

3-bed Semi-Detached in Nenagh



Case Study

Summary

Even for the typical semi-detached house that has been built in the last 15 years there is a need for upgrading energy performance. Houses built or upgraded to the 2008 Building Regulations are warmer and easier and cheaper to heat. This Case Study is based on a Semi-detached house, typical of any of the semi-detached houses built around Nenagh from 1990 – 2005. The house is a typical two story 110 sq m (1250 sq ft) house with cavity walls. Its primary heating is an oil fired boiler with an open fire to supplement the heating. Through energy efficient measures, this home owner could reduce the energy requirement of the house by 44%.

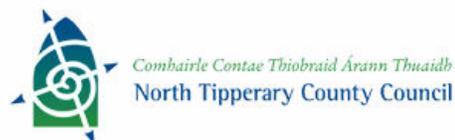
The measures that could be implemented are:

- Wall Insulation
- Attic Insulation
- Heating Controls
- Boiler Upgrade
- Energy Efficient Lighting
- Wood Burning Stove (in place of open fire)

Reducing the energy requirement of the house by 44% equates to a 44% saving in oil annually. Therefore, in monetary terms, this homeowner could save approximately €660 every year. This case study illustrates in more detail how this saving was realised.

The SERVE Project

The SERVE Project is an EU funded project that aims to reduce the energy consumption of what is known as the “SERVE” area in North Tipperary. North Tipperary County Council is administering the project through the provision of grants for homeowners. The grants will help to upgrade the homes making them more energy efficient and less reliant on fossil fuels such as oil, coal, peat etc. The Tipperary Energy Agency works as the technical partner in the project.

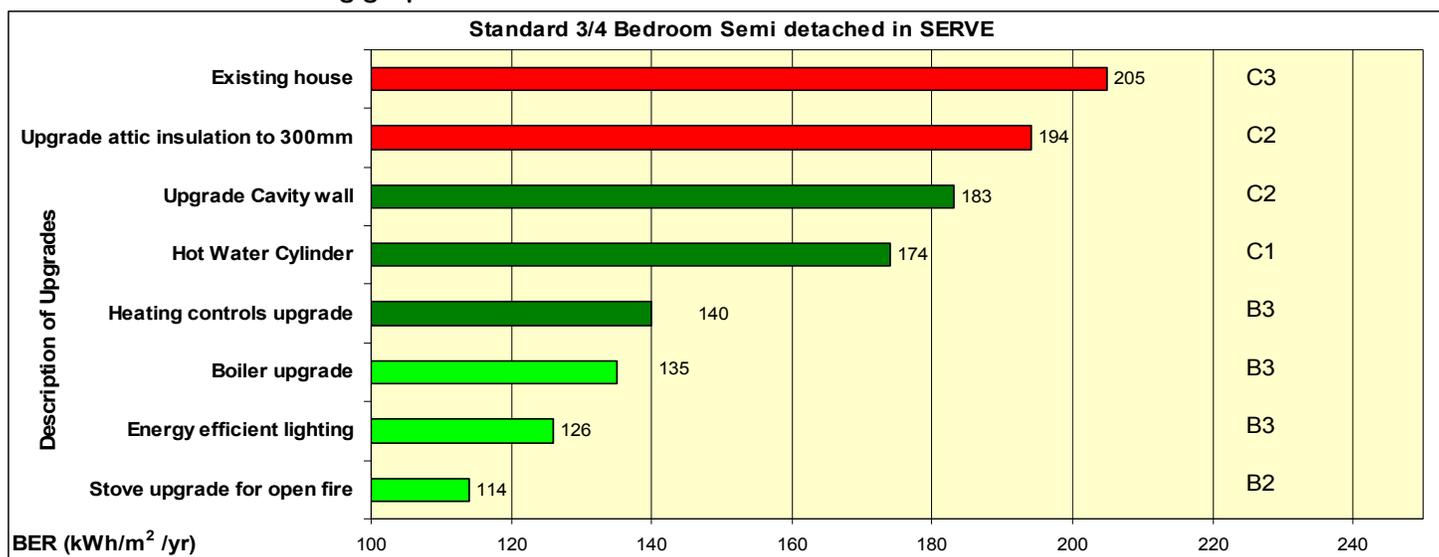


Upgrades

The following upgrades could be completed, and are typically recommended on a house of this type by Tipperary Energy Agency. These include:

	Upgrades	Cost	HES Grant	SERVE Grant
1.	Upgrading of the roof insulation (to 330mm fiberglass)	€600	€250	
2.	Upgrading of the cavity wall insulation	€900	€400	
3.	Installation of heating system controls (thermostats, programmer, radiator valves)	€1200	€500	
4.	Upgrading the boiler (new efficient condensing boiler, with efficiency of >94%)	€1300	€200	€300
5.	Installation of energy efficient LED lighting	€100		€30
6.	Installation of high efficiency wood burning stove	€900		€650
SERVE Energy Efficiency Grant				€1000

By upgrading the house by these 4 methods, the energy requirement in the house **could be** reduced by 44%. This can be seen in the following graph:



Result

As can be seen in the graph, the energy required to heat the house could be reduced dramatically. The results are as follows:

	Original House	House with Upgrades	Savings/annum
1.	Energy Rating of C3	Energy Rating of B2	91 kWh/m ² /yr
2.	€1500 Annual Energy Bill	€800 Annual Energy Bill	€660
3.	7 Tonnes CO ₂ emissions	3 Tonnes CO ₂ emissions	4 Tonnes CO ₂

The total cost of the upgrades would be approximately €5,350 (including BER), the Home Energy Saving scheme grant would be approximately €1,550 (including BER) and the SERVE Grants for the above measures would be approximately €1,980. This means the homeowner would only have to pay approximately €1,800, and just over a 2.5 year payback.

Further options under the SERVE Grant Scheme:

The homeowner could also install the following upgrades which will be grant aided:

1. Installation of lighting controls
2. Installation of a solar panel (SERVE and Greener Homes Grants available).

These measures would take a further 20% (€200) off the energy bill, giving the house a B1 rating.