JHA

ESD GREEN STAR | CAPABILITY STATEMENT

JHA SUSTAINABILITY ROADMAP

Who are you and what do you care about?



MASTERPLANNING

REGULATORY ADVICE

WORKSHOP

ALIGNMENT

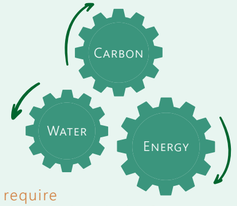
CONCEPT

TARGET SETTING

OPTIONEERING

JHA's diverse team of experts have a wealth of knowledge in delivering major sustainability assessments, providing synergistic opportunities across energy, water and carbon use.

We leverage our clients' targets, focus and priorities to establish a pipeline for project success.



Do you require ESD services during design?

SCHEMATIC DESIGN

ENERGY

LIGHT

CARBON

CLIMATE

WATER

COST BENEFIT ANALYSIS

CONSOLIDATING OPTIONS

JHA will review the work completed to date and provide advice on derisking opportunities.

Example shown on the right, JHA reduced the project complexity without adding any cost to the budget through our expertise.

Difference in Green Star Pathways: Before & After JHA Review



We'll provide all the necessary resources to achieve certification, examples include:

- Material tracking sheets
- Induction information
- Rating management tools and trackers

Do you require ESD services during construction?



CONSTRUCTION

PROCUREMENT ADVICE

CONSTRUCTION

MANAGEMENT

CERTIFICATIONS



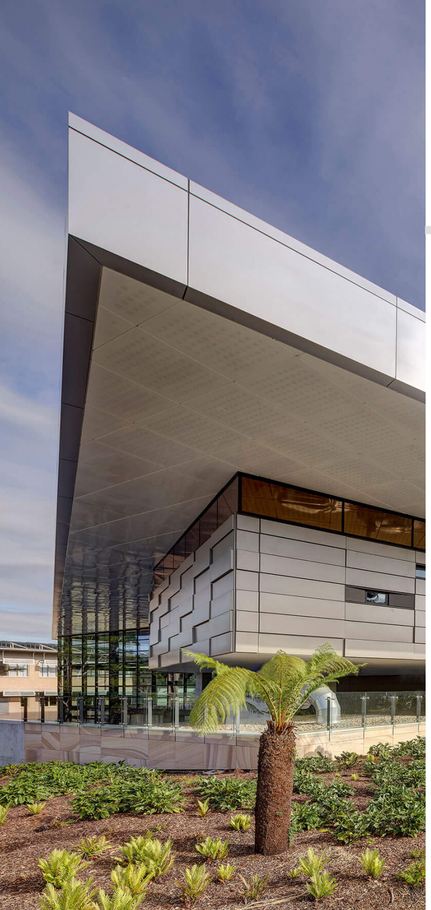
OPERATION

TUNING

PERFORMANCE

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SUSTAINABILITY PROJECT MANAGEMENT

JHA's ESD team are dedicated to providing cost-effective, sustainable and holistic solutions for your development.

Our team has experience delivering a wide range of projects including formal and informal certifications tailored to align with our clients' benchmarking requirements.

We customise informal benchmarking with our clients' regulation needs, organisational targets, typology limitations and location availabilities.

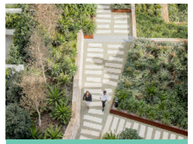
Green Star tools we're experienced in:



DESIGN & AS-BUILT



BUILDINGS



COMMUNITIES



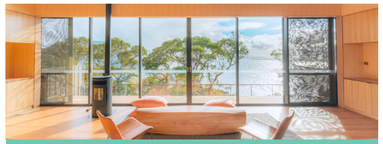
PERFORMANCE



INTERIORS

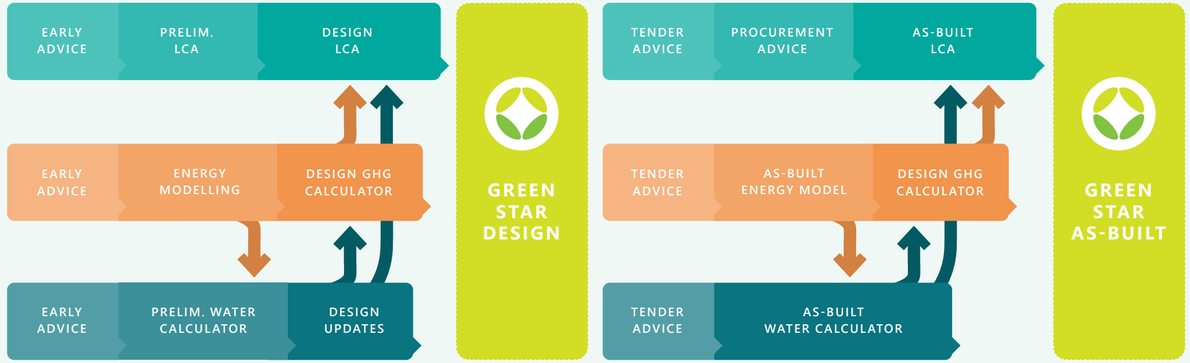


HOMES



NOT SEEKING A FORMAL RATING?
SUSTAINABLE SOLUTIONS/ OUTCOMES

GREEN STAR PROJECT PROCESS



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ENERGY MODELLING

JHA offers a multitude of building energy modelling services to meet our clients' needs, whether it be compliance with Australian Standards, National Construction Code, Council requirements or a voluntary reporting criteria.

Our team use advanced software, analysis and stakeholder consultation to deliver resilient designs that balance operational energy, occupant comfort and cost.

We have expertise that centre around providing early advice to minimise re-work for the various disciplines, in depth modelling of building services and compliance with a variety of voluntary sustainability tools; most prominently Green Star. Additional energy modelling for thermal comfort can be tailored to the developments usage, operational policies and comfort levels.

We provide a high degree of engagement throughout the process to ensure alignment with other disciplines and various stakeholders to ensure the design caters to the project specific nuances.

EARLY ADVICE

FABRIC MODELLING

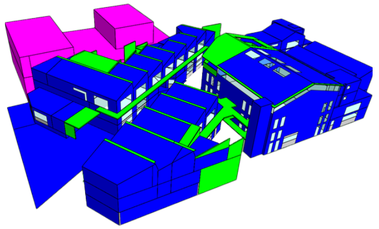
SERVICES MODELLING

GREEN STAR

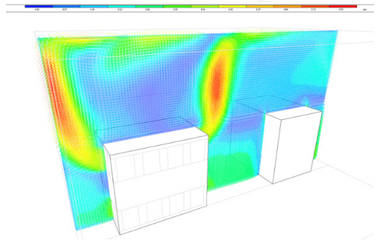
NATHERS/ BASIX

NABERS

THERMAL COMFORT



JHA IES MODELLING



JHA CFD MODELLING

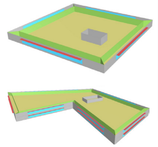
DAYLIGHT ASSESSMENT

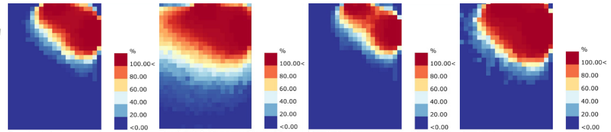
JHA offers parametric daylight and glare simulations and advice to our stakeholders; maximising the synergy between energy use and comfort.

By engaging early in the design process, we can conduct parametric assessments of glare and daylight, ensuring the optimized window to wall ratio and finishes are selected.

Glare and daylight assessment are used to determine the comfort of occupants in a space, ensuring the space can be used appropriately for its use.

PARAMETRIC ANALYSIS





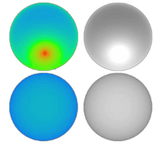
Daylight Autonomy Analysis
DLA Threshold =200lx

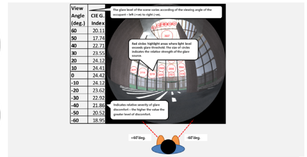
Daylight Autonomy Analysis
DLA Threshold =300lx

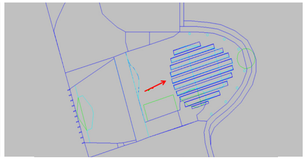
Daylight Autonomy Analysis
DLA Threshold =300lx

Daylight Autonomy Analysis
DLA Threshold =100lx

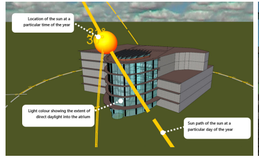
GLARE ASSESSMENT

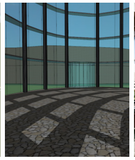




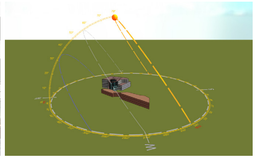


DAYLIGHT SIMULATIONS









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CARBON ASSESSMENT

JHA offers a range of carbon assessments tailored to our clients' needs, whether that be a buildings upfront carbon emission, a full life cycle assessment or an environmental product declaration.

We can also assess the demolition and deconstruction of a site with suggestions for recycling, re-use and retaining materials.

We have expertise in delivering significant carbon reductions for a range of typologies and delivery programs including partial to full reuse, heritage sites and entirely new developments.

JHA focuses on early engagement with the key stakeholders to first determine a reference case before suggesting parametric solutions and opportunities to our clients while keeping in mind financial, program and site-specific restraints.

LEGEND

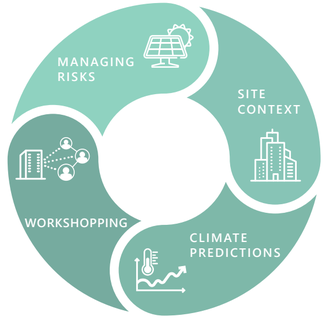
Design: Cost Increase:

MINIMUM EXPECTATION 10% REDUCTION (included in baseline fees)	CREDIT ACHIEVEMENT 20% REDUCTION	EXCEPTIONAL PERFORMANCE 40% REDUCTION
REDUCE CONCRETE AND STEEL QUANTITIES e.g.: Thinning the slab Optimise the spans and framing Reuse existing materials	**PROCURE LOW CARBON CONCRETE AND REINFORCEMENT** e.g.: High strength reo Fly Ash/ BFS/ Tri-blend Concrete	**PROCURE CLIMATE ACTIVE CARBON NEUTRAL CONCRETE**
	FURTHER REDUCE STRUCTURAL QUANTITIES e.g.: Slimming the core walls Exposed services	**PROCURE LOWER CARBON ALUMINIUM** e.g.: Recycled content Hydroelectric aluminium
		PROCURE LOWER CARBON STEEL e.g.: Electric Arc Furnace (EAF) steel Reuse existing materials

INCREASING ESD COORDINATION NEEDED AS MATERIAL COMPLEXITY INCREASES

CLIMATE ASSESSMENT

JHA offer expertise in climate adaptation and future proofing developments.



We use a holistic, collaborative approach, disseminating the latest climate predictions from the International Panel on Climate Change (IPCC).

Our collaborative approach enables us to de-risk projects with minimal to no re-work required by the team.

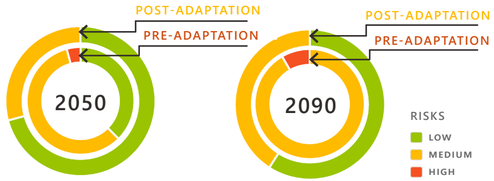
A combination of design and operational strategies are used to reduce climate risk with a focus on areas of concern for the development typology, location and client needs.

We leverage the clients' needs, projects operational, maintenance and emergency plans, user vulnerabilities and surrounding microclimate to establish bespoke project risks and responses.

As the understanding of our rapidly changing climate increases, the data available is frequently updated.

We research the latest climate data, both historical and future, to present the most up to date information.

We interpret complex climate models, synthesise and present them in a digestible way for the project wide stakeholder group.



GLOBAL SURFACE TEMPERATURE CHANGE RELATIVE TO 1850 - 1900

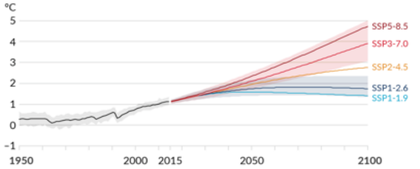


Image: *Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6)*

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WATER ASSESSMENT

PARAMETRIC FIXTURE ANALYSIS

SUPPORT LANDSCAPE SELECTION

WATER RE-USE STRATEGIES

WSUD STRATEGIES

JHA offers water reduction assessments at all stages of development, from early parametric modelling of fixture and fitting flow rates to inform design, supporting the landscape design to choose low water use flora with minimal irrigation needs.

Water re-use strategies may be investigated, parametrically assessing rainwater tank sizing and connection opportunities to reuse water onsite.

Furthermore holistic water sensitive urban design (WSUD) strategies are used in a collaboration between ESD, landscaping and civil works to deliver a more robust reduction in the water loads onsite.

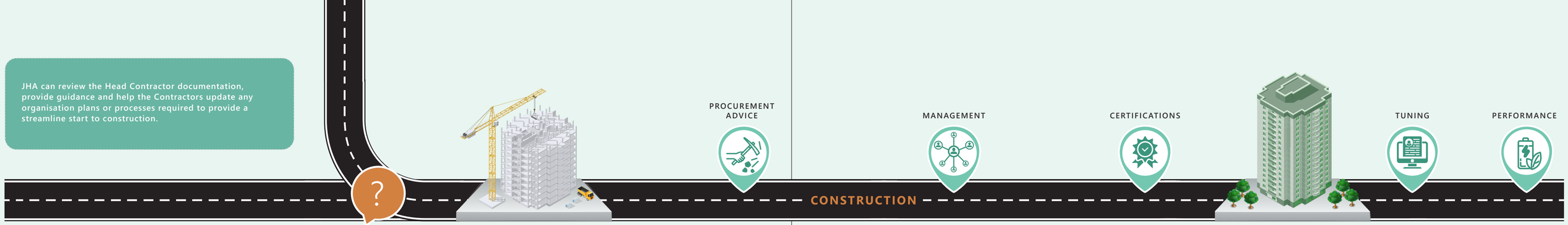






Three Capes Track Lodges

JHA can review the Head Contractor documentation, provide guidance and help the Contractors update any organisation plans or processes required to provide a streamline start to construction.



Do you require ESD services during construction?

CONSTRUCTION

OPERATION

Material selection for any project should go through a key decision matrix including which trade packages are relevant to which Green Star rating.

JHA aims to streamline the construction phase, from Tendering until Operation.



JHA can review the material suppliers and products for a wide series of parameters, depending on the project's budget, targets and priorities.

We customise our approach for each project depending on the client's targets and needs.

JHA have expert experience helping construction teams manage their deliverables and expectations from Tender to Post Construction.
We provide tools for our clients' use to ensure the construction is following the roadmap to success.

- ✓ Construction team workshops
- ✓ Tracking sheets and templates
- ✓ Review construction workflows
- ✓ Review commissioning plans
- ✓ Review operational plans



JHA can help develop a comprehensive and dedicated handover to the operational team, as well as frequent tuning of controls to create better outcomes. Some of the tools that we can develop include:

- ✓ Building User Guide
- ✓ Tenant Fitout Guides
- ✓ Quarterly Tuning
- ✓ Metering and Control Review

NABERS ENERGY

NABERS WATER

NABERS INDOOR ENVIRONMENT

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ABOUT JHA

MULTIDISCIPLINARY ENGINEERING & DESIGN SPECIALISTS



JHA is an Australian engineering and design consultancy firm offering a multidisciplinary approach to all stages of a project's lifecycle, from design to construction and operation.

JHA commenced operations in Sydney in 1995. Since our inception, the demand for diversification of services and project sectors has provided a continuous exponential growth pattern, leading to the company now providing a true multi-discipline in-house engineering and specialist design offering, with staff numbers exceeding 250 and offices in Sydney, Melbourne and Brisbane.

At JHA, we take pride in the full-service depth of our design expertise, from building services and structural and civil engineering professionals to the full spectrum of dedicated specialists in acoustics, specialist lighting, vertical transport, sustainability, audiovisual, information technology, fire safety, and security.

Our service ethos is to listen to our clients' needs, apply our technical flair and depth to our designs, and ensure that the designs are valuable, practical and constructible. We also understand that on-time delivery is vital to achieve coordinated and collaborative project outcomes. Ultimately, our JHA team take a partnering mindset with our clients and other project collaborators to provide successful results.

1995
Commenced

250+
Employees

100%
Employee Owned

OUR SERVICES

JHA is a full-service multidisciplinary studio of consulting engineers providing Electrical, Mechanical, Hydraulic, Fire, Structural and Civil services.

Our talented team also includes Environmentally Sustainable Design (ESD) Consultants, Specialist Lighting Designers and other professionals providing comprehensive technical design services for all facets of the built environment.

ELECTRICAL
Power distribution, lighting systems, communications, infrastructure, generation, solar systems

MECHANICAL
Air conditioning, ventilation, smoke hazard management

HYDRAULIC
Sanitary plumbing & drainage, potable hot & cold water, recycled water, gas services

FIRE
Fire sprinkler, smoke detection, occupant warning, evacuation (EWIS), fire hydrant, fire hose reel systems

VERTICAL TRANSPORT
Lifts, escalators, moving walks, platforms, hoists

CIVIL & FLOOD
Master planning, urban development, subdivisions, sports fields, roads, stormwater management, water sensitive urban design, flood assessment/ mitigation solutions/ emergency management

STRUCTURAL
Structural design and analysis, construction supervision, seismic strengthening and upgrades, adaptive re-use and extensions, risk assessment, value engineering & peer review, temporary works

SECURITY
Video surveillance, integrated security management, security risk assessment, intercom, car park management, electronic access control, intruder detection & duress

HIGH VOLTAGE & ASP LEVEL 3
Chamber and Padmount substations, high voltage transmission line works, 33kV-132kV, street lighting, network undergrounding services

INFORMATION & COMMUNICATIONS TECHNOLOGY
Active & Passive network design, ICN, IoT, GRN, Cybersecurity, WiFi coverage, IP telephony, DAS, smart building technologies

ENVIRONMENTALLY SUSTAINABLE DESIGN
Energy modelling, thermal comfort analysis, natural ventilation verification and climate risk assessment

ACOUSTIC
Architectural and building acoustics, mechanical services noise control, environmental acoustics

AUDIO VISUAL
Display technologies, sound systems, conferencing solutions, interactivity, automation & control

SPECIALIST LIGHTING
Integrated architectural lighting, decorative & custom luminaire design, conceptual lighting master planning

FIRE SAFETY
Fire Engineering advice, Fire Engineering Performance Solutions, Preparation of Fire Engineering Briefs & FEBQs, Fire Engineering Reports

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MECHANICAL

- Improving outside air rates
- Control strategies
- System efficiencies
- Designing for resilience

HYDRAULIC

- Water conservation
- Reduce, reuse, recycle
- Designing for resilience

CONTRACTOR

- Carbon assessments
- Circular economy
- Procurement planning
- Material, waste, carbon tracking
- Supporting ESG targets

CIVIL

- Water sensitive urban design
- MUSIC modelling
- Pollution reductions
- Water capture and reuse

HOLISTIC SUSTAINABILITY

Integrating collaborative sustainable design to enhance outcomes at every project stage

STRUCTURAL

- Parametric assessments
- Reuse, reuse, recycling opportunities
- Supply chain risks

ELECTRICAL

- Capacity studies
- Parametric PV modelling
- Integrated PV solutions
- Demand response planning

FIRE PERFORMANCE SOLUTIONS

- EV Charging
- Building integrated PV
- Structural timber

JHA ESD TEAM



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Group Manager, NSW

Connan Brown
Group Manager, QLD

Garry Luu
Senior Associate

Bronte Bishop
Senior ESD Consultant

Sama Azimi
Senior ESD Consultant

Eddith Chu
Senior ESD Engineer

Gary Tang
Senior ESD Engineer



Rayssa Hagmann
Sustainability Consultant

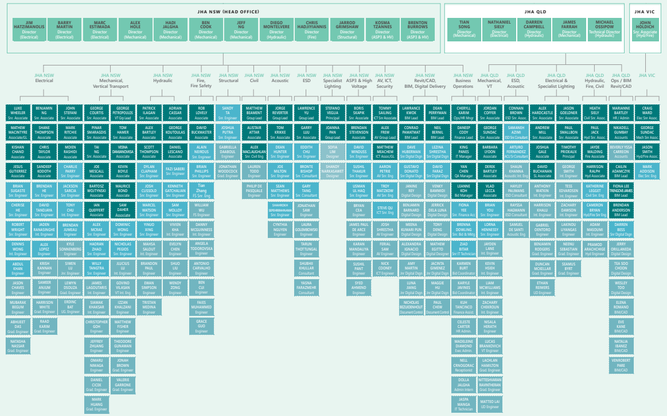
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Sustainability Engineer

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Sustainability Engineer

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Sustainability Consultant



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