



World Society of Sustainable Energy Technologies
NEWSLETTER

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Events



9th International Conference on



Sustainable Energy Technologies

WSSET - New Industrial Members

1. [ATMOS Heating Systems](#)
2. [Danilith UK Ltd](#)
3. [Carbonlow Group Ltd](#)
4. [Vale Window Company Ltd](#)
5. [Gavirol Consult Ltd](#)

UK/China Seminar

Seminar will be held in Shanghai, China on the 28th August 2010

On Sustainable Energy and Construction, including Match making events for UK and Chinese industries coordinated by WSSET (www.wsset.org) in partnership with



Register: Saffa.Riffat@nottingham.ac.uk

Conference Topics

- Renewable Energy Technologies
- CO₂ reduction and low carbon technologies
- Sustainable energy technologies in the built Environment
- Renewable energy management and environmental impact
- Advanced refrigeration and air conditioning technologies and new components
- Technology transfer, international cooperation and innovation

Submission of full and draft papers:

Both the abstract and draft paper must to the conference secretariat:

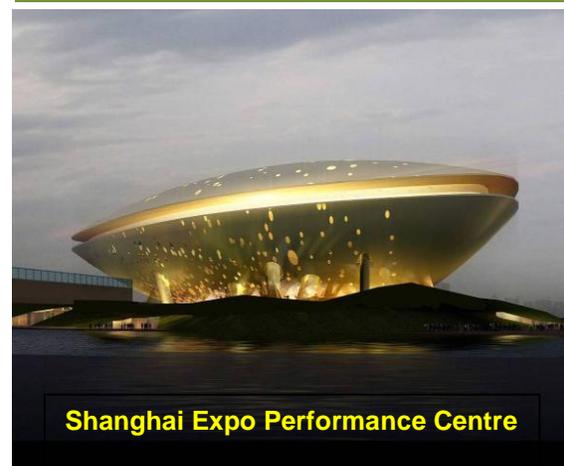
Homepage: www.set2010.org

Email: secretariat@set2010.org

Shanghai, China

August 24th-27th, 2010

A great opportunity to also visit the World Expo 2010 in Shanghai



Shanghai Expo Performance Centre

Technologies and products

SystemFirst™ was awarded BBA Agreement certification on 3rd October 08.

The SystemFirst™ foundation system is a simple, technical design concept of a supported 'slab' platform which will support any building in all ground conditions at an affordable cost and with significant environmental benefits. Roger Bullivant believes that this off-site manufactured modular house foundation system is the most radical move introduced to the house building sector this decade.

- A The SystemFirst™ foundation requires no trench excavation (thus avoiding the unsafe practice of working in a hole in the ground) and components are manufactured off-site and installed on site with a **75% time saving** on traditional house foundation construction methods. As the steel system used in this foundation is lighter, it is therefore easier to manoeuvre, cheaper to transport and more environmentally friendly, with **90% less concrete** used compared to traditional house foundations.

The facts

CO² emissions:

This represents about 15% of the entire annual output of the largest quarrying and aggregates company in the UK.
END.

RENEWABLE INCENTIVES NEED TO BE BROADER

With an EU directive that requires fifteen percent of the UK's total energy to come from renewable sources by 2020, the government's policy to meet this can be likened to a 'carrot and stick' strategy. The latest stick comes in the form of the CRC Energy Efficiency Scheme, which came into force on 1st April and will see around 5000 large energy-users given a carbon emissions cap with an obligation to buy and sell carbon credits to meet the cap. The latest 'carrot' to encourage the use of 'green energy' is the Feed in Tariff (FIT), which will give a return on investment for renewable electricity generation - for every kWh produced for the next twenty years. Also on the horizon is the Renewable Heat Initiative (RHI), due in April 2011 and out for consultation at the moment, under which installers of renewable heat generation will be paid a fixed sum for each kWh of heat produced.

Whilst we welcome the FIT and RHI schemes, which are perhaps long over-due, we do have concerns that the range of technologies being supported may be too narrow. For example, we are aware of a large building project in the East Midlands region that will use a number of energy-hungry cooling systems, the by-product of which is inevitably waste heat. With the help of Professor Saffa Riffat, we are looking at recovering this waste heat and channelling it into what is known as a 'district' heating system for the benefit of neighbouring properties. This has the potential to save around 15000 tonnes of CO₂ a year and yet because this method of heat generation is not covered in the narrow definitions contained in the draft RHI legislation this scheme may be seen as 'not worthy' by the developer and potentially not viable. We have raised our concerns with the Department of Energy and Climate Change (DECC) and hope that as this law is still at the draft stage there may be an opportunity to re-visit the proposed regulations to include recovered waste heat within the RHI. We guess that there are other projects out there where waste heat recovery is being proposed and we would be delighted to hear from other WSSET members who have experience of this so that we can add some weight to our representations to the DECC.

Peter Walden B.Sc. MRICS. C.Env. FRGS is the managing director of CarbonLow Group, which specialises in all aspects of carbon management (www.carbonlow.co.uk). He can be contacted on 0845 634 6071 or by email: peter.walden@carbonlow.co.uk

Research and Development Project

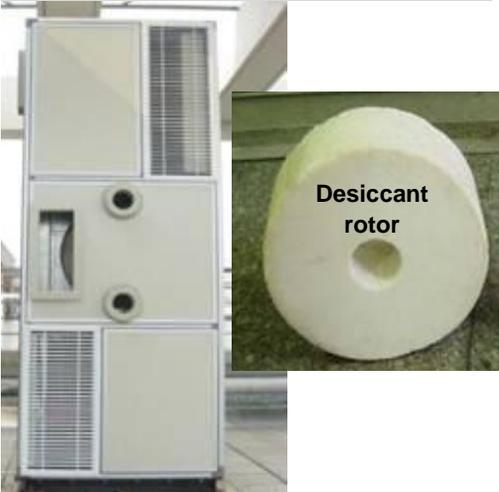
Solar Driven Two-stage Rotary Desiccant Cooling Technology

A solar cooling technology, which can convert more than 40% of the received solar radiation into cooling or dehumidification effect for a residential building, has been developed in Shanghai Jiao Tong University.

The technology works in principle of desiccant dehumidification and evaporative cooling. By developing a novel composite desiccant materials and an improved coated method, the regeneration temperature for desiccant dehumidification process can be lowered to 60-90°C, which meets the temperature level of the commonly used solar collector well. To further improve the performance of desiccant cooling, the researcher proposed a two stage desiccant dehumidification process with internal cooling. Using this method, part of the adsorption heat can be recovered and the thermal COP of the whole system is lifted to more than 1.0, much higher than the conventional one stage desiccant system.

Particularly, the researcher invented a one- rotor two-stage technology,

One-rotor two-stage desiccant cooling unit



Desiccant rotor

which uses only one desiccant rotor but have the same performance as the two rotors two stage desiccant dehumidification system, meanwhile, the size and the cost is almost half of the two rotor unit.



The technology has been successfully used in solar dehumidification and cooling projects in China, such as Himing Group, the biggest manufacture of solar collectors in China, Jiang Yin city, etc. yidai@sjtu.edu.cn END

NEWS IN BRIEF



Pictured here is Professor Riffat cutting the ribbon to open the [Monodraught](#) stand at [BSEC 2010](#) in London , other photographs include shots with Managing Director, Tony Cull, Technical Director, Nick Hopper as well as some of Monodraught's Technical Consultants.

THE MEAT FACTORY

A LIVE-WORK HOUSE FOR HOUSE FOR A FUTURE CLIMATE

Marsh: Grochowski Architects are close to completing an unusual house in an inner city area of Nottingham. Built on a site at the corner of two rows of terraced houses the new house makes the most of its context to reduce energy use and generate what it can for its own consumption

The house is live-work - grow. On the ground floor are studios and a small gallery for one of the occupants and on the first floor the living accommodation. A south facing courtyard gives plenty of space to grow food and a composting toilet provides the fertiliser.



The site faces due south and the orientation is used to provide two sunspaces which provide pre-heated ventilation air in the winter and work with roof mounted stack vents to provide extract ventilation in the summer. Part of the major sunspace is shaded by a 2.52Kwp solar array to reduce overheating the circulation area. Comfort in this space is also supported by a large mass wall with 28 degree C phase change material and water stored in 850 recycled Ecover washing up liquid bottles. This is used in conjunction with night cooling. Extract ventilation for the kitchen, we's and showers is fitted with heat recovery.

Rainwater is recovered from the roofs and used for all except drinking water. Hot water is provided by a solar system backed up by the heating system which is in the form of a GSHP/underfloor heating with two 75m deep vertical bores in the courtyard down to the aquifer below.

The structure is made from parallam recycled timber beams and supports hollowcore concrete floors and ceilings to evenly distribute mass throughout the building. Insulation is hemp batts. END

21st Century Innovation

Today, heat recovery systems are seen as the natural choice for energy efficient ventilation in both new build construction and refurbishment projects. Technological advancements in the development of MVHR have been spurred on by SAP Appendix Q and the Code for Sustainable Homes.

Many heat recovery units are designed with built-in filters to prevent the unit from getting blocked up and operating inefficiently. However, to ensure that the unit continues to operate efficiently most manufacturers recommend regular maintenance by a professional tradesman which can be costly especially in the long term. Another fundamental flaw is that traditional MVHR units do not protect the ductwork and over a period of time they provide a breeding ground for microbial growth such as mould and bacteria. Dirty ducts circulate dirty air and lead to indoor air pollution - the exact opposite of what a good ventilation system is designed to do.

A new solution

EnviroVent have developed energivent FLOW, a sustainable heat recovery unit

designed with a filterless central unit to offer an energy efficient



application that requires the lowest maintenance and performs at the top of SAP Appendix Q. Designed to last the lifecycle of the property it is installed in, the system works by continually extracting stale, moisture-laden air from the 'wet rooms' of a dwelling such as the kitchen, bathroom and en-suite rooms. The extracted air runs through ductwork that is protected by filters at source to the central unit where it passes through a counter-flow heat exchanger before being ducted to the outside. Simultaneously, fresh air is drawn into the unit from outside. This is warmed by the high efficiency heat exchanger before being delivered into the living, dining and bedroom areas.

The unique design of the counter-flow heat exchange cell prevents contaminants from making contact with the sides of the internal mechanisms. As the airflow inside the cell is laminar and not turbulent all particles remain suspended within the airflow unable to settle on the cell walls and clog up the unit. energivent



FLOW provides the optimum solution all round to offer the cleanest system with the lowest maintenance, making it a very attractive prospect for architects, contractors and specifiers in today's climate conscious world

Website www.envirovent.com

END

Latest news

What IS Cool Phase?

COLLABORATING WITH THE UNIVERSITY OF NOTTINGHAM, CIBA (BASF) LTD, AND THE CARBON TRUST, MONODRAUGHT HAS CREATED AN EXTREMELY LOW ENERGY, INTELLIGENT PASSIVE COOLING AND HEAT RECOVERY SYSTEM FOR USE IN COMMERCIAL, ACADEMIC AND HEALTH CARE ENVIRONMENTS. IN THIS ARTICLE PRODUCT DEVELOPMENT MANAGER PAUL AITCHISON, DISCUSSES THE TECHNOLOGY AND THE APPLICATION

Monodraught developed the Cool phase system to provide powered fresh air ventilation with the capability of storing and discharging large amounts of latent thermal energy. The system uses a micro-encapsulated phase change material (PCM) slurry, to provide thermal storage and supply comfort cooling or heat recovery. All this is achieved using a fraction of the power required to run traditional

air conditioning (AC) systems, reducing carbon emissions and the detrimental effects usually associated with AC.



The advantages of Cool-phase are its:

- Low power consumption – of approximately 40W
- Its recyclability – The PCM is simply composted at the end of its life

both commercial and domestic markets.

For more information, please contact:

Monodraught Ltd

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Fax: 01494 532465

Web: www.cool-phase.com/

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