

Andrews' new WSC and WX series continuous flow appliances

Andrews Water Heaters now offers an extended range of the new compact Continuous Flow Water Heaters, comprising one internal model now designated WSC44 and two external models, the WX42 and WX56.

What sets these water heaters apart are the dimensions, comparable to those of a small suitcase, being wall hung and the design, which measures the incoming water flow and temperature via the primary circuit board then modulates the burner up or down according to hot water delivery requirements. In this way these units provide on demand at mains pressure a safe constant flow of endless hot water at circa $\pm 1^\circ\text{C}$ accuracy whilst achieving 89% efficiency.

Being a continuous flow appliance with a modulating burner there is no standby heat loss and auto ignition means there are no running costs when the unit is idle. Safety in use is assured by accurate temperature settings from 37°C to 95°C while the lack of stored water inhibits scaling and reduces the risk of legionella bacteria forming. All models are lightweight for easy location and installation.

The WSC44 is an internal room sealed appliance with

a heat output of 44kW and flow rate of 18 litres/m at 35°C temperature rise. It was the need for services plant to take up as little space within a building as possible that led initially to the design of such a compact, wall hung unit. The WX42 and WX56 are specifically designed for external installation – without the need for further weather protection. The casing is impervious to the elements and an integral anti-freeze device activates at 2°C . These external units require no flue, so savings can be realised on installation and capital costs as well as internal plant room space. The WX42 has a heat output of 42kW and a flow rate of 17 litres/m while the WX56 with slightly larger dimensions has an output of 56kW with a flow rate of 23 litres/m, both at 35°C temperature rise.

For much higher hot water demand any water heaters from this range can be combined singly, or in multiples,



WX42 continuous flow water heater

with Andrews ST range of storage tanks having capacities from 304 to 754 litres. Balancing of the units is made simple by the use of manifold packs designed specially for use with Andrews Continuous Flow Water Heaters when there is demand for increased volumes of hot water, possibly with intermittent usage patterns. In addition there is an electronic system of staging the WX42 units which offers the benefit of random firing, preventing uneven usage. They can also be used in conjunction with solar panels to top up hot water requirements as

necessary and, being gas-fired, are more energy efficient and cost effective than most electric alternatives.

These revolutionary Constant Flow Water Heaters are an ideal hot water solution for large residential and small commercial applications such as independent hotels, restaurants, camping and caravan site amenities, hair-dressing salons and laundrettes, meat and fish traders.

Free update to the latest program – Andrews Size-It 2003

Our acclaimed computerised Andrews water heater sizing guide has been up-dated to include the very latest additions to the range. Size-It 2003 program is designed to assist specifiers in selecting the optimum mix of Andrews units for various types of application.

The software requires Win 95,98 or NT and 10MB free disk space. It is compatible with any printer supported by Windows and the screen resolution will suit even lap-top or note-book PC. Default values are built in to help with start up, only a basic knowledge of Windows is required and it can be operated using the mouse only.



Using Size-It's Main Form the user selects a property type, enters information and is presented with recommendations of suitable water heaters. The selected products and all others can be viewed from the water heater electronic catalogue screen, which includes full specification sheets with dimensions and CAD drawings for all fuel options. The selection report can be printed out and there is a save facility so selection can be held on disk for future reference.

To download Size-It 2003 click onto www.andrewswaterheaters.co.uk. Also available on CD-ROM and in printed form on faxed application to the Marketing Department of Andrews Water Heaters – Fax: 0121 506 7401

Andrews part of perfect package for Tesco

Constant Air Systems Ltd has for a number of years been incorporating Andrews Storage Water Heaters into the packaged plant rooms it constructs and installs for Tesco.

These plant rooms can be standardised offering further benefits to customers like Tesco that order between 30 and 40 of these installations per year. The Andrews Hi-Flo CSC 93 is utilised, the largest model in their balanced, sealed combustion flue system storage water heater range. Highly energy efficient it is economical to run, having a storage capacity of 350 litres and recovering 1808 litres/hr through a temperature rise of 44°C . CSC models have a fan assisted flue and its adaptable concentric flue system draws all primary and secondary air from outside the building. This makes for straight-forward installation and means it can be installed or moved virtually anywhere even where installation might otherwise be troublesome, for instance in areas where air extract canopies cause problems. It has a fully automatic control, BEMS interface and all units for Tesco installations are supplied with an unvented water system pack.



For further information please contact Angela Schaefer

Andrews Water Heaters, Wednesbury One, Black Country New Road, Wednesbury, West Midlands WS10 7NZ
Tel: 0121 506 7400 Fax: 0121 506 7401 Email: andrews@andrews-waterheaters.co.uk Web: www.andrewswaterheaters.co.uk



ANDREWS in ACTION

**ANDREWS
WATER HEATERS**

AUTUMN 2003

welcome...



Welcome to the new edition of the Andrews Newsletter. Within these few pages we believe you will find something of interest and perhaps new ideas on how to approach your hot water requirements, whether you are a building owner, occupier, consultant or contractor.

Whilst writing this type of publication we try not to highlight any particular company but sometimes it is inevitable. On this occasion we are reporting on the outstanding success of Haden Young in obtaining their third successive award as Major M&E Contractor of the Year at the Building Services Awards in London.

As in previous years they had stiff competition for this Award and in particular in 2003 from Skanska Rashleigh Weatherfoil, Southern Electric Contracting and Thermal Transfer. I hope that all four will be back in contention along with new challengers for this prestigious award in 2004.

We are including an article written by Engineers from ABS Consulting about the changing role of water heating in our modern society and the implications for energy efficiency. We are also taking a look at how Andrews is developing its range to meet the increased demand for domestic hot water whilst reducing the environmental impact through improved product technology.

Thank you for your interest in Andrews' activities and we look forward to working together for a sustainable future.

Paul Yunnie, Managing Director

Andrews' product developments prepare for water heating efficiency standards

Andrews Water Heaters is continually developing its range with the addition of technologically advanced products that are in line with Government legislation in connection with the reduction of carbon emissions and broadening the installation options of high efficiency equipment.

Andrews introduction of their direct fired storage water heaters to the UK in the 1970s provided the means of central heating and hot water system separation and decentralisation that is now accepted as the most effective solution in commercial buildings.

As the volumes of hot water being used increased and the hospitality and leisure industries burgeoned, Andrews responded with large volume, high temperature non-storage independent gas-fired units, each capable of generating up to 20,000 litres/hour of hot water on demand at efficiencies of 84%.

Concerns over the effects of carbon emissions on global warming have led to Government commitment on UK targets for reducing greenhouse emissions in both the short and long term and to recent drastic measures to ensure these are achieved. Introduction of the Climate Change Levy, revisions to Part L(2) of the Building Regulations and the Enhanced Capital Allowance Scheme

are the current drivers for equipment manufacturers, system designers, and building proprietors/operators to create and implement sustainable solutions.

Efficient use of energy remains key and Andrews as always is out in front with new technology that will meet these new market challenges. However, for their fullest potential to be realised, the omission of independent water heaters from the legislative and taxation processes that make it beneficial to maximise the efficiency of boiler plant will need to be addressed.

Andrews has already brought new units to the UK market that provide system designers with options for their clients, giving the best possible solutions to tomorrow's stringent demands.

Balanced flue and fanned flue storage water heaters enable high efficiency hot water production in installations where siting difficulties need to be overcome. Condensing storage water heaters are not new, having been in limited use in France and the US. Now these are evolving to be more compliant, compact and comprehensive with new developments by Andrews in this field to be launched next year.

High volume non-storage units also continue to develop in the 70kW to 275kW output range. The Supa-Flo R300 Series, having either copper or stainless steel



finned tube heat exchangers, are truly adaptable appliances. Their patented rapid response burner achieves a nett efficiency of 104% in addition to effectively reducing the emissions of NO_x , CO and CO_2 . They can operate as a Boiler or as a Water Heater. It is therefore possible to design a boiler house with near identical units but with their own specific and

independent functions. The boiler qualifies for the ECA Scheme and carries the Energy Technology List logo.

Innovation was needed for the smaller commercial and residential applications where a common problem with efficient building operation is lack of space for M&E plant. Andrews recently provided the answer in its revolutionary new WSC/WX continuous flow, fanned balanced flue water heater which provides an exceptionally efficient and compact internal or external wall mounted solution where there is a need for constant hot water to be supplied on demand via a small number of outlets. High efficiency and low running costs are assured as the burner modulates according to demand delivering a constant flow of close temperature regulated hot water.

Further developments from Andrews in both high efficiency storage water heaters and condensing technology are due for 2004 that will save energy and running costs and could meet the requirements of any future UK legislation on energy efficiency standards for water heating products.

Water heating – the implications for energy efficiency

This article will examine the trend towards increased hot water load against diminishing space heating requirements in commercial applications and the implications for water heating in the drive for improved energy efficiency. The contribution that efficient products and effective design can make to the reduction of GH gas emissions and energy efficiency in general will be introduced, with a view to exploring these aspects more definitively in the near future.

Jim Ure & Michael Colyer, ABS Consulting
(Reprinted from *Building Services & Environmental Engineer*, July 2003)

INTRODUCTION

As the requirement for space heating in the UK diminishes, the demand for water heating shows no sign of reducing. It is therefore likely that water heating will become the dominant load in the future. In fact, this is already a reality in some energy efficient buildings where the space heating load is minimal but the water heating demand is unchanged. In such situations, which will inevitably become more common, water heating will become the main heating load. Is this adequately recognised by the existing revisions to Building Regulations Part L2? What are the implications for consumers, and the supply chain?

THE DIMINISHING REQUIREMENT FOR SPACE HEATING?

Based on several factors it is safe to assume that space-heating loads are reducing. The most obvious driver for this reduction is the direct effect of climate change. The average UK winter temperature has risen from 5.8°C in 1970 to 7.2°C in 2000. Current climate models predict that global temperatures will rise by 1.4 – 5.8°C by the end of the 21st century. However, cheaper fuel prices and the now common introduction of central heating systems have led to internal housing temperatures in the UK rising from 13°C in 1970 to 18°C in 2000. It is therefore the commitment to tackle and reduce global warming that is affecting space heating. Traditionally space heating and hot water provision have been combined. These systems are generally designed to meet 2 criteria – either sized to meet an average demand or to meet a maximum predicted demand. Both systems will therefore struggle under certain circumstances. Heating is a seasonal requirement which is constant during a building's use, whilst hot water is an annual requirement and is very much dependant upon occupant use. In terms of potential energy savings and efficiency as well as meeting system demands, separation of the systems provides the most effective solution.

The government's commitment to reduce energy use has resulted in several measures, regulations, schemes and incentives. The majority of these schemes focus on



Andrews instantaneous Supra-Heat R300 condensing boilers and Hi-Flo storage water heaters have been installed in the newly refurbished factory of Airways Optical in Southampton as part of an energy-saving design to separate and decentralise space-heating and hot-water loads – each being supplied by independent plant dedicated to matching precisely the very different peaks in demand. The Supra-Heat R300 units to the left achieve a net efficiency of 104% and incorporate burners that modulate down to 25% of full load.

energy efficiency and reducing emissions. Relatively simple combined measures such as improved insulation and heating efficiency improvements have reduced domestic space heating consumption in 2000 to about 48% of what it could otherwise have been in the absence of these improvements. The heat gain from increasing use of IT and other electrical equipment in commercial environments has added to reduced heating loads and has quite often led to the necessity for cooling, especially in office buildings. More specific measures, such as those outlined within the building regulations (U values, materials, solar effects etc.), are designed to make heating a space directly less thermally reactive to its outside environment, making spaces more controllable and keeping heat where it is designed to be.

ARE WE USING MORE HOT WATER?

The use of domestic hot water has increased with baths and often showers fitted as standard in many dwellings. Much new-build housing often will have more than one bathroom. In the commercial sector more offices now have catering facilities, whether centralised or kitchenettes with hot water appliances. Also many now provide staff with shower facilities often as part of an environmental policy (or transport reduction policy) and building certification schemes such of BREEAM offer credits/points for shower inclusion. The growth in leisure and sports facilities has created an additional demand for hot water.

Within the last 10 or so years, the consumption of water for all uses has levelled out to approximately 50 litres/head/day (source Ofwat) but population and development continue to grow. It is therefore likely that the trend in hot water consumption represents an increasing proportion of the total consumption. The number of households in Great Britain increased by almost 6 million (31%) between 1971 and 2001. The number of households in England and Wales is projected to increase by 7% (1.60 million) between 2001 and 2011 and 14% (3.15 million) between 2001 and 2021.

A QUESTION OF ADDRESSING ENERGY USE.

Energy consumption in the UK in 2001 reached a higher level than in any other year over the last thirty years. Overall energy consumption has increased by 13% since 1970 and by 11% since 1990. Space heating and hot water accounted for 82% of domestic use of energy and 64% of commercial use in 2000. More information is required on the trends in hot water consumption because if findings support the apparent increased usage this will impact on the energy consumption of a building. Currently, efficient hot water systems do not attract Enhanced Capital Allowances (ECA). This may be an oversight or because there is not enough known about hot water use. In any event, it is important to bring this issue into focus not only for the purposes of ECA but to give greater prominence to hot water heating in future revisions to Part L2.

Andrews generates hot water for City Inn Hotels – Latest City Inn Westminster opening September 2003

Andrews Water Heaters, a leading UK name in commercial water heating systems, has supplied its Supa-Flo instantaneous commercial water heaters for the largest new-build hotel project in London for 30 years. Located in Westminster and opening in September 2003, this is the fourth new hotel to be built in as many years by the City Inn Group. This company specialises in developing large scale, stylish, contemporary hotels that are all brand new and purpose built in prime city centre locations and which combine a state of the art product with fantastic food and excellent service. Aimed at both business and leisure travellers, three hotels are already established successfully in Bristol, Glasgow and Birmingham.

With business clientele, domestic hot water demand tends to peak at certain times of day when large amounts of hot water are used for food preparation and washing up as well as simultaneous draw offs for high performance showers. In its central location, the new City Inn Westminster will also attract discerning tourists with its 460 en-suite bedrooms and 200 covers restaurant. Andrews Supa-Flo water heaters are well suited to these requirements being efficient generators of high volume continuous flow hot water and have therefore been installed in all four City Inn hotels. This brings benefits in terms of continuity of service and technical support while



keeping maintenance arrangements simple and cost effective.

The City Inn Group required engineering consultants, **Faber Maunsell**, when designing the mechanical services, to give as much consideration to long term operating and maintenance costs as to capital cost of plant. The fundamental requirements for the hot water provision for this project were reliability, space efficiency, cost effectiveness and minimum cost-in-use and the Andrews Supa-Flo series meets all these requirements.

The high efficiency and rapid response of the Andrews

Supa-Flo series is well suited to the peak volume hot water requirements of the hotel industry. These units have a low water content of only 6-31 litres and heat water only on demand, responding immediately to provide a continuous flow of hot water so there are no standing heat losses. High operating efficiency does not diminish under part load conditions due to the simultaneous modulation of gas and air to the burner. This achieves the optimum ratio in part load situations when the efficiency of these water heaters increases beyond the 85% efficiency achieved under full load. The fully electronic EM control option (standard on the R18 series) also ensures temperature accuracy of $\pm 1^\circ\text{C}$.

The Project Manager for contractors, **Haden Young**, explained that the quantity of hot water storage calorifiers needed to meet the level of demand in these applications, and their considerable weight, would have required costly additional structural support. With space at a premium in London, the cost of a plant room within the building would have been prohibitive.

The Andrews units are perfect for rooftop installation being compact, lightweight and just three Supa-Flo R18 154EM water heaters can each deliver up to 180 litres/min through a 44°C temperature rise. System economy is further maximised by the Andrews BT500 Buffer Vessels linked to each water heater that provide just 500 litres of stored hot water for small draw offs, thereby conserving boiler energy.

Andrews supports the CIBSE/ASHRAE Conference 2003

Andrews Water Heaters is supporting the worldwide CIBSE/ASHRAE Building Services Industry Conference to be held in Scotland from 24th – 26th September 2003 at the Edinburgh International Conference Centre. This four yearly event brings together building services industry professionals from around the world providing a unique global learning and networking opportunity.

The programme, created from a mix of invited speakers and accepted papers, features a wide

selection of internationally renowned industry leaders.

The Government's primary target of 20% reduction in carbon emissions by 2010 with the final objective of 60% in building related carbon emissions by 2050 and preparation for the introduction of the EU Directive on Energy Performance in Buildings, has focused industry attention on the pressing need for creation and maintenance of more sustainable and energy efficient buildings. As these aims are not achievable in isolation, this year's conference theme "Building Sustainability, Value and Profit" has been developed to embrace the

whole of the construction industry.

Andrews Water Heaters is one of the 50 companies exhibiting alongside the conference, helping to facilitate the exchange of information for the benefit of all attending. You can be sure to receive a warm welcome from Andrews on Stand 24 and we look forward to meeting you at this auspicious event. Meanwhile, if you need further information or haven't yet returned your completed conference booking form, you can do so online at www.cibse.org/edinburgh.



BS Awards – Haden Young

In 2003 Haden Young won for an unprecedented third successive year the Major M&E Contractor of the Year Building Services Award.

The announcement was made to the 1,000 or so people attending this year's Awards Ceremony on 23rd June at London's Grosvenor House. Paul Yunnice showed his delight when congratulating David Beck, Managing Director, who on behalf of Haden Young once again accepted this award sponsored by Andrews Water Heaters, (pictured).

The awards judges were impressed by Haden Young's strong financial performance and its analysis,

using KPIs (Key Performance Indicators), to examine the business and address weakspots. The company's achievement of ISO 14001 certification and RoSPA Level 4 QSA grading in 2002, they said, signified Haden Young takes seriously its responsibilities for the welfare of the environment and their employees.

An elated David Beck said, "The huge effort put in by all to understand and meet our customers' needs has been rewarded . . . and we'll continue to measure our performance and find ways to improve".

Andrews continues to co-operate with Haden Young as in the most recent City Inn project completed in July this year.