Forestry Commission Scotland

usewoodfuel

TULLYNESSLE & FORBES PUBLIC HALL

Tullynessle, Alford

Why Use Woodfuel?
The previous heating system was based on radiant and electric panel heaters that were operated on demand. These were expensive to run and so were only turned on when needed, this often left the hall temperature very low, which was uncomfortable for hall users.

"Our research and investigation found woodfuel to be the best option over ground source heat pumps, due to the favourable costs of installation."

The new pellet system provides constant background heating which serves to keep the hall at a more reasonable temperature for users and protects the fabric of the building against damp. Originally pellets were delivered in bulk and manhandled into the fuel store, but for ease of use the installation has now been adapted to accept blown pellet deliveries.

Key Benefits of this Woodfuel Installation
// More comfortable ambient temperature for hall users which particularly benefits the local community
// Increased level and variety of hall usage due to better conditions
// Benefits the local economy as local catering and event companies can use the hall to generate more business
// Whole community involvement
// Contributes to carbon reduction commitment

Added Benefits
The Community Hall building was completely renovated in 2008. Wall and underfloor insulation were improved to ensure increased heat retention, further helping to reduce heating costs and energy consumption. Pellets can be delivered via a blown delivery system from a specially designed pellet blower lorry. The boiler and fuel store are located within the existing storage area of the hall, this meant that no additional boiler house construction was required.

Lessons Learned:
// It is important that the user fully understands the cleaning requirements of the boiler to maintain output and reliability
// Delivery methods need to ensure dust creation is kept to a minimum
// Secure a local fuel source as soon as the development is conceived
// An internal fireproof hopper can add extra costs to a project – make sure all costs are identified and included in the budget
// Carefully consider long-term delivery options for pellets. Blown supplies are most like current fossil fuel deliveries, with minimal input from the user

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Wood Pellet Delivery:

// Pellets can be delivered in 10-15 kg bags or in bulk, as one tonne loads, or blown into a fuel store

// One tonne load bags delivered on a pallet are a cheaper way to receive pellets, but require onsite handling machinery

// Buying in bags can cost up to twice the price of buying in bulk

// Blown pellets are delivered directly into the hopper via a pneumatic blower attached to the delivery vehicle

// Blown truck loads often have a minimum delivery of about 5 tonnes

// Two universal fitting delivery pipes into the fuel store are required to accept blown deliveries (the second pipe allows excess air to escape)

// Dust socks or filters on the exhaust pipe will reduce dust build-up

BOILER	
Application	Community Hall Heating and Hot Water
Max output	25.9 kW
Manufacturer/Model	Windhager / BioWin 260
Fuel Type	Pellet
Moisture content	10 %
Installation date	August 2008
Backup system	None
Woodfuel store capacity	5 tonne hopper usually filled in 3 tonne deliveries
Fuel delivery interval	4 – 5 deliveries per year
Supply contract	Pellets bought direct from producer
Source radius	30 miles
Annual woodfuel use	Estimated 12 – 15 tonnes
BUILDING	
Building fabric	Breezeblock and timber structure
Building use	Community hall
INSTALLATION COSTS	£24,000
Boiler System	Scottish Community and Householder Renewables Initiative (SCHRI)
Funding source	Scottish Power Green Energy Fund (GEF)
Funding support rate	60 % (SCHRI) 40 % (GEF)
COST SAVING	
Previous fuel type	Electricity
CO2 savings pa	14 tonnes
Woodfuel cost	£1,600 for 26,000 kWh
Annual fuel cost saving	£1,000
Payback period	n/a - fully grant funded project