



ClearVue^{PV}®

SAYS

hello

OCTOBER 2021



From the Chairman

With our global commercialisation phase well underway, ClearVue is continuing to push forward on current projects including the trial project in New York and is steadily progressing discussions on future potential projects that will see our patented glazing technology deployed in a range of applications – from residential to commercial through to agricultural greenhouses.

The regulatory drive and industry focus on moving towards a more sustainable future through carbon emission reduction is putting the spotlight on renewable energy. Solutions that reduce energy consumption, improve efficiency and move the World towards net zero carbon are gaining increasing interest from both government and private enterprise alike.

A recent article in The Weekend Australian, 14 August 2021 edition titled, "Investment clout set to silence climate sceptics", highlights that business has become the heavyweight accelerating the drive towards net zero carbon emissions, presenting incredible opportunities for ClearVue to triumph as a world leader in sustainable building solutions and clean energy generation.

Global Construction Decarbonisation

As has been widely acknowledged by others, the World is currently undergoing the largest wave of urban growth in human history. By 2060, two out of every three people will live in cities and by 2060, the world is projected to add another 230 billion sqm of buildings - an area equal to the entire existing global building stock. This has been compared to adding an entire New York City to the planet every 34 days for the next 40 years.

Already existing buildings are reported as being responsible for just under 40% of global energy-related carbon emissions, with 28% coming from the "in-use" phase – to heat, power and cool them. In this context buildings are seen as representing one of the greatest and most achievable ways to respond to the climate emergency facing us all.

As a direct response to the urgent global need to address decarbonisation in construction smart building technology company ClearVue is deploying its patented glazing product in international markets as a genuine solution for reducing the energy consumption and carbon footprint of buildings.



United Nations



Food Systems Summit 2021

Later this month, the UK will host the [UN Conference on Climate Change - the COP26\[1\]](#) summit being held in Glasgow, Scotland from 31 October and follows earlier COPs, including the COP21 in Paris in 2015 when the Paris Agreement was reached.

During the COP26 conference representatives from government and business will examine the role of 'Cities, Regions and the Built Environment' in reducing greenhouse gas emissions in a focused session.



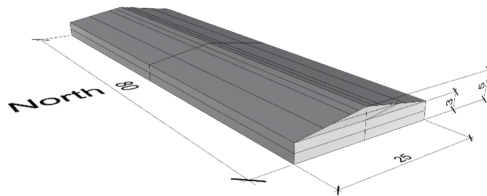
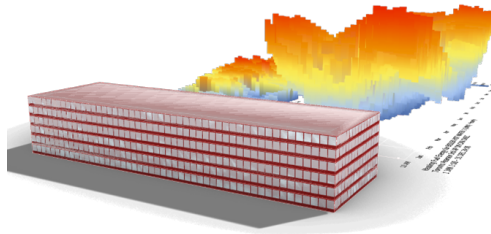
ClearVue is well placed to supply its technology and product that directly responds to the need for decarbonisation in the built environment - both by increasing the energy efficiency of the building envelope *and*, at the same time, using the surface area of that envelope to generate renewable energy at source. In addition to new construction, ClearVue is penetrating the building refurbishment market as regulators are applying increasing pressure to reduce the carbon footprint of existing buildings and are mandating buildings for energy efficient refurbishment.

The team at ClearVue is confident that the Company has a solid foundation and runway for continued growth over the next 40 - 50 years including through the critical climate target dates and eras of: 2030 - before which the UN expects greenhouse gas emissions to be halved; 2050 – the date when the UN expects net zero emissions to have been achieved globally; 2060 – when some countries such as China expect to reach net zero emissions.

[1] ie .the 26th meeting of the 'Conference of Parties'

Say HELLO to ClearVue Solar Glass

ClearVue delivers major advantages for reducing carbon footprint of buildings



Archetype Modelling adding further credibility to ClearVue

In Canada, ClearVue is working with energy modelling and verification specialists [Footprint \(www.saf-footprint.com\)](http://www.saf-footprint.com) to measure the performance of ClearVue's product against the "Toronto Green Standard". Being measured against this, one of the World's highest standards of sustainable and building design, would see ClearVue well credentialed for new construction in the net zero carbon economy.

When considering a building's thermal performance, which is a key factor in energy consumption, traditionally windows have been the weak link. ClearVue windows make it possible to achieve a low carbon footprint, without sacrificing the natural light and views that everybody wants from an office building.

Using CPV Insulated Glass Units, which not only deliver energy but also have excellent thermal insulation properties, ClearVue is able to produce a building that has a Total Energy Use Intensity (TEUI) as defined by the Toronto Green Standard that **exceeds Toronto's standard for new construction from 2030.**

The 15,000m² building also meets Toronto's requirements for 2030 in terms of the Thermal Energy Demand Intensity (TEDI) gauge, which measures the thermal envelope performance and the Green House Gas Emissions Intensity Measure, which looks at total carbon produced by the building. Total carbon emissions of under 4kg per m² per annum is approaching net zero performance.



**CARBON
FOOTPRINT**

Indeed, with the integration of rooftop PV on top of the building and 40% of the car parking, as required by the Canadian construction code, the building will deliver NET ZERO performance, with no net greenhouse gas emissions.

The most compelling feature is that ClearVue technology can deliver this result with a window to wall (Fenestration) ratio of 70% glass to 30% wall material. This data is compelling not only for new construction but in the decarbonisation of existing buildings that will be a key factor in achieving carbon reduction targets in the coming years.

European Market Update



In January 2021, ClearVue established a European sales and marketing office with the appointment of Dieter Moor as its European Chief Executive Officer. Activities in Europe continue to gain momentum as Dieter progresses his promotion of ClearVue with key audiences across the region, through international conferences and expos.

Vertical Farming Application for ClearVue

There is a fast growing level of interest in vertical or urban farming initiatives that are ongoing across Europe, as people are becoming more serious about wanting to know where their produce comes from and are increasingly conscious about having as small a carbon footprint as possible.

ClearVue recognises this as a potential future application for our products, as our clear solar glass offers the capability to merge the two needs of: clean renewable energy; and healthy vegetable and herb production.



[farmNOW](#) is an initiative from Austria that plans to integrate their "Shared Farming for Better Living & Working" concept into several projects, from office buildings to social housing.

ClearVue is exploring a partnership with [farmNOW](#) that would see ClearVue's product used in first reference projects.

3. Symposium Solares Bauen, Zurich

Providing further exposure of ClearVue to key European stakeholders, European CEO Dieter Moor attended the [3. Symposium Solares Bauen](#) (3rd Symposium on Solar Construction) in Zurich, Switzerland mid September 2021. As a sponsor ClearVue achieved prominent positioning and exhibited a ClearVue demonstration unit which featured an integrated fan and USB charger. Strategically placed outside in the sun the ClearVue unit attracted much attention and was a great talking point to promote the company.



16th Advanced Building Skins Conference & Expo | Bern, Switzerland



Switzerland is a key market for ClearVue due to the introduction of a federal law ("Bundesgesetz") on 18 June 2021 which will drive an increased focus on renewable energy.

The bundesgesetz sees the introduction of a new energy strategy that needs to meet the specific targets within the EU climate strategy and has a huge focus on renewable energy.

The following excerpt details the original translated text from the Swiss ministry for energy, highlighting the focus on renewable energy.

"At its meeting on June 18, 2021, the Federal Council adopted the Federal Act on a Secure Power Supply with Renewable Energies. With the bill, which includes a revision of the Energy and Electricity Supply Act, it aims to strengthen the expansion of domestic renewable energies as well as Switzerland's security of supply, especially for the winter.

To achieve the goals of the Energy Strategy 2050 and Switzerland's long-term climate strategy, comprehensive electrification is needed in the transport and heating sectors. To this end, domestic electricity generation from renewable energies must be expanded rapidly and consistently. Grid and electricity supply security must also be strengthened with further specific measures. With the Federal Act on a Secure Electricity Supply with Renewable Energies, the Federal Council is proposing the necessary amendments to the Energy Act and the Electricity Supply Act. It thus creates a legal framework that provides planning security and investment incentives for the expansion of renewable electricity production and its integration into the market."

At the Advanced Building Skins Conference & Expo in Bern, Switzerland ClearVue will exhibit some of its multi-functional building products and present in the Session B2 which covers a lot of topics about ["Integrating Solar Technologies into Façades"](#).

4th Annual Innovative Glazing Global Summit, Berlin | 2022

ClearVue is looking forward to presenting its multi-functional glazing solutions at this prestigious event. ClearVue European CEO Dieter Moor who previously chaired this conference in Prague and Vienna, will be chairing the conference again in Berlin next year.



CPV's Management Team is Expanding

Head of IR

Andrew Miles

Andrew Miles will be joining ClearVue in early January 2022 as Head of Investor Relations and we are extremely excited about the depth of knowledge and experience he will bring to the management team. Andrew brings over 15 years' experience in equity product client solutions and management. Andrew joins us after 13 years with Macquarie Bank Limited in Sydney where his current role is Senior Vice President, Head of Client Solutions - ETDs. Prior to Macquarie, Andrew was Vice President UBS AG Australia, Head of Client Services – ETDs. We are anticipating Andrew will be a strong asset for ClearVue and an invaluable member of the ClearVue team moving forward.

BDM

Doug Hunt

In August, ClearVue enhanced its business development capability with the appointment of Business Development Manager Doug Hunt. Doug's focus will be to assist with ClearVue's commercialisation efforts in Australia and in greenhouse globally.

Doug is the former Chief Executive of Europcar Asia Pacific and former Regional Director Asia Pacific for Europcar International, responsible for 31 countries in the APAC region. He has extensive international experience, substantial experience in international franchising and licencing and also brings extensive experience in the application and

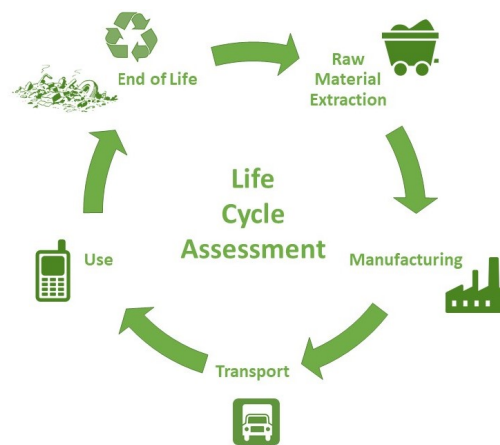
integration of alternative energy solutions, with seven years experience in the renewables industry in the USA and Australia.



Carbon Footprinting Specialists Engaged

LCA & EPD

Recently engaged carbon footprinting specialists [Pleiades Environmental Accounting](#) have commenced working on conducting the ClearVuePV window product's Life Cycle Assessment (LCA) to generate an independently verified Environmental Product Declaration (EPD) for the product, for **three target markets, Australia, Europe and the US**. These are essential tools for selling the ClearVuePV product to sustainability focused end-customers.



Life Cycle Assessment & Environmental Product Declaration

Life cycle assessment (LCA) is a methodology for assessing environmental impacts associated with all the stages of the life cycle of a commercial product, process, or service. In the case of ClearVue's IGUs, the environmental impacts are assessed from raw material extraction and processing (cradle), through the product's manufacture, distribution and use, to the recycling or final disposal of the materials composing it (grave).



LCA's are tools used as part of the independent verification process for acquiring an Environmental Product Declaration (EPD).

An EPD is an independently verified document which transparently communicates the environmental performance or impact of any product or material over its lifetime and with carbon targets playing an increasingly important role in the building and construction sector, the demand for them is also growing.

EPD's are also useful tools in gaining additional carbon credits by increasing a building's potential for a green star rating, which is an independent assessment addressing sustainability performance of a building, such that higher rents can be obtained or higher values can be attributed to the building.

Long term, the results of having a green star rated building can bring benefits to building owners such as reduced electricity and water consumption, reduced greenhouse gas emissions and a competitive edge within the market.



ClearVue's product having an EPD will benchmark our product's performance and help the buildings that they are installed in achieve accreditation for green building certifications and schemes such as [Leadership in Energy and Environmental Design](#) (LEED) in the US and [Building Research Establishment Environmental Assessment Method](#) (BREEAM) across the UN, through the awarding of carbon credits.

Moving forward, ClearVue views the EPD as a critical tool for demonstrating not only the company's commitment to sustainability, but also that of our clients by making it easier for them to choose our low carbon product and comply with embodied carbon legislation within their territories.

Single & Double-glazed prototypes

Single and double-glazed prototype products that have been developed in collaboration with solar specialists D2 Solar in California, are due to arrive in ClearVue's West Perth showroom in November.

These two products are major developments in being able to expand ClearVue's sales opportunities, particularly within the retrofit and transportation markets and where triple-glazed is either not applicable or otherwise not readily accepted currently.



ASX Announcement

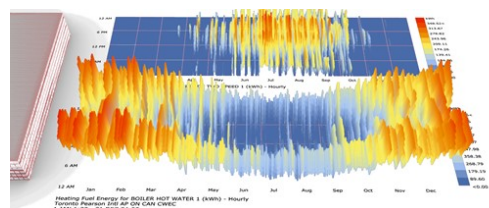
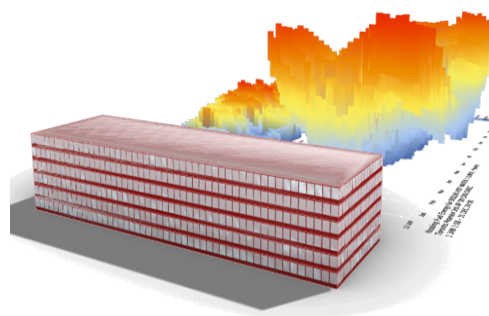
Tech Team Update

Archetype Modelling shows exciting results

ClearVue has been working on increasing the in-house simulation capabilities to demonstrate the improvements that the ClearVue product can provide over regular glass across greenhouses, commercial, and residential buildings. Using advanced finite element analysis software, we've created a thermal model of both a 2000m² greenhouse and a 6-story timber framed office building.

Greenhouse modelling

The greenhouse model has been able to demonstrate that ClearVue glass is able to maintain the building at within 2°C of the desired temperature, while using less energy than a conventional glass or polycarbonate greenhouse would use to keep the temperature within 6°C. This very tight temperature tolerance, with no extra energy cost, allows for a far higher crop yield, vastly reducing the ClearVue PV payback period to potentially as low as 1 year. Through this modelling, we are able to improve our marketing capability to new clients.



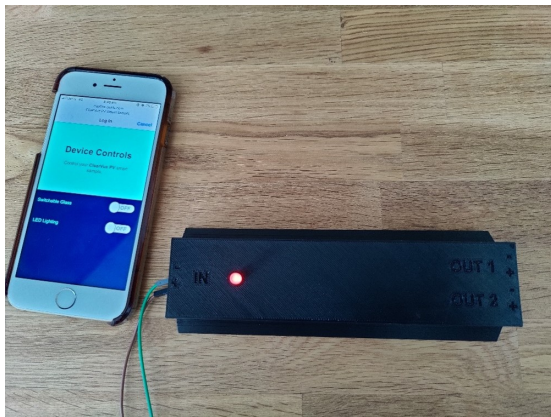
6 storey timber building modelling

Additionally, a 6-story timber building in Toronto, Canada was modelled.

Toronto was chosen due to its cold climate requiring higher insulation and the generous government grants available for high energy efficiency. The modelling showed that installation of ClearVue PV could provide up to a 40% reduction in energy use of the building. Without taking any other measures in energy efficiency, a developer could simply swap out the regular glass for ClearVue's product and meet all of the government's energy use targets. When combined with rooftop solar and high efficiency HVAC, this modelling gives a clear route towards a net-zero building. The addition of carpark with rooftop solar brings the modelling to Net Zero.

This ongoing research is not only providing very pleasing results, thereby adding further credibility to the ClearVuePV product, it is also intended to support marketing campaigns through providing prospective clients and investors with real data. With great results from preliminary modelling, Toronto based [Footprint](#) has been contracted to provide highly accurate models of real buildings to compare the difference in building energy use between ClearVue and regular glass.

Smart facade sample - control interface design completed



To demonstrate that ClearVue glass is producing power when providing sample products to third parties/customers, a new PCB has been designed with a Wi-Fi control interface. Potential clients can simply place the sample they have received into sunlight and connect to the Wi-Fi hotspot that has been established by the controller.

An interface will appear on the customer's phone or tablet, allowing clients to control switchable glass and LED lights built into the edge of the glass, all powered by the ClearVue PV sample. The interactive nature of the sample will differentiate ClearVue from competitors

and other glass solutions, and demonstrate the potential options that the power produced can be used for.



ClearVue features in virtual expo Thailand Sustainability Exhibition (TSX)

As part of their contribution to raising awareness of the global climate crisis and the need to move towards a more sustainable way of living, the Thai Beverage Public Company's Centre of Excellence launched the Thailand Sustainability Exhibition (TSX 2021), a virtual expo showcasing a range of technologies using innovation to transform natural resources into clean energy. ClearVue is proud to have been invited to feature its solar glass product in the **Innovation Pavilion** for energy, health behaviours and changing approaches to waste management.

VISIT TSX 2021

ClearVue in the Media

ClearVue is pleased to have appeared in the 'Financial Review Focus - Clean Energy Report' in the [24 September 2021 edition of the Australian Financial Review](#). ClearVue article "Glass tech has blue sky appeal" features on Page 12.

Aqua Ignis Sendai Greenhouse Project, Japan

The first order from ClearVue's Japanese greenhouse licensee [Tomita Technologies Ltd](#) in August this year, has proven how committed they are to sustainability objectives and in using ClearVue's superior solar glass product for their clients' future projects. ClearVue products are currently in production and anticipated to be shipped and ready for installation by mid-November 2021.



Intellectual Property

Further US and AU patents have recently been granted for technology developed by ClearVue taking the total number of patents granted globally to over 230 across 13 patent families. In addition, the company has recently lodged a large number of design applications, further protecting the unique visual aspects of ClearVue's products in numerous countries.



Sydney Council Public Park Project

ClearVue's project with the Sydney Council is progressing well, with ClearVuePV products having arrived on site on 23 September 2021. Installation has been rescheduled by the council to the middle of October, as a result of several Covid-19 related delays, with the build now expected to be completed around the middle of November 2021.

[ASX Announcement](#)

ClearVue is also in the process of completing extensive patent landscape searches and freedom to operate searches across its various patents and areas of interest including to identify and analyse existing patents held or filed by others.

Murdoch University Greenhouse Update



Murdoch University Greenhouse continues to produce the expected daily energy outputs near ~ 20 kWh/day, in line with spring weather trends, which are now steadily improving.

Winter plant trials at the greenhouse are ongoing and due to be completed at the end of November, when we will be able to share the data collected.

Summer trials will soon commence, when crops such as soybean, ginger, basil, capsicum & tomato seedlings will be planted, and will continue to be monitored by Professor Chengdao Li and his team at Murdoch University.



Progress has been made with the Quantum Dots research, in cooperation with one of ClearVue's new industry partners specialising in plastic materials development, also working in conjunction with our academic research partners in the Eastern States. This has brought the Company several steps closer to using advanced quantum dot material types in new-generation solar windows, subject to some ongoing R&D still in progress. Using new optical component types in windows is being investigated, which can enhance the energy harvesting efficiency when used in conjunction with quantum-dot materials.



Interesting Reads

[Australian Financial Review | Clean Energy Special Report | ClearVue Feature](#) - 24/09/2021

[SMH - Rupert Murdoch's newspapers, 24-hour news channel to champion net zero emissions](#) - 6/09/2021

[Calls for national school ventilation plan, more details on booster shots to protect vulnerable \(smh.com.au\)](#)

- 5/09/2021

[Weekend Australian – Investment clout set to silence climate sceptics](#) - 14/08/2021

[Smart city specialist SenSen just had its best quarter; here are the ASX stocks focused on future living - Stockhead](#) - 5/08/2021

[Smart Glass Accelerates Building Integrated Photovoltaic \(BIPV\) Tech \(memoori.com\)](#) - 28/06/2021

[Vision – Why Transparent Solar Panels Are The Future](#) – YouTube

(Vision – Covering the world of technology and innovation)

[Editora Edebê Brazilian publishing house for educational books](#) – CPV referenced in this new Brazilian text book



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