Getting back to nature

Building services engineers have a huge amount to learn from the natural world, according to the latest expert to address the CIBSE Patrons annual "get rid of all our faulty products" event to do the same thing with technology and whale fins.

An innovative blade design copied from an insect wings are now wind turbines able to generate being applied in commercial building by the design of insect wings are already how camel nostrils are highly effective man-made fire detectors. He also explained how 'biomimicry' – where engineering solutions are based on natural phenomena – made the Eden Project possible and is now being adapted to commercial office buildings.

For example, the Bark Beetle is able to detect a forest fire from a distance of 80km – ten times the range of the best man-made fire detectors. He also explained how camel nostrils are highly effective evaporative cooling devices.

Passive cooling techniques based on termite mounds and solar shading inspired by the design of insect wings are already being applied in commercial building designs, Mr Pawlyn explained. Also, there are now wind turbines able to generate energy at very low wind speeds thanks to an innovative blade design copied from whale fins.

The natural process of evolution refines solutions and so he called for the industry to do the same thing with technology and "get rid of all our faulty products".

Mr Pawlyn urged the industry to move away from the word "sustainable" because it was not inspiring and said we should aim higher by designing things that were "restorative" instead. The design ideas based on nature are "not a gamble"; he added, because they are the result of billions of years of evolution so are tried and tested.

Biomimicry informed the approach of the Eden Project team with the buildings designed to adapt to the landscape rather than the other way round. The engineers also used a membrane for the distinctive domes of the Cornwall attraction rather than glass because it was more flexible and far lighter.

Mr Pawlyn (pictured) told the Patrons meeting that his team had adapted these ideas for commercial office buildings and now insisted that each concept design team included a biologist. He also said it was important to take a more collaborative approach and "suppress the architect's ego". The need for better supply chain collaboration was also stressed by Patrons chairman David Fitzpatrick earlier in the day. "Architects and building services engineers must work more closely together if we are going to achieve our targets for high performing buildings," he said.

Mr Pawlyn also said it was important to explain ideas in a way that meets the expectations of building owners and users. "Some clients are not just interested in saving money, but in the added value and improvements in productivity created by a better working environment, so we need to talk in those terms," he said. "It is getting easier to inspire people with these ideas because the debate is shifting and people are talking about the positive outcomes rather than continually stressing negative issues."

CIBSE president-elect and former Patrons chairman Nick Mead thanked Mr Pawlyn for his "inspiring talk" and said the building services sector had much to learn from these ideas and should use them as a way to "excite the young people considering a career in our industry". You need to learn to speak to people in their own language – don’t talk to them about kilowatt hours.

He was concerned that "little old ladies" were terrified by their energy bill and so automatically turn everything off because they didn’t understand their options.

Lord Martin O’Neill, who hosted the lunch, said there was a clear will within government to improve the standard of building services to improve the efficiency of the construction industry. "We have to be doing things better in future because the competition will be fiercer," he said.

CIBSE conference to focus on building performance

This year’s CIBSE conference will take place on October 28 and 29 at the QEII Conference Centre in Westminster, London.

The two-day Leadership in Building Performance conference and exhibition will enable clients, engineers and designers, contractors and product manufacturers to further explore innovations and best practice aimed at delivering better building performance and operation.

The conference will focus on building performance issues in the private sector during the first day with the public sector covered on day two.

The conference will also feature case studies from CIBSE’s Building Performance Awards.

The event, organised by Step Place Events, is designed to provide "demonstrable and practical advice" that can be implemented by delegates to improve performance in reality and help to close the performance gap.

The exhibition area will include workshops and ‘think tank’ forums from leading building services providers, giving real examples of performance benefits with an emphasis on technical development.

For more information contact:
Steve Webb at Step Place Events: 07545 020458/01892 518877 or Email: stevewebb@stepex.com

Happy 55th

The CIBSE Patrons have now chalked up 35 years supporting and enhancing the work of our Institution. That is a huge amount of financial and professional support to the business of raising the profile of our sector and increasing interest in careers in building services engineering.

To mark this special anniversary we are hosting two special events at London South Bank University – an important centre of hvac education since the aftermath of the Second World War. First we are holding a mainly social event on July 15 where we will discuss the topic and line-up for a major debate sponsored by Patrons to be held at the university in the autumn.

How our sector tackles its skills shortages and continues to compete for the very best people will be a central issue in that debate and we will be looking to draw together a wide range of expert contributors.

The demographic of our industry is changing and we must see more women, more young people and more people from different ethnic backgrounds being attracted to the profession. Our BIM article on page 2 offers a fascinating peak into the future by relating how school children as young as 11 are engaging with the software tools of our trade. Their familiarity with digital technology and lack of fear of IT means many young people are being drawn to the building services industry.

The dual appeal of the climate change agenda and the use of cutting edge software makes a career in our sector more attractive than ever. As CIBSE President Peter Kinsella puts it: “There has never been a better time to be a building services engineer.”

Our industry also offers a continuity of employment that few others can. In fact, building services has a better retention rate than all professions outside healthcare.

We have much to be optimistic about as the lengthy recession slips further into our collective memory, but equally there is a huge amount to play for and CIBSE Patrons are uniquely placed at the heart of our industry’s future planning.

The varied articles in this latest issue of our newsletter demonstrate just how key our work is to the sector and how wide our agenda really is. Please enjoy this update, which I’m sure you will find useful and informative; and please use your Patrons membership as a route to greater participation in the initiatives that drive the world of building services.

David Fitzpatrick, Chairman
Why children ‘get’ BIM

The way school children embrace BIM in their professional aspirations is a great lesson for ‘more mature’ architects, engineers and construction professionals. Patrons meeting heard from Alison Watson, founder of the Class of Your Own (COYO) scheme, explained how designing as young as 11 were creating BIM models of buildings that amazed professional engineers. “Children just get BIM,” she told the Patrons. “They ‘see the world and visualise information in a way that is perfect for working in BIM’”

In one case, when they got to the same way they would computer games like Grand Theft Auto, she explained, adding that companies could learn a lot from teenagers. “While these kids are not fazed by technology, they saw that ‘if you are working in BIM’”

Children were working with various groups of manufacturers to ensure all products relevant to building services design can be imported into these spreadsheet-based tools covering different product categories. The products are represented by their digital geometry so they can be imported into 3D models, with basic information about weights, sizes and general dimensions also included in the BIM.

**Patrons drive BIM progress**

The push for wider adoption of Building Information Modelling (BIM) across the industry is crucial to ensure future generations are engaged as early as possible.

The Patrons steering committee has now signed off £100K of COBie and will be able to distribute their request for an app.

**Skills shortage is top priority**

Sponsoring the COBE Patrons is helping the Institution expand its work to promote building services careers to young people. While the use of digital media has increased COBE website and its About Engineering Services Tab, demand has increased for young people to experience the different versions of the careers, materials, including the 13 career fact sheets supported by Patrons for many years.

Patrons’ sponsorship ensures COBE can continue to replenish stocks of these, and also already contains a certain amount of buildings equipment information. However, the PDT approach is designed to be simpler than COBie and easier to access in an easy, non- proprietary framework using a basic spreadsheet format. It therefore meets everything that is not in the project design stage, with the idea that the manufacturers remain separate and the design team bring the projects into their own model only when it is required. Product specific PUCs also remain the property of the manufacturer that supplied the information.Patrons Angela Fitzpatrick said the PDT process was ‘absolutely fundamental to everything we are doing’ in working and in improving supply chain collaboration and also that it would help companies to co-operate with the PDT tool to allow for the wider capture of wider construction information already in existence or needed to provide a certain amount of the PDT.

**Event to focus on building lifecycle**

The Building Controls Industry Association (BCIA) has announced a new focus with the Building & Engineering Services Association (BESA) to develop a pan-industry conference focused on how buildings perform within their entire life cycle. 10-80 ‘The Building Controls Summer Summit’ will take place on November 27 at the Barbican in London. The title relates to the fact that the cost and value of a building is involved in the construction phase, 80% is spent in the life cycle, while 10% is a commissioning and disposal.

A main emphasis is placed on the capital cost of non-residential buildings, which comprise 80% of the total cost, Linked to that, is the issue of how buildings are maintained, which represent around 80% of the total, yet are too often overlooked,” said Terry Sharp, chairman of the BCIA Marketing Working Group. President of the BCIA, Ray Price of the BES Service & Facilities Group, added that engineers and contractors deal with the installation, commissioning and maintenance of building services on a ‘daily basis’ and were, therefore, best placed to provide expert advice and guidance to building operators. The BCIA will also be releasing a number of energy and environmental tools over the coming months.

For more information visit: www.bcias.org.

**Why children ‘get’ BIM**

The way school children embrace BIM (Building Information Modelling) is a great lesson for our industry, a recent competition that the team they were made up of 13-year-old school members of our industry, a recent competition that the team they were made up of 13-year-old school.

Panel of an international architectural training, I have a group she said. ‘If you are fazed by technology, ‘

‘create BIM models of buildings that amazed professional engineers. “Children just get BIM,” she told the Patrons. “They ‘see the world and visualise information in a way that is perfect for working in BIM’”

They could explain to designing any other way, she believes. The COYO scheme gives them an opportunity to what they learn is school in a practical and challenging way - particularly maths, which is often taught in a way that engages young children.

This was demonstrated to Alison by a group of achieving maths students, who she challenged to calculate the dimensions of a building they had the theoretical skills, but found it hard to apply in reality. She also got them to apply Pythagoras’ theorem to measuring a slice of cake. The COYO programme is making great progress in inspiring school children to take up careers in building services, according to Alison. “They don’t want to become architects because they know there are no jobs for them. They enjoy seeing how a building works instead. Children often ask why do we learn this stuff?” she told the Patrons. “Our programme shows them how to apply their learning in a practical way and start to think like engineers.”

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Patrons head for South Bank

A special Patrons event will take place at the Centre for Renewables and Energy Efficiency (CEREB) at London South Bank University on July 15 starting at 2.30pm.

All Patrons members are invited to attend this event hosted by CIBSE President Andy Ford, who is now an LSBU professor. He will give a presentation and Patrons will then enjoy a tour of this ground-breaking facility, followed by drinks.

The meeting will also consider the proposal for Patrons to host a larger event at LSBU in November. This is planned as a debate to consider how the industry can attract people from a wider range of backgrounds and at all levels. This joint event will mark the launch of LSBU’s renamed School of Building Services and Architecture as well as the Patrons 35th anniversary.

On October 9, the Patrons are playing a key role in the CIBSE Young Engineers’ Awards (YEA) by sponsoring the annual YEA debate chaired by former graduate of the year Angela Malynn. This has become an annual fixture and gives young engineers an opportunity to debate an important topic of the day with industry leaders including the presidents of CIBSE, ASHRAE, the Institution of Mechanical Engineers (I MechE) and the Institute of Refrigeration (IIR). Details about this year’s topic will be released in due course, but all Patrons members are invited to attend the awards event free of charge. They are also encouraged to enter the Employer of the Year Award and to nominate young engineers for the Graduate of the Year award. Details can be found at: www.cibse.org/yea

For details of all Patrons events please email: cbrown@cibse.org

Kinsella takes on the ‘elephant in the room’

The first ever ‘international’ President of CIBSE believes there has never been a better time to be a building services engineer.

Peter Kinsella is an associate at Lehr Consultants International in Australia and will be based Down Under during his year of office so becoming the first President to be based outside of the UK and Ireland.

During his inaugural address in London, he said the profession would grow in “stature and relevance” because of the “uncertainties of the future.” He said that a rapidly changing world would require “continual adaptation of the built environment to meet society’s future needs”, and stressed the vital role of building services engineers in delivering this.

He also urged the industry to address “the elephant in the room”: the fact that most of the buildings that will be here in more than 40 years’ time have already been built. “We cannot wait until they are knocked down to make their replacements better... payback periods on energy efficiency measures [on existing buildings] are of course longer than on new build, but can still be very clearly justified.”

The priorities for his term of office will be:
• developing CIBSE’s influence worldwide;
• promoting a more comprehensive feedback loop for the design and operation of buildings;
• driving forward the benchmarking of energy use in buildings.

“Buildings and their services play a very large part in a nation’s energy consumption and the resulting carbon emissions,” he said. “Buildings are responsible for approximately 40-45% of aggregate energy demand. Delivering significant cuts in this demand and balancing the economic and the environmental imperatives will require very careful management.”

He used an example from his home country to illustrate how voluntary measures can drive change and raise the profile of the profession. The National Australian Built Environment Rating System (NABERS) and The Green Building Council’s Green Star Rating Scheme have increased public engagement with energy efficiency, explained Peter.

The Patrons Co-ordinator is Chris Brown and he can be contacted at:
Office: 020 8772 3629 Email: cbrown@cibse.org

HOW TO BECOME A CIBSE PATRON

The CIBSE Patrons group was established in 1979 to allow companies from all parts of the building services industry to work together for the benefit of the whole sector.

Member firms represent clients, contractors, manufacturers and consultants and include public utilities, industry associations and service organisations. All members must abide by CIBSE’s policies on sustainability, health & safety and CPD. Patrons make a modest annual donation, currently £450, into a fund, which is used to finance special projects such as:
• Organising and financing annual House of Lords briefing and luncheon
• Supporting industry and educational awards
• Implementing a work placement exchange scheme
• Supporting CIBSE careers literature
• Supporting student places at the CIBSE annual conference

Benefits of membership include:
• Access to Knowledge Portal
• Use of CIBSE Patrons logo
• Free copy of the CIBSE Journal
• CIBSE Electronic newsletter
• Meetings and technical visits
• Regular Patrons newsletter
• Member rates for CIBSE events and publications

If your company would like to apply to become a Patron or receive further information, please complete below and return to Chris Brown at CIBSE, 222 Balham High Road, London. SW12 9BS. TEL: 020 8772 3611. FAX: 020 8673 3302.

email: cbrown@cibse.org

I am interested in: 1. Joining the CIBSE Patrons Scheme 2. Receiving further information about membership of CIBSE Patrons

Name ................................................................. Position .................................................................
Organisation .................................................................
Address ........................................................................
Tel ........................................................................ Fax ........................................................................
E-mail ........................................................................

Currently around 90 companies participate in the CIBSE Patrons scheme.