



# **Commercial/Industrial Green-tec Wood Pellet Boilers**



## **Introduction.**

**Ashwell Engineering Services are major UK manufacturers and installers of solid fuel boiler plant in the range 15kW to 1.5MW. Our senior staff have decades of experience and we are well respected throughout the industry with clients, governmental organizations and project managers.**

**In recent years we have completed a successful DTI New and Renewable programme to develop a fully automated range of high efficiency wood pellet burning appliances, which we now offer to the market at competitive prices to include installation and commissioning.**

**We are registered with the Clear Skies government incentive scheme and customers installing our plant will be eligible to apply for grants on capital and installation costs.**

**Our GREEN-TEC range offers a series of boiler packages from 15kW to 1.2MW**

**We also offer a range of GREEN-TEC conversion kits which will convert most existing solid fuel boiler plant (up to 1.2MW) to burn wood pellets, saving on the cost of a new boiler and installation time. This is particularly applicable to potential clients who wish to convert to bio-fuel, but whose existing boilers still have several years of life. To demonstrate the conversion principal we have successful boiler conversions in several regions which potential clients are welcome to visit.**

**Ashwell Engineering Services Ltd are a UK based company who install and service as well as produce boiler plant and because of our UK base we can respond quickly to any necessary customer requirements.**

## Case studies.



**RANSKILL PRIMARY SCHOOL  
CHERRY TREE WALK  
RANSKILL  
NOTTINGHAMSHIRE**



**One 150kW Green-Tec wood pellet package boiler installed to replace existing coal boiler in mid winter 2005**

The unit is complete with automatic ignition and inverter control

The unit is controlled from a remote computer

The client is highly satisfied with all aspects of the installation



**ALBANY INFANTS SCHOOL  
STAPLEFORD  
NOTTINGHAMSHIRE**



**One 200kW Green-Tec wood pellet package boiler installed to replace existing coal boiler 2005**

The unit is complete with automatic ignition and inverter control

The unit can be controlled from a remote computer

The client is highly satisfied with all aspects of the installation and has provided a testimonial in support

# Typical Installations.

## Boiler house:

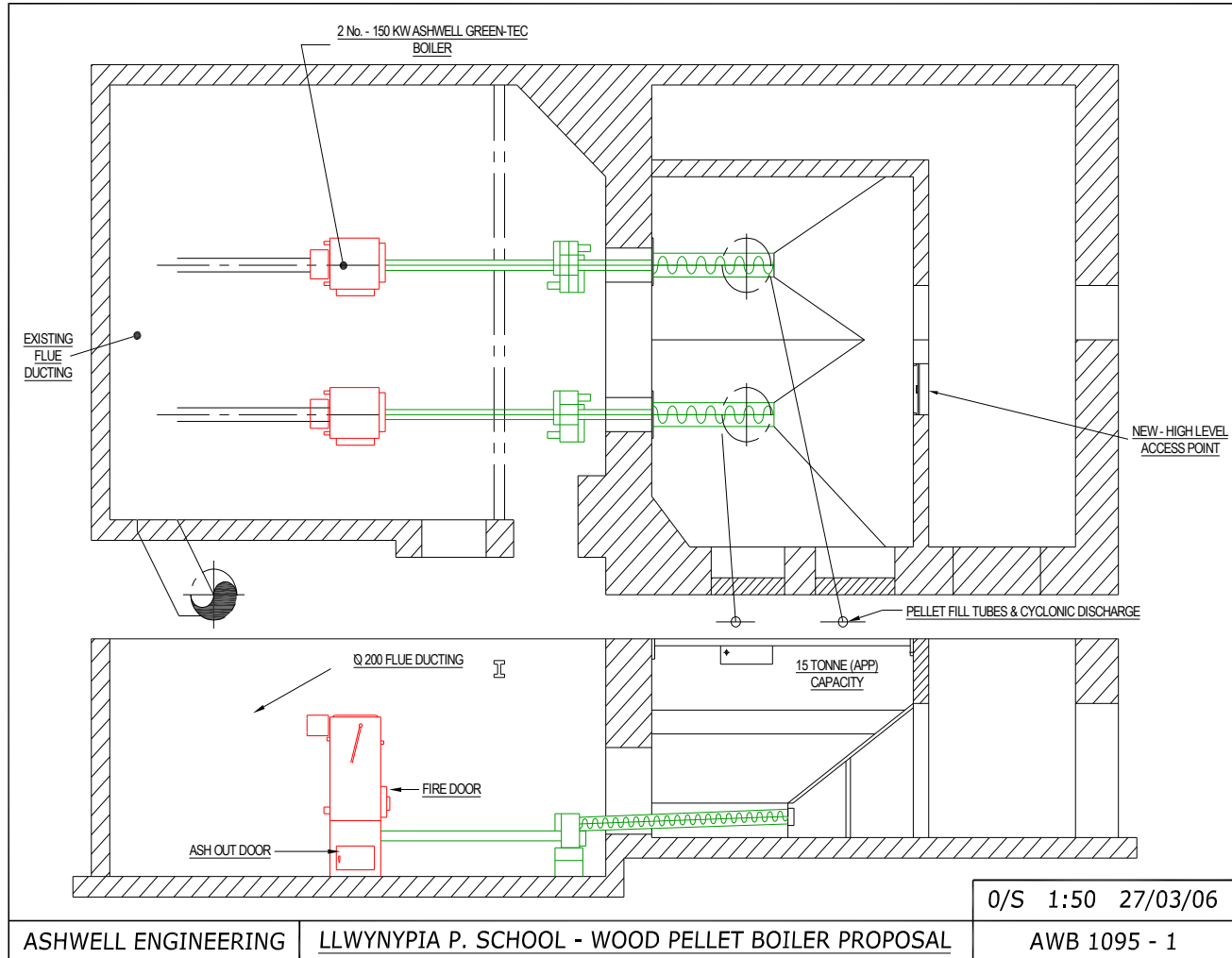


## Fuel store:



# Boiler house/Bunker design and layout.

Example:



- **Custom bunker design and layout for any building or elevation.**
- **Cyclonic discharge on bunker fill inlet to prevent fuel degradation.**
- **Very low friction bunker sides ensure excellent flow characteristics.**
- **Filter units installed to catch dust during bunker fill.**

## Green-tec boiler technical information.

OUTPUT	75KW	150KW	300 KW
Wood pellet kg/hr	16.5	33	66
Hydraulic resistance	89mm	89mm	188mm
Flow rate	3.23 1/sec	3.23 1/sec	6.46 1/sec
Water content	280 ltr	280 ltr	593 ltr
Over furnace negative draught	.02 - .10 in. or .5 -2.5 mm or 5 - 25 pa		

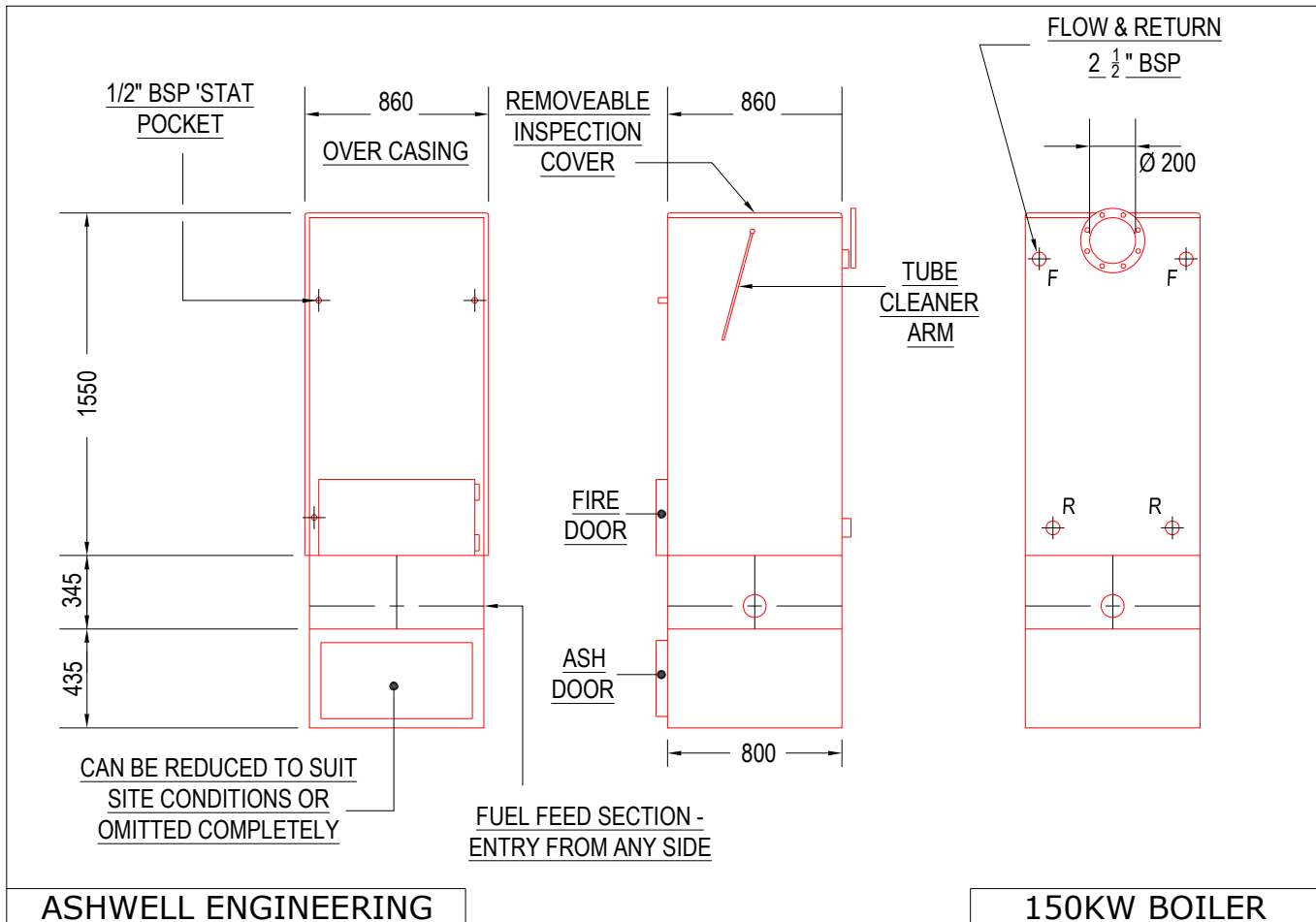
FUEL: Wood pellet 6mm - 12mm dia  
CV average - 18000 KJ/Kg.

Ashwells Green-Tec range of pellet boilers are on the clear-skies / low carbon buildings approved list for grant funding, meeting the criteria for efficiency and emissions.

- **Average boiler efficiency testing 90.6 % Net Basis**
- **Combustion efficiency of fuel 99.7 %**

# Boiler dimensions.

150KW example:



- Please contact us for dimensions on other models.

# **Industrial / Commercial range of Ashwell Green-tec boilers**

## **General specification “Best Practice” option.**

- ✓ Control panel complete with easy to use touch screen interface and programmable logic controller.
- ✓ Fully modulating inverter control. To ensure constant high efficiencies.
- ✓ Air and fuel ratios constantly balanced.
- ✓ Flue temperature monitoring.
- ✓ Automatic ignition.
- ✓ Low maintenance.
- ✓ Stainless steel heat exchanger turbulators, including “easy clean” features.
- ✓ Underfeed combustion principal.
- ✓ Multi option fuel delivery / pickup configuration.
- ✓ Energy management system offering optimization, compensation and frost protection (optional extra)
- ✓ Automatic ash removal (optional extra)
- ✓ Burn back protection:
  - A/ An electrical heat sensor which automatically pushes fuel into the combustion chamber if burn back occurs.
  - B/ Mechanical water douse valve. This dumps a measured amount of water into the delivery auger, this only operates if the electrical heat sensor fails due to a power cut for example.



# ASHWELL

ENGINEERING SERVICES LIMITED  
*green energy solutions*

GREEN-TEC CONVERSION KITS  
FULLY AUTOMATIC HIGHLY EFFICIENT AND RELIABLE WOOD PELLET BURNING KIT TO  
CONVERT EXISTING COAL FIRED BOILERS TO BURN WOOD PELLETS IN THE RANGE  
150KW TO 1.5MW.



The GREEN-TEC range of CONVERSION KITS has been designed to convert existing coal fired boiler plants to burn wood pellets USING THE EXISTING BOILER HEAT EXCHANGER. Significant savings can be made on capital and installation costs when compared to a full boiler replacement.

This equipment is particularly effective when the existing heat exchanger has years of life remaining.

The kits have been designed to meet the needs of the environment and the end user being CO<sup>2</sup> neutral, easy to operate and highly efficient (80%+). the fully automatic units deliver pellets from an adjacent fuel bunker that holds a practical amount of fuel to suit the boiler rating.

To meet the heating demands of the commercial size market, each of the GREEN-TEC kits can vary its output within limits and the kits come in a range of nominal sizes all to provide total flexibility covering all output requirements between 150kW & 1.5MW.

The conversion kits can be matched to most new boiler heat exchangers all to supply a complete new bio-fuel boiler package if necessary. To phase the cost of an installation, a conversion kit can be fitted to an existing coal fired heat exchanger and two or so years (subject to life left in heat exchanger) later the existing heat exchanger can be replaced with a new one.

Ashwell Engineering Services, a UK based company install their GREEN-TEC CONVERSION KITS as well as manufacturing them, they also provide an after sales servicing and parts contract. Because of their UK base Ashwells can respond quickly to any necessary customer requirements.

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# **CASE STUDY – NEWBRIDGE HIGH SCHOOL, COALVILLE, LEICS.**

**Newbridge High School are proud of the achievements they have made in respect of supporting our environment and the innovative way that they have achieved a sustainable development project.**

**Their new wood pellet burning boiler house is part of a “Green Oscar” award and was recently shown on BBC television.**

## **CENTRAL HEATING**

**Until last summer, heating of the main school building was provided by fossil fuels (coal). Growing awareness of environmental issues meant that fossil fuel was becoming less acceptable, with coal and oil the most polluting fuels in terms of carbon dioxide emissions (the main greenhouse gas) and sulphur dioxide (one of the causes of acid rain)**

**Ashwell Engineering Services Ltd conducted a site appraisal and recommended the conversion of the existing boilers to run on wood pellets, by doing so the school has reduced CO<sup>2</sup> emissions to the atmosphere by 300 tonnes per year.**

## **SCHOOL ENERGY TEAM – ENERGY CERTIFICATION FOR SCHOOLS**

**The school set up an energy team in accordance with the Energy Certification for schools.**

**Members of the energy team consisted of Year 9 pupils, Site Manager, Business Manager and a school governor.**

**The scheme promotes energy management and efficiency for the whole school community.**

**Work has included providing links between the school curriculum and the management of energy efficiency and design of school posters.**

## **BOILER CONVERSION**

**During the summer of 2003 Ashwell Engineering Services Ltd., manufactured and installed two of their Green-Tec range of wood pellet conversion kits, into the two existing 600kW output Hartley & Sugden White Rose boilers.**

**The original bunkers were thoroughly cleaned and new bunkers for the wood pellets were built within the original area.**

**The Ashwell Green-Tec conversions are fully automatic and include automatic ignition and full modulation which has increased efficiency by approximately 20%.**

**Ashwell Engineering Services offer a range of Green-Tec conversion kits from 50kW to 1.5MW as well as a full range of new high efficiency boilers with matched burners for wood pellet burning.**

**FOR FURTHER ENQUIRIES:-**

**PLEASE CONTACT ASHWELL ENGINEERING SERVICES LTD 0116 2604050**