

Bungalow in SERVE Region



Case Study

Summary

One of the key benefits of retrofitting your house with energy efficient measures is the instant change in the thermal comfort that your house offers. The bungalow in this case study is typical of the bungalows constructed in the SERVE region from 1960 – 1990. The house is approximately 140 sq m (1550 sq ft) with cavity walls. Its primary heating is an oil fired boiler with an open fire to supplement the heating. Through energy efficient measures, the home owner could reduce the energy requirement of the house by 55%.

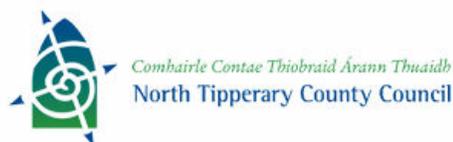
The measures that could be implemented are:

- 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 51% equates to a 51% saving in oil annually. Therefore, in monetary terms, this homeowner could save approximately €1,000 every year. This case study illustrates in more detail how this saving could be 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.

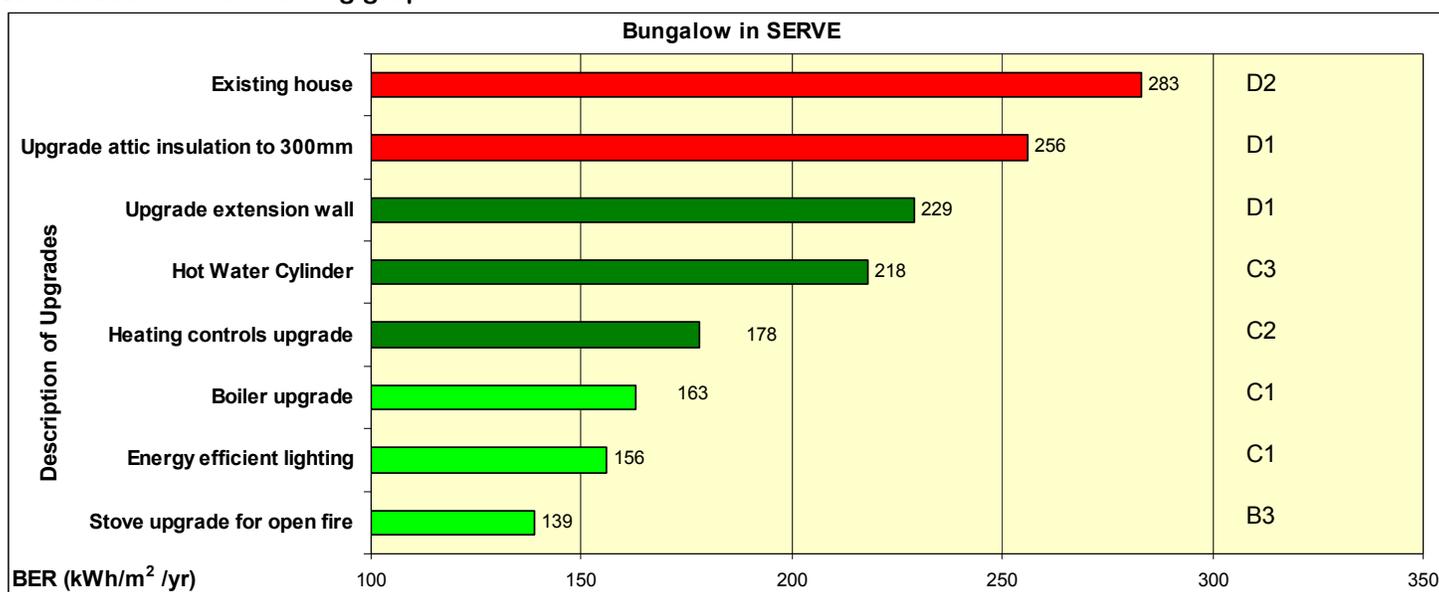


Upgrades

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

	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 of hot water cylinder to high efficiency cylinder	€300		€100
5.	Upgrading the boiler (new efficient condensing boiler, with efficiency of >94%)	€1300	€200	€300
6.	Installation of energy efficient lighting	€100		€30
7.	Installation of high efficiency wood burning stove	€900		€650
SERVE Energy Efficiency Grant				€1000

By upgrading the house by these 7 methods, the energy requirement in the house could be reduced by 51%. 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 D2	Energy Rating of B3	144 kWh/m ² /yr
2.	€2000 Annual Energy Bill	€1000 Annual Energy Bill	€1000
3.	9 Tonnes CO ₂ emissions	4 Tonnes CO ₂ emissions	5 Tonnes CO ₂

The total cost of the actions is approximately €5,650 (including BER), the Home Energy Saving scheme grant was €1,550 (including BER) and the SERVE Grants for the above measures is approximately €2080. This means the homeowner would have to pay approximately €2,000, and have just over a two year payback.

Further options under the SERVE Grant Scheme:

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

These measures could take a further 20% (€200) off the energy bill, giving the house a B2 rating.