



Living with a Wood-based heating system

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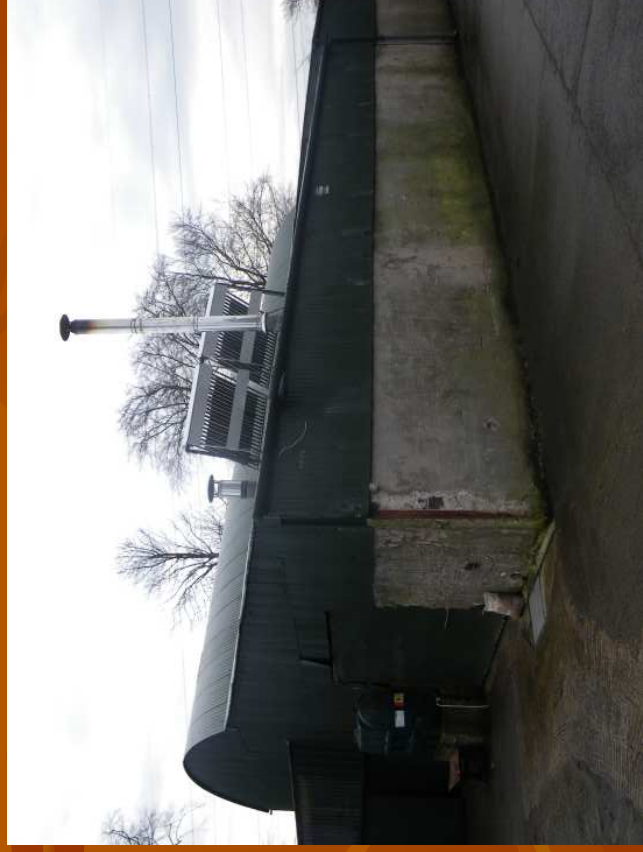
Home



2 Buildings c50 metres apart

Woodshed

Woodshed / Boiler house

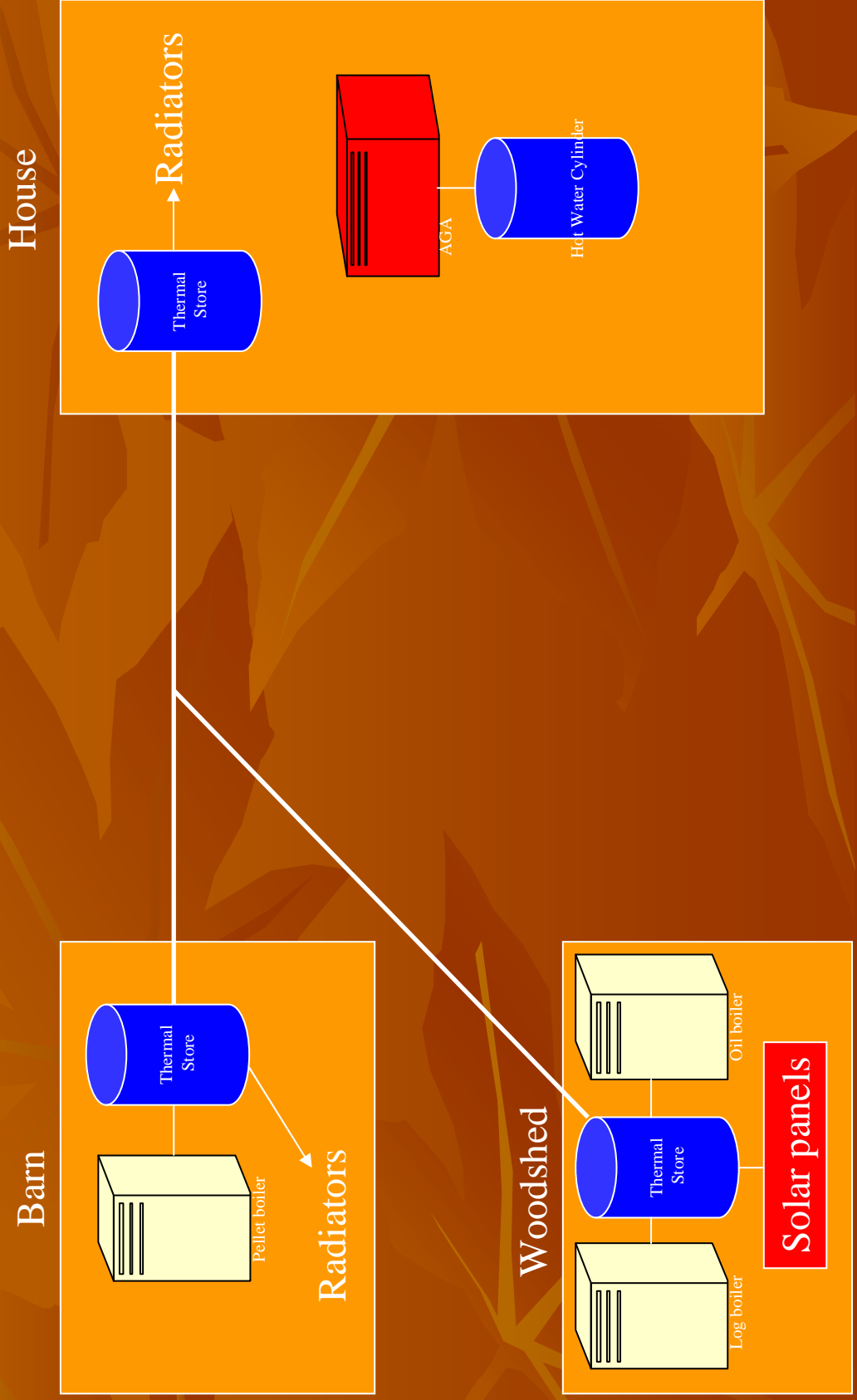


+ c. 120 metres of very expensive insulated pipe!

Log Boiler + Oil Boiler + Thermal Store



Layout



Statistics

- Heat Load
 - House – Stone – 6,000 sq ft
 - Barn – Stone – 3,000 sq ft
- Heat Sources
 - Log Boiler – 32kW
 - Oil Boiler – c 40kW (only used sparingly)
 - Pellet Boiler – 12kW
 - Solar panels (40 tubes)
 - Wood-burning stoves (2 in barn, 1 in house)

Keys to Success

- Planning & Design
 - Accurate heatload calculations
 - Good sizing
 - Good system design
 - Good control systems
 - Don't throw out old equipment – integrate it
- Key Tips
 - Don't skimp on insulated underground pipes!
 - Avoid over-complex equipment!
 - You will have to fix it.
 - Minimise distance between logboiler and wood store

Boilers (in Woodshed)



32kW Log Boiler

1500 litre Thermal store

Oil Boiler

Pellet boiler (in barn)



Pellet boiler



More (600 litres) Thermal stores

2,850 litres of thermal storage!



Woodshed



Barn



House

Controls



Pellets



Stoves



Lessons learnt

- Understand the equipment
- Have someone on-site who can maintain
 - Avoid over-complex equipment
 - Clean regularly
- Don't under-estimate how much wood you will use
 - Plan wood supply
 - **ONLY BURN DRY / SEASONED WOOD!**

Wood.....



Cleaning!



Bad experiences

- Pellet vacuum feed system blockages
 - Distance – motor burn-out
 - Dust in pellets
 - SOLUTION: Feed manually (c 3 Hods per day)
- Blocked auger on pellet boiler
 - Partially blocked flues
 - Dust in pellets
 - SOLUTION: Regular cleaning
- Poor Boiler performance
 - Ladomat Valve set at 72 degC – replaced with 62 degC
 - Slumbering too much = poor heat supply
 - Excessive coking
 - SOLUTION: Temperature settings, dry fuel & regular cleaning
- First year = settling period

Wood-burning behaviour!

- Taking the dogs for a walk?
- A smoker going outside?
- Feeling cold?
 - Combine it with feeding the boiler!
- Feed boiler at night
 - Enjoy heat in the morning!
- *Ensure boiler is convenient to feed*

COSTS etc

- OIL: Woodshed Est: c 1,500 litres p.a.
- OIL: AGA Est: c 2,000 litres p.a.
- PELLETS: Est: 6 tons p.a. (£900)
- WOOD: Labour!
- RESULT:
 - House warm all the time
 - Barn (office) warm every day c21c
- ROUGH COST £16,000



THANKYOU