The Dudleys: An Energy Improvement Toolkit

Practical energy solutions for your home



What is this Toolkit all about?



Why do it?

The Toolkit provides clear steps to help Dudley residents make their homes warmer (or cooler in the summer!), save money on energy bills and protect themselves from price hikes, and reduce their impact on the climate.

Guidance on Energy Improvements

Offers tips on DIY measures, intermediate upgrades, and deeper retrofit and renewables options

The Money Part

Gives a sense of costs and savings, and potential sources of finance

Sharing Local Stories

Includes local stories so you can see the successes and pitfalls of retrofit in Conservation-Area Victorian homes.

Why Make Energy Improvements?





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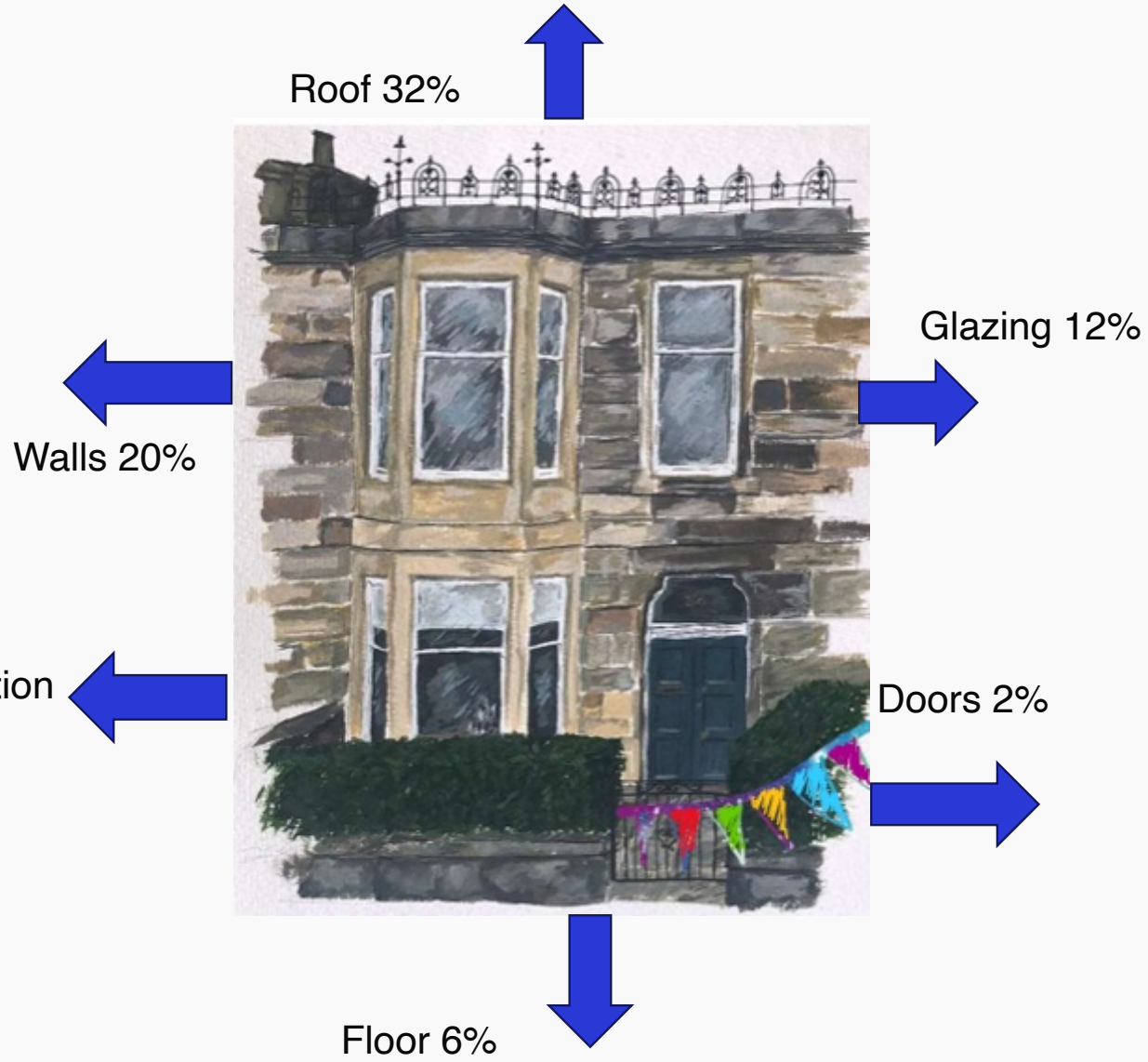
Dudley Home Improvement Group – Our Journey so Far

THE DUDLEYS COMMUNITY HOME & BUILDING IMPROVEMENT GROUP

- Supported by EdinBRIC and EALA to collaborate and learn from other groups in Edinburgh and to develop a **joint xxx for solar installations**.
- Mapped different types of Dudley homes and the possibilities for improvements.
- Engaged with Edinburgh University Conservation Architecture MSc Students to understand challenges and solutions in our homes.
- Met regularly to share learnings about improvements – particularly useful once installations started.
- Held a Community Meeting in 2024 to share early learnings with residents.

Typical Dudley Terrace Heat Loss

(in a home with old double glazing) – glazing loss would be higher in a home with single glazing




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Easier Wins

- Change to a Clean Energy Tariff
- Think about what you're burning in your fireplace/stove
- Switch your lightbulbs to LED
- DIY Draught-proofing doors and windows
- Radiator Reflective panels and Bleeding/ Balancing
- Help your boiler to run efficiently -turn down the "flow temperature"
- Smart thermostats (like Hive or Nest)
- Heavy Curtains/Energy Saving Blinds
- Gas to Induction Hob (needs hardwiring) and/or Electric Oven


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Intermediate Options

- Professional Draught Proofing
- Insulating your roof (if reroofing anyway)
- Floor insulation on ground level - lifting boards or insulating from below
- Secondary Glazing
- Getting rid of “microbore” pipes if you have them (small pipes to radiators) – helps with gas efficiency and makes you heat pump ready long-term. Talk to your plumber about this.



More Advanced/ Expensive Options

Double Glazing

Solid Wall Insulation on the interior of front/back walls (though not needed for heat pump) and in back extension

Reroof to insulate

Solar Panels + Battery Storage

Heat Pump



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Think carefully and don’t miss key opportunities

If redoing your kitchen: replace gas with induction hob

If renovating the whole thing: make sure you think about the “fabric” things you can’t easily redo – pipes, insulation, dirty stuff!

If lifting floors/carpets/general renovation: think carefully about replacing microbore heating pipes and insulating floors or walls if you choose

If reroofing: make sure you insulate. This is the single biggest comfort difference in the Dudleys and you can’t do it from underneath (i.e. the ceiling)

If changing your heating system: could you put in a heat pump or make your home “heat pump ready?”

If removing a hot water cylinder: could you get a heat pump or a gasboiler system that uses the cylinder? Heat pumps need a cylinder and you need space somewhere!

If exploring solar panels: insulate and fix your roof first. Ensure you think about battery storage too to maximise the benefits.

The Money Part: Costs and Financing Options



Home Energy Scotland are the go-to site. They will have a chat, or do a free energy survey of your home, offer advice and take you through the funding journey

Lower Income Homes: May be entitled to free upgrades and extra support. Check with **Warmer Homes Scotland**

- **Check:** Can you source a 0% loan from your bank/mortgage provider (e.g. Nationwide offer a 0% energy retrofit loan)?
- **Note:** None of this constitutes advice – please seek your own!
- **Remember:** It may be more expensive to install but you'll have running cost savings and is often only a small bit more than the alternative if you're replacing a system.

Typical Dudley Retrofitting Costs and Loans and Grants (as of Sept 2025) for the big stuff

- **Floor insulation:** c. 1.5-2K (1.5K grant, 0.5k loan)
- **Solar+Battery:** c10-12K (no loans or grants)
- **Glazing:** c**. 1.5K-2K +** per window (8K total loan available – only if single to double/triple)
- **Heat Pump and Replumb**: c17-18k (7.5K grant, 7.5K loan)
- **Wall Insulation** (grant up to 7.5K, loan up to 2.5K)
- **Roof Insulation:** Full reroof is 20K-30K depending on spec, insulation part is several K. Grant up to 3K, loan up to 1K.

A Whole House Renovation (will visualise and add pics of the kit)

Before (2024)
Energy Bill – £3437
Energy Use – 26,343kWh
Carbon – 6,122kg
EPC – E (50)

After (2025)
Energy Bills – £750 (saving £2687!!)
Energy Use: 7,500 kWh
Carbon – 551kg
EPC – TBC??

EPC **will try and get it updated** but heat pump not reflected really in current EPCs so likely to be way higher from 2026 when EPC reforms come in.
(Based on modelling, figures based on price caps at each time)

Adam and Gina's Story

We bought a house that needed a major renovation as our "forever" family home. It just made sense to do the big jobs now and get the benefit of them over time.

The house was already double glazed 15+ years ago but aside from that we installed:

- Heat pump and new heating system
- Insulation: Underfloor Insulation, Roof insulation (in reroof), Wall insulation in utility
- Induction Hob
- We added solar and battery storage a year later.

The pros

- We're just **evenly warm** all the time. It's more like a new build - warmer in winter but not hot upstairs in summer.
- **Our energy bills have massively reduced**, we're not as worried about price hikes, and we're really happy we're **fossil fuel free** from a climate perspective.
- The **solar and battery install was quick and easy**. It's looking really promising.
- We were able to access **good grants and loans** on the heat pump system, underfloor grant, and got a 0% interest free addition to our mortgage for the solar. So while the outlay was major, much of it we would have spent sooner or later (e.g. the roof) and then rest we accessed grants or cheap money for.

The realities

- Prepare to spend a **lot of time on the phone** to Home Energy Scotland and to do a lot of paperwork, and to **chase installers** – we struggled finding registered ones on the insulation side but there are ways around this to access grants. The right installers make things so much easier. Do ask your neighbours for recommendations.
- **Re-piping was pretty dusty** with raised floorboards. We moved out for a week.
- **The space and layout takes thought** – we gave over an Edinburgh press in the dining room and a space in our utility for the water cylinder. The rest of the tech is on the back wall.
- The **capital outlay was a lot on things you can't see** - though we're enjoying the benefits and are set up for the future.

Solar, Storage and Efficiency Upgrades

Key Retrofit Improvements;
Double Glazing (within timber windows); £12,000
Re-roofing with 100mm insulation; £18,000
North wall 50mm internal insulation; £500
Smart Thermostat; £200
Induction Hob; £600
Solar Pv + Battery install; £11,000 (@£75/month)

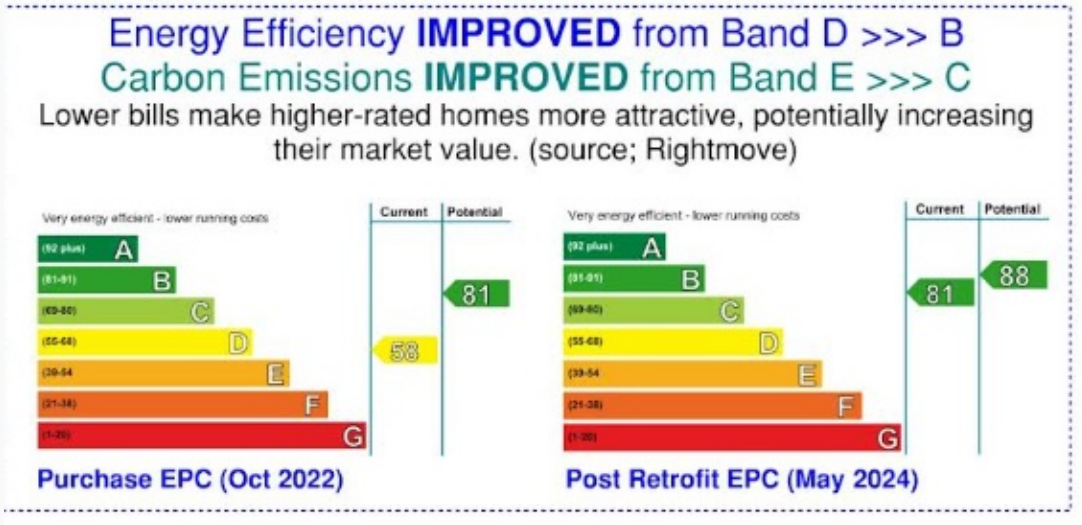
Annual System Results;
Gas use reduced by; 2,765kW/year,
Electric use reduced by; 1,025kW/year
Electricity earnings; £200/year,
Total overall savings = £1,090 per year
Total carbon savings = 535kgCO2* per year

Warmer Home
Improved House Value
No Stove Gas Pollution
No condensation
Fewer Drafts
£1,000+ Annual Savings
Lower Emission

Ollie and Helen's Story

We moved into our house in November and had a very cold first winter. The effects of replacing the failing slimline glazing and added roof insulation has made for a more comfortable life. This along with the replacement of our gas hob has significantly reduced our gas bills, created a safer space for our kids and massively cut our carbon emissions. The solar panels and battery setup has been the icing on the cake, giving us free power and even lower bills year round.

The level of comfort is night and day compared to when we moved in. The impact of the work is so dramatic.



Aging Comfortably – A Whole House Retrofit

Ruth and Michael’s Story

Solar + Battery Storage

Efficiency Measures in an Upper/Lower

Trusted Organisations and Networks – generic slide will add



Role of Trusted Organisations

Trusted organisations provide expert guidance, training, and resources tailored to local retrofitting needs.

Community Support Networks

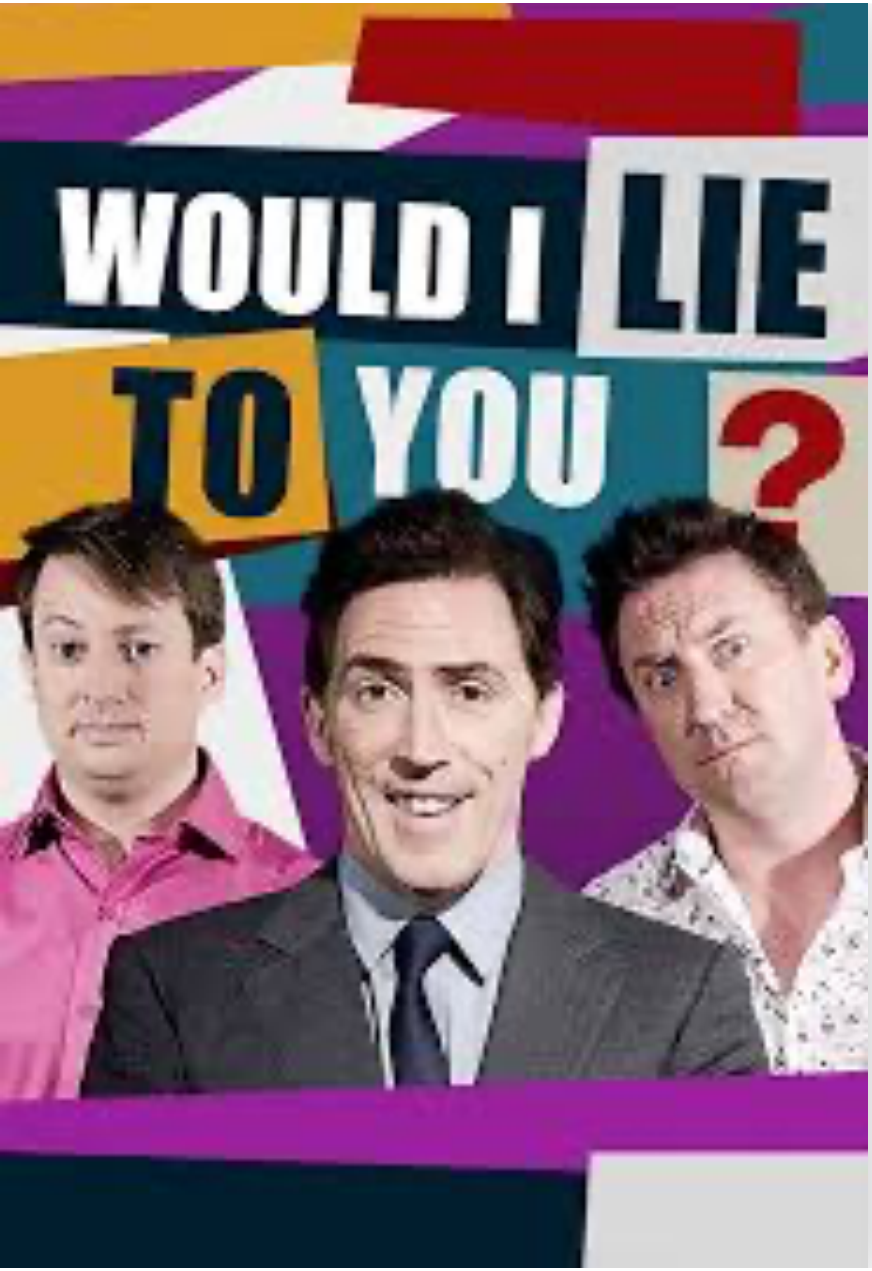
Online forums and messaging groups enable homeowners to share experiences and gain peer support.

Personalised Local Advice

Local retrofit advisors offer personalised support, helping users manage technical and financial retrofitting aspects.

Fostering Confidence and Collaboration

Connecting users with trusted networks builds confidence and promotes sustainable retrofitting efforts.



Mythbusting

Solar Panels don't work in Scotland They work well. They even work on cloudy/rainy days – just not giving as much power.

But seagulls will love them! So far, there's no evidence for seagulls being more attracted to solar roofs than any other. Any seagull poo has not affected solar output.

Victorian homes aren't suitable for a heat pump There's been lots of innovation and learning on old homes, showing they work well. But they do work differently to gas and are on at a low temperature all day. The better the house is insulated, the more efficiently they work. But you don't need to insulate everything. A good installer can advise on your heat loss and heat pump size.

Heat Pumps don't work in the cold They are used extensively in Scandinavia and work well even in cold Scottish winters.

Renewables can't be installed in Conservation Areas The planning regulations were recently relaxed and they are included as permitted developments. As long as these installations can't be seen from the street, they don't require permission but always take proper advice! Heat pumps have been installed in rear gardens and solar on roofs already without planning permission.

You can insulate the ceiling from below This is not suitable in most Dudleys homes and can lead to condensation and damp issues. They need to be insulated from above.