GAEA ARCHITECTS

HOME

The ecologically sustainable philosophy of Sue Connor Architects has evolved over the last 30 years and has led to the decision to create 'Gaea Architects'- a business name that further represents our commitment to creating spaces that nurture mother earth and support people's well-being. We live in challenging times where we need to consider our choices carefully, especially when it comes to the impact the built environment has on the health and longevity of ourselves and the planet.

The combination of an understanding of a deeper level of ecologically sustainable design principles and progressive architecture enables us to go beyond the conventional to create spaces that have a strong sense of place and sit in harmony with the natural and built environment.

We believe the design principles Gaea Architects embodies will not only help preserve and regenerate our beautiful planet, but also improve the health and comfort of occupants.

Our work has morphed into a more targeted strategy of multi- disciplinary high performance building standards- with a focus on Passive House Design. This website will represent our transition into Passivhaus and showcase our 'work in progress' projects that are to be designed, built and Certified to the Passive House Standard.

This philosophy makes sense, for three important reasons - Our state of Health, the Environment and Energy Savings.

PHILOSOPHY

At Gaea, we embrace the principles of varying environmental design initiatives and strive to immerse ourselves in continued education by continuously expanding our knowledge. The team at Gaea Architects includes qualified and accredited Architects and Passive House Designers representing a broad range of experience over many years.

Philosophies and principles, we apply include:

- Passivhaus Standard
- Passive Solar Design.
- Living Building Challenge.
- Biophilic Design.
- The WELL Building Standard.
- Modular/prefab components that minimise waste.
- Materials that are locally sourced, non-toxic, natural, recycled and recyclable.
- Site appropriate Landscape Solutions.

Passive House[1]**:** Passive House promotes health and well-being by providing thermal efficiency, airtight construction and a heat recovery ventilation system. It is a quality, long lasting building that uses minimal power (for heating and cooling), resulting in no condensation or mould. It is an integrated design process and a fabric-first construction standard.

It ensures a design that delivers very high performance and comfort for the lifetime of the building. This plugs the "Performance Gap" often experienced in building operations. It relies on building physics and carefully integrated, minimal building services and technology- eliminating the need to bolt expensive additional technology onto a poorly performing building. Please refer to our blog which explains the 5 design principles and performance criteria.

Passive Solar Design: Passive solar design principles include correct orientation to maximise winter sun and minimise heat gain in summer. Thermal mass is considered along with cross ventilation. Where the right orientation is not available the Passive House building is able to provide thermal comfort year round.

The Living Building Challenge[2]**:** The Living Building is a philosophy, advocacy tool and certification program that promotes the most advanced measurement of sustainability in the built environment. It can be applied to development at all scales, from building construction and renovation to infrastructure, landscapes, neighbourhoods and communities and is more

[1] https://passipedia.org/basics/the_passive_house_-_definition
[2] https://living-future.org/lbc/

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rigorous than green certification schemes. A Living Building Certification adheres to the '7 Petals' principle of which is: Place; Aligned to how people understand and relate to the natural environment. Water; Promotes the proper usage of water and respects water as a precious resource. Energy; aspiring the built environment to be totally reliable on renewable forms of energy and operates in a safe, pollution-free way. Health & Happiness; Focused on creating spaces that have good access to daylight, good indoor air quality, connection to nature and interactivity between the user and built form. Materials; Specified materials that are non-toxic, ecologically restorative, transparent and socially just. Equity; Buildings that promote community and allow equitable access and treatment to all people regardless of physical abilities, age or socioeconomic status. Beauty; Recognizing the need for beauty as a precursor to caring enough to preserve, conserve and serve the greater good.

Biophilic Design: At Gaea Architects we have a particular interest in Biophilic Design, an approach to architecture that draws and incorporates a direct inspiration from nature. Creating a multi-sensory experience through the built form. There are 3 categories to Biophillic Design – nature in space, the nature of space and natural analogues. These principles are applied to create connection with nature, integrating forms in a way that feels natural. Please refer to our blog which explains these principles in more detail.

The International WELL Building Institute[3]: The international WELL Building institute is leading the global movement to transform our buildings and communities in ways that help people thrive. This standard focuses exclusively on the ways that buildings, (and everything within them), can improve our comfort, drive better choices, and generally enhance, not compromise, our health and wellness. WELL has been developed by integrating scientific and medical research and literature on environmental health, behavioural factors, health outcomes and demographic risk factors that affect health with leading practices in building design, construction and management.

Modular/prefab components: Our design methodology includes consideration of standard sizes of building components to minimise wastage. Our team often includes Darryn Parkinson of Eclipse Passive House (http://www.eclipsepassivehouse.com.au) to create certified Passivehaus buildings.

Non-toxic materials: In alignment with our wellness philosophy (WELL/ Living Building) we avoid PVC (and other plasticisers), VOCs (Volatile organic Compounds), Urea Formaldehyde, Polyurethanes, Flame retardant chemicals eg PBDEs (polybrominated diphenyl ethers) and other toxic substances.

Local, natural, recycled and recyclable building materials (and local labour) are specified and utilised as much as possible.

Landscape Solutions: All of our team possess a great love of nature. No good building solution can really exist without incorporating nature as part of the design solution. Whilst Architects are trained in creating both indoor and outdoor environments, we have undertaken continued professional development to include Landscape Design and Horticulture. We love to create outdoor rooms with differing surface treatments, local endemic species, feature planting and permaculture to provide the most project appropriate solution.

CAPABILITIES

By adopting the principles and philosophies outlined, our team is able to provide a comprehensive service that represent very wholistic design solutions.

The methodology of a particular project undertaken by our team includes the following disciplines:

- Effective communication strategies in the office, with the Client, the community and the whole project team.
- Quality Assurance Programs.
- Wholistic design and documentation strategies.
- State of the art software.

The key to reaching the best design solution and outcome is effective communication and a full understanding of all requirements.
The systems and processes in our office ensure our working relationship will result in complete understanding and alignment of all expectations. This will ensure your vision is manifested.

[3] https://www.wellcertified.com/about-iwbi

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We work as a team to ensure the best design and documentation solutions are presented and implemented. Our office promotes a healthy living along with active dialogue of feedback and discussion. Working to a collective outcome, we find solutions to challenges reveal themselves by understanding a greater perspective brought on by a responsive interest in relative problem solving.
Our quality control system and 'Teamwork' project management program reinforces communications and expectations. Progress is continually monitored with each Milestone clearly indicated to allow completion within the project timeline.
Gaea Architects design methodology includes traditional architectural hand sketching combined with the latest technological documentation methods. Our office utilises the latest 3D CAD software (Archicad) and BIMX through all design and documentation stages. The use of this software enables clear communication between all parties throughout the design stages. During construction the builder is benefited with the issue of the BIMX file. All the 2D files are accessible via a 3-Dimensional walkthrough when viewed from an electronic device such as a smart phone or tablet. This program ensures quality control at various points throughout the project.

CONSTRUCTION METHODOLOGY

We aim for projects that are of a high quality being designed and built to last.
In our experience, liaising with a builder for the duration of the project means there is less opportunity for misrepresentations to occur. When the building/interiors/landscape design and construction are combined, the project is able to flow seamlessly. From the stages of initial feasibility, design stages, statutory approvals, construction details, construction phase to completion.
An important aspect to our design solutions is the incorporation of 'Passivehaus' building construction.
Light-weight, timber framed, sealed building components that are prefabricated off site to reduce time on site and allow the cost of construction to be tightly monitored. Components may be transported in building modules allowing the works to be completed in a systematic and trouble-free way.
Working in collaboration with a builder, we have an excellent understanding of construction costs whilst working on your design. We are able to carry out regular checks on the cost of 'The Works' during the design process, to ensure that the project can be delivered within expectations. This reduces the risk of a fully documented project exceeding the specified budget. We work closely with Builders such as Darryn Parkinson, of Eclipse Passive House (http://www.eclipsepassivehouse.com.au) who is able to prepare Cost Plans for the total project and provide the off-site building components.

PASSIVE HOUSE PROJECTS

NEW DWELLINGS:

GREENWICH PARK
Description: Small pavilion style, off the grid home on beautiful acreage that is bushfire prone near Goulburn. For a couple, their dog family and visiting guests.
The client brief included a design solution to make great use of the large site, wonderful views and the lack of neighbours. It is to be environmentally aware but still temperature controlled and easy to maintain.
We are working in collaboration with Eclipse Passive House (http://www.eclipsepassivehouse.com.au) to achieve a high performing Passive House. Our services include inputting all design criteria into the (PHPP) Passive House Software.

Design/Documentation Stage: Design Development (PHPP analysis complete) DA Stage

KANGAROO VALLEY
Description: Courtyard style country home on stunning acreage for retired couple and their extended family. The site is bushfire prone and environmentally significant.

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The Client Brief included an inspiring place for family to gather to be creative and absorb the peace and quiet. The courtyard concept allows family to gather together, creates a sense of enclosure and juxtaposes the expansiveness of the views to Kangaroo Valley.
We are working in collaboration with Eclipse Passive House to achieve a high performing Passive House. Our services include inputting all design criteria into the (PHPP) Passive House Software.

Design/Documentation Stage: Design Development (PHPP analysis complete) DA Stage

NEWPORT

Description: Contemporary cantilevered multi-purpose 'future-proofed' home for a couple and their 2 children.
The design solution is to allow for a structure to cater for all the differing life stages. Simple with open plan living floor plan, the design aims to maximise and protect where possible the principal uninterrupted expansive views to North, North West and North East.
We are working in collaboration with Eclipse Passive House to achieve a high performing Passive House. Our services include inputting all design criteria into the (PHPP) Passive House Software.

Design/Documentation Stage: Design Development

AVALON

Description: Passivhaus Tree House for Eclipse Passive House.
The Client brief includes a carbon neutral home that looks through and into the tree canopy. The home is to allow for areas where this highly creative family can relax and be inspired.

Design/Documentation Stage: Design Development

HUSKINSON – TINY HOUSE

Description: Tiny (approx. 40-50 sqm) totally off-grid house (power, water and septic) in a 2 ½ ha forest. We are working in collaboration Darryn Parkinson (Eclipse Passive House) to achieve a high performing Passive House. Our services include inputting all design criteria into the (PHPP) Passive House Software.

It is understood the home is to feature 'honest', rustic, recycled materials internally and externally As part of our design service, we consider the whole site, and its context in the surrounding landscape and a landscape design concept.

Design/Documentation Stage: Feasibility

WALLUMATTA ROAD – NEW DWELLING NEWPORT

Description: This home, on a very large and complex site, was designed to feel like a resort, to allow the family to enjoy all stages of their life. Working with Landscape Designer Phillip Johnston (www.phillipjohnson.com.au) we were able to integrate the building pavilions and courtyards in the landscape to provide alternative solutions to stormwater and rainwater harvesting. The ultimate aim was to develop the design solution to meet the Passive House Building Standard.

Design/Documentation Stage: DA Approval obtained. This property has since been sold and the project has been shelved.

COMMERCIAL PASSIVE HOUSE PROJECTS

TATHRA HOTEL & THEATRE

Description: Over the last 5 years Sue Connor Architects have been working with Bega Council, Cliff Wallis, and builder Chris Briggs in renovating the Tathra Hotel, Tathra. This exciting project will be built in 3 stages and involves the input of members of the community to create an exciting community facility.

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Core to the design concept was the importance the new owners placed on community and family interaction along with promoting local produce and entertainment.

This complex project has called for a very wholistic approach to design and documentation. It has been of great importance that the design concept considered the surrounding coastal landscape, the historic wharf and the Hotel's street presence. In keeping with the Client Brief, environmental initiatives were prioritised in the design and specifications.

Stage 1 *(Complete)* TRADITIONAL CONSTRUCTION METHODOLGY

Alterations and additions to Restaurant, Brewery, amenities, Heritage Hotel, accommodation and commercial kitchen. The community has embraced the new philosophy and the Tathra Hotel is now well on the way to be a great success.

Stage 2 *(Current)* PASSIVE HOUSE CONSTRUCTION METHODOLGY

Building has begun for a new Reception and 10 Guest Rooms. The aim is that Stage 2 and Stage 3 will be Passive House Certified. Allowing extremely thermally comfortable and healthy spaces that require minimal energy for heating and cooling.

Stage 3 *(Following on from Stage 2)* PASSIVE HOUSE CONSTRUCTION METHODOLGY

The performance space will extend the possibilities of live performances for audiences and artists in this culturally lively region. The proposal relates to a versatile "black box" performance/function space for use by local professional artists/musicians/theatre-makers and shows.

Services provided: Full Architectural Services from Concept design to Construction Documentation. Currently communicating with builder regularly during construction.

BATLOW LIBRARY

Description: Multipurpose Library facility for Batlow (along with an extension to the existing Literary Institute).

'A central information hub in a park setting that all inclusively connects people to invigorate the town of Batlow'
This simple, cost effective, high thermally performing building will be positioned between two historical buildings in the centre of Batlow.
Construction detailing included Passivehaus principles and modular construction to minimise waste. The building, as detailed, represents an incredibly thermally comfortable and healthy 'community hub' to be enjoyed in all seasons.
Design/ Documentation Stage: Construction Documentation complete and the Building has been approved for construction.

Services provided: Full Architectural Services from Concept design through Statutory Approvals to Construction Detailing, Specifications for Tender.

PROJECT TEAM

As a group of individuals, we form a team of people who care deeply about quality design that is well considered and detailed along with how this may be integrated thoughtfully in our natural and man-made environment. Our Project Team may be comprised of, Principal Architect, architecture graduates/designers and a Passive House Certified Builder.

SUE CONNOR

Principal, Sue Connor Architects (now GAEA Architects) 1991 – Present

Sue Connor has been managing her own Architecture business since 1991. Along with a passion for well-considered architecture, Sue has a deep love of our natural environment and is extremely interested in how our living environment influences our health and well-being.
Having directed small practice, as a registered Architect, for almost 30 years, she is now concentrating even more so on her passion of health and wellness for all through Architecture.
Her projects have included numerous residences, hotels, lodges, guesthouses and interior fit-outs throughout Sydney and regional Australia.

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ALICE CUTCLIFFE

Graduate of Architecture and Passivehaus Designer

Alice Cutcliffe is a Sydney University Master in Architecture Graduate and Certified Passive House Designer. Alice is passionate about creating thermally efficient buildings in order to reduce a buildings impact of the environment. She enjoys working with PHPP Software to ensure our building are able to meet the passive House Standard.

Integrating landscape and built form is another interest, so Alice is currently completing a Diploma of Landscape Design, adding further to her skills.

DANIEL GOLDSMITH

Daniel Goldsmith is a building designer with specialty in Sustainable Design. He has a deep passion for Building Ecology and is passionate about Biophilic Design. Dan, along with the rest of the team, loves to be part of the Living Building Challenge. He is currently studying Horticulture/Permaculture and embarking on the formation of exciting new thermally insulating building panels made from mushrooms (Mycelium).

BROOK BEAVER

Project Documentation and Draftsperson: Brook Beaver is an Architectural Draftsperson with over 18 years of industry experience.
Having been the Technical Services manager of Central innovation (Archicad) Brook has excellent knowledge of the Archicad 3d Software and statutory requirements.
Brook is about to embark in Passive House Training.

JAMIE LEE SHAND

Project Documentation and Passivhaus Consultant:
Project Assistant & Contract Administrator of 'The Fern', Australia's first multi-residential Passivhaus building. Jamie Lee was integral to successfully achieving the PH airtightness criteria and ultimately Passivhaus Certification.

TESTIMONIALS

creating spaces that respect the earth

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Darryn Parkinson Builder

Chris Briggs Builder

Kel and Duncan Handley

Peter and Pat Munroe

Nigel and Jude Love

Brett Osborne (Bega Valley Shire Council).

Kristine Twoomey (Snowy Valley Council)

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