

Local Authorities

The rise and rise of district heating



Once a popular choice for local authorities looking to meet the heating and hot water requirements of large scale housing developments and high rise apartment blocks from the 1950's through to the 1970's, district heating schemes appear to be making a comeback. Geoff Hobbs, our business development director, explains the role of modern day centralised energy centres.

"According to the Department of Energy and Climate Change (DECC) district heating is defined as "the supply of heat to a number of buildings or homes from a central heat source through a network of pipes carrying hot water or steam". Heat delivery is achieved via a network of pipes that are laid out and connected into participating properties, so that heat generated in a central location is shared amongst properties and controlled from a single source.

"As trends in heating come and go, it was during the 1980's when local authorities seemed to start shying away from district heating schemes in favour of installing individual boilers in their housing stock. Problems with leakages or unsustainable heat losses resulting from long pipe runs led some local authorities to rethink their heating strategies. However, with advances in heating technologies and controls offering greater reliability and efficiency, not to mention the advent of renewable offerings, it appears the time is right for district heating schemes to make a comeback.

"Having learnt valuable lessons from early district heating arrangements, both local authorities and private housing providers are now considering district heating schemes as alternatives to individual heating systems where the density of heat usage makes a new scheme practical and cost effective. With modern equipment helping prevent the heat losses and leakages of days of old, other driving factors behind this resurgence also include the need for local authorities to demonstrate their 'green credentials' by delivering heat as efficiently as possible whilst reducing CO₂ emissions at the same time.

"And system longevity is a key consideration for most stakeholders too. The beauty of modern district heating schemes is that the pipes used to deliver low temperature heat into homes are not specific to the type of technology

generating the main source of heat. For example, as well as being suitable for connection to a central boiler room, the same pipes could easily be connected to a CHP unit, a biomass boiler, geothermal heat or a power station.

"In brief, today's district heating schemes work by distributing heat generated by a centralised plant room to individual properties via Heat Distribution Units (HDU), which provide both space heating via radiators and instantaneous hot water for the end user.

"Where new build developments are concerned, the Code for Sustainable Homes may also encourage the installation of centralised district heating schemes in the future. This is primarily because of the flexibility of district heating pipework, which presents an opportunity to integrate forms of renewable technology for longer term security but without any disruption to tenants.

"Local authorities continue to be the main instigators of such schemes where additional benefits can make the programme more attractive. Issues such as fuel poverty can be helped with such schemes, allowing heat to be pitched at a very competitive level. Reduced annual maintenance of individual gas appliances and the associated issues of gaining access to tenant properties can mean significant financial / time savings for local authorities too, as well as contributing to greater tenant safety.

"DECC estimates that district heating schemes currently provide around 1-2% of the UK's heat demand. However, further investigations have suggested that "in the right conditions", district heating schemes could easily supply up to 14% of the UK heat demand, be a cost effective and viable alternative to individual renewable technologies and, at the same time, reduce energy bills for consumers."

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Training

HDU training



Having recently launched our Heat Distribution Unit, we are now running a dedicated training programme at our Worcester training and assessment academy. The one day course is aimed at those who wish to take advantage of the innovative solution to district heating and central plant requirements.

Beginning with an overview of how to specify the HDU for commercial and industrial applications, the course then covers installation best practise and how to make the most of the unit's first fix rail, which allows the system to be pre-plumbed before installation.

As with any industrial heating and hot water technology, commissioning and servicing are key to ensuring the appliance runs as effectively and as efficiently as possible. The HDU training course covers each of these aspects in detail to ensure you are equipped to offer post-sales support to your customers.

As part of the training, you will also be given an insight into the features and benefits of the optional heat meter, which is available in those instances where specific end-user consumption needs to be monitored.

To book your place on our one day HDU training course, please call 01905 752526.



Upcoming exhibitions

We will be showcasing our extensive portfolio of high-efficiency technologies at the following future exhibitions:

- **The Facilities Show**, Birmingham 14 – 16 May
- **All Energy 2013**, Aberdeen 22 – 23 May
- **AUE Conference**, London 4 – 6 September

Specially produced for industrial and commercial M&E contractors, consultants & specifiers | Spring Edition

Bosch

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Welcome to the spring edition of BoschCI.

With new build developments across the public and private sectors now requiring greater consideration for energy efficiency than ever before, energy managers, contractors, consultants and specifiers have a huge part to play. This month's cover story focuses on the specification of a heating system at a state-of-the-art school in Hull, which has been able to reap the benefits of our gas absorption heat pump technology.

As many of you will know, Ecobuild 2013 took place last month. This issue sees us reflect on what was our first exhibition under the Bosch Commercial and Industrial Heating brand. Turn to page 4 to read more.

Maintaining our commitment to new product introductions, this year is set to see us bring our expertise in the steam boilers sector from the continent to the UK market. To find out more about how our range of steam boilers can enhance your offering to clients, turn to page 4.

Finally, having received a substantial level of interest in our Heat Distribution Unit (HDU) since its launch, we take a look at the ever growing popularity of district heating systems in the UK. Turn to page 5 to read more on this market opportunity and page 6 to find out how our new training course can help you to understand and make the most of using HDU technology.

We hope you enjoy reading this issue.

Geoff Hobbs
Business Development Director

Cover story: Endike Primary School, Hull

During the development of the new Endike Primary School in North Hull, the decision was taken to significantly reduce the school's carbon footprint and simultaneously enhance its overall heating efficiency by installing a bespoke heating system.

With the previous school building having been on the same site for over 80 years, Endike Primary was selected for the development of an entirely new school under the Primary Capital Programme (PCP). Endike Primary is a £6million state-of-the-art facility which can host over 420 students and a 26 place full time equivalent nursery.

The principal contractor on site was Sewell Group who had to ensure the new build met all the criteria of the BREEAM New Construction scheme and Part L of the Building Regulations. The BREEAM scheme is used to assess the environmental life cycle impacts of new non-domestic buildings at the design and construction stages whereas Part L of the Building Regulations concentrates on the conservation of fuel and power.

To ensure the incoming heating system met each of these strict regulations, Sewell Group appointed Binks Building Services (BBS) to source, procure and manage the entire installation of the heating system. BBS liaised with Bosch Commercial and Industrial Heating and agreed with the installation of six GWPL38 gas absorption heat pumps in a cascade arrangement meeting all requirements set out by Endike Primary.

Tsonka Popova, Design Engineer for BBS, explains: "The purchase and installation of any heating system in a public building is likely to be one of the more expensive investments made. With this in mind, it was vital that we made the right selection at the first attempt.

"By approaching and working closely with Bosch Commercial and Industrial Heating, we were able to come up with a bespoke design and, through a thorough commissioning process, we were able to ensure that the system operated to its full potential and met all the needs set out by Endike Primary."

Lukasz Bulawa, Commercial Technology Consultant for Bosch, comments: "As the absorption technology utilises gas, which is around a third of the price of electricity, running



costs can be cut significantly in comparison to the use of other comparable technologies, such as electric heat pumps.

"With the GWPL38 gas absorption heat pump being part of the air-to-water technology group, and designed for external use, we were able to utilise the ample space on the roof of the building. The unique heat pump design helps to generate up to 65% of additional heat by drawing in free energy from the surrounding air, thus further enhancing the overall efficiency of the system in operation. The additional benefit of an external installation is that the pumps do not need to be situated in an internal plant room where they are likely to take up valuable floor space."

Linda Burrows, Head teacher of Endike Primary School, concludes: "Endike Primary is a state-of-the-art facility using the latest technologies. It was important to the school's Governing Body, the Local Authority and myself that we adopted the same approach to the heating system.

Companies Bosch worked with on the project

- Sewell Group
- Binks Building Services

"In addition to the obvious cost and energy savings, the aftercare provided by Bosch has been second to none. Once the installation was complete they took the time to re-visit the premises on more than one occasion to ensure all relevant members of Sewell Group, BBS and the facilities management team all the necessary training to be fully competent in operating the system. It is those small touches that really do make the difference."

A look back at Ecobuild 2013

This year's event was hugely successful and particularly exciting as it was the first time we have exhibited under the Bosch Commercial and Industrial Heating brand, which gave visitors to our stand the chance to view the new-look Bosch products.



Ecobuild is the world's largest event for sustainable design, construction and the built environment and, as we continue our on-going transition from the Buderus brand, saw it as the perfect opportunity for us to showcase our growing product portfolio and after sales support services.

The two-floor exhibition stand, shared with sister company Worcester, Bosch Group, highlighted our versatile range of high efficiency condensing boilers and renewable technologies. In addition, we were able to display scaled down models of our industrial product range, including our Combined Heat and Power (CHP) modules, UNIMAT high efficiency steel boilers and the overall plant room solutions we can offer.

Also well-received by visitors to our stand was our expanding product portfolio including our CWi47 gas-fired condensing instantaneous water heater and our Heat Distribution Unit.

Geoff Hobbs, our business development director, commented: "This year sees the continuation of our landmark transition from the Buderus brand and it was great for us to be able to share our upcoming developments with thousands of Ecobuild visitors.

"Ecobuild was the ideal platform to not only showcase our new-look Bosch product portfolio but to highlight the benefits of working with a globally-established brand."

Industrial steam boilers: Efficiency on a large scale



In order to fulfil our customers' requirements and offer a complete industrial boiler range, we are set to expand our product portfolio and bring Bosch's established level of expertise from the continental steam boiler market to the UK. Robert Brown, Commercial Technology Consultant for Industrial Boilers, talks us through the new range.

"Our new range of steam boilers will consist of four models, each of which is suitable for liquid and gaseous fuels. Each model comes equipped with flame/smoke tubes which allows for a greater recovery of the heat contained in flue gases. This increases the energy efficiency of the boiler by seven per cent in dry running operation and up to fifteen per cent in condensing operations.

"The UNIVERSAL U-ND and U-HD boilers combine shell boiler technology with the effectiveness of the flame/smoke

tube system. This makes the compact boilers the ideal solution for small to medium steam volume requirements such as smaller manufacturing businesses, processing companies and the service industry. The additional models, the UNIVERSAL U-MB and ZFR utilise three-pass technology ensuring medium to high output requirements, can be met.

"With orders of our new range of Bosch steam boilers now being taken, we look forward to updating you on the developments within this sector over the coming issues."