

PLANET PROPOSITION

Sustainability Report 2013



AT ARMSTRONG, WE'RE MAKING ENERGY MAKE SENSE. WE DESIGN, ENGINEER AND IMPLEMENT TOTALLY INTEGRATED INTELLIGENT ENERGY SOLUTIONS.

From pump and chiller upgrades to complete energy centre installations, we work in productive partnerships with private and public sector clients throughout the UK to deliver innovative and robust solutions — with ongoing support and single source responsibility.

armstrongfluidtechnology.co.uk

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INTRODUCTION

Armstrong Fluid Technology is a global organisation providing low and zero carbon solutions to the heating and comfort cooling sectors of the construction industry.

Since our founding in 1934 by Samuel Allan Armstrong, our company has pioneered an uncompromising range of products and solutions and has developed eight manufacturing facilities on three continents that serve customers in over 50 countries.

As a leading designer, manufacturer, installer and servicer of low carbon heating, cooling and pumping solutions, we provide a comprehensive service from innovative component HVAC products to fully packaged integrated plant rooms and energy centres. Our facilities feature advanced manufacturing processes and quality control, utilizing sophisticated computer testing throughout the entire production cycle.

Thanks to Armstrong's worldwide capabilities and wealth of resources, we are able to deliver integrated energy solutions which provide return on investment, reduced capital expense and minimal energy costs for all non-domestic buildings, including schools and universities, hospitals, shopping centres, commercial and industrial properties.



Steve Cooper
Director of Sustainable Design:

The ideals of commercial success and responsible environmental stewardship are not diametrically opposed - on the contrary, they are inextricably linked. And it's upon this premise that Armstrong's Planet Proposition is borne.

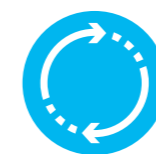
The progress of our objectives for 2013 in each region was assessed against an A3 plan, which includes our key achievements to date, the key resources needed and our key objectives for the year. The cumulative progress of our objectives was logged on a monthly basis and any necessary actions were implemented and recorded.

A handwritten signature in black ink that reads "Steve".



Sustainability in Armstrong

We are committed to making Sustainability the foundation of our business.



Our Solutions

By designing & supplying industry leading energy-efficient and eco-friendly fluid flow solutions, we help our customers reduce their energy consumption, save money and lower their carbon emissions.

At the beginning of 2013, Armstrong has embarked on a sustainability journey which started with the formulation of a charter called the Planet Proposition. The Leadership Board has signed up to this charter and Champions have been empowered at each of our sites in Canada, USA, China, India and the UK to communicate the aims and benefits of the programme and seek active involvement and commitment at all levels of the organisation.

Armstrong defines a sustainable business as an enterprise that measures its success based not only on economic gain but also on their achievements in preserving the environment and bettering humanity, particularly their employees and communities they call home. This approach integrates the three pillars of sustainability- the economical, environmental and social dimensions- and inspires the three key tenets of our Planet Proposition >

Our Environment

By applying stringent environmental standards to our operations, measuring our performance & continually raising the bar we're reducing our own consumption of valuable resources and making our plants a better and more comfortable place to work in.



Our Community

And by educating and supporting the Armstrong community (our stakeholders and neighbours) to make environmentally responsible choices at work and at home we're helping the community at large become more sustainable.



OUR SOLUTIONS

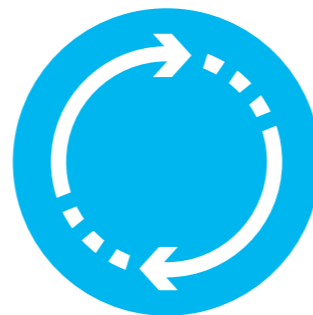
First and foremost, by delivering value to our customers, we aim to create a sustainable business which will continue to produce innovative energy saving solutions for the building services industry.

Integration is the Key to our Success

Armstrong is a leading provider of low carbon heating, cooling and pumping solutions. Our fully integrated approach consists of incorporating multiple systems in order to deliver high performance equipment to our clients while reducing first and whole life costs, lowering our carbon footprint and making the most of renewable technologies.

Armstrong systems are not formed through a collection of products brought together. Our expertise lies in manufacturing multiple systems such as gas-fired condenser boilers, heat pumps,

Utilising high performance equipment we ensure the system design, installation and maintenance deliver maximum efficiency to lower a building's carbon footprint and reduce first and whole life costs.



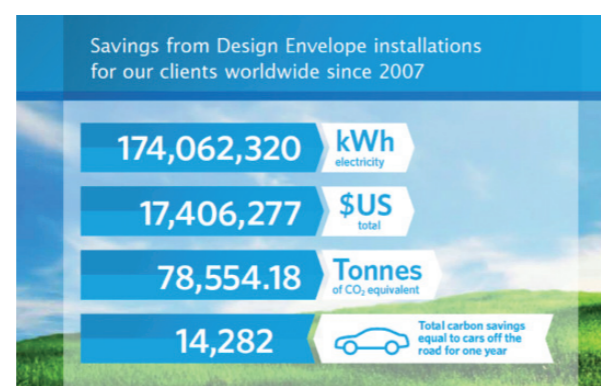
biomass boilers and solar thermals. It isn't enough to simply choose high performing products, or to add low or zero carbon technologies to an existing system and expect to minimise energy costs. In integrating these systems we consider a wide range of factors including the different optimum temperatures, part load operation efficiencies, variable versus fixed speeds and demand based control.

Design Envelope — Intelligent Variable Speed Pumps

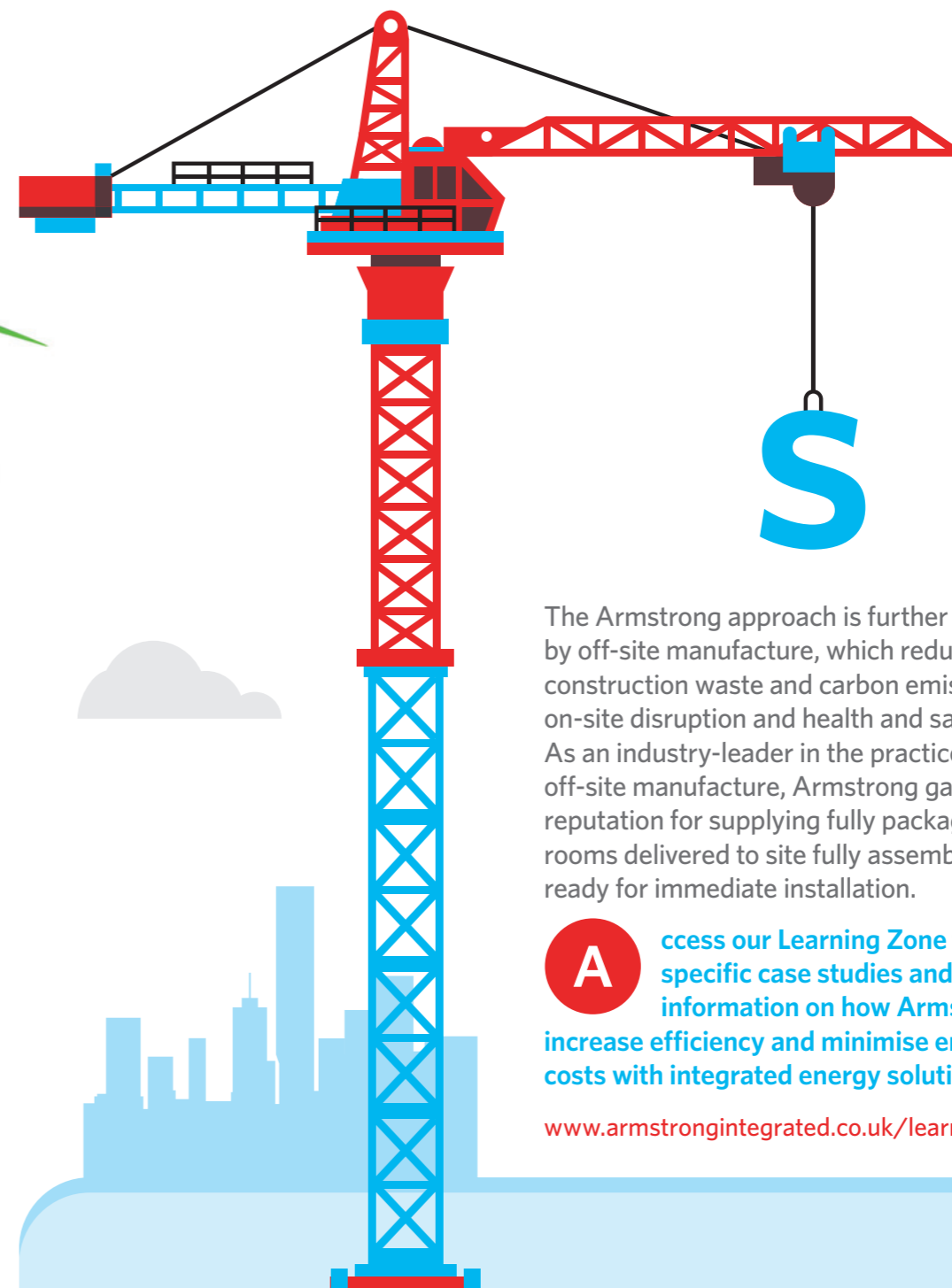
In 2009, Armstrong's Design Envelope Pumps were introduced as a complete solution for heating and cooling systems. At its core, the Armstrong Design Envelope is a new way of approaching equipment selections for HVAC systems which provides both greater efficiency and increased operational flexibility.

IVS pumps reduce pumping costs through advanced integration of demand-based control with variable speed capability, consuming only the energy required, based on current system demand. As a result, clients enjoy substantial energy and cost savings and benefit from reduced carbon emissions.

In 2013, we also launched our Sustainability Dashboard which displays the amount of energy, cost and CO2 we are saving our customers worldwide through our Design Envelope solutions.



Off-Site Manufacturing



The Armstrong approach is further enhanced by off-site manufacture, which reduces construction waste and carbon emissions, on-site disruption and health and safety risks. As an industry-leader in the practices of off-site manufacture, Armstrong gained a firm reputation for supplying fully packaged plant rooms delivered to site fully assembled and ready for immediate installation.

Access our Learning Zone for specific case studies and further information on how Armstrong can increase efficiency and minimise energy costs with integrated energy solutions.

www.armstrongintegrated.co.uk/learning-zone

OUR ENVIRONMENT

We are committed to reducing the environmental impact of our operations. Company wide initiatives include efforts to reduce fuel use, energy consumption, water use and waste to landfill and to increase the proportion of waste that is recycled.

We also continue to develop innovative energy solutions as well as producing case studies and white papers to help our customers reduce their environmental impact.

Energy & Water Consumption

As part of our Planet Proposition, we are committed to reducing monthly electricity, gas and water consumption in our manufacturing plants around the world.

In 2013, we started using a programme of energy monitoring in all of our plants. This programme consists of data loggers on our gas, electricity and water meters feeding through our Eco-Pulse platform into a central display that shows current and historical consumption. This enabled us to trend patterns of use and to identify and fix anomalies as they occurred.

In 2013, the programme was completed for our Birmingham facility where we managed to reduce our electricity consumption to 84% of the average over the last 3 years. Gas consumption was reduced to 85% and water consumption to 72%. We aim to implement the energy monitoring programme in the rest of our plants by the end of 2014.

Other energy and water saving initiatives include:

In Shanghai, lighting was replaced with energy efficient light bulbs and a HVAC test tank filtration system was installed to save about 100m³ of water per year.

In Bangalore, a rain water harvesting system has been installed where-in rain water is collected, stored and used for washroom application which in turn saves groundwater.

2012



2013



0%
2015

4%
2014

8%
2013

11%
2012

14%
2011

Waste Minimisation & Recycling

Reducing the amount of waste we produce and sending it to landfill only as a last resort is another key aspect of our Planet Proposition.

Each month we produce a waste summary which displays the total amount of waste (in tonnes) that we dispose of, the proportion (as %) that goes to landfill and the proportion that is recycled. In the UK, our goal was to reduce the amount of waste sent to landfill from 11% to 5% by the end of 2013 and to zero by 2015.

In order to achieve this objective, we have improved recycling facilities in our manufacturing plants and our offices. For example, we introduced mobile waste units with coloured bins to facilitate waste segregation. In 2013, we made good progress and managed to send to landfill only 8% of our waste, aiming to bring this to 4% in 2014.

We are also aware that there are environmental costs associated with recycling, such as energy and water consumption, transportation, etc., so we are committed to reducing overall consumption of resources and reusing materials as much as possible. For example, we have been working on a returnable packaging solution that would help us and our suppliers to cut down on the amount of packaging that we use.

We are also trying to reduce our office paper consumption by encouraging employees to print only what is absolutely necessary and use the double-sided printing option as default.

ISO 14001 — Certified Production Companies

By the end of 2013, every Armstrong production facility around the world had achieved ISO14001 Environmental Management accreditation.



OUR COMMUNITY

Although reducing carbon emissions, eliminating waste, recycling and conserving water are all cornerstones of sustainability, enterprises should also treat people well, recognizing the basic human dignity in everyone regardless of race, class or gender.

Thus, Armstrong aims to create a working environment that values, inspires and empowers our staff. Also, we understand that environmentally responsible behaviour is a key aspect of meeting sustainability goals so we are committed to promote sustainability both internally and externally to all our shareholders, customers, employees, suppliers and community.



Saving Energy at Home White Paper

At the start of 2013, we produced a guide to help our employees, customers, suppliers and neighbours in the UK save energy. It includes information on understanding energy bills, insulation, eco-driving techniques, energy efficient equipment and renewable energy equipment.

This is now available both as an electronic and as a hard copy.

www.armstrongintegrated.co.uk/email/SavingEnergyAtHome.pdf

The team in Shanghai also created an energy saving checklist for their employees to use at home.



Football Fundraiser

Engagement with Charities

In the UK we have engaged with some good causes such as:



The Christie Charitable Fund

One of Europe's leading cancer centres, treating over 40,000 patients a year. They are also an international leader for research, with world first breakthroughs for over 100 years.

Old Park School is an all aged special school for up to 120 pupils aged 3-19 who have statements of special educational needs. They provide an education for pupils who have severe, complex and profound learning difficulties. During 2013, we organised a number of fundraising events which directly engaged our employees with the cause and we managed to raise around half of the amount that we need to purchase sensory boards which help support the pupils learning.



DRAVET Syndrome UK

A registered charity dedicated to improving the lives of those affected by Dravet Syndrome in the United Kingdom. Dravet Syndrome is an extremely rare condition affecting children who experience many different types of seizures..

The fundraising initiatives will also be continued in 2014.



OUR COMMUNITY

In 2013 we also organised a Superhero Competition near to our manufacturing plants in Birmingham and Manchester which asked 7 to 11 year olds to create a poster showing their own imaginary Superhero that could save the planet by saving energy.

Children were invited to think about energy conservation and sustainability which we hoped would contribute to shaping habits and behaviours that will help slow down the effects of climate change and protect the environment.



Gail Force
Created by Winner, Lexi Kilick.

Eco Superheroes to the rescue

Each school that took part received a free weather monitor and the competition culminated in an awards ceremony in London in the summer.



What Will The World Look Like in 2050

This years competition asks Key Stage 2 children to think about energy saving and sustainability. We invite children to create a poster showing how they think the world will look in 2050.

SUPPLY CHAIN

Supplier Day and Sustainable Procurement Charter

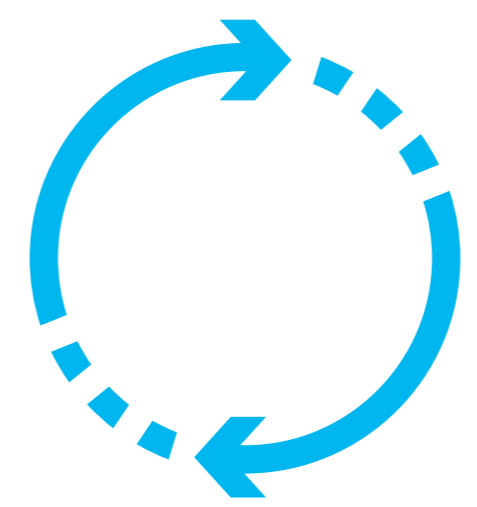
One of the key aspects of our Planet Proposition is the collaboration with our supply chain. We aim to work with our suppliers and customers to reduce our carbon footprint and share good sustainability knowledge and practices.

As part of this initiative, we recently invited our key suppliers to participate in a Supplier Sustainability Day at our facility in Halesowen. We started the day with a presentation of our Planet Proposition objectives and achievements and we continued with the introduction of a Sustainable Procurement Charter which details our joint commitment to sustainability within the supply chain. We then discussed the content of the charter and also shared some good sustainability ideas and practices.

Birmingham



Buffalo Initiatives



Armstrong is partnering with Willow Creek Farm in Clearance, New York to recycle waste pallets into valuable animal bedding that is returned into the Earth as manure.

Willow Creek also converts pallet wood chips into Eco-friendly playground base Cushion Wood Chips certified to exceed CPSC guidelines tested to ATSM F1291.

Buffalo and Bangalore

Armstrong Buffalo and Bangalore have jointly developed a master partition solution which eliminated all the wrapping of individual parts in foam and shredded paper. Without affecting quality, this solution reduced material waste by 70% and decreased supplier labour, material and costs.

Material waste reduced by **70%**

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**MAKING
ENERGY
MAKE
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