The Innovation Hub for Affordable Heating and Cooling
Latest knowledge sharing activities • February 2022

i-Hub enters its final stages

The Innovation Hub for Affordable Heating and Cooling entered its seventh and final milestone in December 2021. Over the past year, 13 new projects launched (a total of 32 since June 2019).

The latest project summary can be found here.

Improve HVAC&R integration with renewables	**Demonstrate** the value of open data platforms in buildings	**Unlock** new demand response opportunities
Fast-track technology adoption with independent validation in real buildings	**i-Hub's aims**	**Engage** whole of industry to maximise knowledge sharing
Build industry capability and best practice	**ihub.org.au**	**Accelerate** the energy transition within the built environment

New projects

Living Laboratories
Led by Queensland University of Technology and the University of Wollongong

Healthcare Living Laboratories

- LLHC5 Net-zero energy and resilient hospitals: Considerations of future climate, pandemics, and demand management

Education (Schools) Living Laboratories

- LLS3 Hivve transportable classrooms in Bankstown (NSW) and Majura (ACT): Evaluating the effectiveness of the PV-battery-HVAC control-ERV nexus system

Data Clearing House
Led by CSIRO

- DCH3 Precinct energy integration for accessing the Wholesale Demand Response Mechanism
- DCH4 Sustainability monitoring and energy innovation in five NSW government buildings
- DCH5 Development and experimental implementation of Transactive Demand Response Management System through Open ADR-approach for institutional buildings
- DCH7 Improving the accuracy of PV analytics and energy analytics in buildings using open asset standards and data platform integration
- DCH8 Exergenics chillers staging application
- DCH9 DCH at Scale: On-boarding Proof-of-Concept at a Queensland Hospital Site
- DCH10 Increasing the value of onsite renewables in Darwin through data driven analytics

Integrated Design Studios
Led by the University of Melbourne

- IDS06 LXRP transport buildings
- IDS07 Aged care I
- IDS08 Laboratories CSIRO
- IDS09 Lightning Ridge LALC multi-purpose building
- IDS10 Lendlease Residential Aged Care
- IDS11 WCC Ribbonwood Community Centre
- IDS12 Illawarra Local Aboriginal Land Council – Mixed use development
- IDS14 (includes IDS13) Sub-tropical and tropical mixed use buildings

We welcome new participants and supporters, including: Australasian Health Infrastructure Alliance (AHIA), Property NSW – Dept. Planning, Industry and Environment, Swinburne University of Technology, KIG Energy, Braemac, Buildings Evolved, Department of Education, School Infrastructure NSW, Virtual Buildings Information System, PrediQ, Exergenics, Charles Darwin University, WSP, Cox Architecture, Atelier Ten, Stocca Architects, DesignInc, Lendlease, Stantec, MI Engineers, ARUP, Stantec and the Wollongong City Council among others.

More information on these and other projects, including Lessons Learnt Reports, can be found here.

Leader profile – Dr Stephen White, F.AIRAH

Dr Stephen White is the Energy for Buildings Manager at CSIRO, and an activity leader for the Smart Building Data Clearing House projects.

What is your role within CSIRO?
I lead the energy efficiency work in CSIRO. This includes research on building automation and smart-building data management. It also includes oversight of research associated with the

NatHERS software and the Australian Housing Database. A lot of my role involves communicating research to non-researchers and interpreting industry research needs into tractable questions that CSIRO research can address. I sit on a number of steering committees helping to initiate new research and guide research for maximum national impact.

Why did you get involved in i-Hub?
I helped to create the i-Hub initiative as a means of realising some of the important ideas arising out of the PRIME initiative. I was (and still am) keen to support this collaborative approach to industry transformation – to drive common good standards and practices, and to help Australian industry to innovate and compete globally.

What are some of the benefits we can expect from i-Hub?
Along with AIRAH's Big Data and Analytics Special Technical Group, i-Hub has helped grow the conversation on digitalisation in buildings. At AIRAH's Future of HVAC Conference in 2016, a workshopping session was held with more than 150 HVAC professionals. The workshop found that "Building control systems are in the 'mainframe' age of computing and not yet advanced to the 'App' age".

The industry has progressed a lot since then, but still has a long way to go. In i-Hub, we have built the Data Clearing House (DCH) software platform with the aim of providing data infrastructure for industry to build smart "Apps". We believe that the DCH is a world-leading integration platform for smart buildings. With around 70 buildings expected on the platform by the end of the project, the collaborative DCH infrastructure is helping to bring modern meta-data standards and practices into the industry and helping to enable innovation and competition.

I'm proud to be supporting the growth of new Australian companies like Exergenics. And I'm excited that the i-Hub Data Clearing House projects can help demonstrate to government that digitalisation is an attractive pathway for our industry to further reduce greenhouse gas emissions and help to stabilise Australia's electricity grid.

i-Hub Outcomes Summit

Tuesday, May 17 – in Sydney and online
Stay tuned for more information on the i-Hub Outcomes Summit. The event offers the chance to hear all about the lessons, success, and opportunities that the projects have created.

KEY PERFORMANCE INDICATORS (on track)

Validation of 8 new technologies for decarbonisation of buildings	Demonstration across 3 building types: • Improved control of HVAC&R/renewable systems by 25%+ • Integrations to significantly reduce peak demand • Increased hosting capacity of solar PV	
Pathway to 100MW of available demand response potential	DCH open platform delivering savings across 6 applications	IDS process deployed across 14 projects

Stay connected with the Innovation Hub

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higher logic