TOMORROW. UPGRADED.

Retrofitting yesterday's façades into tomorrow's architecture

WICONA®

By Hydro

“PROPERTY OWNERS, SUBJECT TO INCREASINGLY **STRINGENT REGULATIONS** AND ENVIRONMENTAL COMMITMENTS, ARE SEEKING SOLUTIONS FOR **SUSTAINABLE RENOVATION** AND REDUCING ENERGY COSTS.”

Rethinking existing architecture

By 2050, the majority of buildings standing today will still be in use. These buildings are reservoirs of resources. The question is no longer if we should renovate, but how we can transform what already exists to meet the demands of a low-carbon, circular economy.

Tomorrow. Upgraded. represents our forward-thinking approach to working with existing architecture to unlock new economic, technological and architectural value through renovation – while conserving resources, reducing carbon emissions and improving occupant comfort.

With solutions built on circular materials, digital product tracking and a trusted partner network, WICONA helps architects, building owners and consultants redefine what retrofitting can achieve – more sustainable, resilient buildings that are better adapted to global warming, designed to endure and capable of retaining both their purpose and value over time.

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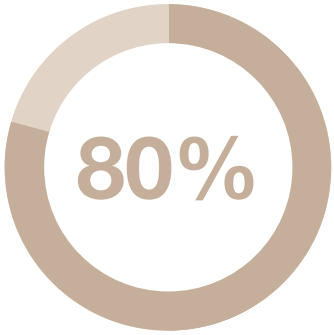
THE URGENCY OF RENOVATION.

The building sector faces mounting pressures - from finite resources and rising material costs to tightening sustainability regulations. At the same time, the United Nations' 11th Sustainable Development Goal calls for safer, more resilient and sustainable cities by 2030.

For building owners and architects, this represents both a challenge and an opportunity: to rethink how buildings are designed, operated and renewed - with smarter use of materials, greater emphasis on reuse of resources and solutions that cut embodied and operational carbon.



80%[1] of the buildings that will exist in 2050 already stand today and need renovation.

The construction sector is responsible for around 35%[2] of waste generated in Europe.

35%

The building and construction sectors represent 39%[4] of global energy-related carbon emissions.

39%

The façade alone contributes up to 25%[3] of a building's total carbon footprint.

25%

Retrofitting aluminium façades is one of the most effective ways to meet these challenges head-on, enabling circular, low-carbon projects that preserve resources while improving building performance, occupant comfort and long-term value.

Sources:
1 For net zero cities, we need to revisit our older buildings | World Economic Forum
2 Buildings and construction - European Commission
3 Etude de l'Institut Français pour la Performance du Bâtiment (IFPEB) et de Carbone 4 (03/10/2022)
4 World Green Building Council

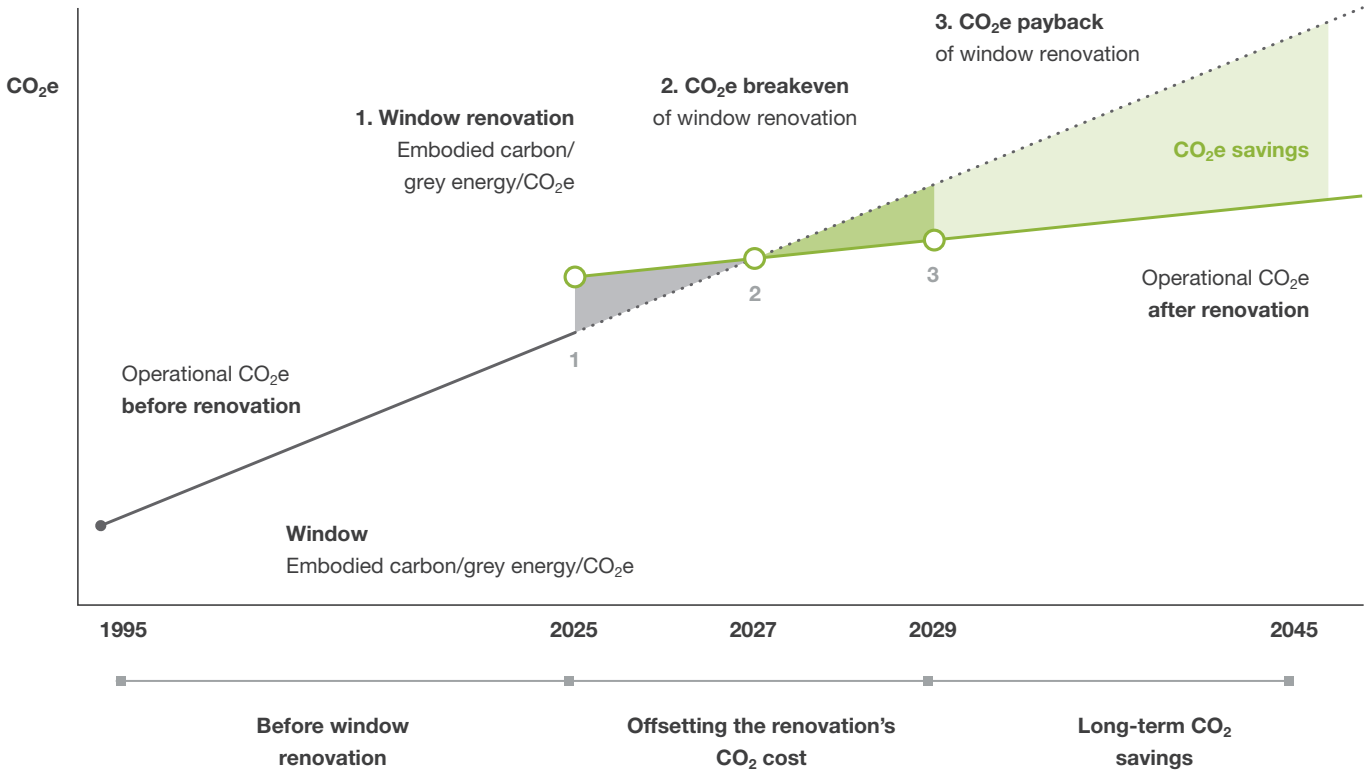
RENOVATION THAT ADDS VALUE.

Economically. Technically. Environmentally.

Circular retrofitting directly reduces operational CO_2 emissions, extends building life, and improves occupant comfort, while retaining the embodied value of the existing structure.

Compared with demolition and rebuild, it requires fewer raw materials, less energy and lower financial investment – all while protecting cultural heritage and the asset's long-term value.

CO_2e amortisation of the customised retrofit



At the circular renovation of the Omega Haus, we demonstrated that retrofitting drives profitability without compromise. With WICONA's circular products, significant CO_2 savings are achieved within two years, and the measures are fully amortised after four years.

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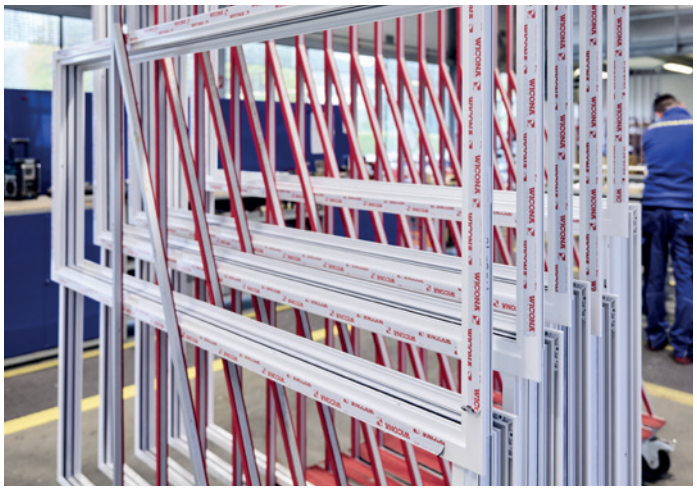


THE BENEFITS OF CIRCULAR RETROFITTING.

Building performance that goes beyond compliance

Retrofitting façades, windows and doors with WICONA systems delivers measurable value, from sustainability gains to long-term financial and operational benefits.

Increased property value

Energy-efficient upgrades not only improve a building's long-term performance, but also make it significantly more attractive to investors, tenants, and future buyers – especially through a clear commitment to sustainability.

Pathway to Green Building Rating Schemes

Buildings designed with a sustainable approach meet the criteria for ecological certification such as DGNB, BREEAM or LEED, strengthening ESG credentials.

Easier project financing

Low-carbon renovation aligns with public policy priorities and increasing environmental regulation, making projects more attractive to banks and investors.

Energy efficiency and cost savings

Upgrading thermal performance reduces heating and cooling demand, lowering both operational carbon and energy bills.

Extended building lifespan

Targeted renovations using durable, low-maintenance materials can significantly extend a building's lifespan. A renewed building envelope provides reliable protection against weathering, reduces maintenance costs, and helps secure the property's long-term value.

Improved comfort and well-being

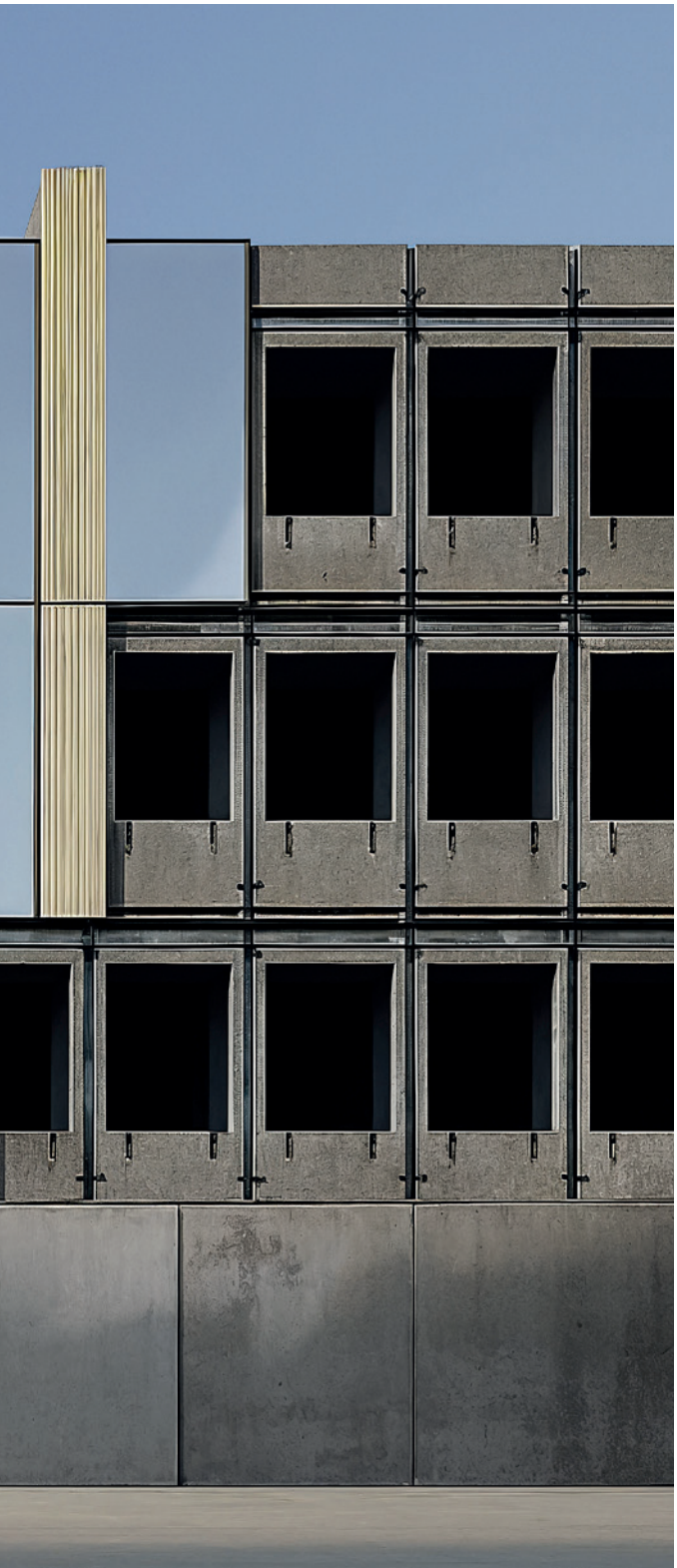
High-performance façades, paired with efficient heating and insulation, improve indoor comfort.

Lower environmental impact

Using recycled materials, such as Hydro CIRCAL aluminium, significantly reduces emissions associated with the extraction, production and transportation of new materials.

A CIRCULAR APPROACH TO RETROFITTING.

Every successful renovation begins with a clear understanding of the existing building and a wide range of specialised knowledge. That's why we actively collaborate with the building owner and trusted expert partners, from structural engineers and architects to sustainability consultants, to achieve commercially realistic solutions.



1. Analysis and Planning: Understanding the building

- Feasibility Pre-study
- Detailed study and specification development
- Final budget and partner coordination

2. Implementation: Solutions that deliver

- System solutions
- Project solutions
- Scrap collection & recycling

3. After-sales and maintenance: Protect your investment

- FRAME ID – a digital ID of the fabricated product to ease maintenance and future renovation.

1. Analysis and Planning – Understanding the building

Feasibility Pre-study

Alongside your team, we assess existing conditions, exploring viable renovation scenarios and evaluating your building's technical and commercial potential.

This early-stage evaluation provides the foundation for informed decision-making, preventing scope creep and budget overruns by identifying constraints before detailed planning begins.

Detailed study and specification development

With feasibility confirmed, we move into a detailed study phase. Here, the precise specification is developed, ensuring that all technical requirements, material choices and sustainability targets are defined from the outset. This level of detail guarantees that the project aligns perfectly with the customer's goals.

Final budget and partner coordination

With the specification in place, we provide a detailed budget proposal. This stage requires close coordination with all relevant stakeholders – from demolition companies and main contractors to façade fabricators – to finalise costs and secure commitments.

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It’s not just about renovation.
It’s about transformation.

2. Implementation – Solutions that deliver

When you choose a façade system for your retrofit, you're making a decision that will impact your building for decades. The material matters. The manufacturing matters. And increasingly, what happens at the end-of-life matters.

WICONA considers the full lifecycle of every product it designs from the very beginning. Our mission is to deliver high-performing, recyclable and low-impact solutions that shape the building industry.

Design freedom

Superior malleability allows complex architectural forms and seamless integration with existing structures – achieving your vision without material constraints.

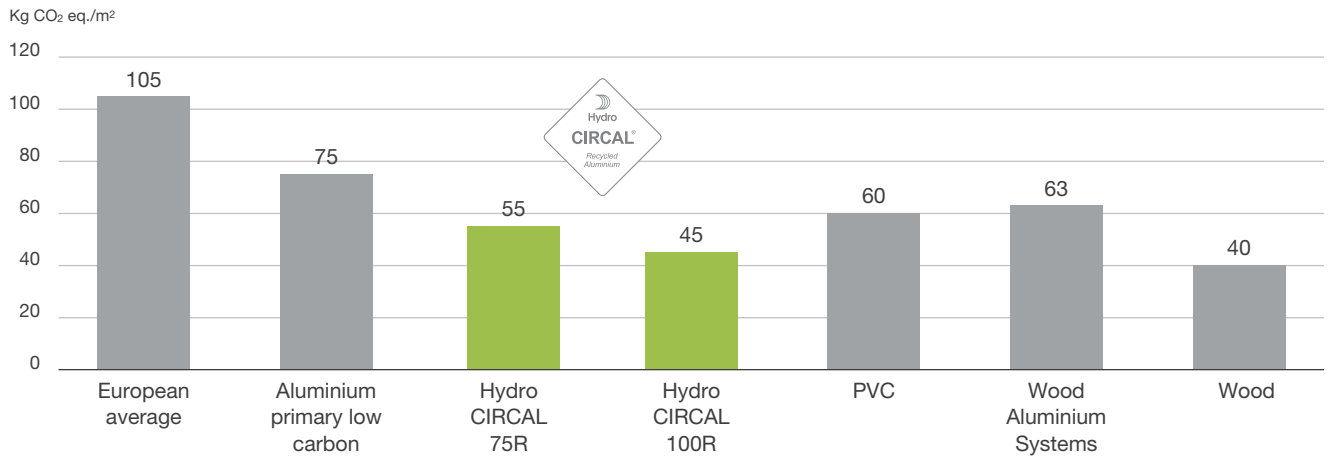
Aluminium for longevity

Exceptional strength-to-weight ratio with a long lifespan and virtually maintenance-free performance. Your investment is protected for generations.

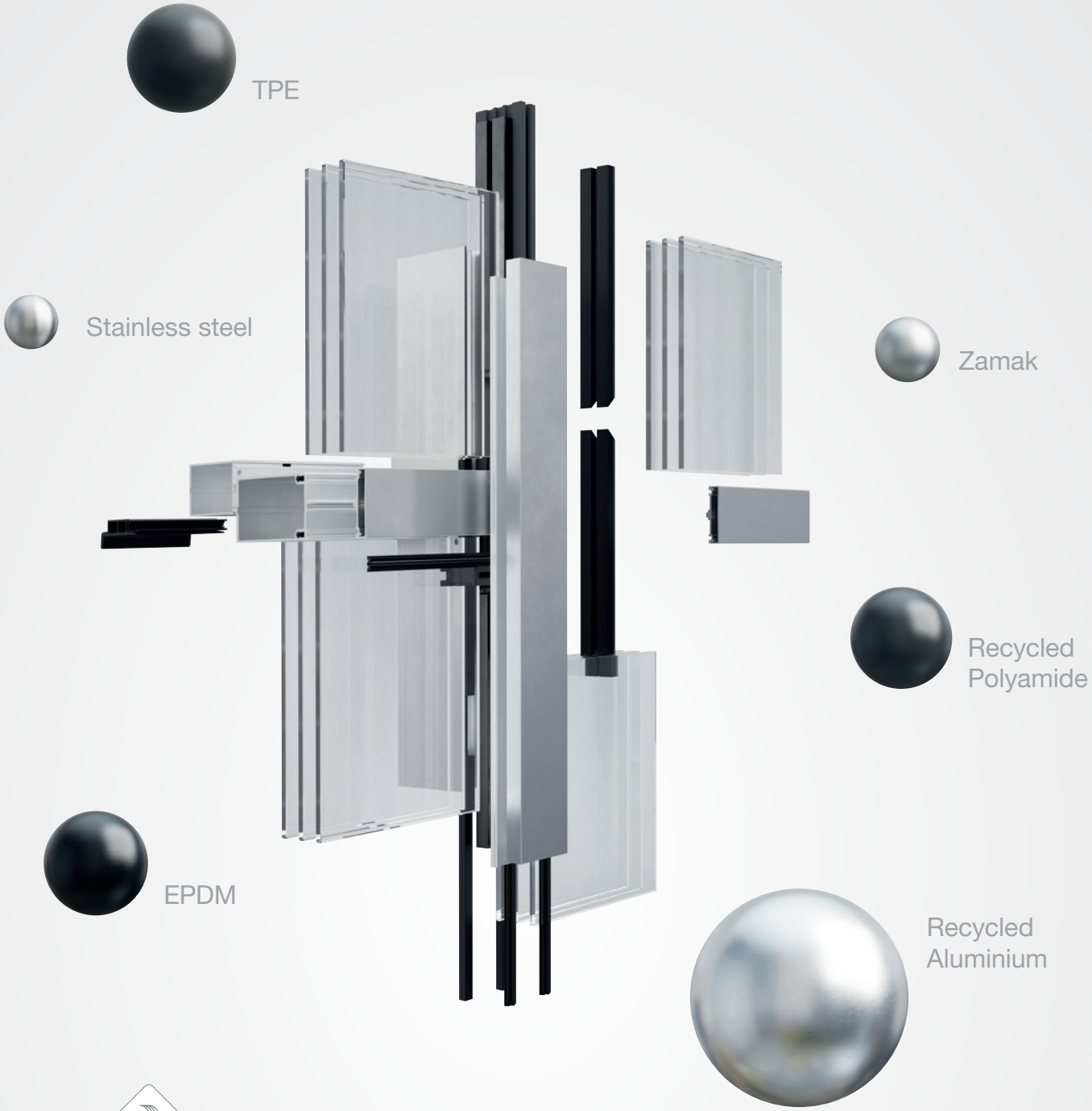
Low- and near-zero carbon material

Delivering up to 80% lower CO_2 emissions than the European average for primary aluminium with a carbon footprint of 1.9 kg CO_2 eq./kg Al., our standard aluminium, Hydro CIRCAL 75R, is a prime quality aluminium made with a minimum of 75% recycled, post-consumer scrap, certified by an independent third party (DNV-GL).

Taking it a step further, our Hydro CIRCAL 100R is made from 100% post-consumer aluminium. This means it is possible to specify profiles with a near-zero carbon footprint (0.5 kg of CO_2e/kg of aluminium on average) - the lowest in the world.



Carbon Footprint per m² – Production phase (A1-A3) | Window 65 mm / Double glazing



Hydro
CIRCAL®
Recycled
Aluminium

75/95

Aluminium is key, but we go one step beyond, taking a holistic approach to all materials used in our system solutions.

Our systems are made from materials that are 75% recycled and 95%recyclable. This allows us to significantly lower the CO_2 footprint of our solutions.

Performance without compromise

Upgrading an existing building should improve the quality of indoor environments. Effective insulation, soundproofing, and energy-efficient systems work together to enhance both comfort and performance. WICONA solutions deliver reliable performance across all key areas:

Advanced thermal performance

Solutions that reduce heat loss and improve energy efficiency.

Enhanced acoustic insulation

Our façades are engineered to deliver outstanding acoustic insulation, ensuring quieter, healthier interiors, essential for both comfort and productivity.

Climate-approved performance

Designed and tested to deliver reliable performance under a wide range of climatic conditions – today and in the future. Whether exposed to heavy rain, strong winds, temperature fluctuations or changes in air quality, our systems maintain their functionality, durability, and energy efficiency. This resilience ensures that buildings remain safe, comfortable, and efficient, even as climate patterns evolve.

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Together, these upgrades **reduce operational emissions** while **maximising comfort, well-being and occupant satisfaction.**

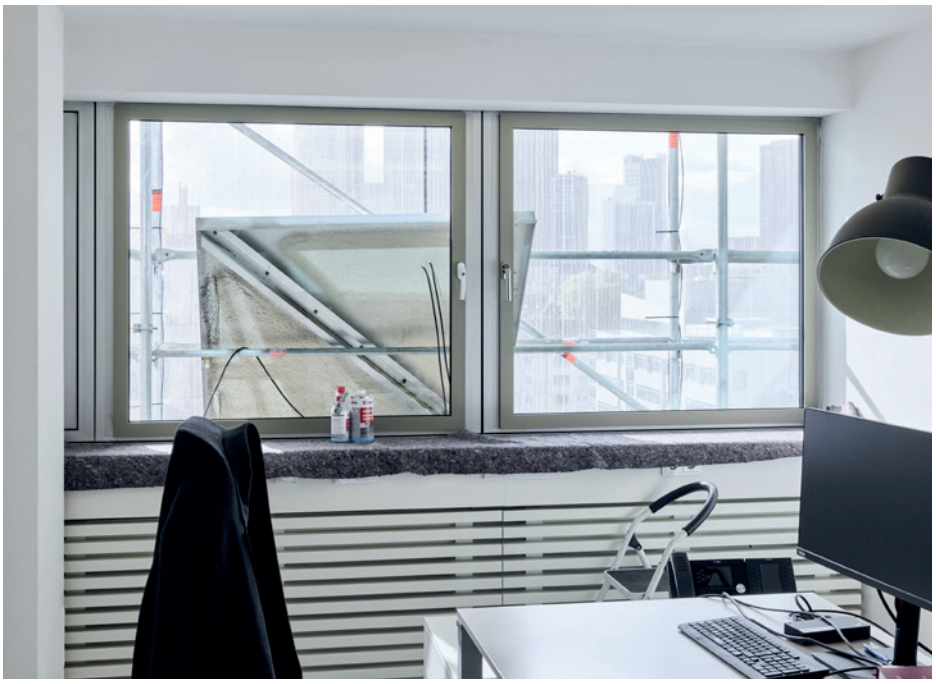
Renovation in occupied buildings

Renovating an occupied building requires precision. Every intervention must balance performance gains with minimal disruption, keeping occupants comfortable, projects efficient and cost under control.

WICONA renovation strategies focus on retaining the existing structure, such as the façade spine or window frame, where possible, replacing only what's necessary to enhance performance, like glazing or sash elements.

Avoiding large-scale structural work, this targeted approach controls costs, reduces waste and allows renovation to take place with minimal disruption to occupants – especially when a building is in operation.

Efficient upgrades with minimal disruption. Renovation in occupied buildings, a constraint ... and an opportunity.



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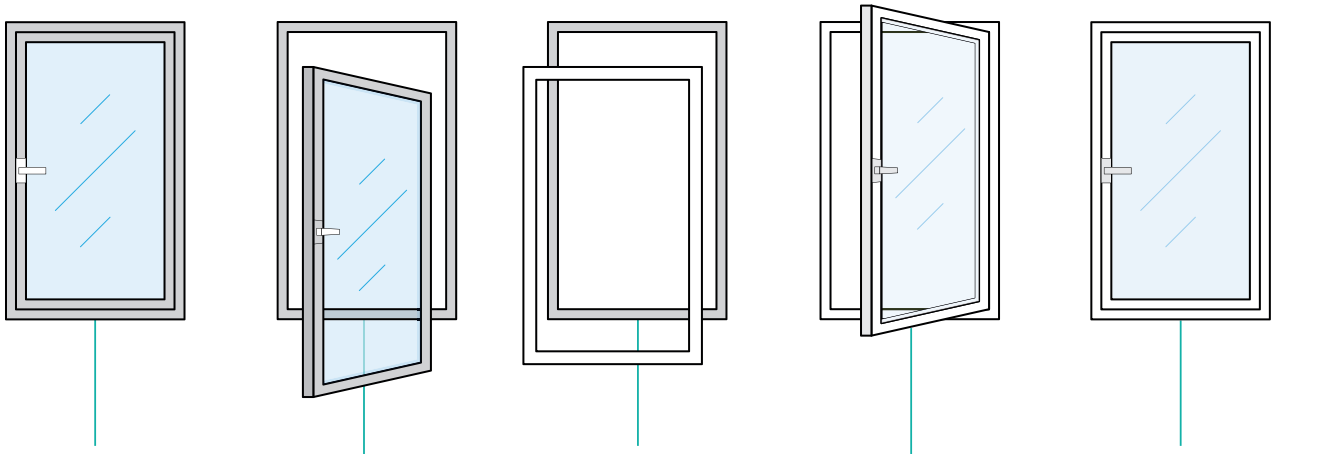
Decarbonising through smart renovation: WICONA renovation window

The WICONA renovation window offers a solution for upgrading façades with minimal intervention, exceptional thermal performance and a circular approach to renovation.

Instead of removing entire frames, the existing structure is retained – only the sash is removed and upgraded using an adapter profile and new gasket system.

How it works:



1. Old window
The original installation nearing end-of-life

2. Retain the existing frame
Only the sash is removed, reducing waste and disruption.

3. Adapt and prepare
A new adapter profile and gasket are fitted on the structure for airtight integration

4. Install the new sash
High-performance WICONA sash to meet project requirements

5. Upgraded window
Fully refurbished window with improved comfort and lower emissions performance.

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Your benefits

Minimal intervention
No structural changes required, ensuring rapid retrofit even in occupied buildings.

Engineered for retrofit
Minimal materials, maximum performance with fast and clean installation.

Boosted thermal performance
Better insulation delivers improved comfort and lower heating and cooling demand.

Closing the loop: from façade to façade without downcycling

Today, retrofitting goes beyond traditional building upgrades – it means rethinking how we build for the future. It's about adopting a fully circular approach that uses resources wisely, keeps valuable materials in use for as long as possible, minimising waste and emissions and extending a building's lifespan.

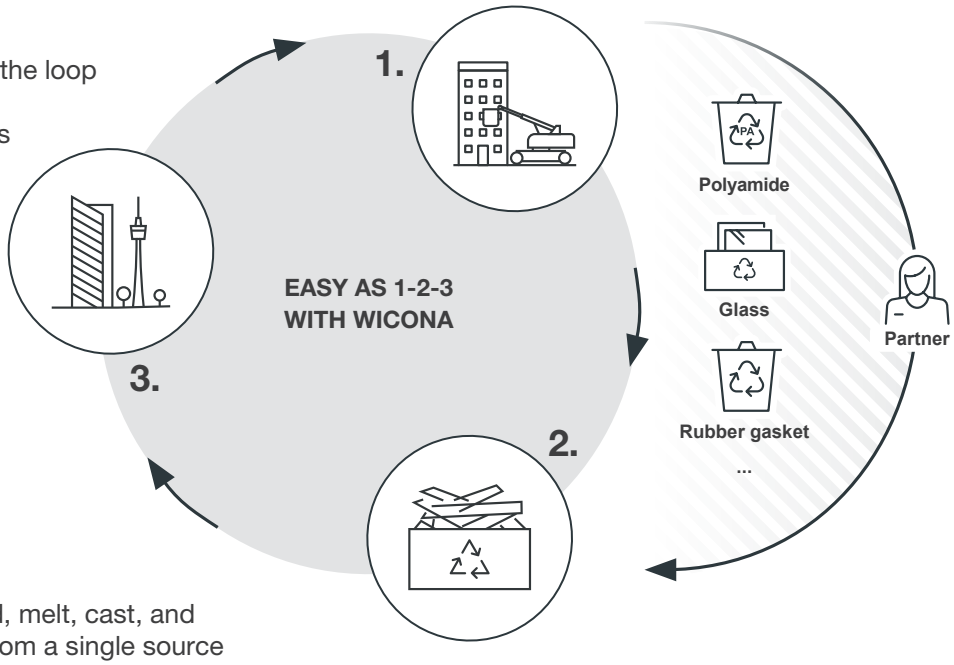
Through urban mining, WICONA and its partners recover aluminium profiles from existing façades, doors and windows. These are cleanly separated, responsibly processed and reintroduced into the production cycle without any loss of quality.

1. DECONSTRUCT

- City as a material warehouse
- Disassembly of end-of-life materials from existing buildings
- Separation of raw materials (Aluminium, Glass, Polyamide, EPDM Seals)

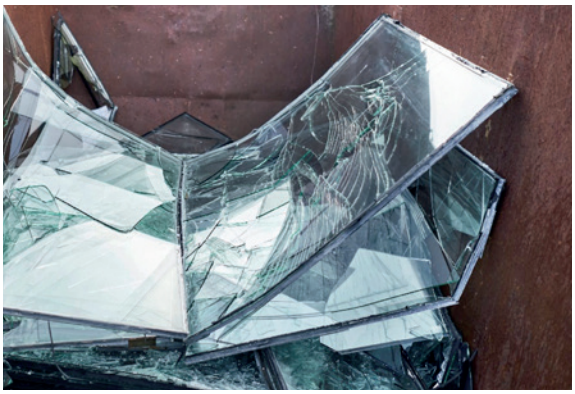
3. REBUILD

- We are the first to close the loop
- 75% recycled and 95% recyclable materials



2. RECYCLE

- We sort, shred, melt, cast, and extrude – all from a single source
- Our partners take care of the other important raw materials
- Our contribution to decarbonisation



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Together, we're turning yesterday's façades into tomorrow's architecture – without downcycling, without compromise and without waste.

WICONA's circular process ensures a fully closed material loop:

- Keep valuable resources in the loop
- No material is exported outside Europe for reprocessing, avoiding emissions-intensive exports
- Advanced sorting technologies guarantee clean, high-grade input
- Clean, traceable material flows.
- Made from at least 75% recycled and 95% recyclable material
- Truly circular façades

We offer an **all-in-one solution** for material recovery, recycling, and supply. By taking back and processing old aluminium systems from existing buildings, we produce **high-quality recycled products** – and significantly increase the **end-of-life value** of the materials used in our systems.


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3. After-sales and maintenance – Protect your investment

As a building owner, you want to ensure your renovation performs year after year, as promised. Our commitment does not end with project completion. Maintenance is part of our solution.

Trusted partners, ready when you need them

Our network of qualified fabricators understands WICONA systems in detail and responds quickly to keep façades performing at their best.

FRAME ID: full traceability, simple maintenance

Every product has a unique digital twin that follows its whole life. Fabricators can access detailed product information, log maintenance via QR code, and replace components easily.

© ronstik

FRAME ID

Enhancing product longevity and sustainability, this digital twin follows the whole life of the product. Therefore, each product will have its own QR code.

You can access:

- Fabricator information
- Product information and technical specifications, full lifecycle history
- Detailed records of maintenance and component replacement
- EPD information
- Bill of Materials enabling end-of-life value and circular recycling

TAKE THE NEXT STEP TOWARDS A CIRCULAR TOMORROW.

From a targeted façades upgrade to a full circular retrofitting, WICONA provides the expertise, technology and flexible approach needed to make every step towards circularity possible.

Whether you're modernising a single elevation or transforming an entire building, WICONA ensures systems and service to meet project requirements.

Two routes to progress:

- Standard, ready-to-use solutions
- Customised solution:
  Bespoke projects require qualified specialist partners. WICONA collaborates closely with you to develop tailored, cost-effective solutions and ensures the expertise needed for successful project delivery at every level.

WICONA Your partner in circular retrofitting.

OMEGA HAUS OFFENBACH, GERMANY.

A pioneering circular renovation – combining architectural heritage with next-generation sustainability.

Technical Consultant:
BauSmart Consult

Commercial Consultant:
Lefair Development

Architects:
WGA ZT GmbH

Façade Construction Company:
Heidenbauer

Façade partners:
WICONA, Saint-Gobain Glass and Semperit

Built in 1994, Omega Haus is a landmark complex of four office buildings in Frankfurt, spanning 50,000 m². Three decades later, its insulation had deteriorated, and its energy performance no longer met modern standards.

Yet, its prime location and distinctive architecture made it an ideal candidate for renovation rather than replacement.

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A vision for sustainable revitalisation

The owners set out to transform the building into a future-ready, ESG-compliant campus aligned with EGB 55 (Energy Efficiency Standard 55) and LEED Gold certification.

The goal was to improve energy performance, reduce CO_2 emissions and operating costs, and create an inspiring work environment with flexible office space, a gym, childcare, and conference facilities – all while preserving the building's architectural identity.

Guided by the principle of "change only what's necessary," the project aimed to achieve maximum impact through minimal intervention.

Selective innovation: the WICONA renovation window

In close collaboration, façade specialist Heidenbauer and WICONA developed a bespoke renovation window system – designed to replace only the infill and opening elements while retaining the existing frame construction.

Each window was digitally recorded to create a FRAME ID digital twin, providing a precise database for production planning, logistics and future facilities management.

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Circular dismantling and material recovery

The renovation followed strict circular economy principles:

- Old windows were dismantled floor by floor.
- Recyclable materials were carefully separated into aluminium, glass and EPDM seals.
- Aluminium was sent to Hydro's recycling plant, where it was reprocessed through a DNV-verified method into Hydro CIRCAL 75R - aluminium containing at least 75% post-consumer recycled content with a carbon footprint of just 1.9 kg CO_2/kg.
- Glass was processed into cullet and reintroduced into flat glass production.
- EPDM seals were shredded, devulcanized, and reintroduced into new Semperit seal manufacturing.

Rebuilding performance

The new sashes, made from Hydro CIRCAL 75R profiles, were assembled at Heidenbauer's facility in Bruck an der Mur. Each was fitted with triple-insulated glazing, achieving U-values below 0.99 W/m²K, fully compliant with the EGB 55 standard.

A tailored adapter profile compensated for existing frame tolerances, ensuring complete air and water tightness.

A complete circular loop

This project closed the material loop, turning end-of-life façades into new, high-performance systems. The approach saves CO_2 at every stage:

- Material efficiency: only sashes and infills replaced.
- Low-carbon aluminium: 75% recycled content.
- Operational efficiency: reduced heating and cooling demand.

As the first speculative refurbishment in Germany to achieve EGB 55 compliance, Omega Haus demonstrates how high-value architecture can be reimagined through circular innovation to balance performance, preservation, and sustainability.

“The refurbishment window was ideally suited here. We achieved significant gains in thermal insulation and usability with **minimal structural intervention – an ideal alternative to a full façade replacement.**”

Dietmar Brüderl, Head of WICONA Project Service

EVANGELICAL CAMPUS NUREMBERG (ECN).

A sustainable transformation with WICONA façades.

Architects:
Franz & Sue (Vienna)

Client:
Evangelical Lutheran Church in Bavaria (ELKB)

Metal Construction Partner:
Heinrich Würfel Metallbau GmbH

Façade Partners:
WICONA, Saint-Gobain Glass

A resource-saving renovation with WICONA façades

Nuremberg's former 1970s central post office complex is being completely reimagined as the Evangelical Campus Nuremberg (ECN) - an educational hub for over 2,000 students, teachers and researchers.

As part of this process, the 50-year-old aluminium and glass façade was completely dismantled, recycled and replaced with a new aluminium system made from sustainable Hydro CIRCAL from WICONA.

For this ambitious regeneration, led by Franz & Sue architects, the client placed great emphasis on a sustainable energy concept including photovoltaic systems, green roofs and EV charging stations. In addition, the goal was to make the best possible use of the building's existing embodied carbon instead of constructing a new building.

The existing 11-storey tower and base structure are being sensitively expanded, introducing light-filled, open spaces while respecting the original architecture.

Using embodied carbon for significant CO_2 reduction

"After the renovation, the ECN will have an energy demand of around 64 kWh/m² - down from 195 kWh/m²," explains Günter Weissteiner, managing director of ELKB. "By retaining and reusing embodied carbon rather than rebuilding, we are avoiding approximately 6,500 tonnes of CO_2 emissions."

Circular design from old façade to new

An important contribution to the CO_2 savings is achieved by the recyclable façade renovation.

Under tight logistical constraints in Nuremberg's dense city centre, the dismantled ribbon windows were loaded onto reusable racks and transported to Heinrich Würfel Metallbau GmbH, where they were separated into individual components.

Each material followed its own circular pathway:

Aluminium profiles were remelted and extruded into new profiles using WICONA's Hydro CIRCAL 75R, an alloy made from at least 75% post-consumer recycled aluminium, with a carbon footprint of only 1.9 kg CO_2 per kg aluminium.

Glass was recycled in partnership with Saint-Gobain Glass, reprocessed into new ORAÉ® low-carbon glazing, free from impurities and ready for reuse.

Greater user comfort, reduced energy use

The new façade covers 10,600 m² and features units designed specifically for this project using the WICONA WICTEC EL series and also WICTEC 50 stick systems, achieving both aesthetic coherence and high environmental performance.

The new units were transported to the construction site and professionally installed in the gutted shell.

"Right from the start, we included the existing façade in the tender, with the goal of returning disassembled raw materials into the resource cycle," explains Heinrich Würfel, Managing Director of Heinrich Würfel Metallbau GmbH. "All façade work was done just-in-time, ensuring a smooth, space-efficient process in the city centre."

Beyond its circular material composition, the façade enhances thermal and acoustic comfort, integrates solar shading, and dramatically reduces energy consumption.

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A model for future-proof regeneration

From selective deconstruction to precision-engineered reinstallation, the ECN demonstrates what true circular renovation looks like in practice: a process that respects existing architecture, conserves embodied carbon and delivers state-of-the-art performance.

This collaboration between WICONA, Saint-Gobain Glass, and Heinrich Würfel Metallbau GmbH demonstrates how urban regeneration can become a driver of circular transformation – not just in theory but in the built environment itself.

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“In every old building, there’s a promise of new life waiting to emerge.”

LET'S BRING YOUR VISION TO LIFE.

Have we sparked your interest?

Whether you're just starting to explore ideas or already deep into the planning phase, WICONA is here to support you with our expertise. From a ready-made façade concept to a fully customised solution, we'll work with you to realise your vision.

Contact us: info@wicona.de

Together, let's create façades that respect the past and build for the future.


HEIDERSBERGER
FASSADENBAU
HEIDERSBERGER
FASSADENBAU
BSF

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GLOSSARY.

SDG 11, or the 11th Sustainable Development Goal, focuses on making "cities and human settlements inclusive, safe, resilient, and sustainable." This goal recognises that cities are crucial for both economic growth and environmental impact and aims to address the challenges of rapid urbanisation while promoting positive development.

75/95 by WICONA is a sustainability standard where all products currently consist of at least 75% recycled and 95% recyclable material. This approach significantly reduces carbon emissions, supports a circular economy, and aligns with climate neutrality goals.

BREEAM (Building Research Establishment Environmental Assessment Method) is a comprehensive, widely recognised sustainability assessment system for built environment and infrastructure. It evaluates energy and water consumption, construction methods and materials, occupant health and comfort, as well as the environmental impact of a building throughout its entire life cycle, identifying opportunities for improvement.

Cradle-to-Cradle (C2C) is a concept for a closed-loop economy in which products are designed to be either biodegradable and returned to nature as nutrients or to serve as technical nutrients for new products without producing waste. It is an approach that goes beyond the traditional linear production method (“from cradle to grave”) by pursuing the idea that products do not become waste at the end of their useful life but are returned to the production process.

EN 16798 (Energy performance of buildings) is a European standard that defines requirements and methods for calculating energy performance and indoor environmental quality in buildings, focusing on ventilation, heating, cooling, and lighting to ensure occupant comfort and energy efficiency.

EPBD (Energy Performance of Buildings Directive) is an EU directive that sets minimum energy performance standards for buildings, aiming to improve energy efficiency, reduce carbon emissions and promote the use of renewable energy in construction and renovation. Aiming to achieve a fully decarbonised building stock by 2050, the revised EPBD contributes directly to the EU’s energy and climate goals.

An **EPD** (Environmental Product Declaration) is a standardised document that provides transparent, verified information about the environmental impact of a product throughout its life cycle, helping architects, builders and buyers make sustainable choices.

The **EU Renovation Wave Strategy** is part of the European Green Deal, which aims for climate neutrality by 2050. This initiative aims to double the rate of building renovations to improve energy efficiency, reduce carbon emissions, and promote sustainable construction across the EU.

The **EU Taxonomy** is a classification system established by the European Union that creates binding definitions of what constitutes sustainable economic activities. It sets specific requirements for companies, banks, and their financial products to promote investments that support climate goals and a sustainable, low-carbon economy.

FRAME ID is a unique digital ID (QR code) of each WICONA product that provides detailed information on the fabricator, fabrication data, product, full record of maintenance actions and bill of materials enabling end-of-life value and circular recycling – to ensure full traceability and accountability.

Hydro CIRCAL is a high-quality aluminium alloy made with at least 75% post-consumer recycled aluminium, significantly reducing CO_2 emissions while maintaining the same performance as primary aluminium. Produced by Hydro, it supports a circular economy by reusing materials from end-of-life products and is used in all WICONA products.

LEED (Leadership in Energy and Environmental Design) is an internationally recognised certification system for sustainable buildings, evaluating criteria such as energy efficiency, water usage, materials, indoor environmental quality and overall environmental impact.

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TECHNIK FÜR IDEEN

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