

Edwardian charm

Veggies out front, scooter out back, an eco makeover pays homage to this Melbourne bayside home's past and a more environmentally sustainable present.

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FOR GEOFF FAGAN, RESTORING AND RENOVATING HIS

Edwardian weatherboard home was like "dressing up a 100-year-old grandmother for a birthday party". The makeover of the four-bedroom house in the Melbourne bayside suburb of Hampton was designed to give it a modern commitment to energy saving and sustainability, while retaining its heritage charm and quirks.

Traces of uneven skirting board, cracking plaster and a sloping floor despite restumping are just some of the imperfections that hint of the faded glory of this workers' cottage built in 1912. "We like her old lumps and bumps," Geoff says with a smile.

Geoff, an electrical engineer, and his wife Lindy, an aspiring sculptor, decided to sell their large family home in nearby Sandringham after their four children moved out. They bought the smaller Hampton house two years ago with the aim of tackling a renovation. Initially it was suggested they demolish the house and build a new dwelling, but for the self-described sustainability "fanatics" that would have meant tonnes of materials sent to landfill. It would not do.

Architect Roberta Rees identified the need to widen the passageways to bring more light and air into the house. Bizarrely, in the old design a person opening the front door was

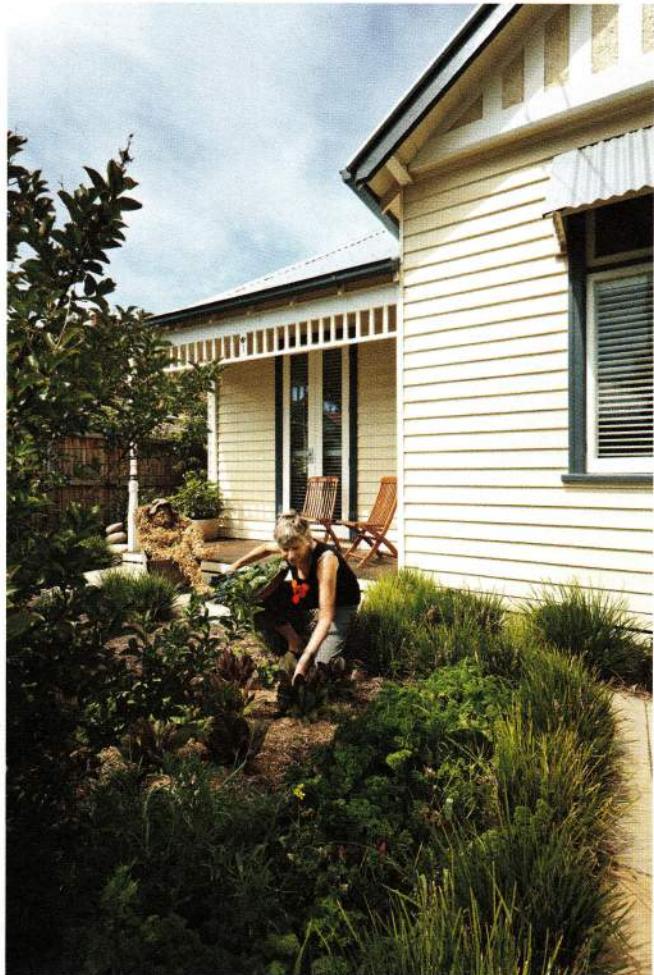
immediately faced with a toilet on their right. The redesign removed this toilet to increase the sense of space in the entrance and added a new bathroom next to the main bedroom.

To make full use of the sunny northwestern side of the house the old kitchen was replaced with a deck, onto which the dining area now opens through double-glazed bifold doors. A former sitting room on the south side of the dining area was taken out and a new kitchen installed. Moving the kitchen from one side of the house to the other was a major plumbing headache but it was important to improve the home's passive performance.

Bifold doors in four places in the new open plan dining, kitchen and lounge create passive cooling through cross-breezes. The couple have barely used their evaporative cooling air conditioner. "We nearly always get sea breezes at the end of the day, even on days of hot northerlies," Geoff says. To create a cooling microclimate, star jasmine has been planted and trained up trellises along the fences at each side of the house.

A range of sustainable products and features have transformed the house into an energy efficient and comfortable home. The renovation saw a 2.2 kilowatt solar photovoltaic system and a flat-panel solar hot water system installed. For insulation, foam was





Geoff and Lindy's front vegetable garden, fed primarily by greywater and rainwater, is a plentiful producer and a talking point for passers-by. The garden complements their renovated and heritage-restored house in a bayside Melbourne suburb.



Windows and bifold doors allow for multiple options for cross ventilation and maximise afternoon sea breezes.

injected through the internal lath and plaster walls so as not to disturb the original weatherboards. Insulation was fitted over the ceiling and insulating foil-polyester sheeting was installed under the wooden floor. The couple also salvaged Baltic pine floorboards from the demolition and reused them in the hallway and family room.

Avoiding energy-hungry slab heating, infra-red lamps were installed in the bathroom. Three natural skylights as well as CFL and LED lighting complement the couple's energy saving efforts. Conscious of enhancing the heritage character of the home, the couple replaced the pressed metal tiles on the roof with reflective zincalume. Inside, they added cornices, ceiling roses and picture rails.

One of Geoff's proudest eco achievements is perhaps one of the least fashionable – the toilet cisterns. In the two toilets the cisterns sit above the ceiling, allowing gravity to do much of the flushing work. Geoff says that a half-flush, described as being "like Niagara", is usually sufficient. Other water saving measures include three 1800-litre rainwater tanks under the rear deck and a greywater system that feeds the garden.

Geoff and Lindy are keen to spread the message of sustainable living. They removed the old concrete driveway to open up the front yard for planting. Now, with bountiful herbs, vegetables and fruit trees in view, their house has become a talking point in the neighbourhood. Passers-by

stop to admire the crops of lettuce, spring onions, broad beans or plums and chat as the couple work in the garden. Lindy, who has created a sculpture of a straw woman reclining on a wheelbarrow on their front deck, says she often puts a bucket of veggies out on the pavement for neighbours to share.

After living in the house for over a year now, Geoff does have a few things he would change were they to do it all over again. In particular, he would invest in a dishwasher and washing machine with hot and cold water inlets so they could connect to the "free" hot water system; skylights in the bathroom would be slightly larger given their placement on the southeast side of the house; and a southwest-facing window in the laundry would be moved to face northwest. Despite these and other "minor niggles", Geoff and Lindy are very happy with the time and money they have invested in their new home. "The liveability here is so fabulous – it's warm in winter and gorgeous in summer," Geoff says. He adds that the total expense of the renovation–restoration of just over \$400,000 is about right because demolishing the house and building a new one would have cost about the same.

Sitting peacefully in her bayside street, there's no question that this 100-year-old Hampton grandmother approves of her new green party dress – as well she might. **S**



"The northwest-facing deck is ideal for winter lunches or afternoons, or to escape gusty sea breezes; the southwest-facing deck is undercover and ideal for hot summer days," says homeowner Geoff.



A bicycle, or a scooter out back, are Geoff's preferred transportation methods. A solar PV system and flat panel solar hot water system are placed at the back of the house to conceal them from view from the street. Star jasmine grows on trellises and fruit trees grow at the side and rear boundaries of the house.



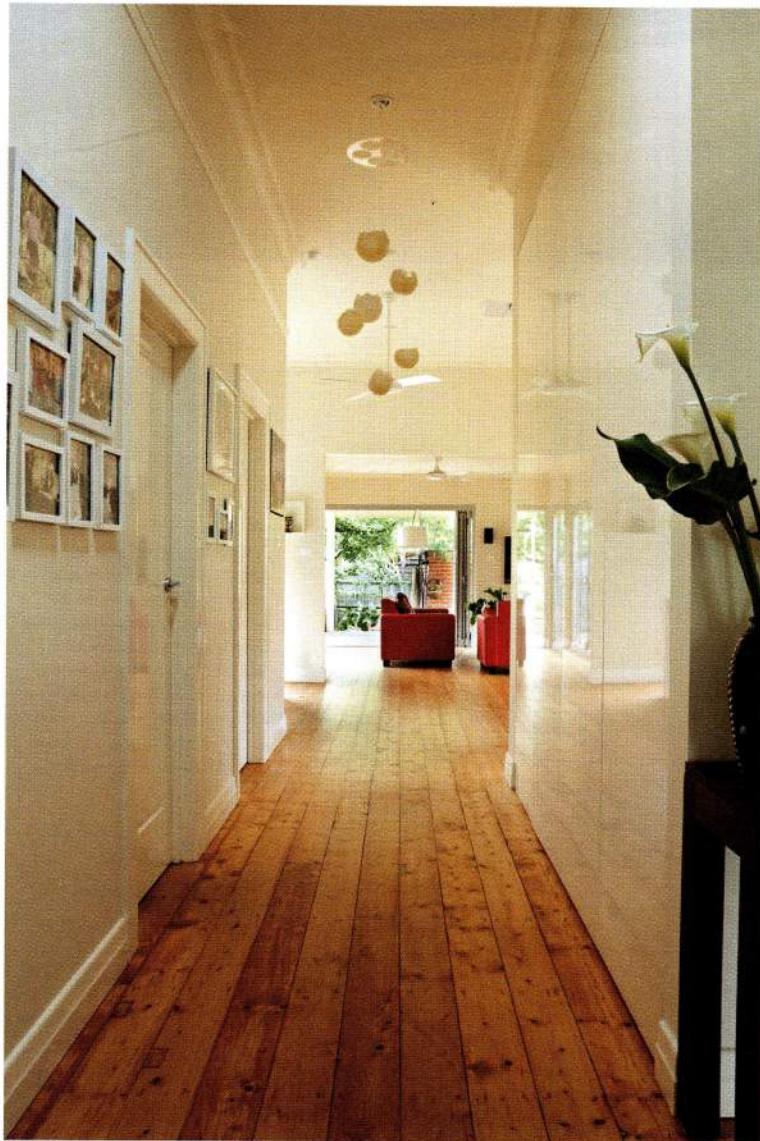
All downpipes feed three 1800-litre rainwater tanks under the rear deck which supplies water to the toilets, washing machine, the evaporative cooling system and four garden taps. Original materials were salvaged from the demolition and upcycled into garden sculptures, such as this one framing the garage door.



A well-insulated study and music room near the front door leads on to a northwest-facing deck. Downlight hoods cover CFL and LED downlights in the insulated ceiling. Underfloor foil insulation was installed to improve the home's energy performance and comfort.

**LEGEND**

- ① Bedroom
- ② Bathroom
- ③ Kitchen
- ④ Dining
- ⑤ Living/family
- ⑥ Laundry
- ⑦ Toilet
- ⑧ Garage/store
- ⑨ Deck

FLOOR PLAN

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Baltic pine flooring salvaged from the old house's rooms was reused in the wide hall, the kitchen and living areas and finished with a natural oil. One of homeowner Lindy's sculptures hangs as a feature in the hall.

Heritage considerations & features

- All eco-features, such as solar PV, hot water panels, skylights and the evaporative cooler, are located so as to be barely visible from the street
- Tri-colour external colour scheme to maintain heritage look
- Existing front bedrooms painted with signature heritage room colours
- Front verandahs restored with turned posts and Edwardian frieze reinstated, original jarrah boards repaired and front fence designed with colours to match
- Four new leadlight windows were inspired by the old front door.

Hampton house

—Specifications

Credits	Sustainable Features
DESIGN Architect Roberta Rees, Roberta Rees and Associates	HOT WATER - 250L Aquamax gas-boosted split system solar hot water. “The gas boost is turned off for half of the year,” says Geoff.
DETAILED DESIGN Peter Hendy Design Drafting	WATER SAVING - Bosch energy and water-saving appliances - Downpipes feed 3 x 1800L poly rainwater tanks under the rear deck. Filtered overflow is fed into local stormwater system. - A Davey RainBank 770W electric pump feeds three toilets, clothes washer and four garden taps. Supply reverts to mains water if tanks are dry. - Rainwater-fed CoolBreeze QAD 160 evaporative cooler from Dale Air. To secure the manufacturer’s full warranty for this setup a special in-line filter was added.
LANDSCAPE DESIGN Rae Jones-Evans	- Rainwater-fed Caroma toilet cisterns placed 3.4 metres high in the ceiling maximise half-flush power - Gator Pro 90L greywater filtering and pumping treatment system.
BUILDER Owner built with project guidance by Tony Hulse, Beachside Builders	
PROJECT TYPE Renovation	
PROJECT LOCATION Hampton, VIC	
COST \$400,000 (incl. prof. fees)	
SIZE House 175 sqm, decks 81 sqm, studio 33 sqm, land 459 sqm	RENEWABLE ENERGY - 2.2kW solar PV system with Solarfun panels and a SolarKing inverter installed by Solargain.
	PASSIVE HEATING & COOLING - Window and bifold door placement maximise cross ventilation options and take advantage of afternoon sea breezes - Star jasmine and trees planted on both sides of the house help create a cooling microclimate - Draught sealing.
	ACTIVE HEATING & COOLING - Ceiling fans throughout from Bunnings Warehouse - Ducted gas heating - Two 150W infrared globes are set high in the bathroom’s ceiling.
	BUILDING MATERIALS - Baltic pine flooring salvaged from the old house’s rooms was reused in the new hallway and family room. It was topped up with matching boards from Recycled Classic Floors and finished by Anro Floorcare. - Original jarrah decking on front verandas was repaired, sanded and treated - Re-roofing with zicalume corrugated iron to retain heritage look.
	INSULATION - External walls injected with Ecofoam through lath and plaster walls to limit damage to existing weatherboards - New walls insulated with 90mm thick (to match studs) Tontine R1.5 polyester batts - Kingspan Permifloor 500 underfloor insulation - Ceiling insulated with two layers of 100mm Tontine polyester batts above plaster, plus sarking of heavy aluminium foil and 50mm fibre blanket under the corrugated iron - Draftstoppa seals over all ceiling fans.
	WINDOWS & GLAZING - Existing windows retrofitted with double glazing and reused where possible - Retained heritage windows at the front and side of the house were draught-proofed, additional shading was added, and internal shutters were installed - Glazing in new aluminium-framed windows is double-glazed and argon-filled toughened glass with a low-emissivity coating from Nu-Line Windows. The powder coated, aluminium frames were chosen to minimise maintenance in a seaside location. - Timber-framed double-glazed french doors from Canterbury
	Windows for heritage feel. - Plantation shutters from Accent Blinds and a Celebration folding-arm awning from Victory Blinds limit direct summer sun.
	LIGHTING - Three Solatube skylights - Compact fluoro and LED lights throughout - Two light circuits per room - Tenmat FF130 loft cone cellulose insulating hoods are placed over CFLs.
	PAINTS, FINISHES & FLOOR COVERINGS - Oxford Plush New Zealand wool broadloom carpet from Prestige Carpets fitted over a recycled foam crumble underlay - Livos natural oils on floorboards.
	GARDEN - Edible gardens where site orientation allows - Nine Greensmart planter boxes near kitchen for herbs and salads - Original materials salvaged from demolition and upcycled into garden sculptures - Landscaping by Grand Designs Landscaping and Second Sun Landscaping saw stone paths realigned, an edible front garden installed and side and rear boundaries greened with trellises and fruit trees.
	OTHER ESD FEATURES - Decks oriented in various directions to enable outdoor living in different seasons and wind directions - Outside undercover clothes line - Doo Doo Loo worm farm - AeroBin 400 compost bin insulated for quicker composting.