People and Communities

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Chapter 3 PEOPLE AND COMMUNITIES

This chapter addresses Social Innovation. It describes conditions, methods, and procedures to optimize engagement and strengthen people's and the community's position in affordable energy renovations in buildings and on the district level. We focus on the lower- and middle-income occupants being tenants of not-for-profit or public housing associations and owner / occupiers in apartment buildings.

Social innovation is about developing and implementing new ideas (products, services, and models) to satisfy social requirements and create fruitful social relationships or collaborations. It represents a new responsiveness to pressing social needs to improve human satisfaction and happiness. Social innovations are new solutions that not only are beneficial to society but also enhance the action capabilities of individuals. In practice, social innovations have a huge role in driving the EU's political agenda, characterized by green, digital, and equitable transitions. These transitions are changing the worlds of work, education and training, social services, and people's ways of living, consuming, and participating in society.

For the renovation of affordable housing, occupants' interests, behaviours, and involvement in decision-making are highly influenced by social dimensions, social norms, and social circumstances. Even if behaviours are constrained by social circumstances by habits, and practices, individual behaviour and value changes can be influenced by events, interactions, and incentives. These measures can create interactions among people in groups. Therefore, it is essential to increase householders' participation in the renovation action process. The householders' involvement is critical in social innovation implementation to understand complex requirements, collect new and better solutions and ideas, and address complex challenges. It mainly refers to how occupants are voluntarily involved in developing and sustaining new solutions to social and environmental challenges. Householders voluntarily participate in collective action activities, generally directed toward common goals, by 1) sharing information and resources, 2) identifying potential issues and solving them collectively, and 3) making collective decisions that affect the communities and governments.

For the renovation of affordable housing, social innovation refers to using alternative social practices or changes in the governance of projects through citizen participation in local communities and group initiatives. Social innovation also includes developing new and unconventional solutions for financing, and community engagement, and utilizing new technologies and methods for construction, maintenance, and management. Social innovation may also involve building stronger partnerships between the government, the private sector, and community organizations to create more inclusive and equitable communities. Social innovation is an effective way to tackle social challenges, reflected

in policy discourses at EU level, which can bring immediate solutions to pressing social problems citizens face in these renovation practices.

The main barriers in the development of social innovation initiatives include external and internal barriers. The external barriers mainly include the low enthusiasm / lack of engagement of occupants to participate, inadequate policies, insufficient financial support, lack of financing mechanisms, poor communication, and poor availability of information. In addition, it also needs to consider some internal barriers, which mainly refer to the shortage of knowledge, competencies, and skills related to affordable housing renovation.

The main goal of this chapter is to provide effective methods, guidelines, and pathways for all stakeholders to facilitate energy efficiency renovation of affordable housing.

1. Supporting residents during renovation

Overview

In most decarbonisation projects that require deep energy retrofit, the occupants cannot live or stay all the time in their homes. The renovation work (façades, installations, structures) will be occupying those spaces, important components (walls, windows, floors) will need to be replaced, or the work will entail considerable nuisances (noise and dust) which will make the living spaces ill-suited for occupation.

If a deep energy retrofit is necessary, the occupants must be assisted with alternative accommodation. Alternatively, the project must be organized in such a way that the dwelling can still have the living conditions required. A clear advantage of relocation is that the renovation can be completed without affecting the occupant's claims during the renovation process. On the other hand, additional challenges occur when relocating tenants, even if only temporarily.

Understandably it is frequently a challenge to find, manage and finance alternative accommodation. Preference must be thus given to solutions that have the shortest, less costly, renovation process while ensuring the least nuisance to the occupants.

Another approach will be to organize and phase the renovation process so that the tenants can temporarily use empty dwellings when they cannot be in their own. Once again, housing providers will have to support the vulnerable tenants during the whole process of emptying the dwelling and the moving actions.

Questions that will be addressed in this section:

I. What can be done to reduce nuisance during renovations?
II. How can renovation projects be organized so that the occupants do not have to move completely to alternative housing?
III. What are important aspects to consider when providing alternative accommodation for tenants during the renovation?

Recommendations and Good Practices

I. What can be done to reduce nuisance during renovations?

When renovation work is being performed, disruptions can be frustrating for those who spend their day at home. Even if renovations do not affect individual apartments, the rest of the building or area may be undergoing works, such as drilling, or windows may be covered for extended periods. The noise, dust, scaffolding, and irregular parking during renovations can be disruptive to residents. If one works in shifts and needs to sleep during the daytime or works from home, the long renovation periods may be invasive and stressful. There is no doubt that renovation can cause severe problems for the neighbourhoods.

Renovations will inevitably disrupt the tenants. Therefore, it is essential to determine the housing provider's legal responsibility and cooperate with the tenant to achieve a reasonable agreement. The contractors will have to identify potential nuisances (including noise, dust, odours, vibration, and other sources of pollution) caused by renovation measures and the significant adverse impacts they may cause.

There are several precautions that the housing manager can take to reduce or avoid nuisances during renovation constructions:

- ✓ Communicate with the neighbourhood to inform about the renovation processes and potential nuisances.
- ✓ Carry out renovation works only at reasonable times and limiting noisy activities to specific periods.
- ✓ Use appropriate construction equipment and materials placement, minimizing demolition or crushing dust, and timely construction and renovation debris clean-up.
- ✓ Set up effective transportation routes to avoid scattering of garbage during transportation.
- ✓ Conduct proper waste management .
- ✓ Use well-maintained, low-noise machines that minimize vibration and perforation.
- ✓ Use preventive measures where possible, to minimize noise transmission through natural or dedicated barriers or shielding of other buildings.
- ✓ Commission the construction and management of housing renovation works to contractors with sound operational management and mature construction skills.

In addition, when renovating, it is necessary to pay attention to specific groups, such as older adults and people with disabilities. Renovations may be troublesome and even cause anxiety, and those who move before renovations often mention a desire to avoid disruption or evacuation. Elderly groups often experience unpleasant and new experiences. In these situations, the support that vulnerable people need can sometimes be complex for those without disabilities to grasp fully. For example, knowing what to pack may take work when one needs to relocate temporarily. The inherent squalor

and poor conditions around the buildings may be an extra burden, especially for people who need mobility aid to move.

II. How can renovation projects be organised so that the occupants do not have to move completely to alternative housing?

There are several practical approaches to organizing a renovation project so that occupants do not have to move to replacement housing altogether.

- ✓ Relocate tenants in the same building or complex.

  This can be done in an interim basis until their original unit is renovated and ready for them to move back in. This way, tenants can continue to live in the same community and avoid the stress and disruption of moving to a new location. Provide tenants with detailed information about the new unit's location, the expected move timing, and any other important details to minimize confusion and uncertainty. When relocating tenants to a new unit within a building or complex, consider their preferences, such as their preferred floor, size of the unit, and location within the building. Offering tenants moving assistance, such as providing moving boxes and equipment or even hiring professional movers, to help make the transition as smooth as possible.

- ✓ Adopt a multi-phase renovation.

  Break the renovation project into smaller, manageable phases, each with its own schedule, budget, and scope of work. Splitting the renovation project into multiple phases, one at a time, in one building area allows for different areas to be renovated at different times. This measure also allows occupants to continue living in other parts of the building while work is done in one area. And the non-occupied parts can be renovated, thus minimizing the disruption to their daily lives. In addition, this measure also requires creating a master plan that includes all phases of the renovation, including the scope of work, schedule, and budget for each phase. This will help ensure that the project runs smoothly and within budget.

- ✓ Adopt staggered construction schedules.

  Work on one unit or floor of the building at a time rather than all units/floors simultaneously, allowing occupants to continue living in their units. In the meantime, work is being done on adjacent units. Staggered construction schedules are an effective way to organize a project so that occupants do not have to move to another location altogether. Prioritize the units or floors that need to be renovated first, and then develop a schedule that staggers the renovation of each unit/floor. Staggered construction schedules require coordination with

multiple trades, such as electrical, plumbing, and HVAC, to ensure that work is completed efficiently and in the correct sequence. It is also possible to keep certain areas of the building ready for occupancy while other areas are being renovated. This may involve enclosing renovated areas and installing barriers to control dust and debris. Timing is also important when implementing a staggered construction plan. For example, if some units/floors have occupants who are elderly, have children, or are disabled, it is important to plan and organize the renovation schedule in such a way as to avoid disrupting their daily lives or access.

- ✓ Provide temporary housing solutions.

  Arrange on-site trailers, off-site apartments or other temporary accommodation if occupants need to leave their unit temporarily. Another option is to rent an apartment or other short-term housing unit locally for occupants to stay in during the renovation. For example, the occupant could temporarily stay in a nearby hotel or motel during renovation. Coordinating with other properties with temporary vacancies, such as nearby apartment complexes or hotels, helps minimize the number of people needing alternative housing during the renovation process. Overall, it is important to have a temporary housing plan before the renovation begins so that occupants are aware of their options and are prepared to move to temporary housing if necessary. It is also important to ensure that the temporary housing solution is comfortable, safe, and easy to use and that occupants are aware of the timeline and duration of their temporary accommodations.

- ✓ Communicate with occupants

  Communicate with occupants about the renovation schedule and any necessary temporary relocations. Providing alternative solutions for occupants will ensure that the renovation process goes as smoothly as possible. Provide a communication channel or platform for the occupants to ask questions and report issues or concerns. This can be via email, phone, website, or messaging app. By keeping homeowners informed and involved, you can help build trust and ensure a positive experience for all involved, which benefits both the occupants and the renovation process. It is also beneficial to communicate and coordinate in advance with other buildings or communities that may have temporary vacancies, which can reduce the risk of disruption to their daily lives and ensure a smooth and successful project.

- ✓ Adopt modular building construction methods.

  Minimise onsite construction work by using prefabricated building modules, which can reduce completion time compared to traditional construction methods. This means that occupants can return to their units faster, thus minimizing the time they spend in alternative housing. On the other hand, with modular construction, renovation work can be done on a unit-by-unit

basis, which means less disruption to the occupants' daily lives. This is because the work is done in a closed environment, away from the occupied units. Modular units are constructed in a controlled factory environment, which enhances quality control and reduces on-site delays due to weather or other factors. It is important to note that using modular construction methods is not always the best option, depending on the type of project and specific requirements. For example, retrofits involving complex or specific architectural designs may not be suitable for modular construction methods. The best approach is to evaluate the feasibility and benefits of modular construction methods for specific retrofit projects and make decisions accordingly.

Wir inHAUSer Project

Salzburg, Austria

Western Europe

In the inHAUSer Project tenants were supported throughout as the renovation works demanded relocation for one and a half years. This process was facilitated by the cooperation of five social housing providers in Salzburg who made their stock available for temporary needs of the project.

III. What are important aspects to consider when providing alternative accommodation for tenants during the renovation?

It is important to minimize the impact on tenants while ensuring that the work is completed effectively and efficiently. Some of the best ways to provide alternative accommodations for tenants during energy retrofits are as follows:

- ✓ Assisting with off-site rental housing. This may be a good option if there are no suitable vacant units on the property or if paying or arranging for tenants to move into off-site rental housing, such as apartments or hotels, while renovations are underway. It will be a challenge to find something suitable and affordable being available. Research and identify rental options that are appropriate for tenants in the area, considering cost, location, security, and amenities and

offering tenants a relocation package that includes moving expenses and other associated costs. It is important to note that relocating a tenant to off-site rental housing can be disruptive and may cause additional stress to the tenant. Therefore, providing as much support and assistance as possible during this process is critical.

- ✓ Thoughtful renovation planning and communication. For tenants who may not want to move or have other constraints, it is important to carefully plan renovation work, schedule work around residents, and maintain good lines of communication with them to minimize the impact of the work on their daily lives. Tenant convenience, comfort, and renovation costs must be considered. Also, consider phased renovations that alternate between units so tenants can stay in them. In contrast, renovation work is being done in adjacent units, thereby reducing the number of tenants displaced at the same time.
- ✓ Offering incentives for participation and relocation assistance. In some cases, offering incentives such as rent discounts or utility bill reductions can encourage tenants to participate in energy retrofit programs and temporarily vacate their units while work is being done. Provide tenants with relocation assistance, which can help cover moving costs and/or provide other forms of support during the transition, such as financial assistance or counselling services.

The alternative accommodation provided should meet the same safety and occupancy standards as the original unit and that tenants should be adequately informed and assisted in transitioning to the new accommodation. Remembering the legal rights and responsibilities of tenants and landlords concerning renovations and temporary relocation is equally important.

URBAN REHABILITATION PROGRAMME IN THE CITY OF PÉCS

Eastern Europe

PÉCS, Hungary

The PÉCS Programme included the resettlement of residents during renovation works in specially developed housing containers. Additionally, the promoters carried out an active agenda before and while people were relocated: community building activities, forums, workshops, inviting notable individuals to speak, and activity clubs such as the Craft Club, Photography and Film Club to improve the community spirit.

Further reading and online resources

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2. Engaging with occupants and co-designing renovation projects

Overview

Establishing active engagement with the occupants is key for a successful renovation project. In many cases, the occupants have a right to approve a project proposal. Besides a legal position, the engagement and enthusiast support of the occupants is essential for its success: it can smoothen the process and achieve better outcomes. 'Occupants' may be either tenants of social and public housing providers or owner-occupiers in apartment buildings (with owner associations). Occupants hold the key to a building's environmental performance despite a careful design and plan for retrofit. Continuous involvement of the residents in the course of the renovation project could unlock the project's potential.

The engagement of occupants is influenced by the understanding and recognition of the benefits from renovation and positive impact in their living conditions, as well as the strength of the emotional connection they feel towards their home and the housing association. Strong and positive engagement could lead to a sense of acceptance of their person and understanding of their personal situation from the housing association or within the owner association. Occupants are most likely to see opportunities where they will be recognized for their contributions. They understand when organizational change happens and why. Positive and strong occupants' engagement can be achieved through active involvement (being part of) and continuous equal inclusiveness in the design process.

Occupants' co-creation is an act of collective creativity and involves active participation and collaboration of occupants in the development process and performance of the renovation project. The idea is that opinions and ideas are shared and that the process will be improved together. It can be seen as an iterative process of engaging occupants to collaborate toward a successful renovation. (It should not be confused with 'co-design' as it indicates collective creativity across the whole span of the design process and is seen as a specific instance of co-creation). The research in co-creation has revealed that people are unlikely to change their established habits if they believe it is being forced upon them. This suggests that a participation process should present the consequences for habits openly and transparently so that participants can help shape them. Tenants are most likely to get involved if one or more of these factors apply: "personal or common interest, want to make a personal difference, self-development, want to influence change and improvement".

In practice, tenants desire and require more information about the costs and benefits of renovation or distrust the information provided by the housing providers. As a result, the housing associations cannot

communicate this critical information to the tenants credibly. Palm' research illustrates that housing companies only ostensibly provide tenants with the opportunity to be informed and give them a chance to influence renovation plans. To some extent, tenants were given the opportunity to put forward their desires to show that they were not excluded from the process. However, some tenants felt it would take more effort than expected to influence the renovation process. As a result, some did not want to expend any efforts to participate in the process, and others felt that efforts to influence the process were futile. Some of these situations reflect a lack of trust on the part of tenants in their homeowners, as the opportunity to participate in the renovation seems superficial. Therefore, it is necessary to appoint a third-party agent to communicate to ensure the legal rights of both parties in the renovation process.

Questions that will be addressed in this section:

I. How to engage with occupants?

II. How can the various social groups be combined in the district?

Recommendations and Good Practices

I. How to engage with occupants?

An engagement process aims at involving occupant/groups in the decision-making and actual processes and to help them live more sustainably in the long term. It guarantees that the concerns and interests of the tenants are included in the projects, enhances local partnerships, and builds social capital[2]. In the blueprint, community engagement is focused on renovation, construction, and policy projects. Community engagement usually leads to commercial benefits to housing services, individual benefits to tenants, and social benefits to local communities. Social inclusion, citizen participation, and having characteristics of a shared economy are the social aspects of tenant engagement.

Tenant engagement depends on the organizational structures and the type of the project, e.g., renovation. The top-down approach consists of informing and asking the tenants about their interests, and it can be done using interviews or satisfaction surveys. The top-down approach perceives engagement as a customer service or satisfaction improvement tool. The bottom-up/citizenship-based approach aims to engage the tenants in the planning or the design processes. In the bottom-up

[2] Shared values or social norms that allow individuals to work together and effectively achieve a common purpose.

approach, the role of the tenants has been changed from a consumer to a participator compared to the top-down approach. Embedding a sense of community and interactive and inclusive engagement are the key outputs of the bottom-up approaches. Tenant engagement can be at collective or individual levels.

A number of methods can be used depending on the level and goals of the engagement. The following table indicates some techniques that can be used for each different situation or purpose.

Table 2. Levels of public participation and empowerment.

	INFORM	**CONSULT**	**INVOLVE**	**COLLABORATE**	**EMPOWER**
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision, including developing alternatives and identifying the preferred solution.	To place final decision-making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for direct advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
TECHNIQUES TO CONSIDER	Fact sheets Web sites Open House	Public comment Focus groups Surveys Public meetings	Workshops Deliberative polling Participatory budgeting games	Citizen advisory committees Consensus building Participatory decision making	Citizens' juries Ballots Delegated decisions

Source: International Association for Public Participation (2005).

II. How can the various social groups be combined in the district?

Inclusiveness of different social groups is crucial to equally consider all types of low- and middle-income occupants. First, a good insight into the audience composition will have to be made, and second, a process of co-creation should be organized. The most vulnerable group of households is highly at risk of poverty and maintaining the good condition of their buildings. Therefore, they need to be considered with a higher priority especially due to the recent increase in energy prices. In addition, the behaviours of the group of people that tenants feel they belong to affects their feelings and actions.

To effectively engage occupants in the energy retrofit process, the following groups should be considered:

i. Low-income households. Social housing is intended for low-income households, and these are likely to be the primary target audience for household participation and co-creation in energy retrofits. They are the most affected by the change, and their feedback is critical to ensuring that retrofits meet their needs and improve their quality of life.
ii. Older adults and residents with disabilities may have special needs or concerns that must be addressed during the retrofit. They may need additional help or accommodations to navigate these changes and ensure their continued comfort and safety.
iii. Families with children may have unique needs and concerns that need to be considered during the renovation process, such as creating safe and healthy living spaces for children to play and learn.
iv. Non-native speakers or those with language barriers may have difficulty understanding and participating in the renovation process. It is important to provide materials and communication in their native language and ensure that trained staff or interpreters can assist them.
v. Community organization representatives can be essential in disseminating information to residents, working with social housing managers and renovation teams, and gathering resident feedback and input. It is important to note that the renovation process should be as inclusive and transparent as possible. Clear and regular communication, opportunities for feedback and engagement, and active listening to residents' concerns and ideas can help build trust and ensure that the result meets the needs and preferences of all residents.

Current completed renovation processes in Europe represent a variety of best practice options. The approach and organization may differ depending on each country of the European Union or even each region of one country.

The bottom-up approach allows the involvement of the occupants and, therefore local community to express their perspectives and contribute to the development of the targeted renovation project with their expectations, opinions, and ideas. This approach is based on the initiatives of the local occupants. Topics like social cohesiveness, concertation, and transparency in decision making have to be considered depending on the local environment. It encourages reflection, local participation, and engagement and could lead to more comprehensibility of the environment there live in and the renovation measures that have to take place.

Central Europe

Fehring, Austria

BOTTOM-UP ENGAGEMENT OF RESIDENTS IN FEHRING

In the city Fehring in Austria, a sustainable village in a former military barrack was built through a community of residents called '*Cambium Community Center'*. The local community was part of the process through workshops, an online platform, and study tours. Building an eco-village with minimal environmental impact was the project's main goal.

The top-down approach involves the decision-making process at the highest level, such as the housing associations or even the government, which is communicated to the lower level, such as the occupants living in the building. This approach could lead to inclusiveness as a decision addresses the whole building and includes all occupants equally. Especially the tenants living in the social housing stock offer an exemplary variety of the low- and middle-income classes in each country.

Eastern Europe

Kaposvàr, Hungary

SOCIAL INCLUSION OF SEGREGATED COMMUNITIES THROUGH THE TOP-DOWN APPROACH

In the Hungarian town Kaposvàr, the municipality carried out extensive renovation of the city's social housing stock and public facilities. The process was accompanied by community development measures such as the creation of a community garden and a communal composting site. Activities with the residents were organized to enhance social cohesion, and improve social inclusion.


The top-down endorsement could also be built as the necessary mechanism for occupants' participation initiative by providing essential space, such as a community hub.

Northern Europe

Dubin, Ireland

DUBLIN CITY HOUSING REGENERATION TO PASSIVE-GRADE & COMMUNITY HUB

In the Irish city of Dublin, the public administration nudged regeneration to passive grade through a deep energy retrofit in social housing stock for vulnerable people with the development of a community hub. This community hub brings new life back into the areas and increases the residents' quality of life.


Further reading and online resources

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- Passive Grade and Community Hub Housing Regeneration project in Dublin. https://www.housingevolutions.eu/project/dublin-city-housing-regeneration-to-passive-grade-community-hub/
- Social Inclusion of Segregated Communities project in Kaposvár. https://www.housingevolutions.eu/project/social-inclusion-of-segregated-communities-through-an-integrated-urban-rehabilitation-program/
- Cambium Community Centre https://houseful.eu/demos/cambium-community-center/

3. Promoting Co-ownership of Dwellings and Utilities

Overview

Co-ownership models of dwellings and utilities can play a role in the energy renovation of affordable housing, as they can help increase its financial feasibility by pooling resources and sharing costs among community members. Co-ownership models promote greater community engagement and participation in the energy renovation process, leading to more successful and sustainable outcomes. Furthermore, they can foster a sense of community ownership and responsibility for the energy performance of the dwellings, which can lead to increased energy savings and long-term maintenance of the renovated housing. Some benefits of co-ownership include:

i. Co-ownership allows sharing of costs, making housing and utilities more affordable for everyone involved, especially for low-income families, people with disabilities, and senior citizens.
ii. Co-ownership allows collective decision-making on energy efficiency and renewable energy issues, enabling the community to make more sustainable choices.
iii. Co-ownership allows community control over housing and utilities. Rather than leaving these decisions in the hands of outside entities, this can lead to more local solutions and more tailored to the specific community's needs.
iv. Co-ownership allows the sharing of renewable energy systems, such as solar panels or wind turbines, which can reduce costs and increase energy independence, reducing energy bills and dependence on fossil fuels.
v. Co-ownership can foster community building among the residents as they work together to manage and maintain the property and its energy systems. This can lead to a stronger community that can better face future challenges.

Questions that will be addressed in this section:

I. What co-ownership models exist?
II. What are energy communities and how can they be supported?

Recommendations and Good Practices

I. What co-ownership models exist?

Joint ownership or co-ownership of a property, such as real estate, is when the shares are divided among different persons. There are three main types of co-ownership (1) joint tenancy, (2) tenancy in common (TIC), and (3) limited liability corporation (LLC). In the evolving landscape of global energy transition and the decentralization of power systems, community-ownership structures have emerged as a pivotal approach. These structures embody collective ownership and management of energy-related assets, predominantly Distributed Energy Resources (DERs).

Community-ownership models facilitate individual participants in acquiring ownership of assets with reduced investment through cost-sharing mechanisms. These models enable participants to own key local energy assets, contribute to community energy development, and help scale up renewables. While energy generation is their most common purpose, community-ownership initiatives can also deploy energy storage, energy efficiency, distribution network, and district heating and cooling systems.

The Community-Based Model epitomizes a decentralized approach where community members actively engage in and own energy projects. This model empowers local communities by involving them directly in the planning, development, management, and benefits of energy initiatives, such as renewable energy installations and energy efficiency projects. It emphasizes local ownership, participation, and community-centric benefits, fostering resilience, and sustainability at the grassroots level.

Conversely, the Hybrid Business Model amalgamates elements from various ownership and organizational structures to formulate a unique and robust approach. This model integrates community-based ownership, cooperative ownership, and partnership models to maximize efficiency and effectiveness. It emphasizes collaboration, shared ownership, and leverages the strengths and resources of multiple stakeholders to address complex challenges and achieve shared objectives.

Both the Community-Based Model and the Hybrid Business Model offer distinct yet complementary approaches to energy project development and management. While the Community-Based Model underscores local ownership, participation, and community-driven benefits, the Hybrid Business Model focuses on collaborative partnerships, shared ownership, and synergistic leveraging of strengths among multiple stakeholders.

The choice between the Community-Based Model and the Hybrid Business Model depends on the specific context, goals, and priorities of the energy project and the community involved. While the

Community-Based Model fosters grassroots empowerment and local resilience, the Hybrid Business Model facilitates collaborative innovation and leverages diverse expertise and resources. The table below compares the advantages and disadvantages of these models in the context of energy projects, offering insights to guide informed decision-making and strategy development.

Table 5.1. The advantages and disadvantages of different models

MODEL	ADVANTAGES	DISADVANTAGES
COMMUNITY-BASED MODEL	• Community-based projects can electrify remote areas where projects are not cost-effective for utilities and private investors and respond to community energy needs. • Communal ownership can facilitate proper management and delivery of high-quality services, which benefits the local community. • Projects can create local jobs and training opportunities. • Communities can use profits from energy projects to support other community development projects	• Communities often lack the financial and technical capacity to install, operate and manage energy projects. • Communities sometimes set tariff levels too low, compromising the project's financial viability. • If the project lacks an effective mechanism to monitor consumption, some community members might overuse electricity. • Corruption in certain cooperatives can divert resources or decrease community support. • Political factors can impede project implementation and progress. • Enforcement and ensuring payment can be challenging.
HYBRID BUSINESS MODEL	• Involving multiple partners combines the advantages of other ownership models. • Well-designed, hybrid ownership maximizes effectiveness and efficiency. • Collaboration among partners can decrease the need for capacity building. • Collaboration can address the weaknesses of one partner with the strengths of another.	• Involving multiple partners can lead to complexity in governance, decision-making, and coordination. • Ensuring alignment of interests and priorities among partners can be challenging. • Equitably allocating resources and responsibilities among partners while ensuring transparency and accountability can be complex.

“Remunicipalisation, Devolution, and Participative” governance approaches can be beneficial to promote the introduction of these energy ownership models. Remunicipalisation refers to the increase of the municipal role over the energy market and the operative role of local authorities. Municipal ownership results in higher control of the local energy system and political involvement in the energy market. Devolution means transferring delegation and accountability at the local level to local authorities, such as the city councils, to facilitate interaction and information flow between citizens. This procedure usually entails the responsibility for the territorial energy supply of the local municipalities. Another accelerator is participative governance, which refers to tools such as discussion

forums, participative budgets, and co-building of planning schemes to encourage transparency and accountability in public service delivery while improving local needs. Its implementation can promote direct democracy by allowing all citizens to participate in future energy and climate policies.

Southern Europe

Spain

Vilawatt

The project VILAWATT was developed by the city of Viladecans to advance 100% renewable energy supply; the fast renovation of private buildings; and a training facility (development of energy audits & contract optimisation, training and empowerment in energy management, financing options). This project shows the potential of local authorities to test high risk experimental ideas. Viladecans City Council was transformed into a lab where governance and energy models and services are tested and lessons learnt.

II. What are energy communities and how can they be supported?

Energy communities, also known as community energy initiatives or energy cooperatives, are grassroots organisations or collective efforts where members of a community come together to generate, manage, and consume (or sell) energy locally. The first examples of successful citizen co-ownership were the active engagement of citizens in wind power plants to increase the acceptance of the construction and their expansion in the near vicinity within the concept of energy communities. The concept of energy communities attends to solve the rejection or non-acceptance of the development of renewable energies and minimize potential conflicts. Today, the concept of energy communities is applied for a renewable energy and heat transition mainly at the municipal level.

The community Wildpoldsried in Bavaria, Germany, is particularly known as a self-sufficient community. They started in 1999 with only 30 citizens with the aim to produce their own wind-powered energy and protect the environment. The initial personal investment was complemented with a 100,000 euros grant provided by the state of Bavaria. Banks financed the remaining investment through the Renewable Energy Act (EEG) guarantee facility. The residents profit from selling a surplus

of their own produced renewable energy (AEE 2022.2). The success triggered a real push for using additional renewable energies such as biogas, solar power, and a local district heating system.

Citizens are co-owners in these community schemes. However, hybrid partnership models are also possible, between citizens and public or private organizations. This may involve the creation of community trusts or foundations, limited liability companies, non-profit customer-owned enterprises or municipal ownership models.

The housing provider or the local authority can play a key role to create or increase the likelihood that the residents will create an energy community or other model, and that initiative is successful. Following the example of Vilawatt project (led by the city of Viladecans), these actions may include:

- ✓ Provide residents with information and training on energy efficiency, renewable energy technologies, and energy conservation practices. Empowering residents with knowledge can help them make informed decisions and actively participate in energy production.
- ✓ Develop the business case, i.e., cost versus energy savings from renewables. This information can nudge the residents towards participating in an energy sharing initiative. The business case can be built by:
    - Undertaking an energy audit. Conduct energy assessments of the housing estate to identify areas of improvement and potential energy-saving measures. This could include insulation upgrades, energy-efficient appliances, or lighting retrofits.
    - Calculating the cost of installing renewable at the community-scale on or by the residential complex (solar, wind or even district heating).
- ✓ Provide direct financial support or seek available grants or other incentives to support energy communities. Private sector financing can be a determinant to achieve financial feasibility.
- ✓ Forge partnerships with local governments, utilities, nonprofit organizations, and other stakeholders to leverage resources, expertise, and support for the energy community. These collaborations can help with technical expertise, access funding, scale up initiatives or even remove regulatory barriers.

Western Europe

France

L'Habitat Participatif, levier d'innovations sociétales

"Habitat Participatif" (Participatory Housing) is a concept in France that promotes the co-ownership and participation of residents in the design, construction, and management of their housing. It is a form of community-led housing where residents come together to collectively plan, design and manage their own housing developments. Habitat Participatif is often seen as a way to provide affordable housing and promote sustainable living by reducing the ecological footprint of the living environments.

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4. Utilising Mediation Techniques

Overview

As the number of renovation-related investments increases, cooperation and compromise are essential to finding sustainable solutions - in particular in multi-apartment blocks. Mediation techniques, by facilitating communication between stakeholders, including community members, developers, and local government officials, rather than adversarial mechanisms can contribute to ensuring a transparent, compromise-oriented, and equitable system.

A renovation process in social and affordable housing can benefit from two types of, quite different, mediation:

(1) a community-oriented mediation, or social mediation, dedicated to solving challenges of a social nature in social housing neighbourhoods and/or during renovation processes. Their work is dedicated to managing the various issues related to housing and co-habitation and to prevent and deal with conflicts related to the interaction among decision-makers, architects, builders, residents and other stakeholders in a renovation process; and,

(2) A process-oriented mediation, frequently the one-stop shop (OSS) model. These are intermediary points of contact between the owner / housing provider and the parts or the entire supply chain and decision-making process, including financial and legal aspects, monitoring and delivery. An OSS aids housing owners in one of more steps of their process of realising energy renovation of their buildings, breaking down the barriers that might stand in the way. This model is prevalent in owner-occupant housing models.

Both mediation roles can be performed by either a formal intermediary organisation or an expert who is aware of renovation barriers and has experience in finding solutions at different scales.

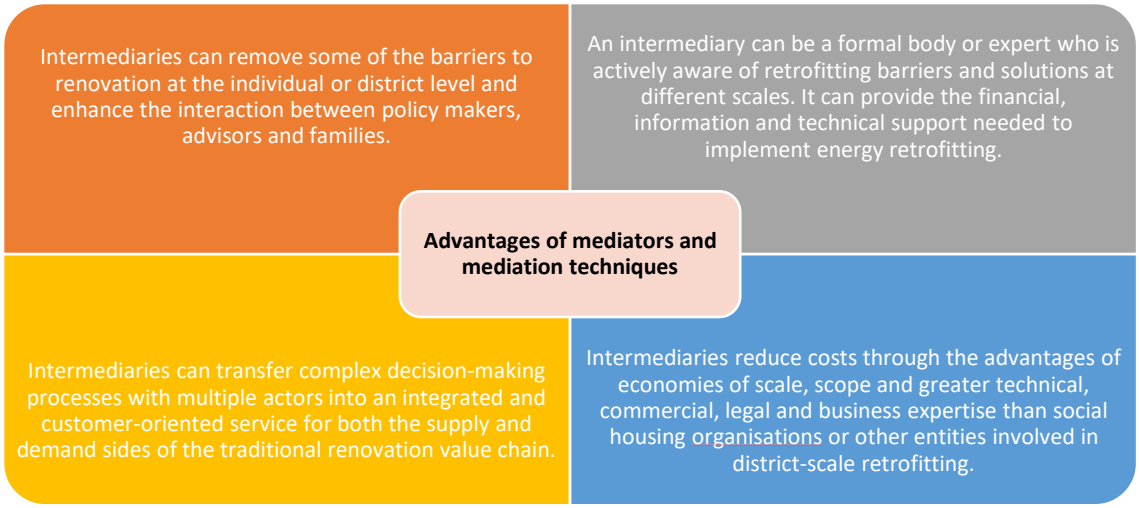

Figure 2. Advantages of mediators and mediation techniques.

In a nutshell, it makes sense to hire the services of an intermediary when the respective cost is lower than the estimated actual cost (monetary or non-monetary[3]) of non-intervention in the long run.

Questions that will be addressed in this section:

I. Which social mediation techniques can be used in a district?

II. What are One-Stop-Shops and how do they mediate district renovation?

Recommendations and Good Practices

I. Which social mediation techniques can be used in a district?

Socia mediators can play a key role to prevent conflict and promote cohabitation, improving relationships between neighbours and fostering empowerment and participation. They can also be an effective tool to remove obstacles at the individual or district level. Some specific ways social mediators can facilitate district renovation of affordable housing include:

a. Facilitate community participation. The mediator can create a forum for community members to express their concerns, ideas, and preferences regarding district renovation. This helps build trust and understanding among different stakeholders

[3] For example, prevented social animosity at the neighbourhood level in the future. This may not accrue to an immediate cost, but it may represent considerable life-cycle costs.

and ensures that the renovation plan reflects the needs and priorities of the community.

b. Encourage collaboration. Mediation can be used to create a collaborative atmosphere among all actors in a neighbourhood. They can help build trust, reduce tensions, and promote cooperation, making reaching agreements easier and moving forward with transformation plans.
c. Protect the interests of vulnerable groups. They can play a key role in protecting vulnerable occupants from being displaced due to a weak position or insufficient information.
d. Broker co-designing processes. The mediator can work towards building consensus among the stakeholders regarding key design priorities and decisions. This may involve organising co-creation fora, synthesizing feedback, identifying areas of agreement and common ground, and facilitating compromise / building consensus when necessary.
e. Resolve disputes. The mediator can resolve disputes that arise during the renovation process, such as disagreements over development design. Mediation provides a neutral third party (or parties using joint mediation to facilitate an amicable dispute resolution process, which has many advantages over adjudicative dispute resolution measures decided by a court or tribunal.
f. Provide information, advice and guidance to residents, such as advice on housing/rental contracts, social and other local services, job search, etc.
g. Training. The mediator could provide also training on rights and duties of tenants, family budget management, energy management, apartment block administration, conflict management, and even community facilitators / mediators.

A professional mediator with experience in affordable housing and community development can help design a mediation process that fits the community's specific requirements and guide the parties through the process in both a constructive and effective manner. Selecting an experienced mediator is key. They should be selected not only based on consensus building specific skills, but also on specific knowledge of the sector and social housing districts mediation. In addition, both sides need to accept and have trust in the mediator for the successful intervention in the renovation project.

Finally, it is important to note that mediation should be used with other strategies to promote district renovation of affordable housing, such as community building.

Southern Europe

Italy

Villagio Gandusio

The blocks in via Gandusio, owned by the Municipality of Bologna, are an illustration of the potentially dangerous situation that can arise in ill-planned large social housing settlements. Prior to the renovation of the district, mediators were engaged to facilitate the cohesion among the different groups and to involve them in the community-building process. Inhabitants were offered training to become community facilitators and were encouraged and supported to write a handbook of good neighbourly practices.

II. What are One-Stop-Shops and how do they mediate district renovation?

For a homeowner renovating can seem like an overwhelmingly challenging journey. It requires technical, engineering, administrative and legal knowledge and depends on the smooth collaboration with several specialised service providers, who may be difficult to identify and deal with. Moreover, in the affordable sector, some vulnerable households may be left behind if the appropriate support is not provided.

The opportunity to outsource some of these interactions in the hands of a one-stop-shop offers an attractive alternative to the traditional way of directly contracting the services. One-Stop-Shops (OSS) typically offer integrated renovation solutions as a service, assisting with a number of steps of a renovation for individuals. Functioning either as a virtual or physical place, they act as intermediary points of contact, integrating designers, technology and materials suppliers, installers and investors into one offer for homeowners.

An OSS model means moving away from the traditional situation where a project promoter (esp. homeowner) deals directly with a multitude of suppliers, and where they (as non-experts) have to take a decision on the best combination of materials and technologies in an overall complex setting, to a

situation where project promoters benefit from a customer-centred service tailored to providing informed decisions in a centralised way.

Table 3. One-stop-shop models.

Model	Roles & Responsibilities	Offer (example)
Facilitation	Raise awareness on energy renovation benefits.	Advice on how to renovate a house and provision of a list of suppliers.
Coordination	– Coordinate existing market actors (suppliers). – Make sure all one-stop-shop services are offered to homeowners. *No responsibility for the result of renovation works (only overlooking the whole process).* *No responsibility for the overall customer journey (just the first part).*	Advice on how to renovate a housed and push suppliers to comply with promises. Suppliers remain responsible for the final result.
All-inclusive	– Offer a full renovation package to homeowners. – Bear responsibility for the result of renovation works. – Bear responsibility for the overall customer journey.	Provision of the whole service and contact point in case something goes wrong with suppliers.
ESCO-type	– Offer a full renovation package with guaranteed – Guarantee energy savings to homeowners – Bear responsibility for the result of renovation works – Bear responsibility for the overall customer journey	Renovation package and guarantee energy savings for the contract duration. The one-stop-shop is paid through energy savings achieved.

Source: Jana Cicmanova, Miriam Eisermann, Thibaut Maraquin (2020).

In most European countries, local or regional OSSs have been created to provide integrated services for retrofitting and cover the whole process, including providing information, technical assistance, organization, and financial support. While all aim at building renovation and improving the energy performance of buildings by helping the homeowners or housing managers to go through the full process, at least 6 different models have been identified, which have been listed below.

Table 4. Types of OSS identified.

Government-drive	Industry Driven	ESCO-based	Facilitator-based	Cooperative type	Store
Programmes are driven by climate and/or energy	Manufacturers or installers that aim to extend their	Building on their complex offerings, they extend	Consultants that develop their original customer-	Aims mostly at the societal benefits, not necessarily	A large store or a warehouse, where the

considerations, sometimes by social targets.	businesses or improve customer care.	and reclassify their value-added solution-parts.	related businesses, e.g. by extending the types of services, in order to reach more customers.	focused only on energy savings/cost saving.	shoppers can get acquainted with the technologies and products, and have a personal contact option to ask for tailored advice and further assistance at the spot.
e.g. Ile-de-France Energies, SPEE Picardie, RenoBooster, HomeGrade	e.g. Reimarkt, CleanTech, ProjektLavenergi, BetterHome	e.g. Ile-de-France Energies, HolaDomus, EBRD credit lines	e.g. CLEAR, Tighean Innse Gall	Haarlemse Huizenaanpak, Retrofit Works	e.g. Center for Sustainability and WoonWijzer Winkel Rotterdam

Source: Boza-Kiss, B., Bertoldi, P., Della Valle, N. and Economidou, M.,(2021).

OSSs are working with social housing organisations and vulnerable groups, including low-income families, single parents, people in need, and people with disabilities. Support is varied and includes financial scheme support, advice on energy bills, stimulating energy saving behaviour, and support in energy poverty instances.

Several bottom-up initiatives (cooperatives) have been created to the community achieve financial and non-monetary benefits, such as gaining knowledge, expertise, and unity within the community. In this case, the OSS is an expert group (social affairs) or a foundation interested in contributing to the sustainability of the built environment in their neighbourhoods. An example of such community-led model is the CoForce Foundation.

Western Europe

Netherlands

CoForce Foundation

CoForce was established to support initiatives in Amsterdam to accelerate the energy transition. It is based on a learning approach, where experts (“energy commissioners”) help bridge the learning curve and accelerate community level ideas to implementation and easily access the necessary process funds. Successful projects are then presented as examples to other potential initiators to accelerate the scaling of sustainable initiatives. One of CoForce's objectives is to bring awareness and knowledge about energy transition and possibilities into the communities, based on good examples and expert advice.

CoForce Energy Commissioners

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- Lokale Energie Monitor. https://www.hieropgewekt.nl/lokale-energie-monitor

5. Tackling the Challenges of Renovating Multi-Apartment Blocks

Overview

The renovation of a multi-apartment block shared and owned by different stakeholders implies a complex arrangement as it requires a collective agreement. In these cases, the residents are either (1) tenants, in the case the large estates are owned by housing corporations or local authorities' linked providers, (2) occupant-owners, who own a "portion" of the property, not the entire building. The owners can organise themselves in a cooperative in which decisions are made collectively, guided by internal regulations or common agreements.

These ownership models can be quite heterogeneous, as the building may include a varying mix of owners, tenants and cooperative arrangements. This presents considerable problems to renovation works, or any kind of intervention or decision that requires a collective agreement:

- Coordination problems: owners must agree on the works to be done while they might not have the same needs or interests. An example is the need to install elevators in a given building. The owners of ground level have no interest in the intervention, while top floor occupants have every interest that the building costs the intervention. A compensation-based agreement must be sorted out between all owners.
- Financial problems: Owners / social housing managers have contrasting interests from tenants as they will have to cost the renovation themselves. Additionally, homeowners have lower financial capacities, and contrary to social landlords, do not have access to large loans and accessible interest rates to help them cost the intervention.
- Information problems: while social organisations, mostly with in-house professional teams[4], have access to information on funding, on return of investment, on impact, etc., they stand in stark contrast with individual homeowners, who in general do not have this information.

[4] Housing managers, engineers, social workers, etc.

Questions that will be addressed in this section are:

I. How does the decision-making processes work in the case of multi-ownership apartment buildings?
II. How to coordinate a renovation in a social and affordable multi-ownership housing block setting?
III. How to lead a renovation project when the residents are solely occupant-owners?
IV. How to finance a multi-ownership building renovation?

Recommendations and Good Practices

I. How does the decision-making processes work in the case of multi-ownership apartment buildings?

The condominium model and the "unitary model" are the two main types of owner-occupation and joint ownership of a property. A unitary system is a type of apartment building where owners possess shares. In a condominium ownership the owners own their homes and collectively own the building's common areas or land. This is the most common system in Europe. In large buildings they are represented by a board or chairperson who has been elected and who makes decisions and/or select a co-ownership managing agency which is responsible for proposing, among others, renovation actions to be carried out. The owners themselves have the last say in the matter and bear the financial burden of the investment as well as general building upkeep. They vote for the works which are selected according to a majority or quorum rules which vary from country to country. Therefore, a large and thus expensive renovation of multi-ownership buildings is harder to be agreed upon by the owners.

An additional difficulty is experienced in buildings where owners-occupants do not have the majority. Indeed, the owners who do not live in the building will not directly benefit from the improvements and will be less likely to be willing to make a deep renovation. This falls into the problem of "split incentives" discussed in Chapter 5.3.

II. How to coordinate a renovation in a social and affordable multi-ownership housing block setting?

Coordinating a renovation in an affordable multi-ownership block, sometimes structured in a condominium, involves navigating the complexity of the decision-making process highlighted above.

The following steps can be used to strive to achieve consensus and buy-in from the occupants:

1. Understand clearly the governance of the building, this may involve communicating with potential homeowners' association or cooperatives from the outset.
2. Hire a mediator to help with the process[5]. If the process is done in-house consider providing mediation or conflict resolution training.
3. Develop a communication plan and start engaging with occupants and owners. This process is key to map individual needs / preferences, concerns and (financial) possibilities. It may include organising building meetings.

   The engagement can be based in working to convince co-owners of the advantages:

   a. For owners-occupants:
      i. the improvement of their living conditions: a higher comfort, both thermal and in terms of quality of life (depending on the works planned), a healthier home thanks to the air quality improvement and the reduction of humidity, and a safer building.
      ii. The financial advantages: reduced energy bills which will reimburse the investments made.
   b. For non-occupant owners:
      i. The improvement of the dwelling: with better living conditions for their tenants.
      ii. The financial advantages: a higher value of the renovated dwelling, the possibility to raise the rent, due to the dwelling's improvement, and the possibility to requiring the tenant to pay back a part of their energy savings (see chapter on the regulatory framework).
   c. For both:
      i. The regulatory obligations on the energy performance of dwellings. Indeed, some countries are progressively forbidding the leasing of low-performance dwellings or enabling tenants to require a decrease of their rent if the dwelling is badly insulated.
      ii. The financing solutions.
4. Create a committee with representatives from the different ownership types (if applicable). This committee would be instrumental in establishing a roadmap towards consensus.

[5] see corresponding chapter "Utilising mediation techniques".

5. Conduct an audit (needs assessment). This should inform the extent of the renovation and ensure the works follow a comprehensive, technical procedure. This is also key to underpin the negotiation process that will follow with the owners and occupants of the building in a climate of trust.
6. Create the renovation plan, including the intervention scope and schedule. Be prepared to present alternatives to the owners (e.g., less or more ambitious renovations). Consider the impact of the renovation on the daily lives of residents. Minimize disruptions, particularly during sensitive hours, and communicate construction schedules in advance. In either case, in a renovation disruption is to be expected and the expectations of the occupants should be managed with that in mind.
7. Clarify how costs will be distributed among owners, taking also into account shared or common areas.
8. Allow continuous interaction to allow constant communication, feedback and continually strive for consensus. During and after completion, joint walkthroughs with the key stakeholders will ensure a climate of openness so as to boost buy-in and satisfaction. During these walkthroughs any outstanding issue can be identified or addressed promptly.

III. How to lead a renovation project when the residents are solely occupant-owners?

In some countries, such as in central and eastern Europe, affordable housing is comprised mainly of occupant-owners. The housing systems in these countries were originally characterized by state ownership and a focus on providing housing as a social service. Post-socialist transitions have brought about the transfer of the housing to the occupants. In some cases, the owners have seldom the financial means to support increased energy bills, maintaining their dwellings or even slight building maintenance. Additionally, in these countries, energy costs may reach considerable amounts, which end up equating as unintended *de facto* rent. As a result, these families can fall into energy poverty situations. In these regions, the problem is then to achieve a consensus on the need to invest on renovating with a prior realisation that some owners possess scarce financial resources.

As this is mainly a coordination problem, an external organisation is usually an effective solution, especially if it is bestowed with financial incentives. The role of one-stop shops has already been put forward in the previous chapter. These initiatives can soften the coordination and financial burdens of individual owners. For multiple housing owners they simplify and streamline the complex process of retrofitting their dwelling. As the renovation process becomes more accessible and efficient, ensuring

the judicious use of available resources, including funding support, most barriers to renovation are considerable reduced.

Central and Eastern Europe

Estonia

Mustamäe

In Mustamäe, Tallinn, the district administration is responsible for the urban planning and encourages apartment associations and private apartment owners to carry out renovations. They overcame complex multi-ownership challenges through a comprehensive programme that included raising awareness on how to implement renovations, organisation of events to inform and motivate to initiate renovations, and visits to completed good practices.

Figure 3. Renovated building in the Mustamäe district (Tallin, Estonia).

IV. How to finance a multi-ownership building renovation?

Identifying financing solutions that accommodate the needs of each individual co-owner is key to ensure the renovation will be accepted and is financially sustainable for all (particularly those excluded from the loan market, over 65 years old or who already have a mortgage that is a burden on their debt capacity). State subsidies can be a first financing solution to look for. Some countries have specific

national subsidies for large and ambitious buildings renovation of multi-apartment blocks. Also, local public authorities usually fund specific renovations.

Collective loans are another option. In multi-apartment blocks, a collective loan could be set up. These are loans given to associations of co-owners, but in which only the co-owners who have subscribed to the loan participate, without debt solidarity. The loan is necessarily subject to a joint guarantee, which should be activated if a given borrower defaults. While difficult in practice, this approach does make it possible to access higher value loans, and disregard such parameters such as the individual's age or the individual debt ratio. In France these collective loans are common practice and managed by such banks as Caisse d'épargne and Domofinance as well as public third-party financing companies.

Lenders usually allow the loan to be passed on to the buyer when the property is transferred. This possibility is rarely used because it is more complex than the early repayment associated with the home concerned by the loan, but it does reassure the borrower who is taking on debt over an often-long period.

In almost all of Europe a homeowners' association is necessary to have a single entity representing the owners, to obtain a collective loan, to facilitate discussions with stakeholders and financers and to sign a unique contract with a company for the works. They are even mandatory in some European countries.

Finally, third-party financing could also be considered. In some countries, private or public organisations can carry out and back financially the energy renovation and then expect progressively the reimbursement by the borrowers, via annual charges paid by energy savings realised for example.

Further Reading and Online Resources

- Muczyński, A. Collective renovation decisions in multi-owned housing management: the case of public–private homeowners associations in Poland. J Hous and the Built Environ 38, 2105–2127 (2023). https://doi.org/10.1007/s10901-023-10025-1
- Ash Renovations (2023). "The Comprehensive Guide to Multi-Family Renovations". Ash Renovations Website. https://ashrenovations.com/blog/the-comprehensive-guide-to-multi-family-renovations/
- Mustamäe project. https://energy-cities.eu/mustamae-district-in-tallinn-a-typical-soviet-era-large-scale-estate-transformed-into-a-prestigious-neighbourhood/

6. Neighbourhoods of Tomorrow

Overview

Introduced by the European Commission in 2020, the New European Bauhaus (NEB) is a movement to collectively think the Residential Neighbourhoods of Tomorrow, guiding the transformation of our societies along three inseparable values: sustainability, aesthetics, and inclusiveness. This allows crossing bridges between different contexts and disciplines and building engagement at all levels. The NEB entails also the renovation of existing buildings, particularly affordable housing. The idea is that by renovating these buildings to be more energy-efficient and sustainable, they can help reduce energy consumption and emissions, while also improving the quality of life for residents. The NEB emphasizes social innovation in the processes of engaging and empowering communities in the design and renovation of affordable housing. This can include involving residents in the planning and decision-making process and providing them with training and resources to take an active role in the renovation of their homes.

Questions that will be addressed in this section are:

I. What will the Neighbourhoods of Tomorrow look like?

II. How will the New European Bauhaus programme support social innovation?

III. How will New European Bauhaus projects be initiated?

Recommendations and Good Practices

I. What will the Neighbourhoods of Tomorrow look like?

The NEB envisions neighbourhoods of the future as spaces that combine functionality, sustainability, and beauty. The initiative is aimed at fostering collaboration among architects, artists, scientists, and citizens to develop innovative solutions for the built environment. The vision included integrating nature into urban spaces, using sustainable materials, and promoting energy efficiency.

The initiative seeks to transform neighbourhoods into vibrant and inclusive communities where people could live, work, and connect with each other. It aimed to promote a holistic approach to design that takes into account environmental impact, social cohesion, and cultural identity.

The main goal of the NEB is to implement the European Green Deal and make the deal more familiar to people throughout Europe. It is also a long-term interdisciplinary plan on how to connect the world

of art, culture, and education by linking them to science and technology. New European Bauhaus can also complement the European renovation strategy by creating a climate-neutral building stock by upskilling the workforce to include green and recycling skills and by developing new job profiles, such as deep building renovation specialists, including professionals and craftsmen.

The NEB movement presents a policy framework for the challenges of smart cities. They are integrated with the overarching vision of contributing to the European Green Deal via modern and fashionable buildings and the Renovation Wave, with strong links to the Affordable Housing Initiative. These are particularly meaningful for cities, whose buildings are often more vulnerable to climate change[3]. The NEB supports innovations aimed at integrating sustainability, inclusiveness, and aesthetics into innovative solutions and products. The real strength of the New European Bauhaus in its work is primarily to address the environmental and social challenges in Europe. It needs solutions that reflect the diversity of voices within our communities. Local citizens need to be engaged to co-create solutions that work. Each initiative awarded through this program brings a unique approach to solving the problems of community members.

The NEB initiative promotes social innovation in affordable housing retrofitting by addressing the need for sustainable, inclusive, and accessible housing solutions in Europe. One of the initiative's key social innovation aspects is inclusiveness. The initiative aims to design and provide housing solutions that are accessible and inclusive to all members of society, including people with disabilities. This includes designing spaces that are physically accessible and considering the social and cultural needs of residents. Another aspect is community engagement. The initiative aims to involve community members in the design and delivery of housing solutions to ensure that they meet the needs and preferences of local residents. This approach helps to create a sense of ownership and pride among residents and ensures that housing solutions are socially sustainable.

II. How will the NEB support social innovation?

Social innovation plays a key role in the New European Bauhaus, as it aims to create solutions that are inclusive, participatory, and people-centred. This can be achieved by involving the community and residents in the design and decision-making process of the energy renovation of affordable housing. The NEB can promote the use of co-creation and co-design methods, where residents and community members are actively involved in the design and planning of the renovation project. This can help to ensure that the solutions are tailored to the specific needs and preferences of the community and that they are more likely to be accepted and adopted. Another option could be using digital tools and platforms to facilitate communication and collaboration between different stakeholders.

The NEB programme could potentially support a range of social innovations in the energy renovation of social housing. The NEB will provide funding, technical assistance, and other resources to help social housing providers and residents retrofit.

Community engagement

The NEB principles include community engagement, or the involvement of stakeholders in project planning to ensure that it is mindful of the needs and priorities of the residents. The programme promotes dialogue and collaboration between social housing providers, residents, and other stakeholders. Training and other support to social housing providers and residents can be provided on how to carry out the collaboration and outreach activities effectively.

Innovative financing models

The NEB programme includes innovative financing models that make it easier for social housing providers and residents to fund energy renovations. For example, the shared savings agreements model provides upfront funding for an energy renovation project, and the social housing provider pays back the financing over time from the energy savings generated by the project. Social housing providers issue bonds to finance energy renovation projects with environmental benefits, such as energy-efficient retrofits. Investors can purchase the bonds and receive a return on their investment. The programme provides funding, technical assistance, and other resources to help social housing providers and residents access these financing models.

III. How will NEB projects be initiated?

The European Institute of Innovation and Technology (EIT)[6] has announced funding for 18 projects that are dedicated to engaging citizens in solutions that transform living spaces. EIT Climate-KIC will work directly with six of these awardees, who will receive funding and tailored support to address local challenges through local solutions sustainably and inclusively. Following the New European Bauhaus mission and vision of working together to create beautiful and sustainable experiences, the EIT community is supporting the development of innovative and collaborative models of local initiatives to increase civic engagement and engage communities in the design of sustainable public spaces to have a lasting impact on the challenges faced at the local level. Each initiative is uniquely encouraging more climate-friendly habits, enabling citizens to implement new solutions to local problems and create sustainable practices that can transform cities and communities.

[6] Through EIT Community New European Bauhaus initiative.

The first winners of the EIT Climate-KIC are shown in the following table.

Table 5. Award-winning projects from EIT Climate-KIC support.

COUNTRY	PROJECT NAME	PROJECT ADVANTAGES
Portugal	Porto Think Tank	The project aims to renovate 24 Lavadouros (laundry rooms) in Porto from architectural artifacts historically associated with women by consulting with the local community and understanding how they can be transformed sustainably to be useful again.
Slovakia	Imagine Your City: Building Stronger Communities with Urban Co-design and NEB Principles	The project brings together residents of Košice and Ukrainian refugees to develop specific sustainable interventions to improve the area around the temporary refugee shelter. In addition, the project aims to share prototypes of scalable solutions that can address immediate problems and future challenges posed by the climate crisis.
Romania	CONNECT, Timisoara Community	Working throughout Timisoara, this project aims to integrate Ukrainian refugees, especially women, into the community by raising awareness of foreigners' role in urban development. This will be explored through gatherings that adopt artistic and social perspectives, using sustainable materials to connect art to history and create connections between communities.
France	Seaport Highlights Initiative: Reconnecting citizens with the beauty of the river	Seaport will use summer workshops and learning explorations on the river to design and activate the shipyard district, interweaving art and innovation to explore the common heritage of the Seine in Paris. The project will prioritize vulnerable groups such as young people and older adults and connect citizens directly with professionals and policymakers.
Spain	ASD-publics	Activating spaces with neurodiverse publics (ASD-publics) will aim to explore nature-based solutions to improve play areas for neurodiverse people, children with autism, and their families. The project will pilot co-creation with the ASD community to learn how to transform the space to create a better overall multi-sensory experience for that community.
Greece	Adama: Community solidarity for a sustainable future	Helping to understand local issues in Elusis through a participatory approach and co-designing them through sustainable solutions.

Further reading and online resources

Neighbourhoods are being planned and developed according to the principles of the New Bauhaus. You can check inspiring examples in the related EU site: https://new-european-bauhaus.europa.eu/get-inspired/inspiring-projects-and-ideas_en?page=0

Chapter 4 TECHNOLOGIES AND TECHNICAL APPROACHES

To double the annual energy renovation rate of residential buildings as foreseen in the Renovation Wave, there is a renewed push for mainstreaming the recent approaches such as digital, smart energy building management systems, prefabrication, low carbon materials, eco-design, renewable energy technologies and other innovations. The synergistic adoption of these advanced technologies represents a significant step towards a greener and more sustainable future in the built environment. By leveraging innovation, the construction sector will be better prepared to contribute substantially to the goal of decarbonising the building stock in the affordable sector.

However, technology providers face a number of integration and regulatory challenges, coupled with the necessary requirement from housing providers to keep costs down and continue to function as actual alternative to the real-estate market. The enhanced and ever-changing building performance standards add another layer of complexity. The latest revision of the Energy Performance of Buildings Directive (EPBD) sets a series of measures in order to achieve a decarbonised building stock by 2050.

Upgrading the local skills and competencies for introducing innovation in the technical aspects of renovation is key for tackling these challenges. Most of the innovation needed has already been invented and developed, however, knowledge and access at the local level is still low. Going beyond the business-as-usual building design and construction process as well as investing added resources in maintenance after renovation also hold considerable potential for improvements.

More recently, local actors are facing additional challenges related to the increase in construction material, energy prices and labour costs, the lack of data and data analysis to improve energy efficiency, waiting periods typically caused by legal and administrative obstacles (obtaining permits, miscommunication between stakeholders, delays in logistics, etc.) and discrepancies between ambitioned construction plans and actual conditions on the ground.

This chapter provides guidance and pathways for renovation of social and affordable housing at district level from the technical and technological perspective alone. Different solutions are proposed throughout this document to ensure that the renovation process is carried out with increased efficiency and economy of means, including industrialised approaches, circularity in renovation, energy efficiency and combination of different sources of energy, and digitalisation of social housing service provision, among others.