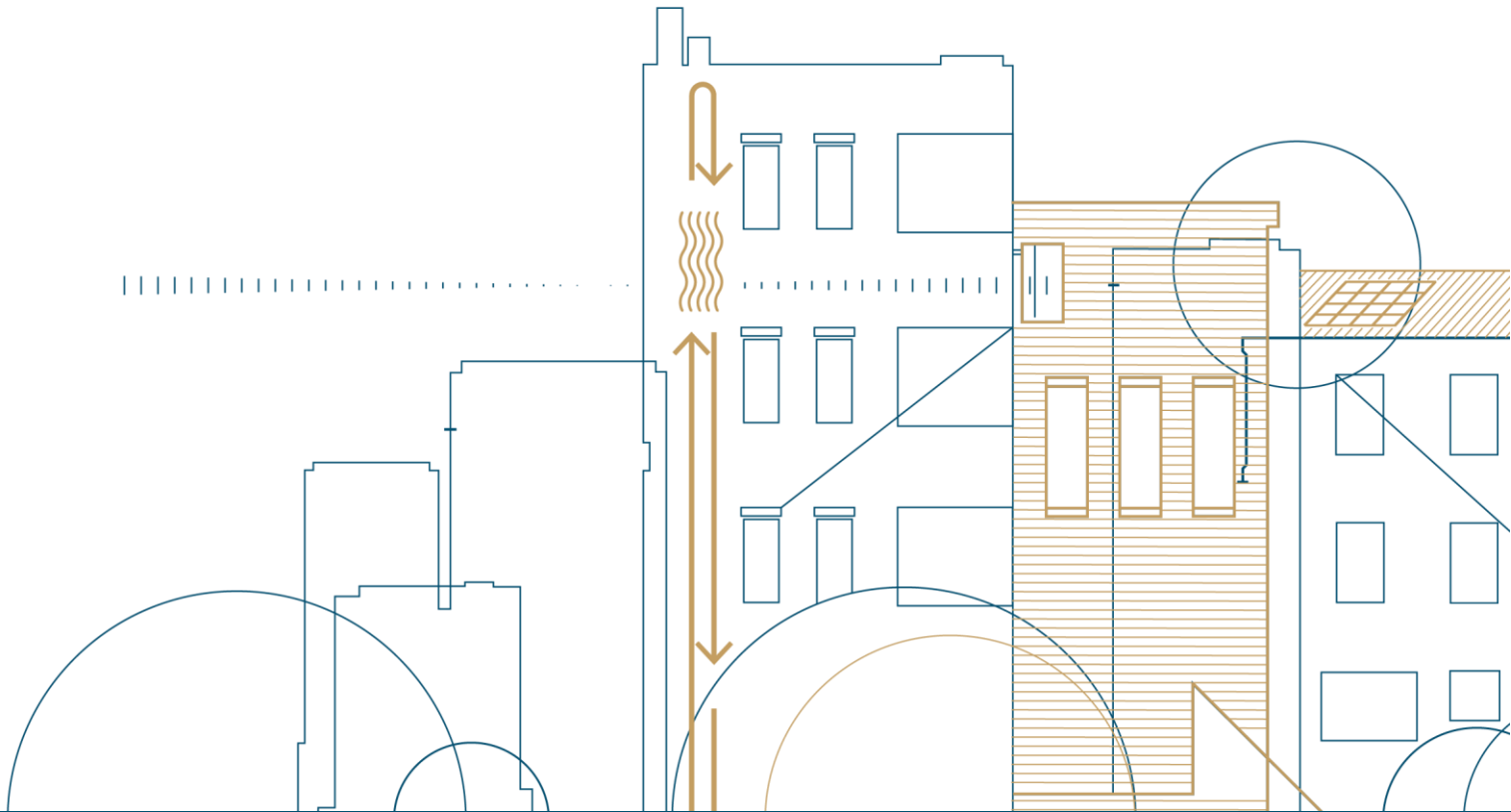
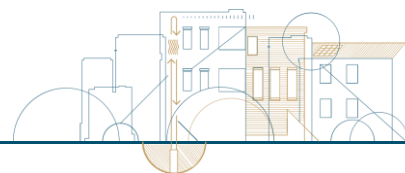


REHOUSE



D1.4

Design of social activities tailored to the local contexts



Project Acronym	REHOUSE
Project Title	Renovation packagEs for HOlistic improvement of EU's bUildingS Efficiency, maximizing RES generation and cost-effectiveness
Project Duration	1 October 2022 – 30 September 2026 (48 months)
GA Number	101079951

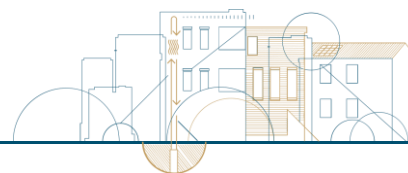
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Deliverable Lead Partner	ENEA
Contributors	ARCA, CEA, DUTh, FCHURCH
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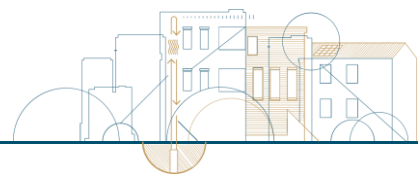
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V.02	2023/10/18	Draft	ENEA
V0.3	2023/10/27	Reviewed version	ENEA



EXECUTIVE SUMMARY

The present document is Deliverable D1.4 developed within WP1 “Social Innovation for People-centric Renovation Processes” in the framework of the European co-funded REHOUSE project. This report presents the design of the social activities adapted to the local contexts in order to contribute to the validation of the Renovation Packages at TRL7.

Social actions will include co-design approach and methods to increase the acceptance of technical innovations. Social activities, in general, will be oriented towards “behavioural change”.

This report presents information about the REHOUSE basic principles in terms of social innovation activities and behavioural change in addition to some key elements to plan an engagement strategy. The importance of the facilitator’s role is also highlighted and presented.

First plans of social actions and events foreseen for each of the four REHOUSE Demo-sites are provided. These are the plans at the current stage of progress of the project but potential adaptations to the plan could be considered (if needed) through the project execution based on the real state to progress and additional needs from the demo-sites.

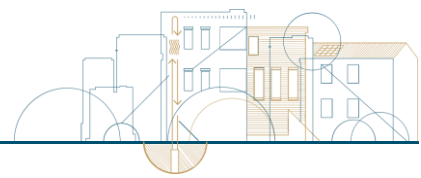
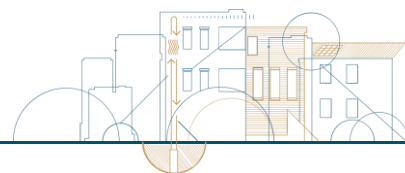


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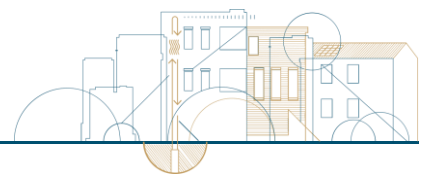
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LIST OF ABBREVIATIONS

ACRONYM	DESCRIPTION
BIM	Building Information Modelling
D	Deliverable
EC	European Commission
IPD	Integrated Project Delivery
OST	Open Space Technology
RP	Renovation Package
s-LCA	social Life Cycle Assessment
WP	Work Package
WT	Work Task
RP	Renovation Package



1 INTRODUCTION

The focus of REHOUSE project is to increase the quality of the renovation process, the improvement of comfort and satisfaction of the building inhabitants and users and enlarge the use of integrated solutions for a decentralised generation of renewable energy.

Eight innovative and holistic solutions for efficient, cost-effective, and sustainable renovation processes will be developed in the four years of project lifetime. These solutions, so-called Renovation Packages (RPs), will be deployed across 4 demo sites in Greece, Italy, France, and Hungary. This will include detailed designs, pilot set-up and demonstrations to validate the RPs themselves. If proven successful, such renovation solutions can be introduced to the market, implemented on a large scale, and eventually contribute to speeding up the current renovation rate.

One of the most important aims of the project is to provide the renovation wave with a resident and owner perspective on the affordability, satisfaction, and allure of sustainable restoration; for this purpose, REHOUSE also employs an inclusive people-centric social engagement strategy.

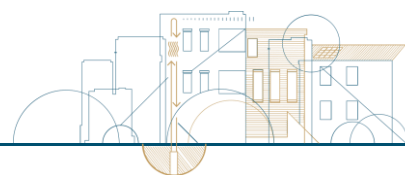
The following activities constitute the backbone of the REHOUSE social innovation approach:

- Creation of dedicated social taskforces at each demo site, involving tenants, renters, owners and other representatives of the civic society. They promote social relationships and secure new forms of collaboration with building teams (architects, promoters, manufacturers, suppliers, service providers, etc.), public authorities and research organizations. At the same time, such social taskforces will encourage in the future the market uptake of innovative solutions.
- Stakeholders engagement and peer learning promoted by the social taskforces by means of activities such as co-design workshops with professionals, serious energy games, specific thematic-schools with workers, live/online co-creation events with citizens, awareness campaigns and prizes, etc.
- Emphasized use of technology allowing all parties involved in the construction/renovation process to work as one coordinated agent in line with the IPD principles. BIM-based workflows will be applied, enabling easier sharing of information along the project execution, while digital communication channels will be considered for a seamless interaction with the social task forces.

Furthermore, a social Life Cycle Assessment (S-LCA) plan was defined to assess the social implications and effects of the proposed RPs along the life cycle of their entire service existence, considering the detailed design, construction (retrofitting), operation, demolition, and waste treatment stages.

1.1 PURPOSE AND SCOPE OF THE DOCUMENT

According to the current situation, and the requisites identified in the first phases of the project, thanks to the surveys, which were carried out online and onsite, also through semi-structured interviews of households and students, tailored social activities have been designed, aiming at also to contribute to the validation of the solutions proposed in REHOUSE renovation packages at TRL7. The adopted approach is people-centric to secure social inclusion, justice and equity. Initially, the social activities that fit better to REHOUSE are those related to co-creation or peer-learning. Among the actions which were identified with the support of the social task force defined in Task 1.1, the plans of the Demo-sites can include: co-design workshops with professionals, peer-learning, serious energy games, specific thematic-schools with workers, live/on line co-creation events with citizens, etc.



In the document D1.1 “Analysis of Social innovation activities for retrofitting projects” a variety of social actions are shortly described, resulting from the analysis of previous experiences of project partners and additional desktop research, options are included with high impact in the achievement of changes in users’ behaviour, users’ habits and awareness.

Starting from this work identifying the most applicable social innovation activities, the analysis of the local social contexts, together with the social requirements elicitation, this document aims to provide the first plan of social actions foreseen for each Demo-site. This is a forecast; it is a work-in-progress that can be modified according to the needs that will be highlighted during the project actions.

1.2 CONTRIBUTIONS OF PARTNERS

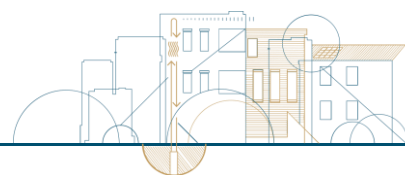
Table 1 Presentation of Task 1.3 actions and partners’ contribution

PARTICIPANT SHORT NAME	CONTRIBUTIONS
ENEA	Contents writing and collecting Demo-site leaders’ inputs
ARCA	Inputs on designed social activities for Italian Demo-site
DUTH	Inputs on designed social activities for Greek Demo-site
FCHURCH	Inputs on designed social activities for Hungarian Demo-site
CEA	Inputs on designed social activities for French Demo-site

1.3 RELATION TO OTHER ACTIVITIES IN THE PROJECT

Table 2 : Description of deliverables

ACTIVITY (DELIVERABLE NUMBER)	DESCRIPTION
D1.1	<p><i>“Analysis of Social innovation activities for retrofitting projects”</i></p> <p>Methods resulting from desktop analysis and review of partners ‘experiences are collected to provide background knowledge on the theory and possible practical implementations of co-creation for the IPD methodology.</p>
D1.2	<p><i>“Social situation of the four local contexts”</i></p> <p>A survey was carried out to assess the local context for social innovation in each of the REHOUSE demo sites, investigating level of energy awareness and the issue of the risk of poverty. The appendix of the D1.2 contains all the data from which the interpretation and conclusions are derived. Despite the similarities, the four demo sites differ. Direct conclusions can be derived from the questionnaire, and broader conclusions can be drawn from the patterns appearing in the regional data. This provides a starting point of</p>



ACTIVITY (DELIVERABLE NUMBER)	DESCRIPTION
	social innovation activities for a higher acceptance of the project.
D1.3	<p><i>“Social requirements identified in the elicitation activities”</i></p> <p>The D1.3 describes the social requirements elicitation process and related activities carried out in Task 1.2 aiming at discovering both stakeholders’ and end users’ needs to be considered in the design and development of the Renovation Packages (RPs). The deliverable suggests a methodology to identify what features are essential for these users, moreover, RP technology developers will verify if these requisites can be met in order to satisfy users’ needs providing effective solutions.</p>
D1.5	<p><i>“Social Life Cycle Assessment Plan (S-LCA) for the 4 local contexts”</i></p> <p>The document displays the methodology of the s-LCA that will be followed in order to investigate the social perspective of the innovative RPs and conventional interventions implemented to the project’s four demo sites: potential positive or negative social impacts on different stakeholder groups during the pilots’ entire life cycle.</p>
D4.6	<p><i>“Report of the social innovation activities launched in the four demos”</i></p> <p>This report will contain all the information relative to the deployment of the social innovation activities in each of the demo-sites. This will be part of the pilot preparation in order to secure the co-creation and co-design of the solutions.</p>

2 DESCRIPTION OF ACTIVITIES

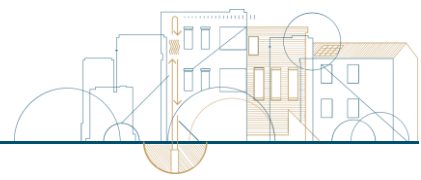
REHOUSE social activities will include a range of different actions. All the initiatives will be based on lessons learnt on:

- Social innovation approach.
- Behavioural change insights.

In fact, the most relevant objective is to ensure the acceptance of the REHOUSE RPs, but the inclusion of innovations, as the RPs, require substantial changes in inhabitant’s behaviour.

It is universally recognised that final energy consumption is strongly determined by factors related to the habits, lifestyle and behaviour of inhabitants. The novelty factors introduced by new systems or devices (photovoltaic, heat pumps, home automation, etc.) need to be understood, managed and introduced into the daily routine with attention to consumption and proper maintenance. Our energy consumption at home is shaped by ingrained habits that are hard to change, due to factors like inertia or a subconscious preference for the status quo. (IEA 2021)

Furthermore, it is important to avoid the so-called “rebound effect”, (Khazzoom–Brookes postulate) (Gillingham, K., et al 2014), caused by specific behavioural responses that tend to reduce or cancel



out the effects of the expected benefits of energy renovation.

Capacity building actions, on the other hand, will be carefully designed according to learning outcomes, different beneficiaries and level of attainment desired.

2.1 SOCIAL INNOVATION

Social innovation is the key for the people-centric approach of REHOUSE project. In the D1.1, as above-mentioned, an overview of methods and social actions are provided.

One pillar is a “participatory design approach” that put together the expertise of the system designers and researchers, and the perceptions and needs of people being affected by the change (E. B. N. Sanders & P. J. Stappers, 2008)

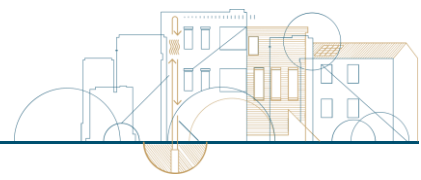
After a reflection of the Social Task force, specifically in Italian Demo-Site, in addition to the social actions already listed in the D1.1, two other techniques that will be adopted in the various scheduled meetings can be catalogued and explained as follows.

Open Space Technology (OST)

It is a flexible and participant-driven approach to organize meetings, conferences, and other events that fosters collaboration, creativity, and engagement. Developed by Harrison Owen in the 1980s, OST is based on the principle that participants are experts in their own right, and they are most motivated and productive when they have the freedom to self-organize and address the topics that matter most of them (H. Owen, 2008).

Key features of **Open Space Technology** include:

- **Self-Organization:** In an Open Space event, participants are encouraged to take responsibility for creating their own agenda. There are no pre-set schedules or prescribed topics. Instead, attendees are free to propose topics they are passionate about and host discussion sessions.
- **Circle of Participants:** The event begins with a circle of participants, where the facilitator introduces the Open Space principles and invites attendees to suggest topics for discussion. These topics are written on cards or posted on a "bulletin board."
- **Marketplace of Ideas:** Once topics are proposed, they are displayed in a marketplace setting. Participants choose which discussions they want to attend and join the corresponding groups. This fluid and dynamic process allows attendees to engage in conversations that truly interest them.
- **Self-Management:** Participants are responsible for the discussions they attend. There are no hierarchical structures or formal leaders. People are encouraged to move between discussions, share their insights, and contribute as they see fit.
- **Law of Two Feet:** The "Law of Two Feet" is a guiding principle in OST. It states that if a participant finds themselves in a discussion that is not productive or valuable to them, they are encouraged to use their two feet to leave and join another conversation where they can make a meaningful contribution.
- **Open and Closing Circles:** The event begins with an opening circle where the principles and process are explained, and it ends with a closing circle where participants share insights and outcomes from their discussions. These circles help capture the collective knowledge and energy of the group.
- **Documentation and Sharing:** Participants are encouraged to document their discussions, key ideas, and action items. This documentation is typically shared with all participants after the event to ensure accountability and to provide a record of what was discussed and



decided.

Open Space Technology is highly adaptable and can be applied in a variety of settings, including corporate meetings, community gatherings, conferences, and workshops. It is known for promoting participant engagement, innovation, and effective problem-solving by allowing people to take ownership of their conversations and outcomes. OST is often seen as a democratic and empowering approach to group collaboration.

BarCamp

BarCamp approach shares some features with OST. It is an unconventional and open-format unconference that promotes participant-driven discussions, learning, and collaboration. Unlike traditional conferences with pre-planned schedules and formal presentations, BarCamp encourages attendees to create the agenda and lead sessions themselves. The event typically focuses on technology, innovation, and a wide range of topics that are of interest to the participants.

Here are some key features and characteristics of a BarCamp:

- **Unconference Format:** BarCamp is known for its "unconference" format, where the agenda is not predetermined by organizers but rather emerges from the interests and expertise of the attendees. Anyone can propose a session or topic they'd like to discuss, and these sessions are scheduled on the fly.
- **Open and Inclusive:** BarCamp is open to all, regardless of their background or experience. It fosters an inclusive and collaborative environment where people from various fields can come together to share knowledge and ideas.
- **Participant-Driven:** Attendees are encouraged to actively participate in the event by giving talks, leading discussions, and engaging in interactive sessions. The emphasis is on sharing knowledge, skills, and experiences with the community.
- **Diverse Topics:** BarCamps cover a wide range of topics, including technology, entrepreneurship, design, art, and other subjects of interest to the participants. Sessions can be technical, creative, or purely informative.
- **Informal and Relaxed:** The atmosphere at BarCamp is typically informal and relaxed, promoting networking and social interaction. It often takes place in a casual setting, such as a co-working space, university campus, or tech incubator.
- **Community Building:** BarCamp events contribute to the building and strengthening of local or global communities of like-minded individuals who are passionate about learning and sharing.

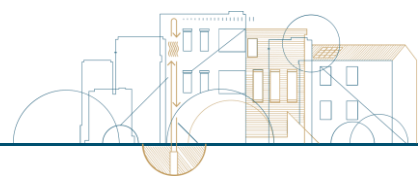
BarCamp is a unique and dynamic platform for knowledge exchange, community building, and fostering a culture of openness and collaboration. It continues to thrive in various cities and regions worldwide, allowing participants to engage in a diverse range of discussions and educational experiences.

2.2 BEHAVIOURAL CHANGE INSIGHTS

Social actions will be inspired to the emerging "Behavioural change insights", a multidisciplinary approach.

WHAT IS A BEHAVIOUR CHANGE PROGRAM?

In a nutshell, a behaviour change program in relation to the use of energy can be defined as a



systematic and structured approach designed to encourage individuals or groups to adopt more sustainable and energy-efficient behaviours. The primary goal of such a program is to promote positive changes in how people use energy in their daily lives, with the overarching aim of reducing energy consumption and minimizing the environmental impact associated with energy use.

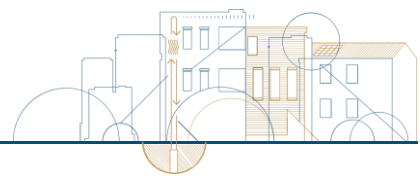
Key components of a behaviour change program related to energy use typically include:

1. **Assessment and Analysis:** Conducting an assessment of current energy usage patterns, identifying areas where energy is being wasted, and analysing the factors influencing those behaviours.
2. **Goal Setting:** Establishing specific, measurable, achievable, relevant, and time-bound (SMART) goals for energy reduction and efficiency improvements.
3. **Education and Awareness:** Providing information and resources to raise awareness about the environmental and economic benefits of energy conservation, as well as the potential consequences of wasteful energy habits.
4. **Incentives and Rewards:** Offering incentives and rewards to motivate individuals to adopt energy-efficient behaviours. These can include financial incentives, rebates, or non-monetary rewards like recognition and prizes.
5. **Behavioural Interventions:** Implementing strategies to encourage targeted energy-saving behaviours, such as turning off lights when not in use, using energy-efficient appliances, adjusting thermostat settings, and reducing standby power consumption.
6. **Feedback and Monitoring:** Providing feedback to participants on their energy consumption and efficiency progress. This can be achieved through real-time energy usage data, energy bills, or regular reports.
7. **Community and Social Norms:** Leveraging social norms and community engagement to create a sense of shared responsibility for energy conservation. Encouraging collective action and competition can be effective.
8. **Training and Skill Building:** Offering training and skill-building sessions to help individuals develop the knowledge and competencies required to make energy-efficient choices.
9. **Continuous Improvement:** Regularly assessing the program's effectiveness, adjusting strategies as needed, and seeking opportunities for further improvement.
10. **Sustainability and Long-term Commitment:** Promoting lasting changes in behaviour by encouraging individuals to view energy conservation as an ongoing commitment rather than a short-term effort.
11. **Measurement and Evaluation:** Employing metrics and data collection to assess the impact of the program on energy usage and its overall success in achieving energy-saving objectives.

Behaviour change programs related to energy use can be implemented by government agencies, utility companies, environmental organizations, businesses, and communities, aiming to create a culture of energy conservation and promote a more sustainable and eco-friendly approach to energy consumption.

2.3 ENGAGEMENT PLAN

In the social activities design, the engagement plan will provide a basis for tailoring the actions and balance involvement and participation of the right target groups, who are not only students and



households.

The engagement plan will consider specific local requirements highlighted through interviews during the project life-cycle, in order to implement a continuous participatory process. This is carried out by specific activities such as on-site inquiries on building features with the aim to identify optimal and cost-effective refurbishment options and financing opportunities, workshops and/or webinars to better understand and manage issues regarding the new technological solutions. Results of all meetings and training sessions will be used for a replication on a national and European scale. The Engagement of the local actors is key in ensuring scalability of the actions. It mainly builds upon the knowledge base acquired by the execution of tasks T1.1 and T1.2. The insightful information expected on social context and the building stock (structural characteristics and energy performance), combined with the stakeholder mapping results, allows the identification of other relevant features of social actions. In particular: 1) specific aspects of the willingness to adopt innovative technical solution of the players, and 2) specific attributes of the interventions (average needs, most targeted interventions, etc.).

2.3.1 STAKEHOLDERS DEFINITION

Key definitions (D. Mac Nicol, G. Giffin & P. Mansell, 2014), used throughout this plan in order to better tailoring the social actions are the following:

STAKEHOLDER: A Stakeholder is any expert, organisation or group that is affected by or who can affect the outcomes of REHOUSE. More in general, individuals and organizations that are actively involved in the project, or whose interest may be positively or negatively affected as a result of the project execution or project completion (L. Wei, 1996).

STAKEHOLDER PARTICIPATION: Stakeholder Participation is a process where Stakeholders choose to take an active role in making decisions about things that affect them.

STAKEHOLDER ENGAGEMENT: Stakeholder Engagement is everything that can be done with Stakeholders within the project, i.e. consult, listen, understand, communicate, influence, participate in the activities, etc., with the broader objectives of satisfying the needs of the project through gaining the approval and support of the Stakeholders.

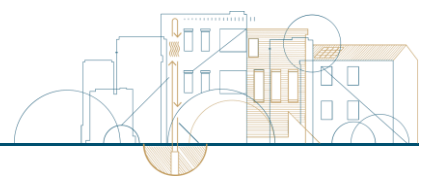
STAKEHOLDER ANALYSIS: Stakeholder Analysis aims to identify people, organizations or groups who may be positively affected by the project. In addition to identifying those affected by the project, Stakeholder Analysis also seeks to identify those who might affect the ability to complete the project and who generate impacts, i.e. they may have the power to enable the outcomes of the project, even after its end.

Concerning stakeholder classification, the following general categories apply:

- **Internal stakeholders:** are considered the groups and/ or individuals that are already part of the project (Project Coordinator and Partners).
- **Key stakeholders:** represent a subset of all the external stakeholders that are either highly impacted by the project or specifically interested in the accomplishment of its objectives and for this reason decide to actively support it.
- **External stakeholders:** are those individuals or groups that are outside the project's environment, have some interest in the project's aims and might influence to different extent its execution and the accomplishment of its expected results.

2.3.2 STAKEHOLDER ANALYSIS

In addition to the end-users who are the beneficiaries of REHOUSE projects, i.d. students and



households, for the success of the activities and for a participatory approach, it is very important to analyse who are the stakeholders and how they can contribute.

The following questions have been included in the initial stage of the social activities design.

- **Expected contribution** - Which role can they play? In which action to be involved?
- **Interest (low/high)** - How interested is this stakeholder in engaging with the project? Select the level of interest and motivations
- **Power to Influence (low/high)** - Indicate the level of power to influence the project and affect its results
- **Incentive** - What could attract the stakeholder(s) to join. What are their current and potential benefits? This is to be linked to consequent key communication message
- **Barriers** - What potential barriers for their participation in the project would you anticipate?
- **Additional information** - for example: highlight relations/conflicts among stakeholders or Indicate pre-existing cooperation
- **Participatory tools** - In your opinion which is best option/channel/method to manage the relationship? Meetings - emails – webinar- clouds to share documents?

2.3.3 STAKEHOLDERS MAPPING

Stakeholders' role is crucial in decision-making and in influencing the project's success and impact. Furthermore, to guarantee that the interests and preferences of people are taken into account in building retrofitting, community engagement is significant. To conduct the social Life Cycle Assessment, foreseen in Task 1.4, an essential group of 3 categories of stakeholders have been identified, taking into account categories, social topics, impact, and performance indicators: 1) users/ Inhabitants; 2) Workers and 3) Local Community and neighbours.

Mapping of Stakeholders generates a visual analysis that Project Partners can use to further determine which Stakeholders will be the most useful to engage with. This can help to visualize the often-complex interplay of issues and relationships. In mapping, the Project Partners may need to create a number of visualizations to capture all possible sights.

The framework for stakeholder mapping can be designed about different dimensions / stakeholder characteristics. A commonly applied option is to choose interest and power as categories and group stakeholders according to their assumed position on these dimensions. Conflicting perspectives, including opposing stakeholders and resulting adverse effects on the project can be prevented.

Stakeholders can be mapped into a diagram with a power and interest axis ranging from low to high specification of the variable.

Power indicates a stakeholder's relative ability over and within a project. A stakeholder with high power would control key decisions within the project and have strong ability to facilitate implementation of project tasks and cause others to take action. Usually such influence is derived from the hierarchical, economic, social, or political position. Other indicators may include: expert knowledge, negotiation and consensus building skills, holder of strategic resources, etc.

Interest indicates how a stakeholder is relatively interested in the organization or project succeeding: How interested is each stakeholder group to impress its expectations on the project's decisions? Do they mean to do so? Do they have the power to do so?

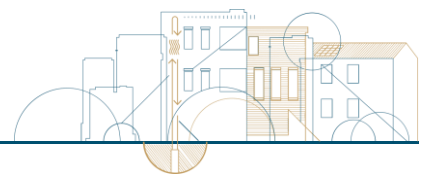


Figure 1: Power/Interest Grid for Stakeholder Prioritization

Source: (A. L. Mendelow, 1981)

Free tool : https://www.mindtools.com/pages/article/newPPM_07.htm#Interactive

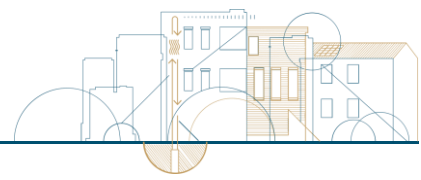
Stakeholders fall into one of four quadrants. Each quadrant calls for a different stakeholder-management strategy.

- **Manage closely:** Key stakeholders directly interested and exert great influence over the outcome. When managed well, these stakeholders can become promoters of your project, making success a likely outcome. Examples : building owners; tenants; students
- **Keep satisfied / Meet their Needs:** Stakeholders with low interest but with the power to impact the project greatly. It's important to ensure these stakeholders are happy. If they find that REHOUSE work impacts their own, they may get involved. Examples : regulators; administrators.
- **Keep informed:** Stakeholders who are interested but have little power. They should be invited to research, copied into debrief emails, and invited to design critiques. Examples : Members of the community; Community Action groups; Media outlets.
- **Monitor:** they have little interest, but circumstances could change and so they need to be monitored regularly. Examples : neighbouring.

All methods for identifying Stakeholders provide a snapshot in time, Stakeholders' interests and influence. This means that Stakeholder mapping exercises should be revisited and updated periodically to ensure that the needs and priorities of all Stakeholders continue to be captured.

Analysis of interests and needs

In this phase of the analysis, the stakeholder interests and if they conflict with each other will be assessed together with the potential influence they may have on the different activities of the WP. To analyse stakeholder's interests and characteristics, several questions should be answered,



such as :

- *What is the reason for their participation?*
- *What are the stakeholder's experiences with or expectations?*
- *What are the current and potential future benefits and costs?*
- *Who can they influence and who influences them?*
- *How do they use that influence or power?*
- *What are the relations among stakeholders? Who cooperates with whom, who is in a conflict with whom?*
- *What resources?*

Answers to these questions will be gathered in the following table.

Table 3 : Analysis of interests and needs

Stakeholder	Main interest to be involved	Potential barriers for engagement
-	-	-

According to the Social Life Cycle assessment plan (D1.5), the stakeholders categories related to the renovation packages of the project are the following.

- 1) **Users/ Inhabitants:** Referred to building owners that the buildings/apartments belongs to their property and occupants/renters who live or work in the buildings that installed the renovation packages. Retrofitting has a direct impact on their comfort, health, and energy efficiency.
- 2) **Workers:** Laborers who contributed to the construction process and execute all the renovation activities according to the guidelines of the manufacturers of the packages.
- 3) **Local Community and neighbours:** Residents and businesses adjacent to the retrofitting buildings. These are maybe affected by noise, dust and traffic during the installation of the renovation packages.

2.3.4 STAKEHOLDER COMMUNICATION AND INITIAL ENGAGEMENT

Messages targeted to objectives and sub-groups

The stakeholder analysis provides the basis for the development of targeted communication strategies, thanks to the opportunity to focus on a segmentation. The collaboration with the WP6 of communication will help to select the most relevant messages for the different subgroups by offering incentives to attract the stakeholders, in order to keep them engaged and provide the necessary involvement over the whole project time.

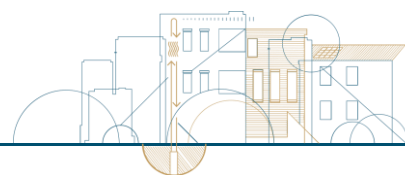


Table 4 : Messages targeted to objectives and sub-groups

Stakeholders	Barriers for participation	Incentive	Key message
List the different stakeholders	What are the main barriers for their participation?	Why should they participate? Which benefits?	Consequent key communication message

2.4 FACILITATION

The role of facilitators is important, she/he can create trust and comfort stimulating the development and proposal of new ideas. Facilitators should clearly communicate that the session is a safe space and that confidential treatment of participants' private information is a guiding principle.

The involvement of diverse participants requires careful observation of individual needs and group dynamics and the ability to re-calibrate the process based on these observations.

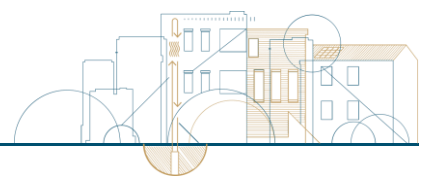
After a short introduction of the project and its targets, the co-design process might start with an 'ice-breaker' activity to allow participants to become familiar with each other and with the facilitator as well as with the objectives of the co-design activity.

Such activities should enable participants to learn something personal about the other group members so as to generate mutual empathy without touching upon sensitive matters.

Once the warming up has been completed, the focus of the session can turn to individual activities and / or in-group discussions corresponding to the session target, followed by the development of ideas. During this stage, all co-design tools (e.g., role playing, mock-ups, cards, canvas) should be considered and selected based upon the potential in order to empower participants and encourage collaboration and creativity. The pertinent literature recognises three main types of techniques for co-design: telling, enacting, and making (E. Sanders, 2014). Using these techniques can help REHOUSE partners to reveal 'real rather than assumed behaviours' (S. O'Rafferty, , 2016) and to make explicit tacit knowledge that is ingrained in people's everyday experiences. Suitable methods to reveal such knowledge are diaries, collages, card sorts, model building, and various forms of mapping and roleplaying (Y. Akama & A. Prendiville, 2016).

Table 5: Things to consider during co-design facilitation

- Take 5-10 minutes in the beginning of a session to describe the project as a whole, its goals, and how participants' contribution relates to the entire project.
- Take another few minutes to communicate with the participants what the session entails and what is expected from them. Projecting a step-by-step schedule of the session and making a hard copy available for each group helps some participants to know where they are in the process and what they should expect next.
- Throughout the session, try not to break the groups' workflow with too many interruptions, announcements, and breaks.
- Recommend flexible breaks, so groups can take breaks as needed and spend longer and less interrupted chunks of time on a task.
- Provide some reminder / preparation prior to the transitioning to a new task (e.g., 5 min reminder).
- Be mindful of each participant's needs and group dynamics. If there are several facilitators, assign each facilitator to specific groups, so they can become more familiar



- with members of those groups, their needs and their interactions.
- When conversations are fading down, join groups to prompt them with additional questions, share personal experiences, and provide other examples or introduce them to the next task / step. But be mindful that you are there to facilitate, let the group steer the conversation as much as possible and contribute their own ideas.
 - When group members have conflicting physical needs, join the groups to help with physical tasks, such as note taking, drawing, building prototypes, etc.
 - To reduce negative group dynamics, ask group members to switch their seats / breakout rooms. Often a simple change in perspective will reset the dynamic of the group.
 - Try to speak slowly, with an audible voice, and avoid using technical terms / acronyms or at least provide a description for them.

Source: <https://cities.inclusivedesign.ca/resources/co-design-facilitation-techniques/>

2.5 PLANNING OF ACTIONS AND EVENTS SCHEDULE

Table 6: Main aspects to design social activities

TARGET (SUB)GROUP(S)	RESOURCING (REQUIRED INPUTS AND BARRIERS TO BE ADDRESSED)	PLANNING (ENGAGEMENT TARGET(S), TIMELINE, NUMBER OF END-USERS TO BE INVOLVED)	RECRUITING (MEANS AND CHANNELS OF OUTREACH (INTERMEDIARY ORGANISATIONS), MESSAGING)	FACILITATION (TOOLS, METHODS, SETUP, DOCUMENTATION)	EVALUATION (ANALYSIS AND PREPARATION OF RESULTS FOR)
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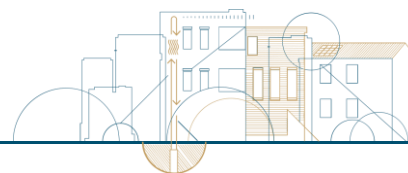
Each Demo-site leader was invited to define a preliminary plan of social activities and their main features have been collected through an online survey. In the following paragraphs the plans are summarised for each Demo-site.

The list (including their specific definitions) of the social innovation activities is the one coming from D1.1 “Analysis of Social innovation activities for retrofitting projects”:

- Online contents.
- Offline materials.
- Information point.
- Public forums.
- Interviews.
- Workshops.
- Visits.
- Training course.

Another selection is about the methods adopted, being the following (Additional information about the methods can be found also in D1.1):

- Adjust group size.
- Card clustering.
- Citizen jury.



- Fish bowl.
- Five colours of change.
- Gamification.
- Hands-on learning.
- Rich picture.
- Six thinking hats.
- Storyboard.
- Other.

Partners have been invited to identify the target group, the social innovations to be carried out, the methods to be used and the main beneficiaries. In the plan it is also defined the schedule and timeline of social activities (if they have already scheduled; presenting when they are going to organize these kind activities and with which frequency).

Recruiting, incentives and barriers (part of the above-mentioned engagement plan) are also considered. Another aspect here considered is the relationship among stakeholders (Highlighting relations/conflicts or indicating pre-existing cooperation) and the identification of any facilitation that will be used (tools, methods, documents, etc).

Partners indicated also how they are going to evaluate the success of their initiatives.

Issues concerning budget and resources have been investigated in order to prevent any problem. The field “best practice” aims to investigating if there is the intention to replicate some experiences already known or performed.

2.5.1 GREEK DEMO-SITE PLAN

The student residence comprises 8 buildings. The target REHOUSE demonstration will focus on a single building.

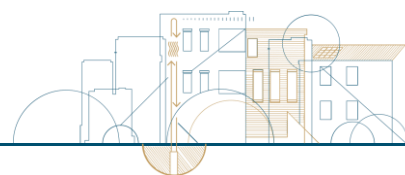
For the Greek demo-site a first session already took place in March 2023 to inform about the REHOUSE project and collect some preliminary information from the tenants of the dormitories. Additional information was collected during a meeting organized in June 2023 with the presence of people representing the technical service of the dormitories.

The target group of the Greek demo-site are the student/resident of the dormitory building.

The main social innovation activities to be carried out are related with the use of offline materials and the organization of interviews and workshops by using different methods as described below.

Table 7: Greek demo-site plan

GREEK DEMO-SITE PLAN	
Target group	Students/residents
Kind of social innovation activities are you going to carry out	Offline materials; Interviews and Workshops.
Workshop - Method	Adjust group size; Card clustering; Fish bowl; Six thinking hats;
Beneficiaries of your social activities	Citizen groups interested in energy sustainability
Scheduled any social activity	One in six months from now



GREEK DEMO-SITE PLAN	
Timeline	One in six months from now
Recruiting	Messaging
Incentives	N/A
Barriers	N/A
Facilitation	Brochures
Relation with stakeholders	Tenant-owner
Evaluation	Questionnaire/ average number of participants 30
Best practise	Interviews, workshops.

2.5.2 ITALIAN DEMO-SITE PLAN

The Italian DEMO in the Margherita di Savoia is a social house built in 1986 where eight families live in vulnerable conditions.

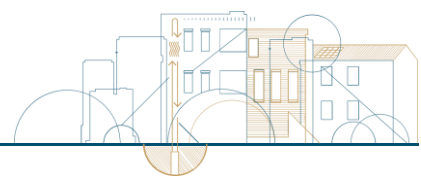
In the first year of the project, Italian partners anticipated the energy audit and the structural analysis foreseen in the second year of the project (Task 4.2). This allowed them to get an initial picture of the structural and energy situation of the building and start immediately with the modelling phase.

During the audit visit, the opportunity to realize a green part on one of the building facades was evaluated. From the technical point of view, this involved an analysis of the types of wall that could be realised therefore the most suitable plant species for the environmental and climatic context, and at the same time the possibility of the wall to be able to be compatible with the eso-skeleton provided in RP#5. The methodological participation approach proposed by ENEA, which involves the tenants in each phase of the project thus starting already from the inspections provided in the building audit, was oriented to “take a picture” of the social situation of each family, and to collect their needs and requirements to match with technical requisites of RP#4 and RP#5.

During these meetings with tenants, the ENEA researcher proposed the green wall as one of the solutions. Tenants didn't know the meaning and functionalities of the green wall and they considered green wall only a problem for maintenance. So that, in June 2023 the first engagement workshop was organized. Under the guide of the facilitator, ENEA technicians introduced the main technologies that will be realized in the building. The “Green Wall” was presented as an option identified in the Grant Agreement for one of the façade of the building not useful for the vertical PV. The engagement workshop was held in one of the flats of the building and it was led by a facilitator who introduced the topic and then left the floor to an ENEA technician. With the support of a power point presentation, all tenants were able to view examples of green part in other cities. Furthermore, ENEA explained the functionality of the green façade and its maintenance features also to owner of the building and to all Italian project partners.

An ENEA expert illustrated the results of the engagement workshop and the tenants' requests were cross-referenced with the technical and economic requirements of the project. The results of the meeting with the project engineers and partners were combined with the results of the workshop with tenants. The conclusion was to opt toward a smart wall rather than the green façade.

However, this was only a first result of the engagement plan planned in the Italian Demo. More



activities are foreseen in the coming months in conjunction with the project milestones (one for the first three years). This was the first project workshop, and another one is planned in December as shown in the timetable.



Figure 2: Milestone for innovation actions

The workshop experience showed how by actively involving end users by assessing their needs and habits and cross-referencing this data with the technical audits carried out by professionals and building owner requisites made it possible to merge a top-down approach with a bottom-up one in the project's implementation. It is a virtuous circle generated by the engagement activities within the REHOUSE project.

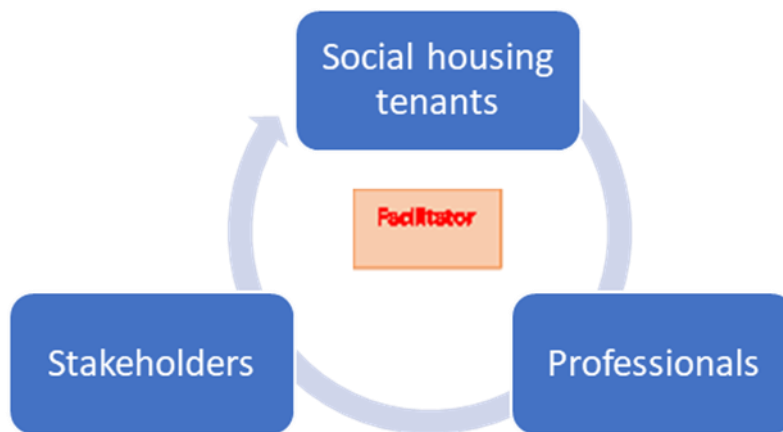
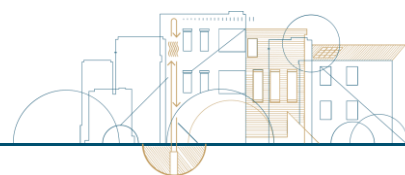


Figure 3: Virtuous circle generated by the engagement activities

ACTIONS AND STRATEGIES TO BE IMPLEMENTED IN THE ENGAGEMENT PLAN AND IN THE PROMOTION OF BEHAVIOURAL CHANGE (demo-site in Margherita di Savoia)

Of particular interest, from a psychosocial point of view, both for the purposes and actions already carried out and for those to be undertaken both in the demo-site and in the neighbourhood of Margherita di Savoia (engagement actions, co-planning and promotion of behavioural change in relation to the renovation packages introduced in the building) described above. In fact, the preliminary meetings and above all the subsequent workshops (which will take shape thanks to the use of one or more facilitators and may be based on techniques such as the so-called "Open Space Technology" or "BarCamp") are based on the importance of social influence, as underlined both in the sector literature (R. Sussman, M. Chikumbo, 2016) and in the broader one (A. Bandura, 1986; R. Cialdini, 2014). In order to achieve the aim, however, in addition to social influence, the possibility of providing the recipients of the project actions with adequate information on the advantages linked to the adoption of virtuous behaviours also plays a primary role. Lastly, the importance of achieving a sufficient level of sustainability over time of the new behaviours adopted



must also be underlined. In other words, it is necessary to "accompany" the new actions for the entire duration of the project in an effective way in order to guarantee their consolidation in the future. To this end, further levers can be hypothesized to be implemented, such as the introduction of feedback that acts as reinforcement with respect to new habits (P. Inghilleri, et al, 2020).

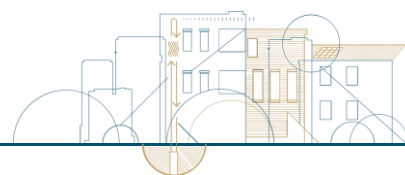
Table 8: Italian demo-site plan

ITALIAN DEMO-SITE PLAN	
Target group	The main beneficiaries are end users (Tenants, and local Community)
Kind of social innovation activities are you going to carry out	Online contents, Interviews; Workshop, Public forum
Workshop- Method	Storyboard; Gamification; other
Beneficiaries of your social activities	Citizens and Apulia region
Scheduled any social activity	We have already organized a Workshop with tenants on green wall. One engagement event for each year
Timeline	Actions foreseen after designing and construction phase
Recruiting	ARCA as owner of the building
Incentives	They was attracted showing them possible advantages such as improving the quality of their inside comfort
Barriers	They were glad to participate, but in the future we have to take into account the healthy problems they can't go out from their house.
Facilitation	We have invited a facilitator to support us in conducting the workshop, and we used power point presentations and videos.
Relation with stakeholders	There was a pre-existing cooperation, there aren't apparently conflicts
Evaluation	Nothing
Best practise	Interviews, workshops

2.5.3 FRENCH DEMO-SITE PLAN

The French Demo is a building in Saint-Dié-des-Vosges, where 34 people live in, with an average age of 55-60 years old.

REHOUSE renovation project was already presented to the occupants during a first meeting in June 2023 in which also some interviews were realized to collect some preliminary information from them. During this first meeting the main actors in the project were present, being those the project



owner, the architect team, TWR and CEA.

The target group of the French demo-site are the owner and tenants of the residential building.

The main social innovation activities to be carried out will be interviews and workshops through different visits to the demo-site.

It is expected that their main incentives to be engaged with the project will be related with the improving of their comfort status and the reduction of their energy bills.

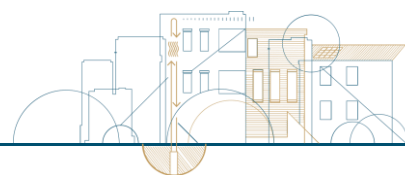
Table 9: French demo-site plan

FRENCH DEMO-SITE PLAN	
Target group	Owner and tenants
Kind of social innovation activities are you going to carry out	Visits
Workshop- Method	Adjust group size
Beneficiaries of your social activities	No others
Scheduled any social activity	No yet
Timeline	No, but we will carry out social activities after the renovation to evaluate the feedback.
Recruiting	Interviews
Incentives	Improving comfort and reducing energy bills
Barriers	Lack of time, lack of interest
Facilitation	No
Relation with stakeholders	The owner and more generally the project management resolves conflicts/problems on a case-by-case basis.
Evaluation	Around 80% of people want to be involved in the renovation process and 90% want to be informed of the planned work.
Best practise	Interviews, workshops.

2.5.4 HUNGARIAN DEMO-SITE PLAN

The Hungarian demo site is a church and university campus. The area was formerly an industrial site and has been transformed through so-called brownfield investment to become the centre for the Faith Church and St. Paul Academy. The demo building also had an industrial function and was converted into a dormitory through an internal transformation and attic installation

Dormitory residents have a special social position. They are only temporary residents in the building during their university years or shorter term. Usually, after they can take on a job provided acceptable income in addition to their studies, they rent and move into an apartment in a residential building. As a result, they do not have a strong engagement to the building. The other factor that makes social innovation difficult is that university students are quite busy, precisely because most



of them do work in addition to their studies. Also, it is a typical custom for them to go home to their families in the countryside on the weekends.

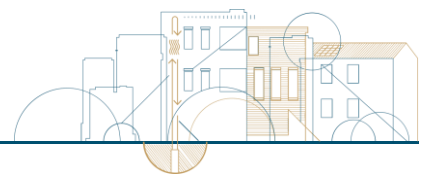
The residents were informed about the project and also filled out questionnaires, the purpose of which was to assess their needs, their level of energy awareness and their opinion of the building. In the next step, the project members supplying the technologies will give a presentation on the innovative solutions. At these meetings, there is again the opportunity for dialogue, in which the students can ask questions and bring new aspects to the project.

An emphasised part of the REHOUSE project is to increase energy awareness. As the demo-site responsible, the manufactories and residents are connected to university education, the project members consider it their duty to expand the social knowledge and transform the energy attitudes. For this, informational materials of a general nature, infographics, and tools can be demonstrated at personal meetings.

It is important to take residents into account when scheduling construction works. For example, during the exam period, they would not welcome work that reduces their comfort and involves dust and noise.

Table 10: Hungarian demo-site plan

HUNGARIAN DEMO-SITE PLAN	
Target group	Students
Kind of social innovation activities are you going to carry out	Online contents; Offline materials; Workshops; Public forums;
Workshop- Method	Hands-on learning
Beneficiaries of your social activities	Students
Scheduled any social activity	N/A
Timeline	Social innovations can be implemented during the active university period. In a sense, the activities started with the notices posted on the entry door, the first meetings and questionnaires. The timing of the presentation of the technologies depends on the manufactory and the progress of the project.
Recruiting	N/A
Incentives	The completion rate of the questionnaires shows the students are eager to participate in the process. No special incentives are needed.
Barriers	A clear hurdle is the busy schedule of the students, as well as they are only in the dormitory during certain periods of the year.
Facilitation	Tools, methods
Relation with stakeholders	The relationship among the stakeholders was not researched, but the results of the



HUNGARIAN DEMO-SITE PLAN	
	questionnaires show that they think similarly.
Evaluation	Social cooperation is difficult to operationalize, the attitudes and opinions are difficult to evaluate. Obviously, the demo responsible will have a subjective perception and opinion about the success of social innovation.
Best practise	N/A

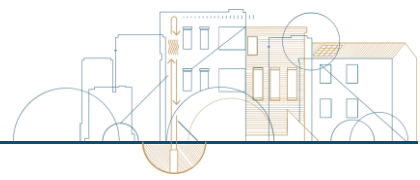
3 CONCLUSION

After the activities carried out in the first year of REHOUSE project, tailored social activities for each demo-site have been designed and planned, according to the knowledge acquired thanks to both on-site survey and desktop research.

During the next phases of the project the defined plan for each demo-site described in this report, will be deployed.

It is also very important to remark that accurate stakeholders' map, analysis and an engagement plan are very important to organize effective actions. The role of facilitators has been highlighted, since they can create trust and comfort stimulating the development and proposal of new ideas in a safe environment.

Behavioural change approach and co-design are the key concepts to drive all the actions.



4 REFERENCES

- Akama, Y. & Prendiville A. (2016) *Embodying, Enacting and Entangling Design: A Phenomenological View to Co-Designing Services*. Swedish Design Research Journal 8(1):29–40. Linköping, Linköping University Electronic Press.
- Bacon J. (2012) *The art of community: building the new age of participation*. Sebastopol, O'Reilly.
- Bandura A. (1986) *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, Prentice-Hall.
- Cialdini R. (2014) *Influence: Science and Practice*. London, Pearson.
- Cornago E (2021) *The Potential of Behavioural Interventions for Optimising Energy Use at Home*, IEA. In <https://www.iea.org/articles/the-potential-of-behavioural-interventions-for-optimising-energy-use-at-home>
- Gillingham, K., D. Rapson, G. Wagner, (2014), *The Rebound Effect and Energy Efficiency Policy*, *Nota di Lavoro 107.2014*, Milan, Italy: Fondazione Eni Enrico Mattei.
- Inghilleri P., Boffi M., Pola L. & Rainisio N. (2020) *I comportamenti energetici in ambito domestico. Dimensioni culturali, sociali e individuali*. Roma, ENEA - Agenzia Nazionale per l'Efficienza Energetica.
- Mac Nicol D., Giffin G. & Mansell P. (2014) *RICS Professional Guidance, Stakeholder engagement 1st Edition*. In https://apmv1livestorage.blob.core.windows.net/legacymages/rics%20stakeholder%20engagement-final-proof-pw%20protected_0.pdf
- Mendelow, A.L. (1981) *Environmental Scanning - The Impact of the Stakeholder Concept*. ICIS - International Conference on Information System, Proceedings. In <https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1009&context=icis1981>
- O'Rafferty S., A. de Eyto & Lewis H. J. (2016) *Open Practices: Lessons from Co-Design of Public Services for Behaviour Change*. In P. Lloyd and E. Bohemia (eds.), *Proceedings of DRS 2016: Design + Research + Society* (pp. 3573–3590). Brighton, Design Research Society.
- Owen H. (2008) *Open Space Technology - A User's Guide*. Oakland, Berrett-Koehler Publishers.
- Sanders E. (2014) *Perspectives on Participation in Design*. In C. Mareis, M. Held, and G. Joost (eds.) *Wer gestaltet die Gestaltung? Praxis, Theorie und Geschichte des partizipatorischen Designs* (pp. 61–75). Bielefeld, transcript Verlag.
- Sanders, E. B.-N, Stappers, P, J (2008) *Co-creation and the new landscapes of design*, *CoDesign*, 4:1, 5-18, DOI: 10.1080/15710880701875068
- Sussman R., Chikumbo M. (2016) *Behaviour Change Programs: Status and Impact*. Washington, American Council for an Energy-Efficient Economy. In <https://www.aceee.org/sites/default/files/publications/researchreports/b1601.pdf>
- Wie L. (1996) *A Guide to the Project Management Body of Knowledge*. Newton Square, Project Management Institute.