



ClearVue^{PV}

ASX Announcement – 11 July 2019

ASX Release | ClearVue Technologies Limited (ASX: CPV)

ClearVue signs Agreement with ARUP to develop its Smart Façade Concepts

Highlights

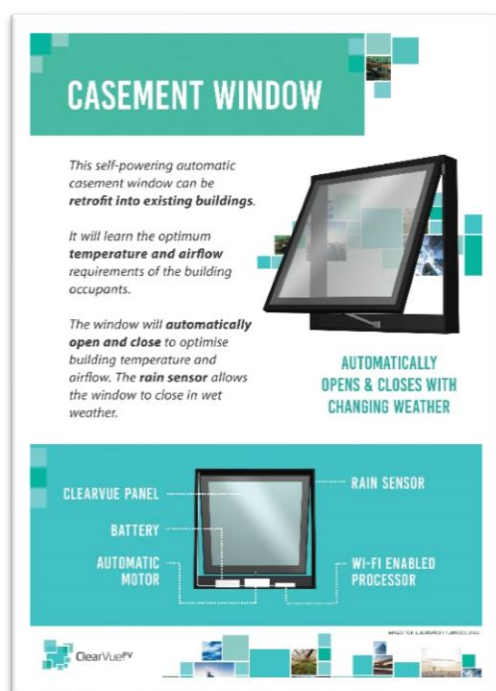
- ClearVue has signed a Consultancy Agreement with ARUP to further develop its Smart Façade panel concepts
- The Consultancy provides for an approximate 5-month program to design and develop 4 design typologies for the ClearVue Smart Façade modules

11 July 2019: Smart building materials company ClearVue Technologies Limited (ASX:CPV) ("**ClearVue**" or "**the Company**") is pleased to announce that it has signed a Consultancy Agreement with Arup Australia Pty Ltd ("**Arup**").

Arup is a world-leading firm of designers, engineers and architects including façade engineers.

Arup's façade engineering team led by Haico Scheepers (in conjunction with engineering staff and students from the University of Sydney engaged through Arup) will work with ClearVue on the development of 4 design typologies of the ClearVue Smart Façade concepts in an approximate 5-month program.

The intended outcome from the project will be 4 prototyped design concepts that can be supplied to selected manufacturers for prototyping and integration into mass production and assembly. Under the Consultancy Agreement, all intellectual property related to the new façade design typologies is to be owned by ClearVue.



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AUTO SWITCHING GLAZING


These smart facades utilise **electrochromic technology**. This enables our glass to automatically tint and therefore adjust building **temperature and lighting** comfort.

The panels can be **retrofit** into existing buildings with **no need for cables**, as they are completely self-powering.

Light sensors and learning algorithms give these windows intelligence to **optimise occupant health and wellbeing**.



WINDOWS AUTOMATICALLY TINT TO ADAPT TO LIGHTING CONDITIONS




BATTERY
LIGHT SENSOR
ELECTROCHROMIC LAYER
WI-FI ENABLED PROCESSOR
CLEARVUE PANEL


MULTI-FUNCTION FACADE

This self-powered, multi-functional smart facade incorporates a **closed cavity blind** and a **smart ventilation system** to enable optimised control of lighting, temperature and air quality.

The environmental multi-sensor monitors **light, temperature and CO₂**. The Wi-Fi enabled processor uses deep learning algorithms to learn the optimal conditions and can control both the blind motor and the ventilation system within the facade.




AUTOMATIC BLIND AND VENTILATION




BLIND MOTOR
BLIND WITHIN CLOSED CAVITY
FAN
ENVIRONMENTAL SENSOR
CLEARVUE PANEL
BATTERY
WI-FI ENABLED PROCESSOR

NATURAL VENTILATION

EXTERIOR
FRESH AIR ENTERS VENTS



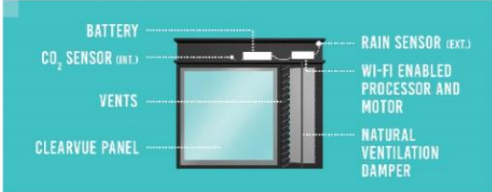
INTERIOR
AIR FLOW REGULATED BY DAMPER



This intelligent panel incorporates **natural ventilation** with an **automatic motorized damper**, enabling optimized control of a building's ventilation.

The interior of the facade is embedded with a **CO₂ sensor**, while the exterior contains a **rain sensor**.

This system allows for **automatic night flush**, and has the added benefit of **acoustic damping**.



BATTERY
CO₂ SENSOR (INT.)
VENTS
CLEARVUE PANEL
RAIN SENSOR (EXT.)
WI-FI ENABLED PROCESSOR AND MOTOR
NATURAL VENTILATION DAMPER

SMART FACADES

ClearVue^{PV}

To establish and maintain a **sustainable future**, smart buildings, indeed smart cities will have to form an integral part of how we live, and how we work. Industry experts anticipate the smart city market will be worth **US\$2.57 trillion** by 2025.

ClearVue PV is producing **multi-functional glass** that is both sustainable and cost effective.

Our smart facade panels will:

- Enhance the **health and wellbeing** of occupants
- Increase **building value**
- Reduce **energy costs**

Each panel contains a **Wi-Fi enabled microcomputer** equipped with deep learning algorithms. This enables the panel to learn the ideal **temperature, ventilation and lighting** conditions for the building occupants.

These smart facades all utilise our patented ClearVue PV panels, which enable the units to be **completely self-powering**. This removes the need for cables to the facade, and makes them an ideal solution for **retrofitting** old buildings to improve green credentials.

With the incorporation of smart facades into any building design the **lighting, heating and cooling** costs are reduced. These savings are derived from the efficiencies in triple glazing, the power generating capability of ClearVue PV panels, and the optimisation of the building through smart facade technology.

SMART FACADE FEATURES CAN BE CONTROLLED WITH AN APP



INTEGRATION WITH SMART HOME SYSTEMS



Indicative ClearVue Smart Façade design concepts.

Commenting on the consultancy with Arup, ClearVue Executive Chairman Victor Rosenberg has said:

"This new work under the Consultancy Agreement further extends our relationship with ARUP but more importantly is a major milestone for ClearVue in preparing our multifunctional windows and smart façade designs to take them from concept to commercial reality and paving the way for ClearVue's entry into the coming Smart City explosion. At the centre of, and the key to all of these concepts, is the ClearVue solar PV IGU powering the smart façade - at the glass - representing significant savings to building owners, developers, architects and engineers wanting to introduce smart façades into new building designs and retrofits for all of the benefits that a smart façade offers."

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About ClearVue Technologies Limited

ClearVue Technologies Limited (ASX: CPV) is an Australian technology company that operates in the Building Integrated Photovoltaic (BPIV) sector which involves the integration of solar technology into building and agricultural industries, specifically glass and building surfaces, to provide renewable energy. ClearVue has developed advanced glass technology that aims to preserve glass transparency to maintain building aesthetics whilst generating electricity.

Solar PV cells are incorporated around the edges of an Insulated Glass Unit (IGU) used in windows and the lamination interlayer between the glass in the IGU incorporates ClearVue's patented proprietary nano and micro particles, as well as its spectral selective coating on the rear external surface of the IGU.

ClearVue's window technology has application for use in the building and construction and agricultural industries (amongst others).

ClearVue has worked closely with leading experts from the Electron Science Research Institute, Edith Cowan University (ECU) in Perth, Western Australia to develop the technology.

To learn more please visit: www.clearvuepv.com

About Arup

ARUP

Arup is an independent firm of designers, planners, engineers, architects, consultants and technical specialists, working across every aspect of today's built environment. Together we help our clients solve their most complex challenges – turning exciting ideas into tangible reality as we strive to find a better way and shape a better world. Arup made its name in the twentieth century as the designer and engineer behind some of the world's most ambitious structures. That creative strength and independence of mind continues to guide Arup. Today, Arup employs more than 14,000 people, in 90+ disciplines in more than 34 countries – in a culture underpinned by Sir Ove Arup's aims and values. For further information see: www.arup.com

Forward Looking Statements

Statements contained in this release, particularly those regarding possible or assumed future performance, revenue, costs, dividends, production levels or rates, prices or potential growth of ClearVue Technologies Limited, are, or may be, forward looking statements. Such statements relate to future events and expectations and, as such, involve known and unknown risks and uncertainties. Actual results and developments may differ materially from those expressed or implied by these forward-looking statements depending on a variety of factors.