

- Type/age of building and main extensions - with pictures **but only if you are happy that your property may be identified** 1930s semi, 3 bedrooms, ~ 110m<sup>2</sup>. Single floor extension to the back containing a shower room and living room.
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- Overview of fabric (walls/roof/floors/windows) BEFORE and AFTER any improvements – various double glazed pvc windows but with some blown , and probably at least 20 years old so not very effective. Chimney on rear roof removed as not used and made more space for solar panels.
- Types of Insulation installed BEFORE/AFTER – no wall cavity. 300mm of loft insulation. Render needed attention. Was told £9000 to re-do and £15,000 to fit 95mm external insulation. Didn't want disruption of putting up internal insulation and then making rooms smaller. Windows replaced with PVC double glazing to all windows except for on extension
- EPC rating BEFORE and AFTER improvements – D67 before and said potential B82. After all work B87
- Main energy sources used for heating BEFORE and AFTER (gas/oil/electricity/solid fuel). Gas central heating, and for water. Gas hob, electric oven. Wood burner in sitting room just used in evening
- Major changes in use of energy / energy tariffs –Electric hob installed before work started. Builder doing insulation capped gas. Switched to Octopus and got them to take away the meter to avoid getting the standing charge. Builder accidentally damaged the gas pipe so Cadent came out to cap by the house. A year later Cadent got in touch to come and check the gas and make sure all ok. Got in touch with Cadent before all the work to see what we should do and they wanted to charge ~£3000 to disconnect! Builder said just wait. On Octopus Flex with 3 different tariffs through day for both import and export.
- Renewable energy systems installed (Solar water, solar PV, batteries, heat pumps, wind turbines etc – 7KW Vaillant ASHP installed. Sits on back of house. Replaced or swapped round a couple of radiators as not big enough for room. Existing pipework was adequate. Someone recommended to check if existing pipework is adequate for a ASHP, to turn down the flow temperature on the gas boiler to 45C and see if was still able to warm the house. Was ok. Have an expansion tank installed in the loft which was a bit of a nightmare to get up there and have since found out that this is not vital to the system in most situations. 9 solar panels fitted, 5 on West facing roof, 4 on south facing roof. 5kw battery installed. Do wonder if should have had a bigger battery installed but so far happy with this. Battery and inverter fitted in garage.
- Heat recovery systems installed - none
- Comparison of Energy usage In £££ / KWH BEFORE / AFTER found it really difficult to make a comparison but our old energy bills said ~ 2,500-3000 KWH electric annually, and 11,000 KWH gas. Before work, central heating would go off once we lit woodburner at night in winter. July 2024 to end June 2025 used 4674 KWH. And have exported 2645 KWH in same time. The feeling in the house is so different to before. As we just used woodburner in sitting room at night in winter the rest of house was cold and was suffering with damp in places. We now have a much more comfortable house and feels much better for the fabric of the house.
- Plans for further decarbonisation - e.g. battery EVs & charging stations, offgrid power – wonder about putting 2 or 3 solar panels on garage roof but would need to make

sure National Grid are happy to increase and that it wouldn't need to much more supporting equipment that might make it not economic. Need to box in ASHP equipment in bathroom



Before



Chimney removed. Panels fitted



Additional info.

We had windows with Sanctuary Home Improvements, Kevin Stapleton, Eastwood, NG16 3SR. uPVC, nothing fancy but was two of them and they did everything in a couple of days and were really neat. were recommended by friends and would definitely recommend. Linear Energy Plus A++, u-value 1.2

Builder probably did a good job overall but was a nightmare to get hold of and we had hardly any paperwork. Wouldnt recommend as it was just stressful waiting and wondering. wasnt helped by the weather and his scaffolder getting taken into hospital for weeks. Atlas Etics EPS. Potential u-value 0.22.



Solar panels by Smart Homes Electrical, Tansley DE4 5FW, tel 01629 56168. Spoke to Will Chamberlain most of the time, can't remember what the boss is called. We found them when we went to a Green Homes event in Darley Dale. They had put solar panels on a house in the village a couple of months before and we were able to go and see the guy and he showed us what they'd done and was happy with them. If we have queries the online system is a bit laborious to contact but generally good. Had a 5kw battery as well. Not sure if it's worth doing but we did. We are with Octopus so make sure we charge it on the cheap rate at night in winter so think it must be saving something. Just checked the other day and their quote gave an estimate of the power it would generate and it is almost spot on to what they've done. 9 panels, 3.9kW total power. quoted 3,304 kWh/yr and look on target for that. Octopus pay about half what we pay for energy so figure that we're banking credit in the summer to go towards running heat pump in winter.

Marvel Heating and Renewable Energy, 01302 357958. Think they're based in Barnsley. They normally install Samsung but we wanted a Vaillant and they were happy to do. It's a 7kw. they did the grant thing that was straightforward. They had completely misjudged the size of the equipment as they thought would all fit in our bathroom cupboard but they had to put a tank in the loft. they were learning as they went along but know they have since installed more Vaillant. apparently one of the energy companies was offering a tariff with Vaillant pumps so they wanted to start doing them. We had a leak a few weeks later and they were straight out to do. Good guys, quite entertaining. we have a telephone number for any queries and the guy is very responsive as soon as we ask anything. the heat is completely different to when we had gas central heating. was a bit scary while it was very cold as was running most of the time but feel that it is much better for the house. before we didn't heat upstairs so was always cold and was getting damp. and we were just being warm, cold, warm, cold and think these older houses benefit from a more constant heat. We can't work out yet how much it's costing but it feels so nice we almost feel if it cost the same we wouldn't complain as it's so different. we used to light a woodburner every evening and let the gas central heating go off but it meant it was only warm in the living room. now we might light the fire when the Octopus energy is expensive, 4-7 pm, and then heat pump kicks in again after.

Marvel swapped a couple of radiators to suit the size of the rooms and put a bigger one in one room. our pipework was ok for the heat pump so wasn't changed. Not sure if it was you that suggested but someone said to set the gas central heating to a flow rate of 45C (what the vaillant pump runs at) and see if we could still heat the house. we could so is a good indication if the pipework is adequate for heat pump. If we have queries we just text an engineer and he is usually really good about getting in touch.

We were in touch with Cadent about disconnecting gas and they wanted to charge over £2,000. builder said just tell them you're disconnecting the meter and they will eventually come and properly disconnect. heard that Octopus were good at taking meters away so switched to them to get meter removed to stop standing charge. apparently energy companies own the meters but Cadent own from the meter back to the mains.