INTERSECT

"Before I even put pen to paper, I think a few decades ahead. Would people still love this fifty years into the future?

What materials would have the durability for a timeless appeal?"

Vale Yael K

Q1.22

Design Matters National

The Snug

By Green Sheep Collective

'The Snug,' as affectionately known by its' owners, was originally a run-down, dark, poorly insulated and 'inward looking' two-bedroom, one-bathroom Californian Bungalow situated on a small block in inner Melbourne. The footprint of 99m^2 consisted of a series of separate rooms and lean-to structures that were in need of substantial maintenance.

Small Project

The owners, a couple, requested a thermally comfortable, sustainable home with open kitchen, dining and living area, third bedroom, second bathroom, and covered entertaining area, with light living spaces and an improved connection with the outdoors.

The design brief sought to address a number of challenges – namely, working within a modest budget, without compromising the garden area. Design planning also needed to consider factors including a poorly orientated and inefficient house, a lack of cohesion within the existing floor layout and a relatively small lot size.

A comprehensive site analysis, including shadow studies, informed the siting and massing for passive solar design. The design process explored multiple layouts for the building to test possibilities and ensure the chosen design was the best response to the brief, the surroundings and the climate.

The owners specified that sustainable design measures be applied from the outset to achieve energy efficiency and sustainability. The design and construction allowed for future installation of solar panels, with provision of wiring, and sufficient north facing roof area.

In terms of energy efficiency, a whole-home approach was taken to the energy rating - lifting the environmental performance and energy efficiency of the entire home, not merely the extension. The original dwelling had poor thermal performance with an energy rating of just 0.9 Stars. Significant improvements in thermal performance and occupant comfort were achieved by the design – achieving a massive 77% reduction in heating and cooling loads.

Overall, the design preserved valuable embodied energy - retaining the whole original building and increasing the footprint by just 18m 2. The highly efficient floor plan has just 7% of its floor area as circulation space - the entire house is roughly half the size of the average Australian new home.

Right: The striking built form sits comfortably with the original home and respectfully in its context. The warm, classic material palette complements the landscape and provides longevity with a robust and beautiful finish.

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Above: This beautiful extension integrates seamlessly with its landscape, connects indoors and out, allows for north light and natural ventilation and is detailed with sustainable materials.

Right: This expressive extension boldly asserts its presence - a feat for just 18m² new area. It modernises original fabric to transform the house into a light, energy efficient, comfortable home.

A minimal footprint is offset by lofty angled ceilings, north-facing living areas, garden views and a great sense of spaciousness.

Big Difference

The starting point involved a design approach that was both highly site-responsive, in terms of climate, views, orientation, slope and neighbourhood context, and highly client-responsive, to the brief and to their underlying needs.

At just 117m², The Snug features clever multi-functional spaces to include three bedrooms, two bathrooms and spacious, naturally-lit living areas with strong connections to north-facing garden areas. The small-footprint home significantly improves the solar orientation, thermal performance, comfort, daylight, ventilation, views and connection to the outdoors, while preserving the existing streetscape and built form heritage of the neighbourhood.

Reconfigured internal spaces encourage occupants to make use of the entire property, as the design features views to trees, garden and sky. Living areas are functional, practical and light-filled, with soaring ceilings and a strong connection to the outdoors.

The design responded to the site's temperate climate and site conditions through the stringent application of passive solar design principles including the re-positioning of living areas to the north, non-habitable rooms to the south, and ensuring outdoor living areas receive northern sun, thereby maximising solar gain.

In addition to ensuring excellent natural cross ventilation and stabilised thermal comfort to the whole home, abundant natural light allows the owners to grow indoor plants that remove pollutants by filtering the air to reduce toxins and VOCs. All materials and products used in the construction of The Snug were researched and selected to create a healthier indoor environment. Building materials were carefully selected to minimise the amount of embodied energy. E-crete concrete was specified, reducing the embedded CO_2 by up to 80%, while radially sawn Silvertop Ash cladding was used, resulting in up to 60% reduced waste in the milling procedure. Preference was given to paints, oils, sealants and glues that are made with renewable raw plant materials, and are recyclable, biodegradable and emit no harmful substances.

The Snug is spacious, with plentiful storage. The warm, classic material palette complements the landscape and provides longevity with a robust and beautiful finish. With custom design throughout - from angled ceiling junctions, to intricate cabinetry, this reinvigorated building will provide for its owners well into the future.


MY SEARCH FOR THE PERFECT
BOSCH

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