

JON MORGAN

Technical Director – Building Performance & Sustainability

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Sustainability and systems professional with 30 years spanning building performance, ESD, and software development. Led technical analysis and simulation for a global engineering consultancy, co-directed an independent consulting practice, and built tools that turn complex analysis into decisions people can use. Most recently, led performance and sustainability initiatives for councils and developers across strategy, technical delivery, and decision support, with a growing focus on climate risk and adaptation.

Currently focused on director-level work in climate resilience and adaptive systems — informed by study of resilience engineering theory and a career-long recognition that complex systems require adaptive response, not prediction alone.

CORE COMPETENCIES

- Climate Resilience & Adaptation — heat resilience for buildings and vulnerable populations: heatwave and future-climate stress-testing, heat-resilient public-housing design and retrofit modelling, and technical input on heatwave refuges and building targets for the City of Melbourne.
- Regulatory & Rating-Framework Delivery — NCC Part J, Green Star, NABERS, BESS and JV3 compliance and certification delivered commercially at scale.
- Commercial & Operational Ownership — co-ran an independent ESD consulting practice for nearly a decade, closely involved in service-line profitability, cost management, strategy, branding and team leadership.
- Data & Digital Delivery — designed and personally built the data and software behind practice delivery: an automated reporting pipeline across ~10 report types, analysis infrastructure, and decision tools used by non-technical staff, from council officers on resident calls to retrofit field teams. At Arup, selected and managed the analysis software and licensing for building physics work. Works AI-first: specifies, reviews and tests AI-generated code (Claude Code), builds LLM pipelines over practice data, and has used LLMs in client reporting under controls that keep the output factual.
- Systems Engineering & Diagnostic Modelling — aerospace/defence-trained systems engineer; applies formal modelling method (abstraction, parameterisation, verification, validation) across aerospace, offshore, aviation, urban-microclimate and building-physics domains.
- Carbon & Emissions Profiling — community and organisational emissions inventories (Hepburn Shire's community baseline; annual Scope 1-2 and business-travel inventories for a council alliance), household interval-data load profiling, and upfront embodied-carbon quantification for Green Star submissions; NABERS Upfront Carbon Accredited Assessor.

PROFESSIONAL EXPERIENCE

Co-Perform — Principal Jul 2018 - Aug 2026, Melbourne

Co-directed an independent ESD and building performance consultancy, delivering strategic advisory and technical work for councils, architects, builders and developers. Advisory work included technical input on heatwave refuges and sustainable-building targets for the City of Melbourne (via Nation Partners), battery-storage sizing and payback for councils, and early design advice that let design teams select compliant façades quickly. Delivery spanned NCC Part J performance solutions (JV3), NatHERS rating delivery and QA from single dwellings to a 70-storey tower, NABERS Commitment Agreement modelling and Green Star upfront carbon submissions. Co-led the practice's business strategy and rebrand, owned its full analysis stack and built its reporting platform end-to-end.

Moreland Energy Foundation — Senior Consultant Sep 2014 - Jul 2018, Melbourne

Senior Consultant at a community-focused not-for-profit, delivering energy, emissions and housing work for state government, councils and communities. Thermal modelling lead on Victorian DHHS public-housing projects for vulnerable tenants, and built the data platform preparing field teams for the EnergySmart retrofit program. Produced Hepburn Shire's community emissions baseline, presenting it at a community information session, and annual carbon inventories for a regional council alliance. Engaged directly with households and front-line council staff on solar and energy programs.

Visergy — Principal / Sole Trader Sep 2014 - Jul 2018, Melbourne

Operated as an independent sole trader under Visergy, delivering performance-based design support for town planning and building approvals (energy, daylight and thermal simulation) as a sub-consultant to ESD engineering firms — concurrent with a Senior Consultant role at Moreland Energy Foundation.

Arup — Senior Consulting Engineer 2004 - Aug 2014, London / Melbourne

Consulting Engineer in London (2004–05), then Australasian Building Physics Lead in Melbourne, with two direct reports and informal mentoring of around ten analysts embedded in mechanical and façade teams across APAC. Owned the simulation infrastructure, software and workflows for energy, daylight, reflected-glare, CFD, plume-dispersion and façade work, including a compute cluster shared with fire engineering that sped up analysis Australasia-wide. Collaborated with structural, mechanical, façade and lighting engineers on commercial, residential, aged-care, master-planning and transport projects, focused on the comfort and safety of occupants, pedestrians and transport users.

Early Career — DSTO, Scott Wilson Irwin Johnston, BMT Fluid Mechanics 1996 - 2004, Melbourne / Teddington, UK

Aerospace and defence engineering at DSTO, then building physics and fluid mechanics consulting at Scott Wilson Irwin Johnston and BMT Fluid Mechanics: energy, daylight and ventilation simulation, CFD, wind tunnel testing and offshore blast modelling.

SELECTED PROJECT HIGHLIGHTS

- Climate-Adapted Public Housing (Victorian DHHS) — thermal modelling lead in an MEFL-led consortium with DesignInc, stress-testing heat-resilient public housing for vulnerable tenants against spliced BOM heatwave records; three prototype units are now built and occupied at Mt Martha.
- Future Climate Weather File Application & Stress Testing — applied synthetic future-climate weather files to dynamic energy models, quantifying HVAC load and overheating risk in free-running buildings.
- City of Melbourne Sustainable Buildings & Heatwave Refuges — technical input to Nation Partners' strategic advice for the City of Melbourne on repurposing council-owned commercial buildings as heatwave refuges (smoke ventilation, backup and off-grid power, solar and battery), and on setting Green Star targets for new council buildings under the City's internal sustainable buildings policy.
- Practice Data Model & Reporting Engine — replaced manual report assembly with a single-source project database (3,000+ fields, entered once) feeding all ~10 client report types, removing copy-paste errors from deliverables.
- Richmond Window Film Retrofit — modelling showed an external window film would resolve an overheating problem exposing the owner to occupant legal claims, securing planning approval for a multi-hundred-thousand-dollar retrofit. Report drafted with an LLM under controls: project data only, a fixed template, and every figure and claim checked before issue.
- Battery Storage Sizing Tool for Local Government — built a tool on NREL's SAM engine to right-size solar-battery systems and test payback against commercial tariffs.
- Public Housing Retrofit Audit Platform (Victorian DHHS) — built a mobile audit platform combining building condition, tenant experience and billing data with in-home temperature logging to prioritise state-funded retrofits.

- Physics-Informed ML Surrogate Model (prototype) — trained regression models on hundreds of multi-zone thermal simulations to predict dynamic building performance in milliseconds.
- 2.5D-to-3D Computational Geometry Engine — built a procedural pipeline turning 2.5D building plan definitions into watertight, simulation-ready 3D geometry near-instantaneously, without reliance on full 3D CAD workflows.
- Victorian Local Government Capacity Building (MAV/CASBE) — designed and delivered 2025 training for council sustainability planners on auditing non-residential energy-modelling submissions, and helped test and refine the BESS framework.

TECHNICAL & DOMAIN EXPERTISE

Climate Resilience & Adaptation · Regulatory & Rating Frameworks (Green Star, NABERS, NCC Part J, BESS, JV3) · Thermal Dynamics & Building Physics · Fluid Dynamics & Atmospheric Flow · Energy Systems & Infrastructure · Critical Infrastructure & Transport · Offshore & Marine Engineering

CREDENTIALS

- NABERS Upfront Carbon Accredited Assessor (2026)
- Advisory Board Member, Energy & Sustainability Hub — Building Designers Association of Victoria (2015–2018)

EDUCATION

- Master of Urban Planning and Environment — RMIT University (2009–2014)
- Bachelor of Engineering (Aerospace) — RMIT University (1991–1995)