

Green Buildings in Norfolk Open Days 2011

Weekends of 17–18 & 24–25 September

Energy-saving solutions for all budgets



Campaign to Protect
Rural England
NORFOLK

Book online: www.cprenorfolk.org.uk/opensdays

Welcome to the Open Days

With energy prices on the rise, there is no better time to think about energy saving home improvements. Basic measures such as loft and cavity wall insulation, draughtproofing, secondary glazing and rainwater collection will be within most household budgets, while renewable energy systems and whole house refurbishments require a bigger investment. Whatever your plans, the Open Days will help you find the right solution for your home.

These guided tours allow you to meet homeowners that have already done the research, completed the work and are living with the results. The tours give you the chance to see materials and technologies in a real-life setting and make your own judgements. You can study fuel bills, ask questions, discuss costs, read manufacturer manuals and get useful trade recommendations. You'll find the homeowners will be completely honest with you about what works and what doesn't; their advice is impartial and thousands of visitors to our Open Days have already benefited from their knowledge and experience.

As ever, there are a wide range of homes taking part, throughout the county. Terraced houses, farmhouses, bungalows, cottages, barn conversions and off-grid smallholdings are all featured. You can see examples of solid wall insulation, wood burners, cob and straw bale building, as well as many types of renewable energy technologies in action. We've also included a few pioneering business premises and community buildings for those looking to invest in other areas of their life.

Unlike other Open Days schemes, we receive no central support or statutory funding for organising the event. As such, unless you are a CPRE member (members go free), we ask you to pay a small charge per tour to allow us to cover some of our costs and continue to run the event in the future. You must book your tours in advance using our online booking system and then directions to your chosen properties will be sent directly by email. Please see middle pages for further information on booking.

The *Green Buildings in Norfolk – Open Days* event is in its 5th year and was the first 'open eco-homes' event in the UK. Whether you have attended before or just discovered the event, then I'm confident you'll find something to inform, inspire or amaze you. From LED lighting to natural swimming ponds, local timber shacks to Bavarian kit homes, air source heat pumps to wood pellet boilers, there really is something for everyone.



JAMES FROST DIRECTOR, CPRE NORFOLK



Green buildings by location

Norwich & Broadland

p4

South Norfolk

p7

Booking

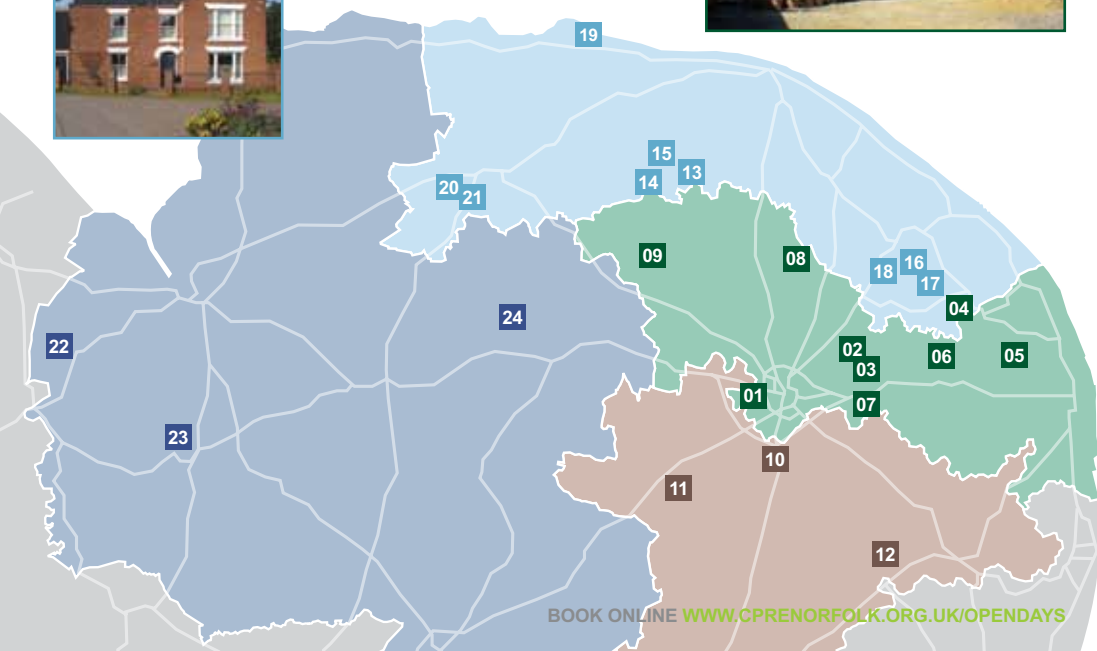
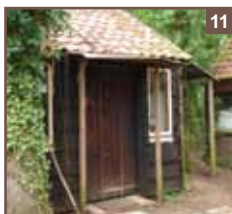
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North Norfolk

p10

West Norfolk & Breckland

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01 NEVILLE STREET, NORWICH

VICTORIAN TERRACE WITH DIY SOLUTIONS

With their solid walls and sash windows, pre-war terraced houses are notoriously energy-inefficient. But this mid-terrace house, built in 1926, has been retrofitted to incorporate simple, low-tech energy-saving and water-saving features. Underfloor insulation has been fitted between joists in the front room and stepped unit double-glaze glass has been fitted to existing timber window frames. The loo has been connected to a water butt in the small rear garden and flushes with rainwater. The house is part-heated by a woodburner stove in which the owner burns locally-coppiced wood.



02 STATION HOUSE, SALHOUSE

SELF-BUILT, SUPER-INSULATED FAMILY HOME

Built by the owner after careful research, the property is constructed around a green oak frame with super-insulated wall panels. Reclaimed materials have been used wherever possible and the use of concrete has been minimised. Loft insulation is made of sheeps' wool and recycled plastic bottles. Other measures to reduce the carbon footprint of the property include photovoltaic solar panels, a wood burning stove, an air source heat pump and – in progress – rainwater recycling. And for the ultimate in low carbon transport connections... it is right next door to Salhouse train station!



03 RENENERGY OFFICES, BLOFIELD HEATH

RENEWABLES ON SHOW AT BUSINESS PREMISES

This new office building has a hand cut oak frame, a red brick construction and is finished with a copper roof. It has numerous technologies installed, all of which contribute to the building's energy requirements, including a ground source heat pump, an air source heat pump, photovoltaic panels, a rainwater harvester, underfloor heating and a wind turbine. Whether you are a homeowner interested in specific technologies or a business owner looking to 'green' your premises, this will undoubtedly be an informative and useful tour.

TOUR DATES AND TIMES		SAT 17			SUN 18			SAT 24			SUN 25		
		10am	12pm	3pm	10am	12pm	3pm	10am	12pm	3pm	10am	12pm	3pm
01	NEVILLE STREET, NORWICH												
02	STATION HOUSE, SALHOUSE												
03	RENENERGY OFFICES, BLOFIELD HEATH												



04 ECO-SHED, POTTER HEIGHAM

RAMMED EARTH WORKSHOP, BUILT BY HAND

This remarkable, single storey, rammed earth garden building was built by hand, for just £2700. The owner researched and taught himself rammed earth building techniques, designed his own soil-sifting machines and shuttering, and then used soil from his own garden to create the workshop walls. Sedum was added to the roof and a tank was buried underground to collect run-off rainwater for use in the fruit and vegetable garden. All in all, the carbon footprint of the building is the equivalent of driving a car only 200 miles!



05 THE WHITE COTTAGE, FILBY

TRADITIONAL COB AND THATCH HOME

Set in an idyllic location overlooking a Broad, this beautiful, 300-year old, clay lump/wattle and daub house has been recently extended by the owners. A unique, two-storey, cob bale extension has been added, built almost entirely from the clay, sand and straw that was found on the site. It is designed using passive solar design principles, requires little heating and has a roof thatched by the owner. It is believed to be only the second cob bale hybrid house to pass building regulations in the country.

Please note that there is no vehicular access to this property, except for disabled visitors. The owners ask other visitors to park nearby and walk the ¼ mile down the driveway.



06 GROVE BARN, UPTON

REBUILT BARN WITH NEW TECHNOLOGIES

The owners originally bought Grove Barn intending to renovate it, but when it became apparent it was structurally unsafe, they decided to demolish and rebuild it completely, using as much of the original flint, bricks, roof and floor tiles as possible, and reclaiming additional material from elsewhere. As an installer of renewable energy technologies, the owner also was able to use his knowledge and experience to fit photovoltaic panels, solar water heating, a ground source heat pump and a rainwater harvesting system. Expect a positive and in-depth discussion of the merits of renewables.

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07 POSTWICK VILLAGE HALL

VILLAGE HALL WITH ECO-IMPROVEMENTS

When the ageing oil boiler at Postwick Village Hall needed replacement, the Parish Council opted for a sustainable alternative. The local community pooled resources to raise the money through a campaign of community fundraising and grants. The 'Sustainable Village Hall Project' was completed in February 2011 providing a ground source heat pump, a 5 Kilo Watt wind turbine and a number of other lo-tech energy saving measures for the Hall, saving almost 8,000 Kg of CO2 a year. Although this tour will be of special interest to community groups, the success story of the people involved will be enjoyed by all.



08 HAUTOBOIS CENTRE, COLTISHALL

STRAW AND TYRE EDUCATION HUB

When it comes to hi-tech eco-buildings, Girlguiding Anglia are perhaps not the first people that come to mind. However, in 2007, a contemporary extension to the main house of their Residential and Activity Centre in Coltishall was opened, featuring a sedum roof, ground source heat pump and rainwater collection tank. Now, in 2011, an off-grid eco-classroom is being built, with foundations made from car tyres (akin to the Earthship building technique) and load-bearing walls made from over 175 straw bales. Come meet the young people of the future!



09 LOW CARBON COMMUNITY, REEPHAM

WALKING TOUR OF LOW CARBON COMMUNITY

This one-off walking tour with a member of the Reepham Green Team will give an overview of the many community projects now completed in Reepham aimed at reducing the town's carbon footprint. These include the installation of renewable energy technologies at churches, schools and social housing in the town and sensitive eco-renovation work at other community buildings such as the Town Hall and the Bircham Centre. Along the way you will also hear about car clubs, low-energy lighting, new allotment spaces and much more...

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08 HAUTOBOIS CENTRE, COLTISHALL		■	■	■	■							
09 LOW CARBON COMMUNITY, REEPHAM					■							



10 THE OLD BARN, STOKE HOLY CROSS

MODERN, ENERGY-AWARE, BARN CONVERSION

These redundant and dilapidated barns have been converted to residential use by dedicated owners, paying particular attention to the character of the original buildings. The design is to a very detailed energy-efficient specification (including a ground source heat pump, sheep's wool insulation and passive ventilation system) and all materials have been chosen to minimise their impacts after extensive research. The owners have been giving guided tours for the last five years and can explain all aspects of the work in some detail. A modern, comfortable and stylish home for 21st century living.



11 THE VINEYARD, BUNWELL

OFF-GRID, SUSTAINABLE LIVING

This is an extraordinary example of sustainable living in a rural setting. Two simple hemp, lime and timber shacks are entirely off-grid with no electricity, no indoor plumbing and no phone! There are paraffin lamps for lighting and wood burners for heating. Cooking is done with charcoal, with gas bottles and a small twig stove. Wood is coppiced onsite and vegetables and fruit are grown by the owner, with the hand-pressed apple juice well worth a try. A homemade kiln also produces beautiful clay pots. If you are looking for an alternative lifestyle, look no further...



12 LITTLE HAVEN, BROOME

INNOVATIVE RETROFIT TO 1930S BUNGALOW

This 1930s bungalow has an array of DIY energy and water saving solutions. Water is pumped from an original well to feed the loos, washing machine and drip-irrigate the garden. Vegetables and fruit are grown hydroponically, with nutrients heated by an ingenious second hand solar system. Inside the house, a wood burning stove feeds a thermal storage tank, supplying hot water to the radiators and taps. The electrical supply has a voltage optimiser and there are solar panels on the front and side of the building. This is a truly exemplar retrofit project.

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How to book

- Decide which tours you want to go on by studying the table opposite. The coloured boxes indicate when the property is open.
- Visit www.cprenorfolk.org.uk/opendays and click on the link for the bookings website.
- Find the tours you want using the calendar and add them to your 'basket'.
- When you've finished, go to 'the checkout'.
- Tours are £4 per person per tour (CPRE members go free – see right).
- Pay using a credit or debit card.
- You're booked! Directions to the properties and any further information will be sent by email.

NOTE: There are a limited number of places on each tour and many tours will sell out – so don't delay!

THE OPEN DAYS HELPLINE

Please book online – we are not taking bookings by post or email. If you have a problem with the online system, or need to change/cancel a booking then please leave a message on the Open Days helpline – 07847 111769. We will get back to you as soon as possible.

IT'S FREE FOR CPRE MEMBERS!

Tours are free for CPRE members. Please enter the promotional code that was included with your brochure, when using the online booking system.

People interested in joining CPRE to be eligible for free tours (and to raise money for a local countryside charity!) should leave a message on the Open Days Helpline. Membership starts at £31 per year.

AND FINALLY...

- Disabled Access: most properties have disabled access in part or throughout, but not all. Please call the Open Days helpline if you would like to discuss access arrangements at any individual property.
- Visitors to properties do so at their own risk. CPRE Norfolk, the property owners or any other parties connected with this event shall not be held liable for injuries, accident or loss arising from this event.
- No dogs.

About CPRE Norfolk

CPRE Norfolk is the Norfolk branch of the Campaign to Protect Rural England, a national environmental organisation which exists to promote the beauty, tranquillity and diversity of rural England by encouraging the sustainable use of land and other natural resources in town and country.

CPRE Norfolk is a registered charity no. 210706. The *Green Buildings in Norfolk – Open Days* event is organised annually by CPRE Norfolk as part of an ongoing campaign to promote positive and practical solutions to climate change and rising energy prices.

CPRE Norfolk is hugely grateful for the time, effort and commitment of the homeowners, business owners and community groups that open up their buildings for tours. We are also grateful to East Publishing and Breckland Print for support with this publication and E-Availability and the Energy Saving Trust for support with the bookings website.

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This brochure is printed on 100% recycled paper. It was printed at an FSC-certified printer using vegetable-based inks.

Open days at a glance

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14 HORSESHOE COTTAGE, CORPUSTY												
15 DAIRY BARN, SAXTHORPE												
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17 BLEAK HOUSE COTTAGE, CATFIELD												
18 NEW VICTORY HALL, NEATISHEAD												
19 JASMINE HOUSE, BLAKENEY												
20 VICTORY HOUSE, FAKENHAM												
21 CRANMER COTTAGES, FAKENHAM												
22 INGLESIDE, WEST WALTON												
23 88 THE LODGE, DOWNHAM MARKET												
24 CORNUCOPIA, DEREHAM												



13 ITTERINGHAM MILL

TRADITIONAL MILL USING HYDROPOWER

This 18th century former watermill has been converted by the owners into a striking family home and B&B, maximising the use of energy from the river. A micro hydro-turbine was installed in 2006, to use the flow from the River Bure to generate electricity for the property. A water source heat pump was added last year to draw heat from the river. The Mill also has solar panels for heating water, re-uses rainwater and has been extensively eco-renovated, making it essentially carbon neutral. Tours at this property will help inform anyone looking to make small or large eco-improvements to a traditional Norfolk building.



14 HORSESHOE COTTAGE, CORPUSTY

AFFORDABLE SOLUTIONS AT REFURBISHED PUB

This 18th century former pub is now a great example of an ordinary home being slowly refurbished to reduce a family's energy needs. The owners do not have a large budget so improvements have to make financial as well as environmental sense. The oil-fired Rayburn has been replaced with a wood-pellet boiler and the cost of the photovoltaic panels is being recouped via the feed-in tariff. The owner has installed solar water heating and has recently dug a well to provide water for loos and the washing machine. Smaller-scale DIY solutions have also been applied, such as LED lighting.



15 DAIRY BARN, SAXTHORPE

ECO-RENOVATION WITH NATURAL SWIMMING PONDS

Whilst the owner of Dairy Barn is slowly renovating the building itself and has already installed a solar water heating system, the main draw on this tour will undoubtedly be the two (yes, two!) beautiful, clean, natural swimming ponds dug into the garden outside. There is also a ground-mounted photovoltaic array, designed and built by the owner, which moves and follows the path of the sun, optimising the electricity generated for the house. The owner will also be able to tell you about his other innovative ideas to become more self-sufficient.

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15 DAIRY BARN, SAXTHORPE												

**16 GALLOWAY HOUSE, CATFIELD****REFURBISHMENT OF FARMHOUSE-STYLE BUILDING**

Galloway House is a late 19th century farmhouse-style building being gradually retrofitted with carbon saving measures. A 25kW wood boiler system heats the main house, with open sheds outside for seasoning timber. Rainwater is collected to flush the loos, photovoltaic panels provide electricity and solar thermal panels provide two hot water cylinders. A programme to install insulation on the solid walls has been started, alongside the fitting of additional roof insulation. The owners have also recently acquired an electric car for local journeys and are planning to process waste vegetable oil into biodiesel for longer journeys.

**17 BLEAK HOUSE COTTAGE, CATFIELD****SELF-SUFFICIENT MEASURES AT RENOVATED COTTAGE**

This cottage is a converted 19th century stable block with part rendered solid walls and double glazed doors and windows. Insulation has been added to a new extension and upper floor. The tiled roof is fitted with photovoltaic and solar thermal panels and an underfloor heating system is in the process of being fitted. The owner is self-sufficient in organic fruit and vegetables and rainwater is harvested using a series of linked barrels for use in the garden and, by way of a watering can, for flushing the loo! A simple blend of home, garden and lifestyle improvements for greener living.

**18 NEW VICTORY HALL, NEATISHEAD****NEW, STRAW BALE, COMMUNITY HALL**

Opened in 2009, New Victory Hall must be one of the most eco-friendly village halls in Britain. The construction is timber framed, using a high percentage of reclaimed timber, and locally-harvested straw bales. The walls are rendered with clay or lime and painted with eco-friendly paint. It has an underfloor heating system drawing energy from a ground source heat pump. The main roof is planted with sedum. Visitors will draw inspiration from the residents' stories, as well as get useful guidance on straw bale building, use of technologies in large-scale projects and funding streams for community projects.

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19 JASMINE HOUSE, BLAKENEY

CONTEMPORARY HOME WITH VEDIC DESIGN

Designed on the principles of Vedic architecture (Sthapatya Veda), Jasmine House is the first of its kind in Norfolk. According to this ancient system, precise alignment of the house (facing due East) and the correct proportions of its rooms create a home in tune with natural law, that brings good fortune to its owners. Natural materials are used, with structural rammed earth walls made from locally sourced earth and sand. The upper storey is timber frame, clad in cedar. There are three solar panels to the south, and the glazed apex brings light through the centre of the property from roof to ground. A truly remarkable building.



20 VICTORY HOUSE, FAKENHAM

BAVARIAN, ZERO-CARBON, KIT HOME

This striking home was designed in Norfolk, built in Bavaria and erected in just 30 hours. The building is zero-carbon or better, even allowing for its transport to Fakenham. The insulation, structure and window frames are wood, but wood grown so far north in Finland that it requires no paint, preservative or maintenance. The house also makes high use of triple glazed pre-fabricated panels, and has solar water heating, a wood chip boiler, a ground mounted array of photovoltaic panels and extensive rainwater harvesting. For anyone considering a new-build, this is an excellent property to visit.



21 CRANMER COTTAGES, FAKENHAM

ECO-FRIENDLY HOLIDAY COTTAGES

These holiday cottages are powered entirely by renewable energy including a 20kW wind turbine, ground source heat pumps and solar panels. The wind turbine also supplies electricity for the swimming pool and the nearby farmhouse. The cottages are conversions of original farm buildings, together with a contemporary new extension, and insulated well beyond regulations. Two existing LPG boilers were removed during refurbishment, heat retaining glass was used on windows and environmentally-friendly paints used on internal walls. In all, visitors will learn about running a green business in Norfolk as well as the sustainable redevelopment of farm buildings.

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**22 INGLESIDE, WEST WALTON****DIY RETROFIT TO 50S BUNGALOW**

The owners of this 1954 brick-built bungalow started with loft and cavity wall insulation, added double and triple-glazing to their windows and have never looked back. They designed and installed an extensive rainwater harvesting system, which provides soft water for their showers, heated by their solar hot water panel. Their next addition was a small wind turbine, and in recent years they have installed two sets of photovoltaic panels. This remarkable retrofit project, now part of the accredited Superhome network, show what can be done to 'green' ordinary homes.

**23 88 THE LODGE, DOWNHAM MARKET****1970S BUNGALOW WITH ENERGY-SAVING MEASURES**

The Lodge is a 1970s brick-built bungalow incorporating a number of energy-saving measures and technologies that work together to reduce the owner's energy needs. A biomass boiler heats radiators and provides hot water in the winter months, whilst during the summer months hot water is provided by solar heating. Photovoltaic solar panels provide electricity and rainwater is harvested from the roof. An elaborate system of recycling bins in the front yard ensure that the minimum of waste is diverted to landfill. The owner also runs a free advice service to the public, so expect all sorts of hints and tips on how you can reduce your energy bills, starting today.

**24 CORNUCOPIA, DEREHAM****EARTH-SHELTERED HOME IN RESIDENTIAL SETTING**

Designed by its architect owner, this bungalow is built into the banks of a hillside at the end of a quiet cul-de-sac. The earth-sheltering provides a ready-made heat store to keep internal temperatures steady. The bungalow has a lawned roof and uses water butts to collect rainwater for use in the garden. Photovoltaic panels have been fitted on the garage roof and solar water heating tubes have been installed to the south-facing conservatory. Sun-pipes also increase natural daylight into the house. Cornucopia is an excellent example of traditional earth-sheltering techniques, as well as an ingenious use of space and energy in a modern home.

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