

Towards Net Zero: Blinds, Best Practice Sustainability & Beyond



Thomson Adsett, Jubilee Place Brisbane

Moved to action by a range of environmental challenges – including not just climate change but also issues relating to pollution, species loss and more...

Introduction

Moved to action by a range of environmental challenges – including not just climate change but also issues relating to pollution, species loss and more – the construction sector has begun to change its ways. On the surface at least, it appears that ‘Sustainability’ has become as important a consideration for developers, builders and architects as good design, cost, and safety.

While this shift in mindset is to be applauded, it is important when considering sustainability to begin by defining our terms. It is important to assess whether projects, systems or products that are sold as ‘environmentally friendly’ meet the requirements of this definition. In other words, it is important to establish whether such products have earned the right to call themselves sustainable.

While ‘Sustainable Architecture’ is an evolving concept with no fixed definition, it is generally used to refer to those parts of the built environment that have no negative impacts on the natural environment or human communities. An inherently forward-looking notion, the term is now closely aligned with the concept of ‘Sustainable Development’, which is defined as

“Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Sustainable Architecture is a broad concept, which includes three primary components – environmental sustainability, economic sustainability, and social sustainability. This is important because, as we shall see, the failure to address all these components means that a lot of building products that are claimed to be ‘sustainable’ are not sustainable at all. ‘Greenwashing’, along with ‘Equivalency’ and the practice of swapping out specified products for inferior alternatives, often hampers the efforts of well-intentioned specifiers.

Focussed on window coverings, this whitepaper is concerned with overcoming the false promises of greenwashing, equivalency and so on, and identifying products that are genuinely sustainable. Beginning by outlining all the potential negative environmental impacts associated with blinds and curtains, it explains how to assess the various alternatives and choose the right products for your specific applications.



Wurriki Nyal, Geelong - Civic Precinct.



National Herbarium.

Sustainable Window Coverings

In line with all the above, sustainable blinds and curtains can be defined as products that have negligible impacts on the natural environment, both now and into the future. Best practice sustainability involves considering two types of environmental impacts – those associated with greenhouse emissions and carbon abatement, and those unrelated to greenhouse emissions and carbon footprint (e.g., manufacturing by-products, pollution, deforestation, etc.).

Greenhouse emissions & carbon abatement

When considering greenhouse emissions and carbon abatement, it is important to note that there are two types of emissions:

- **Operational Carbon** – which are greenhouse gas emissions resulting directly from the day-to-day energy consumption (electricity, utilities, etc.) of buildings.
- **Embodied Carbon** – which includes all emissions associated with the materials and products used within the building (including extraction and refinement of raw materials, manufacturing, intermediate transport, installation, end-of-life considerations, and eventual disposal)

How do window coverings help reduce operational carbon?

The thermal efficiency of buildings has a significant effect on their heating and cooling requirements, and consequently also on operational carbon. Given that 30% of heating energy is lost through windows and 76% of sunlight that falls on standard double-pane windows enters to become heat, the presence

of windows is an important consideration when looking to minimise operational carbon.

The installation of performance blinds and curtains is an excellent way to address this issue and maintain thermal efficiency without needing to reduce windows and compromise other important considerations including good design, liveability, well-being, and more. The best products, which incorporate metallised fabrics, reflect up to 85 per cent of solar radiation, reduce the SHGC, virtually eliminate UV radiation, significantly reduce glare, and dramatically reduce day to day energy consumption for heating, cooling, and lighting.

In recent years, new technologies have been shown to increase these effects. Used in conjunction with automation systems and empowered by the Internet of Things and the 'Smart Building' Concept, such window coverings can be further optimised. When blinds and other window coverings are automated and controlled via a Building Management System, their operation can be optimised. In this way, it is possible to ensure they are drawn during the brightest, hottest parts of the day and therefore it is possible to minimize the need for air conditioning.

Window Coverings & Embodied Carbon

As with many other building products, window coverings vary greatly on this score. The best and most sustainable products are responsibly produced, using efficient manufacturing techniques by organisations that incorporate carbon offsets into their procedures. Measures such as decarbonisation, the use of renewable energy, recycling, take back programs, green packaging, and product stewardship all contribute to reductions in embodied carbon.

Other Environmental Impacts

While critically important, carbon abatement is not the only consideration when evaluating the sustainability of window coverings. Other factors include the raw materials used to produce them. Specifiers motivated by sustainability need to assess whether these resources are abundantly available and whether utilizing them represent unacceptable resource depletion. Similarly, they need to consider whether the methods of raw material extraction comply with regulations and meet best practice standards.

Then moving to the manufacturing stage of the lifecycle assessment, consideration must be given to the by-products of the manufacturing process and whether these are likely to result in the pollution of waterways,

air, or eco-systems; as well as whether final products meet all relevant requirements in terms of the standard of internal air quality. For example, in the case of window covering products containing PVC, specifiers need to ask themselves whether every effort been made to use best practice PVC. If this is not the case, off gassing comes into play.

Then, moving to the installation and end-of-life phases of the products lifecycle, consideration must be given to factors like conscious design. In other words, whether the product is designed with things like disassembly and recycling in mind. Specifiers need to ask questions like whether installation involves any toxic substances or excessive waste; and whether components of products, which cannot be recycled, can be re-used or easily disposed of.



Macquarie University.

The Importance of Certification

Unavoidably, the amount of detail involved in this type of Lifecycle Assessment, combined with the ever-present greenwashing phenomenon, make it difficult to identify sustainable products. The best way to do this is to seek out products that carry third-party environmental certifications. When it comes to window coverings, there are many such certifications. The best regarded certifications include the following:

Global GreenTag - One of the most robust, trusted and widely recognised ecolabels, Global GreenTag employs world's best scientific methods to independently verify the sustainability of products.

Green Star - Internationally recognised and founded by the Green Building Council of Australia in 2003, Green

Star is a rating system that addresses standards for healthy, resilient, positive buildings and places.

WELL - An initiative of the International WELL Building Institute, WELL is a performance-based method of measuring the impact of the built environment on human health and well-being. A comprehensive system, WELL rates buildings according to 10 key measurements.

NABERS - Unlike Global GreenTag and Green Star, NABERS (National Australian Built Environment Rating System) assesses buildings rather than building products. It is intended to provide a means for building owners to compare performance with other similar buildings.



Macquarie University.



Smart Design Studio.

ABOUT VEROSOL

Verosol is a global leader in manufacture and supply of performance-based window coverings for architects and designers. Offering products in a virtually limitless range of colours and styles, the company has what it takes to help its clients elevate their work beyond the ordinary.

The inventor of a process of vacuum bonding reflective metal alloy with fabrics to create curtains and blinds that can reflect up to 85% of solar radiation, Verosol leads the field when it comes to environmental sustainability. Known as SilverScreen, these fabrics improve thermal efficiency, reduce the need for artificial cooling, and help minimise the carbon footprints of the commercial and residential buildings in which they are installed.

Beyond this, since its inception, Verosol has demonstrated a comprehensive commitment to eliminating all other

potential environmental impacts of its operations. The company's product stewardship initiatives – which include a Product Take Back Program, regulatory compliance in all countries in which it operates, responsible sourcing of materials, and concerted efforts in terms of Material Re-Use and Product Conversion – rank among its top priorities and it has made every effort to minimise the carbon footprints of all its facilities. In fact, thanks to the installation of solar panels at its manufacturing plant, the company more than offsets energy consumed during the production process and is able to export energy back into the grid.

An organisation with nearly 60 years' experience to its name, Verosol matches know-how with a commitment to effective communication and a willingness to lend its expertise to ensure the success of all its projects.

References

- i United Nations, "The Brundtland Report", Oxford University Press, 1987.
- ii Ibid.
- iii Blind Manufacturers' Association of Australia, "Saving energy at home". <http://bmaa.net.au/energy-savings-at-home/>
- iv Verosol, "Global leaders in solar control fabrics". https://verosol.com.au/wp-content/uploads/2021/10/Verosol_Presentation_Brochure_2021-10.pdf



Wurriki Nyal, Geelong - Civic Precinct.

PRESENTED BY INDESIGN MEDIA IN COLLABORATION WITH VEROSOL



☎ 1800 011 176 ✉ info@verosol.com.au 🌐 verosol.com.au