

HIA GreenSmart Professional of the Year 2009

ecoMaster

Lyn Beinat – Chief Executive Officer



Approach to Design, Building, Professional Service or Client Management - A : Individual Philosophy

Why We Exist

My individual philosophy is that our generation's lifestyle should not be consuming the resources of future generations.

Climate change is a major threat to the earth as we know it.

The built environment contributes between 30% and 40% of total green house gas emissions. There are 8 million homes in Australia. New homes account for approximately 2% of all housing stock. The vast majority of the housing stock has not been built in regard to energy, water or waste efficiency.

Developing a repeatable, scalable, professional, cost effective service to retrofitting homes to **permanently improve** their comfort and energy / water efficiency is vital. Retrofitting the existing building stock to a very high level of energy / water efficiency is vital.

This has driven the development of this company and is the sole purpose of ecoMaster. The road is long and the damage done is already high. Time is short. We need to change quickly.

Our Approach

ecoMaster provides thermal performance and energy / water efficient solutions for existing homes. The key objective of the business is to reduce / eliminate greenhouse gas emissions from the built environment.

This is done via an ecoHome assessment that provides the householder with a prioritised and costed roadmap and a complete and comprehensive implementation service – a one stop shop.

The report contains two components:

- Behaviour change that empowers the householder to implement simple behavioural changes that will reduce their energy / water consumption.
- Retrofit solutions that normally include energy efficient lighting, draught proofing, ceiling, wall and underfloor insulation, secondary glazing or replacement double glazing, shading solutions, passive solar heating, solar hot water, water harvesting technologies and water reduction strategies.
- Renewable energy options such as 100% accredited green power and the installation of photovoltaics.

Our installation teams have been utilised by many of our clients to reduce their impact on the environment, save energy and improve their home comfort - warmer in winter and cooler in summer.

Other clients have taken our roadmap and continued their sustainability journey on a DIY basis.

Growing from two staff to over twenty in a five year period, we are beginning to achieve our objective. The groundswell of customers continues to grow. We have moved three times to make way for the increased number of staff and the opportunities that we have created.

History

ecoMaster's expertise comes from over five years of research, development, prototyping and innovation to improve the thermal performance of the built environment, and significantly reduce greenhouse gas emissions. The resulting products combine the best technology from around the world with an innovative view of what can be achieved through persistence.

Global Vision

That the built environment can be truly sustainable.

ecoMaster Vision

To be the premier climate change solution provider for the built environment.

Making a REAL difference. tread lighter - live better

ecoMaster's Mission

To provide practical and accessible solutions to **permanently reduce** the environmental footprint of the built environment.

Values

Honesty, integrity, quality, commitment, teamwork, respect, loyalty, innovation, work - life balance.

The Opportunity...

The working experience of a lifetime with amazing growth potential.

B: Effectiveness in Creating or Leading Change in the Housing Industry

Five star new domestic building standards will take many years before they result in a meaningful reduction of greenhouse gas production. Given that existing housing stock represents the vast bulk of accommodation, effort and encouragement needs to focus on retrofitting the existing housing stock to reduce overall greenhouse gas production from the domestic sector.

ecoMaster works towards leading change in the housing industry by:

- Creating and developing an **affordable sustainable retrofit service and technologies** where none previously appeared to exist
- Remaining in business whilst everybody else went broke! (Particularly so in NSW) refer to Easy Being Green, Neco etc.
- Researching, developing and patenting technology for **secondary glazing**
- **Retrofitting social housing** (those who can least afford high energy bills) in conjunction with the local council
- Conducting mass home retrofits for **Yarra City Council** – 60 homes with a 15% energy reduction target (this project is currently underway).
- Conducting home retrofits for Aged Care individuals in the **City of Banyule** (currently underway).
- **Sustainability Victoria** sought our expertise as one of two businesses that contributed their intellectual property in the development of SV's Home Assessors course.
- **ABSA** – provision of ecoMaster's assessors training course materials and assessment reports for Federal Government Green Loan Program
- **Department of Sustainability and Environment** – ecoMaster conducted a series of sustainability audits for homes nominated for Open Garden Scheme
- **Victorian Department of Primary Industry** – ecoMaster provided detailed submissions for the development of the Victorian Energy Efficiency Target scheme.
- Provided orientation tours for Victorian Department of Primary Industry and **Essential Services Commission** staff on retrofitted homes in the Melbourne CBD area as background for the Victorian Energy Efficiency Target scheme.
- **Australian Conservation Foundation** seek our expertise for their GreenHome Project in Victoria
- **Moreland Energy Foundation** – engaged ecoMaster to retrofit homes funded by Sustainability Victoria.
- **Victorian sponsor of Sustainable House Day** in September each year.

The major project this year has been the Department of Environment, Water, Heritage and the Arts. ecoMaster was selected as 1 of 6 national organisations to conduct Home Sustainability Assessment Training for the new Low Interest Green Loans Scheme. ecoMaster has trained over 150 assessors nation wide with outstanding results (satisfaction ratings in the high 80%).

C. Identify who is in our sphere of influence with your business in promoting improved environmental outcomes and explain how you influence them

Federal Government

ecoMaster's circle of influence has expanded rapidly over the last year.

- ecoMaster has been heavily involved with the **Department of Environment, Water, Heritage and the Arts**.
- **ABSA** – provision of ecoMaster's assessors training course materials and assessment reports for Federal Government Green Loan Program
- ecoMaster was **selected as 1 of 6 national organisations** to conduct Home Sustainability Assessment Training for the new Low Interest Green Loans Scheme.

Influence:

- Redevelopment of the training course from a theoreticians course to a practitioners course.
- ecoMaster has **trained over 150 Home Sustainability Assessors** from their offices in Gisborne.
- Home Sustainability Assessors have ranged from Professors of Environmental Science, designers and builders to environmentally passionate 'stay at home' parents; travelling from Perth, Brisbane, Sydney, Tasmania and of course Melbourne to attend the training. Training results have been outstanding, with satisfaction ratings in the high 80% with some in the 90% range.
- ecoMaster has conducted ongoing feedback / commentary on the development of the Green Loans Scheme based on our existing operation – practical solutions to problems being encountered in the development of the scheme (such as the removal of the Green Renovation Pack and replaced with Green Vouchers).
- Completing a full report on the design, delivery and efficacy of the Home Sustainability Training course.

State Government

- **Victorian Department of Primary Industry** – ecoMaster provided detailed submissions for the development of the Victorian Energy Efficiency Target scheme.
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- **Sustainability Victoria** sought our expertise as one of two businesses that contributed their intellectual property in the development of SV's Home Assessors course.

Local Government

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D. Demonstrate how you are expanding your knowledge and keeping abreast of changing trends

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- Through our work with the Federal Government, we are involved in the development of trends within Australia – rather than staying abreast of them.
 - The Green Loans scheme has the capacity to generate between 1,000 and 2,000 home sustainability assessors nation wide.
 - The Green Loans program will introduce 360,000 home sustainability assessments over the next 5 years (with this number set to increase)
 - The scheme is expected to generate 200,000 x \$10,000 green loans over 5 years and save over 200,000 tonnes of greenhouse gas emissions.
 - ecoMaster continue to conducts its own research and development into cost effective retrofit solutions.
 - Training 150 people has given us incites into the ‘state of play’ in the green industry.
 - ecoMaster’s library is extensive, wide ranging and constantly building.
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E. Current evidence of building the GreenSmart way or providing a service that demonstrates the incorporation of GreenSmart principles

ecoMaster Test Home – Case Study

GreenSmart Principles:

- Introduction of energy efficiency technologies, behaviours
- Introduction of water reduction strategies
- Reduction of waste

All retrofitted technologies:

- Ceilings rated at R5.9 in summer and R5.2 in winter
- Walls rated R4.0
- Secondary glazing on 80% of all glass in the home
- Thorough draught proofing
- Replacement of 34 halogen downlights with a mix of LEDs and CFLs
- Installation of a hybrid evacuated tube solar hot water system with fuel stove boost
- Installation of pelmets (including invisible pelmets) on all windows – to complement heavy drapes
- Installation of solar reflective blinds
- Installation of two different passive solar heating systems
- Installation of smart meter and winner tariff to allow for load shifting
- Switching to 100% accredited green power to produce a 0 emission home
- Installation of NASA technology skylight to introduce natural light in dark areas
- Installation of solar drying technologies
- Installation of save water technologies on taps
- Introduced winter heating zoning
- Introduction of a recycling centre

Highlights:

- This home was rated 1 star at the beginning of the retrofit.
- It now rates over 6 stars.
- Reduced greenhouse gas emissions from 22 tonne to 0 tonnes
- Reduced summer temperatures by 5 to 10 degrees - on Black Saturday, the external temperature was 46 degrees, the home operated at 28 degrees (with no air-conditioning)
- Improved winter temperatures by +8 degrees
- Reduced winter heat costs from \$2,500 to \$400
- No air-conditioning is used, nor required
- Cost of hot water for a home of 6 people – 77 cents per annum
- Zero water usage from town water – totally water self-reliant
- 1 x 10 litres of hard waste per week (for a family of 6)

F. What are your learnings from any showcase or experimental project incorporating environmental issues

ecoMaster is continuously learning by developing retrofit technology, client feedback / requests, Home Sustainability Assessment feedback, etc.

The learnings are too many to itemize but a brief summary as follows:

- Home owners are passionate about halogen down-lights. We have sought many energy efficient solutions to offer in their place. The uptake of these solutions has been incredibly high.
 - LED technology with plug and play solutions
 - Energy efficient alternatives that fill the space of halogens, and can be insulated over
 - Home owners are unaware of the impact of draughts on their heating / cooling energy use.
 - We have developed a huge range of technologies to deal effectively with draughts from a number of sources
 - Making energy usage visible by means of in home energy readers can result in huge reductions in energy – just via behaviour change.
 - One Home Sustainability Assessor has reported a fall in daily energy consumption from 25 kW / day to 7 kW / day – just from behaviour change.
 - The ultimate learning for us this year has been:
 - ‘To never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.’ Margaret Mead
 - Via the Home Sustainability Assessor Training we have met 151 committed individuals – we look forward to some amazing energy reductions being made via the Green Loans program brought about by us training those individuals to an incredibly high standard.
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G: Outline how environmental issues have been incorporated into decision making processes for your business

Business Approach

ecoMaster embodies the HIA GreenSmart principles.

HIA GreenSmart principles involve a more optimum use of resources.

In focussing on the retrofit market we examine the **energy efficiency** of the existing home and then **choose materials** and systems that will maximise their improvement.

ecoMaster, where possible, improve the original **passive design** of a home by introducing measures to optimise the passive components of the home. Eg. Installing solar light systems (velux etc) and recommending where external shading and deciduous planting would be beneficial.

We retrofit rather than replace (where possible) and we insulate over rather than remove. All products used are chosen for multi-function, highest quality, longevity and zero toxicity.

Internal Systems

ecoMaster recently moved to 20 year old premises that were derelict for the last 6 years. (maximise reuse!).

- The building is 0 stars and heavily dependent on artificial heating and cooling
- Has major eastern and western shading issues
- It is the ultimate retrofit project!
- We have a plan to commence retrofit to bring it to 6 stars commencing with draught proofing and shading options
- It is an excellent opportunity to educate the landlord as well.

ecoMaster

- Uses electronic correspondence wherever possible to minimise printing and paper use.
 - Uses 100% recycled paper and envelopes where printed documentation is required.
 - Proudly recycles envelopes!
 - Is situated next to the railway line (to enable staff to commute via train rather than drive).
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Staff Walk the Talk Too!

All ecoMaster staff are recruited because they want make a difference.

Some of the activities and behaviours of our staff include: a high use of public transport to work, live 'off the grid' on photovoltaics, 100% water self-reliant, nearly all have water tanks, most have developed self-sufficient gardens and blend sustainable living principles. All are retrofitting their homes to be more energy efficient.

H. How do you see the housing industry adapting to a changing environment e.g. modular housing, zero carbon emission housing

Future trends envisioned:

- Thoughtful design of new sub-divisions to encourage appropriate solar gain.
 - The elimination of covenants that insist of minimum home building sizes that are incredibly large or of a particular building material.
 - Enhancement of First Rate 5 star system to 10 stars as a minimum.
 - Orientation of all new build homes to be optimized for appropriate solar gain.
 - Construction of large numbers of zero carbon emission homes (they are already possible, but not common)
 - Incorporation of technologies to produce zero waste homes (zero food miles in particular)
 - Water self reliance becoming the norm rather than the 'new'.
 - The re-introduction of appropriate eaves into home design.
 - Designing out the necessity for air-conditioning / major heating input.
 - The elimination of halogen down-lights for all new buildings.
 - The creation of a new trade in thermal performance (like a plumber, electrician).
 - Retraining of the entire electrician / plumbing workforce into green technologies (it should be possible to speak to either of these trades and get solid green advice).
 - The continued emergence of grass roots demand for sustainable housing, and gaining considerable strength.
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I. Outline how you communicate your business philosophy

Public Presentations

All ecoMaster staff are passionate about climate change and retrofit solutions. We would easily have 5 – 10 public speaking events every month; occasionally more. A sample of those events are:

Guest Lectures

During 2008 - 2009 ecoMaster staff has spoken at:

- Ballarat University
 - Swinburne University
 - NMIT
 - Holmesglen TAFE
 - Mildura TAFE
 - Landcare groups
 - Rotary groups
 - U3A
 - Probus groups
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Open Days

Providing Open Day opportunities (including Sustainable House Day for the public and school groups to visit the ecoMaster test home.

Exhibitors & Presenters

- Exhibitor and presenter at Sustainable Living Festival 2007, 2008, 2009
- Exhibitor and presenter at Save Water Save Energy 2007, 2008
- Exhibitor and presenter at Seymour Alternative Farming Expo
- Exhibitor and presenter at Going Green Expo 2008
- Exhibitor at HIA Homeshow 2008
- Providing expertise at HIA Ask an Expert Stand at RACV 2007 & 2008
- Presenter at Breaze Ballarat Renewable Energy and Zero Emissions Greenhome Project in conjunction with Australian Conservation Foundation
- Presenter at Greening of Riddell Sustainability Talks
- Exhibitor and presenter at Boroondara Sustainable Expo
- Exhibitor at Stonnington Sustainable Living Expo
- Exhibitor and speaker at Warrandyte CAN
- Presenters to U3A at Gisborne, Riddells Creek, Woodend, Newham and Daylesford
- Keynote Speaker at Landcare groups
- Forum panel representative on Climate Change Forum in the Macedon Ranges

Sponsorship

- Exhibitor and Key Note Sponsor of Mt Alexander Sustainable Group Environmental Expo
 - Victorian sponsor of ANZSES Sustainable House Day – September 2007 / 2008 / 2009
 - Sponsor of Climate Change Forums in Batman and Melbourne Electorates
 - Sponsor of 9: The Expo in the Macedon Ranges in November 2008
 - Sponsor of The Gisborne Festival in March 2009
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Media Interviews & Presenters

- Interviews with The Age – Cover Story in the Domain in February 2009
 - A number of interviews with The Weekly Times
 - A number of interviews with local newspapers
 - Presenter on Foxtel’s How to Channel and Lifestyle Channel
 - Presenter on Foxtel’s new show ‘Owner Builder Australia’ (due for screening on 2nd July)
 - Radio interviews with various radio stations including 3AW
 - Consulted to ABC production “Carbon Cops”
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Awards

Raising public awareness of the significance of retrofit in the climate change equation:

- Winner of Excellence in New Business in the Macedon Ranges Business Award 2007.
 - Finalist for Excellence in Customer Service in the Macedon Ranges Business Awards 2008 and 2009.
 - Finalist HIA GreenSmart Professional of the Year Award 2008.
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Website

ecoMaster’s website is in its third complete re-write. We are continuing to develop concepts to make access to this technology easier.

J: List the principles, practices or products that you can see yourself using in the future to build the Green Smart way and why.

Retrofitting one home will not make a difference to Australia's greenhouse gas emissions. Retrofitting every Australian home, will.

The solutions that ecoMaster provides are many and varied. A single, one size fits all, approach does not work. Each house assessed has its own strengths and weaknesses from an energy efficiency perspective, depending on the past designer, builder, owner and DIY activity.

The ecoMaster approach is always the same:

- Understand the customer's individual circumstances, needs and desired outcomes.
- Understand the strengths and weaknesses of the existing home.
- Recommend the most appropriate actions to improve the energy and water efficiency of the home.
- Install the requested work for the customer to a very high professional standard.
- Post installation follow-up to ensure satisfaction.

ecoMaster's approach has been designed to be scalable and repeatable; from staff selection and training, assessment processes, client reporting, installation services, administration and post-installation follow-up.

We seek solutions to common problems that have applicability in many homes. Suitable solutions are developed if none are found to exist. At this stage, we are working on several projects to do with ventilation of existing homes.

GreenSmart Principles into the Future - Why?

We love our children. Their future should not be extinguished by the resource over-use (some might say 'greed') of current and previous generations. The threat of climate change is what gets us up at 5am every morning and work until late every evening.

Our children, and your children, deserve a future.

We will shift heaven and earth to ensure they get one.
