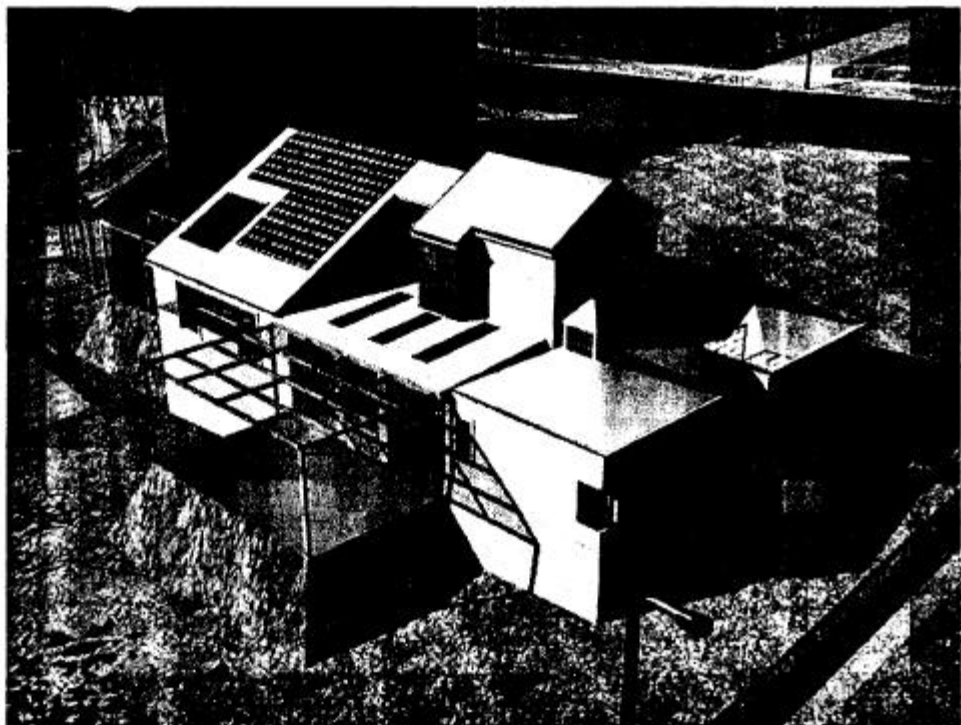


# Passive solar ecohome



*The north west view of the Sunbury Ecohome.*

SUNBURY, VICTORIA  
**BP ARCHITECTS**

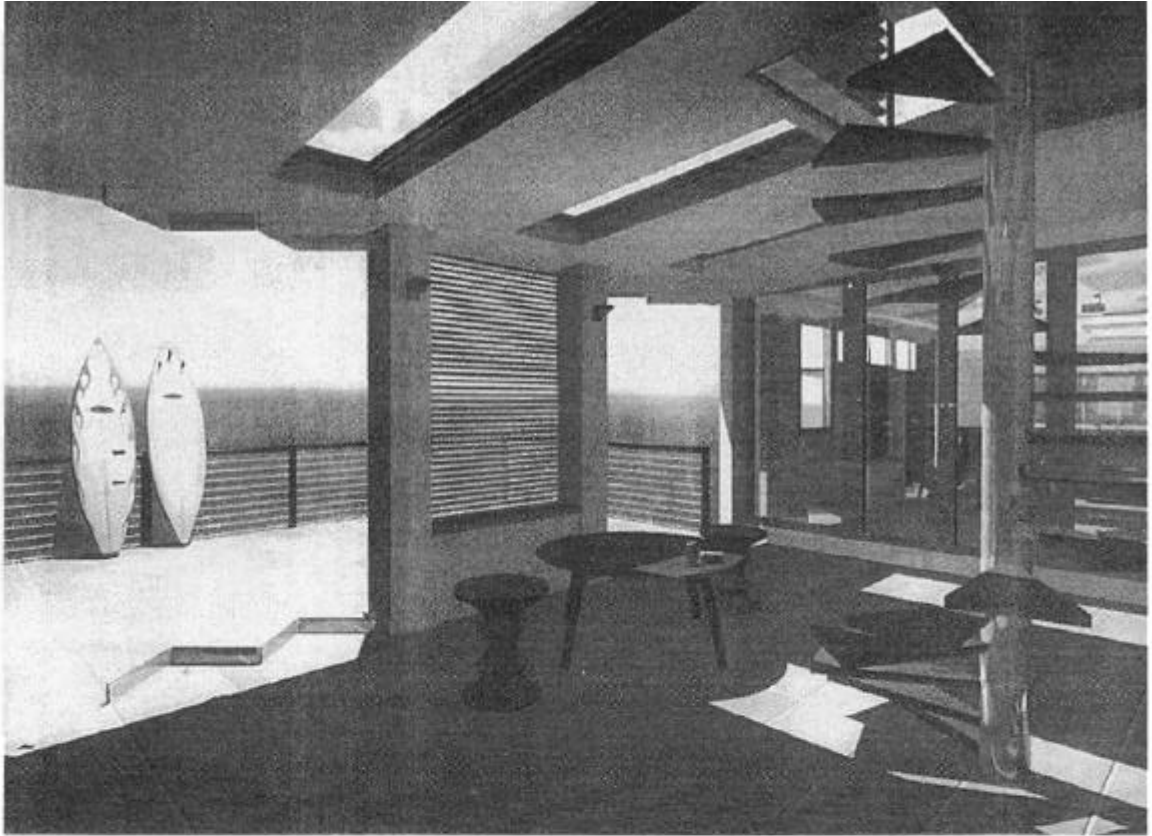
BP Architects specialise in the ecological design of houses to suit the climate and their clients' lifestyles. This includes the design of new homes and the retrofitting of existing homes. Their architectural philosophy encompasses the design of energy, water and waste efficient homes, towards sustainable building. They deliver on the triple bottom line: reduced running (energy) costs, a reduction in Greenhouse gas emissions, and a win on comfortable indoor environments.

BP Architects provide design strategies using passive solar design principles, minimising heating and cooling loads on the building. These strategies are incorporated into each design at concept stage to form an integral part of the design. Their designs allow for the expansion of the living areas of a home to the immediate outdoor environment using concepts such as 'solar court' and garden court design elements.

The outcome offers high comfort levels, natural daylight, natural cooling and heating systems and minimal energy consumption.

The Ecohome, designed by BP Architects, demonstrates sustainable and healthy house principles of passive solar design, active solar systems, greywater recycling, rainwater collection, animal and bird friendly landscaping. Located on the Urban Land Corporation's first energy efficient subdivision, 'Sunset Heights', Jacksons Hill, Sunbury, Victoria, it was designed for the Australian Healthy Housing Institute and Envirobrokers Australia to accommodate a family of five.

The Ecohome demonstrates the benefits of passive solar design principles in regards to cost savings, comfort and delight in a home. Passive solar heating is maintained through the well-insulated lightweight building envelope and the



*Computer visualization of the solar court, EcoHome.*

thermal mass of the slab. Living areas face north and the solar court takes advantage of this orientation. Acting as a transitional space between the inner sanctum of the house and the external environment, it expands into the outdoor living area under the solar pergola.

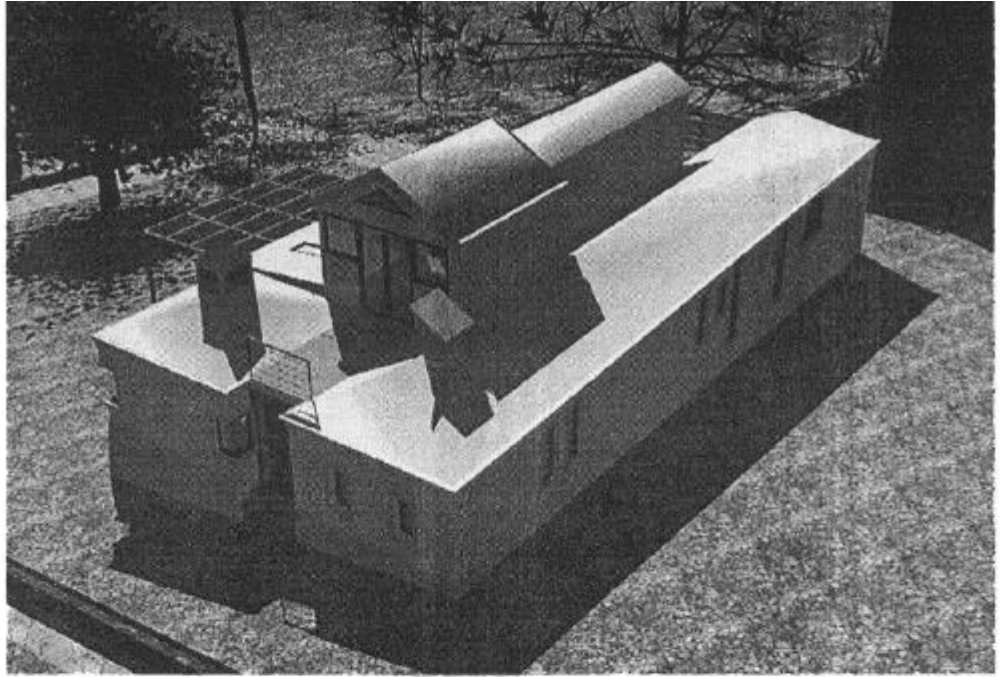
Passive cooling is achieved through cross ventilation, night time ventilation and natural evaporative cooling through the function of the garden court and with strategically-placed water features. Living areas have larger volumes with high ceilings, assisting in the stratification of hot air in summer, using fans to force hot air down in winter.

The position of the home office/library allows for effective exhausting of hot air using the stack effect and window positioning. Shading devices such as the

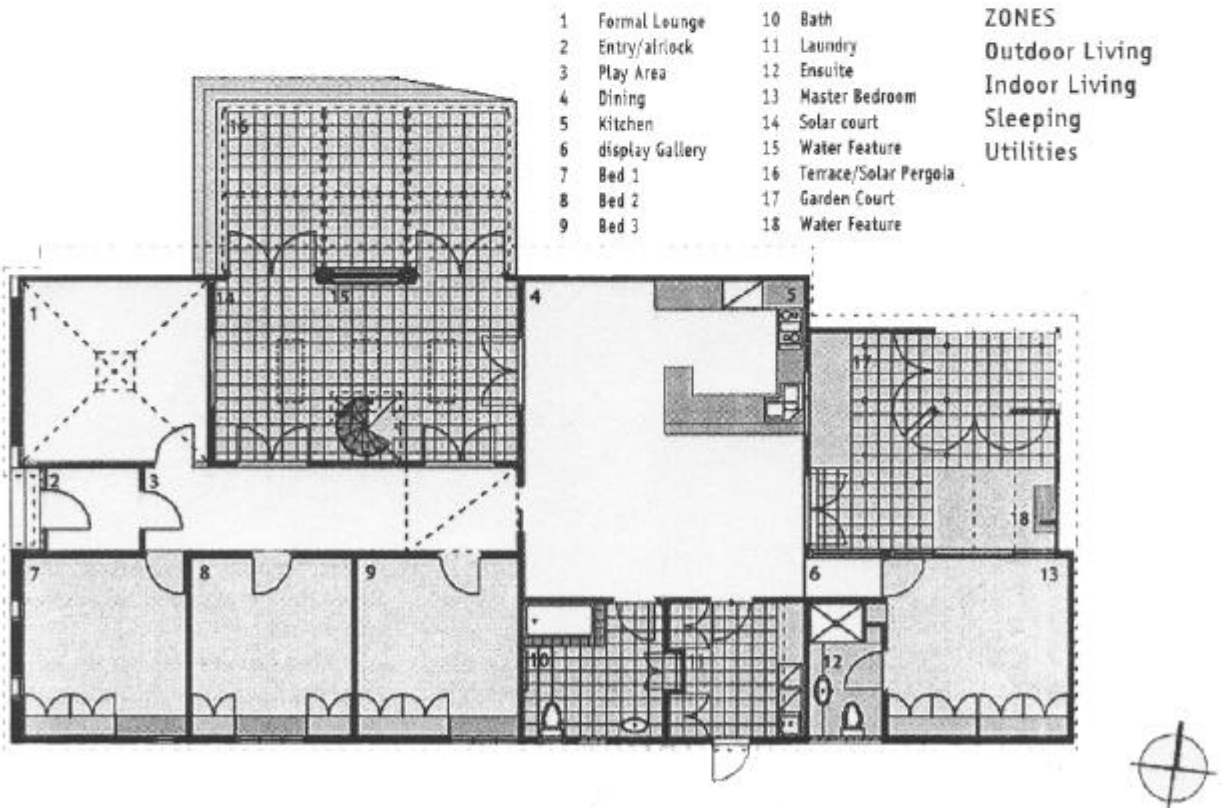
solar pergola and light shelf allow for sun protection during the summer months maintaining natural daylighting levels within the home. West facing windows are protected with solar film to reduce heat loads in these rooms.

Active solar systems includes solar hot water and grid-connected Photovoltaic array. The greywater recycling system filters discharged washing machine water and provides gravity flow water to the garden. Rainwater tanks collect additional water for garden use.

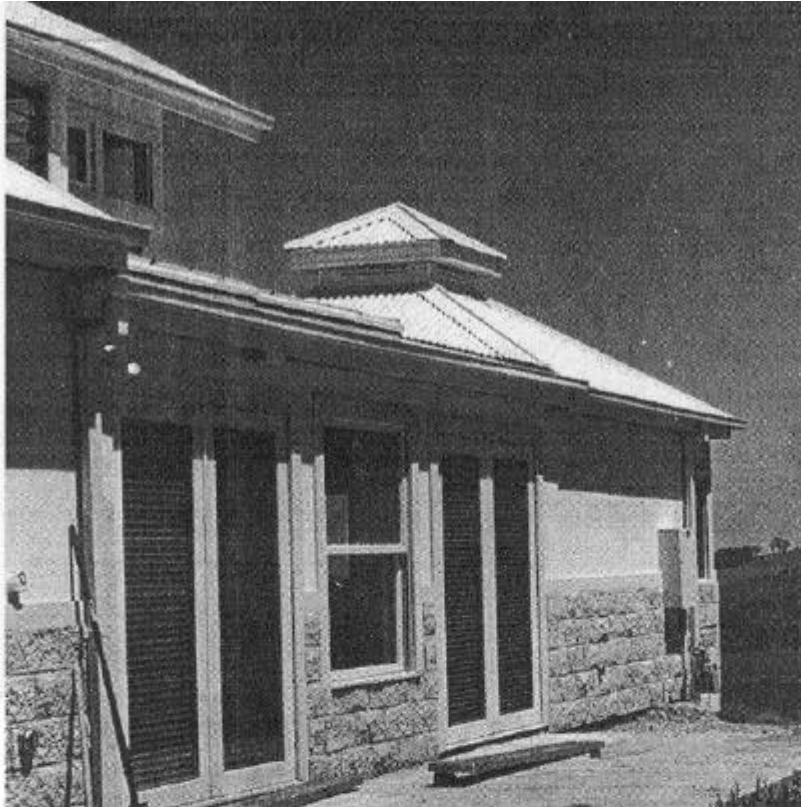
The Ecohome allows the occupants to be aware of changes in the climate. This allows them to optimise solar heating and cooling, breaking down this transitional zone between house and environment. All materials used in this home have low emission of volatile organic compounds.



*The south west view of the Ecohome.*



*The floor plan of the Sunbury Ecohome.*



*The north face of the Ecohome before the solar pergola was installed.*

BP Architects' expertise includes specifying non-toxic, non-polluting, sustainable building materials. Architectural Services include:

- Site analysis studies for solar optimisation
- Computer simulation for solar performance
- Formalising client brief requirements
- Concept sketches
- Master plan studies
- Schematic and developed design
- Town planning approval documentation
- Building permits approval documentation
- Construction drawings
- Management of tender for construction
- Contract administration of construction
- Preliminary Energy Audits.

BP Architects subscribe to the basic principle that when it comes to environmental issues, there should not be a cost

penalty to their clients. The principles of energy efficient building design can be applied to any home, costing little or nothing to put into practice. Designed to passive solar principles, a home or home office will need very little heating or cooling to maintain comfortable indoor environments. By reducing running costs, people can save money and reduce greenhouse gas emissions, which are producing global climatic changes.

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