

# SUPPORTING HIGH- EFFICIENCY BIO-MASS

A RESIDENTIAL  
FACILITY CASE STUDY

The new district heating system is expected to provide consistent and reliable delivery of heat to local residents in addition to reducing heating costs and cutting CO<sub>2</sub> emissions by over 1000 tonnes per year.

“This installation creates an ‘all-variable-speed’ environment and enables the system to adapt quickly to changing demands for heat.”

**Dominic Cutts**  
Director - Systems Solutions Group

## Riverside Dene Estate

Vital Energi needed pumping capacity to support a sustainable district heating scheme at Riverside Dene Estate. Armstrong delivered an intelligent Fluid Management System (iFMS), including Design Envelope pumps with integrated controls. iFMS are complete, pre-assembled fluid management systems that provide high-efficiency pumping combined with advanced control capabilities.

### Background

Riverside Dene Estate is an iconic apartment complex in Newcastle, UK. When the towers were constructed in the 1960s, local council envisioned a ‘city in the sky’, and the apartments have provided much-needed affordable housing for the area.

As part of a large scale refurbishment, six tower blocks of Riverside Dene have been remodelled to create 550 flats, in line with revised government legislation known as the ‘Decent Homes Standard’. The project involved the creation of a sustainable district heating scheme. The solution, supplied by Vital Energi, is a highly efficient £1.7 million wood-fuelled biomass installation providing low carbon heat and hot water.

Vital Energi approached Armstrong Fluid Technology to provide pumping capability for the project. The systems supplied by Armstrong are iFMS integrated pumping units, a complete pre-designed and pre-assembled fluid management system. Each unit is capable of controlling up to 18 zones. The pumps at the heart of each module are Armstrong Design Envelope Vertical In-Line 4300 pumps with integrated controls.

### Benefits

The district heating scheme provides reliable heat for residents in addition to saving 1,054 tonnes of CO<sub>2</sub> per year. The project has an expected pay-back period of less than eight years, and household fuel bills on the estate will be substantially reduced.

The apartments were named the BEST AFFORDABLE HOUSING DEVELOPMENT in the North by the Local Authority Building Control organisation and were later shortlisted for 2 awards in Housing Excellence and Constructing Excellence.

Commenting on the installation, Dominic Cutts, Director - Systems Solutions Group, Armstrong Integrated stated, ‘The Riverside Dene development is one of the most impressive demonstrations to date of the ability of renewable heating technology to improve lives at the same time as helping the environment.’

### Tech Facts

intelligent Fluid Management System (iFMS) including

- Series 4300 Design Envelope Vertical In-Line pumps
- Suction Guides
- Flo-Tex Valves
- Integrated controls and set-mounted IPS controllers

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