

Energy Performance Certificate (EPC)

3F3 , 143 GRANTON ROAD, EDINBURGH, EH5 3NL

Dwelling type: Top-floor flat
Date of assessment: 20 February 2015
Date of certificate: 20 February 2015
Total floor area: 38 m²

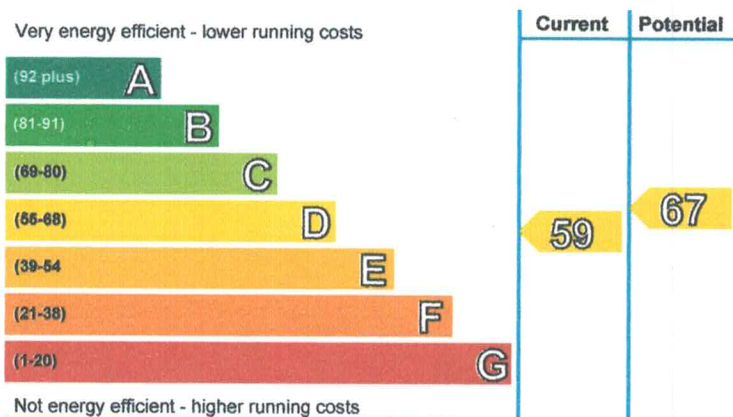
Reference number: 9200-5904-0329-1025-1253
Type of assessment: RdSAP, existing dwelling
Primary Energy Indicator: 421 kWh/m²/year
Main heating and fuel: Boiler and radiators, mains gas

You can use this document to:

- Compare current ratings of properties to see which are more energy efficient and environmentally friendly
- Find out how to save energy and money and also reduce CO₂ emissions by improving your home

Estimated energy costs for your home for 3 years*	£2,016	See your recommendations report for more information
Over 3 years you could save*	£420	

* based upon the cost of energy for heating, hot water, lighting and ventilation, calculated using standard assumptions

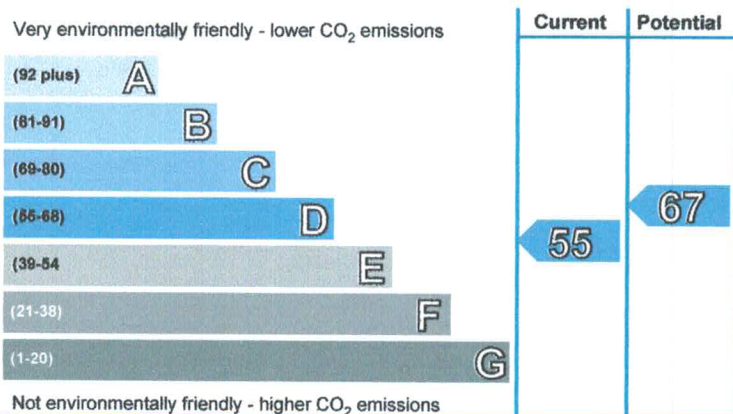


Energy Efficiency Rating

This graph shows the current efficiency of your home, taking into account both energy efficiency and fuel costs. The higher this rating, the lower your fuel bills are likely to be.

Based on calculated energy use of **421 kWh/m²/yr**, your current rating is **band D (59)**. The average rating for a home in Scotland is **band D (61)**.

The potential rating shows the effect of undertaking all of the improvement measures listed within your recommendations report.



Environmental Impact (CO₂) Rating

This graph shows the effect of your home on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating, the less impact it has on the environment.

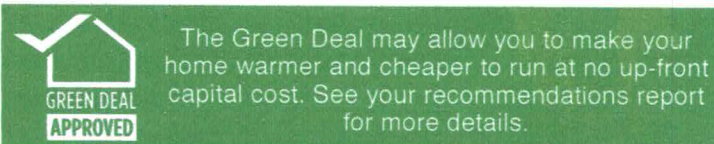
Based on calculated emissions of **2 kg CO₂/m²/yr**, your current rating is **band D (55)**. The average rating for a home in Scotland is **band D (59)**.

The potential rating shows the effect of undertaking all of the improvement measures listed within your recommendations report.

Top actions you can take to save money and make your home more efficient

Recommended measures	Indicative cost	Typical savings over 3 years	Available with Green Deal
1 Internal or external wall insulation	£4,000 - £14,000	£69	✓
2 Low energy lighting	£10	£24	
3 Heating controls (room thermostat)	£350 - £450	£90	✓

A full list of recommended improvement measures for your home, together with more information on potential cost and savings and advice to help you carry out improvements can be found in your recommendations report.



THIS PAGE IS THE ENERGY PERFORMANCE CERTIFICATE WHICH MUST BE AFFIXED TO THE DWELLING AND NOT BE REMOVED UNLESS IT IS REPLACED WITH AN UPDATED CERTIFICATE

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT
5720 S. UNIVERSITY AVE.
CHICAGO, ILL. 60637
TEL: 773-936-3700

PHYSICS DEPARTMENT

Summary of the energy performance related features of this home

This table sets out the results of the survey which lists the current energy-related features of this home. Each element is assessed by the national calculation methodology; 1 star = very poor (least efficient), 2 stars = poor, 3 stars = average, 4 stars = good and 5 stars = very good (most efficient). The assessment does not take into consideration the condition of an element and how well it is working. 'Assumed' means that the insulation could not be inspected and an assumption has been made in the methodology, based on age and type of construction.

Element	Description	Energy Efficiency	Environmental
Walls	Timber frame, as built, no insulation (assumed)	★☆☆☆☆	★☆☆☆☆
	Sandstone or limestone, as built, no insulation (assumed)	★★☆☆☆	★★☆☆☆
Roof	Flat, limited insulation	★☆☆☆☆	★☆☆☆☆
Floor	(another dwelling below)	—	—
Windows	Fully double glazed	★★★★☆	★★★★☆
Main heating	Boiler and radiators, mains gas	★★★★☆	★★★★☆
Main heating controls	Programmer, TRVs and bypass	★★★★☆	★★★★☆
Secondary heating	None	—	—
Hot water	From main system	★★★★☆	★★★★☆
Lighting	Low energy lighting in 67% of fixed outlets	★★★★☆	★★★★☆

The energy efficiency rating of your home

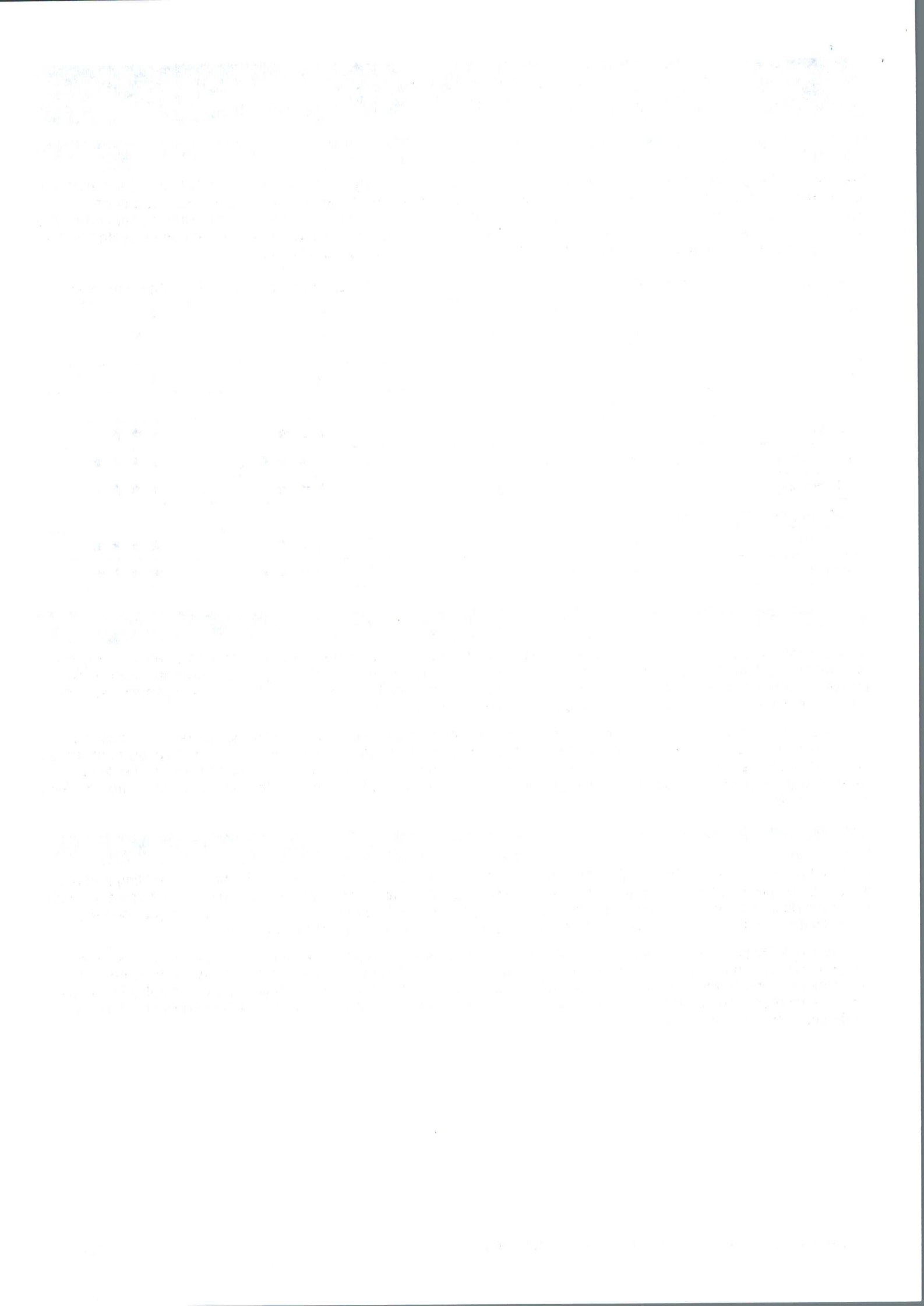
Your Energy Efficiency Rating is calculated using the standard UK methodology, RdSAP. This calculates energy used for heating, hot water, lighting and ventilation and then applies fuel costs to that energy use to give an overall rating for your home. The rating is given on a scale of 1 to 100. Other than the cost of fuel for electrical appliances and for cooking, a building with a rating of 100 would cost almost nothing to run.

As we all use our homes in different ways, the energy rating is calculated using standard occupancy assumptions which may be different from the way you use it. The rating also uses national weather information to allow comparison between buildings in different parts of Scotland. However, to make information more relevant to your home, local weather data is used to calculate your energy use, CO₂ emissions, running costs and the savings possible from making improvements.

The impact of your home on the environment

One of the biggest contributors to global warming is carbon dioxide. The energy we use for heating, lighting and power in our homes produces over a quarter of the UK's carbon dioxide emissions. Different fuels produce different amounts of carbon dioxide for every kilowatt hour (kWh) of energy used. The Environmental Impact Rating of your home is calculated by applying these 'carbon factors' for the fuels you use to your overall energy use.

The average Scottish household produces about 6 tonnes of carbon dioxide every year. Based on this assessment, heating and lighting this home currently produces approximately 2.8 tonnes of carbon dioxide every year. Adopting recommendations in this report can reduce emissions and protect the environment. If you were to install all of these recommendations this could reduce emissions by 0.7 tonnes per year. You could reduce emissions even more by switching to renewable energy sources.



Estimated energy costs for this home

	Current energy costs	Potential energy costs	Potential future savings
Heating	£1,662 over 3 years	£1,350 over 3 years	
Hot water	£246 over 3 years	£165 over 3 years	
Lighting	£108 over 3 years	£81 over 3 years	
Totals	£2,016	£1,596	

These figures show how much the average household would spend in this property for heating, lighting and hot water. This excludes energy use for running appliances such as TVs, computers and cookers, and the benefits of any electricity generated by this home (for example, from photovoltaic panels). The potential savings in energy costs show the effect of undertaking all of the recommended measures listed below.

Recommendations for improvement

The measures below will improve the energy and environmental performance of this dwelling. The performance ratings after improvements listed below are cumulative; that is, they assume the improvements have been installed in the order that they appear in the table. Further information about the recommended measures and other simple actions to take today to save money is available from the Home Energy Scotland hotline which can be contacted on 0808 808 2282. Before carrying out work, make sure that the appropriate permissions are obtained, where necessary. This may include permission from a landlord (if you are a tenant) or the need to get a Building Warrant for certain types of work.

Recommended measures	Indicative cost	Typical saving per year	Rating after improvement		Green Deal
			Energy	Environment	
1 Internal or external wall insulation	£4,000 - £14,000	£23	D 60	D 57	✓
2 Low energy lighting for all fixed outlets	£10	£8	D 60	D 58	
3 Upgrade heating controls	£350 - £450	£30	D 62	D 60	✓
4 Replace boiler with new condensing boiler	£2,200 - £3,000	£44	D 65	D 64	✓
5 Flue gas heat recovery device in conjunction with boiler	£400 - £900	£20	D 66	D 65	✓
6 Replacement glazing units	£1,000 - £1,400	£17	D 67	D 67	✓

Measures which have a green deal tick ✓ are likely to be eligible for Green Deal finance plans based on indicative costs. Subsidy also may be available for some measures, such as solid wall insulation. Additional support may also be available for certain households in receipt of means tested benefits. Measures which have an orange tick ✓ may need additional finance. To find out how you could use Green Deal finance to improve your property, visit www.greenerscotland.org or contact the Home Energy Scotland hotline on 0808 808 2282.

Alternative measures

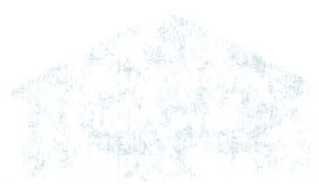
There are alternative improvement measures which you could also consider for your home. It would be advisable to seek further advice and illustration of the benefits and costs of such measures.

- Biomass boiler (Exempted Appliance if in Smoke Control Area)
- Micro CHP

Choosing the right improvement package

For free and impartial advice on choosing suitable measures for your property, contact the Home Energy Scotland hotline on 0808 808 2282 or go to www.greenerscotland.org.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions. This is essential for ensuring the integrity of the financial data and for providing a clear audit trail.



2. The second part of the document details the various methods used to collect and analyze data. This includes the use of statistical software and the application of advanced mathematical models to predict future trends.

3. The third part of the document provides a comprehensive overview of the current market conditions. It highlights the key factors influencing the economy and offers insights into the potential risks and opportunities.

Category	Value 1	Value 2
Item A	120.0	150.0
Item B	80.0	100.0
Item C	60.0	75.0
Item D	40.0	50.0
Item E	20.0	25.0

4. The fourth part of the document discusses the challenges faced by the industry and the strategies being implemented to address them. It emphasizes the need for innovation and collaboration to drive growth and sustainability.

5. The fifth part of the document provides a detailed analysis of the competitive landscape. It identifies the key players in the market and evaluates their strengths and weaknesses.

6. The final part of the document offers a summary of the key findings and recommendations. It concludes that a focus on data-driven decision-making and strategic planning is essential for long-term success.

About the recommended measures to improve your home's performance rating

This section offers additional information and advice on the recommended improvement measures for your home

1 Internal or external wall insulation

Internal or external wall insulation involves adding a layer of insulation to either the inside or the outside surface of the external walls, which reduces heat loss and lowers fuel bills. As it is more expensive than cavity wall insulation it is only recommended for walls without a cavity, or where for technical reasons a cavity cannot be filled. Internal insulation, known as dry-lining, is where a layer of insulation is fixed to the inside surface of external walls; this type of insulation is best applied when rooms require redecorating. External solid wall insulation is the application of an insulant and a weather-protective finish to the outside of the wall. This may improve the look of the home, particularly where existing brickwork or rendering is poor, and will provide long-lasting weather protection. Further information can be obtained from the National Insulation Association (www.nationalinsulationassociation.org.uk). It should be noted that planning permission might be required and that building regulations apply to this work so it is best to check with your local authority whether a building warrant or planning permission will be required.

2 Low energy lighting

Replacement of traditional light bulbs with energy saving recommended ones will reduce lighting costs over the lifetime of the bulb, and they last up to 12 times longer than ordinary light bulbs. Also consider selecting low energy light fittings when redecorating; contact the Lighting Association for your nearest stockist of Domestic Energy Efficient Lighting Scheme fittings.

3 Heating controls (room thermostat)

The heating system should have a room thermostat to enable the boiler to switch off when no heat is required. A competent heating engineer should be asked to do this work. Insist that the thermostat switches off the boiler as well as the pump and that the thermostatic radiator valve is removed from any radiator in the same room as the thermostat. Building regulations generally apply to this work and a building warrant may be required, so it is best to obtain advice from your local authority building standards department and from a qualified heating engineer.

4 Condensing boiler

A condensing boiler is capable of much higher efficiencies than other types of boiler, meaning it will burn less fuel to heat this property. This improvement is most appropriate when the existing central heating boiler needs repair or replacement, however there may be exceptional circumstances making this impractical. Condensing boilers need a drain for the condensate which limits their location; remember this when considering remodelling the room containing the existing boiler even if the latter is to be retained for the time being (for example a kitchen makeover). Building regulations generally apply to this work and a building warrant may be required, so it is best to obtain advice from your local authority building standards department and from a qualified heating engineer.

5 Flue gas heat recovery

A flue gas heat recovery system extracts heat from the boiler flue gases and transfers it to the incoming cold water so that the boiler needs to supply less heat. It is suitable for use only with modern condensing gas boiler and should be fitted when a replacement boiler is installed. You should seek advice from a qualified heating engineer.

6 Replacement glazing units

Replacing existing double-glazed units with new high-performance units. Building regulations require that replacement glazing is to a standard no worse than previous and a building warrant is not required. Planning permission might be required for such work if a building is listed or within a conservation area so it is best to check with your local authority.

Low and zero carbon energy sources

Low and zero carbon (LZC) energy sources are sources of energy that release either very little or no carbon dioxide into the atmosphere when they are used. Installing these sources may help reduce energy bills as well as cutting carbon.

LZC energy sources present: There are none provided for this home

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Your home's heat demand

You could receive Renewable Heat Incentive (RHI) payments and help reduce carbon emissions by replacing your existing heating system with one that generates renewable heat and, where appropriate, having your loft insulated and cavity walls filled. The estimated energy required for space and water heating will form the basis of the payments. For more information go to www.energysavingtrust.org.uk/scotland/rhi.

Heat demand	Existing dwelling	Impact of loft insulation	Impact of cavity wall insulation	Impact of solid wall insulation
Space heating (kWh per year)	7,565	N/A	N/A	(416)
Water heating (kWh per year)	1,514			

Addendum

This dwelling has stone walls and so requires further investigation to establish whether these walls are of cavity construction and to determine which type of wall insulation is best suited.

About this document

This Recommendations Report and the accompanying Energy Performance Certificate are valid for a maximum of ten years. These documents cease to be valid where superseded by a more recent assessment of the same building carried out by a member of an Approved Organisation.

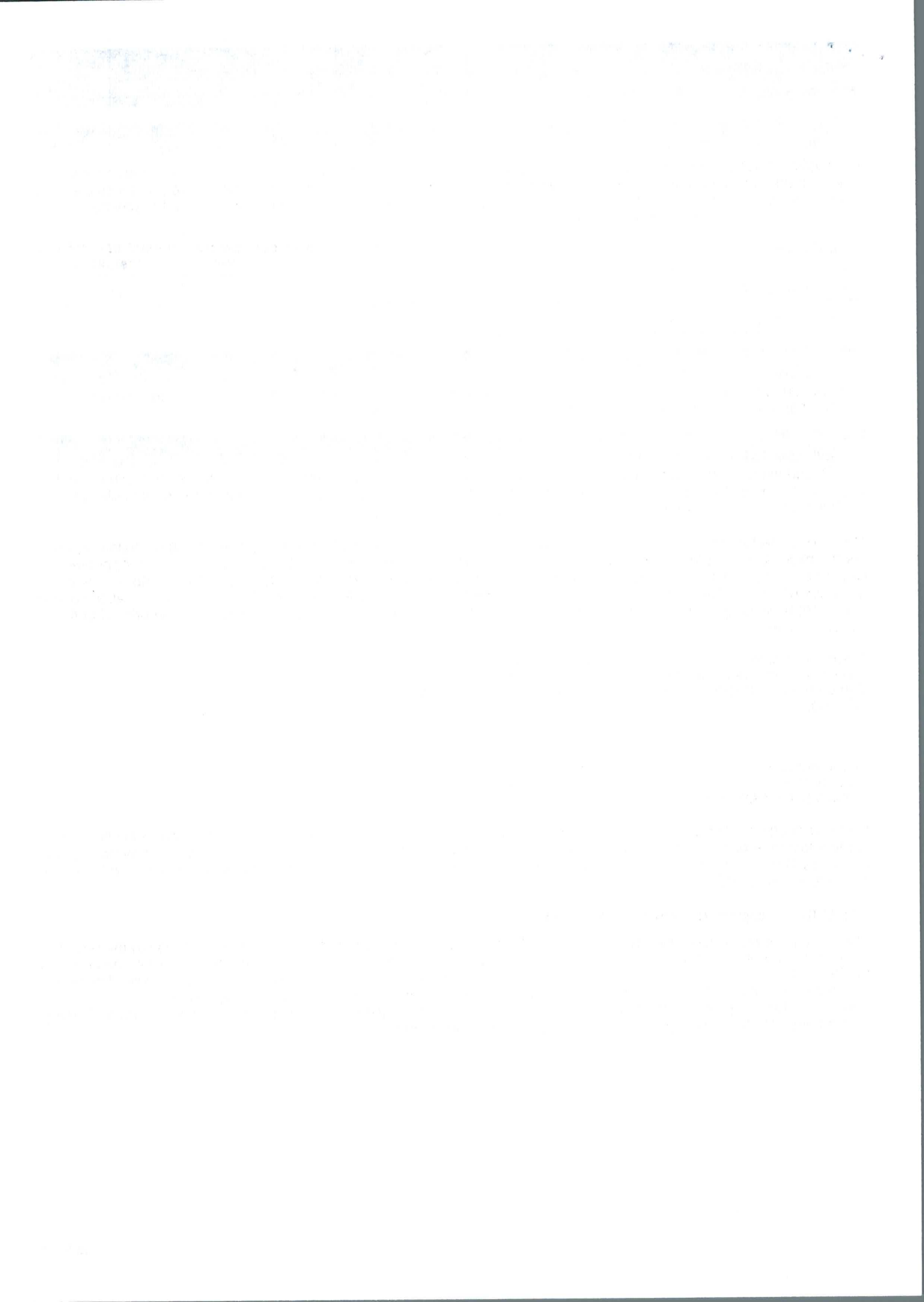
The Energy Performance Certificate and this Recommendations Report for this building were produced following an energy assessment undertaken by an assessor accredited by Elmhurst (www.elmhurstenergy.co.uk), an Approved Organisation Appointed by Scottish Ministers. The certificate has been produced under the Energy Performance of Buildings (Scotland) Regulations 2008 from data lodged to the Scottish EPC register. You can verify the validity of this document by visiting www.scottishepcregister.org.uk and entering the report reference number (RRN) printed at the top of this page.

Assessor's name:	Mr. Paul Wilkinson
Assessor membership number:	EES/006253
Company name/trading name:	The Wilkinson Partnership
Address:	47 (3F2) Warrender Park Road Mid Lothian Edinburgh EH9 1EU
Phone number:	0131 228 1104
Email address:	paul@wilkinsonpartnership.co.uk
Related party disclosure:	No related party

If you have any concerns regarding the content of this report or the service provided by your assessor you should in the first instance raise these matters with your assessor and with the Approved Organisation to which they belong. All Approved Organisations are required to publish their complaints and disciplinary procedures and details can be found online at the web address given above.

Use of this energy performance information

This Certificate and Recommendations Report will be available to view online by any party with access to the report reference number (RRN) and to organisations delivering energy efficiency and carbon reduction initiatives on behalf of the Scottish and UK Governments. If you are the current owner or occupier of this building and do not wish this data to be used by these organisations to contact you in relation to such initiatives, please opt out by visiting www.scottishepcregister.org.uk and your data will be restricted accordingly. Further information on this and on Energy Performance Certificates in general can be found at www.scotland.gov.uk/epc.



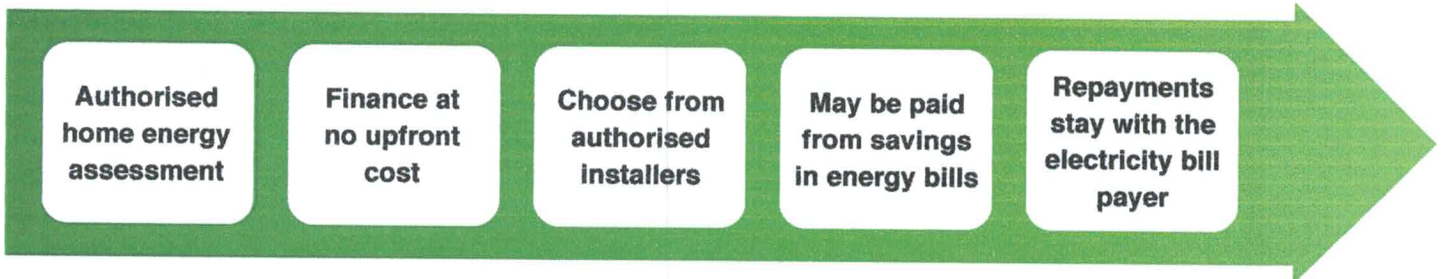
Opportunity to benefit from a Green Deal on this property

Under a Green Deal, the cost of the improvements is repaid over time via a credit agreement. Repayments are made through a charge added to the electricity bill for the property.

To see which improvements are recommended for this property, please turn to page 3. You can choose which improvements you want to install and ask for a quote from an authorised Green Deal provider. They will organise installation by an authorised Green Deal installer. If you move home, the responsibility for paying the Green Deal charge under the credit agreement passes to the new electricity bill payer.

For householders in receipt of income-related benefits, additional help may be available.

To find out more, visit www.greenerscotland.org or call 0808 808 2282.



1. The first part of the document discusses the importance of maintaining accurate records of all transactions.

2. It is essential to ensure that all data is entered correctly and consistently.

3. The following table provides a summary of the key findings from the study. The data shows a significant increase in productivity over the period.

Year	Productivity (Units/Day)
2018	120
2019	150
2020	180