



Verosol's Ambience Motorised SilverScreen Roller Blinds prove their worth at Legacy Living Lab

Located in Curtin University, the Legacy Living Lab (L3) is a place of innovation and research, where industry and academia meet to develop environmentally progressive ideas and present them to the broader community.

Dr. Roberto Minunno, of the Curtin University Sustainability Policy Institute, came up with the idea for L3 three and a half years ago. *"It was created – as a building and as a concept – through a research project I was part of with another PhD candidate Timothy O'Grady and Professor Greg Morrison,"* he said.

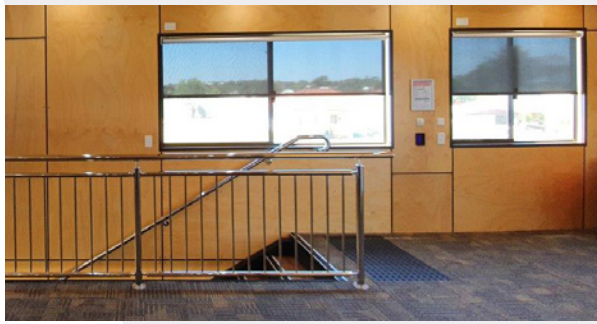
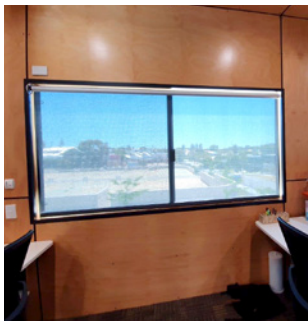
Initially, the project focused on the circular economy and in particular the circular economy of buildings – i.e., the economic concept of

designing out waste from the construction process by recycling or re-using as much of it as possible.

"In terms of buildings, this is tricky because construction and demolition waste is not usually easy to use," said Minunno.

Still, despite these challenges, the project has been a great success. Through a series of clever design choices – like making it modular, accessing steel frames from another project that had gone bankrupt, and making a balcony from recycled tyres – the build generated only five tonnes of CO2 emissions (a figure that is significantly less than the 50 tonnes that buildings of its size typically generate).

Verosol has long been associated with not only developing ground-breaking window covering products, but also educating the wider world on their energy saving potential. Its collaboration with Curtin University's Legacy Living Lab is just the latest example of this commitment.



L3 and Verosol

Having put the concept of circular economy into action, L3 has moved to a new phase. It has become a meeting place for industry and researchers; a place for these key players to conduct prototyping and research projects and showcase what is possible to the general public.

This is where Verosol, a global leader in window covering solutions and an L3 industry partner, comes in.

"When we designed the building, we didn't think much about orientation because the building is movable. We didn't consider things like passive design because they weren't in the scope of our project. But we realised pretty soon that it was too bright inside for anybody to work comfortably," said Minunno.

To address the problem, in December 2020, Verosol supplied L3 with seven Ambience Motorised Roller Blinds featuring 203 SilverScreen Performance in Dark Grey. In addition, sun sensors were installed and an automation system was employed to allow the blinds to be controlled through an app.

As Minunno explained, these products solved the immediate problems of glare and heat but also, more importantly, presented a perfect opportunity to quantify their potential benefits in terms of glare reduction, cost savings, and CO2 emission cuts.

The data collection process is ongoing. *"For the sake of the research, we have the air-conditioning system on 24 hours a day. We have smart tags constantly monitoring its electricity consumption across the seasons, as well as seven temperature points for readings from various positions around the interior,"* he said.

The results

While the final results of the study are yet to be published, previous research by Verosol suggests the installation of the blinds will be shown to have had significant effects, in terms of all relevant parameters.

According to the company, installation of products featuring Verosol's 203 SilverScreen Performance typically results in a 75% reduction in heat gain, which in terms of volume, can be up to 11,374 kWh per annum. At a price 0.2 AUD/kWh this equates to a saving of \$785 per annum.

By far the biggest part of the potential energy saving is due to the g-value (SHGC) improvement. Although the U-value is improved by 2.9 W/m²K, the climate in Perth (where L3 is located) is mild. In addition, the total light transmission of the fenestration is 4%. In other words, while maintaining a good view, through to the exterior, 203 SilverScreen Performance Dark Grey provides a good level of glare control.

Minunno and his colleagues continue their work at L3. *"We are monitoring the amount of light that comes in through the windows throughout the day, blinds up compared with blinds down. Then, at the end of the year, we plan to change from single to double glazing to extend our results."*

Considering Verosol's history of dedication to state-of-the-art window covering technology, its partnership with the Legacy Living Lab is a natural fit. The company is proud to be associated with the facility and determined to continue to play a role in ensuring Australia has an energy-efficient, low carbon future.