

Jack Madew

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Sustainability engineer specialising in building physics and integrated design at boutique building consultancy in the heart of Sydney.

A sustainable engineer with 3 years of experience, Jack brings an efficient and enthusiastic approach to every project he engages with. His current experience lies in building physics knowledge specialising in thermal, daylight radiance and parametric modelling in IESVE and Rhino Ladybug tools. He has become proficient at delivering and presenting on sustainability projects such as Section J and NABERS assessments, reflectivity, solar PV and natural ventilation studies in a timely manner.

KEY SKILLS

- Experience in **technical analysis** of energy within a variety of built environments from thermal comfort and daylight assessments, parametric façade analysis, advanced HVAC WOL analysis.
- **Ability to quickly pick up new technical skills and software, find use cases for clients and deliver on concrete outcomes in terms of energy, wellness, carbon and cost.**
- Ability to **work within a team** of members with varying skill and identify areas of expertise that can be used to the team's advantage
- **Software Proficiencies:** IESVE Energy Simulation, Daylight Simulation within Honeybee Radiance and Pollination suite of tools for Grasshopper in Rhino CAD, ANSYS CFD simulation + FEA, Excel, Github web hosting
- **Carbon accounting proficiencies:** EC3 EPD based calculation, UoM EPiC database calculations in excel and integrated in Rhino Grasshopper
- Ability to speak conversational **French**, and slight **Chinese**

EMPLOYMENT EXPERIENCE

E-Lab Consulting, Sustainability Engineer, Dec 2022 – Current

- Applied Whole of Life Cost Benefit approaches to understand the energy, carbon and capital costs of building façade and HVAC designs to deliver optimal outcomes for clients and the climate.
- Applying Australian Compliance Codes (BASIX, NatHERS, Section J, NABERS) to commercial, residential, retail, hospital and industrial projects. Energy simulation expertise in IES VE, Rhino + Pollination Ladybug tools, First Rate 5.
- Developed parametric workflow to generate modelling iterations based on project desired inputs and outputs. Utilised Thorton Tomasetti's Design Explorer to showcase hundreds of modelling iterations in parallel axis presentation to quickly optimize façade design ([project example](#)).
- Pioneered Architectural model to Energy model workflow using Rhino CAD program to allow for quicker and more accurate energy, thermal comfort and daylight model development
- Delivering on local and international sustainability ratings; Green Star, NABERS Energy, Water and Waste, and WELL Health Safety Ratings.
- Helped start modelling group within E-lab to standardise technical workflows and discuss future avenues for modelling development to benefit the company.
- Experience modelling complex HVAC systems for IT Data Centres and commercial developments with specific internal conditions (dehumidification, humidification, economy cycles, chiller load modelling)
- Head of Social Committee at E-lab Consulting organising social events (trivia, fun runs etc..)

ADP Consulting, Graduate Engineer, Jan 2021- Dec 2022

- Experience working with an integrated services engineering consultancy to deliver Green Star and NABERS ratings and commercial and residential Thermal Envelope assessments.
- Thermal comfort in natural ventilated, mixed mode and outdoor spaces utilising IESVE and Ladybug tools in Grasshopper
- Initial experience in delivering Acoustics design criteria for residential, commercial base building and fitouts, music education and medical facilities.
- Helped also start the modelling group within ADP to standardise technical workflows.

OTHER EXPERIENCE

[Sydney Motorsport](#) (FSAE team for University of Sydney), Manager, 2018-2021

Mechanical Design tutor, the University of Sydney, 2020

Sydney Heritage Fleet (SHF), Volunteer Engineer, 2019 – 2020

EDUCATION

- **University of Sydney, 2017-2020**
 - Bachelor of Mechanical Engineering – Major in Energy and Environment (First Class Honours)
- **People's University of China, Beijing, Jan 2016 – Jun 2016**
 - Mandarin Language Course Certificate at Confucius Institute

Hobbies/Interests

- **Rock climbing and hiking**, Member of Sydney University Rock-climbing Club
- Reached the summit of Kilimanjaro and Kosciuszko, hoping to complete the 7 summits in my lifetime
- **Amateur Kite Surfing**: I own a cheap and flimsy kite, but it does the job right.
- **Orienteering**: it has become harder to do now I live in Sydney
- **Tennis**: my serve is inconsistently good

REFEREES

Alex Kobler: Director, E-lab Consulting

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Alan Davis: Former Direct, E-lab Consulting, Current Director WSP

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Stephen Huang: Former FSAE Chief Engineer, Department of Defence

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