MEDIA RELEASE

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FLEETWOOD CHALLENGE CUP SHOWCASES THE BEST DESIGNS FROM AUSTRALIA'S LEADING AEC STUDENTS AS 2021 FINALISTS ARE ANNOUNCED

A glut of empty commercial premises exist in inner city areas thanks to the pandemic-induced mandate of working from home. The volume of empty properties has triggered an unprecedented need for vast numbers of commercial buildings to be redesigned and reconfigured to meet a mix of residential and commercial needs using adaptive re-use.

The Fleetwood Challenge Cup was developed by Fleetwood Australia in partnership with the peak body for Australia's prefabricated building industry, prefabAUS, to address some of Australia's most significant construction challenges. The competition is open to faculty teams with a cohort of Architectural, Engineering and Construction (AEC) Management students from Universities across Australia.

Cash prizes totalling $15,000 attracted an outstanding field of entries in the 2021 Fleetwood Challenge Cup.

2021 Fleetwood Challenge Cup. Following on from the 2020 inaugural Fleetwood Challenge Cup, the 2021 cross-faculty design competition addresses the global issue of adaptive re-use, needed to make use of empty buildings.

The 2021 Challenge Cup explored the proposition of adaptive re-use in the built environment. Teams were asked to retain, incorporate and extend buildings at a local site into a vibrant mixed-use development with retail and residential elements and explore the role of offsite manufacturing and prefabrication methodologies in supporting the development of solutions.

This year's competition presented the unique opportunity for some of Australia's most inspired young AEC minds to grapple with and develop clever a design response using adaptive re-use.

Each multidisciplinary team consisted of four to six students who worked collaboratively through the design process to produce innovative solutions to meet a challenging brief and then verify their approach.

Fleetwood Australia CEO Bruce Nicholson commented, "With more than 100 students and 26 teams involved, we were inspired by the quantity and extraordinary calibre of submissions. The 2021 competitors, who are the industry's next generation of change makers, drew great inspiration from the challenge set and delivered some outstanding solutions. It has been exciting to see great use of innovation, design knowledge and creativity deliver cutting edge designs to support adaptable re-use of vacant building stocks."

"In 2020 we had a fantastic turnout of entries in the Fleetwood Challenge Cup but this year it got even better with some very unique concepts presented that have never been seen before in this competition."

THE Fleetwood Challenge Cup In association with prefabAUS

"We were pleased to hear that student teams enjoyed the experience of working collaboratively to solve real world issues and were delighted to hear some University students involved have used the experience to help secure job offers."

prefabAUS Executive Chair, Damien Crough commented, "As the peak body for Australia's offsite construction industry, we are proud to partner with Fleetwood Australia to deliver the Challenge Cup and showcase ingenuity in action.

"With the highest building vacancy rates world-wide following the COVID-19 peak, the need to find sustainable ways to adapt, extend and reconfigure existing buildings with prefabrication and offsite manufacturing is a critical part of the solution."

"We assembled a diverse Fleetwood Challenge Cup judging panel that includes a leading Architect, Mechanical Engineer, Structural Engineer and a Physicist who determined the finalist teams. When the judging panel met and blended those unique perspectives to determine the finalists, there was apparently some passionate debate about merits of many of the top entries.

"Whilst many of the entries were on par with each other, the judging panel advised there were some absolute standouts at the pointy end of the competition. The variation in approach of the top four finalists was quite vast and each was very strong in their design. They were all well thought out concepts and very deserving finalists, who demonstrated great innovation and novelty."

"We would like to thank the judging panel, all of the brilliant entrants and of course our partner and co-creator of the event, Fleetwood Australia."

This year's top four finalist projects are, in no specific order:

- **Shipping House (Curtin University)**
- **Think Tank, (Deakin University)**
- **Asian Persuasion (Curtin University) and**
- **Fremantle Springs (Curtin University).**

Overview of the entries attached in Notes to Editor.

The winners of this year's Fleetwood Challenge Cup will be announced in September.

See: https://www.fleetwood.com.au/the-fleetwood-challenge-cup

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Notes to Editor

Participating Universities:

Curtin University

Deakin University

Queensland University of Technology

University of Newcastle

University of Queensland

University of Western Sydney

Cash prizes to be announced in September

First place	**$7000**
Second place	**$3500**
Third prize	**$2500**
Fleetwood Industry award	**$2,000**

Offsite manufacturing industry statistics:

The environmental case for adaptive re-use of buildings is gaining momentum. According to a 2019 report published by the International Energy Agency (IEA) for the Global Alliance for Buildings and Construction (GlobalABC), the global building and construction sector accounted for 36% of final (global) energy use and 39% of energy and process-related carbon dioxide (CO2) emissions in 2018, 11% of which resulted from manufacturing building materials and products such as steel, cement and glass. These compelling statistics further strengthen the argument for adaptive re-use as we move, ultimately, towards a net-zero-emissions building and construction sector.

The time is now to upcycle these buildings; to adapt and reconfigure for both residential and retail needs.

According to the 2020 McKinsey report – The Next Normal in Construction, the future of the construction ecosystem will be radically different.

The next normal in construction - McKinsey

The report quotes, “The construction ecosystem of the future is a more standardized, consolidated and integrated construction process. It is increasingly product based, meaning structures will be products and manufactured offsite by branded product houses specializing in certain end-user segments. Developers will choose entire designs or specific components from a library of options developed in house or ordered externally.”

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Finalist project overviews:

Asian Persuasion

As a team we first asked ourselves, "how modular can we go?" as we wanted to test the boundaries to make modular buildings even more convenient so they can adapt easily to the space. Over the past five years there has been an attempt at spreading the use of recyclable and environmentally-friendly, low cost and rational houses, apartments and offices, which doesn't need to limit the space of these pre-fabricated buildings as they seemingly integrate into the urban fabric. The project's modular apartments are designed to accommodate a broad demographic. The ground floor is activated by the diversity of land use, combining commercial and residential areas. This includes a Heritage Market Space, Click and Collect and a 24-hour mini mart. The second floor and third floor are a mixture of one- and two-bedroom apartments and the fourth floor accommodates 4 x one-bedroom apartments and a shared garden space.

Shipping House

The prefabrication module for housing is greatly popular in Australian design strategies for the adaptive reuse and extensions to modular housing. However, there are two main issues with the current designs, size limitation and inner-city transportation. With the high impression of the industrial urban space of Fremantle, especially the existing warehouses, the reuse of existing frames of heritage buildings for housing demand should be considered as one of the core concepts of the project as it will maintain the cultural integrity of the city and the industrial design heritage as well as promote economic value to future development in Fremantle. This research focuses on design solutions for re-using the envelope of the existing building to reduce the cost to the client and the benefits of modular construction including compact design, ease of storage, transportation and re-use.

Think Tank

This design purposely demonstrates insights into constructing a mixed-use, prefabricated, space displaying unique educational & experimental dimensions. Designed, in part, as a modular residential apartment, the structure transforms an existing warehouse at the Geelong CBD into a student focused single and double-bedroom units coupled with a 'Think Tank' for development of marketable products and ideas. In the residential structure, CLT modular units are stacked one upon the other and bound by a strikingly visual tectonic architecture design of steel columns and beams The Think Tank zones push through to profitability and social uptake goals via a retail space, where ideas brought to life in the workshops may be marketed and trialled through exhibition, a space operationally concurrent with a University Name.

Fremantle Springs

The project seeks to respond to the neglected abandonment of the Freemantle heritage by proposing a small-scale mixed-use development that establishes a connective core between Freemantle's forgotten heritage and the principles of natural living. The three storey –mixed use development adapts to a flexible modular design that utilizes a steel framework construction methodology followed by the adaptive reuse of on-site existing materials such as bricks and timber. As most modularity typologies come in forms of linearity, Fremantle Springs aims to challenge design norms by providing residents with organic forms of communal and balcony spaces that increase natural biodiversity and biophilic principles. The modular design approach in connecting the core through heritage and organic ideologies is self-sustainable.

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Judging panel biographies

John Lucchetti

Personal Biography: John Lucchetti is the Commercial Sector Leader in Stantec's Melbourne office and a director of prefabAUS, and the modular construction industry body in Australia. With a focus on managing multi-disciplinary projects for Stantec, John acts as both a project manager and director. He's worked on projects in the commercial, residential, high-rise, hospitality, education, correctional, and museum/civic sectors and he drove the adoption of 3D photogrammetry within the Australian business. In 2019 John joined Stantec's Executive Leadership Team for Buildings (Australia), working collaboratively with Stantec's national and international operations.

Martin Luoni

Personal Biography: Martin is a senior structural engineer at Arup, Melbourne. Martin has 13 years of engineering experience, working across a broad range of international projects across multiple sectors, having lived and worked in Australia, New Zealand, South Africa, Hong Kong, Thailand and Canada. As a Chartered Engineer, he has acted as structural designer and discipline lead on a wide array of projects, with focus on unique structures, cross-disciplinary projects and seismic engineering. A few career highlight projects to date include roller coaster track design, a large-scale telescope enclosure in Chile, high speed rail terminus in Hong Kong, half scale Eiffel Tower replica in Macau and a suspension footbridge at Port Campbell.

James Murray-Parkes

Personal Biography: James is an innovative, engineering professional and scientist offering a broad range of mathematical expertise, academic & industry experience and leadership. James has extensive experience in connectivity in weapon design, forensic high load structural connection failure investigation and remedial design. James' unique connection designs are at the forefront of assembly and subassembly manufacture in the construction, Defence, automotive and the energy sectors. James is the co-founder of the Australian Engineered Fasteners & Anchors Council (AEFAC) and was also the founder of the newly developed (2016) Modular Construction Codes Board (MCCB).

Laurence Robinson, Director, Brand Architects:

Personal Biography: Laurence Robinson is a director of Brand Architects, based in Melbourne. Laurence has over 30 years' experience in Architectural practice with a focus on Community, Sports and Education Infrastructure. He has taught Environmental and Architectural design at Melbourne University and is currently a partner investigator on the ARC Linkage project, Building Connections and Schools as community hubs. Laurence is also currently a director of Learning Environments Australasia.