



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](#)

CALL FOR PAPERS

Authors are kindly welcomed to submit an abstract in English before **March 31, 2010** for the initial review. The accepted abstracts will be invited for oral or poster presentations on research, policy and practice regarding the conference topics. The abstract should clearly state the objectives, results, and conclusions to enable the scope and nature of the paper to be assessed. Final acceptance will be determined based on the review of the abstract and authors will be notified of acceptance by **April 10, 2010**. Full manuscripts are due by **July 15, 2010**.

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 papers

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

Homepage: www.set2010.org

Email: secretariat@set2010.org

On the 28th August 2010 UK-China Seminar on Sustainable Energy and Construction to be held in Shanghai including Match making events for UK and Chinese industry coordinated by WSSET (www.wssset.org) in partnership with

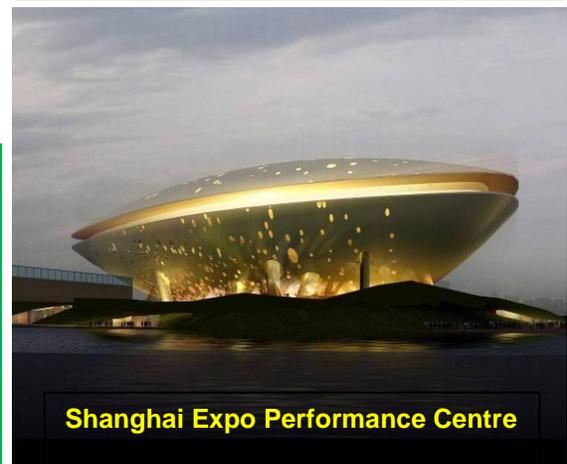


Register: jessica.surname@nottinghamcity.gov.uk

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

The SystemFirst Foundation System

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.



The facts

CO² emissions:

'Traditional' trench fill foundations for an average house (having a footprint of 80m²) will release 45 tonnes of CO² into the atmosphere. The SystemFirst™ foundation system will release 11 tonnes, a **reduction of 75%**. The effect of introducing SystemFirst™ to only 30% of the UK house construction market would provide a **10% reduction in the whole of Europe's CO² emissions** from construction-related material production over the next four years.

Water usage:

'Traditional' trench fill foundations for an average house (having a footprint of 80m²) will use a staggering 36,026 litres of water. The SystemFirst™ foundation system will use 4,287 litres, a **reduction of 88%**.

Raw materials:

'Traditional' trench fill foundations for an average house (having a footprint of 80m²) will use 233 tonnes of raw materials. The SystemFirst™ foundation system will use **18 tonnes, a reduction of 92%**.

The effect of introducing SystemFirst™ to only 30% of the UK house construction market would **save approximately 11 million tonnes of quarried aggregates** annually.

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

END.

FUNDING AND AWARDS



The Sustainable Construction iNet has allocated £250,000 of funding for Higher Education Institutions (HEIs) to work collaboratively with construction sector businesses across the East Midlands in 2010 to develop innovative, sustainable technologies or processes.

the iNet has finalised three themes for the next round of funding:

Theme 1: Drivers for Change

How specifiers can accelerate the take-up of sustainability and set the pace for innovation and sustainability

Theme 2: Value Engineering for Retrofit

How to encourage affordable solutions to improve sustainability of the existing stock

Theme 3: The Time to Innovate is Now

How to remove the barriers to increased innovation to encourage greater acceptance of sustainable technologies

How to develop and roll-out new products and processes as best practice

Workshops

The iNet has organised two workshops to let people know about how its funding works and explain the opportunities and benefits of working collaboratively.

For more information, please contact:

Nawal Arshad at the Sustainable Construction iNet by email at nawal.arshad@northampton.ac.uk or by phone at 07545 419615. www.eminnovation.org.uk/construction

- A modular foundation system providing a viable alternative to traditional strip and deep trench Foundations
- Provides dramatic reductions in carbon emissions, water consumption and raw materials.
- Built using lightweight steel components designed to act as a composite unit
- Off-site factory construction using modern methods of construction.

High thermal insulation compliance to proposed 2016 regulations and Code for Sustainable Homes Level 6

- Comparable costs to finished floor, either per plot or per m²

As an innovation it might be easy to underestimate the significance of SystemFirst™. Foundations are hidden platforms which are not generally appreciated by the public at large; they are assumed to be a necessity which property owners take for granted.

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.

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

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

- Health benefits – fresh air is the drivingforce.

The next stage... True zero carbon cooling and heat recovery Cool-phase was designed from the outset to run on DC power ; and although only a small amount is required it is still powered by mains electricity. Monodraught is therefore developing a solar powered version, creating a true zero-carbon product for both commercial and domestic markets.

For more information, please contact:

Monodraught Ltd

Tel: 01494 897700

Fax: 01494 532465

Web: www.cool-phase.com/

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