



SUPERSHINE

D1.2 Engagement strategy and social acceptance KPIs

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Technical references

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Abbreviations and Acronyms

Acronym	Description
CEC	Citizen Energy Community
ESCO	Energy Service Companies
FVG	Friuli-Venezia Giulia Region
GA	General Assembly
KPI	Key Performance Indicator
LH	Lighthouse
NEB	New European Bauhaus
PV	Photovoltaic
PVC	Polyvinyl Chloride
QoL	Quality of Life
TAM	Technology Acceptance Model
UTAUT	Unified Theory of Acceptance and Use of Technology

Keywords

Engagement strategies, Lighthouses, social acceptance, social indicators



Executive Summary

This document outlines the guiding principles and the approach employed in the development of engagement activities within the three LHs of the SUPERSHINE project, and the evaluation model used to assess the societal acceptance of renovation works, as well as the effectiveness of the engagement activities implemented. The three LHs involved in this endeavour are referred to *Riga – Latvia*, *Faelles Bo – Denmark* and *ATER – Trieste*.

The foundation of this document is rooted in data collected through initial joint questionnaires conducted in collaboration with LH representatives and other consortium partners. It also incorporates insights gained from preliminary engagement strategy modules and roadmap templates. These elements served as the building blocks for crafting specific engagement scenarios tailored to each LH. These scenarios encompass the entirety of the renovation project, spanning from the initial phases through to the post-work phase. To gauge the effectiveness of these engagement activities and measure the societal acceptance of the renovation works, a set of KPIs has been defined and documented. The KPIs, elaborated in detail towards the conclusion of this document within dedicated KPI cards, provide a structured framework for evaluating the success and impact of the engagement strategies across the LHs.



1. Introduction

The SUPERSHINE project represents a transformative and pivotal initiative that aligns closely with the objectives outlined in the European Green Deal by the European Commission. At its core, the project aims to address the pressing challenges related to energy affordability faced by households while simultaneously combatting the issue of energy poverty. The project is set to guide in a new era of sustainability within designated lighthouse districts. The central focus of the SUPERSHINE project revolves around the renovation of social housing, underpinned by a commitment to promoting multifaceted sustainability. This commitment encompasses several key facets, including the development of energy-efficient buildings, the integration of low-carbon mobility solutions, the establishment of smart grids, the enhancement of water and waste management efficiency, and the seamless integration of responsive technologies. The overarching goal is to optimize the utilization of resources, elevate overall well-being, and cultivate sustainable lifestyles.

SUPERSHINE'S approach centres around the renovation of three pilot lighthouse districts (*Faelles Bo-Denmark, Riga-Latvia and Ater Trieste-Italy*), guided by a methodology that integrates human-centred principles with technological and economic considerations. Rooted in the New European Bauhaus (NEB) principles, this approach places a strong emphasis on engaging a diverse range of stakeholders, including citizens, through inclusive participation initiatives. The final goal is to democratize the renovation process as much as possible by actively involving stakeholders, thus ensuring their participation in shaping the future of their communities.

1.1. Purpose of this document

This document provides a comprehensive overview for each designated LH, including a detailed engagement roadmap, its underlying rationale, and the corresponding evaluation framework. The engagement roadmaps and their associated evaluation frameworks, as outlined in this document, are essential components contributing to the overall success of the SUPERSHINE project. This document not only outlines the strategic plan for involving various stakeholders in the renovation process but also establishes a structured framework for assessing the effectiveness of these engagement strategies and measuring the level of acceptance regarding the renovation efforts. Within this context, the document also includes details of the selection process and methodology for key indicators that will evaluate both aspects.



1.2. Interdependencies with other WPs and tasks

The information encapsulated within this deliverable form the cornerstone for orchestrating a multitude of activities across WP2, WP3, WP4 and WP5. More specifically, the engagement strategies outlined within each LH as well as the KPIs that will be monitored throughout play an important role. The insights and outcomes generated from these initiatives serve as pivotal components, feeding the development and achievement of subsequent tasks within these WPs mentioned above.

1.3. Structure of the document

The core content of D1.2 is structured as follows:

- Chapter 2: A description of each LH context, providing insight into the foundational environment upon which each engagement strategy is built.
- Chapter 3: Explains how the SUPERSHINE engagement strategies have been aligned with the NEB compass framework, as well as outlines the various stages of engagement envisaged for this project.
- Chapter 4: The concrete engagement strategies developed in collaboration with the LH's representatives and the project coordinator is described in this chapter.
- Chapter 5: Explains the methodological framework and the developmental process employed for setting the assessment and evaluation of the societal acceptance of renovation works and the effectiveness of social engagement activities.

2. Understanding the LHs context.

The SUPERSHINE lighthouse districts embodies a forward-looking approach that integrates smart neighbourhood principles. This approach leverages methods and technologies rooted in resource efficiency, circularity, renewable energy, modular construction, smart living, and eco-design. Crucially, the entire process involves different stakeholders, positioning them at the forefront of decision-making. This resident-centric focus serves as a catalyst for social innovation and human-centred approaches, emphasizing when feasible co-design, co-development, and co-implementation. The SUPERSHINE lighthouse districts are strategically located in three cities and revolve around housing developments that are ready for transformation. In the upcoming chapter, we delve into a characterization of the lighthouse districts, building upon the insights derived from a survey conducted as part of Task 1.1 – *Exploration of Pilot Sites Socio-Economic Context*. The focus of this chapter is



based on the planned renovation works, providing an exploration of the key aspects and considerations that will shape these transformative initiatives. The contextual understanding of the lighthouses serves as the cornerstone for the formulation of effective engagement strategies, which will be explored in Chapter 4. Furthermore, it provides essential input for defining key performance indicators that will assess the impact and effectiveness of the interventions carried out within these districts.

2.1. Riga - Latvia

The SUPERSHINE Latvian lighthouse district “Āgenskalna priedes” is situated in Riga, a notable residential area within the city. This district is centrally located within the Āgenskalns borough and comprises twenty-four multi-apartment residential building dating back to the Soviet era (1959-1961), along with one newer multi-apartment residential building constructed in 2020. In total, the district offers 1,283 apartments designated for affordable housing, accommodating approximately 2,700 inhabitants. Within this context, "Āgenskalna priedes" has been identified by the municipality as a pilot area for renovation under its Sustainable Development Programme for 2021-2027, signifying a commitment to revitalizing the region. The Āgenskalns neighbourhood is characterized by its diverse land use, encompassing both low- and medium-rise structures of a mix of multi-apartment residential buildings, family housing areas, offices, retail spaces, public services, universities, schools, and kindergartens.

Recent years have witnessed significant development in Āgenskalns, marked by the construction of new residential housing and office projects, as well as a general revitalization of the area. Commercial zones have also seen expansion and growth. Moreover, the district and the surrounding neighbourhood enjoy excellent connectivity to other parts of the city, facilitated by an extensive network of city highways and streets.





Figure 1: Riga Buildings

Proposed interventions at the Riga lighthouse:

- **Building Envelope:** Proposed interventions for the building envelope focus on enhancing insulation and reducing heat loss. These include insulating external walls, the attic floor, foundations, and the cellar's roof. The installation of PVC windows and replacement of external doors will further improve energy efficiency and comfort.
- **Systems:** The heating system will undergo renovation, with the possibility of individual temperature regulation for improved comfort and energy savings. Insulation and replacement of the hot water system and tubes will contribute to energy efficiency. Additionally, the ventilation system will be renovated to ensure optimal air quality and energy efficiency.
- **Renewable Energy Sources:** The installation of rooftop PV panels is currently planned for communal energy use. Depending on the progress of energy community regulations, there may be an opportunity for individual use as well, which could further reduce energy costs and environmental impact.
- **Efficiency-Enhancing Systems:** The potential for heat-reclaiming ventilation systems is being examined, which could recover and reuse heat from wastewater or ventilation to improve energy efficiency.
- **Additional Building Changes:** Potential cosmetic repairs, both interior and exterior, are being considered, which will not only enhance the building's aesthetics but may also contribute to energy efficiency.

The residents in the district exhibit several distinct characteristics:

- **Average income slightly above the average in the city of Riga.**
- **Access to financial resources:** The municipality offers housing support to low-income residents to enable them to pay their bills for housing-related services.



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- **Employment:** Average unemployment rate of 2% (4.3% in the city of Riga)
- **Aged Over 45:** Average age of residents in the district, slightly above the average age in Riga city (43 years).
- **Mixed ethnic composition:** The district is composed of Latvian, Russian, Ukrainian, Belorussian, Polish, Jewish and Lithuanian.

2.2. Herning – Denmark

The SUPERSHINE Danish lighthouse district is in Herning Municipality (part of the Midtjylland Region). The residential demonstration buildings are in the south-eastern part of Herning in a mixed-use area (see Figure 1), which includes a large school, a shopping centre, residential villas and residential blocks.

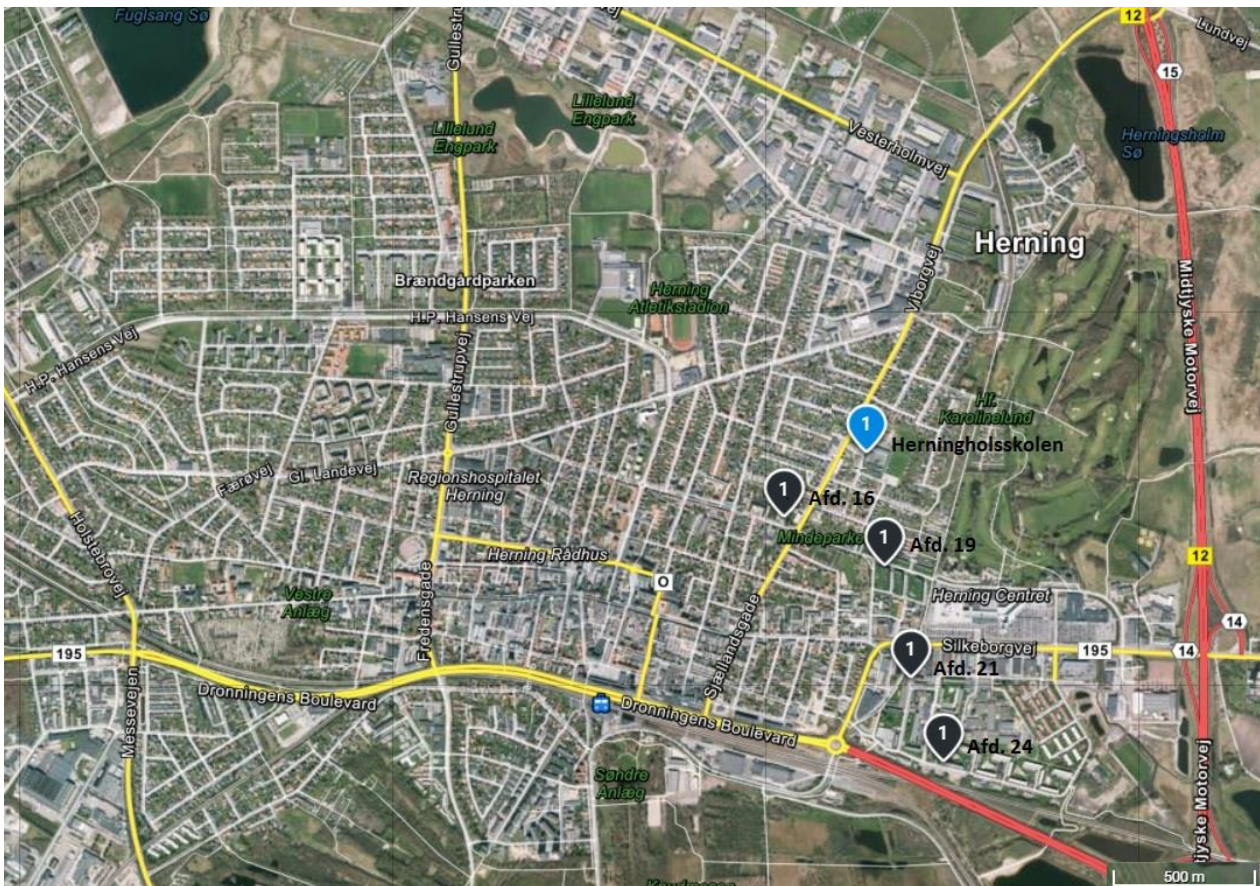
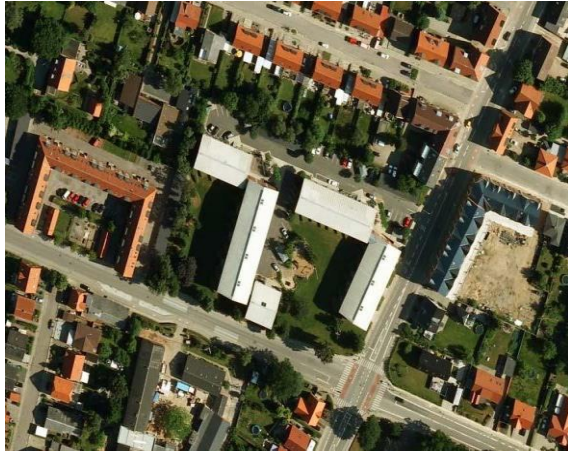


Figure 2: Pilot site of departments 16,19, 21 and 24

There are four residential buildings (identified as Afd. 16, 19, 21, and 24) that have been earmarked as ready-to-go renovation projects. These buildings collectively encompass 692 flats with a total area of 55,101 square meters. Notably, these buildings, constructed between 1954 and 1965, have not undergone any refurbishment to date. In terms of

renovation needs, while each building has its unique requirements, there is a general consensus that envelope renovation, insulation enhancements, and upgrades to energy systems are imperative. It's worth mentioning that none of these buildings currently utilize renewable energy generation methods.



FællesBo, Department 16 with totally 5 building blocks with similar construction etc. (grey roof)



Facade of the 3-floor building.

Figure 3: Faelles Bo's departments and buildings

Proposed interventions at the Faelles Bo lighthouse:

- **Building Envelope:** The proposed interventions for the building envelope focus on improving insulation and reducing heat loss. This includes replacing the roof, re-insulating the attic space, installing a new shell wall, insulating the facade, replacing basement stairs in conjunction with facade renovation, upgrading windows and doors, insulating the floor deck above the basement, and various other improvements. Additionally, sewage separation is planned to enhance environmental sustainability.
- **Interior Renovation:** The interior renovation aims to enhance the comfort and aesthetics of the living spaces. This includes the installation of a spacious bathroom with underfloor heating, a floor heating system, and preparations for a wash column. The kitchen is being revamped with options for an open or screened layout, sound insulation is being added to improve acoustics, and new doors, flooring, and electrical installations are planned.
- **Energy efficiency systems:** The maintenance of a biomass (energy-efficient heating source) cogeneration district heating system will be implemented. The installation of a rooftop PV system will also be considered for generating renewable electricity for common areas and potentially flat units.

The residents in the district exhibit several distinct characteristics:

- **Low income and financial capacity:** A significant portion of the residents have limited financial resources and capacity to undertake major expenses.
- **Low education level with good access to education:** While many residents have lower education levels, it's noteworthy that they have good access to educational opportunities, which could be leveraged for community development.
- **Access to local services:** The community benefits from convenient access to local services, which is a positive aspect for their daily living.
- **Social Support Requirement:** Approximately 50% of the residents require some form of social support, underlining the importance of community assistance programs.

Among the tenants in the district, specific statistics regarding Faelles BO tenants are as follows:

- **Single Person Households:** 68% of Faelles Bo' tenants reside in single-person households, with 12% of them being single parents.
- **Aged Over 60:** 26% of F tenants are over 60 years of age.
- **Limited education:** Half of the Faelles Bo' tenants have not received formal education.
- **Employed Residents:** 53% of Faelles Bo' tenants are part of the workforce.
- **Immigrant Population:** A significant portion, 20%, comprises immigrants, reflecting cultural diversity within the community.

2.3. Trieste – Italy

The SUPERSHINE lighthouse district comprises 8 buildings, each consisting of 4 storeys and 16 dwellings. The total floor area is 4,417 square meters, with a heating energy consumption of 131 kWh/m². There are plans in place to demolish and reconstruct these buildings with the aim of addressing the functional obsolescence resulting from the deteriorating condition of the structures and addressing technological inadequacies through a comprehensive set of redevelopment measures. The proposed renovation plan includes:

- Upgrading the utility networks.
- Improving road infrastructure and creating additional parking spaces.
- Restoring the surrounding green areas.
- Constructing housing units in compliance with current building standards. These new dwellings will be allocated to low-income tenants, taking into account their composition and age groups. Some of the technical aspects that will be considered are the following:



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- Replace components of envelope
 - Replace systems components (fuel type)
 - Installation of a rooftop PV, community owned wind power, renewable heat in district heat generation
 - Systems that reclaim the heat of wastewater or ventilation
- Ultimately, this development will be conducive to establishing an energy community, further reducing energy poverty among the local social housing residents.

The residents in the district exhibit several distinct characteristics:

- **Low income and financial capacity:** A significant portion of the residents have limited financial resources and capacity to undertake major expenses.
- **Access to financial resources:** The community benefits from income support measures at the state and local levels in addition to fixed rents based on income and discount on for energy bill payments.
- **Social Support Requirement:** The community could benefit from support services on energy efficiency issues and improving lifestyles.

Among the tenants in the district, specific statistics regarding Ater - Trieste tenants are as follows:

- **Single and two-person Households:** 49% of Ater-Trieste tenants reside in single-person households and 31% of tenants reside in two-person households.
- **Aged Over 50:** 57% of Ater-Trieste tenants are 50 or over 50 years of age.
- **Non-immigrant population:** A significant portion, 87% of the population, are Italian.

3. SUPERSHINE Engagement Framework

3.1. An introduction to the NEB Principles and values

The NEB Compass is a dynamic framework that fosters cross-sectoral collaboration, embraces interdisciplinary approaches, and prioritizes participatory processes at all levels. This initiative was launched in 2020 as a core part of the Green Deal and the primary objective is to transform the environmental transition through tangible local experiences. The NEB is founded on three fundamental values:



- **Beautiful** – A project becomes beautiful when its developers draw from collective sensitivity, intelligence and competences into creating a positive and enriching experience for people, beyond functionality.
- **Sustainability** - This value involves aspects such as the capacity to maintain or extend usability while also emphasizing its environmental dimension.
- **Togetherness** – The value of togetherness builds on the concept of inclusion, encompassing elements of equality, accessibility and affordability.

The NEB values are guided by the following three core principles:

- **Participatory processes** – This principle refers to the extent to which communities impacted by the project actively participate in both the decision-making and implementation stages.
- **Multi-level engagement** – This principle should facilitate a robust exchange of ideas and cooperation, both horizontally (among peers) and vertically (with entities operating on different scales), all working together to establish a collaborative framework.
- **Transdisciplinary approach** – NEB projects should aim to gather knowledge from diverse fields and practitioners from various domains.

This structured guideline¹ outlines three levels of ambition for each NEB value, with the minimum requirement being to implement level 1 for each working principle. Higher ambition levels indicate a more robust alignment and synergy between the project's values and working principles. The integration of the highest ambition levels for each value and working principle is expected to drive significant societal transformation and organizational change.

3.2. The integration of the NEB framework within the SUPERSHINE project

The methodological engagement approach employed in this project places a significant emphasis on the *Participatory Processes* working principle from the NEB Compass, positioning it as the central guiding force that permeates and defines the SUPERSHINE renovation process in each LH. The other working principles are a background check rather than a guiding mechanism.

The *Participatory Processes* principle revolves around the active and inclusive engagement of the communities impacted by the project throughout its various phases. It operates on the fundamental premise that civil society, along with representatives of other social groups referred to as 'stakeholders,' play integral roles within a participatory framework. The

¹ (Commission, 2022)



overarching objective is to foster equitable relationships in shaping and executing the project, with the ultimate goal of empowering local communities to oversee critical processes, outcomes, and even to establish self-governance for future initiatives in the long term. Within the *Participatory Processes* principle, three distinct levels of ambition are embedded:

- **Ambition I - Consultation:** At this initial ambition level, participation ranges from sharing information about the project to consulting stakeholders for input into decision-making.
- **Ambition II - Co-development:** This level places a strong emphasis on collaborative co-creation of solutions.
- **Ambition III - Self-governance:** It involves negotiation and discussions with identified stakeholders at all stages of the project lifecycle, including design, management, implementation, monitoring, and evaluation. Additionally, it empowers the community to hold decision-making authority and exercise project governance.

Regardless of the chosen ambition level, the participatory process, as defined within the NEB Compass framework, requires active involvement and engagement of stakeholders throughout the entire project lifecycle. This comprehensive process entails the identification of stakeholders and their integration through workshops, consultations, and various other forms of collaborative sessions.

3.3. Stages of engagement in SUPERSHINE

The approach employed for managing the stages of engagement in SUPERSHINE, as depicted in Figure 4, encompasses a breakdown into five distinct phases. These phases were identified through an interpretation of the renovation works to be undertaken within the scope of the project. It is worth noting that the stages of engagement have been tailored and customised to meet the specific requirements of SUPERSHINE, drawing from the framework initially introduced by the Home Upgrade Hub². This adaptation reflects a careful alignment of the framework within the unique needs and objectives of the project.

² (Home Upgrade Hub, 2022)



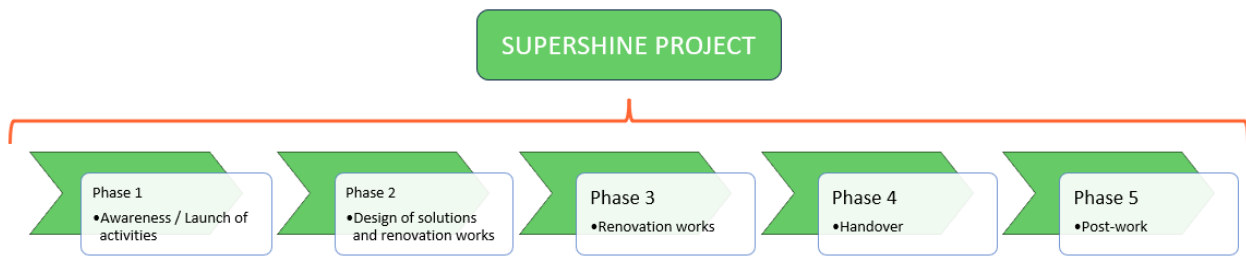


Figure 4: SUPERSHINE framework for stages of engagement

In what follows an explanation of the various phases of engagement is provided. It is important to bear in mind that not all three LH in SUPERSHINE necessarily includes all five phases outlined here; this serves as a broad overview. In subsequent sections, the specific stages pertinent to each LH will be discussed, tailoring this approach to their unique requirements. Additionally, it is crucial to acknowledge that there may be instances of overlapping engagement activities spanning across multiple stages, highlighting the dynamic nature of the process.

- **Phase 1 – Awareness and launch of activities:** The primary objective of this phase is to provide residents and other stakeholders with comprehensive information regarding the project, including its purpose, potential benefits and anticipated outcomes resulting from the renovation efforts. This phase assumes strategic significance, not only for informing residents but also for instigating a transformation in their lifestyle choices. Moreover, it plays a pivotal role in promoting the adoption of essential tools, fostering acceptance, and encouraging active engagement in the renovation process. Typically, this engagement phase is initiated in tandem with the beginning of the planning process.
- **Phase 2 – Design of solutions and renovation works:** The overarching objective of this phase is to actively engage residents and stakeholders to the greatest extent feasible. This often entails collaborative efforts, including co-designing solutions and renovation plans where applicable. In cases where direct involvement in co-design may not be viable, the aim is to create opportunities for stakeholders to provide feedback that can significantly influence the renovation process. It is important to note that during this phase it is important to ensure that stakeholders' collaboration and feedback is incorporated into the final design plans whenever feasible, demonstrating a commitment to their input.
- **Phase 3 – Renovation Works:** The overarching engagement aim in this phase is to cater to the needs of stakeholders who will experience direct impacts from the



renovation works. The objectives are 1) to offer various activities that facilitate the smooth adoption of the renovation efforts, ensuring that these stakeholders are well-supported throughout the process; and 2) to keep residents informed about the status of the renovation works.

- **Phase 4 – Handover:** The objective in this phase is to focus on aspects and engagement activities that contribute to community building. As the renovation works end, apartments will be assigned to residents. In this stage, it becomes essential to provide guidance on the utilization of any newly introduced or modified systems, such as energy-efficient appliances or building controls. Furthermore, it is imperative to share the outcomes and results of the renovation efforts with the community. *It is important to acknowledge that not all the LH will go through this phase as in some cases the residents do not change or need to be assigned.*
- **Phase 5 – Post-work:** The primary objective in this phase is to maintain high levels of resident satisfaction by actively encouraging them to share feedback on their experiences and the effectiveness of the renovations. It is crucial to place particular emphasis on gaining insights into how the success of this project can be replicated in other districts or areas.

4. Lighthouses Engagement Roadmaps

4.1. Developmental process of social strategies

The engagement roadmaps proposed by each LH in SUPERSHINE is founded on a participatory approach, involving collaboration with LH representatives and leaders as well as other consortium partners, to develop a strategy that is both distinctive and well-suited to the specific local context. The co-design process of each engagement roadmap unfolds across four different steps, each playing a crucial role in shaping the final strategy.



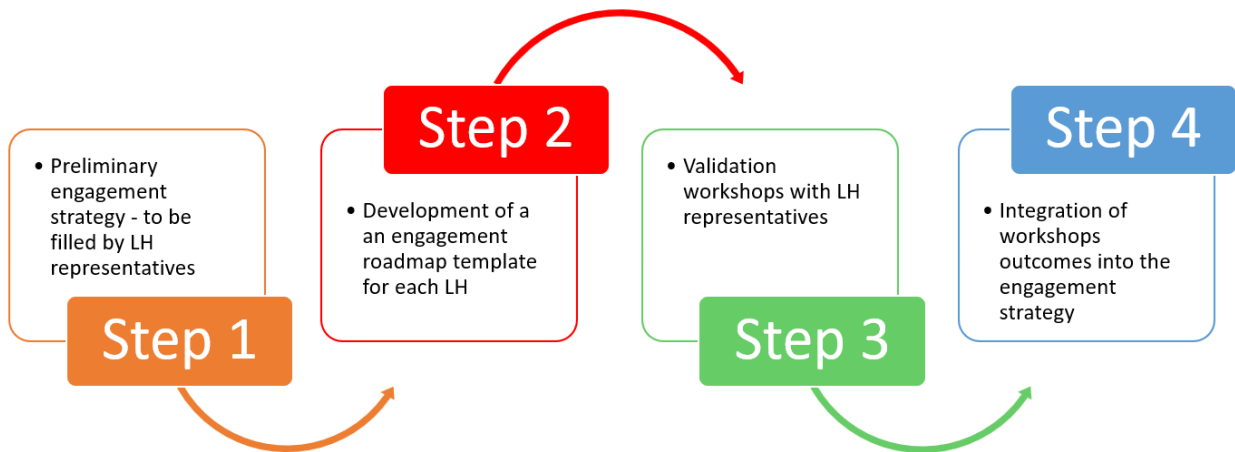


Figure 5: Development of LH's engagement strategies

- **Step 1:** In the initial step, a raw preliminary engagement strategy was shared with LH representatives, serving as a foundation for the subsequent design process. The document was pre-filled with some information gathered in the survey conducted in T1.1. This document served as a guiding framework, breaking down various key elements essential for the formulation of an effective engagement strategy. These elements included:
 - **Social objectives:** This section addressed the overarching goals and objectives of the engagement strategy, outlining the desired social outcomes and impacts it aims to achieve within the community.
 - **Stakeholders to engage with:** Identifying and understanding the range of stakeholders involved was another pivotal aspect covered.
 - **Potential Challenges:** Recognizing and anticipating potential challenges and barriers was essential for proactively addressing obstacles that might arise during the engagement process.
 - **Engagement Roadmap:** The document introduced an engagement roadmap that aligns with the various project phases outlined in Chapter 3.3. This roadmap provided a structured plan for how the engagement strategy would evolve and adapt throughout the different stages of the project.

By providing this preliminary document (see Annex 1) at the outset, it ensured that LH representatives had a clear foundation to initiate meaningful discussions and contribute their insights.

- **Step 2:** In this phase, we conducted an analysis of the preliminary engagement strategy with the inputs from each LH. As part of this analysis, we formulated a

specialized template (see annex 2) designed to be used during a co-design workshop with each LH. This template served the purpose of offering a visual representation during the workshop and enhanced comprehension of each LH's unique engagement plans.

- **Step 3:** These workshops were conducted during the first GA in York (November 2023). Throughout the workshops, we engaged in a collaborative process to validate the inputs provided by the LHs. Together, we designed innovative approaches to incorporate the NEB principles and explored the feasibility of increasing the engagement ambition levels of their strategies.
- **Step 4:** The results and insights obtained from the workshops held with each LH representatives were incorporated into the respective LH's engagement strategy. This integration not only enhanced the comprehensiveness and effectiveness of each LH's engagement approach but also ensured that the strategic objectives and principles discussed during the workshops were reflected and embedded in their engagement strategies moving forward.

Nevertheless, it is essential to highlight that each LH operates with a different agenda, leading to variations in their progress at the time of developing these engagement strategies. Consequently, the development process entailed the harmonization of different elements and the establishment of a cohesive path forward. This endeavour aimed to synthesize existing progress and set the foundation for advancing and building upon their unique starting points.

In what follows, a detailed presentation and explanation of each LH engagement roadmap is provided. These roadmaps have undergone scrutiny and received the endorsement of LH representatives. The aim of this presentation is to offer an in-depth understanding of the strategic initiatives, goals, and key elements that comprise the engagement strategies embraced by each LH.

4.2. Riga – Latvia

Social Objectives
Devising a sustainable model that can generate the necessary funds for energy-efficient renovations in the multi-apartment buildings
Raising awareness on energy efficiency issues and promoting renovations by explaining its benefits
Making available to residents the financial tools necessary to alleviate renovations costs. These tools would cut the cost of renovations by lowering the monthly fees

Stakeholders	Role



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SH1 – Tenants, residents and citizens	Beneficiaries of the interventions and agents of change. Tenants and residents of the buildings will be the main actors involved in engagement activities
SH2 – Designers, architects, engineers	These stakeholders are technically involved in the renovations. It is important to engage with them to understand the feasible margin for co-creation activities

Engagement Roadmap	
Phase 1: Awareness/Launch of activities	
Engagement tool	Neighbourhood festivity including: <ul style="list-style-type: none"> • Problem mapping, • Introduction of support services on energy efficiency and renovation, • Community building through numerous creative workshops, as well as collection of family recipes of the quarter's residents.
Goal	<ul style="list-style-type: none"> • First outreach and introduction of the project to the target area. • Community building. • Identification of residents' needs.
Stakeholders	SH1
Participants/Target	400
Timing	June 2023
Phase 2: Design of renovations works	
Engagement tool	Meeting
Goal	Presenting the vision of the Riga City Architect on the development of the neighbourhood and on financial alternatives to conduct the renovation. As well as presenting good praxis examples from both abroad and locally in Riga.
Stakeholders	SH1 and SH2
Participants/Target	40
Timing	October 2023
Phase 3: Capacity building	
Engagement tool	Seminar
Goal	Capacity building session I to improve overall knowledge of the renovation process of the building: <ul style="list-style-type: none"> ➢ Building renovation ➢ Available co-financing/grant schemes
Stakeholders	SH1 (apartments owners)
Participants/Target	80-120
Timing	December 2023
Phase 4: Ongoing support	
Engagement tool	Meeting – Individual consultations
Goal	Ongoing Capacity building sessions to monitor the progress and support further renovation works.
Stakeholders	SH1 (apartment owners)
Participants/Target	TBD
Timing	January 2024 – until the end of the project



D1.2 Engagement strategy and social acceptance KPIs

Engagement tool	Resident Advisory Group
Goal	To create an active group of residents to support renovation goals
Stakeholders	SH1 (apartment owners)
Participants/Target	TBD
Timing	Early 2024
Engagement tool	Workshop
Goal	Co-design of buildings and common green areas <ul style="list-style-type: none"> ➤ Potential elements to be co-designed regarding the building are the colour of the façade and window material. Internally, it could be possible to co-design the redistribution and renovation of non-liveable spaces (i.e. cellars)
Stakeholders	SH1 and SH2
Participants/Target	80
Timing	June 2024
Engagement tool	Questionnaire
Goal	Baseline scenario – Social Acceptance Analysis
Stakeholders	SH1
Participants/Target	120
Timing	June 2024
Engagement tool	Workshop
Goal	To discuss and validate funding instruments proposed within the WP4
Stakeholders	SH1
Participants/Target	30
Timing	September 2024
Phase 3: Renovation works	
Engagement tool	Questionnaires
Goal	Post-interventions scenario – Social Acceptance Analysis
Stakeholders	SH1
Participants/Target	TBD
Timing	Mid 2025
Engagement tool	TBD
Goal	To document (photos, videos, interviews etc..) the renovation works and disseminate the progress.
Stakeholders	TBD
Participants/Target	TBD
Timing	Early 2026
Phase 4: Post-work	
Engagement tool	TBD
Goal	Feasibility analysis for replication
Stakeholders	TBD
Participants/Target	TBD
Timing	2027



4.3. Herning – Denmark

Before delving into the engagement roadmap for the Herning LH it is crucial to grasp the significance of Danish social housing companies, as they play a pivotal role in transforming the renovation process into a participatory endeavour. The primary objective of these non-profit housing organizations in Denmark is to ensure the availability of suitable and affordable dwellings for those in need while also empowering tenants to influence and shape their living conditions. Danish housing organizations are legally mandated to engage in social activities, and they establish collaborative partnerships with municipalities to achieve this goal. Social initiatives are at the core of Danish non-profit housing organizations' missions, aiming to enhance the quality of life within the built environment beyond physical aspects.

It is important to note that all housing organizations in Denmark operate under a tenant democracy model. Each housing estate conducts annual tenant meetings to elect its tenant board, and these individual estate boards appoint representatives who collectively elect a board for the entire organization. The majority of board seats are held by tenants, with some representation from municipalities. Therefore, the tenant democracy system requires tenant approval for each renovation work within SUPERSHINE. In this regard, the tenant democracy model integrated into the Danish social housing system has enabled the attainment of the highest ambition level of engagement within the NEB framework. In this model, tenants are not merely occasional participants, but integral decision-makers involved from project inception to its completion ³.

The following engagement roadmap sets itself apart from the other two LHs by featuring four distinct lines of actions. Thus, for each line of action, there is an engagement roadmap presented.

Objectives – Lines of action
PV + battery-packages
Energy (heat) management
Biodiversity – rewilding of nature
Reuse and recycling of building materials

Stakeholders	Role
SH1 – Faelles Bo Social Housing Company	Company owner of buildings and responsible for developing the renovation plans together with the board of the tenants for each department. FællesBo is a tenants' cooperative, so this SH is a key channel to reach the tenants.

³ (Danish Federation of Non-Profit Housing Providers, 2023)



D1.2 Engagement strategy and social acceptance KPIs

SH2 – Herning Municipality	The municipality has accepted the building renovation activities, and it is a cooperation partner in the pilot activities.
SH3 – Tenants, residents and citizens	Key stakeholder group, also seen in the context of FællesBo being a tenants' cooperative. The tenants are organized with independent boards of tenants for each department making the decisions for the building renovation project. The board of tenants for each department decides the activities to be carried out for their department having their own independent economy.
SH4 – Business/Start-ups- SMEs, local business, industry associations	FællesBo is supported by consulting companies in developing the renovation plans. Other businesses can potentially play an important role in developing and implementing solutions
SH5 – NGOs	They can act as an important cooperation partner. Local sustainable energy and environmental groups and individuals can play an important role in supporting the wilderness and recycling activities.
SH6 - Investors	A key cooperation partner in developing new financing solutions, e.g., in crowdfunding, ESCOs, etc.

Engagement Roadmap – Common to all lines of actions	
Phase 1: Awareness/Launch of activities	
Engagement tool	Meeting + workshop
Goal	To reach all tenants in the pilot apartments and reach a minimum of 50% support to conduct the renovation work
Stakeholders	SH3, SH1, SH5,
Timing	Ongoing (December 2023)
Engagement tool	Questionnaires
Goal	Baseline scenario – Social Acceptance Analysis
Stakeholders	SH3 and SH1
Timing	Early 2024
Phase?	
Engagement tool	Questionnaires
Goal	Post-interventions scenario – Social Acceptance Analysis
Stakeholders	SH1 and SH3
Timing	Will depends on renovation progress and SUPERSHINE project's timeframe. Thus, it is not possible to define either the timing or the phase of the renovation project this will be conducted.
Phase 4: Post-work	
Engagement tool	TBD
Goal	Feasibility analysis for replication
Stakeholders	SH1, SH3, SH5, SH2



D1.2 Engagement strategy and social acceptance KPIs

Timing	TBD
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Engagement Roadmap – PV + battery packages	
Phase 2: Design of renovation works	
Engagement tool	Meeting and workshop
Goal	To define the tenant's interaction with the energy system
Stakeholders	SH1, SH3, SH4
Timing	June- September 2023
Engagement tool	Meeting
Goal	Approval for solar cells
Stakeholders	SH1, SH3
Timing	September 2023
Engagement tool	Meeting
Goal	Selection of a financial tool
Stakeholders	SH1, SH3, SH6
Timing	October 2023
Engagement tool	Meeting
Goal	To discuss how power savings are to be distributed among the residents
Stakeholders	SH1, SH3,
Timing	Ongoing (December 2023)

Engagement Roadmap – Energy (Heat) Management	
Phase 1: Awareness/ Launch of activities	
Engagement tool	Meeting
Goal	To inform about the new heat management system
Stakeholders	SH1, SH3
Timing	October 2023
Engagement tool	Meeting
Goal	To discuss how to work with heat management in FaellesBo's departments in order to save heating bills
Stakeholders	SH1, SH3
Timing	Ongoing (December 2023)
Phase 2: Design of renovations work	
Engagement tool	Meeting
Goal	To select case departments for heat management
Stakeholders	SH1, SH3
Timing	Ongoing (December 2023)
Phase 4: Handover	
Engagement tool	Training session
Goal	To foster more sustainable behavioural patterns on energy management



D1.2 Engagement strategy and social acceptance KPIs

Stakeholders	SH1 and SH3
Timing	TBD

Engagement Roadmap – Biodiversity	
Phase 1: Awareness/ Launch of activities	
Engagement tool	Meeting
Goal	To receive support and inspiration from external experts
Stakeholders	SH1, SH3, SH5, SH2
Timing	Ongoing (December 2023)
Phase 2: Design of renovation works	
Engagement tool	Meeting
Goal	Biodiversity issues
Stakeholders	SH1, SH3 and SH2
Timing	November 2023
Phase 3: Renovations work	
Engagement tool	Capacity building session
Goal	To foster biodiversity in the district
Stakeholders	SH1, SH3 and SH5
Timing	TBD
Engagement tool	Dissemination of project case
Goal	Engaging and disseminating information
Stakeholders	SH1, SH3, SH2, SH5
Timing	All 2024
Phase 4: Handover	
Engagement tool	Training session
Goal	To foster more sustainable behaviours regarding biodiversity
Stakeholders	SH1, SH3, SH2
Timing	TBD

Engagement Roadmap – Reuse and Recycling of building materials	
Phase 3: Renovations work	
Engagement tool	Capacity building session
Goal	Recycling and reuse of materials
Stakeholders	SH1, SH3 and SH5
Timing	TBD
Phase 4: Handover	
Engagement tool	Training sessions
Goal	To foster more sustainable behaviours regarding recycling of materials
Stakeholders	Sh1, SH3, SH2
Timing	TBD



4.4. Trieste - Italy

Social Objectives
Making available to inhabitants in low socio-economic conditions the tools necessary for energy saving. These tools would cut the cost of energy and free up income for other primary needs.
Fostering the creation of communities of inhabitants and posing the foundation for the launch of an energy community.
Raising awareness on energy efficiency issues and improving lifestyles.

Stakeholders	Role
SH1 – ATER Trieste	Social housing company leading the project.
SH2. Municipality of Trieste /Local Health Agency	Local authorities supporting the development of the project: <ol style="list-style-type: none"> 1. Through MA project, for the social and health aspects 2. Trough PAESC project for public building energy savings 3. With a specific agreement for the infoldment of the buildings owned by the municipality in the CEC. 4. Involvement of district governance
SH3. FVG Region	Regional authority supporting the development of the project. <ol style="list-style-type: none"> 1. Involvement of expert from the Region at CEC working tables. 2. As investor, the FVG Region is in charge of the monitoring of the investment 3. Moreover a regional institution ARPA https://www.arpa.fvg.it/, should be engaged in the dissemination of the results.
SH4. Public utilities providers	Energy providers to the district. <ol style="list-style-type: none"> 1. Involvement in PPP project 2. Involvement in CEC as utilities providers
SH5. Tenants, residents and citizens	<ol style="list-style-type: none"> 1. The residents of the district will be involved in the co-design of the external area and the new services to be activate. 2. Also the community of a social housing complex close to the pilot district will be involved. 3. The target groups should be defined: elderly, young family, persons who lives alone, etc. 4. involvement of small shops and small businesses in the area
SH6. Students/schools and teachers	Beneficiaries of the interventions and agents of change. There are 2 institutes in the area, one Kindergarten, and one primary school. The engagement of



D1.2 Engagement strategy and social acceptance KPIs

	students will support learning and act as a relevant channel for reaching their parents and families.
SH7. Artists	Photographic research project
SH8. Designers, architects, engineers	Involved in the construction of the new buildings. They will be involved in the participation sessions with the inhabitants of the district. University students should be invited to sessions to give a different point of view.
SH9. Policymakers/experts	Expert in social innovations should be engaged for the co-design sessions. The policymaker function is covered by the FVG Regional institution ARPA https://www.arpa.fvg.it/ , should be engaged in environmental analysis before and after interventions.
SH10. NGOs and voluntary	Facilitating the connection with district residents. Some voluntary associations are involved in MA project, and the new MA to be created in Boito district will involve all the association operating in the district.

Engagement Roadmap

Phase 1: Awareness/Launch of activities

Engagement tool	Social/Public event
Goal	Social event to inform about the project within the community: to explain the masterplan of the intervention and the roadmap of the stakeholder's engagement and to kick off of the co-design activities
Stakeholders	SH1, SH2, SH3, SH4, SH5, SH6, SH9 and SH10
Timing	April – July 2024

Engagement tool	Social / Public event
Goal	Social event to inform about the project within the community: to explain the result of the co-design activities to the SH
Stakeholders	SH1, SH2, Sh3, SH4, SH5, SH6, SH9 and SH10
Timing	April – July 2025

Phase 2: Design of renovations works

Engagement tool	Public workshops using cards, vision factory, maps.
Goal	Co-design some exterior aspects of the new buildings: external appearance of buildings, murals.
Stakeholders	SH1, SH2, SH3, SH5, SH6, SH7, SH8, SH9 and SH10
Timing	July – December 2024

Engagement tool	Questionnaire
Goal	Baseline scenario – Social Acceptance Analysis
Stakeholders	SH2, SH3, SH5, SH6, SH8, SH9
Timing	July – December 2024

Engagement tool	<ul style="list-style-type: none"> Public workshops using cards, vision factory, maps.
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D1.2 Engagement strategy and social acceptance KPIs

	<ul style="list-style-type: none"> Innovation challenge for kids (i.e. Children can draw how they would like to experience the green areas). Photographic research (artists + schools)
Goal	<ul style="list-style-type: none"> Co-design the green areas around the building. Co-design pedestrian and cycle paths. Defining maps of the community with kids, teachers, inhabitants and other SH.
Stakeholders	SH1, SH2, SH3, SH5, SH7, SH6, SH8, SH9 and SH10
Timing	July – December 2024
Engagement tool	Public workshops, questionnaires
Goal	Co-design the type of services that residents/community would like/need in the through the Habitat Microaree project.
Stakeholders	SH1, SH2, SH3, SH5, SH6, SH8, SH9 and SH10
Timing	July – December 2024
Engagement tool	Public workshops, questionnaires
Goal	Co-design services for residents in the area (i.e. walking bus for children, market, needed shops, places of aggregation etc...)
Stakeholders	SH1, SH2, SH3, SH5, SH6, SH8, SH9, SH10
Timing	July – Decembre 2024
Engagement tool	Public workshops, questionnaires
Goal	Co-design of CEC
Stakeholders	SH1, SH2, SH3, SH4, SH5, SH6, SH8, SH9, SH10
Timing	TBD 2025
Phase 3: Renovation works	
Engagement tool	Tenants training plan: tools, paths, actors. Graphic instruction manuals
Goal	Training programme for future tenants
Stakeholders	SH1, SH2, SH3, SH4, SH5, SH6, SH8, SH9, SH10
Timing	TBD 2025
Engagement tool	Periodic Report on project status (web site)
Goal	Information on project status.
Stakeholders	SH1, SH2, SH3, SH4, SH5, SH6, SH8, SH9, SH10
Timing	TBD 2025-2026
Phase 4: Handover	
Engagement tool	Community day
Goal	Community building
Stakeholders	SH1, SH2, SH3, SH5, SH6, SH9
Timing	TBD 2026
Engagement tool	Public workshop with the assistance of sociologists and psychologists



Goal	"Living assistance" project: program aimed at new tenants to prevent and face episodes of incivility that affect neighbourhoods and structures.
Stakeholders	SH1, SH2, SH3, SH5, SH6, SH10
Timing	TBD 2026
Engagement tool	Opening of the district headquarters and starting of services
Goal	Project MA new district headquarter
Stakeholders	SH1, SH2, SH3, SH5, SH6, SH11
Timing	TBD 2026
Phase 5: Post-work	
Engagement tool	Questionnaires
Goal	Post-interventions scenario – Social Acceptance Analysis
Stakeholders	SH2, SH3, SH5, SH6, SH8, SH9, SH11
Timing	TBD 2026
Engagement tool	Community advisory group
Goal	To act proactively on any building issue to keep satisfaction high
Stakeholders	SH1, SH2, SH4
Timing	TBD 2026

5. Measuring Social Acceptance and engagement

As part of Task 1.2, the project's impact on the social acceptance of the proposed interventions as well as social engagement will be measured throughout the project. To achieve this, a comprehensive approach to measure specific KPIs have been devised. The methodology behind the selection of these KPIs employs both top-down and bottom-up perspectives. From a top-down perspective, it has been drawn upon well-established literature. Existing sources provide a solid foundation for defining relevant KPIs. Conversely, the bottom-up approach entails aligning the KPIs with the project's technical and social objectives to ensure their relevance and effectiveness. This alignment has been further reinforced through a consultation with LHs representatives. By synthesizing the top-down literature and the bottom-up information and feedback, we have carefully selected KPIs that align with the project's goals.



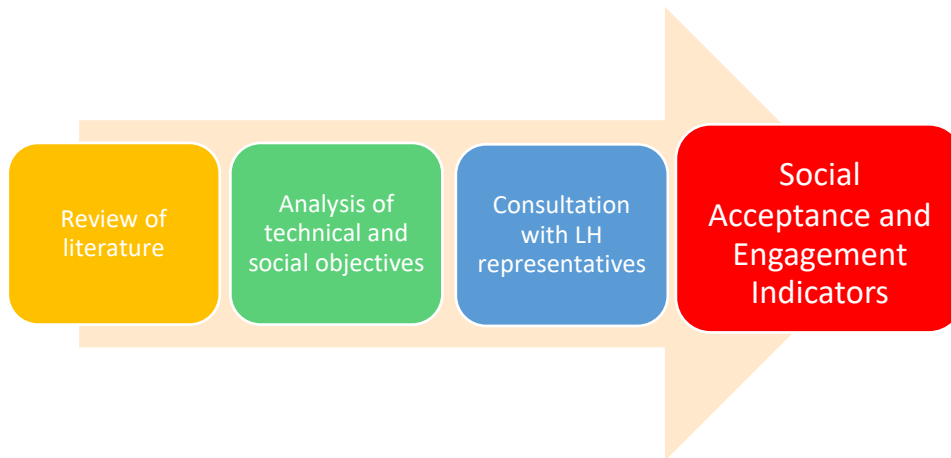


Figure 6: Development process for the selection of KPIs.

5.1. Selection of indicators

The chosen top-down strategy involved a review of well-established Technology Acceptance Models (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT)^{4, 5, 6, 7, 8, 9} particularly within the context of urban regeneration. These models encompass various aspects, such as Quality of Life (QoL), Attractiveness, Perceived Benefits (including elements like comfort and well-being), Aesthetic and Social Image, and Perceived Usefulness. The primary objective of this approach was to harness the insights provided by established theories and models to better understand how individuals and communities embrace solutions of diverse natures. To gain valuable insights into this specific area, an extensive search was conducted across various databases. This thorough exploration ensured that the selected indicators were firmly rooted in both theoretical frameworks and empirical research findings. However, due to its primary focus on studying the acceptance of information systems, these models have inherent limitations when applied in other domains. Therefore, it has been essential to review and introduce new indicators that can capture the unique attributes of the SUPERSHINE project.

The introduction of new indicators is supported by also adopting the bottom-up approach. In this sense, the bottom-up approach adopted entailed a comprehensive analysis of both the planned technical solutions and the social engagement roadmaps. These activities were meticulously catalogued and systematically categorized based on their nature, scope, and intended outcomes. This process provided a deeper understanding of the project actions at technical and social level, ensuring that the KPIs developed closely align with the unique

⁴ (Davis, 1989)

⁵ (Rosli, 2020)

⁶ (Hewavitharana T, 2021)

⁷ (Boesiger, 2018)

⁸ (Quijano, et al., 2022)

⁹ (Jianhong, Jiaqi, & and Fabin, 2020)

goals and characteristics of all LHs. This alignment has been instrumental in optimizing the relevance and effectiveness of the evaluation framework. To further enhance the relevance, effectiveness, and alignment of the KPIs with both the overarching project objectives and the specific goals of LHs, a collaborative and consultative process was conducted to validate the list of KPIs. This critical step involved organizing a workshop during the General Assembly held in November 2023 and mentioned above in section 4.1

5.2. Assessment and Monitoring of KPIs

The assessment and monitoring of KPIs in SUPERSHINE depend on the specific type of indicators to be monitored and assessed. Therefore, because of the inherent differences between social acceptance and engagement indicators, these two sets of indicators follow different evaluation models as explained in Figure 6 and 7. It is essential to emphasize that monitoring these KPIs may necessitate the creation of questionnaires, feedback forms, or reporting templates. The development of these data collection tools as well as the facilitation of the data collection and the subsequent analysis within the SUPERSHINE project will be conducted during the second phase of T1.2 (M15 to M35).

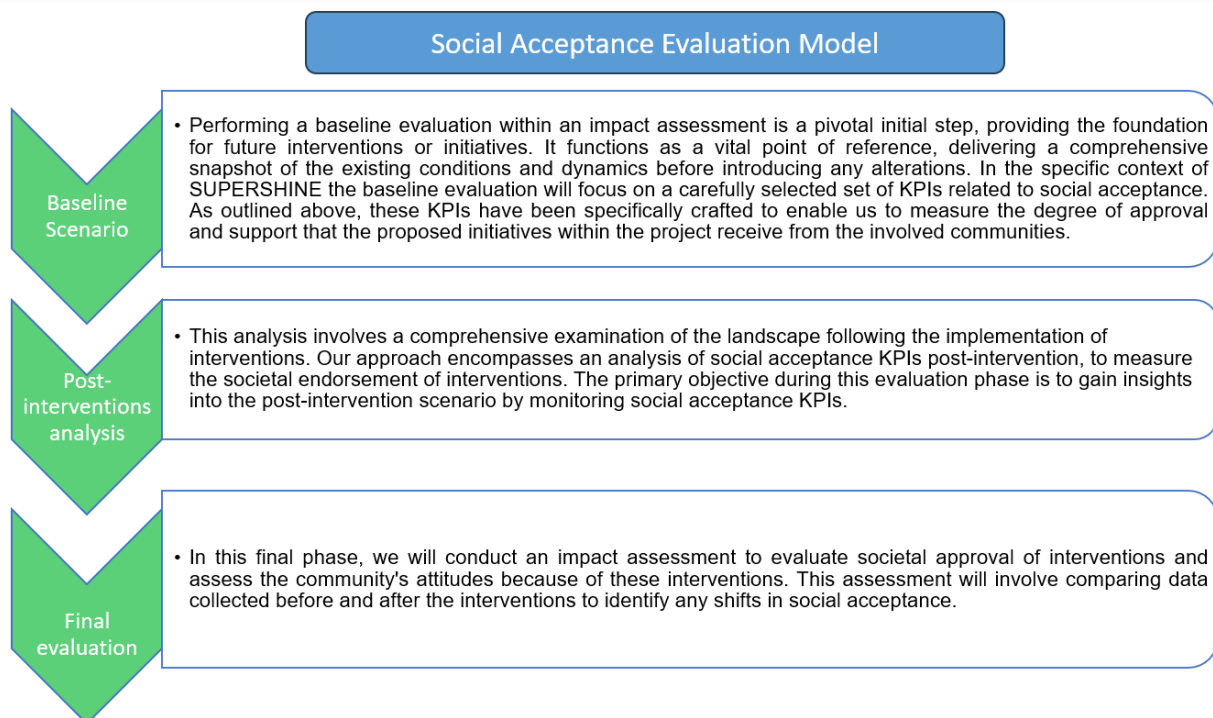


Figure 7: Social Acceptance Evaluation Model

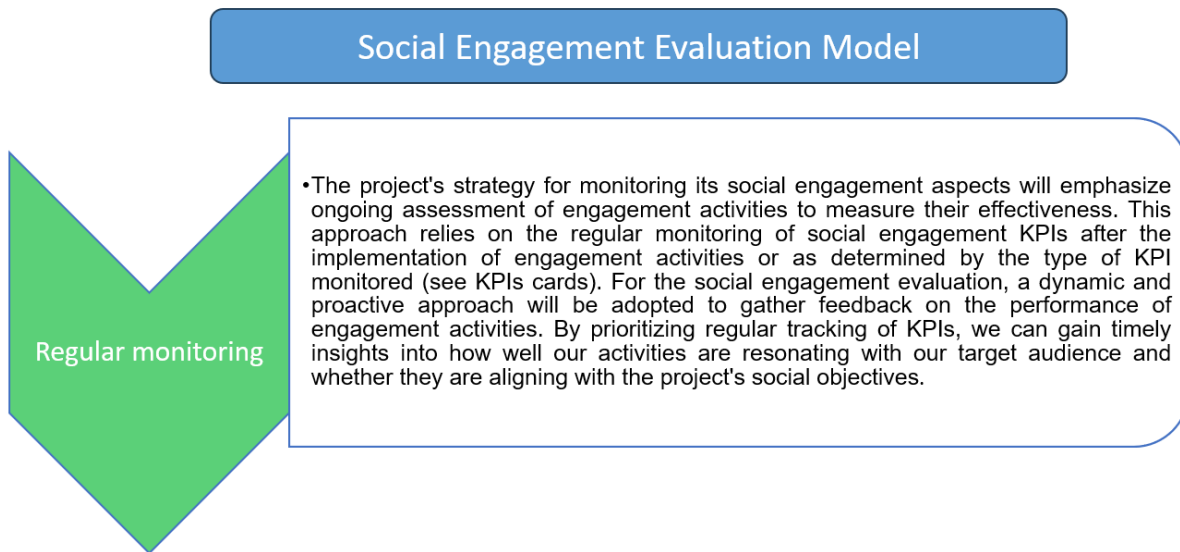


Figure 8: Social Engagement Evaluation Model

5.3. List of Key Performance Indicators

In this section, you will find a presentation of all the social acceptance and engagement indicators through KPI cards. These cards include detailed information such as the indicator's description, its association with the NEB values, the formula used for calculation, the unit of measurement, the target, and the data collection interval. Additionally, a summarized table featuring all the indicators is provided below.



List of Social Engagement indicators	List of Social Acceptance Indicators
<ul style="list-style-type: none"> • KPI1.SE Stakeholder outreach • KPI2.SE Stakeholder groups • KPI3.SE Engagement Activities • KPI4.SE Capacity building activities • KPI5.SE Capacity building overall usefulness • KPI6.SE Capacity building knowledge transfer • KPI7.SE Level of engagement reached 	<ul style="list-style-type: none"> • KPI1.SA Changing Attitudes • KPI2.SA Awareness • KPI3.SA Perceived value for money • KPI4.SA Perceived usefulness • KPI5.SA Quality of Life • KPI6.SA Perceived ease of use • KPI7.SA Social Image • KPI8.SA Aesthetic Value • KPI9.SA Perceived Comfort • KPI10.SA Bill saving • KPI11.SA Sense of belonging • KPI12.SA Green Areas

Table 1: List of Social Engagement and Social Acceptance Indicators

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Engagement	
Stakeholder outreach	KPI Code	KPI1.SE
	NEB value associated	Together
	Definition	This KPI measures the number of SHs engaged in the LH for each activity conducted (e.g., co-design sessions, capacity building sessions, community events) according to the target set
	Formula	$(\text{Number of SHs participating in the engagement activity} / \text{target set for that activity}) * 100$
	Unit of Measurement	%
	Target	100%
	Data collection interval	During each activity

Field of Action	Social Aspects	
Performance	Effects on community & social environment	



D1.2 Engagement strategy and social acceptance KPIs

Evaluation Procedure		Social Engagement
Stakeholder groups	KPI Code	KPI2.SE
	NEB value associated	Together
	Definition	This KPI assesses the participation of all stakeholders' groups that the activity aims to engage in the event. For instance, if a workshop involving tenants, students and local association has been planned, it is important to verify that all stakeholders' groups have participated.
	Formula	$(\text{Number of stakeholders groups engaged} / \text{total number of stakeholders groups targeted by the engagement activity}) * 100$
	Unit of Measurement	%
	Target	100%
	Data collection interval	During each activity

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Engagement	
Engagement Activities	KPI Code	KPI3.SE
	NEB value associated	Together
	Definition	This indicator measures the number of engagement activities by type and level of engagement, according to the target set. Engagement activities may include meetings, consultations, workshops and co-design sessions.
	Formula	$(\text{Number of engagement activities by type and level of engagement} / \text{Number of activities planned in each LH}) * 100$
	Unit of Measurement	%
	Target	100%
	Data collection interval	Yearly

Field of Action	Social Aspects
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D1.2 Engagement strategy and social acceptance KPIs

Performance	Effects on community & social environment	
Evaluation Procedure	Social Engagement	
Capacity building activities	KPI Code	KPI4.SE
	NEB value associated	Together
	Definition	Number of SHs reached by capacity building activities or material prepared
	Formula	Count of SHs reached with capacity building material and training
	Unit of Measurement	Number
	Target	TBD
	Data collection interval	After each capacity building session

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Engagement	
Capacity building overall usefulness	KPI Code	KPI5.SE
	NEB value associated	Together
	Definition	This indicator measures the overall usefulness regarding the capacity building material/session shared through feedback forms (online/offline)
	Formula	A five-point Likert Scale: Not all useful -1 - 2- 3 -4-5 Very useful
	Unit of Measurement	Mean average of results or % of respondents for each score
	Target	Around 4 or above
	Data collection interval	After each capacity building session

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Engagement	



D1.2 Engagement strategy and social acceptance KPIs

Capacity building knowledge transfer	KPI Code	KPI6.SE
	NEB value associated	Together
	Definition	This indicator measures the increased knowledge after training sessions. It could be referred to different topic areas, depending on the training session
	Formula	Different questions depending on topic. A five-point Likert Scale: Strongly disagree 1 -2 - 3 -4-5 Strongly agree
	Unit of Measurement	Mean average of results or % of respondents for each score
	Target	Around 4 or above
	Data collection interval	After each capacity building session

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Engagement	
Level of engagement reached	KPI Code	KPI7.SE
	NEB value associated	Together
	Definition	This indicator assesses the level of engagement reached with each stakeholder group at the end of the participatory process, according to the initial engagement plan. This indicator will consider the engagement strategy developed within WP1 (NEB Ambition level 1, 2, 3) where for each stakeholder there is a desirable level of engagement to be reached.
	Formula	Count of activities and SHs that have reached the initially planned level of engagement after the participatory process.
	Unit of Measurement	Number
	Target	TBD
	Data collection interval	Yearly

Field of Action	Social Aspects
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D1.2 Engagement strategy and social acceptance KPIs

Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Changing attitudes	KPI Code	KPI1.SA
	NEB value associated	Sustainability
	Definition	The indicator assesses whether there has been an attitude change on energy patterns (or other items) as a consequence both of engagement activities and the project as a whole
	Formula	A five-point Likert scale: Strongly disagree (not at all likely) – 1 – 2 – 3 – 4 – 5 – Strongly agree (very likely). 2 Different questions/options: 1) in feedback forms after engagement activity 2) in the social acceptance questionnaire
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after the renovations)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Awareness	KPI Code	KPI2.SA
	NEB value associated	Together
	Definition	This indicator relates to the level of awareness of residents of the LH area on project interventions and benefits
	Formula	2 Questions: one on interventions and one on benefits A five-point Likert scale: Not at all aware – 1 – 2 – 3 – 4 – 5 – High awareness.



D1.2 Engagement strategy and social acceptance KPIs

	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after the renovations)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Perceived value for money	KPI Code	KPI3.SA
	NEB value associated	Together
	Definition	This indicator evaluates whether citizens perceive the interventions worth the investment
	Formula	A five-point Likert scale: Not at all – 1 – 2 – 3 – 4 – 5 – Very much
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after the renovations)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Perceived usefulness	KPI Code	KPI4.SA
	NEB value associated	Together
	Definition	This indicator measures the perception of citizens on how useful the interventions are.
	Formula	A five-point Likert scale: Not useful at all – 1 – 2 – 3 – 4 – 5 – Very useful.
	Unit of Measurement	Mean average of results or % of respondents for each score)



D1.2 Engagement strategy and social acceptance KPIs

	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Quality of life	KPI Code	KPI5.SA
	NEB value associated	Beauty
	Definition	This indicator measures to what extent citizens perceived the interventions as a benefit to their quality of life (with reference to the experience in the buildings, but also the green areas).
	Formula	A five-point Likert scale: Not at all – 1 – 2 – 3 – 4 – 5 – Very much.
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
User experience: Perceived ease of use	KPI Code	KPI6.SA
	NEB value associated	Beauty
	Definition	This indicator evaluates the perception of citizens on the ease of use of technologies deployed (i.e. control panels, thermostats, etc..)
	Formula	A five-point Likert scale: Not at all – 1 – 2 – 3 – 4 – 5 – Very much
	Unit of Measurement	Mean average of results or % of respondents for each score)



D1.2 Engagement strategy and social acceptance KPIs

	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Social Image	KPI Code	KPI7.SA
	NEB value associated	Beauty
	Definition	This indicator is about citizen's perception regarding their community social image
	Formula	A five-point Likert scale: Very dissatisfied – 1 – 2 – 3 – 4 – 5 – Very satisfied
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Aesthetic value	KPI Code	KPI8.SA
	NEB value associated	Beauty
	Definition	This indicator is about citizen's perception regarding the aesthetics of the buildings and/or green areas
	Formula	A five-point Likert scale: Very dissatisfied – 1 – 2 – 3 – 4 – 5 – Very satisfied
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)



D1.2 Engagement strategy and social acceptance KPIs

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Perceived comfort	KPI Code	KPI9.SA
	NEB value associated	Beauty
	Definition	This indicator measures the level of thermal comfort regarding the apartment temperature in winter and summer.
	Formula	A five-point Likert scale: Strongly disagree – 1 – 2 – 3 – 4 – 5 – Strongly agree.
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Bill saving	KPI Code	KPI10.SA
	NEB value associated	Together
	Definition	This indicator evaluates citizen's perception on whether the renovations/interventions have contributed to save money on their energy bills
	Formula	A five-point Likert scale: Not at all – 1 – 2 – 3 – 4 – 5 – Extremely
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)

D1.2 Engagement strategy and social acceptance KPIs

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Sense of belonging	KPI Code	KPI11.SA
	NEB value associated	Together
	Definition	This indicator evaluates the perception of citizens feeling part of a community
	Formula	A five-point Likert scale: Not at all – 1 – 2 – 3 – 4 – 5 – Extremely
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)

Field of Action	Social Aspects	
Performance	Effects on community & social environment	
Evaluation Procedure	Social Acceptance	
Green areas	KPI Code	KPI12.SA
	NEB value associated	Beauty
	Definition	This indicator evaluates the usage of green areas by the community
	Formula	A five-point Likert scale: Never– 1 – 2 – 3 – 4 – 5 – Very often
	Unit of Measurement	Mean average of results or % of respondents for each score)
	Target	Around 4 or above
	Data collection interval	Twice (before and after interventions)



6. Conclusions

This deliverable marks the culmination of a collaborative effort dedicated to designing a dynamic engagement roadmap that encapsulates the distinctive renovation objectives and social ambitions of each LH within WP1. Additionally, it introduces an evaluation framework designed to facilitate a comprehensive assessment of the community's acceptance of these renovations and the effectiveness of the implemented engagement activities in achieving predefined engagement targets. Furthermore, the set of social engagement KPIs presented in this document are designed to enable adjustments and fine-tuning of the engagement strategies during the implementation phase. Thus, it is worth noting that the engagement strategies presented herein are not static; they may be subjected to adaptation and refinement as the implementation progresses.



7. References

- Boesiger, M. a. (2018). Acceptance of building integrated PV (BIPV) solutions in urban renewal : obstacles and opportunities in Switzerland. *Status-Seminar "Forschen für den Bau im Kontext von Energie und Umwelt*. Zurich: Zurich, Switzerland, 6-7 September 2018.
- Commission, E. (2022). *The New European Bauhaus Compass*. Brussels: European Commission.
- Danish Federation of Non-Profit Housing Providers. (2023). *BL*. Retrieved from BL: <https://bl.dk/danish-federation-of-non-profit-housing-providers/>
- Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. . *MIS Quarterly* , 319-340.
- Hewavitharana T, N. S. (2021). Modifying the Unified Theory of Acceptance and Use of Technology (UTAUT) Model for the Digital Transformation of the Construction Industry from the User Perspective. *Informatics*.
- Home Upgrade Hub. (2022). *Resident Engagement Toolkit*. Home Upgrade Hub.
- Jianhong, Y., Jiaqi, Z., & and Fabin, Y. (2020). A study on users' willingness to accept mobility as a service based on UTAUT model. *Technological forecasting and social change*.
- Quijano, A., Hernandez, J., Nouaille, P., Virtanen, M., Sanchez-Sarachu, B., & J., P.-B. F. (2022). Towards Sustainable and Smart Cities: Replicable and KPI-Driven Evaluation Framework. *Buildings*.
- Rosli, A. S. (2020). A review of technology acceptance models and theories. *Innovative teaching and learning journal*.



8. Annexes

8.1. Annex 1

LH X Engagement Strategy

Social Objectives

To be filled

Stakeholders

To be filled

Challenges

To be filled

Engagement roadmap

Phase 1: Planning and awareness

Goal: Inform about the project and its benefits. This is strategically important to increase awareness and acceptance of energy renovations and solutions, promoting usage of EVs in the district, paving the way for an energy community, and building consensus.

Goals	When	Who	How – engagement tool
	MX-MY	SHX and SHY	
	MX-MY		

Phase 2: Design

Goal: Involve the residents in the codesign of the buildings.

Goals	When	Who	How
	MX-MY		
	MX-MY		

Phase 3: Implementation and handover MX-MY

Goals	When	Who	How
	MX-MY		
	MX-MY		
	MX-MY		

Phase 4: Handover:

Goal: Community building. As construction works will be finished, new residents will be moved in the apartments in the new buildings. By then the Supershine project will have ended but keeping the sense of community will be still a priority to ensure long term social inclusion and prosperity in the district.

Goals	When	Who	How

Phase 5: Operation and eventual post work:

Goal: Keep residents' satisfaction high, extend the CEC, replicate in other districts

Goals	When	Who	How
	MX-MY		



