

MAJOR CONTRIBUTORS	MORE INFORMATION
Premium - Robes & Shower Screens	John Pool Telephone: 5442 7799
Velux Australia Skylight window at no cost	1300 738 917 www.velux.com.au
The Down to Earth Store – Supplier of environmentally friendly products for use in the house	227 Barker Street Castlemaine, Telephone: 5472 5032 www.thedowntoearthstore.com.au
Louise Moysey and Daughters Quilted blinds in children's bedroom	Telephone: 5472 1212

CONTRIBUTORS	MORE INFORMATION
CKC – kitchen cabinets	Telephone: 5472 4144 castlemainekitchens@bigpond.com
Hebel Wall Panels	Build Pro Bendigo Phil March Telephone: 5448 3355 bendigo@buildpro.com.au
MPB Electrical	Matt Bolton Telephone: 0408 179 048 kylieandmattbolton@bigpond.com
Carson Plumbing	Alan Carson Telephone: 0409 404 733
UAP Plumbing – Heating	Mick Webb Telephone: 0407 844 474 mickuap@bigpond.com.au
Dales Discounts – Hardware, tiles	Lindsay Dale Telephone: 5472 1586 castlemaine@paintright.com.au
Dredge Earthmoving - Excavation	Russell Dredge 0418 367 562 russelldredge@bigpond.com
Kyneton Floor World	Gary Banfield Telephone: 5422 2635 Mid180@gmail.com
Borderline Garden Supplies	Gary Davis Telephone: 5472 4053 kdavis@castlemaine.net.au
Kordon Termite Barrier	Paul Harris Telephone: 0417 575 952 pharris@kordon.net
Wattworks Greywater System	Steve Watts Telephone: 9888 3117
Hume and Iser – Boral Bricks	David Pantell Telephone: 5440 7135
The EcoBrick Company	Rory Stainton Telephone: 5469 1350 info@geobrick.com.au



mount alexander low energy solar display home

building for a sustainable future

Why it was needed

MASG recognized the need to create a local example of a home built on sustainability principles. This is important for home builders and renovators, for the people who design, approve, build and provide services and products so that they can see that homes and gardens built on these principles can be comfortable, attractive and cost less to run over time through savings on energy and water costs.

How it came to be

Local builders, Maine Design and Construction have built a home which provides an opportunity for the Mount Alexander Sustainability Group (MASG) to showcase environmentally responsible housing. The house is based on a concept from local designers Lifehouse and we hope it will help people to make more educated choices about the way they build, renovate, garden and use scarce resources such as energy and water.

Supporters and Sponsors

Many businesses have provided products and services at discount rates or on a sponsorship basis to assist in building the house. A full list of businesses and individuals who have collaborated in creating the home and garden is included in your information pack.

Building for a more sustainable future

The house is neither cutting edge nor alternative. It is built on conventional lines but it demonstrates how features can be incorporated into new and existing homes to make them more environmentally friendly. By doing this, families can live very comfortably and stylishly whilst making a valuable contribution to conserving our planet. At the same time they are lowering their household's carbon footprint. New homes are now required to be 5 star, this house is 6.5 stars – the highest rating at the time of building.

Sustainability features incorporated in the home include

- North facing aspect and limited west facing windows
- Cross-flow ventilation and use of casement windows for maximum airflow
- Double glazing
- Rating 6 ceiling insulation
- Hebel wall cladding
- 5 star gas ducted heating
- Evacuated tube solar hot water with instantaneous gas water heating system
- Recycled timber
- Greywater treatment system for garden irrigation & water efficient garden planting
- Rainwater tank connected to the house and garden
- Water efficient plumbing fixtures
- Photovoltaic cells for generating electricity

Additional cost to make a home more sustainable

The inclusion of features to make the house more sustainable has added between 8 & 9% to the cost. This display home is 24 squares (21.6 square metres) without the garage and covered outdoor area, smaller than many of the large family homes we see being built today. If a home owner eliminates just one room or builds a carport instead of an average sized garage, we estimate that this would cover the cost of incorporating features to make the home sustainable.

What is in the house which departs from usual?

The specifications for the house are fairly standard for new housing. The table below indicates what additional items or measures have been incorporated to make it more sustainable, more healthy and where possible Australian made. For more information on sustainable homes and products visit the websites of Sustainability Victoria www.sustainability.giv.gov.au and the Australian Greenhouse Office site www.yourhome.gov.au/ and others including www.vicurban.com/residential www.greenpower.gov.au www.acfgreenhomes.com www.buildingcommission.com



Aspect of House	Product, material or building method used	Why it was used	More Information
Orientation	Major living area windows face north	To ensure maximum passive solar effect to reduce energy use for heating and cooling	Visit makeyourhomegreen to find out more about the benefits of passive solar homes
Termite Protection	Kordon – chemically impregnated plastic barrier	Protection is more often in chemically treated timber which involves larger amounts of chemicals than Kordon. Does not contaminate soil.	Kordon hotline 1 800 634 913 www.kordonmb.com.au
Timber Decking	Spotted Gum	Plantation grown timber which is more sustainable and less damaging to natural habitats than timber sourced from native forests.	Beards Hardware Cambpells Creek 5472 1270
Timber feature wall	Recycled oak stained with Sikkens transparent protective coating.	A long lasting Swedish stain which does not break down	1300 SIKKEN www.tenaru.com.au 1800 338 871
Walls	Hebel Wall Panels 75mm thickness	Aerated concrete has greater “R” insulation properties than brick so excellent thermal performance	Buildpro 615 Napier St White Hills 5448 3355 or www.hebelaustralia.com.au
Paint	Dulux Low Sheen low VOC (Volatile Organic Compounds) Paint	Low toxicity rating. Australian Made. Company has good environmental manufacture and disposal policies in place	Dales Discounts 5472 1586 or Google Dulux or any major paint manufacturer. Most have low VOC paint products available.

Many people have collaborated to make the Low Energy Solar Home a reality.

MASG House Working Group

As well as MASG staffers Ian Lillington and now Fran Woodruff, a group of people with an interest or skills in the area have been meeting voluntarily for some two years to plan and deliver the house. Over time the group has included Builder Trevor Butcher, Design concept team and advisors Lifehouse, Sue Turner, Deb Taylor, Felicity Faris and Peter Sansom.

The House concept, its construction & the Display Project

Trevor Butcher of Maine Design and Construction along with concept design advice from Lifehouse have made this project possible. Without their major interest, commitment and contribution it could not have occurred. The MASG part of this project has been made possible through a grant from the Victorian Government’s Sustainability Fund.

Major Contributions

Many suppliers and local businesses have helped to make this project a reality by donating items, offering discounts or pro bono services. Their contributions have helped to make this project a truly collaborative success.

MAJOR CONTRIBUTORS	MORE INFORMATION
House Builder Maine Design and Construction	Telephone: 5472 4144 castlemainekitchens@bigpond.com
Original Concept Lifehouse Design on a pro bono basis	Telephone: 5470 5584 lifehouse@impulse.net.au
Garden Landscape Plan Landscape Designer Phil Hansen has provided his expertise and advice and designed the garden on a pro bono basis.	Phil Hansen Landscapes Telephone: 0425 856 833 philhansen@southernphone.com.au
Solar Hot Water AAE have provided the solar hot water system for the house.	AAE Solar Hot Water Service chris@aesolar.com.au Telephone: 0400 547 315
Internal Blinds Luxaflex duette blinds kindly provided and fitted on a pro bono basis	Robinsons of Castlemaine Telephone: 5472 2828 ashley@terryrobinson.com.au
Stylist Debbie Taylor – Usethings has provided expertise and advice on a pro bono basis.	Debbie Taylor Telephone: 0414 814 993 debbietaylor@iprimus.com.au
Graphic Design Michael Wolfe Art & Design display and information graphics on a pro bono basis.	Michael Wolfe A&D Telephone: 5472 5224 mike@mrwolfevintage.com.au
Picture Framing Templeton Studio Picture Framers on a pro bono basis.	Templeton Studios Telephone: 5470 6446 www.templetonstudio.com.au

Aspect of House	Product, material or building method used	Why it was used	More Information
EQUIPMENT & FITTINGS Appliances	Fisher & Paykel cooktop and oven	Company's cradle to grave environmental policy	See www.fisherpaykel.com.au
Kitchen Benchtops	Laminex	The Laminex group has had an in depth environmental management system for many years.	Check out their Greenfirst product at www.thelaminexgroup.com.au
Window coverings	Luxaflex 'Duette' Architella Shades. 10 mm fabric blinds.	Can reduce heat loss through windows by up to 70%, thus reducing energy use and your heating costs	Robinsons 5472 2828 Email: ashley@terryrobinson.com.au
Quilt blinds	Louise Moysey	Quilted natural wool with cotton covers insulate by trapping layer of still air. Reduces flow of cold or heat.	Louise Moysey 5472 1212 rmoysey@vtown.com.au
Ceiling fans	Hunter Pacific	Australian designed. Low energy use. Mercury free fluorescent globes.	Lighthouse 5443 5911
Floor tiles	Ceramic Floor Tiles	Affordability. Provides good thermal mass.	Dales Discounts 5472 1586 castlemaine@paintright.com.au
Carpet	Victoria Carpets	100% pure NZ wool. Locally made. Company participation in MASG Sustainability Project.	Midland Floorworld Telephone 5422 2635

Aspect of House	Product, material or building method used	Why it was used	More Information
Roof Eaves	Wider than usual at 1200mm out from the walls	Provide correct angle for shade on north windows in summer & sun in winter	See diagram on the walking map in your Information pack.
Insulation	Ceiling R 6.0 'Gold' glasswool batts in all ceiling space. The 'R' rating refers to resistance to heat energy flow.	R 6.0 where usual in roof is R 3.5. Sealed joints in sisalation to eradicate small holes which are detrimental to efficiency	Use higher rating batts and ask your builder to seal joints.
Windows & Doors	Aluminium frames	Difference between using rainforest timber or aluminium frames with higher embedded energy in production probably about even. Affordability a factor in choice	For a comparison of ratings for windows check the web at www.wers.net
Windows	Double glazing	Maximises warmth in winter and coolness in summer. Low E or comfort plus glass also effective. Skylight is double glazed with Low E film.	See www.wers.net Stegbar – contact 5441 5316 or Google Stegbar
Windows	Casement style	Casement instead of awning to enable maximum airflow and to open to provide cross ventilation for summer cooling.	See www.wers.net

Aspect of House	Product, material or building method used	Why it was used	More Information
Windows	Flywire screens	Encourages windows to be open to provide air and cross ventilation while blocking bug entry	Any hardware store
External doors	Door seals on all external doors	Assist in prevention of heat entry/loss	Ask your builder to seal all external doors
Thermal insulation	Walls Bradford R2.5 glasswool batts to all exterior walls	Provide greater insulation for winter warmth, summer cool	Local provider Matt Skinner 5464 2357
Insulation	Junctions between window/door frames and wall frames packed this is not usual	Additional way of preventing heat leakage	Ask your builder to pack junctions
HOUSE SYSTEMS Shower heads	Reduced flow showerheads fitted	Minimize shower water used	Reece Plumbing Centres 5472 2711 www.reece.com.au
Instant hot water	Chilli Pepper Smart Water System	Smart water system recycles all cold water cutting time waited for hot water thus saving water	Reece Plumbing Centres 5472 2711 www.reece.com.au See leaflet in your info pack
Taps	Dorf Avanti range	5 Star rated basin mixers run at 6-8 litres minute compared to usual 15-18 litres.	See www.waterrating.gov.au or Reece Plumbing as above

Aspect of House	Product, material or building method used	Why it was used	More Information
Toilets	Caroma Smart flush	Most dual flush toilets are 6/3 litre. These are 4.5/3litres.	See www.caroma.com.au Reece Plumbing as above.
Hot water service	AAE 250 litre 20 tube evacuated tube solar hot water split system. 5 star rated instantaneous gas boost unit.	Solar system boosted by gas is greenhouse gas emission friendly. High efficiency collector. Frost protected to minus 15 degrees without anti freeze liquid.	AAE Solar See www.aaesolar.com.au 1300 303 779
On site water collection	13,500 litre Aquaplate Rainwater Tank can supply house or can be switched to supply toilets or garden only.	To supplement or replace scarce town water supply for house, or toilets and for the garden.	Any Tank Supplier fitted by licensed plumber.
Greywater recycling treatment	Watt Works grey water recycling system.	Shower & bath water retained, recycled to flush toilets. All excess water is released daily to the sewer/septic or for re use in the garden.	Telephone 9888 3117 www.wattworks.com.au
Gas heating	5 star BV5-30 Bonaire gas ducted heating system.	Usual star rating used is 3. For use in extreme temperatures. Passive solar design is expected to limit use.	See www.bonaire.com.au
Solar panels	1kw solar system Sunniboy Inverter, Schott PV Panel.	Savings on energy can be 50-75% on power in one year.	1800 664 078 www.clickcontrol.com.au