



Two weekends in 2013  
**15-16 & 22-23 June**

# Eco Open Houses Brighton & Hove



[www.ecoopenhouses.org](http://www.ecoopenhouses.org)

Visit new and renovated houses that demonstrate how to reduce your energy and water bills

With funding from



Department of Energy & Climate Change



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# Welcome to the sixth Eco Open Houses

15–16 June and 22–23 June 2013



**This year Eco Open Houses is bigger than ever, running over two weekends in June, delivered as part of the European ECOFab 2 and Green Deal Pioneering Place projects.**

In February of this year the government launched a new way to pay for energy efficiency measures called the Green Deal. Since then we've been busy teaming up with the Pioneering Places project to showcase the Green Deal in Brighton & Hove. Assessments have been carried out and measures have been installed as part of the project and six of these houses can be visited during Eco Open Houses. These houses are identified in the brochure by a green house number and their features are highlighted with this Pioneering Places logo:



These houses highlight that significant savings can be made from fairly modest investment. To read more about the Green Deal and the Pioneering Places project see pages 28 and 31.

The other exciting local collaboration for Eco Open Houses this year has been with the Eco Technology Show in Brighton on 14–15 June. The show has over 100 exhibitors and talks demonstrating cost effective ways to renovate a property to be more energy efficient, some of which are installed in the Eco Open Houses. For more details about the Eco Technology Show see page 17.



All these events show that it doesn't necessarily take expensive renovation to cut bills: behaviour changes and small alterations can make a big difference.

So whether you are a home owner or tenant wanting to find out what you can do in your home to save money and feel warmer and healthier, a builder looking for better ways to build for your clients, or simply curious – come and be inspired by visiting an Eco Open house near you!

Eco Open Houses is an annual collaborative project between Low Carbon Trust, Brighton Permaculture Trust and Brighton & Hove City Council. This year the event is run as part of the ECOFab 2 project and has been selected within the scope of the INTERREG IV A France (Channel): England cross-border European cooperation programme and is co-financed by the ERDF. For more details about ECOFab 2 see page 16. The Green Deal strand of the project has been funded by the Department of Energy and Climate Change through the Local Authority Fund.

More info at [www.ecoopenhouses.org](http://www.ecoopenhouses.org)

## Contents

### Information

Opening times	4
Visiting the houses	4
Energy saving features at a glance	6
Eco Open Houses team	8
European partners	16
Eco Technology Show	17
Map of houses	20
Green Deal (GD)	28
Green Deal Pioneering Places	31



### Houses

1	51 Gardener Street, Portslade BN41 1SX	9
2	15 Lloyd Close, Hove BN3 6LZ	10
3	20 Avondale Road, Hove BN3 6ER	11
4	Flat 12, 27 Bedford Place, Brighton BN1 2PT	12
5	One Brighton, Stroudley Road, Brighton BN1 4GH	14
8	Hanover Community Centre, 33 Southover Street, Brighton BN2 9UD	19
9	50 Southampton Street, Brighton BN2 9UT	22
10	4 Whichelo Place, Brighton BN2 9XF	24
11	24 Cuthbert Road, Brighton BN2 0EN	25
12	[148 Hartington Road, Brighton BN2 3PB]	26
13	14 Newport Street, Brighton BN2 3HL	27
14	3 Brewer Street, Brighton BN2 3HH	30
15	Smart House, Ditchling Road, Brighton BN1 4SE	33
16	Yew Tree House, 5b Preston Park Ave, Brighton BN1 6HJ	34
17	40 Varndean Gardens, Brighton BN1 6WL	35
18	5 Hollingbury Copse, Brighton BN1 6XD	36
19	140 Balfour Road, Brighton BN1 6NE	37
20	42 Golf Drive, Dryad Housing Cooperative, Brighton BN1 7HZ	38
21	27 Roundway, Coldean, Brighton BN1 9AQ	39

### Talks/demonstrations

6	French Eco Renovation Techniques, Phoenix Brighton	15
7	Retrofitting in the SE: Hastings Eco Projects, Phoenix Brighton	18



# Energy saving features at a glance

## Airtight construction

The method of making new or refurbished buildings highly airtight to minimise ventilation losses; often associated with **MVHR**.

## Biomass boiler

Boiler fuelled by largely carbon-neutral wood, normally as pellets, but can also be chips or logs.

## Condensing boiler

A type of boiler that captures more usable heat from its fuel. Its efficiency is made possible by the design of the condensing boiler's larger (or dual) heat exchanger. Most modern boilers are condensing boilers.

## Draughtproofing

Lots of heat is lost through draughts so this is a priority for saving money. Typical draughty areas of a house include chimneys, loft hatches, windows and doors, around skirting boards and floors.

## Energy controls

Heating systems with simple controls in an accessible place can be more efficient as people are more likely to use them. Typical controls include thermostatic radiator valves for each radiator, room thermostats – and programmers, which enable more control.

## Flue gas heat recovery (FGHR)

Even a condensing boiler vents useful heat in the flue gas, but this can be recovered to preheat water using a simple FGHR unit.

## Green roof

A roof that is partially or completely covered with vegetation and a growing medium, planted over a waterproof membrane.

## Grey water recycling

Collecting waste water from sinks, showers and baths and reusing it for toilet flushing or watering the garden. Grey water is waste water that has not been mixed with sewage.

	Airtight construction	Biomass	Cavity wall insulation	Condensing boiler	Draughtproofing	Flue gas heat recovery	Green roof	Grey water recycling	Ground floor insulation	Heat pump	Heating controls	Heat recovery vent unit	High performance glazing	LED lighting	Loft insulation (270mm+)	Low water goods	MVHR	Natural materials	Passivhaus standard	Passive solar	Rainwater harvesting	Solar PV	Solar thermal	Sun tube	SWI external	SWI internal	Timber frame	Underfloor heating	Woodburning stove
1 51 Gardener Street																													
2 15 Lloyd Close																													
3 20 Avondale Road																													
4 Flat 12, 27 Bedford Place																													
5 One Brighton																													
8 Hanover Community Centre																													
9 50 Southampton Street																													
10 4 Whichelo Place																													
11 24 Cuthbert Road																													
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13 14 Newport Street																													
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16 5b Preston Park Avenue																													
17 40 Varndean Gardens																													
18 5 Hollingbury Copse																													
19 140 Balfour Road																													
20 42 Golf Drive																													
21 27 Roundway																													

## Ground floor insulation

For suspended floors, mineral wool or rigid insulation boards are installed between beams. For solid floors, rigid insulation board is placed on top of the solid floor and under a finishing layer. Installing thicker carpets and/or insulated carpet underlay may also help reduce draughts.

## Heat pump

A heating unit that extracts heat from the external environment, e.g. air or ground, and uses it to heat a building. The pump uses electricity to power it.

## High performance glazing

Windows that are designed to minimise heat loss, for example through an insulated frame, a low E coating, an inert gas filled cavity, triple glazing, or any combination of these.

## LED lighting

A very low energy form of lighting (light-emitting diode) which uses significantly less energy, is long-lasting and cheap to run. LEDs are now available for most light fittings.

## Low energy appliances

All appliances are rated from A to G, with appliances rated A to A+++ for refrigeration using the least energy. Washing machines and dishwashers are also rated for the amount of water they use per cycle.

## Low water goods

Taps, showers or toilets that are designed to use less water than typical plumbing fittings, typically by aerating the water.

## Mechanical ventilation with heat recovery (MVHR)

A ventilation system with a heat exchanger that recovers warmth from outgoing air to warm cooler incoming

fresh air. This requires a high level of airtightness to be effective.

## Natural materials

Products that comes from plants or animals – including sheep's wool insulation, sweet chestnut cladding, sustainably sourced timber paints and clay plaster. Natural materials tend to be more sustainable than artificial materials and allow breathability and movement of moisture.

## Passive solar design

Careful design using building orientation, solar gain, super insulation, thermal mass and passive ventilation. It can take advantage of the sun's energy and internal gains from cooking and other activities to reduce the amount of heating required.

## Passivhaus standard

A low energy standard that reflects the principles of high levels of insulation, airtight construction, high performance

glazing and a mechanical ventilation system with heat recovery.

## Photovoltaic (PV) panels

Panels usually mounted on a south-facing roof that convert sunlight into electricity. Electricity generated using PV panels attracts a payment known as the Feed in Tariff (FIT).

## Rainwater harvesting

Collecting water that falls on a roof and using it at home for washing clothes, flushing a toilet or watering the garden.

## Solar thermal panels

Using the sun's energy to directly heat water. Can be a flat plate system or evacuated tube system. From 2014, the Government plans to introduce the Renewable Heat Incentive, which will give payments for solar heat.

## Solid wall insulation (SWI)

Solid walls can be insulated externally or internally. Walls are usually insulated externally by fixing insulation boards to the wall and then finished with rendering or cladding. Walls are internally insulated by fixing rigid insulation boards to existing walls or by building a stud wall filled with mineral wool or equivalent which is then dry lined with plasterboard.

## Timber frame

Type of wall made from timber studs, finished with dry lining boards on the inside and cladding outside, creating a void that is easy to fill with insulation.

## Woodburning stove

A simple measure that can substitute low carbon heat from wood for a large proportion of fossil fuel space heating.

## Eco Open Houses team

*Eco Open Houses has been coordinated by:*

### Brighton & Hove City Council

[www.brighton-hove.gov.uk](http://www.brighton-hove.gov.uk)

The city council is committed to improving the energy efficiency of the city's housing stock across all tenures, and to reducing the number of people on low incomes living in homes with low energy efficiency. Eco Open Houses is supported within the council by City Planning which seeks to facilitate the development and refurbishment of the city's housing stock to the highest environmental standards.

### Brighton Permaculture Trust

[www.brightonpermaculture.org.uk](http://www.brightonpermaculture.org.uk)

Brighton Permaculture Trust promotes greener lifestyles and sustainable development through design. We run a range of courses and events, from an introduction to permaculture to a longer permaculture design course and specific courses/events on green architecture, gardening and fruit growing including our apple day at Stanmer Park. We run eco clubs in schools, and assist schools and community projects in planting small orchards. Other fruit themed work includes managing orchards and a small fruit nursery at Stanmer Park, and harvesting unused fruit from around the city for juicing etc. Permaculture design is about practical ecological strategies for land, water, buildings, people and communities. It is based on the philosophy of co-operating with nature and caring for the earth and its peoples.

### Low Carbon Trust

[www.lowcarbon.co.uk](http://www.lowcarbon.co.uk)

Low Carbon Trust is an independent, not-for-profit organisation formed in 2001 to set up, manage and promote environmental projects. Our main objective is tackling climate change through highlighting the connection between buildings, energy and carbon emissions. We do this by building innovative low-carbon construction projects, such as the award winning Earthship Brighton community centre, and delivering education experiences, including Eco Open Houses, sustainable construction training courses and Eco Education Days for local schools.



### 1 51 Gardener Street Portslade BN41 1SX

Erin, Katie and their baby share this hard to heat Victorian terraced house. Because of the baby, temperatures have been kept high making heating costly.

The recent Green Deal assessment revealed that although the house had part double glazing, in other respects it was very inefficient in its use of energy.

This has now been remedied, with initial work focussing on the basics, such as upgrading loft insulation to 300mm, installing an efficient condensing boiler with flue gas heat recovery and LED lighting. Equally importantly, programmable heating controls, TRVs and a room thermostat have been fitted to allow heating to be fine tuned to their needs. Beyond that, the scheme has gone on to tackle the more demanding but highly effective insulation of the walls from the outside, both front and rear.

The end result has transformed an inefficient leaky house into a far more comfortable dwelling, with much reduced heating bills.

BUSES: 1 or 1a to 'Battle of Trafalgar' in Trafalgar Road, Portslade  
TRAIN: Fishersgate

#### FEATURES

- + Condensing boiler
- + Double glazing
- + Flue gas heat recovery
- + Heating controls, room thermostat and TRVs
- + LED lighting
- + Loft insulation
- + Solid wall insulation (external, front and rear)

Sunday 16 June

10–1

Open

Sunday 23 June

10–1

Open

#### Green Deal Pioneer Places



This house has been renovated as part of the Green Deal Pioneering Places project



## 2 15 Lloyd Close Hove BN3 6LZ

This is a recently completed new build detached eco house designed by award winning eco architects Mark Pellant and Abi Torr of Koru Architects for their family ([www.koruarchitects.co.uk](http://www.koruarchitects.co.uk)). The house is zero carbon, benefiting from a good orientation, very high levels of insulation and air-tightness – which exceed building regulations.

A wood pellet boiler and solar thermal array provide the small amount of heat required. A large underground rainwater harvesting tank provides water for flushing the toilets. The photovoltaic array exports energy to the 'grid'. Materials are mostly natural, low impact and environmentally friendly and reflect the architects' desire to promote green architecture.

The house is the realisation of a long held dream, following a five year journey of searching for a suitable site in Brighton & Hove, negotiating, designing the house and building.

This house won the RIBA Downland Prize 2011 for sustainability.

BUSES: 81, 81c and 55, 56, 59 (Old Shoreham Road). TRAINS: Hove

Saturday 15 June		Saturday 22 June	
11–12	12–1	11–12	12–1
Book	Book	Book	Book

### FEATURES

- + Airtight construction
- + Biomass boiler
- + Green roof
- + Natural materials
- + Photovoltaic panels
- + Rainwater harvesting
- + Solar thermal panels
- + Solid timber frame construction
- + Underfloor heating
- + Woodburning stove
- + Zero carbon



## 3 20 Avondale Road Hove BN3 6ER

Oliver Heath's award winning eco refurbishment of this 1960s detached house had key aims of creating a great family home and reducing the house's carbon footprint by 75% from 10.9 to 2.7 tonnes a year, making dramatic savings on energy bills.

The brick exterior has been transformed using insulating render and locally sourced sweet chestnut cladding. Natural materials and finishes have been used inside to create Oliver's trade mark 'Eco Chic' interior, and include reclaimed larch, Cumbrian slate, natural paints and Resilica recycled glass work surfaces.

Key areas of interest in Oliver's refurbishment were: creating a healthy interior space; retrofitting a heat recovery system; maximizing the use of natural light; minimizing artificial light; and ingenious low flow water saving features. The 3.7kWp of photovoltaic panels generate electricity for the house as well as the electric car.

Oliver has used his design skills to create a home that reflects a sustainable approach in both practical and aesthetic ways, winning the British Institute of Interior Design Eco Retrofit Award in 2011.

Saturday 22 June					
10–11	11–12	12–1	2–3	3–4	4–5
Book	Book	Book	Book	Book	Book

BUSES: 7 (Cromwell/Davigdor Road); 55, 56, 59 (Old Shoreham Road)

### FEATURES

- + Cavity wall insulation
- + Ground floor insulation
- + Heat recovery system
- + High performance glazing
- + Loft insulation
- + Low energy LED lighting
- + Natural materials & finishes
- + Photovoltaic panels
- + Solar thermal panels
- + Sweet chestnut cladding
- + Woodburning stove



## 4 Flat 12, 27 Bedford Place Brighton BN1 2PT

When Kathy and Andrea bought this flat just before Christmas, it was boarded up and in an appalling state. Since then they have achieved wonders in clearing out soiled carpets and filthy mattresses, to get down to restoring it and making it energy efficient.

The first step was to catch the last of the free deals for loft insulation and have 270mm of mineral blanket put in the loft. Next, the old boiler was replaced with a much more efficient condensing combi boiler. The leaky single glazed rear windows and door were exchanged for modern double glazed versions. Lighting is also being changed to ultra low energy LEDs.

At this point, a Green Deal assessment took place, primarily to tackle the much harder technical challenge of internal solid wall insulation. For the future, as soon as planning approval is received, the front single glazed windows will also be changed for new double glazing, to complete the package. As a result, a run down 1980s flat has been quickly transformed into a cosy, superinsulated space with much reduced energy bills.

BUSES: Any bus along Western Road to Montpelier Road:

1, 1a, 2, 2a, 5b, 5a, 5, 6, 25, 49, 71, 81, 81b, 81c, 46, N25, 700, 20X, 37a

TRAIN: Brighton (1km)

### FEATURES

- + **Condensing boiler**
- + **Double glazing**
- + **LED lighting**
- + **Loft hatch insulated and draughtproofed**
- + **Loft insulation**
- + **Solid wall insulation (internal)**

**Saturday 15 June**

2-5

Open

**Sunday 16 June**

2-5

Open

### Green Deal Pioneer Places



This house has been renovated as part of the Green Deal Pioneering Places project

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**5 One Brighton  
Stroudley Road  
Brighton BN1 4GH**

If everyone in the world used as many resources as people in the UK we would need three planets to survive! The One Brighton development has been designed under the 'One Planet' approach ([www.oneplanetliving.org](http://www.oneplanetliving.org)). This uses ten guiding principles developed by BioRegional and WWF International to lower people's ecological footprint to within a capacity the earth can sustain:

- |                              |                                 |
|------------------------------|---------------------------------|
| 1 Zero carbon                | 6 Sustainable water             |
| 2 Zero waste                 | 7 Natural habitats and wildlife |
| 3 Sustainable transport      | 8 Culture and heritage          |
| 4 Sustainable materials      | 9 Equity and fair trade         |
| 5 Local and sustainable food | 10 Health and happiness         |

The apartments' features include triple glazing, highly insulated breathable walls, a biomass community heating system for hot water and space heating, solar panels for electricity, and roof allotment plots.

BUSES: 5, 5a, 5b or any bus to London Road (York Hill); 8, 37 to New England Street  
TRAINS: Brighton

- FEATURES**
- + Biomass heating & hot water
  - + Breathable clay block walls
  - + High performance glazing
  - + Photovoltaic panels
  - + Roof top allotments
  - + Sustainably sourced timber
  - + Ventilation system with heat recovery
  - + Zero carbon

Saturday 15 June				
10-11	11-12	12-1	2-3	3-4
Book	Book	Book	Book	Book

Sunday 16 June				
10-11	11-12	12-1	2-3	3-4
Book	Book	Book	Book	Book



**6 Interactive presentation  
French Eco Renovation Techniques  
Phoenix Brighton, 10-14 Waterloo Place  
Brighton BN2 9NB**

Interactive presentation by Association Régionale de Promotion de l'Eco-construction en Basse Normandie (ARPE) with three short films about low impact houses in Lower Normandy, France as part of ECOFab 2 project.

The first project is a cohousing project of 13 families near Caen. The houses are timber frame and use lots of natural materials. The walls are infilled with straw and the roof is insulated with cellulose wadding. Each house has a solar panel.

The second project is a hexagonal house built by an organic farmer and his family. The house is timber frame, with hemp and lime used as infill in the walls and for the ground floor slab. There is a solar thermal system and wood stove for heating. The hexagonal shape is designed to improve the 'bioclimatic' performance.

The final project is a barn conversion in a rural village. The intention of the owners was to preserve the original features of the building but modernising it to make it comfortable to live in. The walls are insulated with hemp and lime and are plastered with earth. Hot water and heating are supplied by a solar thermal system and wood stove.

BUSES: 5, 25, 28, 29, 49, 50 (St Peter's Church). TRAIN: Brighton (10 min walk)

- FEATURES**
- + Insulation
  - + Low water use shower
  - + Low water use toilet
  - + Natural materials
  - + Solar thermal panels
  - + Woodburning stove

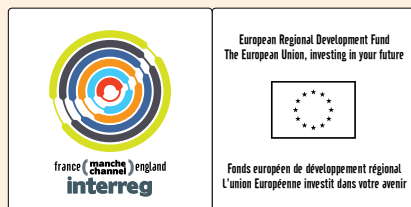
Sunday 23 June	
10-11.30	11.30-1
Book	Book



Eco Open Houses 2012 is part of ECOFab 2 and is supported by INTERREG IVa:



[www.ecofab.eu](http://www.ecofab.eu)



ECOFab 2 is a European project gathering 17 English and French partners from Sussex and Lower Normandy around eco-construction and sustainable development. The objective of the project is to produce eco-construction knowledge and skills and to implement training and cross border exchanges of best practices between the partners, including Low Carbon Trust.

The project has been selected within the scope of the INTERREG IV A France (Channel) – England cross-border European cooperation programme, co-financed by the ERDF. The project has different areas based around experimentation with new eco building techniques, sustainable construction training, creation of tools and various eco building events.

#### Experimentation with new eco building techniques

- Renovation of a former 1950s school with straw bales
- Building of an eco-garden pod in Hastings from straw bale
- Implementation of training activities integrating an eco-citizenship approach

#### Sustainable construction training

- Training of builders and artisans
- Training of job seekers in their search for vocational projects
- Organization of a seminar on the eco-citizenship approach

#### Creation of tools

- Eco-material learning kit
- Franco-British glossary on eco-construction

#### Eco building events

- Amblie event: *L'éco-construction en pratique*
- Brighton and Basse-Normandie events: *Eco Open Houses*
- Hastings event: *Pathways to construction*

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## 7 Talk Retrofitting in the South East: Hastings Eco Projects

**Phoenix Brighton**  
10–14 Waterloo Place  
Brighton BN2 9NB

The housing market is very stagnant at the moment. Because of this people are looking to improve their houses rather than move. Add to this the ever increasing energy bills and we can start looking at retrofitting our houses as a realistic and cost effective way of investing money in the future and reducing our carbon footprints.

This short introduction by Jim Murray of South Coast College to retrofitting is designed to give an idea of how it could work for your house and explores a whole house approach, energy efficiency measures for solid walls, improved heating systems and controls and funding options to pay for the work. South East College is a partner in the ECOFab 2 project (see page 16).

BUSES: 5, 25, 28, 29, 49, 50 (St Peter's Church). TRAIN: Brighton (10 min walk)

### FEATURES

- + Condensing boiler
- + Draughtproofing
- + Flue gas heat recovery
- + Ground floor insulation
- + Heating controls
- + Heat recovery ventilation
- + High performance glazing
- + LED lighting
- + Loft insulation
- + Solid wall insulation (internal and external)

## 8 Hanover Community Centre 33 Southover Street Brighton BN2 9UD

In recent years Hanover Community Centre has become a hub for education about energy saving measures via Hanover 10:10, part of a wider community group Hanover Action for Sustainable Living (HASL).

The Centre itself is a former school. It was built around 1870 as a church-like structure, with massive brick walls, high ceilings and a vaulted timber framed roof. This poses challenges in heating, with heavy losses via the solid walls, uninsulated roof, and large window areas. Acting on a detailed energy audit, a plan has been drawn up to address these issues. Volunteers have already installed cheap secondary double glazing, draughtproofing and fitted part loft insulation. Lighting is being converted to low energy lamps and funding is in place to install a much lowered, highly insulated ceiling in the upper hall.

This is a work in progress and during the open house event teams will be fitting solid wall insulation in the toilet block.

BUSES: 23, 81, 81a, 81b, 81c to 'Pepper Pot' in Queens Park Road – or 37b up Southover Street (hourly and not Sundays). TRAIN: Brighton (1km)

### FEATURES

- + Draughtproofing
- + Energy monitoring
- + Features
- + LED lighting
- + Lowered and highly insulated ceiling for upper hall (imminent)
- + Secondary double glazing
- + Solid wall insulation (internal) for toilet block (imminent)
- + Water saving fittings

### Sunday 16 June

10–11.30	11.30–1
Book	Book

**écoFAB**

### Saturday 22 June

2–5	5–6.30
Open	Talk

### Sunday 23 June

10–1	2–5
Open	Open

At 5–6.30pm on Sat 22 June there will be inspirational talks on a One Planet Living theme by Pooran Desai OBE, co-founder of BioRegional, and Council Leader Jason Kitkat.

# Brighton and Hove Eco Open Houses 2013



-  51 Gardener Street
-  15 Lloyd Close
-  20 Avondale Road
-  Flat 12, 27 Bedford Place
-  One Brighton
-  French Projects at Phoenix B'ton
-  Hastings Projects at Phoenix B'ton
-  Hanover Community Centre
-  50 Southampton Street
-  4 Whichelo Place
-  24 Cuthbert Road
-  [148 Hartington Road]
-  14 Newport Street
-  3 Brewer Street
-  Smart House
-  5b Preston Park Avenue
-  40 Varndean Gardens
-  5 Hollingbury Copse
-  140 Balfour Road
-  42 Golf Drive (Dryad Co-op)
-  27 Roundway



## 9 50 Southampton Street Brighton BN2 9UT

### FEATURES

- + Condensing boiler
- + Draughtproofing
- + Double glazing (part)
- + Heating controls
- + Loft insulation
- + Solid wall insulation (external, front and back)

Dani and Allie moved to Southampton Street in 1994. They have made a number of improvements designed to cut energy use including a new condensing boiler, deep loft insulation and part double glazing. They have been involved in, and motivated by, the excellent community based campaigns for reducing carbon emissions mounted by Hanover 10:10 and Hanover Action for Sustainable Living (HASL) and have a deep commitment to sustainable living.

Although they had wanted to externally insulate the walls for some time, this proved daunting due to cost and planning processes. However, the Green Deal assessment process has shown this to be achievable, coupled with Energy Company Obligation (ECO) grant assistance, and the front and rear have successfully been completed. This style of insulation is highly effective, not only in reducing losses, but also in increasing building comfort, by enabling the walls to act positively to store rather than lose heat.

BUSES: 23, 81, 81a, 81b, 81c to 'Pepper Pot' or 21, 22, 23 to 'De Montfort Road' in Elm Grove  
TRAIN: Brighton

Sunday 16 June		Sunday 23 June	
10-1	2-5	10-1	2-5
Open	Open	Open	Open

### Green Deal Pioneer Places



This house has been renovated as part of the Green Deal Pioneering Places project

The  
**Green  
Building**  
Partnership



The Green Building Partnership is a cooperative enterprise:

- We are signed up to Co-operative principles
- We are a socially responsible business. Our aim is to cut energy use and help us all live more sustainably.
- We use reliable and trained local suppliers to help support our local economy. They have become our associates and therefore pledged to work to the same principles.
- We work co-operatively ensuring that we draw upon one another's skills. To achieve this we are a not-for-profit company: - we use income for information, training and development of the business and the community
- We believe in sharing our knowledge with our subcontractors to help them achieve the best energy efficient building work.

### What we offer:

**Architectural Services, Code for Sustainable Homes Assessments, Commercial Design, EPCs, Green Deal Assessors, OCDEA, SAP Assessors, Passive House Designers, Project Management, Thermography, Stock Assessment, Interior Design etc. for Householders, Tenants, Developers, Landlords and Local Authorities.**

## Green Deal Pioneer Places 2013

The Green Building Partnership are proud to have delivered the Green Deal Pioneer Places Project with project partners; Brighton & Hove City Council, Brighton & Hove 10:10 & Low Carbon Trust funded by the Department of Energy & Climate Change. Delivering 100 Green Deal Assessments and offering 10 house-holders the chance to win up to £10,000 worth of energy efficiency measures. Some of the homes that were renovated as part of this project can be visited during the Eco Open House event:

Cuthbert Road	Southampton Street
Gardner Street	Newport Street
Bedford Place	Brewer Street
Crayford Road	Uplands Road
Livingstone House	Mile Oak Road

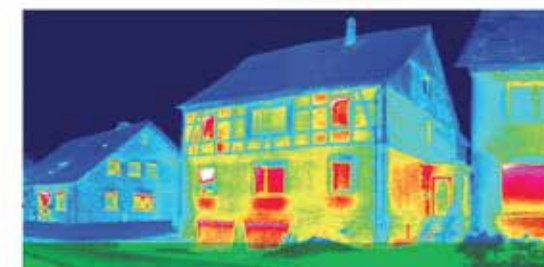


BRIGHTON AND HOVE

LOW CARBON TRUST



Green Deal Pioneer Places



[www.greenbuildingpartnership.co.uk](http://www.greenbuildingpartnership.co.uk)

[info@greenbuildingpartnership.co.uk](mailto:info@greenbuildingpartnership.co.uk) tel: 01273 961272



## 10 4 Whichelo Place Brighton BN2 9XF

4 Whichelo Place is a typical Victorian three storey mid-terrace, solid wall house in the Hanover area of Brighton. The aim of Paul and Marion's refurbishment (including loft extension) was to make the house much more comfortable (particularly in winter), while reducing energy consumption for space and water heating by at least 50%. These aims have been achieved by fitting good quality double glazing, external wall and internal floor insulation, new internal doors, a solar hot water system and a woodburning stove.

Post refurbishment monitoring demonstrates that not only is the house much more comfortable but the target for reduction of energy consumption has been met. The loft extension was constructed at the same time to a much higher than normal insulation specification. Natural materials and finishes such as lime render were used wherever practicable. The architects were ARCH angels ([www.aarchitects.co.uk](http://www.aarchitects.co.uk)).

BUSES: 25c, 37, 37b, 81, 81a, 81b, 81c to Queens Park Road (Pepper Pot)  
TRAINS: Brighton  $\frac{3}{4}$  mile

### FEATURES

- + Draughtproofing
- + Energy efficiency
- + External wall insulation
- + High performance glazing
- + Natural materials
- + Solar thermal panels
- + Woodburning stove

Saturday 15 June		
10-11	11-12	12-1
Book	Book	Book



## 11 24 Cuthbert Road Brighton BN2 0EN

Terry and his wife relocated from London to their terraced house in Brighton in 2008, with the intention of installing as many energy saving features as possible before impending retirement limited their funds. The prime motivation has been a commitment to sustainable living rather than financial savings.

The house already benefitted from some double glazing and they have added a woodburning stove, which has helped to reduce gas usage. However, the house still felt cold, particularly in the larger rooms and the loft conversion.

Following a Green Deal assessment, they have adopted a coordinated package of measures including external solid wall insulation and a new high efficiency condensing boiler, coupled with a flue gas heat recovery unit to further improve efficiency. The new system will have modern heating controls to tailor heating to their needs. Draughtproofing and low energy lighting further help to conserve energy. All external work has been managed carefully to reinstate original features and preserve the house's appearance.

BUSES: 81, 81a, 81b, 81c to 'Cuthbert Road' (junction of Freshfield Road and Queen's Park Terrace) or 2, 2a to 'Evelyn Terrace' on Sutherland Road.  
TRAIN: Brighton (1km)

### FEATURES

- + Condensing boiler
- + Draughtproofing
- + Flue gas heat recovery
- + Heating controls
- + LED lighting
- + Low energy lighting
- + Solid wall insulation (external, front and back)
- + Woodburning stove

Sunday 16 June		Sunday 23 June	
2-3.30	3.30-5	2-3.30	3.30-5
Book	Book	Book	Book

### Green Deal Pioneer Places



This house has been renovated as part of the Green Deal Pioneering Places project



## 12 148 Hartington Road Brighton BN2 3PB

This new build house was completed 2011. It is built on an extraordinary, steep, compact, triangular plot and is a single storey at the upper end and double storey at the lower. The site with approved plans was bought by lighting designer Jason, wife Sarah and two small children. Through much hard labour, ingenuity and skill on Jason's part and having spent a year on the build; costs for the house and plot have totalled an affordable £170K. It was recently filmed for the BBC's *To Build or Not To Build* (series 2 episode 16).

The house has a highly insulated timber frame, and despite little opportunity for glazing on the south side, a passive design approach has been achieved.

Abundant natural light floods through home made double glazed skylights, space and water heat is provided from renewable sources, and heat is recycled via heat recovery ventilation. Low energy lighting combined with the glazing approach reduces energy inputs for lighting.

Please note that 148 Hartington Road has had to close throughout the 2013 event and will not be open on Saturday 15 or 22 June as intended and initially published on this website and in the original brochure. We apologise for any inconvenience this may cause.

### FEATURES

- + Insulation
- + LED lighting
- + Mechanical ventilation with heat recovery
- + Natural materials
- + Passive solar design
- + Rainwater harvesting
- + Solar thermal panels
- + Timber frame
- + Woodburning stove



## 13 14 Newport Street Brighton BN2 3HL

Since David acquired this house in 2010 he has made number of energy saving improvements, including solar thermal hot water, part double glazing and highly insulating the loft. David's motivation has been an awareness of diminishing fossil fuels and the need to switch to renewables. At the same time he is delighted by the idea that the sun can provide much of his hot water; avoiding the need to burn gas.

The recent Green Deal assessment has built on this excellent start to go even deeper, primarily by enhancing the insulation to the fabric of the house. This has tackled the much trickier areas of external and internal wall insulation, together with underfloor insulation, whilst also insulating awkward places such as above the ceiling in the bay window.

BUSES: 21, 22, 23, 24, 25, 28, 29, 38, 48, 49, 78, 81, 81a, 81b, 81c to 'Elm Grove' (junction of Lewes Road and Elm Grove).

TRAIN: London Road (1/2km)

### FEATURES

- + LED lighting
- + Loft insulation
- + Solar thermal
- + Solid wall insulation (external, rear)
- + Solid wall insulation (internal, front)
- + Sun tube
- + Underfloor insulation

Sunday 16 June

10-1

2-5

Open

Open

Green Deal Pioneer Places



This house has been renovated as part of the Green Deal Pioneering Places project

## Green Deal (GD)

### A new way to pay for home improvements

See how the GD works and some of the measures that could be installed by visiting houses renovated through the Green Deal Pioneering Places Project.

### What is the Green Deal?

Through the GD you can get a range of energy efficiency measures installed in your home at no upfront cost. The GD Plan is a new type of unsecured, low interest loan, whose repayments do not exceed savings and are added to your electricity bill. GD measures include:

- Double or secondary glazing
- Loft insulation or flat roof insulation
- Solid wall or cavity wall insulation
- Underfloor insulation
- New condensing boiler with flue gas heat recovery
- Upgraded heating controls, e.g. thermostatic radiator valves, thermostat and programmer

'Quick guides' on the GD can be found at: <https://www.gov.uk/government/organisations/department-of-energy-climate-change/series/green-deal-quick-guides>



### What are the steps to getting a Green Deal?



- 1 An assessor visits your home/property to see what improvements can be made to give energy bill savings. Improvements and potential savings are summarised in a GD Assessment Report.



- 2 The Assessment Report can be taken to a GD provider. You can discuss with them what work you want done and whether the GD is right for you. A list of GD Providers can be found at the GD Orb: [www.greendealorb.co.uk](http://www.greendealorb.co.uk)



- 3 To go ahead with improvements you must sign your GD Plan – this financial arrangement is a contract between you and the provider stating what work will be done and costs. The provider can arrange a GD installer to do the work who must be accredited with the GD tick.



- 4 After the work is done, instalments are paid through the electricity bill. The pay back time depends on the work carried out and amount borrowed.

## What is the Energy Company Obligation (ECO)?

ECO is a grant; different from the GD as it isn't repaid. There are three ECO funding strands which the six biggest energy companies (Southern Electric, British Gas, EDF, Scottish Power, nPower and E.on) are required to contribute to. ECO strands are:

- 'Affordable warmth' provides support to low income and vulnerable households least able to heat their homes. It covers measures to improve thermal performance and reduce fuel bills including new heating systems and basic insulation measures, e.g. cavity wall and loft insulation.
- 'Carbon reduction' works alongside the GD to provide additional support for 'harder to treat' houses, e.g., solid wall or off gas network properties where it may not be possible to fund energy efficiency improvements through GD alone. Households may receive measures funded by Green Deal finance and ECO.
- 'Carbon saving communities' targets households in specified UK areas focusing on low income households/areas, ensuring properties receive energy efficiency measures, e.g. solid wall, loft and cavity wall insulation.

## What is the Cashback incentive?

The Cashback scheme is a first-come, first-served offer where householders can claim money back from Government on energy saving improvements under the GD.

Cashback is capped at 50% of the householder's contribution. The more improvements a householder makes, the bigger the Cashback. For example:

- Loft insulation (incl. top up) £100
- Cavity wall insulation £250
- Solid wall insulation £650
- Floor insulation £150
- Draught proofing £50
- Heating controls (z, room thermostat, programmer) £70
- Upgrade boiler to condensing gas boiler £270
- Flue gas heat recovery (condensing combi boiler) only alongside replacement boiler £90
- Double/triple glazing (old single to A) £20 per m<sup>2</sup> up to £320
- High performance replacement doors £40
- Secondary glazing £15 per m<sup>2</sup> up to £230

Details can be found at: <https://gdcashback.decc.gov.uk/>



## 14 3 Brewer Street Brighton BN2 3HH

Since Neil moved into this house in 2012, he has undertaken a number of measures to improve efficiency, such as overhauling the sash windows, draughtproofing, and generous loft insulation.

The Green Deal assessment which was undertaken recently has opened up a number of new ways to further reduce energy consumption. In particular the installation of solid wall insulation externally has had a big impact on what was the biggest remaining area of heat loss; the walls. Whilst doing this work, it was decided to carefully replicate external mouldings and pediments on the new wall surfaces, in the interest of conserving period features and maintaining the handsome appearance of the house. Further detailing on draughtproofing, such as chimney balloons, has tackled the other main weakness of Victorian properties, ventilation losses.

BUSES: 21, 22, 23, 24, 25, 28, 29, 38, 48, 49, 78, 81, 81a, 81b, 81c to 'Elm Grove' (junction of Lewes Road and Elm Grove)

TRAIN: London Road (1/2km)

**Saturday 15 June**

2-5

Open

**Sunday 16 June**

2-5

Open

### FEATURES

- + Condensing boiler
- + Draughtproofing
- + Heat recovery unit
- + Loft Insulation
- + Solid wall insulation (external)
- + Solid wall insulation (internal, basement)
- + Underfloor insulation

### Green Deal Pioneer Places



This house has been renovated as part of the Green Deal Pioneering Places project

## Green Deal Pioneering Places

The Pioneering Places project aims to kick-start uptake of the Green Deal in Brighton & Hove by creating a network of Green Deal show-homes in spring 2013. Green Deal assessments were undertaken for 100 homes, and energy efficiency measures were installed in 10 of the houses up to the value of £10,000.

Some of the houses are being opened as part of Eco Open Houses. They demonstrate the different measures that can be installed through the Green Deal, such as solid wall insulation. The houses being opened as part of Eco Open Houses are marked by a green house and include the Pioneering Places logo on their page. They have lots of information on display about the Green Deal.

Project partners:



## Interested in a green building course?

Brighton Permaculture Trust runs green building courses and events in partnership with Low Carbon Trust and RESET:

- **Eco Renovate Your Home**
- **Building with Straw Bales**
- **Rammed Earth and Chalk**
- **Green Roofs**
- **Intro to Photovoltaics**
- **Self-Building an Earthship**

Also:

- **Green Architecture Day:** Illustrated talks by designers, builders and practitioners

[www.brightonpermaculture.org.uk](http://www.brightonpermaculture.org.uk)







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## 15 Smart House Ditchling Road (CORNER OF VERE ROAD) Brighton BN1 4SE

The Smart House is a south facing bungalow dug in to the ground. It demonstrates a passive solar earth sheltered design, providing a warm comfortable home all year round whilst using almost zero energy. It has photovoltaic and solar thermal panels producing renewable energy and hot water on site and a grass roof to attract bio diversity.

The holistic design by Alan Phillips incorporated a sustainable approach from the outset, rather than simply adding on renewable energy as an afterthought. This illustrates that sustainable architecture has to begin with a thoughtful understanding of environmental techniques. In principle, the scheme could be constructed as a modular system that is designed to be fairly accessible to most people.

BUSES: 26, 46 (Ditchling Road); 5, 5a, 5b (London Road)  
TRAINS: London Road

### FEATURES

- + Green roof
- + Passive solar design
- + Photovoltaic panels
- + Rainwater harvesting
- + Solar thermal panels
- + Super insulation
- + Thermal mass
- + Under floor heating

**Saturday 15 June**

2-5

Open

**Sunday 16 June**

2-5

Open



## 16 Yew Tree House 5b Preston Park Ave Brighton BN1 6HJ

This house won the Federation of Master Builders Energy Efficiency Award 2011 as an 'Inspiring eco home'.

Mick and Sue Paskins had this new house designed by award winning eco architects ZED Factory. It is an outstanding exemplar of urban low energy design. The house is orientated to maximise the amount of sun it receives. High levels of insulation and heavyweight internal materials store the sun's energy. The house is very airtight and has a ventilation system with heat recovery to provide fresh air in winter.

Hot water is mostly supplied through a solar thermal array. A condensing gas boiler can top up hot water during winter and the woodburning stove provides any additional heating required. Rainwater is harvested for flushing toilets and watering vegetables and fruit. The house is clad in Sweet Chestnut, which needs no treatment to preserve it and is grown in Sussex. There is a green sedum roof to attract beneficial insects and other wildlife. A 3.6kWp Photovoltaic array has been added to the house.

BUSES: 5, 5a, 5b, 56. TRAINS: London Road

### FEATURES

- + Airtight construction
- + Condensing boiler
- + Green roof
- + High performance glazing
- + Low energy LED lighting
- + Low water use toilets & shower
- + Mechanical ventilation with heat recovery
- + Passive solar design
- + Photovoltaic array
- + Rainwater harvesting
- + Solar thermal panels
- + Sun tube
- + Woodburning stove

Sunday 16 June											
10.00	10.30	11.00	11.30	12.00	12.30	2.00	2.30	3.00	3.30	4.00	4.30
Book	Book	Book	Book	Book	Book	Book	Book	Book	Book	Book	Book



## 17 40 Vardean Gardens Brighton BN1 6WL

Nigel's parents originally designed this house in the 1950s to be modern, efficient and comfortable. When Nigel and Sally decided to live in the house, they wanted to use Nigel's knowledge of the house and his skills as a surveyor to enhance the best of the original structure. Working with BBM architects they have created a stunning retrofit.

Their approach has been to wrap the whole of the house in high levels of insulation and fit high performance windows to reduce heat losses. Solar thermal panels, a condensing boiler and a wood burner heat the house and provide hot water. A photovoltaic array combined with low energy appliances also mean low electricity bills, with money back from the electricity they produce!

Projected figures indicated that despite increasing the size of the house by 25% with the garage extension, energy costs would be reduced by 75% and CO<sub>2</sub> emissions from around 7 tonnes annually to 1.2 tonnes, a saving of 83%.

BUSES: 5, 5a, 17, 33, 40, 273 (London Road); 5b, 55 (Surrenden Road)  
TRAIN: Preston Park

Saturday 15 June			Sunday 16 June		
10-11	11-12	12-1	10-11	11-12	12-1
Book	Book	Book	Book	Book	Book



## 18 5 Hollingbury Copse Brighton BN1 6XD

Kevin and family moved in to this house five years ago and began its transformation by meshing a 1940s house with a substantial modern extension. The aspiration was to make the most energy efficient house they could on a moderate budget whilst making the maximum use of the existing structure and plot. The remodelling included extensive insulation, the introduction of renewable energy systems and the creation of new areas to make the home larger.

Natural materials have been used extensively on the extension, including wood fibre insulation, lime render, clay tiles on the roof, galvanised steel gutters and a recycled oak floor.

There are a range of renewable technologies in the house to demonstrate what is possible; photovoltaic panels, air source heat pump, woodburning stoves and solar thermal panels. A decision was made to take the property 'off gas' to protect it from future rises in energy prices.

There are plans to install a rainwater harvesting system in the future.

BUSES: 26, 46, 56 (Ditchling Road)

TRAINS: London Road

### FEATURES

- + Air source heat pump
- + Green Roof
- + Induction hob
- + Natural materials
- + Photovoltaic (PV) panels
- + Solar thermal panels
- + Sun tube
- + Sweet chestnut cladding
- + Underfloor heating
- + Wood burning stove



## 19 140 Balfour Road Brighton BN1 6NE

Tim and his family recently bought this 1920s semi-detached three bedroom house. They are completely renovating it, adding a loft conversion and single story rear extension. Their motivation is to make the house warm and comfortable, cheap to run in the long term, but also to help to mitigate climate change. The approach has closely followed the German Passivhaus standard. It focuses on high levels of insulation on the walls, ground floor and roof, airtight construction (to reduce heat loss) and the introduction of a ventilation system which recovers heat that is normally lost to the outside. There are also lots of low water use goods, such as low flow shower heads, spray taps and low flush toilets. All of the energy efficiency measures have been carefully modelled using the Passivhaus Planning Package, a software based tool for calculating the amount of energy a building uses. Suitable renewable energy systems such as solar panels are also being considered, but there is quite a lot of overshadowing of the roof from neighbouring houses.

### FEATURES

- + Airtight construction
- + External wall insulation
- + Green roof (planned)
- + High performance glazing
- + Low water use goods (planned)
- + Mechanical ventilation with heat recovery (planned)
- + Underfloor heating

Please note that 140 Balfour Road has had to close throughout the 2013 event and will not be open on Saturday 22 or Sunday 23 June as intended and initially published on the website and in the original brochure. We apologise for any inconvenience this may cause.

### Saturday 15 June

10-1	2-5
Open	Open

### Saturday 22 June

10-1	2-5
Open	Open

### Sunday 23 June

10-1	2-5
Open	Open



## 20 42 Golf Drive Dryad Housing Cooperative Brighton BN1 7HZ

Flo and Andy moved into this timber frame house, which was built by the original tenant in 1990 as part of a self-build scheme in the 'Walter Segal' style. It is one of 16 houses on the site nestled under Hollingbury Golf Course and the Roedale allotments. Extensive south facing windows bring light and warmth into the house which overlook their small but beautiful garden bursting with salad crops and the communal garden planted with fruit trees.

They are part of Dryad Housing Cooperative, which was created by tenants who moved into 11 timber framed houses on the site. The Cooperative has developed a green policy, updated their houses with rainwater butts and installed wood stoves in which they burn locally sourced wood. This, and using a green electricity tariff, has significantly reduced their carbon footprint. The Cooperative hopes to go further by installing solar thermal for hot water in the future.

BUSES: 50 (Burstead Close); 26, 46, 56 (Osborne Road on Ditchling Road)

### FEATURES

- + [Food growing](#)
- + [Passive solar design](#)
- + [Self build](#)
- + [Tenants green policy](#)
- + [Timber frame house](#)
- + [Woodburning stove](#)

#### Saturday 22 June

2-5

Open

#### Sunday 23 June

2-5

Open



## 21 27 Roundway, Coldean Brighton BN1 9AQ

Tom is a woodworker who has creatively transformed his semi detached post war house in Coldean. In the process he has created a house that can be heated virtually exclusively by renewable fuels, just using the sun and wood.

Having completely gutted the house two years ago, Tom made the ground floor open plan, bringing light and space into the main living area. Solar thermal panels provide hot water in summer and the wood burner heats the house and provides hot water in winter. It can be used for cooking too! Tom is currently building a timber frame shed, which when finished will feature a green roof.

Materials have been used ingeniously, with an emphasis on reuse and second hand sourcing for affordability. Rather than use masonry that has a high embodied energy, Tom prefers to use timber that is local or from certified sustainable sources.

BUSES: 24 (Coldean, Rushlake Road); 26, 46 (Woobourne Ave, then walk across Hollingbury Hillfort); 42, 44 (Big Lemon), 23, 25, 28, 29 (Coldean Lane)

### FEATURES

- + [Grey water recycling](#)
- + [Insulation](#)
- + [Natural materials](#)
- + [Solar thermal panels](#)
- + [Woodburning stove](#)

#### Sunday 23 June

10-1

Open

2-5

Open

# One Planet City



If everyone consumed natural resources at the rate we do in Brighton & Hove, we would need not one, but three and a half planets to support us.

Brighton & Hove City Council is working to create a more sustainable city, using the One Planet approach, which includes support for sustainable building and development across the city.

[www.brighton-hove.gov.uk/oneplanetcity](http://www.brighton-hove.gov.uk/oneplanetcity)