

Case Studies: Wood Pellet Heating Systems

One day seminar
Wood Pellet Fuel Production

Tuesday 13th July 2006
National Energy Centre, Milton Keynes

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Case Study 1

Wood Pellet Stove
with radiators
15kW

Bardney, Lincolnshire

Forest Visitor Centre



Activity room + office and kitchen



Manual fuel feed from sacks



Case Study 1

Applications & Features:

- Domestic
- Small remote building
- Relatively low fuel use
- Lack of gas or oil fuel supply

Case Study 2

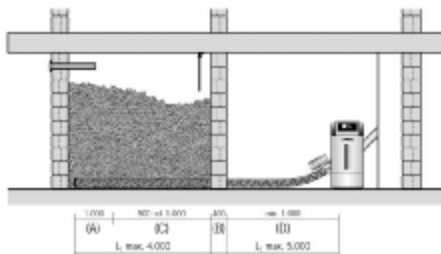
Domestic Space Heating and hot water
20kW

Somerby, Leicestershire

Boiler in utility area.



Typical Installation



Installed during major renovation



Purpose built bulk hopper



Accumulator Tank in adjacent cellar



Case Study 2

Applications & Features:

- Domestic
- Automatic clean, O2 sensing, auto ignition
- Burn, store, extinguish cycle
- Large distance from fuel store to boiler
- Lack of gas or oil fuel supply
- Very high efficiency
- Relatively high cost system

Case Study 3

Domestic Space Heating and hot water
20kW (Low cost system)

Braunston, Northamptonshire

Boiler and store in adjacent outhouse



Boiler and fuel store



Pellet Feed Auger



Fuel hopper and filling point



Case Study 3

Applications & Features:

- Domestic
- Constant slumber
- Short distance from fuel store to boiler
- Lack of gas or oil fuel supply
- Low cost system, at expense of some efficiency

Case Study 4

Church and Community Centre
90kW

Brockley, London

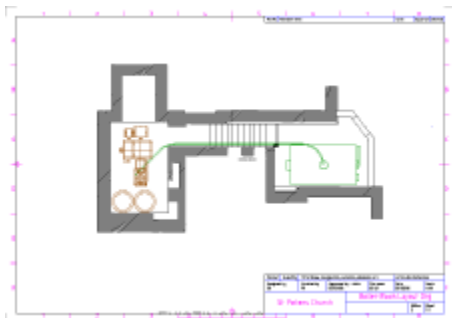
St Peters Church and Community
Centre, Brockley, London



90kW pellet boiler



Layout Plan



Case Study 4

Applications & Features:

- Commercial
- Space and design limitations
- Distance from boiler to fuel store
- Urban location with delivery constraints

Case Study 5

Large Primary School
300kW pellet boiler

*Orchard Primary School, Castle Donington,
Leicestershire*

Orchard Primary School, Leicestershire



Boiler house and heating system



Prefabricated pellet store



Wood Pellet Hopper



Fuel Delivery Auger



Case Study 5

Applications & Features:

- Commercial
- Auto ignite, auto deash, O2 controls
- Space and design limitations
- Reliability needed with single boiler design
- Large peak loads and low occupancy

Case Study 6

Large Secondary School
Coal to pellet conversion
450 kW

Melton Mowbray, Leicestershire

One of original coal boilers



Replacing the under stokers



Secondary air in boiler



Bunkers modified for wood pellets



Delivery of Wood Pellets



Case Study 6

Applications & Features:

- Commercial
- Low cost conversion of outdated system
- Interim measure in old school
- Space and design limitations

Case Study 7

Farm premises: House and
workshops
45kW

Melton Mowbray, Leicestershire

Multi fuel options



Fuel Options:



- Wood Pellets
- Grain
- Wood chip
- Logs
- Miscanthus pellets

Combustion Chamber



Case Study 7

Applications & Features:

- Commercial/Domestic
- Low cost system
- Labour intensive
- Fuel choice versatility, depending on cost
- Farm and rural application

Wood Pellet Supply

An essential ingredient!

Access required for delivery vehicle

