



Inspiring change for people
and the environment



LEAF: Improving the energy efficiency of apartment blocks

Tessa Clark, 30th September 2014



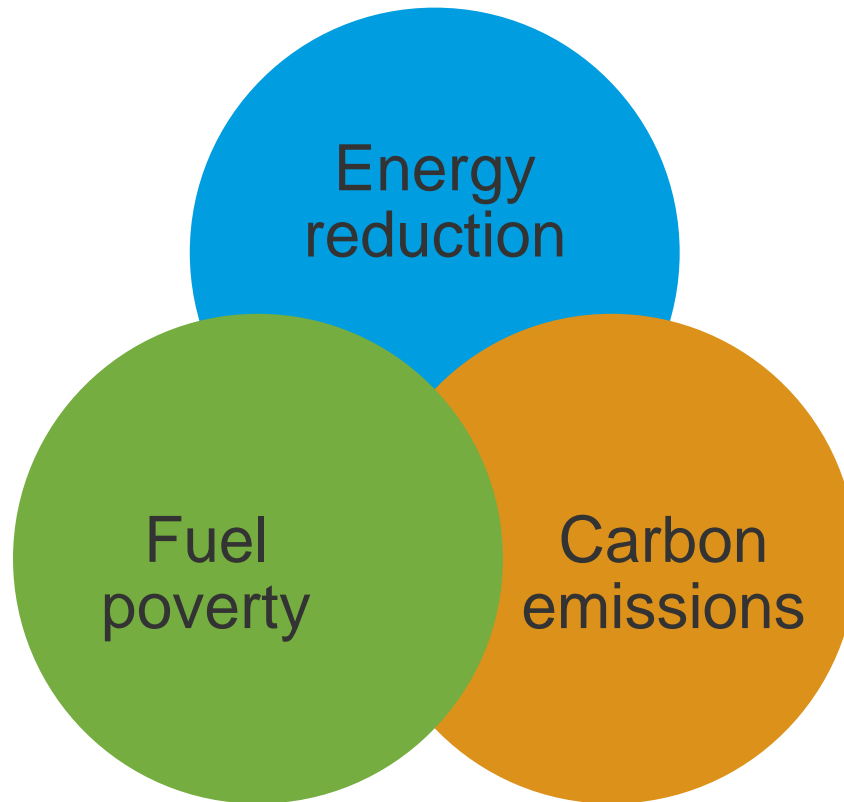
About the project

Aim = improve the energy efficiency of flats, apartments and tenements

- Multi-occupancy properties
- Taking whole block approach
- April 2013 – March 2016
- Intelligent Energy Europe (IEE) funding
- Six partner countries
- 24 case study blocks – 240 apartments

BACKGROUND

Drivers



EU targets by 2020:

- 20% of energy from renewables
- 20% increase in energy efficiency
- Reduce greenhouse gases by 20%

% of multi-occupancy housing



Population

43



43% of Europeans live in flats

Source: Eurostat, European Union (2011).

This refers to the 27 EU member states.

Common barriers

Financial

- Access to finance
- Payback expectations
- Competing purchase decisions
- Price signals

Institutional / admin

- Regulatory and planning issues
- Institutional
- Structural
- Multi-stakeholder issues

Awareness & skills

- Information barrier
- Awareness of benefits
- Skills & knowledge related to building professionals

Different contexts: EPCs

- **Whole building** EPCs available in all partner countries except UK
- **Individual apartment** EPCs provided in all partner countries except Sweden and Germany
- **Listed buildings** can be exempt
- **Quality** of output

Different contexts: management

- Property managers or management boards exist in all partner countries except the UK
 - Often required to have annual meetings
- Various ownership models:
 - Housing co-operatives
 - Homeowner association
 - Fully owned by one organisation
 - Fully private owned (different owners)
- Decision procedures and voting rights vary
 - Majority usually required for refurbishment



Scottish context

- Improvements more likely in individual flats than communally:
 - Getting agreement and securing finances is difficult
- Tenements Act - further clarity required
- Householders need to be persuaded of the benefits

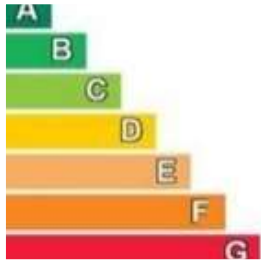
Communal improvements
Energy efficiency in tenements in Scotland

ABOUT THE PROJECT

LEAF Partners



Toolkits



TECHNICAL TOOLKIT

- Reinforcing and beyond EPCs
- Info on:
 - What EPCs are
 - Descriptions of technical measures
 - Cost, savings and subsidies
 - User behaviour guidance
- Communal EPC tool (UK)



ENGAGEMENT TOOLKIT

- Step-by-step guidance for managers
- Info and advice on:
 - Engaging and communicating with owners/ residents
 - Decision-making
 - Legal agreements
 - Planning consents
 - Signposting for further contacts

➤ **Both available in European-wide and national specific versions**

Project impacts



CASE STUDIES

- 24 pilot projects in 6 countries (240+ flats)
- Whole building action plans
- Targets (per year):
 - 0.55t CO₂ saved
 - 2,300 kWh saved
 - 280 kWh generated



OTHER IMPACTS

- Toolkits publicly available for other organisations to use
- Learnings from case studies
- Policy recommendations at local, national and EU levels related to:
 - EPCs
 - Multi-occupancy housing
 - Energy efficiency

CASE STUDIES

William Street, Edinburgh

- Built 1824/5
- Solid stone, single glazed windows
- Four storeys, including basement
- Mix of owner-occupied and private rented
- Ground floor is shops and offices
- Located within Edinburgh New Town conservation area and is 'B' listed
- Recent refurbishment work



William Street, Edinburgh

EPC recommendations:

- Draught proofing
- Low energy light bulbs
- Heating controls
- Solid wall insulation
- Replace boiler
- Replace glazing

EPC ratings:

- Change from 'D' and 'C'
- To all 'C'



Spey Terrace, Edinburgh

- Nine flats - part owned by housing association
- Located in Pilrig conservation area
- Constructed pre-1919, solid stone construction
- EPCs currently underway. Recommendations
 - Boiler and heating control upgrades
 - Wall insulation
 - Glazing improvements



Visby, Sweden

- Built 1885
- 7 dwellings
- Private tenancy until 2005 – now a housing co-operative
- Main building connected to district heating - two smaller buildings are not
- Part of Visby World Heritage site
- Main recommendations – triple glazing, wall insulation
- Residents want better comfort and reduce energy bills



Lyon, France



- Built early 1900s
- Requires roof work
- Owners wanted to find out how energy efficiency could be improved at the same time

Bristol, England



- Built pre 1900s
- Solid wall sandstone
- 3 student flats (private rented) + 1 owner-occupier
- Looking at:
 - Solid wall insulation – ECO funding?
 - Secondary glazing

1950 – 80s concrete blocks / pre-fab

Hungary



1950 – 80s concrete blocks / pre-fab

Germany



1950 – 80s concrete blocks / pre-fab

Edinburgh



1950 – 80s concrete blocks / pre-fab

France



Austria



Emerging lessons - engagement

- Time intensive!
- Challenges:
 - Private rented properties
 - Social relationships between owners
 - Lack of interest / awareness
 - Finding contact details
- Successes:
 - Working with trusted, known organisation e.g. Edinburgh World Heritage
 - Where formal management arrangements exist e.g. property managers
 - Resident meetings
- Maintenance works – present challenges & opportunities



Emerging lessons

EPC recommendations

- Limited impact on energy rating
- Planning restrictions
- **A** Residents don't want disruption of install

Finance

- Major issue
- Availability varies across Europe
- Uncertainty in funding programmes can make planning difficult (e.g. ECO)
- Maintenance funds exist in some countries – but insufficient

Conclusions

- Tackling flats is challenging across Europe
- We need better technical tools - EPCs are a starting point
- Robust and flexible frameworks are needed to secure the support of owners from project initiation to installation
- Scotland's EPC regime, tenure split and system for regulating maintenance in communally owned buildings is especially challenging
- Case studies are needed to illustrate success stories



Low Energy Apartment Futures (LEAF) is an EU project aiming to improve the energy efficiency of apartment blocks

About the project



Find out what the project aims to achieve, how and when.

[Find out more](#)

Why LEAF exists



Why are apartment blocks difficult to retrofit?

[Read our background research](#)


The LEAF approach




Find out about our approach to retrofitting apartment blocks.

[Download the LEAF toolkit](#)

Key statistics

 Click on the red icons on the map for more details of the case studies.

 Population

43



43% of Europeans live in flats

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Latest updates



LEAF PARTNER MEETING, BUDAPEST

Date: 6th – 7th October 2014 Location: Budapest, Hungary Overview: The LEAF project partners will meet to discuss progress on the LEAF project including finalisation of the technical and engagement toolkits, and progress with case studies. We will also be planning evaluation of the case studies and policy

Thank you

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Co-funded by the Intelligent Energy Europe
Programme of the European Union

