

supporters' update

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Amgen  Centre for
Alternative
Technology

summer 2008

CAT gears up for the challenges of the 21st century



A great deal has changed since The Centre For Alternative Technology (CAT) published its energy strategy 'Zero Carbon Britain' last July. Only a few years ago, scientists were predicting that Arctic waters would be ice-free in summer by about 2080. Over the following years, their computer models started projecting earlier dates, around 2030 to 2050. Then last summer saw the Arctic sea ice shrink to the smallest extent ever recorded, from 1980 levels of 7.8 million km², down to 4.2 million km². By the end of last year, one research group was forecasting ice-free summers as soon as 2013.

In addition, as oil crosses the \$100, \$120, \$140 a barrel mark, it has catalysed a rise in public understanding of our urgent global energy predicament. We use five times more energy in 2000 as we did in 1950, and over 13 times as much as in 1900. With demand exploding across the globe and many countries at or nearing peak oil production, analysts, scientists and political leaders are only now beginning to grasp the vast quantities of energy that have become essential for sustaining modern civilisation, and the challenges we face in meeting that need.

We have stumbled blindly into an emergency situation; industrial society must quickly re-think its attitudes, delivering our well being using a lot less energy, and

embarking on a massive new programme to accelerate the use of Britain's indigenous renewable energy sources.

CAT is gearing up to help realise this vital vision. We are now on our second print run of the Zero Carbon Britain report and there have been thousands of downloads of the PDF version from the website www.zerocarbonbritain.com. Presentations have been made in parliament, to groups across the UK and as far afield as Brussels, Dublin and Spain. At the '10th Forum for Sustainable Energy' in Barcelona, Paul Allen, CAT's Development Director, presented it alongside zero carbon visions from groups in Germany, Denmark, Spain, Japan and the United States.

CAT is now preparing for next phase of the Zero Carbon Britain. The project will be a hub for cutting-edge research needed to create a vision of how the UK can revitalise the economy through a genuine investment in a secure and self-sustaining energy future and so provide valuable and genuine leadership on the global challenges of the 21st century. We will be inviting supporters of CAT to get involved in Zero Carbon Britain towards the end of 2008, so keep an eye out for information about this vital initiative.

CAT is also pressing ahead with the WISE project, to help

deliver the skills and training urgently required to make sustainability a reality. We have invested in developing a number of new courses including an MSc in Renewable Energy and the Built Environment and a distance learning version of the MSc Advanced Environmental and Energy Studies.

But we couldn't do it without YOU! With your valuable support, we have recently been successful in raising the funds needed to secure 13 acres of land urgently required to enable CAT courses to expand their research and teaching activities.

Your support has been absolutely vital in enabling WISE, Zero Carbon Britain and all of CAT's activities to gear-up and to rise to the challenge of the 21st Century.

For more information about how to support WISE, Zero Carbon Britain or CAT's extensive education work, contact Tanya or Chris on 01654 704951 or 01654 704959. Visit www.zerocarbonbritain.com for information. Many thanks from all of us at CAT!

Tanya Hawkes and Chris Moreton
On behalf of CAT's Fundraising Team

Make a regular gift to CAT



The number of people who donate to CAT on a regular basis via Direct Debit is growing. Thank you so much to those of you who have already made this commitment to support our work. A Direct Debit donation provides reliable and regular support for our work, enabling us to focus on communicating climate change to people of all ages and backgrounds whilst developing and promoting practical solutions that will ease the transition to sustainability.

Your ongoing donations will help us to teach school pupils about the impact of fossil fuels on our planet's atmosphere, equipping them with the knowledge that we can avert serious climate feed-back effects with a host of proven technologies and practices. Your gift will help our hard-working information team to answer even more questions, as more and more people need support and advice to help reduce

their domestic CO₂ emissions. Your Direct Debit will help us take the message to the policy makers as CAT devises clear pathways to a clean, climate safe future powered by renewable energy technologies.

Pledge your support to CAT now, get behind our message, your help has never been needed so much as at the present. We have a window of opportunity to make real changes to the ways we live, travel and work. Set up your Direct Debit today by getting in touch with CAT's friendly fundraising team who will make sure your donation goes straight to where it matters most. Contact Chris Moreton on 01654 70495 or email fundraising@cat.org.uk or visit the 'support us' section on the website www.cat.org.uk.



Telephone fundraising

For the first time over the summer we worked with an external telemarketing agency to raise funds for the WISE Project.

We're pleased to say that the venture was a success and has made a huge difference to the donations made to the project - a huge thank you to everyone for your support. If you were one of the people who received a phone call we're very keen to hear your thoughts, positive or negative, on this new type of fundraising - please contact James on james.cass@cat.org.uk or call 01654 704958.

Members Inspired By Conference

The members' conference this year included talks from Paul Allen, on Zero Carbon Britain, and Ben Brangwyn; the co-founder of the Transition Towns network. Members had the chance to learn about and debate these current topics in the natural woodland setting of Europe's leading Eco-Centre. There was also the opportunity to tour CAT with the experts. The tours included Dave Hood's exploration of the CAT energy systems, Roger McLennan's popular tour of the organic gardens and Peter Harper's insight into CAT past and present. Music and food were excellent, the Ceilidh band on the Saturday night included CAT's own Paul Allen and Peter Harper. There was also time for members to discuss their own projects and to network.



Feedback highlighted that attendees really appreciated 'meeting like minded people' and 'the positive atmosphere'. As one member put it, 'There are things we can do'.

Good reasons to join CAT as a member and come along to next year's conference. For more information, and to join, contact the membership department at CAT on 01654 705988 or members@cat.org.uk

Discovery days

The Centre for Alternative Technology (CAT) has announced a programme of one-day courses for 2008/9 on skills including how to make charcoal, build a water recycling system or learn about which renewable energy systems are for you

Participants are enjoying the opportunity to learn from CAT's 35 years of experience in sustainability. The courses are taught by a wide range of experienced tutors, including Roger McLennan, who has been Head Gardener at CAT for almost 30 years, CAT's expert engineers and local, established crafts people.

Please go to www.cat.org.uk/courses or ring 01654 705981 for further details and to book your place.

WISE update



Interview with Danny Harris By Chris Moreton

The Wales Institute for Sustainable Education (WISE) building is heading towards its final stages of completion and those of us watch in anticipation can now appreciate how it will eventually look. We are all looking forward to stepping inside this ground-breaking environmental building.

I decide to chat to Danny Harris, WISE's tireless assistant project manager, to see how the last stage of the building is going.

We are standing on the viewing platform, made from FSC timber, which gives the visitors a fantastic insight into the scale of the building. We are sheltered from the midday sun and there are films of CAT's MSc students playing to visitors behind us.

The walls look like they are finished. What's left to do now?

We've got the test panel wall just in front of us to finish off, and the external walls of the lecture theatre are running a bit behind the rest of the build, but other than that not much on the walls. The internal rammed earth lecture theatre walls have been completed, and we're working on the roof and frame for the external wall now. The roof is a timber structure like the rest of the building, with the final finish being a mix of stainless steel and glass, designed to provide optimum passive solar gain, the thermal mass of the rammed earth will help to even out extremes of temperature.

The main hempcrete walls, a mixture of hemp and lime, have been completed successfully and act as insulation and ensure an airtight, draught-free building. Research is already being carried out in WISE; a PhD student is testing the insulating properties of this building technology. The unfinished wall in front of us will be made up of 5 panels of hempcrete, each about 3 metres wide, using different kinds of lime. Sensors are being built into the walls and Ranyl Rhydwen (one of CAT's PhD students and a

tutor at the GSE) will investigate how heat and moisture move through the wall and hence give valuable results on breathability and insulating properties.

A lime render (a coating of lime, sand and pigment) is being applied to the exterior of the building, this will be both weather proofing and the final colour. That's the yellow you can now see on much of the building. Lime allows breathability that concrete doesn't, it also requires a lot less energy to make than concrete.

When will people be able to go inside? Is there much left to do in the rooms? I ask.

We have made good progress with the mechanical and electrical installation, the underfloor heating is now in place in most of the building and will be warming up some of the spaces in the next few weeks. The heating will stabilise the temperature inside the building and stop the wood we'll be laying for the floors from absorbing too much moisture. It will also allow paint and plaster to dry faster. The first fix of electrical wiring has been installed and an electrical engineer will be connecting it to our power supply in order to test the connections.

The accommodation blocks are the furthest on - the internal decoration has begun; plaster, paint and render on the inside walls are being applied, windows and french doors have been fitted and will be glazed very soon. The excitement surrounding WISE has never been greater and we very much look forward to inviting all those who have donated to the project to see this amazing building once its doors open next year.

Is that an invitation to WISE's supporters?

Definitely! We want everyone who has helped us to be able to come and celebrate with us next year.

I leave Danny to talk to some of the builders, he seems to be very much in demand!

WISE has been made possible by the large number of incredibly generous donations we have received from people like you. You have acted to mitigate the worst effects of climate change by supporting a centre dedicated to delivering positive green solutions:

To continue to help and to keep up to date on the latest developments please see

www.cat.org.uk/wise

Thank you from all the staff at CAT!



Woodland appeal success

Well, it has been an exciting few months for biology related activities at CAT. Thanks to the generosity of many of our supporters the Centre is now the proud owner of 15 acres of woodland just across the road from the main visitor site. The woodland was clearfell, and was last cut 10 years ago. It clearly has a healthy seed bank as we have hazel, rowan, birch, oak and ash self-seeding. We also have a range of planted trees such as cherry and beech. The habitat is a mix of drainage gullies interspersed with woodland and patches of heather and gorse. It is the intention to block some of the ditches and return it to wetland, and to clear some areas to encourage heath, and to manage the other sections as coppice with standards to provide timber for courses, firewood, fencing and structures.

The site will become an experiment in biodiversity enrichment as we intend to monitor the species by carrying out monthly transects of all plant and animal life. CAT is interested to learn more about the effects of climate change on the phenology of species in mid Wales. Transects have already been marked out along paths cut in by scythe. The next step is to reinforce the paths and get right into the heart of the wood to assess where is best to put a green classroom and wood workers hut. This will contain a teaching space, pole lathes and other woodworker's equipment.

The woodland has resident dormice, pied flycatchers and an array of interesting mosses and lichens. Once made accessible and explored more fully, the site will be used for a whole host of activities ranging from hurdle making and charcoal making to bird identification and habitat restoration. The woodland will be called Coed Y Gwern or Alder Wood. That ties in nicely with the CAT quarry being called Valley of the Alders; Llwyngwern, but also with the fact that the site is damp and it is expected that alder would have once thrived here. This woodland, Coed Y Gwern, will, we hope, become recognised as a green college where a range of skills can be explored and taught.

Coed Y Gwern will ultimately form a part of a new initiative at CAT called the Sustainable Land Used Initiative (SLI), where we will focus our interests in land, biodiversity and food issues. Zero Carbon Britain will be a common thread that holds it together. The SLI will be a forum for discussion on land use related issues. CAT would like to invite all those that supported the purchase of Coed Y Gwern to a Supporters' Working Party on the site, followed by a dinner. Accommodation will be provided. This will occur in October this year. We'll keep you posted.



zerocarbonbritain education

CAT's team of education officers have also been busy integrating Zero Carbon Britain (ZCB) into their work. As one of the key communication departments at CAT, they frequently work with a broad range of stakeholders ranging from pupils, students and teachers to policy makers and academics within the education sector. Zero Carbon Britain (ZCB) provides a neat context for many of the department's education for sustainability programmes, and has appeal and relevance to a variety of audiences.

The team have made ZCB presentations to several groups of education specialists, including Education for Sustainable Development and Global Citizenship (ESDGC) trainers, humanities advisers, and design and technology heads of departments. In every instance ZCB has been met with enthusiasm and praised for providing solutions in a background of uncertainty, fear and problems.

This is especially valuable to teachers who are faced

with communicating the challenges of climate change to young people.

Children are responding particularly well to ZCB. A useful method of communicating a weighty policy document to younger audiences has been to make the presentations very visual, and include interactive activities and discussion. The education team are hoping to be able to secure funds that will allow them to develop practical ZCB education resources that would enable pupils to create their own zero carbon futures, and explore the realities of living with tradable energy quotas (TEQS).

The new academic term kicks off with a member of the team giving a ZCB presentation at a higher education conference 'All our Futures' at Plymouth University.

To find out more about the work of the education department or how you can support our work, please contact Tanya or Chris on 01654 704951 or 01654 704959.

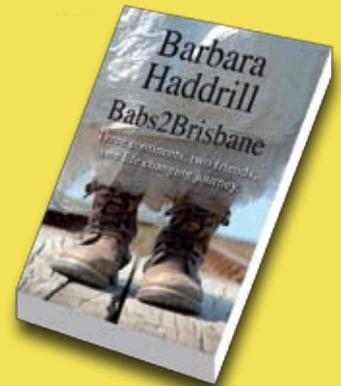
Support CAT when sending greetings cards

At www.charitygreetings.com/cat/ you can send e cards to all your friends and family for special occasions and for every card bought £1 will be donated to CAT.

Your Charity Greeting is 'virtually' posted through your friend's email letterbox. It's like getting the real thing, without any paper waste, stamps or postal delays. So as well as saving paper you are also contributing to the vital environmental work we do here at CAT. Not bad, hey?

charitygreetings.com harnesses the emotional act of connecting with the valued act of environmentally friendly and charitable giving, creating connections that count.

So send your loved ones an e-card today at www.charitygreetings.com/cat/



Babs2Brisbane

CAT employee Barbara Hadrill made headline news around the world a year ago when she travelled overland from Wales to Australia to be a bridesmaid at her friend's wedding. Saying no to air transport because of high carbon emissions, Barbara travelled by train, bus, boat and bike in an epic six week journey. She's written a book about her experience - Babs2Brisbane (the name is taken from her blog www.Babs2Brisbane.com). Published by CAT Publications in January it will include stories from her travels as well as useful information for other people who want to make the same (or similar) journeys.

Josh Brown Bursary Fund

Help people on low incomes to train at CAT by donating to the Josh Brown Bursary Fund.

"After attending CAT's introduction to renewable energy course, courtesy of the Josh Brown Bursary Fund, I was inspired, and am now actively involved in accelerating the sustainable commercialisation of photovoltaic technology in Western Kenya."

The Fund enables students to attend CAT's practical courses. Set up in 1997, in memory of Josh Brown, a young man who was dedicated to social and environmental issues, the Fund is held in an ethical investment account. Many people who would otherwise not be able to attend CAT courses are now creating a more sustainable world after studying at the Centre.

Please donate to the Josh Brown Bursary Fund by contacting Tanya Hawkes on 01654 704951. Thank-you.

Words to Wikipedia

Tradable Energy Quotas (TEQS)

Effects of Global Warming

Peak oil





CAT Community self build

Thanks to two very generous donors CAT's live in community is embarking on an exciting new building project. A new kitchen and communal eating area has long been needed for the CAT staff and four volunteers who live on site.

The building will essentially be a timber frame building with hemp and lime walls and a cob interior render. The back wall will be made of straw bales and will be load bearing. It will consist of a main eating area and a curved kitchen; the curve nestles into the surrounding bank and hence reduces the visual impact of the building on the landscape. There will be a wood stove in the middle for cosy winter evenings and waste 'grey' water to will feed a herb garden. Other ideas will surely follow; rain water harvesting butt, south facing sky lights, and possibly a solar water array.

The building has been designed and project managed by one of the residents and all are helping to build the eco-kitchen. Work days and the opportunity to learn eco-building skills have attracted a wide range of friends to come along and help out with this exciting project too. This has lead to a communal buzz about the place with friends and residents often sitting down to eat together and a spontaneous barbeque one evening. With everyone pitching in to help and learn from each other in any way they can, this project has really strengthened the community's bonds.

Sponsor a Volunteer Placement



For the past 10 months, I have been working with CAT's engineering department as the industrial experience part of my degree.

This paid placement, funded by generous sponsors, has been the best experience I could have hoped for from a year out. I have spent my time learning practical skills both about general engineering and specifically renewable energy, which I could not have learnt on my theory based undergraduate degree. I have also learnt a lot about sustainability in other areas through mixing with the informed and enthusiastic staff.

I was involved in compiling a report on CAT's energy use throughout the year, which was a big task but one that familiarised me with all the systems in place. This data is now available to students and CAT staff for analysis, and will help minimise energy usage and with planning future distribution.

I have also, with some of the other members of staff, been laying the foundations to put in place automated energy monitoring systems, which would automatically record and display data on energy usage at a detailed, room by room level, in real time, in preparation for implementing our zero carbon CAT strategy.

As a result of my experience this year I now have a clear idea what I want to be doing in the future - community based renewable energy projects in developing countries. My time at CAT has changed me as a person, increasing my confidence both in work and beyond it, and I have nothing but gratitude for everyone who made this placement possible. Thank you!

Ralph Thompson

Lewis Winks

I am beginning a one year research placement at CAT. Throughout the next twelve months I will be looking into ways of making effective use of the 'waste' emissions from the new CHP power plant on site,



as well as any excess heat produced. This may provide the means to enhance plant growth within greenhouses, growing more food while re-using CO₂ and reducing our carbon footprint.

Help to fund a placement

You can help to fund a placement by visiting our website at www.cat.org.uk and clicking on "Support Us," then "Sponsor a Volunteer," where you can get further details or donate online. Or you can contact us at fundraising@cat.org.uk or on 01654 704959.