

Green Certification Demystified

A Holistic Approach to Integrating
Sustainable Building Products in Design

Introduction

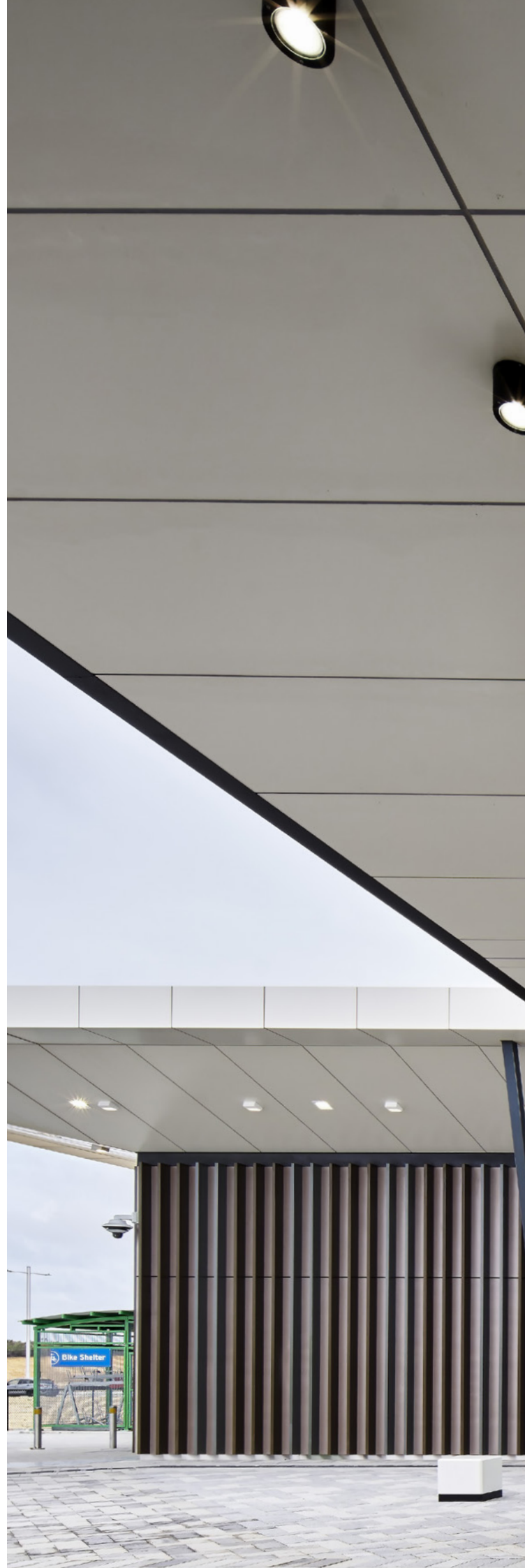
Sustainable architecture aims to minimise resource consumption, lower carbon emissions, and deliver spaces that are healthier and more comfortable for their occupants. This practice extends beyond the design and construction phases, encompassing the long-term operation, maintenance, and end-of-life considerations of buildings.

To standardise and measure sustainable practices, several green building certification systems have been developed. Among the most notable are **Green Star**, **LEED (Leadership in Energy and Environmental Design)**, and **BREEAM (Building Research Establishment Environmental Assessment Method)**. These frameworks provide structured methodologies for assessing a building's environmental, social, and economic performance.

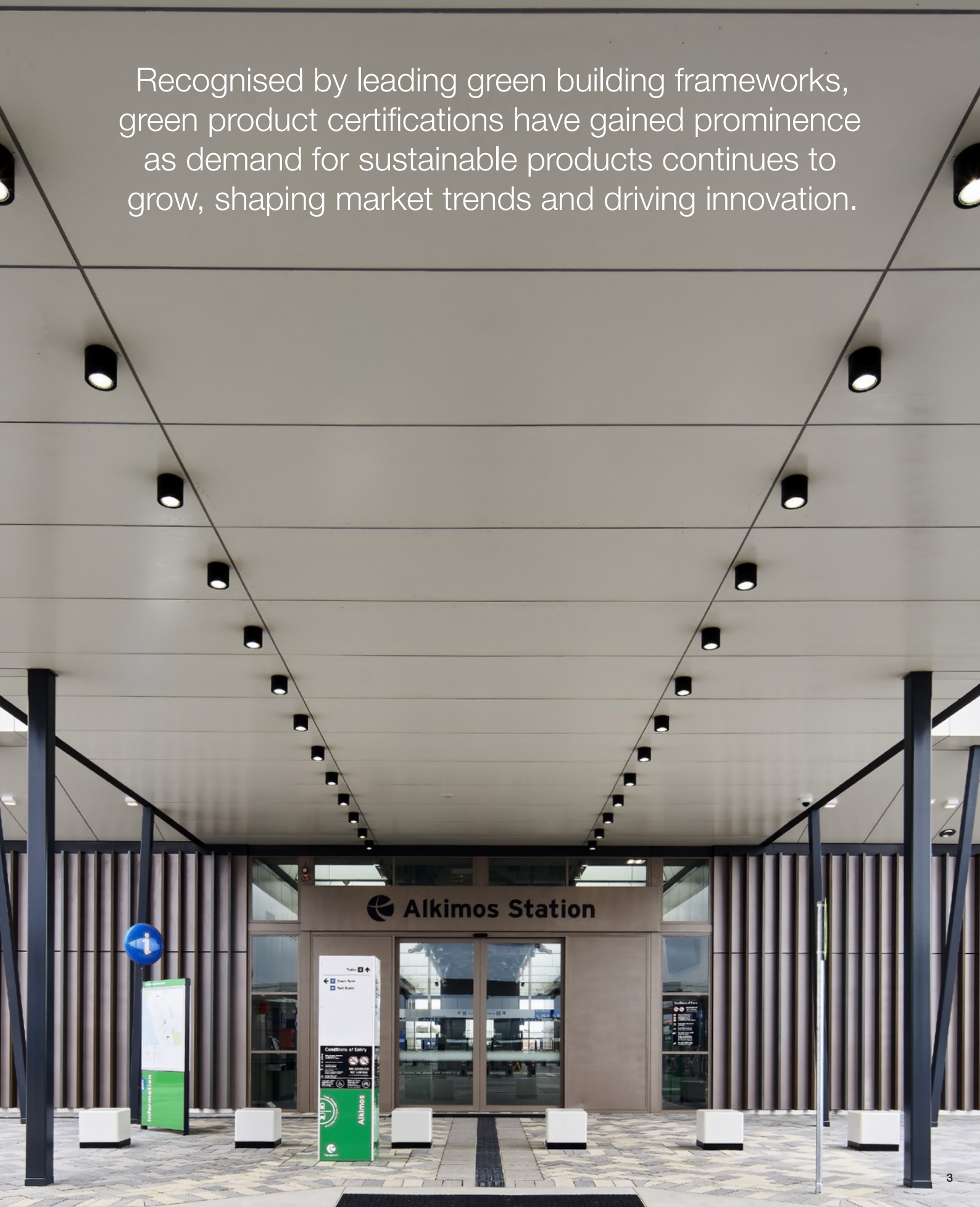
However, creating truly sustainable buildings demands more than adherence to environmental performance metrics. A genuinely holistic approach integrates material health, ethical sourcing, and social responsibility into every stage of a project. Tools such as **Environmental Product Declarations (EPDs)** offer critical insights into a product's life cycle impacts but often fail to address these broader concerns.

Certifications like **Product Health Declarations (PHDs)** and **GreenRate** complement EPDs by ensuring that building materials are aligned with contemporary sustainability benchmarks.

This whitepaper discusses how a holistic approach to green product certifications drives and enhances the impact of green building standards. With a better understanding of how different product certifications support specific sustainability goals, professionals can create spaces that prioritise the health and well-being of occupants while fostering ethical practices and reducing negative impacts on workers and communities.



Recognised by leading green building frameworks, green product certifications have gained prominence as demand for sustainable products continues to grow, shaping market trends and driving innovation.



Beyond environmental and health considerations, sustainable design must also account for ethical and social factors, such as modern slavery risks and corporate social responsibility in the supply chain.

Green building standards and certification systems

Buildings have a significant impact on the environment throughout their life cycle, from construction to demolition. They consume energy, water, and raw materials, generate substantial waste, and can release harmful emissions into the atmosphere. Recognising these impacts, green building standards and certification systems were developed to encourage sustainable practices in design, construction, and building operations. These frameworks aim to reduce the environmental footprint of buildings while promoting healthier, more efficient spaces for their occupants.

Green Star, a leading certification system in Australia, exemplifies the role of green building standards in fostering sustainability. Established by the Green Building Council of Australia (GBCA), Green Star provides a structured framework to evaluate and improve the environmental performance of buildings.

The Green Star system assesses projects across eight categories: Management, Indoor Environment Quality,

Energy, Water, Materials, Transport, Land Use and Ecology, Emissions, and Innovation. Each category encompasses criteria such as energy efficiency, water conservation, sustainable material usage, and innovative design practices. By addressing these areas, Green Star offers design and construction professionals a clear path to creating buildings that meet high standards of environmental stewardship and operational efficiency.

Another example is LEED (Leadership in Energy and Environmental Design), which is among the most widely adopted green building certification systems globally, with over 197,000 certified projects across 186 countries and territories. LEED offers a comprehensive framework to design, construct, and operate buildings that are highly efficient, environmentally responsible, and cost-effective. The latest version, LEED v5, emphasises alignment with a low-carbon future while addressing equity, health, ecosystem preservation, and resilience.

Figure 1. Key features of Green Star buildings

Responsible

Recognises activities that ensure the building is designed, procured, built, and handed over in a responsible manner.



Healthy

Promotes actions and solutions that improve the physical and mental health of occupants.



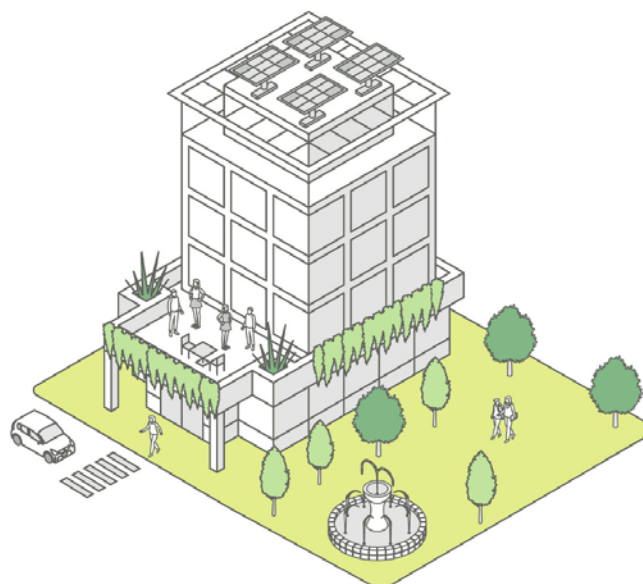
Resilient

Encourages solutions that address the capacity of the building to bounce back from short-term shocks and long-term stresses.



Positive

Encourages a positive contribution to key environmental issues of carbon, water, and the impact of materials.



Places

Supports the creation of safe, enjoyable, integrated and comfortable places.



People

Encourages solutions that address the social health of the community.



Nature

Encourages active connections between people and nature and rewards creating biodiverse green spaces in cities.



Leadership

Recognises projects that set a strategic direction, build a vision for industry, or enhance the industry's capacity to innovate.



Source: <https://new.gbca.org.au/green-star/rating-system/buildings/>



How do projects get certified?

Obtaining a green building certification involves meeting defined criteria that demonstrate a building's dedication to sustainability and environmental stewardship. With an emphasis on life cycle impacts, frameworks such as Green Star or LEED guide projects to contribute meaningfully to sustainable development while adhering to stringent standards. The certification process is structured and systematic, consisting of several key steps:

1. Preparation: Define sustainability goals, assemble a project team, and select the appropriate green building certification framework.

2. Documentation: Collect and organise all required materials, including architectural plans, product data, operational strategies, and other relevant project details.

3. Assessment: Submit the documentation to an accredited third-party organisation for evaluation. This step may also involve a site visit to verify compliance with the certification criteria.

4. Certification: If the building meets all required standards, it is awarded a certificate, confirming its alignment with sustainable design and construction practices.

Role of sustainable products in green certification

Material selection is a critical component throughout a building's life cycle—spanning design, construction, operation, and eventual demolition. Many certification systems, such as Green Star, incentivise the use of sustainable products through dedicated credits.

For example, the Responsible Products credits in Green Star award points for using materials that meet criteria established by recognised sustainability initiatives. While the specific requirements may vary across different tools or certification

frameworks (discussed further below), the underlying process remains consistent.

Project teams can target these credits by specifying products in the Responsible Products calculator that meet or exceed thresholds for Credit Achievement and Exceptional Performance. To qualify, a minimum percentage of materials, calculated by cost, must adhere to these guidelines, emphasising responsible sourcing, low environmental impact, and compliance with recognised standards.

Attributes of sustainable building products

Sustainable materials are characterised by their reduced negative impact on the environment across their entire life cycle, from extraction or production to disposal or recycling. Key attributes may include recyclability, renewable sourcing, biodegradability, low-embodied carbon, and low toxicity. Factors such as energy consumption, water usage, and greenhouse gas emissions are integral to ensuring material choices align with green building objectives.

It is not just environmental impact that is considered. The Green Star rating system promotes ethical sourcing across various materials and practices. For example, it acknowledges timber certified under the Responsible Products Framework, requires energy-efficient processes for manufacturing

reinforcing steel, and encourages the reduction of harmful chemicals. Additionally, it considers respect for human rights in product manufacturing and prioritises community health in production locations.

Additionally, the impact of materials on indoor air quality and occupant health are important factors. For example, green building certifications typically incorporate indoor air quality requirements as part of their broader indoor environmental quality (IEQ) goals.¹ These programs promote emission source control by targeting building materials that release harmful substances and encouraging the use of products with low toxicity and low volatile organic compound (VOC) emissions.

Green product certifications and related tools

Green product certifications and other tools such as product labels and declarations serve to verify that a product meets specific environmental standards, often based on specific attributes such as energy consumption, recycled content, and emissions associated with manufacturing, disposal, and use. Some certifications evaluate multiple attributes, while others focus on single aspects like water conservation, energy efficiency, supply chain, or chemical emissions that affect IEQ.

Certifications are most credible when awarded by independent third-party organisations, separate from manufacturers,

contractors, or specifiers. Recognised by leading green building frameworks, green product certifications have gained prominence as demand for sustainable products continues to grow, shaping market trends and driving innovation.

As noted above, green building frameworks typically encompass more than just environmental factors but also consider occupant health and wellbeing and ethical sourcing. To fully understand the relevance of product certifications and how they may contribute to achieving green building certification, it is essential to thoroughly examine their specific scope, purpose and what issues they focus on.



An Environmental Product Declaration (EPD) is an important tool in sustainable design, offering detailed insights into a product's environmental impacts throughout its life cycle. By providing data on aspects such as energy use, greenhouse gas emissions, and resource consumption, EPDs enable designers and specifiers to make more informed decisions. However, while EPDs are valuable for understanding a product's environmental footprint, they do not address all the critical dimensions of sustainability, such as health or social and ethical considerations.



Beyond environmental and health considerations, sustainable design must also account for ethical and social factors, such as modern slavery risks and corporate social responsibility in the supply chain. Certifications like GreenRate address these issues by verifying supply chain transparency and ethical sourcing. These certifications ensure compliance with ethical standards by offering supply chain audits and encouraging responsible business practices.



To address gaps in EPDs, tools like Product Health Declarations (PHDs) focus on evaluating the health and safety impacts of construction materials. PHDs provide transparency about the presence or absence of harmful substances, helping stakeholders select materials that are safer for fabricators, installers, end-users, and the environment.



MondoClad® by HVG Facades sets a new standard with Global GreenTag Certifications

Available from **HVG Facades**, MondoClad® stands out as a versatile and sustainable solution for achieving green building certifications. Its non-combustible, marine-grade aluminium composition ensures compliance with fire safety regulations, including AS1530.1, while offering exceptional durability and corrosion resistance.

These qualities make MondoClad® an excellent choice for a wide range of applications, from recladding projects to new builds, in both commercial and residential settings.

A key aspect of MondoClad®'s environmental performance is its recyclability. The panels are 100% recyclable, requiring up to 95% less energy during recycling compared to primary metal production. The product's manufacturing process incorporates a closed-loop PVDF coating system that minimises waste, eliminates harmful VOC emissions, and enhances durability, aligning with sustainability goals set by certification frameworks like Green Star.

HVG Facades is dedicated to supporting design and construction professionals with comprehensive data to meet the guidelines established by the Green Building Council of Australia and the Australian Government. MondoClad® reinforces this commitment by providing detailed certifications, including an **EPD** to declare its carbon emissions and life cycle impact and a **GreenTag PHD PlatinumHEALTH** certification confirming its adherence to high material health standards. Additionally, MondoClad® holds the **GreenTag GreenRate Level A** certification, representing the highest achievement in responsible sourcing and manufacturing processes.

These certifications offer architects and designers confidence in specifying MondoClad®, knowing it meets stringent sustainability benchmarks while promoting healthier indoor environments.

References

- ¹ Wei, Wenjuan, Olivier Ramalho and Corinne Mandin. "Indoor air quality requirements in green building certifications." *Building and Environment*, Vol. 92 (2015): 10-19.
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