TECHNAL®

By Hydro

CO_2 IS THE NEW CURRENCY

How circular buildings create value from day one?

©Joan Guillamat

↗ Windows ↗ Doors ↗ Façades

FACING THE CHALLENGES OF DECARBONISATION TOGETHER

International climate efforts, tightening regulations, and emerging carbon taxonomies are rapidly **reshaping priorities** across investors, building owners, and contractors. The building and construction sector accounts **for 39%[1] of global energy-related CO_2 emissions** – both embodied in materials and generated during operation.

Effectively **managing a building's carbon footprint throughout its entire lifecycle** is now a core challenge in the decarbonisation of real estate assets and **crucial for protecting long-term investment value.**

25%

of building's CO_2 footprint comes from the façade.

Invest in High-Performance, Low-Carbon Products

The façade accounts for up to 25%[2] of a building's total carbon footprint. Investing in low-carbon products that combine outstanding thermal performance with long-lasting durability and low maintenance requirements is key.

80%

of the buildings we will use in 2050 already exist.

Retrofit the Existing Building Stock

80%[3] of the buildings that will be in use by 2050 already exist today. Upgrading these structures is essential to reduce their energy consumption, enhance performance, and ensure alignment with the EU Green Deal and national climate targets.

75%

of building materials are still landfilled or incinerated.

Invest in Circular Building Strategies

75%[4] of building materials still end up in landfills or are incinerated after demolition or renovation – a massive loss of value and resources. Circularity is becoming a strategic and regulatory priority.

Source: [1] World Green Building Council, [2] Etude de l'Institut Français pour la Performance du Bâtiment (IFPEB) et de Carbone 4 (03/10/2022), [3] UK Green Building Council 4 The Environmental Protection Agency (EPA)

The façade plays a crucial role to a building's total carbon footprint.

Why choose TECHNAL as your partner to **implement a decarbonisation strategy** for your property portfolio and protect your investments from stranded asset risk?

PROVEN CIRCULARITY

We use **circular materials** in our aluminium solutions

We design durable, **high-performance** aluminium solutions

We ensure circularity by **recycling end-of-life materials**

TRANSFORM CO_2 CHALLENGES INTO ASSETS.

TECHNAL's solutions and services enable you to:

Access the best financing

Less carbon, lower costs, and more capital all through smart, sustainable choices.

Optimise operational performance

Higher efficiency, lower costs, a resilient asset ready for future challenges.

Enhance existing assets while controlling investments

Build smart on what already exists and turn renovation into a strategic investment.

Combine environmental impact with economic performance

Boost the attractiveness of your property.

UNLOCKING THE VALUE OF LOW-CARBON INVESTMENT

Aligning your property with the **EU Taxonomy, ESG criteria, and national green building standards** unlocks access to a wide range of preferential financing options.

TECHNAL's low-carbon system solutions can cut up to 50% of envelope-related CO_2 emissions – a critical advantage, as the envelope accounts for **up to 25% of a building's total construction emissions.**

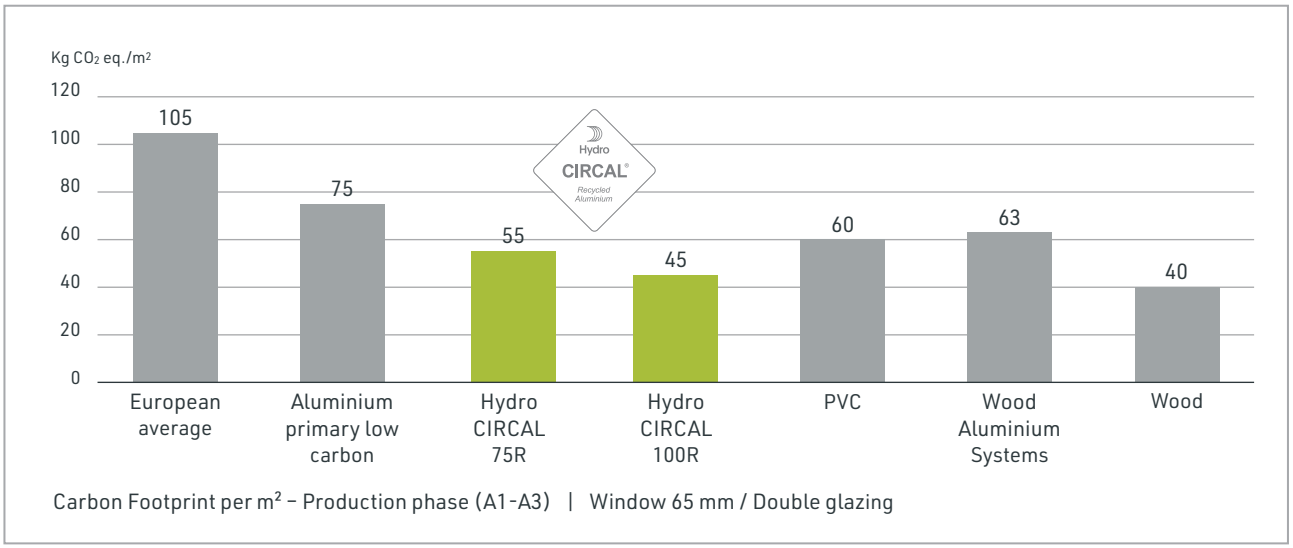
-50% of envelope-related CO_2 emissions

How does TECHNAL drastically reduce the embodied carbon of your property?

Low-carbon solutions made of Hydro CIRCAL aluminium

All our window, door, and façade systems are made from **Hydro CIRCAL 75R** aluminum containing at least 75% post-consumer scrap. This aluminium has a certified carbon footprint of just **1.9 kg CO_2 per kg of aluminum** – among the lowest in the industry.

For even greater impact, you can choose **Hydro CIRCAL 100R**, made with up to 100% post-consumer scrap and a footprint of **less than 0.5 kg CO_2 per kg of aluminium**. With Hydro CIRCAL, you can significantly reduce the embodied carbon of your building envelope across all projects.



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

Low-carbon solutions made of recycled and recyclable materials

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.

75%
RECYCLED CONTENT

95%
RECYCLABLE

Optimised production processes run by decarbonised electricity & fully integrated supply chain

We approach sustainability holistically; therefore, we go beyond products **to reduce the upfront and embodied emissions** of the building's carbon footprint.

By improving our operations, we are actively **reducing our footprint by cutting CO_2 emissions at our sites** while also lowering water consumption and waste.

Proven sustainability puts you in a strong position to achieve top ratings in leading green building certifications.

Circular products

All our new products are **Cradle to Cradle Certified®**, and we provide a Health Product Declaration (HPD) for our new façade system. In addition, we conduct Volatile Organic Compound (VOC) emission measurements to ensure our products contribute to healthy indoor air quality and meet the strictest environmental standards.

By manufacturing locally and certifying our products, **we guarantee both the material health and recyclability of our solutions** – helping you design buildings that are safer, more sustainable, and future-ready.

Certified carbon footprint

EN 15804 + A2 EPDs available for **all our new products.**

Our TECHTIP quotation software comes with a tool enabling you to **generate dynamic EPDs (Environmental Product Declaration)** for your projects and dynamic carbon footprint calculation.

Our products and solutions **unlock access to green loans,** climate-linked funding, and sustainability-driven investments **boosting your asset's market value and financial strength.**

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SOCIAL HOUSING TORRE BARÓ, BARCELONA, SPAIN

CO_2 saving: -57 t

thanks to our systems made of Hydro CIRCAL® 75R aluminium.

REDUCING OPERATIONAL COSTS ACCROSS THE LIFECYCLE

OPTIMIZED PRODUCTS DURING THE WHOLE LIFECYCLE

We use circular material to **minimise our products footprint** and to **reduce the waste of our industry.**

We design **high-performance products** that drastically reduce the **energy consumption** of the building envelope.

We design **today light, performant and long-lasting products** easily dismantable for tomorrow.

Low maintenance, long-term asset

Aluminium building systems offer outstanding durability with minimal maintenance requirements. **Naturally resistant** to corrosion, UV exposure, and weathering, aluminium won't warp, crack, or degrade - even in the harshest environments.

Unlike materials that need regular treatment, repainting, or protective coatings, aluminium maintains its structural and visual performance with **very limited upkeep.**

This long-lasting reliability **reduces maintenance costs,** extends the life cycle of the façade, and ensures consistent performance over decades – making it a smart, cost-effective choice for long term building value.

GeniusID: your aluminium system ally

GeniusID follows the whole life of the product. Therefore, each product (e.g. window) will have its own QR code, even if it's technically the same product. This will be available for all our products, which is an added value.

The QR code ensures detailed records of maintenance and component replacement, enhancing product longevity and sustainability.

- Giving instant access to material specifications and carbon footprint data.
- Avoid breaking the link between fabrication, installation and maintenance.
- Allow to maintain the window remotely without having to go on site and try to identify what needs to be replaced.

This transparency otimizes material sourcing, boosts a building´s sustainability profile, and enhances its long-term value.

ENHANCE EXISTING ASSETS WHILE CONTROLLING INVESTMENTS

By 2050, 80% of the buildings in use already exist and urgently require sustainable retrofitting to meet climate targets and protect asset value.

Retrofitting is one of the most effective levers for **reducing the carbon footprint of the built environment and offers strong financial returns.**

80%

of the buildings we will use in 2050 already exist and need renovation.

Closing the loop: circular façades as strategic advantage

Integrating **circular, low-carbon façade solutions** into existing buildings limits the need for new raw materials, enables the reuse of valuable components, and benefits from certified recovery and recycling processes.

This strategy leads to **lower initial investments, optimised amortisation over time, and reinforces the asset's sustainable positioning** – a key factor for future valuation and regulatory compliance. Building smart on what already exists turns retrofitting into a strategic investment.

By returning old aluminium systems, an investor not only ensures high-quality recycling but also turns deconstruction waste into both a financial return and an environmental benefit.

WE ENABLE THIS TRANSFORMATION

We manage the entire recycling process **in collaboration with local recovery experts.**

At the end of a building's lifecycle, **we take back existing systems** to recover their residual value.

Key materials – including aluminium, polyamide, EPDM, and glass – are **carefully extracted, documented, and reintegrated** into new high-performance products, closing the loop and driving circularity in construction.

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.

This all-in-one solution is unmatched in the industry.

1. DECONSTRUCT

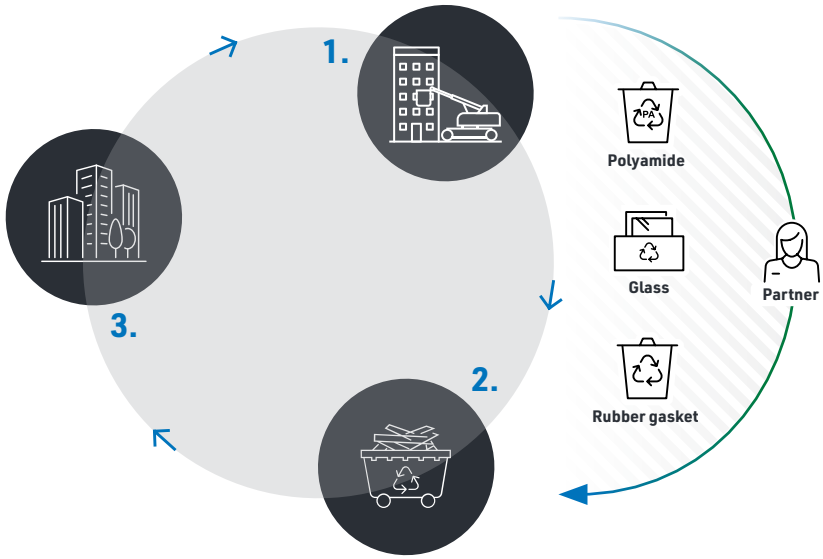
- City as a material warehouse
- Disassembly of end-of-life materials from existing buildings
- Separation of raw materials (Aluminium, Glass, Polyamide, EPDM Seals)

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

3. REBUILD

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



Urban mining made profitable

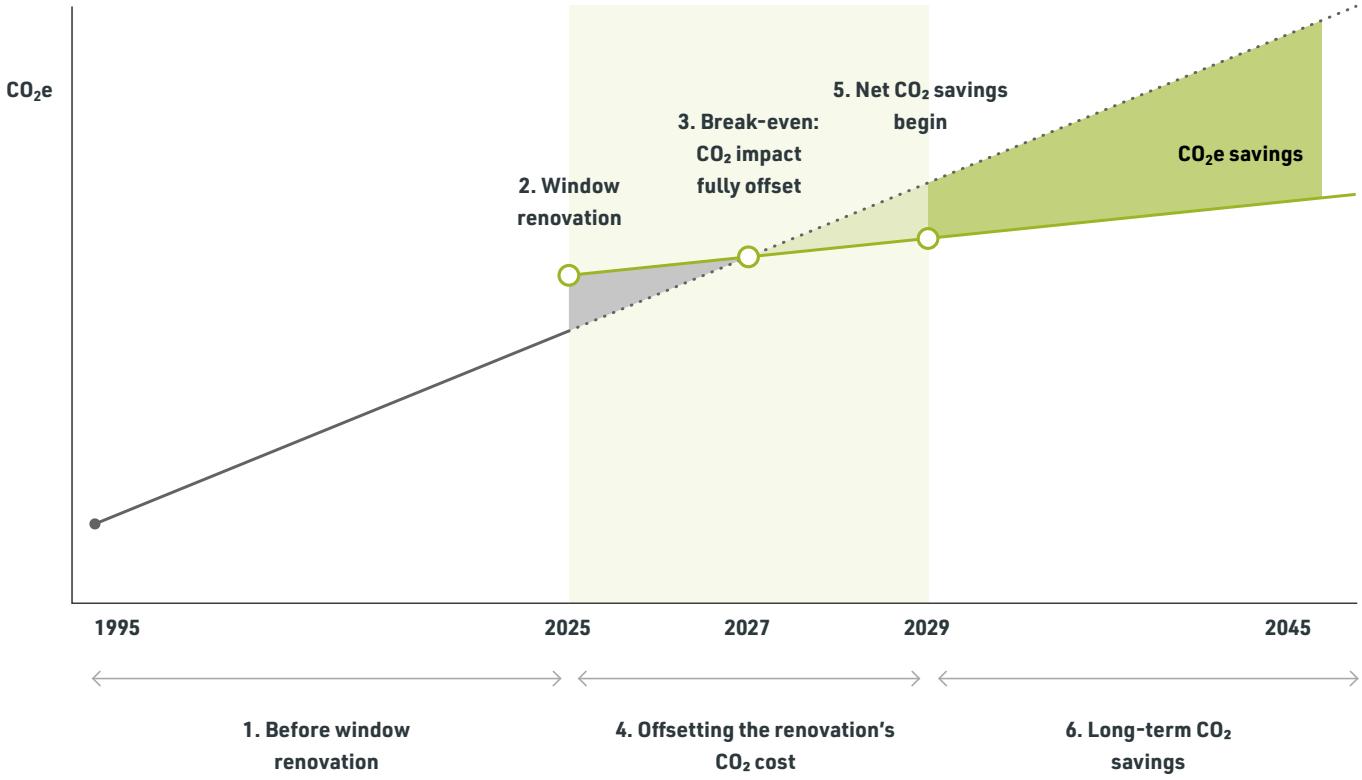
ARCHITECTURE SCHOOL ENSAM, MONTPELLIER, FRANCE

CO_2 saving: -126 t

thanks to our systems made of Hydro CIRCAL® 75R aluminium.

With TECHNAL's circular products, achieve CO_2e payback and recover your financial investment in less than 4 years.

Renovation window: CO_2e amortisation



1.Before window renovation (1995–2025)
Operational CO_2 esteadily increases due to energy losses. The embodied carbon is already accounted for.

2.Window renovation (2025)
Renovation generates an additional CO_2e "spike" from the embodied carbon of new windows (manufacturing, transport, installation).

3.Break-even: CO_2 impact fully offset (~2027)
Energy savings from improved window performance compensate for the renovation's carbon cost. The CO_2ebalance becomes neutral.

4.Offsetting the renovation's CO_2 cost (2025-2029)
In four years, energy savings offset the carbon impact and repay the investment, thanks to circular products.

5.Net CO_2 savings begin (~2029)
Beyond this point, cumulative operational savings exceed the initial embodied carbon of the renovation, creating a net CO_2e benefit.

6.Long-term CO_2e savings (2029–2045)
Over the window's lifespan, significant CO_2e reductions accumulate compared to the "no renovation" scenario.

COMBINE ENVIRONMENTAL IMPACT WITH ECONOMIC PERFORMANCE

Carbon is capital. Circular design is not just the future, **it's today's competitive advantage.**

By choosing low-carbon, circular façade solutions, you create future-proof, high-performing assets that drive long-term value and environmental impact.

The benefits go far beyond sustainability: you **unlock the full economic potential of genuine**, traceable circularity – including higher asset valuations, reduced lifecycle costs, access to green financing, and alignment with the EU Taxonomy.

Sustainable buildings rent faster, sell at higher prices, and have a longer lifespan.

+5% rental income

Increased rental premium

+16>25% property values

Maintain value in downturn

+4% occupancy

Retain/attract clients, occupiers and talent

-5% operating costs

Efficiency/reduced regulatory risk

Source: https://www.cbreim.com/sustainability/the-economic-case-for-sustainability

ARCHITECTURE SCHOOL INSA, STRASBOURG, FRANCE

CO_2 saving: -97 t

thanks to our systems made of Hydro CIRCAL® 75R aluminium.

©Brutos audiovisual

CINEMA BATALHA, PORTO, PORTUGAL

CO_2 saving: -22,56 t

thanks to our systems made of Hydro CIRCAL® 75R aluminium.

KEY TAKEAWAYS

01. TECHNAL's certified low-carbon façade solutions puts you in a strong position to achieve top ratings in **leading green building certifications.**

02. TECHNAL's low-carbon façade solutions can cut up to **50% of envelope-related CO2 emissions:**

- ↗ We use circular materials in our aluminium solutions.
- ↗ We design durable, high-performance aluminium solutions.
- ↗ We ensure circularity by recycling end-of-life materials.

03. TECHNAL is your **trusted partner for new builds and renovation.**

From new buildings and full circular renovations to partial upgrades of your properties, we bring the expertise, technology, and flexibility to **develop tailored solutions that are both cost-effective and thermally efficient.**

TECHNAL®

IMAGINE WHAT'S NEXT

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