our MB-86m making it possible to adapt them precisely to architectural requirements while retaining their high thermal, acoustic and burglar-resistant parameters.



A sector trendsetter in the USA

Anyone visiting New York today cannot fail to encounter buildings with ALUPROF systems as part of their fabric. There are numerous towers featuring systems we created especially for them, accommodating them to the design and the developer's requirements. The **Sky View Parc** complex, the **LIC Marriot** hotel, the apartment building at **125 Greenwich Street** and the sustainable building at **61 Ninth Avenue** provide just a few examples of these custom-made systems. Imagine a walk through the streets of the Big Apple, strolling between buildings constructed using ALUPROF's products. Could Polish industry ask for a better showcase?

WIN NICA LAHO FER

Lahofer vineyard, Dobšice

Architects: Chybik + Kristof Associated.

ALUPROF systems: **MB-86SI** window and door system,
MB-SR50N mullion and transom curtain wall

The art of architecture and winemaking

The Lahofer is the newest architectural jewel in the Czech Republic's crown and another vineyard belonging to one of the largest wine producers in the Moravian region and the country in general. To carry out this unique development, Lahofer chose the highest quality materials and established a working relationship with the young generation of designers from international company Chybik + Kristof Associated Architects.



Czech wine and Lahofer in Dobšice, in the district of Znojmo

The wine-drinking culture in the Czech Republic has been redefined in recent years, while the winemaking tradition of the Moravian region and the country in general is enjoying a new heyday. One superb example of the industry's adaptation is the latest development undertaken by Lahofer, the third largest grape grower in Moravia.

Located in the Znojmo district in the South Moravian region, it was completed in 2020 and is part of a 430-hectare vineyard. The entire development covers an area of 3,482 square metres and forms a complex consisting of three connected buildings.

The facilities they house include a wine processing and distribution area, while a space open to visitors, complete with an amphitheatre, has been created on the roof of the winery. The demanding structure was created using modular columns. It echoes the rows of vines in a composition which harmonises with the region's sloping landscape. The ribbed concept of the interior creates an equally striking, vaulted space which calls to mind the traditional form of Czech cellars.





Chybik + Kristof Associated Architects' innovative design

The design by Chybik + Kristof Associated Architects has been nominated for the 2022 European Union Prize for Contemporary Architecture, the Mies van der Rohe Award, one of the most prestigious architectural honours in the world. The only materials and products that the designers and Lahofer gave consideration to were those which met the most rigorous technical conditions. The outcome was the selection of ALUPROF's **MB-86 SI** and **MB-SR50N** systems, which provide windows and doors with high thermal isolation, energy-saving and watertightness parameters.







Carefully selected materials

When the materials were being chosen, two aspects which turned out to be of the essence were flexibility and the potential for experimenting with form. The ALUPROF **MB-SR50N** mullion and transom façade system and **MB-86 SI** window and door system with thermal break not only brought their technical qualities to the table. They also fitted in perfectly with the aesthetic concept for the buildings.



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The shape of the MB-SR50N system's mullions and transoms made it possible to build a state-of-the-art façade with visible, slender dividing lines. It provided a solid, hard-wearing structure and also made it easier both to create a harmonious fusion of various offices and the visitors' area and to enlarge the space optically. The high durability of the MB-86 SI window and door system, which was used in various parts of the building, including the formal area, made it possible to build large-scale windows, meaning that the building has become an integral element of the natural world around it, creating the effect of an open space.

Tomáš Buček

project business manager ALUPROF SYSTEM CZECH s.r.o.

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MB-79N





The MB-79N. An innovation for 2021

ALUPROF has been expanding its product range in response to the requirements of the 2021 Technical Requirements. The MB-79N window and door system is a modern solution with very good insulation parameters introduced onto the market at the beginning of 2021.

The MB-79N. An innovative window and door system by ALUPROF

The company has expanded its product portfolio to meet the requirements of the majority of global markets. The successor to our highly popular MB-70 system, which has found wide use in the construction industry, the MB-79N was developed with a view to meeting the new standards set out in the 2021 Technical Requirements.

The new system is the best thermal isolation on the market for its category of profile depth.

The profiles are fitted with the latest in thermal insert technology, facilitating the production of structures featuring excellent heat insulation. The value of the U_w heat transfer coefficient for an MB-79N window reaches $0.64 \text{ W/(M}^2\text{K)}$.

The system's watertightness parameters are also the best on the market, at E4500 for a reference window. The profile structure and sealing system is optimised by the use of two-component gaskets making it possible to achieve acoustic insulation of 46 dB for glazing with a value of 47 dB.





The advantages of MB-79N doors

The MB-79N's profiles are just 70 millimetres deep and make it possible to build slender, durable structures. They are also designed to allow the surface of the leaf and frame to be flush on both the interior and exterior. The leaves of MB-79N doors can measure up to 2700 millimetres tall and 1300 millimetres wide and they can weigh up to as much as 200 kilos, while the use of innovative technology makes it possible to produce leaves with a width starting from 250 millimetres. Concealed hinges and the most popular multi-point locking systems can be

use on doors and windows constructed on the basis of the MB-79N system, as can the latest types of automation and access control.

The developer has a choice of numerous kinds of glazing beads in various forms. The system also permits the use of double glazing with a thickness of up to 63 millimetres for windows and 54 millimetres for doors. The aesthetics are complemented by hardware in the same colour as the joinery. The client can choose from a number of handle series that match the joinery.

Business and science. Two environments, one objective

Research, development and the creation of innovative solutions are the foundation upon which ALUPROF builds its position as a leader in the production and distribution of aluminium systems for the building industry. Our engineers create innovative technologies on both an in-house basis and for projects carried out together with scientists from outside the company. ALUPROF system designers Paweł Dacka and Dariusz Ruśniok and product manager Michał Marcinowski talk about the company's collaboration with HEIs and our trailblazing project to reduce transom deflection.



How does the synergy of business and science work for ALUPROF?

Michał Marcinowski: *Our industry is rather specific, in that if you don't come up with a concept yourself or define a task to be solved, it's unlikely that a university will tackle the matter on its own. However, the scientific world has excellent engineers, PhDs and professors who can assist us in aspects like numerical methods and translating our visions into physical models, along with the development of a testing system. This is why ALUPROF's collaboration with the world of science exists and brings measurable benefits.*

Dariusz Ruśniok: *As ALUPROF, we primarily create know-how and develop innovative concepts, which we then examine in terms of various design issues as we search for a viable solution for implementation. In aluminium and glass façade design, there's a whole range of innovative issues that can and should be solved in technological HEIs.*

This is why we establish relationships with them, not only to commission research and testing, but, above all, to collaborate and create future jobs for construction and mechanical engineers and for specialists in statics, concepts, design, thermology and acoustics.

Paweł Dacka: *Our collaboration with the scientific community can be divided into two areas, the didactic, where we participate in the education of future engineers, and research, where we commission laboratories which, in this case, exist within the structure of the HEI, because we have specific issues for verification.*

In this area of R&D, the institutions we collaborate with include the Silesian University of Technology. In addition to its substantive base, it also has the appropriate research infrastructure, which makes it possible to reflect the situation being studied not only virtually, but also physically. It's important to test the technology in question under conditions that correspond to those that the actual structure will face. The Silesian University of Technology's laboratory has a gravity loading system. In the case of the research we've been conducting, it's given us the possibility of specifying loads with dynamics that the most common hydraulic system lacks.

What projects have you carried out as part of this collaboration?

Paweł Dacka: *We've completed two tasks. Both of them featured an innovative approach to the classic static issues relating to mullion and transom façades. The project that deserves special attention is our Reduction of Transom Deflection solution, which addresses the problem of transom deflection caused by the weight of the infill. It's a recurrent issue in buildings where mullion and transom facades are used. Until now, the glazed lights have been limited in size on account of their weight, which has repeatedly brought about deflections in excess of the 3 millimetres, or L/500 ratio, which is acceptable in line with the standards.*

And the project I'm talking about addresses exactly that problem. We began with in-house discussions at ALUPROF. Then we developed and created a solution. We passed that over to the Silesian University of Technology so that they could develop a computational method and check out how the technology would work in a real, full-scale system. The analytical method they created makes it possible to arrive at a very precise estimate of displacements and gives us an overview of how the structure works.

What's innovative about the project?

Paweł Dacka: *We've used the rigidity of the glass itself. In the classic version, it stands on a transom, resting against it at two points, 150 millimetres apart from its lower corners. The transom naturally begins to buckle. So the idea we came up with was to connect it to the glass at the centre of its span, which is where the greatest deflection occurs. It's proved possible to do that, meaning that we've turned a classic, single-span beam into a multi-span one. In other words, we've changed the static arrangement of the transom. That reduces its deflection over long spans. Although the problem isn't new, the solution developed by ALUPROF is innovative on a global scale. It's universal, it can be used regardless of the transoms' position on the structure, at the edge or in the middle, and it doesn't have a negative impact on the aesthetics of the façade, because it's quite simply invisible.*

The outcome of the research was the development of an ALUPROF façade model with a transom load capacity of up to 1100 kilos.



WAR SZAWA





City and experiment

Warsaw is not only a metropolis and a capital city. It is a city-as-symbol of rapid change and transformational capabilities, building its character as a capital ad hoc centuries ago, repeatedly demolished, then rebuilt. It is a city-as-melting pot, not only of the cultures and traditions of the communities living there, but also of ideas for organising everyday life and the spatial order associated with it.

In the early 1950s, the whole country was involved in the massive effort to rebuild the capital after it was reduced to rubble during the Second World War. A popular song of the time tells us that *"If there's adventure, it's only in Warsaw"*, a sentiment that architects and designers from all over Poland facing a project in Warsaw might well share. It is normal and understandable that the height of many a design office's ambition is for their portfolio to include successfully accomplished buildings in the capital, the apple of their eye, so to say. Warsaw is thus magnetic and it serves as a testing ground, a place where buildings are created which often go on to become models that are followed in other regions of Poland. Bold visions are brought to life here, with modern technologies and innovative systemic solutions being used.

In Warsaw, the drive for innovation has recently been joined by efforts to save and renew what already exists, the old, the traditional... This is not a paradox, but a sign of the times, in that we are becoming more and more resource-conscious. The word 'recycling, refers not only to household waste, but a civilisational trend where many of us can see salvation, a chance not to be left with no ground beneath our feet when our ambitions have soared too high into the sky.



An overview of the projects accomplished in Warsaw this year reveals that there is no shortage of regeneration. Old addresses in a new context is something the Varsovians have come to love. Of course, we have also included modern buildings, where it is crystal clear that technology is winging its way into the hands of the builders, often simply in order to wrap breathtaking solutions in a discreet, minimalist costume.



GALERIA PÓŁNOCNA

LATARNIA PORT PRASKI

WARSAW UNIVERSITY,
FACULTY OF MODERN
LANGUAGES & INSTITUTE OF
APPLIED LINGUISTICS, STAGE 2

THE NORBLIN FACTORY

INTRACO PRIME

SKYSAWA

UNQUE TOWER

WARSAW BREWERIES

WOLA CENTER
OFFICE BUILDING

CEDET

THE NORBLIN FACTORY

CHMIELNA 89

NOBU HOTEL WARSAW

MENNICA LEGACY TOWER

AMBASSADOR
OFFICE BUILDING

WAR SAW

An aerial photograph of Warsaw, Poland, showing a dense urban landscape with a winding river. Several callout boxes with white lines pointing to specific buildings are overlaid on the image. The boxes are dark blue with white text. The buildings highlighted include the Copernicus Science Centre, Equilibrium, The Tides, Kruczkowskiego 2 Office Building, X2 Boutique Office, Bobrowiecka 8, Villa Metro, and Royal Wilanów.

COPERNICAN REVOLUTION
LAB COPERNICUS
SCIENCE CENTRE

EQUILIBRIUM

THE TIDES

KRUCZKOWSKIEGO 2
OFFICE BUILDING

X2 BOUTIQUE OFFICE

BOBROWIECKA 8

VILLA METRO

ROYAL WILANÓW

Selected buildings featuring

Let us take you around Warsaw in a rather uncommon way! Not on the trail of distinguished witnesses of history, but in search of the central characters of a history that is only now being written, to be read some day by others...

. A building site teeming with challenges.



Elżbieta Dziubak,
architect general **Aluprof SA**

Why is Warsaw a special place for Polish architecture?

Because of its many contexts. Because it's the capital city; because it's the largest city in Poland, located in the central area of the country, on the Central Mazovian lowland, in the Mazovia region and on the Vistula River; because it's the largest city in terms of both population and surface area; because 90% of the city was destroyed by the Nazis; because it was rebuilt; because it's an important scientific, cultural, political and economic centre, where the most important figures of state have their seat and where the largest companies are located; because it's here that the security of the European Union's external borders is watched over... I could go on and on, but suffice it to say that, in the context of globalisation and the interdependence and integration of countries, economies and cultures, Warsaw ranked as an Alpha in 2020. And one more thing...

because it's unique.

How does Warsaw's uniqueness translate into the quality of its designs and finished buildings?

Like every creator, architects want to accomplish their life's work here, be it large or small, to be the best, to be admired and noticed by experts and average, busy people alike. This is where the best opportunities are. All you need is a bit of luck and a developer with a fine, generous wallet and then you can let rip with the form of the project and the best materials.

The quality of the project has to be fought for by all the participants in the construction process, from the general contractor to the small subcontractor. But that isn't always possible. Price is a frequent determinant of quality and, at the same time, a barrier to it.

The process of a development project causes enormous stress for every participant and unfortunately, you sometimes have to yield for the sake of psychological comfort...





Why are the modernisations and regenerations in Warsaw so vital?

They give us what's most important. Our history. They resurrect and update our forebears memories. This is particularly vital for today's generations, who have different value systems because of their youth. Meanwhile, it's our 'old and old in a new way'. Thanks to modern, extraordinarily abundant possibilities, when you respect the characteristic details woven into the building, it pleases the contemporary eyes of everyone, old and young alike.

My grandfather was a 'builder of Warsaw', he was part of the efforts to reconstruct the city after the war. When I also wanted to build things myself, he said, "Elżbieta, remember the most important thing... the dimensions of the bricks from before and after the war". I remember that to this day, although aluminium and glass are more important nowadays and those dimensions don't need to be remembered.

Will the boom in Warsaw last much longer?

I'm going to answer a little evasively here. The pandemic has changed plenty about plans for the future. Numerous projects have been put on hold, a lot of developments before the permits stage are on the back burner and those with permits are taken forward the shell phase. Life goes on, though. We move towards tomorrow and look after our environment as best we can. Hopefully that applies to everyone.

Which Warsaw projects is ALUPROF particularly proud of?

As ALUPROF, we're proud of each and every building involving our systems. And there are a great many of them. Mennica Legacy Tower, on the site of the former headquarters of the Mint of Poland. The design was created in Chicago by the Goettsch Partners practice. It's the most popular project of 2020, distinctive for its curved glass façade, which adds lightness to the building. My personal impression is that, when it's viewed from different angles, it looks different, but always beautiful. We're tackling a new challenge together with Polski Holding Nieruchomości, building SKYSAWA, a skyscraper "sculpted by sunlight", to quote architect Adam Wagner of Projekt PBPA. We're really looking forward to the end of the construction work.

Which of the Warsaw projects was particularly tough or challenging?

ALUPROF accepts every challenge and never says no.

The first moment is particularly difficult, exploring a design that's not been cut yet, but it's draped, visualised in a CAD programme, in spatial perspective, showing our outfit for a gala when we still don't have the right material... But just as soon as we've prepared the 'threads', then, thanks to the fact that we have the right people, work can begin, full steam ahead! As soon as our management board gives the signal to take on the task,

**nothing is impossible!
That's a time I love!**

MENNICA LEGACY TOWER



The pride of the
Wola district



Mennica Legacy Tower, Warsaw

Architects: Goettsch Partners, EPSTEIN SP. Z O.O.
ALUPROF systems: *MB-SE80 MLT* mullion and transom unitised façade system, *MB-86 SI MLT* panel window, *MB-SR60N MLT*

Mennica Legacy Tower is one of the most prestigious developments in Poland. Designed by Goettsch Partners of Chicago and their Polish partner, Epstein, it is a new symbol of Warsaw's Wola district. All the more so inasmuch as the very construction of this building in this place has symbolic

significance; after decades of stagnation, this part of Warsaw, which suffered the most during the Second World War, is only now returning in style to the map of prestigious, desirable and attractive business spots.

A new Warsaw landmark

The Mennica Legacy complex stands at the intersection of ulica Prosta and ulica Żelazna. The main tower is 140 metres tall and provides more than 50,000 square metres of office space. The lower building, which is 43 metres high, offers an additional 15,000 square metres of space. The European market is currently facing a growing demand for top-end office spaces, which is exactly what the Mennica Legacy Tower offers, so it fits right in with the trend. The most extensive rental agreement in the history of the Polish property market was signed there when a commercial bank took on the tenancy of more than 45,000 square metres, almost the entire usable office space provided by the Tower.



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Simplicity and the elegance that springs from it are the main features of our design. When a building has 'Mint' in its name, there is no need for it to put on a dazzling display of splendour. The impressive hall, which



is several metres high, is enough.

In a case like this, less is more.

Michał Jaworski

Epstein Sp. z o.o.

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Top-end aluminium systems

ALUPROF created the custom-designed façade systems in collaboration with the Eljako-Al company.

The first of them, which is to say the ALUPROF **MB-SE80 MLT** unitised, mullion and transom unitised façade system, is a solution designed for the construction of light, suspended curtain walls. The height of the prefabricated modules corresponds to the height of the storey where they were installed, while their width was established in accordance with the design. The appropriate differentiation in the shapes of the aluminium profiles and the glazing technology used for the segments of the façade made it possible to obtain a diverse range of visual effects on various elevations of the building, in line with the architects' vision. The system is complemented by the ALUPROF **MB-86 SI MLT** panel window.

The second system custom-designed to meet the requirements for the construction of the façade segments on the lowest floors of the complex is the **MB-SR60N MLT** mullion and transom façade system. The solution is intended for the production of light, infill-type curtain walls.

The load-bearing system consists of the aluminium mullion and transom profiles and the set of integrated profiles enclosing the structure at the top and bottom. Both this method of building the façade and the MB-SE80 MLT were dictated by the search for ways to accomplish the designer's intentions for the aesthetic effect and functionality of the façade.

ALUPROF has received two prestigious CIJ Poland awards for the MB-SE80 MLT unitised façade system in the Green Technology Solutions and Innovation of the Year categories.





A certified building

Another noteworthy point about the Mennica Legacy Tower complex is that it has obtained the highest possible ratings for state-of-the-art building certificates, having achieved a score of more than 88% under the BREEAM system, which achieves a rating of Outstanding, the top classification. This means that the principles of sustainable, ecological building were applied from the planning stage and during construction and they are inherent to the final outcome. Another crucial certificate which the Tower has obtained was awarded by LEED. Again, it achieved the highest possible ranking, Platinum.



A skyscraper sculpted
by sunlight

THE SUSTAINABLE

SKY SA WA

SKYSAWA, Warsaw

Architekt: Polsko-Belgijska Pracownia Architektury Projekt
ALUPROF systems: *MB-SR60NEFEKT* mullion and transom
façade system, *MB-SE81 SkyS* unitised façade system

At the heart of the capital, a skyscraper which has a chance of becoming another symbol of contemporary, ecological Warsaw is taking shape. It forms a perfect composition with its surroundings, respects tradition and sustainability and boasts an extraordinary view of the capital's skyline. A view which is utterly breathtaking.

SKYSAWA is a new skyscraper under construction right by the ONZ (United Nations) roundabout, at No. 36 ulica Świętokrzyska, in the very centre of Warsaw's Central Business District. A flagship project for the developer, Polski Holding Nieruchomości (PHN), It will be one of the first office buildings with a direct link to a metro station.

The dense built environment of this part of the city, the need to integrate with the surroundings and the relatively small plot of land on which SKYSAWA is being constructed were the inspiration for the building's unique shape, which has been compared by architecture enthusiasts to the 'pencil towers' of new York. The height of SKYSAWA blends

perfectly with the high and low buildings in the area, enriching the skyline of the city centre.

The cascading shape of the tower ensures adequate sunlight, while the building's slender silhouette makes it possible to organise the space so that every user will have access to the views from the windows.





The dynamism of the volume was literally 'sculpted' by sunlight. The shape has been adapted to bring sunlight to the neighbouring residential buildings. The volume of the complex of buildings emphasises the scale of the frontage on ulica Świętokrzyska, as required by the city authorities. We achieved that by introducing a horizontal risalto on the tenth floor and covering that with slats painted with IGP paint in an anthracite hue.



Adam Wagner

architect Polsko-Belgijskiej Pracowni
Architektury Projekt



The two-building complex will be one of the most attractive commercial properties in this part of Europe. The lower building, SAWA, will have nine floors above ground and three underground storeys, providing tenants with around 10,000 square metres of office space. The SKY building will be 155 metres tall, with forty floors and almost 25,000 square metres of space. The best view of the cascading volume will be from ulica Świętokrzyska and ulica Emilii Plater. The architectural concept is the work of Polsko-Belgijska Pracownia Architektury Sp. z o.o. and its president, Adam Wagner. The general contractor is a consortium of three companies; PORR S.A. is the lead contractor, working with TKT Engineering and ELIN Sp. z o.o. Future tenants will be tempted not only by SKYSAWA's prestigious location, with its superb transport links, but also by all the conveniences and technological solutions it offers. There will be a wide range of service and catering outlets in the complex itself and in the near vicinity. The open space of the square leading off ulica Twarda and the walkway next to SAWA, the lower building, will be an invitation to people to relax for a moment both during the day and in the evenings.

SKYSAWA numbers among the most ecological and sustainable buildings currently under way in Poland. The construction is being managed in a way which reduces the generation of waste and the carbon footprint. Transport is optimised and the materials are sourced locally. The ecological solutions featured in the complex encompass systems ranging from energy-efficient lighting and high-performance ventilation and air conditioning, to rainwater retention. With the intention of maintaining the principle of complementarity and meeting the needs of urban mobility, the complex will offer a number of facilities for cyclists.



The concept of building an office block of the future that operates in line with the principles of sustainable development has been with us from the outset. The complex is being built on greyfield land with derelict buildings dating from the 1960s. Our project is not only not contributing to the destruction of green areas, but is actually enriching the plant life. The green area around SKYSAWA will be increased by more than 50% in comparison with the state it was in before we began the development.

The sustainable design, which is adapted to the surroundings, our use of green technologies and systems, our choice of materials and our management of the construction process are all examples of our respect for the environment.



Piotr Mechecki

investment area
managing director PHN





The work invested in accomplishing the project at the highest possible ecological level was appreciated during the BREEAM certification process. Both SKYSAWA buildings receiving Interim Stage certification with ratings of Outstanding. The highest possible BREEAM grading, Outstanding is reserved for the most environmentally friendly and technologically advanced commercial buildings. At present, their market share is less than 1% of all building projects. In addition, at the design stage, the lower building was nominated for the 2020 BREEAM Awards in the Commercial Project - Design Stage category, competing with developments from London, Rotterdam and Brussels.

The **MB-SE81 SkyS** is a unitised façade system custom-designed by ALUPROF for the high section of the complex's Building 'B'. The solution is a tailor-made response to the expectations and particulars in terms of both construction and installation.



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Using a unitised façade for the design provides the opportunity of carrying out a great deal of the work on the shop floor and reducing the time required to install the elevation. In comparison with traditional mullion and transom façades, bringing complete, glazed segments into play accelerates the on-site work and eliminates the need for exterior scaffolding. And that means lower costs.

Zbigniew Poraj

commercial sales director, ALUPROF SA

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Construction work on SKYSAWA began in June 2019. In line with the schedule, the lower building should be ready in the third quarter of 2021 and the higher should be completed in the third quarter of 2022.

INTRACCO PRIME

INTRACO Prime, Warsaw

Architects: Juvenes-Projekt

ALUPROF systems: **MB-86 SI** window and door system, **MB-SR50N HI+** mullion and transom façade system, **MB-SR50N** mullion and transom façade system, **MB-70 CASEMENT** outward opening window system, **MB-SUNPROF** external venetian blind system, commercial shutters based on the MB-86 SI system

An intimate space at the heart of the Muranów quarter

In less than a year, the capital will gain another top-end office building. Under construction in the Muranów district is the INTRACO Prime building, a place fully integrated with its surroundings both functionally and spatially.



The development of the Śródmieście district

INTRACO Prime is being built in a location where enormous changes over the past century have left their mark on the space. It is taking shape in Warsaw's Muranów quarter, near the Dworzec Gdański railway station. It was here, in the late 1970s, that one of the first skyscrapers in Warsaw was built at No. 2 ulica Stawki. That was Intraco, and it has towered over the city for more than forty-five years now, an undisputed Warsaw icon and legend. Before long, a new building will be enhancing the landscape of this rapidly developing district of the city.

The main idea behind the INTRACO Prime building is to restore the urban tissue of the area and add to the city in the sense of a space for the residents, defined by frontages, the walls of buildings, public zones and urban greenery. The design of the office building is the work of the Juvenes-Projekt studio and Polski Holding Nieruchomości (PHN) is both the developer and the future property manager. The aluminium façade systems were designed by ALUPROF.

Architecture of the highest class

The volume of the new building echoes the existing buildings along ulica Stawki. In terms of function, the building is intended to complement the existing INTRACO skyscraper, being its 'visual podium', as it were. It is clad in a segmental façade, underscoring the stability of the urban development.





The surroundings of INTRACO Prime began undergoing an intensive transformation at the end of the last century, but the most important site, in other words, the corner at the junction of ulica Stawki and ulica Władysława Andersa, remained undeveloped. Only with a plan to construct a new building could the corner be restored to its rightful position in the built area of this part of the city. We wanted the new volume to be architecturally neutral. It wasn't intended to compete with its surroundings, but to complement them and emphasise the corner and its value. The orderly, rhythmic façade creates a feeling of stability. The decorative panels that break up the whole façade are grey-beige, a colour characteristic of Muranów's buildings.

The first two storeys are set back, creating an arcade that shelters the main entrance to the building. The façade's tectonics, a complex play of planes set back and jutting forward in relation to one another, are an additional solution which affects how the façade is perceived. It's made of glass and aluminium, it's light in appearance and it smoothly merges the building with its surroundings, which are reflected in it.



Marcin Szymański
architect at Juvenes-
Projekt and one of the
building's designers



A sustainable urban space

Thanks to its functional layout and the use of innovative solutions and materials, INTRACO Prime has a chance of becoming an important point on the map of Warsaw.



When we were planning the building, we wanted to create a single, coherent urban space where the history and splendour of INTRACO would be combined with the modernity and freshness of INTRACO Prime. The two buildings will complement each other both architecturally and functionally. This functional, unostentatious office building, architecturally modelled on INTRACO, will retain its distinctiveness and originality. Thanks to the application of simple and logical design principles, together with the selection of appropriate materials, like sandstone, for instance, INTRACO

Prime will be a perfect fit for the ambience and character of Muranów


The attractive location, integration with the surroundings and roomy office spaces with ample access to daylight will make working in the building comfortable and ergonomically optimal. We hope that INTRACO Prime will not only add a new page to INTRACO's history, but will also create its own chapter by coming together with the legend of the city.



Piotr Mechecki

investment area
managing director PHN





The sustainable and ecological approach to the construction was adopted from the outset. This, together with the energy-efficient systems and installations that included ALUPROF's joinery, led to a BREEAM Interim certificate with one of the highest ratings for INTRACO Prime.

The aluminium systems featured in the project

The most prominent part of the façade is the bottom transom of the inter-storey spandrel, which is created in a light colour which stands out against the backdrop of the façade. Those elements were made using ALUPROF's **MB-SR50N** and **MB-SR50N HI+** systems. The main advantages of the system, apart from its excellent technical parameters, are the freedom it provides in terms of shaping the space and its durability. The mullion and transom system has a load-bearing capacity of up to 1100 kilos per transom, making it possible to create spectacularly large sweeps of glazing. This solution means that the composition of the façade can be seen as stacked modules the height of an entire storey, unseparated by inter-storey strips.

The remaining elements of the mullion and transom façade were designed in a shade of anthracite, which recedes visually into the background. The safety of the construction is increased by the **MB-SR50N EI** façade, which has a fire-rating of up to class EI 60. Protection from excessive sunlight is provided by our **MB-SUNPROF** external venetian blind system.

INTRACO Prime also relies on the energy-efficient structures of our **MB-86 SI** window and door system. This product features some of the best technical parameters in our product range. Other strengths of the **MB-86** include the excellent thermal insulation and high durability of the profiles, meaning that they lend themselves to creating large-scale, heavyweight structures while maintaining superb airtightness parameters. The rest of the windows were produced on the basis of our **MB-70 Casement** system, which is used for outward-opening windows.

ELEKTR OWNIA POWI ŚLE

Elektrownia Powiśle, Warsaw

Architects: APA Wojciechowski Architekci

Photo: Marcin Czechowicz; Minus Osiem

ALUPROF systems: **MB-70** window and door system, **MB-86** semi-structural façade system, **MB-SR50N EFEKT** mullion and transom façade system, **MB-SR50N HI+** mullion and transom façade system



A new context under a familiar sign


After twelve years of work, the regeneration of the Powiśle Power Station is coming to a close. This unique place, which dates back more than a century, is becoming part of the public space before our very eyes. It is already functioning as a retail, service, office and residential facility and there will soon be a hotel, as well.

Elektrownia Powiśle was established in 1904 and it was the first power station in Warsaw. It ran on coal and steam. The steel structure of the boiler house, which was unusual for its time, is now a unique, European industrial monument. Just fifteen years ago, this century-old infrastructure was still performing its original function, powering Warsaw with energy. After it was closed down, it deteriorated at a dizzying rate. The idea of restoring the facility to the urban fabric, no longer as an enclosed industrial site, but as an open space, proved to be its salvation. It is also open to the residents and their needs. Intrigued by the aura of post-industrial uniqueness, they vote with their feet, flocking to visit spaces that were previously dead, but have recently been revived.

APA Wojciechowski Architekci is responsible for the design of the Elektrownia Powiśle regeneration project. Work began as early as 2008, but the project's journey has been almost as convoluted as the fate of the site. In the meantime, with three changes of historical sites conservation officer and two changes of owner, the project itself also evolved. The goal of creating a people-friendly space in a building complex with a unique character and atmosphere, while respecting its historical nature and the original urban planning remained the same. That has been achieved.

**The effect is
breathtaking.**



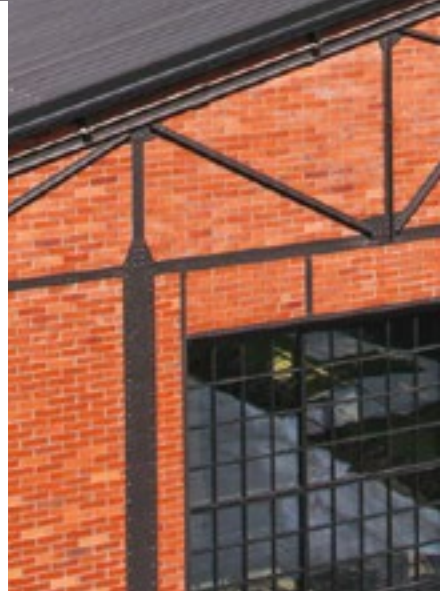


Office buildings and an apartment building have been built next to the venerable boiler house, the plant room, the caisson and the switching station. Construction work has begun on a new hotel facility. Urban squares have been created in the restored space and they can be visited via viewing axes that catch the eye of passers-by. The delightful interiors of the boiler house will offer a retail experience rather different from that of shopping centres, while the machine room will be the place to enjoy refreshments and concerts.





New global brands, well-known designers, designer shops and restaurants are simply a bonus. The essence of the concept is to provide a space for people and regular cultural and artistic events that will ensure that Elektrownia Powiśle is a place that never sleeps. The wide range of functions are combined with intuitive ways of moving around. Elektrownia Powiśle consists of private spaces in the form of flats, and semi-private spaces linked by urban squares filled with café tables, fountains, greenery and vibrant life. A big challenge for the designers was the architecture and the choice of materials.









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Every time the proverbial shovel was driven home, new facts and stories about the site were discovered. Each expert opinion on structural, archaeological or conservation matters was a tremendous experience and influenced the final shape of the project (...) The façades of the new buildings echo the principle of a steel structure filled with brick or glass, which gives a coherent character to the whole complex.



Michał Sadowski and Katarzyna Koziół

APA Wojciechowski Architekci

Photo: Adam Rotter

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The designers wanted to preserve as much of the buildings' original character as possible, reconstructing and giving new functions to now defunct, but once highly visible structures. This includes the 30-metre-high chimneys; three of the four restored chimneys now serve as air intakes or exhausts. Then there are the dormer windows, which light up the attic of the plant room, and the coal crane, now transformed into a panoramic lift.



Most of the coal funnels from the original boiler house structure have been retained and repaired and are now on display. Above them there is the technical floor. The attic houses two storeys with a view of Warsaw. The original steel structure supporting the funnels has been retained to a height of twelve metres. Having been repaired, painted with fire-retardant paint and stiffened with new ceilings, it now provides support for the attic storey. The structure retains traces of wartime shelling and post-war alterations. All of the original roof girders in the boiler house have also been retained. However, on account of their deterioration and insufficient load-bearing capacity, they have

been suspended from a new steel structure concealed in the layers of the roof.

All of this represents just a few examples of the attention paid to historical details during the reconstruction process. Meanwhile, the façades of the new buildings echo the principle of a steel structure filled with brick or glass, which gives a coherent character to the whole complex. Elektrownia Powiśle is home to several thousand original pieces of equipment recovered from the power station. They include a sign saying *PAŁAC* (palace) from the panel supplying power to the Palace of Culture and Science.





Until recently, Powiśle was historically unlucky. It entered the twentieth century as a poor and ugly district with little that was appealing about it. Despite its central location, it played a peripheral and subservient role to the nearby Śródmieście district and Old Town. Now, though, it is the setting for spectacular developments ranging from the visionary University of Warsaw Library, via the futurological Copernicus Science Centre, to Elektrownia Powiśle, which is regaining its former glory and acquiring a new context.

Is history correcting its own mistakes? That we will never know, so all that remains is for us to enjoy similar achievements of urban thinking... and also to demand that they continue in the future because, as we can see... that kind of thinking works!

91 APA Wojciechowski architects were involved in the project



WAR SAW BREWE RIES

Warsaw Breweries

Architects: JEMS Architekci

ALUPROF systems: **MB-SR50N EFEKT** semi-structural façade, **MB-SR50N OW** tilt and slide, outward-opening window system, **MB-86** door system with thermal insulation



A journey through time

The global trend of moving industrial production out of the centres of ever-growing metropolises has lasted for almost half a century. This is a good thing, from at least two perspectives. Disruptive manufacturing is disappearing from places where people want to live, work and spend their leisure time free from unpleasant odours and noise. At the same time, extensive quarters of cities and town that were closed off are being given a new lease of life, thanks to regeneration. Old industrial buildings are not regaining their former splendour on account of their conversion into loft flats and offices. They are gaining splendour for the first time. This is happening before our very eyes in an area of over four hectares in Warsaw's Wola district, where Warsaw Breweries was built a hundred and eighty years ago.

Warsaw may not be associated with a centuries-old brewing tradition, but there were forty breweries in the city in 1840. This is hardly surprising. Before today's industrial practice of pasteurisation and bottling, beer was a commodity that had to be sold close to where it was brewed. Hence the tradition of every city and town having its own brewery. The largest one in Warsaw was established in the Wola district in the mid nineteenth century.

Now, when production has been transferred elsewhere, the abandoned buildings are acquiring new functions and entering into the context of the city. It would be nice to add the word 'again' but, enclosed behind a high wall of redbrick, the industrial facility never participated in the life of the city. It was a blank spot on its map. Now the four-and-a-half hectares of terra incognita have become one with the city; they have their own passages, squares and green areas. The way the streets, squares and gardens of the Breweries have been designed is similar to the way the hierarchy and layout of the rooms in a flat are planned. Each space is different, with a dedicated purpose and furnishings, yet it all comes together to form a coherent whole. The functional buildings that have been converted into lofts are now home to on-trend restaurants, quirky offices and resident-friendly flats.





Warsaw Breweries is a lively, integral part of Warsaw's Wola district. It's neither a residential estate nor an office park, but a complex created from architecturally diverse buildings set along a generally accessible public space. The southern section, which contains offices, is the metropolitan face of the complex, opening on to ulica Grzybowska. The residential space creates a regular urban quarter, forming the frontage of ulica Krochmalna, which has been reconstructed to follow the same route as it did in the pre-war era. The ground floors of the buildings, new and historical alike, are premises offering a range of retail and catering services, with a mini-brewery producing its own beer in the vanguard.



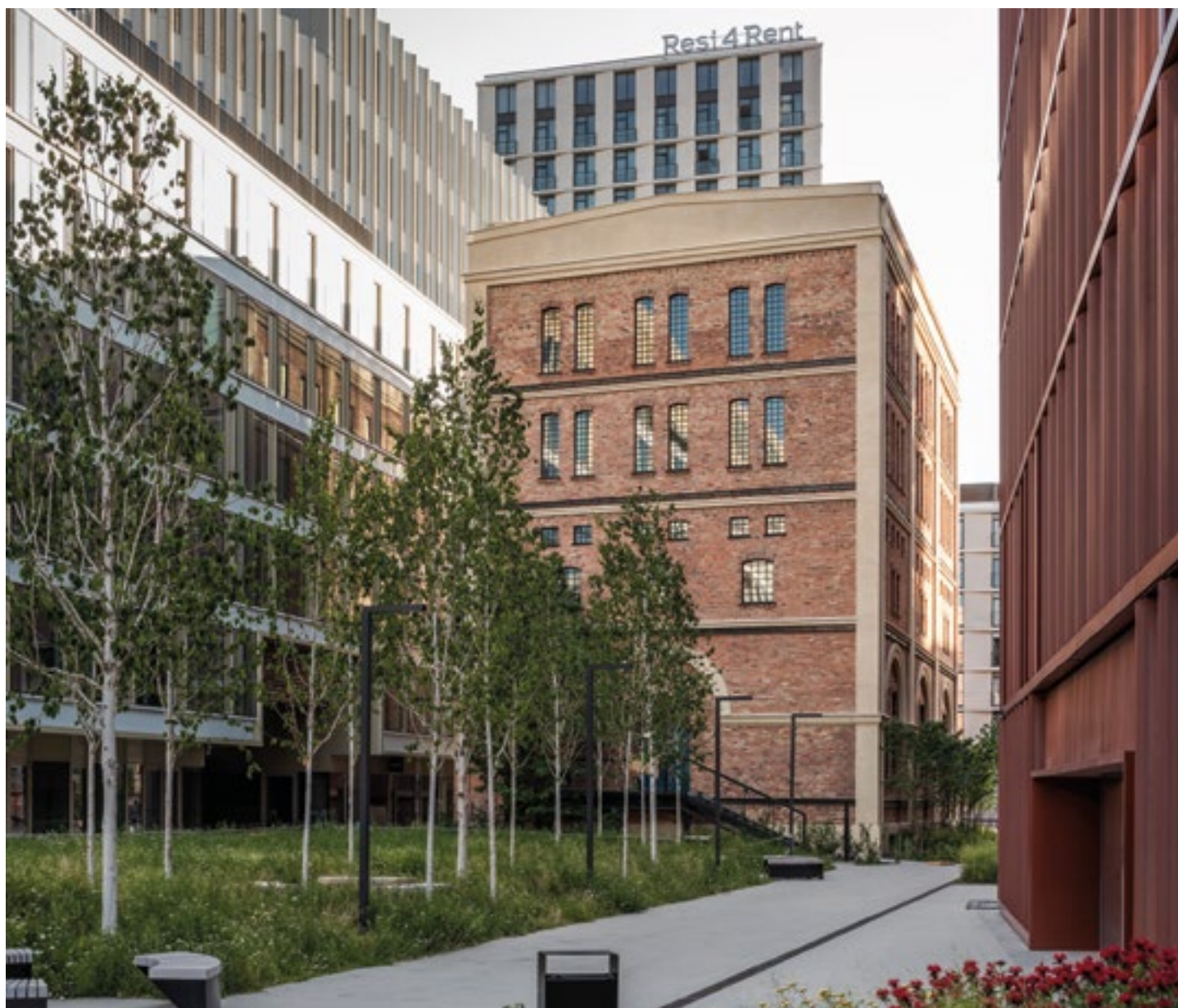
Maciej Rydz
JEMS Architekci





The developer responsible for the regeneration and commercialisation of the Breweries has attached great importance to maintaining a symbolic and aesthetic link with the site's industrial heritage. It is no accident that the street which has enriched the map of Wola district, is named after brewers Haberbusch and Schiele, the founders of the mighty brewery.

Laboratory, Leżakownia and Warzelnia Market, the square which connects all the functions of the complex and forms its heart, are all street names that echo the historical spirit of the place. The red bricks adorning the facades of the buildings are similar to those used to build industrial facilities in this part of Europe over a hundred and fifty years ago and they add to the charm of the space.



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Post-industrial sites are so attractive because of the aura of mystery surrounding their former function. Apart from the experts, no one quite knows what went on here. And now, almost everyone can take a stroll here, work here and live here. And all in a setting that's not just fashionable. Its uniqueness also makes it exclusive.

JEMS Architekci

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Greenery has been taken care of with a panache worthy of praise and emulation; 230 large trees have been planted on 1.8 hectares of open space. Dendrologists were consulted to ensure that they were species which, on the one hand, would thrive in the city and, on the other hand, would not be a nuisance to residents by causing allergies, for instance.

Echo Investment is the developer and is also selling the office and retail space and the flats in the complex. The renowned JEMS Architekci practice, with a portfolio which includes the spectacular regeneration of Hala Koszyki in Warsaw, is responsible for the design in its entirety.



UNI QUE TO WER

Unique Tower, Warsaw

Architects: Piotr Schneider, SUD Architekt Polska

ALUPROF systems: *MB-SR50N HI* mullion and transom façade system, MB-86 SI window and door system, MB-86 US Casement outward-opening window system, MB-SR50N EI fire-rated mullion and transom façade system

Warsaw's Manhattan

If there is one thing that makes the area bordering on the Śródmieście and Wola districts distinctive, it is high-rise buildings. This trend will intensify and the buildings being constructed will become taller and taller. Predictions suggest that between 1 and 1.5 million square metres of office and service space will have been created here by 2030. This represents workplaces for 150,000 people, all of whom have to live somewhere and some of whom are not Varsovians. Not to mention the fact that, with the shift to a hybrid model of work, not everyone has to turn up at the office every day. They will therefore be accommodated near their company's headquarters in apartment buildings and condo hotels. Like Unique Tower.

Unique Tower is a response to the growing demand for a new business centre in Warsaw. It is also one of the tallest residential buildings in the capital. The apartment complex, which is located in nearby Wola at No. 51 ulica Grzybowska, consists of a five-storey frontage with a central square and two towers, the higher of which shoots almost 100 metres above the streets of the city.

Modern trends and almost 100 years of tradition

Just as the modern image of the capital is intertwined at every turn with its history and heritage, so the towers combine the latest global architectural trends with the traditions of the Preasens Group and the Warsaw School of Architecture.



The characteristic motif of the buildings' spandrels is combined with the once popular Warsaw rounded corner, traditional but modern at the same time, thanks to the light, soaring structures. The compact, impressive volume of the building is emphasised by the horizontal arrangements of white cornices surrounding the whole. The rounded corner breaks the horizontal continuity of the architecture, introducing vertical dynamism and subtly emphasising the expressiveness of the form, which is finished with an openwork attic, typical of high-rise buildings.

For the apartment complex spandrels, plaster and windows in the same dark grey were used. The black-and-white façade, with its gold accents, gives the building a noble, metropolitan and timeless appearance.



Piotr Schneider

biuro projektowe ARPES



With a view of the highest standards and the Warsaw skyline

Developers of condo apartment buildings have accustomed their clients to a certain standard, which consists of a standardised turnkey décor, exclusive, resident-only common areas, fitness zones and gastronomic facilities. All of this will also be present in the Unique Tower.

In addition, the facility will boast something that is difficult to come by elsewhere; an unparalleled view. To enjoy it to the full, extensive glazing covers almost the entire wall area, from the floor to the ceiling suspended 280 centimetres above it.



Living in a city is not only using its infrastructure. It's also knowing its ambience, its specific rhythm. So those who come here for a short time or who rarely come can't be isolated from the city. Unique Tower allows its residents to get a sense of Warsaw, even if it's just for a few days.

Sud Architekt Polska
co-designers



The developer and operator of the building is Marvipol, a distinguished company which is well-known on the Warsaw market. The design is the work of Piotr Schneider of ARPES, in collaboration with Sud Architekt Polska Sp. z o.o., the Polish branch of Lyons-based French consortium Sud Architectes and Sud Groupe.





UNIQUE
TOWER





THE NORBLIN

The Norblin Factory, Warsaw

Architects: PRC Architekci

ALUPROF systems: ***MB-SR50N HI+*** mullion and transom façade system, ***MB-SR50N PL*** mullion and transom façade, ***MB-DPA*** automatic and manual sliding door system, ***MB-RW*** roof window system, ***MB-86 SI*** window and door system, ***MB-86US SI*** window with concealed casement



FACTORY

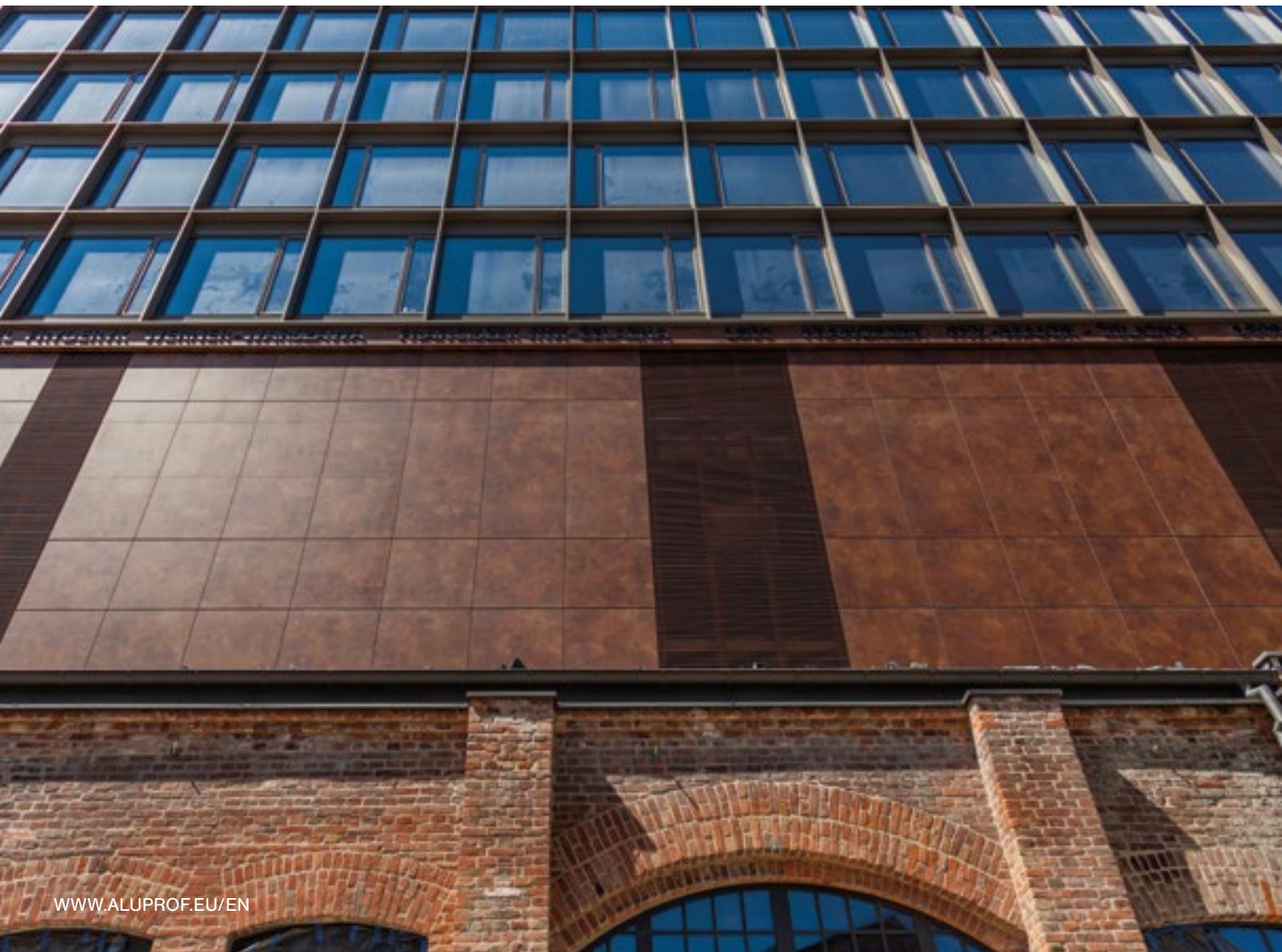
A museum or an office?

Even in a place as steeped in history as Warsaw, there are few places that are as much a part of the traditional fabric of the city as the Norblin factory. After decades of neglect and degradation, when an opportunity for regeneration arises, the question is not 'To do or not to do' but 'How quickly?' and 'How well?'. Fortunately, it was both fast and excellent. The Norblin factory is a model example of how buildings can be saved with the support of modern design and innovative technologies.

In 1882, when Ludwik Norblin bought out the Buch brothers' plating factory at what is now No. 51 ulica Żelazna, his company already had over sixty years of success and expansion to its account. With time, the modest but thriving metallurgical plant became a towering concern, not only in the entire part of Poland that lay under Russian rule at the time, but also throughout the Tsar's empire. Uninterrupted prosperity and excellent management made the Norblin factory a true global player. Its foreign trade offices and agencies scattered from St. Petersburg to Tehran were excellent evidence of this, as were

prestigious projects like Bertel Thorvaldsen's Copernicus monument, which stands in front of the Polish Academy of Sciences on Krakowskie Przedmieście to this day.

During the Warsaw Uprising in 1944, the Wola district probably suffered the most. After the war, the Norblin factory was nationalised and marginalised as a supplier of wire for the local railway system. It was finally closed in 1982 and the building then served as the Museum of Industry, a branch of the Museum of Technology. Gradually, it fell into disrepair.





The Norblin factory is a special project in terms of both its legacy and the uniqueness of the challenges we faced on the design and development front, like moving the historical building while the diaphragm walls and reinforced concrete structure were being constructed. The last time an operation like that was carried out in Warsaw was in the 1970s. Once the reconstruction work is complete, the Norblin factory will be a new museum on the trail of Warsaw's industrial heritage. It will become a place that is open and friendly and we hope that the Varsovians will really be fond of it.



Małgorzata Badzyńska-Trojan

PRC Architekci



Nowadays, the site of the former rolling mill once again has the chance of pulsing with life. The regeneration, which is carefully preserving the architectural relics of our industrial heritage, is leading to the creation of a multi-functional building, in the full sense of the word, ranging from 40,000 square metres of modern offices, to a cinema and a gastronomic, wellness and fitness zone. All of it in a museum setting! The designers' and developer's ambition was to draw attention to the heritage of the place, which cannot be passed by with indifference. Like it or not, visitors to the Norblin Factory or people using the services available here will always be on one of four contextual paths, namely, People, Architecture and Buildings, Machinery and Equipment, and Products. Each of them is to have several variants, which will be addressed to children, for first-time visitors and visitors who have come to further their knowledge.



The museum obtains its unusual character through its openness, which is also understood literally, since the actual museum space is spread throughout the complex and visitors will be able to decide for themselves which path and which variant of the tour interests them the most. By the same token, the common and communicative space of the office and service building is also a cultural facility. Thus conceived, the museum draws inspiration from the world's best museum, exhibition and educational models. Presenting its collections using modern, interactive and multimedia forms will integrate the exhibits into the life of the modern city.

The work being carried out goes hand in hand with concern for the environment. During the design stage, the buildings received BREEAM pre-certification with a rating of Very

Good. Heat recovery and rainwater utilisation technologies will be used and smog-absorbing trees and shrubs will be planted. The space will also be filled with bird feeders, nesting boxes and urban beehives. The Norblin Factory will support ecological transport, as well. In addition to providing chargers for electric vehicles, the complex will also feature Poland's first automatic underground parking for bicycles, with as many as

95 places!

The innovative formula of the entire complex, combined with its very attractive location, has already attracted prestigious tenants. For instance, this is where Internet sales giant Allegro has its Warsaw office.



NOBU



Nobu Hotel, Warsaw

Architects: Medusa Group

Photo: Nate Cook

ALUPROF systems: ***MB-SR50N EFEKT*** semi-structural façade system, ***MB-SR50N EI EFEKT*** fire-rated mullion and transom façade system, ***MB-78EI*** fire-rated partition system, ***MB-86 SI*** window and door system, ***MB-SKYLINE*** panoramic sliding door system, ***MB-SR50N OW*** tilt and parallel opening window

Robert De Niro's hotel

The hotel market in Warsaw has been experiencing a revival for several years now, with the city becoming one of the top destinations for Central European tourism. Now the eyes of the capital's residents, lovers of good architecture and travel enthusiasts are all fixed on the five-star Nobu Hotel. The Nobu brand was founded by three friends, Robert De Niro, Nobu Matsuhisa and Meir Teper. There are Nobu hotels operating in Miami, Barcelona, Manila and Ibiza, to name but a few. The luxury building in Warsaw is the chain's first branch in Central and Eastern Europe.



"I've brought part of New York with me to Poland." Thus spoke Robert De Niro, one of the co-founders of the Nobu chain, during the opening of the hotel in Warsaw. The brand is synonymous not only with luxury and refined design but, first and foremost, with the worldwide renown that the founders have built over the years.



The striking volume was created by separating the seven storeys on the basis of a V-shaped plan. In this way, a curved corner block of coloured fair face concrete obtained balconies. Planted with greenery, they will create a vertical garden at the centre of the urbanised city.



Przemko Łukasik
Medusa Group
architect



New York chic harmonises with the history of the city here. The building was constructed as a new wing of the Rialto Hotel, an important symbol of the city, which was rebuilt after the Second World War after being razed to the ground during that conflict. The building and part of the interior were designed by Przemko Łukasik and Łukasz Zagała, founders of the Polish architectural practice Medusa Group.



The interiors, which are sparing in form, use simple materials; concrete, wood, stone, and glass. They were designed in a Japanese style which alludes to the heart of the hotel, the Nobu Restaurant, designed in



collaboration with Californian studio PCH.

Łukasz Zagała
Medusa Group
architect







The five-star building offers 125 deluxe rooms, conference facilities, a fitness zone and a fine dining restaurant serving Asian cuisine. The first lifestyle hotel on the Polish market, it boasts noteworthy design which reflects the art deco style. The architects provided aluminium and glass arches, partitions connected at an angle and decorative muntins on the glazing of the

elevation. The appropriate solutions were provided by ALUPROF. From the outside, the building is distinguished by a substantial, vertically oriented, living wall, which contrasts with the cutting-edge **MB-SR50N EFEKT** glazed, semi-structural façade and its visual twin, the fire-rated **MB-SR50N EI EFFECT**.

Other ALUPROF solutions also have an impact on the safety of the hotel's guests and staff. As part of the building's fire protection measures, organisation of fire zones and provision of proper conditions for evacuating people, our **MB-78EI** system was used. It is designed for producing partitions and doors up to class EI90. The special fire insulation elements introduced into the internal cavities of the profiles and the insulation spaces serve to enhance the structure's resistance to high temperatures. In addition, the **MB-SKYLINE** sliding door with concealed frame was installed in the building, as was the **MB-86 SI** window and door system.



VILLA METRO



Villa Metro, Warsaw

Architects: DA Dziuba Architekci

Photo: Marcin Mularczyk

ALUPROF systems: *MB-SR50N EFEKT* semi-structural façade system, *MB-SR50N IW* façade with integrated window, *MB-86 SI* window and door system



Where routes intersect

The Villa Metro office and services building was built in the Mokotów district at the intersection of Warsaw's key transport arteries, ulica Puławska, aleja Niepodległości and aleja Wilanowska. It is a major transport and interchange hub formed by the Wilanowska metro station, a coach station serving suburban lines south of the capital and long-distance coach routes, tram stops and a Park & Drive car park.

There is a possibility that the functions of the site will be extended to support the tram line which is planned to run to the Wilanów district. You can get almost anywhere from this hub... and get here from almost anywhere.

The designers had a difficult task, because the building stands on a small, irregularly shaped corner plot.

It occupies the area where the original, very extensive southern entrance to the metro station was located. The main idea for the design was to unify and tone down the volume of the building, which is determined by the difficult shape of the odd plot.

Equally as important was the creation of a harmonious and elegant building that would moderate the multifaceted environment, bring order to the chaotic surrounding space and become the first element in the built area around the urban square which is envisaged here. The distinctive soft, rounded, north-east and south-west corners contrast with the sharp angles on the Park & Drive side.



The building is a distinctive and dominant feature thanks to the white rhomboid structure on the fully glazed façade. The aluminium structure is a set of initials, 'VM', translated into a drawing on the façade to create a defining characteristic of the Villa Metro office building. It worked. Villa Metro is already a distinctive and recognisable building on the map of Warsaw.

Julita Kucharska-Dziuba

DA Dziuba Architekci





Villa Metro is a Class AA office building. It has a total floor area of around 11,000 square metres and a GLA of approximately 8,000 square metres, consisting of nine floors above ground and two underground storeys. The local development plan means that the height is limited to 35 metres.

It proved possible to fit the building to the irregular shape of the plot in a way which allowed a layout with almost exemplary office space modules and a minimised area for moving around, in other words, an efficient net to gross floor area ratio, was achieved. The two-level underground car park is served by a vehicle lift. Office space occupies eight floors of the building, while the ground floor contains retail and services space.





Julita Kucharska-Dziuba and Karol Dziuba
Villa Metro designers

The Villa Metro building was awarded an LEED Gold certificate thanks to the numerous pro-ecological solutions it features. All the wooden elements, such as the internal wooden doors, hold an FSC certificate. The double-glazed façade is energy-efficient; the building is equipped with sunscreen roller blinds; the roof features white island technology, which reflects solar radiation; there are water flow

limiters in the toilets and there is a grey water system, which uses rainwater to flush them. All the finishing materials, such as paints and varnishes, are low VOC. As is usual for a building of this class, high-quality materials and state-of-the-art interior installation systems controlled by a Building Management System were used.



The all-glass, double-glazed façade, created using a system with windows from the technical floor to the suspended ceiling, ensures thermal comfort and excellent daylight provision for the office space. The specially selected glazing parameters prevent the interior from overheating. Tilt windows were installed in every third façade module. The office building features ALUPROF's **MB-SR50N EFEKT** mullion and transom façade, our **MB-SR50N IW** façade with integrated window and our **MB-86 SI** windows and doors with thermal insulation.



As soon as the occupancy permit was obtained, Villa Metro had a 100% take-up. This is an indisputable success given the current high supply of office space in Warsaw. The development was accompanied by the construction of two new entrances to the Wilanowska metro station. The previous entrance, which dated from the 1990s, was a structure covered in blue polycarbonate. It has been replaced by a distinctive design which echoes the white rhomboid structure of the office building.



THE ART OF LIVING RESIDE NTIAL STYLE







Can a single-family home be a sustainable development?

Nowadays, as environmental awareness is growing, this question is not all that easy to answer. Sceptics will highlight the fact that a single-family building takes up too much space, consumes too many building materials and too much energy and contributes to uncontrolled built areas and increased traffic. At the same time, especially after the collective experience of the lockdown ordeal, it is hard to imagine that our own home is an asset we will give up in the name of decarbonisation. Moreover, now is a time when developers have begun to appreciate the potential of old, or more precisely, ramshackle houses and are looking for designs for year-round holiday homes and building plots.

To be happy, we need natural light, fresh air and greenery. These are often in short supply in urban agglomerations; hence the desire to organise our own space, possibly with Internet access.

All that thus remains is to study the optimistic standpoint whereby even a luxury villa can be sustainable and environmentally friendly. How does that work in practice? Technology has long since caught up with imagination. A design can respect the beauty of the local landscape and make naturally growing trees an inherent part of a building's volume. A development can be spacious and self-sufficient at one and the same time. It can produce energy to power the hybrid car we use to commute to work. The material used for construction can have a negligible carbon footprint during the use phase and provide a long-term benefit to the planet. State-of-the-art construction methods and technologies offer a full range of possibilities for responsible design and construction. If a single-family home is seen as a luxury, it is worth accepting that it can be a responsibly designed luxury.

This chapter will most certainly prove that. We will start with the 'picture houses' designed by Przemek Olczyk's Mobius Architekci studio, which enclose natural landscapes that change throughout the year in their modernist framework. We will be visiting a unique home, where the boundaries between interior and exterior are blurred, thanks to bold design and remarkable glazing. That home is Circle Wood in east-central Poland, not far northwest of Warsaw. Finally, we will have a look at ALUPROF technologies which allow architects and designers to turn the creations of their imaginations and, more importantly, their clients' dreams into reality.



Nature permeating the home



An interview with **Przemek Olczyk**
of **Mobius Architekci**

Did the pandemic and lockdown change anything in your approach to residential design? It's certainly affected people around the world and a growing number are thinking about a home close to nature. Are you happy about this, or do you have any other thoughts?

In fact, the pandemic has played its part in people's greater interest in building homes and creating their own independent space. It's certainly accelerated key decisions on the part of developers. People's return to nature is always good. I'm also seeing increased interest from developers. Their focus is mainly on higher standard buildings

Since its inception, Mobius has focused on designing houses. It could be said that, at one point, the studio belonged to a narrow group specialising in that field. What's it like to live in a house designed by Przemek Olczyk's team? What do you offer your

clients along with the design?

Assimilation with nature, for sure, but what else besides that?

We offer uniqueness. Our clients receive a space that's original, both aesthetically and functionally. They benefit from our experience in designing solutions that have already been tried and tested in previous projects. At the same time, they appreciate the innovative technological solutions our designs feature, because they have a direct impact on their living comfort.

Most of your projects have received worldwide recognition. Which house do you think was the turning point for the studio? And why?

The first house that gained recognition in Poland, and also beyond it, was the Edge House, where we transformed the difficult terrain into our greatest asset.





The Green Line House was also noticed and appreciated, thanks to its green roof and customised incorporation into the slope of the plot. Today, Circle Wood House comes to the fore, permeating the interior with nature.

All of the houses I've just mentioned are linked by the idea of assimilation into the environment, of corresponding closely with the surrounding nature. All our designs draw inspiration from the landscape, creating a unique space.

All the same, we know that the concept is often distorted at the implementation stage. At Mobius, you try to protect yourselves from such painful interference in the idea by offering a design to construction service, a service from A to Z. Which project is your showpiece? Which home are you most satisfied with as representing the studio in every sense? And why?

Most of Mobius' recent projects, like Green Line, created for the client on a turnkey basis, Circle Wood House and the most recent houses which we've yet to show to a wider audience...

that's Wind, Loop and Dune... are built to the highest possible quality and we can unhesitatingly pride ourselves on them. There are no failed solutions. Everything's been done in line with the documentation. The developer remained faithful to the details we designed... and that's something we devote a great deal of attention to, both at the design stage and during construction.

We collaborate with a great many contractors, technologists and engineers who control the quality and correctness of the solutions at every stage of the process. An additional factor that's equally as important to the overall picture is the awareness of our developers, who know that every smallest detail has an impact on flawless execution and the expected end result.

The hallmarks of your projects are undoubtedly refined detail, technology and an openness to nature. Light, air, greenery in abundance... The houses are like paintings that encapsulate the natural, often untouched landscape in stunning frames. How has that philosophy evolved? Where did you get your inspiration from? What led you to this point?

The context of the place has always been a determining element of design for me. Each time, the main idea is to create a new living space in an existing place. We try to use its strengths without destroying it. When we build,



our interference with the landscape is obvious, but we know that it can be done sustainably, in a way which gives the space character and enriches it, but doesn't eliminate it. So we write a new chapter, finding an idea for the space in line with the developer's expectations.

A house with a forest in the middle or on the surface of a pond, embedded between trees or hidden in a slope. Without technology and imagination, it wouldn't be possible to accomplish those ideas. What product and technological solutions do you value the most? Which ones couldn't you design without? I suspect that panoramic windows rank high on the list.

There's no doubt about it! Vast sweeps of glazing come right near the top as far as shaping the aesthetics of our buildings is concerned. We also attach great importance to the materials we use for our elevations. Very often, mobile solutions in the form of shutters, liftable walls, movable ceilings and terraces are complementary elements. Me, I'm a fan of mechanical elements that have a major functional significance in addition to their added aesthetic value.

How does luxury architecture of this kind correspond with the idea of sustainable building? Don't the original volume, which is rarely less than 400 square metres, and the unusual materials cancel out the possibility of achieving goals like energy efficiency and reducing the carbon footprint? Can a villa be eco?

In the case of our projects, we're talking about areas that are generally above 400 square metres, where zero emissions isn't achievable. We use solutions from companies that place a great deal of emphasis on the ecological production of materials, of course. But given the size of our projects, for example, it's difficult to talk about reducing the carbon footprint. However, we certainly give our buildings state-of-the-art internal installations that ensure lower energy consumption.

Do you agree that no one should be granted planning permission if alternative energy sources are not taken into account in the design?

I think that this is now a very important aspect of design and it should be really firmly emphasised when permits are being issued.

What challenges await Mobius? Are there any amazing new projects on the horizon? Or are you planning to switch career tracks and rework the idea of accessible housing, for instance? What else will we be hearing about?

We're constantly working on ambitious projects. At the moment, they're mainly single-family homes, but we'll have some new multi-dwelling units in our portfolio before long. Challenges also await us in office building projects. One thing's for sure... there's certainly no lack of ideas.



CIRCLE WOOD HOUSE



Circle Wood House

Architekt: Przemysław Olczyk Mobius Architekci

Joinery contractor: Bausan

ALUPROF systems: **panelled front door** with sidelights, **MB-SR50N EFEKT** façade and roof skylight system, fixed windows and large-scale glazing from the **MB-86 SI** system



“

I thought of the house as a massive section of a tree trunk. Designing by reduction was akin to hewing out pockets to form the rooms and the intimate, semi-private, glazed recesses. This gives users a sense that they're constantly strolling amidst trees. There's a lot of glazing, which blurs the boundaries, while the plot of land provides freedom and, quite simply, an intimate communion with nature.

Przemek Olczyk

Mobius Architekci, Warsaw office

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In a forest circle

Mobius Architekci's projects are rarely smaller than 400 square metres and such is the case with Circle Wood House, which was built on a large, sandy plot among tall pines of imposing scale. The expansive and complex volume of the building is not overwhelmed by its size. Concealed beneath a harmonious oval frame, overhanging the garage and open spa area, it endows the volume with softness and gives it a resemblance to the trunk of an ancient tree that could hold all the secrets of the forest. The heavy, reinforced concrete structure has been carefully concealed under panels of exotic angouma, or okoumé, wood. It comes from West Africa and the studio chose it for its knotless structure and warm, smoky hue. In this way, the 'house-cum-trunk' blends in even better with the natural landscape.

An invisible border

This camouflage within the setting of the Kampinos National Park is enhanced by the panoramic sweeps of glazing, through which not only the interior of the house can be admired, but also the other side of the clearing. Thanks to the glass walls, the sandy landscape, with its tall grasses and pine trees, forms a background that changes with the seasons. Another distinctive feature, and the crowning glory of the forest assimilation,

is the original atrium. In Rome, the atrium was the centre of family life. In Circle Wood House it is the crucial point where nature permeates the home. Grass grows in the small, exposed courtyard and towering pine trees hug the walls of the building. Nature not only surrounds the house, but also fills it. The structure of the home provides a frame in which the residents can enjoy the forest scenes.





Light, air and greenery. How technology brings us closer to nature

The twentieth-century concept of modernism has revolutionised the way single-family homes are designed today. They have become more open, with no clear boundaries between interior and exterior. Nowadays, in fact, it is difficult to find a design without an open plan and large, glazed walls. Yet who would want to search for examples like that when they can enjoy the play of light or the spectacle of nature on the other side of the glass.





Open to the surroundings

I am amazed by the way houses adapt light, open up to their surroundings and nature.

This is something Przemek Olczyk once said in an interview and it is reflected in all his projects. At the Underpass House, the surface of the pond reflects the glass façade, creating an extraordinary optical illusion. The Horizon Villa is an example of how to make the most of the scenic nature of the building plot and an incredible panorama by incorporating glass terraces at each level. In the Green Line House, panoramic windows

connect to the space of the uncultivated plot with its complex morphology, while serving a transparent windbreak. In the Wing House, balconies, terraces and panoramic windows frame the surroundings. In the Cube House, on the other hand, the glass builds the dynamics of the volume, refusing to let the cube be pigeonholed. What technologies make it possible to accomplish such bold ideas?



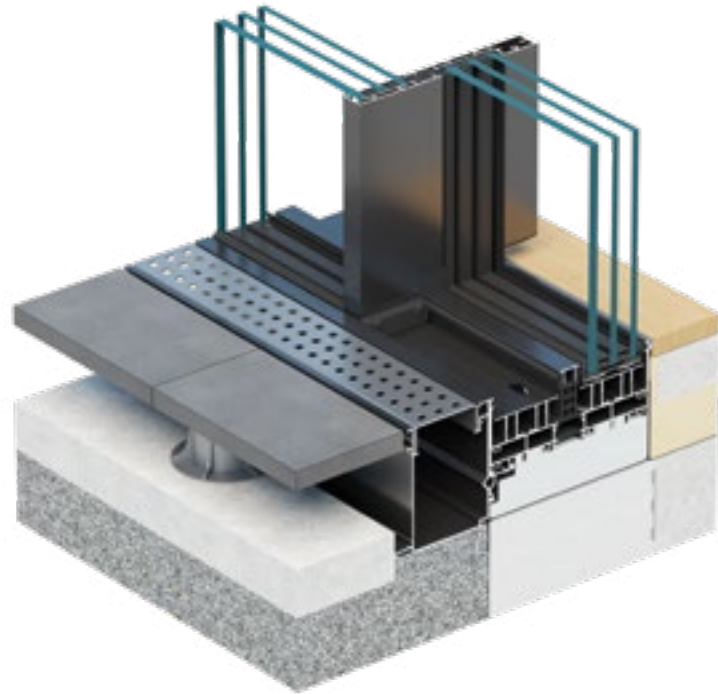




A glass panorama

A LUPROF's MB-SKYLINE TYPE R system makes it possible to design glass walls with no limit to the length and invisible frame parts. The technology is based on slender profiles. Door leaves are concealed in the bottom and top frames. If the variant equipped with a motor or with a lock on the mullion is selected, then the side profiles are also concealed. The frame itself has been designed to be as shallow as possible, with a depth of just 23 millimetres. The width of the mullion has also been reduced to a minimum, with the only visible joint measuring a mere 25 millimetres.

The structural depth of the door profiles is 71 millimetres and, of the frames, 190 millimetres. The leaves of the ALUPROF MB-SKYLINE TYPE R doors are made using cutting-edge, environmentally friendly materials which provide the



highest possible thermal isolation parameters. Triple glazing with a thickness of 52 to 60 millimetres also plays a crucial role in this respect. The custom-designed, external motor is equipped with a radio receiver and safety radar, meaning that the mechanism can be operated remotely. Excess moisture is removed via a state-of-the-art drainage system, complete with guttering. The maximum height of an MB-SKYLINE TYPE R door

is no less than 4 metres and, if the motor is fitted on the outside, then the moving structure can weigh as much as 700 kilos. This affords the possibility of designing spectacular glass walls. The leaves may be massive, but no great effort is required to slide them open and closed and the mechanism that operates them is almost soundless. Aesthetic slider seals can be used for the frames, making the everyday use of the door even easier.

Sunbathing under control

Our SkyFlow external venetian blind system protects interiors from overheating while providing the right optical comfort. Regulatable slats are a major feature of these blinds, giving users the freedom to select and control the angle and degree of shading which works best for them. In addition, the aesthetic profile of the moveable blades, combined with the aluminium guides and headbox, give façades a contemporary, original look. The system is available in three installation variants; flush-mounted, as a self-supporting structure or adapted to existing buildings which are already in use. Crucially, the guides, which are the only one of their kind on the market, are fitted with special sound dampers that eliminate any noise when the slats hit the guide rails. The textile elements are made using polyester fabric. They are thermally treated, making them resistant to weather, stretching, wear and the action of UV radiation and mould.






The **MB-SR50N ZS** system is a complementary solution. It combines the Skyflow venetian blind and the MB-SR50N mullion and transom façade system. Clamping strips have been custom-designed for the mullions, making it possible to install the façade infills and masking strips, which also act as the guides for the external blinds. This means that the decision to use this kind of blind can be taken at a later stage of the development process, when the façade has already been installed.

The technologies described here make the modernist proximity to nature an idea of enduring strength. It has carved out a niche for itself in the construction of villas, but is increasingly being claimed by the residential, services and public sectors, as well. Being open to the city is not necessarily a bad thing if the city can be closed off with a well thought-out blind.

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