Engagement Toolkit

Guide for building managers of multi-occupancy housing

Common European version

Low Energy Apartment Futures (LEAF) Deliverable 4.1.

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Lead organisation: Energiaklub

Contribution: ALE Lyon, Changeworks, CSE, Uppsala University, e7, Fraunhofer IBP

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1 Introduction

The guide is for people with the job of coordinating the low energy retrofits of apartment blocks such as common representatives, chairs of housing co-operatives and property management companies.

The goal of the document is to raise awareness of the beneficial nature of such investments and provide a ’helping hand’ to individuals who want to launch these investments, but do not know where to start or how to persuade residents.

The guide summarises the most important steps of the planning and decision making process, the persons who should be involved, as well as the challenges and difficulties that might arise while preparing or implementing the project. It offers potential solutions for these actions, provides best-practice guidelines and recommendations to aid decision-making.

This document is a common tool for any European contry. Because of different regulations and market conditions the situation varies in different countries. For further use of this document detailed country-specific research is neccesary.

LEAF partners will develop their own country-specific version for England, Scotland, Austria, France, Hungary, Sweden and Germany.

2 Retrofit process: from preparation to evaluation

This diagram provides an overview of the process the retrofit may take. However, it will differ between countries and the exact building.

3 Why carry out retrofits? The benefits of improving energy performance?

Before starting to think about improving the energy performance of buildings, it is important to consider what potential benefits there may be. This will help to engage owners and assess priorities when it comes to decision-making. But why is it worth dealing with such issues? There are various reasons to improve the energy efficiency of your building:

- **Energy bills decrease significantly:** There is huge energy saving potential hiding in our buildings! The energy requirement of older properties without insulation could be reduced by up to 50% with the help of well-considered reconstruction works.

- **The level of comfort and security increases in the property:** Draughty windows, cold walls, hard-to-heat properties cause a lot of headaches in many apartments, but sometimes it is overheating, high summer temperatures , and the noise entering from outside that cause problems. In certain cases the inhabitants also face the problem of mould or damp. The replacement of outdated heating appliances is also important from a safety perspective. With modern appliances that could be operated securely without dangerous leak of carbon-monixide. With the help of energy performance upgrade - i.e. with the regulation of heating or ventilation, heating replacement or the insulation of the roof and the walls - such problems might be overcome.

- **Increasing value of properties:** The property market calculates the price of the reconstruction: the market value of modern, lower energy expense homes is higher than that of properties with the same characteristics, but undergoing no reconstruction. Thus the reconstruction may also be considered an investment. What is more, an energy performance upgrade may also increase the useful life of the property, as with the insulation the structural elements of the building are also protected from extreme heat effects.

- **Improved appearance:** For many people, an energy performance upgrade does not only represent lower energy bills, but, with the renewed facade, a nicer house as well. Thus it is a value booster in itself, and the inhabitants happily occupy their renewed properties. Such reconstruction works - that are necessary anyway - could be perfectly coordinated.

- **Good for the climate, good for the environment:** If less energy is consumed, then less CO_2, the main gas responsible for climate change, is emitted, thus such investment is profitable not only for us, but for the environment as well. And furthermore, reduced fuel consumption can improve urban air quality.

- **Further reasons:** There could be other local or country- specific reasons, e.g. in Scotland, social landlords are obliged to meet minimum standards.

4 The starting point: necessary conditions before retrofit

An energy performance upgrade may be an attractive opportunity for cost cutting, aesthetic renewal of the building, as well as for increasing the value of the property. However, before launching such a process, the community should understand the context for their building to consider what scope and limitations there may be for improvements, and what may help or hinder the decision-making process. This should be the first step of planning.

In order to decide what expectations there could be for the implementation of a future investment the following circumstances are required to be considered:

- **Are there any technical problems** that might hinder an energy performance upgrade? Such as: problems with the building foundations, the roof-timbers, rising damp or leaks in the roof, etc. If such problems persist, they are required to be tackled before or aligned with such upgrades. Consider whether there are repairs or maintenance works that need to be carried out prior to or at the same time as improvements.
- What is the **management and financial management structure** of the building like? Do the owners have a renewal fund or some specific savings to be used for this very reason? How can the willingness to pay of the dwellers be characterised? How much extra burden are they ready to accept in connection with the investment? Should the residents be unwilling or unable to pay, it is far from being beneficial to the investment.
- What is the residents' **willingness to invest** like? Can they make joint decisions in order to improve the house? The more residents that side with the investment, the more fluent planning and implementation will be, and the easier the solution for difficulties arising in the meantime could be found.
- Are there any **specific regulatory arrangements** e.g. the protection of historic buildings or the townscape that would restrict the planned reconstruction works or result in an increase of the related expenses?
- **How much time is available** to be spent on the preparations and the coordination of the works? The harmonization of the tasks belonging to the various parties and experts, administration, communication with the dwellers and organization are all time consuming duties. For this reason the representation of the property should organize adequate management/coordination capacities.
- What **recent works** have been carried out? For instance, if the walls were recently refurbished, owners will not want to do this work again.
- What are the voting rights for communal measures? Are there other **relevant legal issues** that need to be considered?

The questionnaire in Appendix 1 may help you collect this information from residents.

5 How to prepare for decision-making

The energy performance upgrade of apartment blocks come hand-in-hand with several benefits including improving the value, and creating energy savings and an increased level of comfort. They require special attention and professional coordination in such communities.

Wherever the responsibility regarding a decision is shared by many owners, it is extremely difficult to find a solution acceptable for each and every resident.

5.1 Collecting information and making preliminary plans

Assess the needs of the dwellers, as well as their complaints about the utilisation of the building (e.g. draughty, the property is overheated, mould appearing on the walls, high energy consumption, etc.). From this feedback and from the information on the technical conditions of the house, the needs of the community regarding a joint reconstruction may be formed.

- Collect the energy bills of the building; real consumption figures are required if possible! In the light of these it will be much easier to make decision, and they will also play an important role at the evaluation of the results.
- Is any (expected) financial assistance (assistance schemes, tenders, preferential loans) available for the house?
- Think ahead! For the reconstruction works, your own capital might be required; it is recommended to collect such capital during a longer period of time with smaller payments.

BEST PRACTICE EXAMPLE

The LEAF Technical Toolkit

The Technical Toolkit of the LEAF project provides comprehensive and useful background informatinon for owners, dwellers and housing managers in decision making. With its estimated calculation the saving potential became clear and visible. It also provides tips and recommendations for smart use of energy.

See: http://www.lowenergyapartments.eu/the-leaf-toolkit/the-toolkit/

5.2 Convincing the community for retrofit

Even if some residents fully support the reconstruction works, there will still be others who are indifferent, or simply against the interventions. This might be due to various reasons such as unfamiliarity or disbelief at the possible extent of energy savings, the return based indicators of the investment, or the financial solutions.

The best way to convince uncertain residents is to provide them with adequate, easy-to-understand information.

BEST PRACTICE EXAMPLE

Renovation on your doorstep! Easy to understand website for everyone

'The right planning saves money, and it is also necessary for the monthly utility fees to really decrease significantly.' says the motto of ENERGIAKLUB's national information program.

The „Küszöbön a felújítás" website provides useful and easy-to-understand information that facilitates carrying out an energy-oriented renovation. For example, visitors can review return of investment calculations belonging to various apartment types, find the definitions to the most important professional concepts, or read about other people's renovation experiences. The downloadable, printable Modernization – In a modern way booklet provides home owners a step by step guide showing them what considerations should be taken into account when asking for quotes, signing agreements or during the implementation.

www.kuszobonafelujitas.hu

Tips for informing and convincing the residents:

- First get in contact with those members of the community who require the reconstruction or are open to that. It will be easier to convince the other together with their support.
- As a first step collect information leaflets and materials for the inhabitants that may raise their attention towards the potential reconstruction opportunities, and also make such materials accessible for them.
- Look for free, simplified, easy-to-use calculation software that could provide an approximate picture of the potential savings.
- Organize visits to houses where the recommended low energy investments have already taken place. Consult with other representatives, ask them about their experiences and savings, and share such information with the dwellers.
- Try to look for the available options for financial assistance; these may stimulate the inhabitants.
- If the work will involve inconviences for the residents, it may deter them proceeding with work. Look for a company that is ready to perform all extra duties (e.g. clearing out junk, obtaining permits, clean-up after the investment).
- Organize a committee with the owners and residents. It is worth involving a narrow circle of the residents even at the preliminary planning phase, because they could then help in the preliminary decision making procedures and the determination of the directions to follow. It is useful if they can follow the planning and implementation phases continuously and more closely.

BEST PRACTICE EXAMPLE

- The 'Renoveraenergismart' website promotes the benefits of working with a focused steering group within a large organisation, the importance of result dissemination to the residents, and perhaps most notably, how simple joint actions can often have a large impact on energy savings.
- [http://www.renoveraenergismart.se/inspirerande-exempel/].
- The BeBo Halvera-Mera website offers a number of good-practice examples where apartment blocks via well-organized decision making, efficient refurbishment works and ambitious goals have reduced their energy consumption by at least 50 %. Read more about the examples at [http://www.bebostad.se/portfolio/kampanjen-halvera-mera/]

Source of photo: http://www.renoveraenergismart.se/inspirerande-exempel/

5.3 Preliminary decision making: the intention to reconstruct the building

The development of detailed technical and financial documents for the house require special expertise; it is a time consuming process in itself and may incur significant expenses. For this reason, before launching such activities it is a good idea if the residents make a preliminary decision - based on the above mentioned information materials – for example, if they want to reconstruct the building, as well as its main aspects they may only want to insulate the building, or replace old windows with new ones.

With this preliminary decision the community empowers its representative to initiate the phase of the detailed planning and elaboration of different concepts of retrofit. Even the preliminary decision should comply with the legislative frameworks regarding the community! For instance, when the owners mandate the chairman of the communty to initiate the detailed planning phase, this decision should fulfil all the requirements of national law and legal regulations and codes of the building community.

In this phase the residents can elect a committee of the shareholders involved in the preparatory works, or if such committee is already in operation, then they can confirm it by means of voting. They will be the internal project team.

In the same manner, in the preliminary decision making phase, the community can be involved in the selection of experts and companies who will later on be involved in the detailed planning phase.

BEST PRACTICE EXAMPLE

78% of owners vote for retrofit

The renovation of FALUHÁZ – beneficiary of the Staccato project – in Budapest is a unique project in Hungary. With 886 flats owned by private persons it is the largest single block in the country. Despite of the challenge of common decision making 78% of owners voted for the energy retrofit of the building.

What are the key elements of success?

- Well prepared and regular communication with the owners

- Attractive financing

- Full project management service from the municipality of Óbuda

6 Detailed planning

If the main directions have been agreed on by the community, then comes the detailed planning. In this phase it is important to involve an expert, in any case. Remember, the more thorough the planning-preparatory phase is, the easier the implementation will be.

6.1 The involvement of experts

Deciding on which option to realise out of the potential options for reconstruction, could be basedon the opinion of an independent energy expert . For this reason it is indispensable to involve an expert to the preparation for decision making.

What kind of expertise is required for the planning and implementation of an investment?

- **Technical:** For the technical assessment and planning a qualified expert (with special planning licence if required) would be required (e.g. architect, energy expert, energy engineer).
- **Financial:** Depending on the financial opportunities a financial expert and a tender specialist might also be necessary, as they are familiar with the available sources, the available support schemes, and could make recommendations on how to collect own resources.
- **Project management:** in the case of a larger, more complex investment special expertise might be required for the acquisition of authority permits, timing the coordination of the works, the standard conclusion of contracts and the technical audit.
- **Public procurement:** If state subsidies are also utilised for the implementation of the investment, then a public procurement specialist might also be necessary.

The contents and profoundness of expert opinions might differ and they may also depend on the amount invested. It might also be possible that even the involvement of experts or the ordering of the expert opinion require the decision of the members' meeting (see Section 5.3).

Energy experts at work

6.2 Technical solutions

The planning of the reconstruction works starts with the energy status assessment of the building, including the current energy needs of the building, as well as the energy rating the property could achieve with the upgrade.

The Energy Performance Certificate (EPC) provides information about the energy needs of the property, but it does not necessarily include detailed suggestions for reconstruction, cost estimates or the payback period of the individual steps (depending on the country). The contents and profoundness of the plans are necessary to clarify even when selecting the experts.

Following the status assessment, the technical expert selects the cost efficient investment steps that could realistically be implemented with regards to the property in question, and also provides information on the potential extent of the energy saving connected to this solution. A cost estimate is also prepared for the selected steps, based on which the approximate payback period could also be calculated. For more information, see the LEAF Technical Toolkit: **http://www.lowenergyapartments.eu/the-leaf-toolkit/the-toolkit/** .

In this phase it is recommended to develop several alternatives.

Thousands of good European examples show the possibility of application different, even high-tech solutions in practice.

Visit the highlighted case studies of buildup.eu (http://www.buildup.eu/cases) or get inspiration from best practices of any European country!

6.3 Financing

In this phase of the planning it is necessary to assess and collect the potential resources of the investment, as well as the own management figures of the building. The following issues should be considered carefully during planning:

- Do the owners havetheir own an own capital stock or a reconstruction fund?
- What kind of state or municipal supports could be applied for? What are the related terms and conditions?
- If the house is planning to involve state funds, then would it need to participate in a public procurement procedure?
- What kind of bank finance are available? For the employment of such finances what conditions need to be met? What are the costs of borrowing?

Applying for a loan, submitting a tender application or a public procurement procedure may represent costs that are necessary to be included in the total expenditure of the investment.

6.4 Schedule

The timeframe necessary for the reconstruction may differ from project to project. A preliminary process design may be necessary, where the steps and approximate time of the reconstruction works are indicated. The schedule might change because of the authority permits, the financing or some unforeseen technical problem, thus it is not good if the schedule is too tight.

7 Final decision making

If the community is familiar with the detailed technical and financial plans, it can make a responsible decision about whether to launch the investment or not. It is usually necessary to introduce the complicated and lengthy documentations in an easy-to-understand format. The more informed dwellers are, the more likely they will support the project.

7.1 What should precede the decision of the members' meeting?

Firstly, it is recommended to discuss the detailed plans with the narrow circle of the housing committies.

It is important to create an easy-to-understand summary about the figures of the technical and financial plans that each and every inhabitant should receive in advance. This summary should discuss the following issues in any case:

- How much energy and money can the house save?
- What is the amount to be invested by the individual apartments?
- What is the payback period of the investment?
- What kind of subsidies can the house apply for?
- How do the works influence the dwellers?

It is recommended to make the results even more understandable with the help of charts and illustrations.

It is also recommended to list further additional benefits of the low energy investment: increase in value, higher comfort level, reduced heat and noise pollution, etc.

Collect the questions, doubts and counter arguments of the inhabitants in advance. They should be provided with the answer in detail before the decision making.

Organise an informative event where the expert planners have the opportunity to introduce the plans, and the dwellers can consult with them about arising issues.

7.2 Members' meeting

The investment can only be initiated on the basis of the official decision of the members' meeting; for this reason the meeting needs to be arranged in accordance with the operative legal regulations and the internal statutes of the building.

It is a general rule that the higher the proportion of the residents who support the investment, the fewer problems that will arise during implementation. When making preparations and organizing the members' meeting try to achieve as high participation ratio as possible.

It is useful if on the level of the members' meeting making the decision on the reconstruction works the experts preparing the technical and financial plans are also present, as they can answer the arising questions.

It is decided here what measures will be installed/improvements made and what kind of issues the residents have their direct say in.

The members' meeting has the opportunity to elect the project management team (if it is neccessary) participating in the implementation of the project. This team involves a smaller team of the inhabitants, but the independent experts participating in the planning may also be involved.

If the opportunity is given, after having provided adequate information, the inhabitants can vote on the reconstruction in writing, which can support a well-considered decision.

8 Installing measures

If the community has given a green light to carry out the retrofit, then they have reached the second phase of planning. This is when the practical part of the implementation can start.

8.1 The project management team

During implementation the project management team or the owners communty makes the interim decisions; they may be responsible for communicating with the dwellers and administration. It is important that the project management team meets regularly and discusses the arising issues.

8.2 Request for quotations

Quotations can be requested from the contractors on the basis of the detailed reconstruction plans, in accordance with the decision of the community. Based on the quotations the final budget can be specified. Get at least three quotations for works to ensure costs are competitive.

It is important to acquire as detailed and comprehensive quotations as possible, which should be comparable as regards to the prices and the technical contents alike.
If the contractors are to be selected by means of a public procurement procedure, then a public procurement expert is to be involved into the process.

8.3 The selection of the contractors

In simple cases the project management team or the authorised representative can decide on the contractor on the basis of the quotations. Depending on the rules of procedure of the house and the volume of the investment the involvement of the dwellers might also be necessary in selecting the contractor(s). Then another round of written voting or members' meeting could be necessary.

8.4 Contracts

The contract should cover as many details as possible, but the following most important content elements should any case be settled with the contractors:

- Price
- Exact technical content
- A list of the accessory works to be included (e.g. the acquisition of authority permits, the removal of building rubble, clean-up, repairs)
- Deadlines: final and internal schedule
- Conditions of Completion
- Terms of Payment
- Warranty Conditions

8.5 Permits

During the planning phase you should also consider and obtain all necessary authority permits (the requirements of which will vary between countries) before starting the implementation. Depending on the works and the local regulations the following might also be necessary:

- site occupation permit
- the approval of the authority responsible for the protection of historic buildings
- construction permit / building warrants
- the approval of the local energy provider or that of the authority responsible for chimneys
- the consent of the neighbouring buildings

Please enquire about the list of necessary permits at your local competent construction authority or municipality.

8.6 Organisational works during the reconstruction

It might be necessary to have regular discussions with the project management team, for example in specifying the division of tasks and the supervision of works.

It is important to supervise the contractors regularly during the implementation works. In connection with investment of a higher value it is justified to involve a construction supervisor who can professionally represent the interests of the building during the implementation.

The supervision of schedules might also be necessary. Please inform the owners about such changes.

Many inconveniences might occur during implementation. On the one hand residents have to be informed about such things, and, on the other, the arising complaints need to be managed.

The most important information residents need to know are:

- The start and expected end date of the implementation works
- Works to be expected
- Information number and e-mail address where dwellers can find information or lodge their complaints
- On-going progress updates and notificiation of any problems or delays

8.7 Completion of works

With the completion of the works - or the interim closure of certain partial tasks - each and every detail included in the contract needs to be controlled.

The acceptance of the works has to be certified by the construction supervisor.

The certificate of the relevant authority (e.g. the authority responsible for the protection of historic buildings, energy supplier, chimney authority, etc.) about the conformity of the works might be required for the handover. Collect and document such certificates.

The certificate of completion should only be issued after the work has been completed to a high standard. Invoices of contractors should only be accepted and paid, once this has been achieved.

8.8 Technical warranties, complaints

There might be warranty issues or complaints even in connection with the most cautious implementation; the management of these and the division of responsibilities are recommended to be settled in the contract in advance.

Matters in dispute should always be managed in a written form in order to avoid misunderstandings.

9 After the work has been carried out

Reconstruction works do not end with the implementation. The assessment of the results, the follow-up of the savings and the optional warranty issues are necessary after the project has finished. It is also important that the residents should be aware of the new usage that the reconstructed building requires. Lessons learnt from this project can also be used to inform future cases.

A revision of the contract with the energy supplier might be necessary after the renovation.

Track the savings and make the results accessible for the residents as well.

Following the implementation works the inhabitants might need some guidance or advising for the use of the renewed property, just like airing, heat control, or the use of shutters. It could be useful to give a users manual about the house for each and every inhabitant, or provide regular consultation. This way many complaints can be avoided. For smart energy use tips, see the LEAF Technical Toolkit**:** **http://www.lowenergyapartments.eu/the-leaf-toolkit/the-toolkit/**.

If you really want to realise the savings options hidden in such upgrading, it is indispensable that the residents continue to focus on their energy consumption habits. There are various publications and websites helping the residents to reduce consumption.

10 Appendices

Appendix 1: Questionnaire for residents

About your building and home

We are interested to know a bit about any problems or concerns you have with maintaining a comfortable living environment in your home and building.

Your building

1. Thinking about the building in which you live (the whole building, not just your individual flat/apartment), to what extent are the following factors: 'no problem at all'; 'somewhat of a problem'; or 'a significant problem' for you?

About your building	No problem at all	Somewhat of a problem	A significant problem
Water-tightness or poorly insulated roof	☐	☐	☐
Poor condition of outer façade (e.g. plastering cracked)	☐	☐	☐
Damp and/or condensation in communal areas	☐	☐	☐
Poor lighting inside the building in communal areas	☐	☐	☐
Draughty communal areas (e.g. due to poorly fitting windows or doors)	☐	☐	☐
Open space / outdoor area in poor condition	☐	☐	☐
Low building value	☐	☐	☐
Poor external appearance of the building	☐	☐	☐
Lack of heating in communal areas	☐	☐	☐
Lack of control over heating in communal areas (if applicable)	☐	☐	☐

2. How would you describe the overall level of warmth in commuanl areas of your building last winter? Was it…

   ☐ Much colder than you would have liked

   ☐ A bit colder than you would have liked

   ☐ About right

   ☐ A bit warmer than you would have liked

   ☐ A lot warmer than you would have liked

   ☐ Both too warm and too cold (e.g. too warm in some areas, too cold in other areas of the building)

3. How would you describe the overall level of warmth in commuanl areas of your building last summer? Was it…

    - ☐ Much colder than you would have liked
    - ☐ A bit colder than you would have liked
    - ☐ About right
    - ☐ A bit warmer than you would have liked
    - ☐ A lot warmer than you would have liked
    - ☐ Both too warm and too cold (e.g. too warm in some areas, too cold in other areas of the building)

4. Overall how satisfied are you with the appearance of internal commual areas of your building?

    - ☐ Very satisfied
    - ☐ Moderately satisfied
    - ☐ Neither satisfied nor dissatisfied
    - ☐ Quite dissatisfied
    - ☐ Very dissatisfied

5. Overall how satisfied are you with the external appearance of your building?

    - ☐ Very satisfied
    - ☐ Moderately satisfied
    - ☐ Neither satisfied nor dissatisfied
    - ☐ Quite dissatisfied
    - ☐ Very dissatisfied

Your home

6. Thinking now about your own home and personal living space, to what extent are the following factors: 'no problem at all'; 'somewhat of a problem'; or 'a significant problem' for you?

About your home	No problem at all (/not applicable)	Somewhat of a problem	A siginificant problem
An ineffective heating system	☐	☐	☐
Lack of control over heating system (e.g. lack of room thermostat, heating programmer etc)	☐	☐	☐
Damp and/or condensation	☐	☐	☐
Poorly insulated building fabric (e.g. lack of insulation on walls, loft/roof, floors etc)	☐	☐	☐
Draughts (e.g. through poorly fitting doors and windows)	☐	☐	☐
Poorlyinsulated building fabric (e.g. lack of insulation on walls, loft/roof, floors, etc.)	☐	☐	☐
Draughts (e.g. through poorly fitting doors and windows)	☐	☐	☐
Poor ventilation	☐	☐	☐
Problems with mildew in wet rooms	☐	☐	☐
Problems with mildew in living- or bedrooms	☐	☐	☐
Electrical installation is in bad shape	☐	☐	☐

7. How would you describe the overall level of warmth in your home last winter? Was it…

   ☐ Much colder than you would have liked

   ☐ A bit colder than you would have liked

   ☐ About right

   ☐ A bit warmer than you would have liked

   ☐ A lot warmer than you would have liked

   ☐ Both too warm and too cold (e.g. too warm in some areas, too cold in other areas of the home)

8. How would you describe the overall level of warmth in your home last summer? Was it…

    - ☐ Much colder than you would have liked
    - ☐ A bit colder than you would have liked
    - ☐ About right
    - ☐ A bit warmer than you would have liked
    - ☐ A lot warmer than you would have liked
    - ☐ Both too warm and too cold (e.g. too warm in some areas, too cold in other areas of the home)

9. Thinking back to last winter, would you say your household energy bills (for room heating) were:

    - ☐ A heavy financial burden
    - ☐ Somewhat of a financial burden
    - ☐ Or not a problem at all?