

CREATING YOUR COSY HOME

turning inspiration into active plans



Cambridge
Carbon
Footprint



WELCOME

This booklet gives you the basic tools to help make your home cosy, energy efficient and better for the environment. It assumes that you've taken the decision to change aspects of your home but not yet figured out what needs changing or in what order. Perhaps you're looking to build on work you've already done with some good next step advice.

Either way, we'll help you identify where home improvements will make a big impact on your comfort, well-being and energy consumption, and by working through this booklet we hope you'll be able to create a Cosy Action Plan (CAP) for your home.

Through our experience with Open Eco Homes we know that most houses are not built in the best way possible, with the best interests of the people who live in them in mind. That's why so many people either want to build a new house from scratch or renovate an existing home. This booklet helps you take first and next steps to create the home you want.

In the next few pages we want to help you create a Cosy Action Plan (CAP) for your own home. This could be a home you want to build or buy, or one you already own and live in. The important thing is to make sure the CAP fits. Make a plan that's right for you, your family, your budget and your home.

Most people take their time about change. This makes sense. Houses and people are complex and unique. It makes sense to get to know what you want before you get started and then to get to know your house (whether imagined or real).

Most of the things that you see in our Open Eco Homes are the result of many years of careful thought, planning and implementation.

But usually a plan starts with some back of the envelope ideas that people find a compulsion to write down. These first ideas are incredibly powerful and keeping a record of them to refer back to help you remember what you first wanted to achieve when you started out.



GET STARTED ON YOUR COSY ACTION PLAN

First, take a few moments to write here your positive vision for a future home. What do you want?

Second, make a note of the things that might hold you back – money, time and lack of knowledge are common answers, but there may be others.

Third, write down the name of someone or something that could help you overcome one of these obstacles, or inspire your positive vision.

GETTING STARTED

Whether you are renovating a house or building new from scratch, there are six basic elements you need to get right to create a cosy home.

- 1. Ventilation and draught proofing** – how you control air flow in and out of the building
- 2. Insulation (including glazing)** – how you keep heat in and cold out
- 3. Passive heat gain** – from the sun, which means making the most of this free energy source in the home but also being conscious of over-heating
- 4. Active heat gain** – choosing the right heating system, including renewable heat
- 5. Electrical efficiency** – reducing waste from electrical appliances
- 6. Electricity generation** – using renewables like solar PV

Strictly speaking you need to work on numbers one and two first, before anything else, because these will determine your basic comfort in the house and also the effectiveness of everything else that follows. Work on passive heat before active heat, and only think about generating energy once you've tackled electrical efficiency. It is far more effective and cheaper to save a Watt than generate it.

Having said all this, it is not always possible to follow the correct order of things so don't let this stop you taking action. More importantly make sure your improvements are high spec, doing the best job possible, not ones you'll regret later as inadequate.

CHOOSE YOUR TIMESCALE

Be realistic. Most of the houses in Open Eco Homes were built or renovated following several years of planning and implementation. Most of us have really busy lives and many of us struggle even to keep on top of day-to-day things. Renovations and new-builds are time-consuming, pocket-busting and energy sapping, as well as being inspiring, knowledge-building and good for your long term wellbeing.

Your CAP could be five years long, nothing wrong with that.



PICK THE LOW HANGING FRUIT

There are some things you can do quickly, easily and cheaply – that will make a big difference. These are the low-hanging fruit:

1. Borrow a thermal image camera from Cambridge Carbon Footprint and book on to one of CCF's Thermal Imaging training sessions. Thermal images help you identify where you need to draught proof and fit insulation. Once you know where your house is losing heat you can do something about it.

2. Draught proof your home. This takes a bit of investigation but spending an afternoon exploring your home on a draught busting expedition is well worth your while. Draught proof windows, doors, gaps between floorboards, skirtings, the loft hatch, random holes you had no idea were there until you looked closely! Use the back of your hand to feel draughts, or a lighted incense stick to see whether the smoke blows.

3. Insulate your loft and don't forget the loft hatch. Make a loft hatch insulation pillow using leftover insulation and a bin liner. Tape or staple the pillow to the hatch. Any gaps in your insulation coverage will significantly reduce the effectiveness of the whole covering, as hot air will just head for the gap.

4. Replace your old boiler with something modern and energy efficient. Depending on the age of the existing boiler, you will save the cost very quickly.

5. Turn down the thermostat a degree or two. There will be no noticeable loss of comfort and according to the Energy Saving Trust you'll save £75/yr and 340kg CO₂ for every degree. If it starts to get chilly reach for the jumper then the thermostat.

6. Replace old electrical appliances with A+++ rated where possible. Tackle stand-by. Reduce your clothes wash temperatures and chose a quicker cycle. These measures will save you money and energy and reduce CO₂ emissions. You could take your old electrical items to Emmaus Cambridge, a social enterprise that helps homeless people get back on their feet.

7. Switch to a green energy supplier



NEXT STEPS

So you've got all the low hanging fruit in your basket. Time to climb the ladder to pick the juicy, rosy, but difficult to reach apples at the top. Why are they harder to pick?

- They cost more and the payback time is uncertain or longer
- They are technically more challenging and usually imply disruption
- You quite often need to choose a person you can trust to work with, be they builders, engineers, installers, architects.

But they do deliver significant life improvements when complete – a new extension sun room (for solar gain), solid wall or underfloor insulation, new energy systems (for example heat pumps, wood pellet burner or solar).

Living in an uncomfortable house can really hold you back and in the worst cases cause illness or even death (about 15,000 in the UK in the winter of 2015 according to fuel poverty campaigners). This process is about living better with a lower impact on the planet, and it's about moving you and the people around you into a healthier, happier and more environmentally beneficial future. Yes, you have to clamber up a ladder to reach the fruit but they taste all the better for it.

MAKING YOUR PLAN

Where do you want to be in five years time? Probably my least favourite interview question, but very useful for CAP creation. Everybody's CAP is going to be different. It's impossible to be prescriptive in a small guide like this, but we hope this booklet has started to tease out some thought processes that will eventually result in you sitting down with a calendar, a spreadsheet and a drawing board.

In the meantime how about filling out our five year CAP plotter. This is by no means fixing the plan, just charting a course with some milestones and a destination, thinking about what's achievable and what you can fit in around the rest of your life. Worth remembering John Lennon's lyric from *Beautiful Boy* 'Life is what happens to you while you're busy making other plans'.

Year One

Year Two

Year Three

Year Four

Year Five

COMBINING JOBS AND MAKING USE OF OPPORTUNITIES



Now you have a road map, the most common journey question – are there any short cuts? Yes! This can save time, energy and money, as well as making more things possible.

Some jobs are better done together. For example, if you need to replace an existing roof, think about fitting external wall insulation and any solar roof systems at the same time. You can save money on imple-

mentation and the disruption happens only once.

If you have scaffolding up for one job, what else can be done whilst the scaffolding is up? When you're re-decorating or improving a room think about how you can improve the thermal comfort and efficiency of the room at the same time. If you're taking on a bigger job like re-wiring, for example, it's a good time to add internal insulation, fix any ventilation issues and install LED lighting.

Modern building regulations for extensions are usually much better than for the original build. If you're planning an extension or another major change such as fitting a new kitchen or bathroom, re-decorating, changing things when a child leaves home, use the opportunity to retrofit other parts of the building.

If you can't retrofit an entire house, but use one room more than any other, why not make that room particularly cosy. The cost of retrofitting a single room is much cheaper than a whole house and could make life a lot nicer. This could be particularly the case for older people who need a safe cosy space that can be heated cheaply to keep happy and healthy.

MAKING IT REAL

Now you need to spend some time really working out what you want, costing your improvements, finding the people who can help you, and creating a timescale.

This is often about visioning the future, rather than just thinking about how you can improve the present. Are you doing it for the environment, for yourself, your family, a tenant or as an investment? Are you planning children, retirement, a business?



Download some Open Eco Home case studies from www.openecohomes.org. Each one contains household stories, details of costs, technologies and the names of companies and individuals who have done a good job. We also have a resource section on our website which includes videos and links to a wide range of useful organisations and companies.



FURTHER READING

Cambridge Carbon Footprint

www.cambridgecarbonfootprint.org

Open Eco Homes

www.openecohomes.org

Transition Cambridge

www.transitioncambridge.org

Energy Saving Trust

www.energysavingtrust.org.uk

Centre for Alternative Technology

www.cat.org.uk

Emmaus Cambridge

www.emmaus.org.uk/cambridge

Centre for Sustainable Energy

www.cse.org.uk

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