



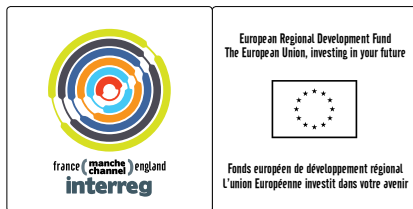
Two weekends in 2014
18-19 & 25-26 OCT

Eco Open Houses

Brighton & Hove



www.ecoopenhouses.org



Welcome to the seventh Eco Open Houses!

Over two weekends in October
18th-19th and 25th-26th

Part of the European ECOBEE Project



Eco Open Houses 2014 is scheduled in October to coincide with the start of the 'heating season' - a good time to think about how fuel bills can be reduced when it's cold.

Whether you're a home owner, a tenant, a builder, or just curious; come and get inspired at an Eco Open house near you. Householders and professionals will share practical ways to reduce energy use, water use and carbon emissions.

This year nineteen buildings will be opening. These include:

- 10 retrofitted homes and 5 new built homes
- 6 houses opening for the first time, featuring low energy refurbishments in Kemp Town, Rottingdean and Hove
- the exciting 'Waste House' at the University of Brighton is made purely of reused materials
- 3 eco community buildings
- an ex-toilet converted into an eco office in Portland Road!

Gain insights from talks on Straw-bale construction and low energy Passivhaus construction, highlighting eco houses being opened in Totnes and Normandy. Our brochure also offers 'case study features' on slim line double glazing and air tightness: measures which can help keep you warmer through cold winter months.

Please complete a pledge form after visiting a home to share changes you would like to make. Everyone who completes a pledge form is entered into our prize draw to win a smart meter or a free place on our Eco Renovate Your Home course.

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 Ecobee project and has been selected within the scope of the INTERREG IV A France (Channel): England cross-border European cooperation programme and is financed by the ERDF. For more details about the ECOBEE Project see page 28.

More info at www.ecoopenhouses.org

Contents



Information

Opening times	4
Visiting the houses	4
Energy saving features at a glance	6
Eco Open Houses team	8
Case Study – Slimline Double Glazing	15
Map of houses	18-19
ECOBEE Project	28
Case Study – Draughtproofing	35



Eco Open Houses

1	201 Portland Road	9
2	92 Livingstone Road	10
3	15 Lloyd Close	11
4	20 Avondale Road	12
5	Exeter St Hall	13
6	One Brighton	14
8	Waste House	17
9	Hanover Community Centre	20
10	50 Southampton St	21
11	1a Whichelo Place	22
12	4 Whichelo Place	23
13	14 Newport Street	24
14	Smart House	25
15	43 Ditchling Rise, 1st Floor Flat	26
16	Yew Tree House, 5b Preston Pk Ave	27
17	27 Roundway	29
20	Earthship Brighton	32
21	34 Belle Vue Gardens	33
22	1 Challoners Close	34

Eco Open Talks

7	Passivhaus Talks, King & Queen	16
18	Straw-bale Building – a viable alternative? Stanmer Park	30
19	Straw-bale Renovation, Stanmer Park	31

Opening times

Times marked **Book** must be pre-booked from house pages on the website www.ecoopenhouses.org



	PAGE	Saturday 18 October						Sunday 19 October						Saturday 25 October						Sunday 26 October																					
		10.00	10.30	11.00	11.30	12.00	12.30	2.00	2.30	3.00	3.30	4.00	4.30	10.00	10.30	11.00	11.30	12.00	12.30	2.00	2.30	3.00	3.30	4.00	4.30	10.00	10.30	11.00	11.30	12.00	12.30	2.00	2.30	3.00	3.30	4.00	4.30				
1	201 Portland Road	9											OPEN					OPEN						OPEN					OPEN					OPEN							
2	92 Livingstone Road	10	OPEN					OPEN																																	
3	15 Lloyd Close	11	Book	Book	Book			Book	Book	Book																															
4	20 Avondale Road	12																				Book	Book	Book			Book	Book													
5	Exeter St Hall	13											OPEN																												
6	One Brighton	14	Tour	Tour	Tour			Tour	Tour	Tour							Tour	Tour	Tour			Tour	Tour	Tour			Tour	Tour	Tour												
7	Passivhaus Talks, King & Queen	16																								Talk	Talk														
8	Waste House	17	OPEN					OPEN					OPEN					OPEN					OPEN					OPEN					OPEN								
9	Hanover Community Centre	20						Tour	Tour	Tour																															
10	50 Southampton St	21																								OPEN															
11	1a Whichelo Place	22																												OPEN											
12	4 Whichelo Place	23																								Tour	Tour	Tour							Tour	Tour	Tour				
13	14 Newport Street	24	OPEN					OPEN																																	
14	Smart House	25											OPEN																												
15	43 Ditchling Rise, 1st Floor Flat	26											Tours every ½ hr					Tours every ½ hr																							
16	Yew Tree House, 5b Preston Pk Ave	27											Tours every ½ hr					Tours every ½ hr																							
17	27 Roundway	29																																							
18	Straw-bale Building	30																				Talk	Talk																		
19	Straw-bale Renovation	31																																							
20	Earthship Brighton	32																																							
21	34 Belle Vue Gardens	33	OPEN					OPEN																																	
22	1 Challoners Close	34																												OPEN									OPEN		

Visiting the houses



The event is free and all are welcome. Visits to these houses are possible thanks to the kindness and generosity of the householders. Please be respectful at all times and observe some basic rules:

- **Opening days vary** and some can only be visited as part of a pre-booked guided tour. See the bottom of each page for opening times. Some properties may be 'open house' but have tours on the hour or half hours as indicated. Visitor numbers may be limited and you may be required to wait if it is busy.
- **If a house requires pre-booking** then please go to the house page on our website www.ecoopenhouses.org and click on the *Book Tour* link for the time you wish to visit and reserve your place. Booking closes at 6pm the day before tours to this house begin.
- **Pre-booked tours** last between 30-90 minutes depending on the house. They are led by the householder or a professional associated with the project and are based around the eco features listed in this brochure.
- **Times for open house sessions** are between 10am-1pm in the morning and 2pm-5pm in the afternoon unless otherwise specified. *Please do not visit between 1-2pm.*
- At some of the houses you may be asked to remove your shoes.
- **Take care when visiting.** Some of the houses are currently having building work done on them. Some brochure photographs show construction work which may have been completed by the time of your visit.
- **Children must be supervised** by an adult.
- **Sorry, no dogs** (please ask householder for permission to admit guide dogs).
- **We encourage everyone to travel to each house by sustainable means.** Details of buses and the nearest train station are listed with each Eco Open House. **Information** on all forms of sustainable transport is available at www.brighton-hove.gov.uk/travel

Energy saving features at a glance

For explanation of the terms used here, please visit www.ecoopenhouses.org

	Airtight construction	Cavity wall insulation	Condensing boiler	Electric car charging	Food growing	Grey water recycling	Ground floor insulation	Heating controls		Double or triple glazing	Low energy appliances	Low energy lighting	Loft/ceiling/roof insulation	Low water goods	Mechanical ventilation heat recovery	Natural materials	Passive solar design	Rainwater harvesting	Solar Photovoltaics (PV)	Solar thermal	Solid wall insulation: external	Solid wall insulation: internal	Underfloor heating	Woodburning stove
1 201 Portland Road		●				●				●						●	●							
2 92 Livingstone Road	●		●							●	●				●					●				
3 15 Lloyd Close	●					●	●			●	●	●			●	●	●	●	●			●	●	
4 20 Avondale Road	●	●	●	●	●	●	●			●	●	●	●	●	●		●	●	●				●	
5 Exeter St Hall										●	●	●												
6 One Brighton	●			●		●				●	●	●	●	●	●		●	●						
7 Passivhaus Talks	●					●				●	●	●												
8 Waste House	●		●			●	●			●	●	●	●	●										
9 Hanover Community Centre				●						●	●	●	●		●									
10 50 Southampton St			●			●					●									●				
11 1a Whichelo Place			●		●		●			●	●	●			●		●		●			●		
12 4 Whichelo Place	●		●							●	●	●	●	●	●				●	●	●	●	●	●
13 14 Newport Street			●			●				●	●	●							●	●	●	●		
14 Smart House			●			●									●	●	●	●	●			●		
15 43 Ditchling Rise, FFF			●							●			●		●						●			
16 Yew Tree House	●		●	●						●	●	●	●	●	●	●	●	●	●	●				●
17 27 Roundway				●	●		●			●	●	●			●				●	●				●
18 Straw-bale Talks	●						●								●	●		●	●					●
19 Straw-bale Talks	●					●	●			●			●		●	●		●	●	●	●	●	●	●
20 Earthship Brighton					●					●	●	●			●		●	●	●					●
21 34 Belle Vue Gardens			●				●			●	●	●			●	●								●
22 1 Challoners Close	●	●	●							●	●	●	●	●	●									

Eco Open Houses team

Eco Open Houses has been coordinated by:

Brighton & Hove City Council

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 by the council's planning service 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

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

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 an education programme, including Eco Open Houses, green building training courses and Eco Education Days for local schools.



Former WC

201 Portland Road, Portslade, East Sussex BN3 5JA

Claire is the magpie of the design world, finding unwanted objects and upcycling and reusing them in interesting and creative ways.

Her new office is an exercise in recycling itself, having been converted from a former disused public convenience. Just leased from the council, it has been refitted as office space, with huge lantern lights that let in natural light and warmth from the sun. Fittings throughout and much of the building materials are recycled, including beautiful parquet flooring and kitchen cabinets given a new lease of life. Similarly office furniture includes a gym horse converted to a table and a recent find of a row of aircraft seats, soon to be reborn as a sofa.

To soften the austere appearance, raised beds have been created at the front to contain espalier fruit trees on either side.

BUSES 2, 46, 49 (to Coleman Avenue)

TRAIN Portslade (15 min walk or bus 46/49)

FEATURES

- + Cavity wall insulation
- + Food cultivation
- + Ground floor insulation
- + Recycled materials
- + Solar gain
- + Rainwater Harvesting (planned)

Sun 19 October		Sat 25 October		Sun 26 October	
10-1	2-5	10-1	2-5	10-1	2-5
Open		Open		Open	

www.ecoopenhouses.org



2 92 Livingstone Road Hove, BN3 3WL

Jim Miller is applying principles from his Passivhaus design practice to the renovation of his own home. The plan is to repair and insulate each element to the highest possible standard, rather than attempting a range of cheaper, quick fix solutions that might compromise the results.

The first area for renovation is the back wall, which suffered badly from penetrating damp, rising damp and had blown plaster and render. The windows were also poor quality and rotting. This has now been stripped back to the masonry on both sides, finished with lime render and plaster and then insulated externally with breathable Woodfibre external insulation. New windows are triple glazed and timber framed.

Jim's expertise has ensured that the fine detail has been meticulously covered, with no cold or damp bridging (where possible). He will be giving talks to visitors, running through the logic underlying the design and use of materials for this project.

BUSES 7 (to Livingstone Road) or 5, 5A, 5B (to Coleridge Street)

TRAIN Hove (5 min walk)

FEATURES

- + Airtightness
- + Condensing boiler
- + Low energy lighting
- + Natural materials
- + Solid wall insulation (External, Breathable)
- + Triple glazing

3 15 Lloyd Close Hove BN3 6LZ

This new build detached eco house was designed by award winning eco architects Mark Pellant and Abi Torr of Koru Architects for their family (www.koruarchitects.co.uk). The house is zero carbon, benefiting from a good orientation, and 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 55, 56, 59 (Old Shoreham Road). **TRAINS:** Hove

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

Sat 18 October

10-1 2-5

Open

Sat 18 October

10-11 11-12 12-1

Tours on the hour, please book

Sun 19 October

10-11 11-12 12-1

Tours on the hour, please book



4 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; 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.

- | FEATURES |
|--|
| + Cavity wall insulation |
| + Electric car charging |
| + Ground floor insulation |
| + High performance glazing |
| + Loft insulation |
| + Low energy LED lighting |
| + Mechanical heat recovery ventilation |
| + Natural materials & finishes |
| + Photovoltaic panels |
| + Solar thermal panels |
| + Sweet chestnut cladding |
| + Woodburning stove |

5 Exeter Street Hall Exeter St, Brighton BN1 5PG

Exeter Street Hall was bought in 2013 following a long campaign, and public share issue and is now given over entirely to community activity. There is a commitment to restore the building and reduce its environmental impact as sustainably as possible.

It is early days yet, but so far the Hall's lighting has been replaced with commercial LED units, which have cut lighting energy use by 75%. The roof was also insulated heavily in the summer of 2014, to tackle the main area of heat loss. Inefficient old heaters have been removed and replaced with a high level warm air unit.

In the medium term, it is hoped that this can be followed up by a substantial roof PV installation to generate electricity on site, when a means of financing is established. There are plans to use either secondary or 'Slimline' double glazing to reduce heat loss from the windows, which are the second largest area of heat loss after the roof.

Given the age of the building (built 1880) and the high cost of renovation, this project may take some years, but has made an inspiring start.

BUSES 27 or 77 (to Port Hall Road) • **TRAIN** Brighton (15 min walk or bus 27/ 77)

- | FEATURES |
|----------------------------------|
| + Low energy lighting |
| + Low water goods |
| + Superinsulated roof (imminent) |
| + Destratification fans |
| + Warm air heating |

Sat 25 October				
10-11	11-12	12-1	2-3	3-4
Tours on the hour, please book				

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

Sun 19 October	Sun 26 October
2-5	3.30-6.30
Open	Open



6 **One Brighton**
Stroudley Road, BN1 4GH

One Brighton is a pioneering, mixed use development of 173 apartments near central Brighton, completed 2010. It was planned and built by Crest Nicholson BioRegional Quintain as a One Planet Community based on BioRegional's ten One Planet Principles. One of the aims is to radically reduce greenhouse gas emissions (GHGs). A recent review of the buildings' performance found lifetime GHGs are reduced by 60% compared to an average UK home, with potential to achieve 80% by 2020.

One Brighton's sustainability features include roof terrace allotments, a living roof planted with clifftop vegetation, a community composter, photovoltaic panels, a community centre and a sustainable foods cafe. One Brighton also has its own energy services company (ESCo) providing renewable heat from the biomass boiler and renewable electricity from photovoltaic panels.

Tours meet outside Brighton Junction, on lower ground level.

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

CASE STUDY
Slimline double glazing



A big problem with older properties is how to insulate leaky timber sashes.

A popular option is to keep the existing sash windows, refurbish the frames and put in new ultra thin 'slimline' double glazing units. If draught-proofing is included the effect on heat loss can be dramatic.

This is particularly useful when trying to preserve original features. Manufacturers such as Slimlite, St.Gobain and Pilkingtons, now make high performance glazing units at competitive prices. These can be installed by local joiners. Why not give it a try? It can work out cheaper than uPVC with lower environmental impact!

Slimline units insulate better when filled with inert gas such as xenon or argon, or where a vacuum is created. Slimline is not quite as effective as standard double glazing but can have a significant impact on comfort and energy bills in older homes and is a good solution for Conservation Areas (planning permission may be required when making changes to windows).



Brendan of 34 Belle Vue Gardens refurbished his windows in this way:

"My sister draughtproofed her sash windows but the draughtproofing didn't prevent coldness, so she would now like double glazing. Visiting Eco Open houses last year spurred me on to double glaze my existing windows and my architect came up with Slimlite.

I love the way it insulates whilst retaining the character of the property." For more information see page 33.



Sat 18 October						Sat 25 October					
10-11	11-12	12-1	2-3	3-4	4-5	10-11	11-12	12-1	2-3	3-4	4-5
Tours on the hour, no need to book						Tours on the hour, no need to book					



7 Passivhaus Talks Function Room, King & Queen, 13-17 Marlborough Place, Brighton, BN1 1UB

Passivhaus is the leading low energy and comfort standard for designing buildings in Europe where thousands of houses achieve this standard. The approach is centred on high levels of insulation; air tight construction to eliminate draughts; and heat recovery ventilation (MVHR) to supply fresh air when windows are closed. This session offers two short talks from two presenters.

Mischa Hewitt introduces the Passivhaus standard; a new build Oxford house he's working on; and a certified Passivhaus in Coutances, Normandy, recently opened up as part of the Fête de l'énergie at Le Désert.

In *'How far should I go with retrofit? - The story of the Totnes Passivhaus'*, Adam Dadeby discusses his award winning Devon house, one of the UK's first Passivhaus certified retrofits. This is a family home and bed and breakfast where visitors can directly experience a Passivhaus (www.phbb.co.uk). The house was recently opened up as part of Devon Open Doors.

BUSES Any bus to Old Steine or St Peter's Church

TRAIN Brighton (15 min walk)

- | FEATURES |
|----------------------------|
| + Airtight construction |
| + Ground floor insulation |
| + Triple glazing |
| + Low energy lighting |
| + Loft insulation (270mm+) |

Sun 26 October	
10.00	11.30
Talk	Talk

8 Waste House 58-67 Grand Parade, Brighton BN2 OJY

The Waste House was conceived by local sustainable architect, Duncan Baker Brown of BBM Sustainable Design Ltd working with founder of recycling website FREEGLE UK, Cat Fletcher. The premise was simple; 'there is no such thing as waste: just stuff in the wrong place'. For every five houses built enough material to build another is thrown away: why not try to build a house purely out of waste?

The Waste House is built on the University of Brighton's Faculty of Arts site, and is co-designed by Duncan's undergraduate architecture students, overseen by constructors The Mears Group and built by apprentice construction students from City College, Brighton & Hove.

Clad in recycled carpet tiles with walls filled with experimental insulating mixes of old cassettes, toothbrushes and wallpaper, the building is surprisingly elegant. Thermal performance will be monitored by Brighton University's Faculty of Science & Engineering.

The house will remain an evolving project and centre promoting recycling and waste reduction.

BUSES Any bus to Old Steine or St Peter's Church • **TRAIN** Brighton (15 min walk)

- | FEATURES |
|-----------------------|
| + Condensing boiler |
| + Low energy lighting |
| + MVHR |
| + Recycled materials |

Sat 18 October		Sun 19 October		Sat 25 October		Sun 26 October	
10-1	2-5	10-1	2-5	10-1	2-5	10-1	2-5
Open		Open		Open		Open	



A23

Hollingbury



- 1 201 Portland Road
- 2 92 Livingstone Road
- 3 15 Lloyd Close
- 4 20 Avondale Road
- 5 Exeter St Hall
- 6 One Brighton
- 7 Passivhaus Talks, King & Queen PH
- 8 Waste House
- 9 Hanover Community Centre
- 10 50 Southampton St
- 11 1a Whichelo Place
- 12 4 Whichelo Place
- 13 14 Newport Street
- 14 Smart House
- 15 43 Ditchling Rise, FFF
- 16 Yew Tree House, 5b Preston Pk Ave
- 17 27 Roundway
- 18 Straw-bale Talks, Stanmer Park
- 19 Straw-bale Talks, Stanmer Park
- 20 Earthship Brighton
- 21 34 Belle Vue Gardens
- 22 1 Challoners Close

Withdean Park

SURRENDEN CRES
WITTHDEAN CRES
VARNDEAN GDNS

SURRENDEN RD

PRESTON PARK

Hollingdean

Fiveways

Preston Park

A270

LLOYD CLOSE

LLOYD ROAD

RADINDEN MANOR ROAD

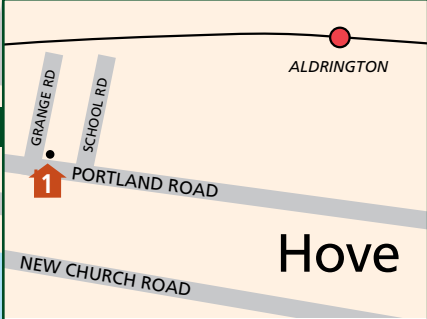
DYKE ROAD

Dyke Rd Park

OLD SHOREHAM ROAD

HOVE

2



Hove

18

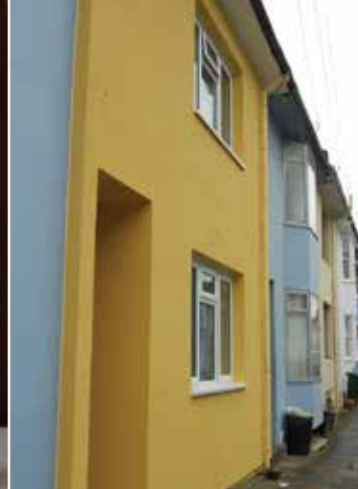
Brighton

Hanover



Rottingdean

19



9 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 is a former school, built around 1870 as a church like building, with massive brick walls, high ceilings and a vaulted timber framed roof. This poses challenges for heating, with heavy losses via the solid walls, uninsulated roof, and large windows.

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 a new highly insulated ceiling has been fitted in the upper hall.

This is a work in progress and further measures are planned, subject to funding, to make the hall progressively more efficient and reduce its carbon emissions.

Buses 23 to 'Pepper Pot' in Queens Park Road – or 37b up Southover Street (hourly and not Sundays). Train Brighton (1km)

FEATURES

- + Draughtproofing
- + Energy monitoring
- + LED lighting
- + Low water goods
- + Lowered and highly insulated ceiling for upper hall
- + Natural materials
- + Secondary double glazing (low cost)

10 50 Southampton St Brighton BN2 9UT

Dani and Allie moved to Southampton Street in 1994. They have made a number of improvements designed to cut energy use including installing 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 heat losses, but also in increasing building comfort, by enabling the walls to act positively to store rather than lose heat.

Buses 23 to 'Pepper Pot' or 21, 22, 23 to 'De Montfort Road' in Elm Grove
Train Brighton

FEATURES

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

Sat 18 October

2-3	3-4	4-5
Hourly tours, no need to book		

Sun 19 October

10-11	11-12	12-1	2-3	3-4	4-5
Hourly tours, no need to book					

Sat 25 October

10-1	2-5
Open	



11 1a Whichelo Place Brighton BN2 9XE

Jackie and Alan have lived in various houses in Brighton since 1992, but were increasingly 'fed up with living in cold, damp, draughty places, paying huge heating bills and constantly running up and down stairs'.

After completing a self-build course they decided to have their own house built 'as greenly as possible'. They looked around for a suitable site and successfully bid on the plot in Hanover at auction. They gained planning permission to build a bungalow and the project was completed in 2007.

The bungalow is a highly insulated timber frame building slightly set into the ground with underfloor heating throughout. It is very light and airy inside. Each room has its own roof light to provide natural light, reducing the need for artificial lighting. Designed by architect Simon Atkins (www.abirarchitects.com), the house was built to 'Eco Homes' excellent standard. It has won several awards including Green Apple Silver and two eco house awards.

BUSES 25c, 37, 37b to Queens Park Road (Pepper Pot)

TRAIN Brighton ¾ mile

FEATURES

- + Condensing boiler
- + Grey water system
- + Green roof
- + Rainwater harvesting
- + Sheep's wool insulation
- + Solar thermal panels
- + Timber frame

12 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.aaarchitects.co.uk).

BUSES 25c, 37, 37b to Queens Park Road (Pepper Pot)

TRAIN Brighton ¾ mile

FEATURES

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

Sun 26 October

10-1 2-5

Open

Sun 26 October

10-11 11-12 12-1 2-3 3-4 4-5

Tours on the hour, no need to book



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 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



14 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)

TRAIN London Road

FEATURES

- + Insulation
- + Natural materials
- + Rainwater harvesting
- + Solar thermal panels

Sat 18 October

10-1 2-5

Open

Sat 18 October

2-5

Open

Sun 19 October

2-5

Open



15 FFF, 43 Ditchling Rise Brighton BN1 4QN

Abby and Kate have renovated one end of this split level flat in a Victorian house into a healthy home. The approach has included insulating the floor, walls and roof using natural, recycled or reused building materials wherever possible.

Natural materials allow moisture to pass through the building fabric and reduce 'off-gassing' from synthetic materials. This includes sheep's wool and newspaper insulation, bamboo work surfaces, marmoleum flooring, clay-board ceiling and partition wall boards, lime plaster, natural paints, wood-fibre insulation and Forest Stewardship Council (FSC) sustainable birch ply.

Windows have been replaced with high performance glazing, with the triple glazing at the back significantly reducing noise from the road. There are also various water conservation measures in place, including a dual flush toilet, aerated showerhead and water meter to measure savings, with water bills being around a quarter of what they would be if paid by standing charge.

BUSES 26, 46 (Ditchling Road), 5, 5A, 5B (London Road)

TRAIN London Rd station

- | FEATURES |
|----------------------------|
| + Condensing boiler |
| + Internal wall insulation |
| + Low water use toilet |
| + Low water use shower |
| + Natural materials |
| + Triple glazing |
| + Under floor insulation |

Sun 19 October					
10	10.30	11	11.30	12	12.30
Tours every 30 mins, no need to book					

Sat 25 October					
10	10.30	11	11.30	12	12.30
Tours every 30 mins, no need to book					

16 Yew Tree House 5b Preston Park Ave, 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.

- | 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 |

Sun 19 October											
10	10.30	11	11.30	12	12.30	2	2.30	3	3.30	4	4.30
Tours every 30 mins, no need to book											

BUSES 5, 5a, 5b, 56.
TRAIN London Road



www.ecobeeproject.eu

The ECOBEE Project is a European project about eco-construction and energy efficiency in buildings with nine English and French partners. The aim of the project is to pool existing knowledge, tools and techniques to assist businesses in the construction and housing sectors and to support behavioural change amongst building users.

The project has been selected within the scope of the INTERREG IV A France (Channel) – England cross-border European cooperation programme and is financed by the ERDF. The project involves five linked open door events, a dynamic website to develop and strengthen cross border networking and two reports on the eco-construction & energy efficiency sectors.

ECOBEE events

- Open Door events in both countries linked to 'Eco Open Houses' in England and 'Fête de l'énergie' in France. The events are in Brighton & Hove, Worthing & Steyning, Totnes, Southend-on-Sea and Normandy. The events are aimed at decision makers, professionals and the general public. Some of the buildings opened up as part of these events are featured in Eco Open Houses Brighton & Hove; see Passivhaus Talks on p.16, Strawbale Building on p.30 and Strawbale Renovation on p.31
- A UK dissemination event in early 2015 to raise knowledge and awareness about how to improve the sustainability and energy efficiency of commercial buildings.
- A final event at Plymouth University in March 2015 involving all of the ECOBEE Project partners in an exhibition and series of seminars, to showcase the sustainable construction and energy efficiency tools identified and developed by the ECOBEE Project partnership.

ECOBEE reports

- Analysis of the eco-construction sector in England and France, including the stakeholders with knowledge and experience in sustainable construction and energy efficiency
- Analysis of support measures for the improvement of energy efficiency of buildings and barriers to the adoption of energy efficient and sustainable practices.



17 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 has built a timber frame shed which features 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
+ Food growing
+ Green roof
+ Grey water recycling
+ Heating controls
+ Triple Glazing
+ Loft insulation
+ Natural materials
+ Solar Thermal
+ Woodburning stove

Sun 26 October	
10-1	2-5
Open	



18 Straw-bale Building – a viable alternative?

Stanmer House, Stanmer Park, Brighton BN1 9QA

Jim Carfrae runs Carfrae Sustainable Design, a design consultancy specialising in construction using straw-bales and other natural materials. He has another existence as Dr Carfrae, a university lecturer and academic researcher into the moisture performance of straw-bale.

Jim will be talking about the buildings that he has designed and built, outlining the positive aspects of straw-bale, and the compromises that sometimes have to be made. Examples included are Capton Spring a 4 bedroom new build near Totnes and his own house in Totnes, both of which have recently been opened as part of Devon Open Doors.

He will demonstrate what he sees as the way forward for straw-bale construction, how it can be incorporated into a conventional timber frame to make a system that is both cost effective and easy to construct. This can be used to create affordable buildings that can equal the performance of any current building standard but still have the low embodied energy that comes from using renewable materials.

Buses 23, 25,25c to Park entrance, 20 minute walk along park road or on grass.
78 to Stanmer Village (Hourly bus. The first does not arrive until 10.30am)

Sat 25 October

10.00 11.30

Talk

Train Falmer Station and 30'walk

FEATURES

- + Airtight construction
- + Heating controls
- + Natural materials
- + Passive solar
- + Solar PV
- + Solar thermal
- + Wood burning stove

19 Straw-bale Renovation

Stanmer House, Stanmer Park, Brighton BN1 9QA

A large scale renovation of an existing stone building in Normandy, this project is being used as a case study to look at the whether a project using non-certificated locally sourced materials can meet thermal performance criteria required to benefit from state funded grants.

Straw-bales, flax, hemp, seashells, shredded clothing, earth – some very interesting materials being used in innovative ways, in particular the pallet wood and straw-bale roof structure. There are also some creative examples of using existing timber and recuperated materials in this passive solar house – which in places resembles a children's playground.

Vincent Doussinault and Lawrence Brown, representatives of l'Association Régionale de la Promotion d'Écoconstruction will be presenting the project (in English).

Buses 23, 25,25c to Park entrance, 20' walk along park road or on grass.
78 to Stanmer Village (Hourly)

Sat 25 October

2.00 3.30

Talk

Train Falmer Station and 30 minute walk

FEATURES

- + Airtight construction
- + Ground floor insulation
- + Heating controls
- + High performance glazing
- + Loft insulation
- + MVHR
- + Natural materials
- + Passive solar
- + Solar PV
- + Solar thermal
- + SWI external
- + SWI internal
- + Underfloor heating
- + Woodburning stove



20 Earthship Brighton

Stanmer Park, Brighton BN1 9PZ

The award winning Earthship Brighton was designed and built by Low Carbon Trust as a project aiming to create a model passive solar, low carbon building for use as a community centre at Stanmer Organics in Stanmer Park.

Earthships are off-grid self-sufficient 'green' buildings, constructed using waste car tyres and other recycled materials. They use natural systems to provide all utilities – solar energy for heat and power and rain for water. They heat and cool themselves, and use plants on site to treat sewage. They also employ extensive energy efficiency and water conservation measures, ensuring that the rainwater and renewable energy they harvest go as far as possible.

For more details of the project see www.lowcarbon.co.uk or the book *Earthships in Europe*. Tour meets outside Stanmer House and involves a short walk through the countryside to the Earthship.

Buses 23, 25, 25c to Park entrance, 20 minute walk along park road or on grass.

78 to Stanmer Village (Hourly bus. the first does not arrive until 10.30am)

Train Falmer Station and 30'walk

Sat 25 October

10.00	11.30	2.00	3.30
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Tours. No need to book

FEATURES

- + Grey water recycling
- + Natural materials
- + Photovoltaic panels
- + Passive solar design
- + Rainwater harvesting
- + Solar thermal panels
- + Wood burning stove
- + Wind turbine

21 34 Belle Vue Gardens

Brighton, BN2 0AA

Brendan had plans to renovate his terraced Victorian house, adding a new ensuite bedroom in the roof and opening up the kitchen to receive more light: his visit to Eco Open Houses 2013 inspired him to go further. Brendan wanted to sympathetically preserve the character of his house, whilst making it a far more energy efficient and well designed space to live in.

Rather than replace the existing period windows, Brendan decided to refurbish the sashes and seals, installing new 'Slimlite' double glazing units. This has enabled the existing appearance to remain largely unaltered, whilst improving thermal efficiency and comfort.

In the interests of sustainability, natural materials and finishes have been used as far as possible, using sheep's wool insulation and floor coverings such as wool and linoleum.

BUSES 1, 1A, 7, 14C, 23, 52 (to College Place)

TRAIN Brighton (1.5 miles: take bus 7 or 14C from Station to College Place)

FEATURES

- + Condensing boiler
- + Draught-proofing
- + Low energy lighting
- + Low energy appliances
- + Natural materials
- + Slimlite double glazing
- + Underfloor insulation
- + Woodburning stove

Sat 18 October

10-1	2-5
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Open



CASE STUDY Draught-proofing



22 1 Challoners Close Rottingdean BN2 7DG

Alex and Lesley moved into this house in November 2012 and found it poorly laid out and often very cold and damp feeling in winter, even with the heating running. Energy costs were also high. They embarked on a full refurbishment which included adding a loft conversion and a new extension, with professional input from Jim Miller Design. Their main priorities were to reducing energy use and improve year round comfort levels.

Very high levels of insulation were aimed for, with new triple glazing and very thick recycled Warmcell insulation used in the roof. Careful attention was also paid to airtightness in this windy location. The new glazing maximises natural lighting and free heat from the sun, whilst reducing heat losses and maintaining a comfortable environment.

BUSES 2, 57 (to Rottingdean Pond) or 12, 12A, 12X, 14, 27, 47 (to White Horse plus 10 min walk)

TRAIN Brighton (4 miles: take bus 27 from Station to Rottingdean)

FEATURES

- + Airtightness
- + Condensing boiler
- + Low energy lighting
- + Low energy appliances
- + Natural materials
- + Roof insulation (300mm)
- + Solar Gain
- + Triple glazing

Draught-proofing is one of the cheapest, easiest and most efficient ways to save energy – and money.

To draught-proof your home you should block up unwanted gaps that let cold air in and warm air out including around the windows and doors, skirting boards, between suspended floor boards, electrical fittings on walls and ceilings, pipe work that leads outside, chimneys and loft hatches.

Saving warm air means you'll use less energy to heat your home, so you'll save money as well as making your home snug and more pleasant to live in.

It's important to maintain good air quality so don't accidentally block any ventilation such as extractor fans, under-floor grilles, airbricks or trickle vents above windows.

Some people when renovating their home take a very thorough approach and consider careful detailing to reduce draughts as much as possible.



Tim Small of 140 Balfour Road spent a long time improving the air-tightness and says:

"Leaky houses are a real problem in the UK (especially in the windier areas like Brighton) – they're like having a window or door which is permanently stuck part-open! Sometimes the leaks provide useful ventilation, but most of the time they just steal our heat... In winter draughty houses end up overly dry, and the cold air often sinks, leaving people with cold feet - they reach for the thermostat to compensate."



Sat 25 October

2-5

Open

Sun 26 October

2-5

Open

Winter warmth for those in need

If you struggle to pay the bills and stay warm or know somebody who does, you could get help to install a new boiler and insulation in time for winter.

The offer, which is open to people on certain benefits, is available through Your Energy Sussex, the council-backed partnership promoting energy saving and renewable energy.

Visit www.westsussex.gov.uk/energysaving for details and eligibility criteria or you can call our accredited contractor, C Mitten Plumbing and Heating, directly on **0800 5999089**.

