

Greener Houses

Growing Greener Neighbourhoods



5 Neighbourhood Houses
-living and evolving demonstrations
of sustainability



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Growing Greener Neighbourhoods project.

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www.nenetwork.org.au

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Working documents and training and information materials from the Greener Houses project
can be found at www.nenetwork.org.au

“To everyone who
was involved,
especially the
Greener Houses
volunteers whose
energy and
enthusiasm was
inspirational”



The transformation of five Neighbourhood Houses to 'Greener Houses' was made possible by investment
from the Victorian Government, The George Alexander Foundation, The Helen Macpherson Smith Trust,
City of Yarra, City of Banyule, City of Darebin, Shire of Nillumbik and City of Whittlesea.



The Greener Houses project is supported through the EcoLiving grants program,
funded by the Victorian Government's Sustainability Fund



Richmond and Allwood are converted weatherboard homes over 100 years old. Watsonia was a three bedroom brick veneer family home from the 1940s.



What Greener Houses Growing Greener Neighbourhoods achieved



Greener Houses Growing Greener Neighbourhoods provided an exciting opportunity for Neighbourhood Houses and local volunteers to take action on climate change in their communities, learn new skills, and help others to take action too.

Together we created five 'eco-living' Neighbourhood Houses in Melbourne's northern suburbs.

- Recruited 59 volunteers at five Neighbourhood Houses
- Empowered and trained volunteers to develop plans to retrofit four Neighbourhood Houses
- Transformed the four Neighbourhood Houses by implementing the volunteers' Retrofit Plans
- Created a new 'eco-living' Neighbourhood House
- Formed partnerships with businesses in the sustainability industry to be part of the implementation of the volunteers' Retrofit Plans
- Trained volunteers in community engagement skills
- Empowered volunteers and Neighbourhood Houses to share their eco-buildings and their sustainability knowledge and skills with their local communities



Neighbourhood Houses (Left)

- 1 Richmond Community Learning Centre, in the City of Yarra
- 2 Allwood Neighbourhood House, in the Shire of Nillumbik
- 3 Jika Jika Community Centre, in the City of Darebin
- 4 Creeds Farm Living and Learning Centre, in the City of Whittlesea
- 5 Watsonia Neighbourhood House, the City of Banyule



The five 'Greener' Neighbourhood Houses are living and evolving demonstrations of sustainability for local communities.

Volunteers: the sustainability learning journey

Greener Houses Growing Greener Neighbourhoods has embedded sustainability knowledge and skills in five local communities by training over fifty volunteers in home sustainability and empowering them to plan the retrofits of their local Neighbourhood House.

Volunteers came from many walks of life and shared enormous energy and enthusiasm for learning about home sustainability, and wanting to make a difference in their local communities about the environment.¹

Ranging in age from 20s to 70s, about 60% were women. Many were relative new-comers to home sustainability, others had already given their own homes a thorough green makeover, but most were somewhere in the middle. Some had technical backgrounds in engineering and physics while most had no, or limited technical backgrounds. Our volunteers included artists, administrative officers, university students, pensioners, people who were unemployed, retired school teachers and librarians.

Empowered and trained the volunteers to develop Plans to retrofit four Neighbourhood Houses

Greener Houses volunteers' challenge was to find ways to retrofit four Neighbourhood Houses.

Richmond and Allwood are converted weatherboard homes over 100 years old. Watsonia was a three bedroom brick veneer family home from the 1940s. Bedrooms and living rooms have been converted to classrooms and community spaces. Jika Jika started life as a local theatre in the 1920s. They all have kitchens and toilet facilities.

The volunteers' Retrofit Plans are impressive, comprehensive and a testament to their enthusiasm, commitment and attention to detail – and the effectiveness of working together.

The project took volunteers on a "sustainability learning journey" gradually building knowledge, understanding and skills through seeing and doing, experiencing, reflecting, thinking, discussing, researching, sharing and deciding what was needed in each of the Houses and how to get there.

Volunteer Recruitment

- Greener Houses advertised for volunteers using posters and ads through Neighbourhood Houses, local Councils, other NGOs and at community events.
- People decided 'Is the project for me?' through Eco-Living Volunteer Information Kits, and information sessions.
- Volunteers signed up using the Eco-Living Volunteer Application Form

¹ More detailed information on volunteers' age, employment, their previous experience volunteering, and their motivations for volunteering in this project can be found in Greener Houses Growing Greener Neighbourhoods Evaluation Project – Community Engagement, Phase 1. Volunteer Survey: Summary of Preliminary Findings, July 2010. Centre for Design, RMIT. See pages 19 – 22.

‘Education for Sustainability’ provided the missing framework and fitted well with the culture of Neighbourhood Houses.



Education for Sustainability

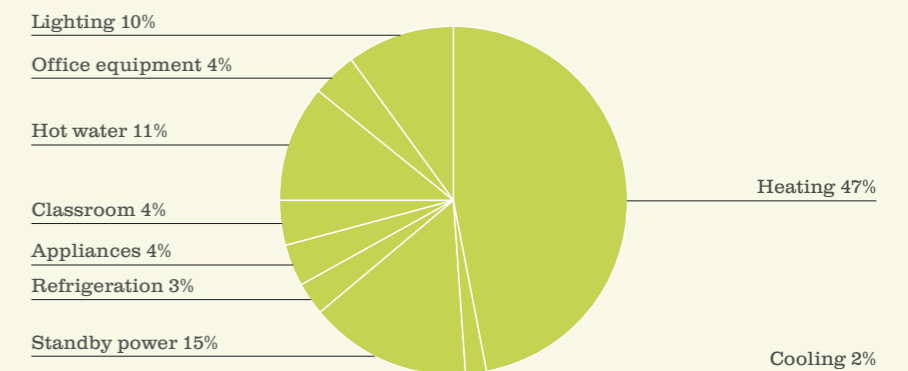
“Providing information and raising awareness are important, but so too is building individual and organisational capacity...to... implement solutions..”

Living Sustainably: The Australian Government’s National Action Plan for Education for (p8)

www.environment.gov.au/education/publications/pubs/national-action-plan.pdf

Fig 2

Energy use at Jika Jika Community Centre before retrofitting: results of volunteers’ audit



Workshops - volunteers attended a series of four sustainability information workshops at the beginning of the project. Later there were practical in-depth sessions to help formulate the retrofit plans on: water efficiency, green purchasing, and energy efficiency measures including passive design, lighting, heating and cooling as well as renewable energy and the energy efficiency computer software program, FirstRate 4.

Hands-on - volunteers at Watsonia, Richmond and Allwood held eight working bees to seal the draughts in their old and very draughty buildings.

Auditing - volunteers measured the energy used at the house using energy bills and power usage meters. See the pie chart of energy use at Jika Jika.

Analysis - volunteers used the information from the audits to understand how energy was used in the Houses and what retrofit actions could achieve good results

Research options - volunteers researched options for retrofit actions that would save energy, reduce costs and greenhouse pollution.

Decision-making - each volunteer group developed criteria to help them choose between the options

Retrofit Plans - the volunteers Retrofit Plans typically comprise about 20 actions in priority order, starting with small, but important actions like reducing stand-by load and draught sealing; right up to major items like solar panels and, at one House, completely re-building a particularly inefficient room. A list of all retrofit actions is on page X.

Information not enough

A key turning point in the project was the realisation that information workshops would not, on their own, enable the volunteers to work together to formulate their Retrofit Plans. ‘Education for Sustainability’ provided the missing framework and fitted well with the culture of Neighbourhood Houses. It emphasises learning by doing and transforms information and knowledge into action and change. Swinburne University’s National Centre for Sustainability specialises in ‘Education for Sustainability’, and provided the necessary in-depth training for volunteers.

Energy use is lower, and so are bills, due to improved energy efficiency and the installation of solar power.



Eco-features installed in the Greener Houses

- Energy efficiency - Stand-by power eliminated with FutureSwitch; advanced draught sealing by EcoMaster, ceiling and wall insulation, add Thermalite to roof paint for added insulation
- Lighting - Solatubes, Belray Selectolite, retrofit existing, add clear roof to verandah, more efficient fluoro tubes, CFLs, LEDs, motion sensors
- Windows - retrofit EcoGlaze secondary glazing, new double-glazing, pelmets, drapes, roman blinds, external blind, heavy duty security screens for night purging,
- Ceiling fans
- Heating and cooling - upgrade to very efficient gas space heating, SolaMate passive cooling and solar heating system, ceiling fans
- Instantaneous gas hot water services
- Water - flow restrictors, replace single flush toilets with dual flush, water tanks
- Solar power - 19.62kW of solar panels
- Rebuild "glassroom" at Richmond Community Learning Centre



Images: (top to bottom)
 A) Drapes front meeting room - Watsonia
 B) New water tanks - 8 Plant Street
 C) Solatubes - Jika Hall
 D) Shade blinds - Watsonia
 E) Wall insulation - Richmond
 F) Installing double glazing - Richmond
 G) Window draught seal - Jika Jika
 H) Ecomaster draught sealing - Allwood
 I) Solatube installation - Jika Hall
 J) Rebuilding glassroom - Richmond





Creating a new 'eco-living' Neighbourhood House

Creeds Farm Living and Learning Centre



The Centre has generated enormous interest from professionals in the building and construction industry, senior staff in state and local government, community organisations, and Members of Parliament.

Visitors to Creeds Farm Living and Learning Centre, the new building in the Greener Houses project, love the openness of the building, the natural light, the feeling of being connected with the outside, and the central community space.

Creeds Farm took a different journey to the other four Neighbourhood Houses in Greener Houses Growing Greener Neighbourhoods.

The Building

Greener Houses worked with the partnership of government and non-government organisations whose job it was to build a new Neighbourhood House in the Aurora Housing estate in Melbourne's northern growth corridor.

Greener Houses went with the other partners and the architect on a Sustainability Learning Journey to ensure that the building design embodied good environmental design principles. This was vital so that the Centre could take its place with the other 'Greener Houses' as an 'eco-living' Centre and be an effective sustainability teaching and learning tool for the community.

After Creeds Farm had been open for a few months, we found, like many other new buildings, it needed a few adjustments. Greener Houses improved draught seals, added extra external shading and upgraded ventilation, to further improve comfort and environmental performance.

Unlike the other Greener Houses, Creeds Farm started life as an 'eco-living' Centre. Greener Houses worked with the Centre to establish the 'eco-culture' and policies before the doors opened, rather than transforming an existing culture.

Volunteers

Volunteers were also involved at Creeds Farm, tracking the construction of the building. Regular site visits helped staff and volunteers understand the design, and how it would work environmentally.

Creeds Farm chose furniture and equipment that would be healthier, cheaper, greener, for example:

- Photocopier/printer/scanner made from recycled materials, which are recyclable; no chemicals, it uses a wax made from vegetables for ink (like crayons)
- Stackable Chairs have frames that are 100% recycled plastic from car batteries the mesh seat is made of old safety belts, it weighs less than 4kg (9lb), which is 40% lighter than most stacking chairs
- Even the Stapler is staple-less - folding papers together at the top corner rather than using metal staples
- Dishwasher - 3 minute wash cycle, minimum water use

Eco-features of Creeds Farm Living and Learning Centre

- Oriented north to catch winter sun
- External shade screens and blinds screens
- Thermal mass - waffle pod slab and reverse brick veneer
- Ceiling and wall insulation, including internal wall cavities
- Daylighting - Solar tubes
- Double glazing
- Solar hot water
- Solar Panels
- Plantation timber framing - low embodied energy
- Floor coverings - locally made recycled cork and rubber
- Recycled water used to flush the toilets, and water the garden

Green Bond

Creeds Farm Living and Learning Centre has a Green Bond to encourage members of the community who hire the Centre for birthdays, workshops, and cultural events behave sustainably. If, for example, hirers leave lights when they finish, or put recyclables in the rubbish bin, they risk losing the \$100 Green Bond that they pay up-front.



Community engagement for Sustainability

Trained volunteers in community engagement skills

Empowered volunteers and Neighbourhood Houses to share their eco-buildings and their sustainability knowledge and skills with their local communities



Sustainable House Day*

Four Houses opened for Sustainable House Day in September 2011: Creeds Farm, Watsonia, Jika Jika and Richmond. About 100 people visited, most took a volunteer-led tour, or talked with volunteers. In an exit survey completed by about 90% of visitors, about 80% said they had never visited the Neighbourhood House before, and about half said the most enjoyable thing about the Day was the friendly and helpful people and the tours.

Virtually all visitors said that as a result of visiting the Greener House they would take action at home - most commonly nominating draught sealing, followed by installing Solatubes, insulation, FutureSwitches and solar PVs.

What visitors said:

'splendid guided tour, enthusiasm, knowledge' and the guide 'knows her onions' helpful staff and volunteers great people to talk to love the community focus met new community members

* An annual event run across Australia in mid-September by the Alternative Technology Association see: www.sustainablehouseday.com/



Greener Houses Volunteers' Fact Sheets

1. Skylights and natural lighting
2. Windows
3. Window coverings
4. Water tanks
5. Power meters - measuring your power use at home
6. Stand-by power
7. Insulation
8. DIY energy audit
9. Draught proofing

All available from www.nenetwork.org.au

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Skylights Fact Sheet

September 2011
A publication of the Greener Houses Project, 2011

The benefits of natural lighting

Natural lighting can help reduce energy use and this because electric lights aren't needed as much. Good natural lighting can come from well-placed windows, and from skylights.

A skylight can let in more than three times as much light as a vertical window of the same size. Even on a cloudy day, a good skylight can provide enough light to read a book or do the housework.

But poorly designed skylights can allow a lot of heat to escape in winter, and make rooms hotter in summer. They can also mean you need to use additional heating or cooling to keep the room at a comfortable temperature.

We list a series of tips to choose energy efficient skylights. It is also now possible to retrofit older style skylights to make them more energy efficient.

This sheet is a guide for design and the Public Technical Council (PTC) 2011. www.technicalcouncil.org.au

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Power Meter Fact Sheet

August 2011
A publication of the Greener Houses Project, 2011

Measuring your power use at home

Power meters can be used to measure how much electricity your power appliances are using while they are operating. This is done by plugging the power meter into the mains power socket, then plugging the appliance into the power meter.

- Measure the daily power usage for operating cost of an appliance
- Measure the per-run power usage of an appliance (good for dishwashers, washing machines, etc.)
- Compare power usage for different operating modes of an appliance (for example different settings on a washing machine)
- Compare power usage of different appliances that have the same use
- Check for power used by an appliance in standby mode (for example a TV in standby mode)
- Measure the amount of Greenhouse gas your appliance is generating

Instructions
Plug the power meter into the mains power then plug the appliance into the power meter. Press the FUNC key to toggle through the readings.

“The volunteers’ workshop with staff guided us through everything – it was easy to understand and ask questions. Growing up we had some ways to stay naturally cool, or keep the warmth in in winter but I couldn’t remember the details. The volunteers’ workshop simplified it. I could then explain to staff that had some doubts. I enjoyed the work shop, and have been confidently doing what they showed us since then. It’s also relaxing for both children and staff.”

Sue, Childcare worker, Jika Jika



“Nothing happens without conversation. Conversation, or at least interaction, is the carrier of social change. It connects people, decides social norms, and it’s how societies and groups make choices. In short: no buzz, no change”

Les Robinson

Greener Houses Community Engagement training drew on Les’ Enabling Change approach.
www.enablingchange.com.au
 See also ‘Enabling Change: A Master Class in program design for behaviour change’. Les Robinson Sept 2009

‘Hot spots’ of community activity Neighbourhood Houses are “hot spots of community activity”, according to a detailed census* of participation in Neighbourhood Houses in Victoria.

About 2000 people regularly participate in classes in activities at the five Greener Houses.

* Participation in Neighbourhood Houses: Results of the 2006 Census Department of Victorian Communities, 2006.



Volunteering with the Greener Houses project gave me the opportunity to de-mystify the science behind home energy audits; following the easy steps listed in the Greener Houses DIY Energy Audit Fact Sheet that I wrote, pretty much anyone can do an energy audit at home.

Nikki, Volunteer, Medical Physicist and mother of two!

“We want to make it ‘normal’ for people to stay comfortable with less air con and heating. We keep the hot day outside by keeping doors & curtains closed, and pulling down the shade blinds. We are encouraging people to do this at home too. Our sandwich boards tell people what they can do to stay comfortable. There’s one for hot days, cold days, in-between days and night time as well”.

Max Sargent NH title (?Assistant coordinator)

At Allwood NH living cheaper, healthier and greener is a cornerstone of who we are. And we’re here for the long haul. We’ll be offering sustainability courses and activities every term from now on and we’ll be open to the public for major events like World Environment Day. So come and join in..... we’d love to see you!

Vicki, Coordinator Allwood Neighbourhood House



Any teacher training starts with ‘begin where the learner is’ but actually doing this and not ‘talking at’ people is easier said than done. The National Centre for Sustainability (NCS) trained volunteers in community engagement: active listening, how to ‘read’ the audience; good adult learning - encouraging active participation; using ‘Action Research’ to improve engagement activities; behaviour change, group facilitation, and group ‘health’ and maintenance.

NCS Greener Houses training materials and report are available at:
www.nenetwork.org.au



“We live in a very old timber house which was built before Melbourne had running water, sewerage, gas or electricity - not exactly a green gem!

The number of things we wanted to do was overwhelming and way beyond our budget. Which one first? - better insulation, new toilet, replace the rotting windows, solar panels, efficient lighting?

We went around and around in circles trying to decide.

Then watching the Greener Houses volunteers plan the retrofit of Jika Jika Community Centre inspired me to plan our own retrofit which we’ll now do gradually as we can afford it

We’ve now made a start – the insulation and professional draught-stripping has made an enormous difference. We no longer need the heater blasting in the winter and even on hot summer days the lounge room stays blessedly cool”.

Annie, former Community Development Worker, Jika Jika

Greener Houses involved over 50 volunteers at five Neighbourhood Houses



Greener Houses Volunteers

Greener Houses Growing Greener Neighbourhoods would like to thank all the incredible volunteers who have contributed over the 3 years of the project. Your interest, time, effort and commitment have made Greener Houses possible.

Some especially dedicated people participated for the full three years. Others participated for shorter periods of time – some for the retrofit planning phase or for the community engagement phase; some found the project was not for them and others moved on due to changes in their lives (moving house, caring for others, new jobs, health, and new babies!).

Thank you to you all, your contribution is greatly valued. We look forward to the seeing the volunteer program at each of the 'eco-living' Neighbourhood Houses continue with the work you have started.

Victoria Alford
Helen Altmajer
Peter Appelman
Sue Arnold
Chris Artufel
Lysette Ashford
Aran Barker
Di Beaumont
Alphonse Benoit*
Romney Bishop*
Lisa Blake
Jane Blaxland
Julie Cain
Liliana Diaz-Tornros
Julie Edwards
Grant Edwards
Beryl Evans
Nicole Filippis
Debbie Firestone*
Lucinda Flynn
Keith Gifford
Marianne Gifford
Amanda Gilbert
Ursula Hara
Sandra Hardiman
David Holmes
Alister Huth*
Mario Ieraci
Chris Kent
Wolf Kimmel
Steven Lawson
Liz Lee*

Daniel McLauchlin
Mary Mesquita*
Sue Monigatti
Peter Moon
Venkat Narayanan*
David Nelson
David Nicholls*
Lily Nguyen
Manni Pasqualini
Melinda Payne*
Christine Pinniger*
John Pinniger
Michael Pivetta
Mychelle Potts*
Jemma Reinsch
Cathy Romeo
Virginia Ronai*
Sharyn Ross Rakesh
Kerstin
Schnekenburger
Nikki Shelton*
John Sully*
Ian Swann
Yvonne Taylor*
Kim Trang Tu
Huey Tz Moo
Mark Vassarotti
Simon Wark
Marcus Wee

*Volunteers who participated in both the retrofit planning, or tracking the construction of Creeds Farm; as well as the community engagement phases of the Greener Houses project



Four Houses were retrofitted, one newly built, and two supporting Houses that contributed resources, expertise and project governance.

Greener Houses Partners

North East Neighbourhood House Network is the regional association of 33 Neighbourhood Houses in the north-eastern suburbs of Melbourne. The network coordinated and managed Greener Houses in close association with the seven participating Houses.

Neighbourhood Houses

The project involved seven Neighbourhood Houses. Four Houses were retrofitted, one newly built, and two supporting Houses that contributed resources, expertise and project governance.

Allwood Neighbourhood House
Retrofitted

Creeds Farm Living and Learning Centre
New

Richmond Community Learning Centre
Retrofitted

Jika Jika Community Centre
Retrofitted

Watsonia Neighbourhood House
Retrofitted

Supporting Houses

Thornbury Women's Neighbourhood House
www.twnh.vic.edu.au

Fitzroy Learning Centre
www.fitzroylearningcentre.com

Local Government

The Cities of Yarra, Darebin, Banyule, Whittlesea and the Shire of Nillumbik provided grants and in-kind support to the project. The four Neighbourhood Houses that were retrofitted are owned by their local government.

National Centre for Sustainability, Swinbourne University - provided training for volunteers in home sustainability and community education, including evaluation of the community education work.

Centre for Design, RMIT University, undertook evaluation of the environmental performance of the Neighbourhood Houses before and after the process of retrofitting the buildings. The centre also undertook evaluation of the volunteer engagement and education.

Business partners

The project approached a number of businesses involved in manufacture, sale and installation of the products selected by volunteers in their retrofit plans, seeking their involvement as project partners. The following companies responded positively through the donation or partial donation of products or installation:

Belle skylights
- Solatubes and Belray Selectolite.
www.belleskylights.com.au

Bosch
- instantaneous gas hot water systems.
www.bosch.com.au

ecoMaster
- draught sealing, ecoGlaze secondary glazing, ceiling insulation.
www.ecomaster.com.au

Justrite
- retrofitted wall insulation.
www.justrite.com.au

Solamate
- solar air heating and cooling system.
www.sola-mate.com

The project has also enjoyed the very generous support of Chorus Studio. Chorus designed and produced all promotional and education materials as well as signage.



Richmond Community Learning Centre

92 - 94 Lord St,
Richmond
(In the City of Yarra)

T 9428 9901
E rclc@internode.on.net
W www.rclc.org.au



Jika Jika Community Centre

Cnr Plant &
Unions Sts, Northcote
(In the City of Darebin)

T 9482 5100
E office@jikajika.org.au
W www.jikajika.org.au



Watsonia Neighbourhood House

47 Lambourne Pde,
Watsonia
(In the City of Banyule)

T 9434 6717
E cherylp@watsonianh.org.au
W www.watsonianh.org.au



Richmond Community Learning Centre

901 Main Road,
Hurstbridge
(In the Shire
of Nillumbik)

T 9718 2717
E allwood@hurstbridge.org.au
W hurstbridge.org.au



Creeds Farm Living and Learning Centre

Cnr Redding Rise
and Snugburgh Way,
Epping North
(In the City
of Whittlesea)

T 8320 3973
E admin@cflc.org.au
W www.cflc.org.au

