

In-depth case study

The “Manival” condominium near Grenoble



Fig. 1: The Manival condominium in Grenoble, before (left) and after (right) retrofit

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Table of contents

1	Theoretical frame	3
1.1	Enabling environment	3
1.2	Focus group	4
1.3	Semi-structured interview.....	5
2	Case study.....	5
2.1	Focus group participants	5
2.2	MURMUR Program in Grenoble	7
2.3	“The Manival” condominium: data sheet	9
3	Interview.....	10
3.1	Why this retrofit: Impulse and motivations	11
3.2	Supporting factors	12
3.2.1	Before retrofit: existing knowledge.....	12
3.2.2	Before and during retrofit: guidance by professionals	12
3.2.3	Before and during retrofit: mobilization inside the condominium	14
3.2.4	Financing scheme	16
3.3	Challenges encountered.....	18
3.3.1	Before retrofit.....	18
3.3.2	During retrofit.....	19
3.3.3	The Saint-André: potential failure factors.....	21
3.4	Results and perspectives for the future	22
4	Conclusions.....	24
4.1	Enabling environment: socio-ecological model	24
4.2	Lessons and advice	28
	Conclusion	29
5	References.....	30

1 Theoretical frame

The aim of this report is to develop an understanding of the enabling environment that led to the renovation project of a specific condominium, from the decision-making process to the financing scheme that was used, via the support system from which homeowners benefitted, throughout the process. In short: what are the crucial elements and enabling environment that allowed the energy retrofit in condominiums?

1.1 Enabling environment

Energy retrofit in condominiums involves collective decision making, the complexity of which is believed to be one of the main barriers to retrofitting as there is a strong heterogeneity in the occupants in terms of age, education, income, or occupancy status. Varying interests and perceptions can make it difficult to gather people around a common project. Whereas some owners are willing to, and pushing for, the energy retrofit of their condominium, others can block the decision by voting against the project. It is therefore necessary to understand what motivates co-owners to behave the way they do, in order to create an enabling environment stimulating the acceleration of energy retrofitting of condominiums. (Ramirez Tamez 2018, Sottovia 2018)

An enabling environment is understood as a set of interrelated conditions that impacts the potential to bring about sustained and effective change; in this case, impacts on the capacity of co-owners to engage in energy retrofitting. According to the literature, four main pillars are involved in creating enabling environments:

- **Policy**, a generic term regrouping political will and support through policies, strategies and governments' capacity to engage, such as the creation of energy efficiency requirements (Living Cities 2009) or the creation of mandatory pluriannual plans for renovation, ensuring that co-owners adopt a long-term vision toward retrofitting (Liverzay, Teissier et al. 2016, Plan Bâtiment Durable 2018).
- **Finance**, through the development of supportive financial regulations and mechanisms (e.g. tax credits, tax reduction/exemption, public loans/grants, green public procurement) and the mobilization of funds for implementation. Among the solutions specific to energy retrofit, literature suggests the creation of financial incentives and attractive financing programs to deal with the initial cost of energy retrofitting such as zero interest financing or clean energy assessment districts.
- **Capacity and internal organization**, to ensure sufficient investment in human (condominiums) capacity and skills development. For instance, there should be a dedicated budget and staff for the retrofit, and technical training opportunities for the energy referent. A prerequisite for enabling environment could also be the identification of clear management roles and responsibilities (condominiums' structure and role delegation among co-owners) across institutions and agencies (condominiums) (e.g. data and information, creation of planning tools and management guidelines). Capacity and skills development could also mean providing a free (= subsidized by public authorities) consultant who guides the condominiums with the procedures.
- **Socio-cultural acceptance**, through the presence of social capital and trust (within the condo, towards the service providers and towards the intervention), which involves communication practices, information networks and third-party services. The intervention should match the users' perceptions, preferences and commitments. For example, changing paradigm from energy retrofit to global amelioration of building would help the decision to retrofit by taking

into account co-owners' priorities and interests (Plan Bâtiment Durable 2018). Also, in order to maintain positive perceptions, information regarding energy-efficiency interventions should be made clear and easily available, with measures including minimal paper work requirements and information services that help owners in choosing contractors. Renovation professionals, technologies and contractors must be reliable and capable of meeting participants' expectations to increase social capital and trust.

1.2 Focus group

In order to investigate the enabling environment surrounding successful energy retrofits, several in-depth case studies were conducted within the Interreg NWE "ACE_retrofitting"¹ project. Focus Groups are generally used to gather people's opinions, ideas, and beliefs on a certain topic (Copley Focus Center 2012). Surveys or questionnaires can be useful, but cannot capture the depth of a person's thoughts, feelings or understanding, whereas focus groups allow to gather more useful information in a shorter period of time. In this interactive context, people are encouraged to discuss thoughts freely with other participants, which typically generate ideas and can provide a wealth of information through open ended, broad, and qualitative responses (Adams and Cox 2008). The main purpose of focus group research is therefore to draw upon respondents' attitudes, feelings, beliefs, experiences and reactions in a way where other methods are not applicable. Focus groups can provide insight into complicated topics where opinions or attitudes are conditional or where the area of concern relates to multifaceted behaviour or motivation (Smithson 2007). They are particularly useful when there are power differences between the participants and decision-makers or professionals, which could be the case in the context of a condominium renovation project.

The idea is that in-depth case studies will lead to insights into what constitutes an enabling environment, so that other local authorities can create their own enabling environment. Creating an enabling environment implies interacting with a variety of actors and external factors (legislation, finances, etc.), that must be in place in order to accelerate the energy retrofit uptake. In order to understand the interrelations of personal and external factors, the **social ecological model** (SEM) can be used. Consistent with systems thinking, this model is a theory-based framework for understanding the intricate interactions among individual, interpersonal, organizational, community and societal factors that determine behaviour (Centers for Disease Control and Prevention 2020). A system is a set of activities, actors and settings that influence or are influenced by a specific situation. The effectiveness of planning behavioural change intervention can be increased when using a systems perspective to assess the needs and strengths of a population; to comprehend a problem and its causes; to create a group of stakeholders to design, carry out and diffuse an intervention; and to choose the most efficient influence points to address a certain problem (Ramirez Tamez 2018). An approach of looking at environmental agents (decision makers or role actors) at every ecological level (individual – home-owners; interpersonal – co-owners of the condominium; organizational – property manager, condominium board, architect; community – municipality and its services; societal – legislators) allows for multiple influences both within and across levels to enhance behavioural change. Interventions using SEM centre their attention on agents in positions to exert control over aspects of the environment (Bartholomew, Markham et al. 2016).

In this analysis (see Fig. 2 hereunder), the home-owner is at the centre of the model. The co-owners of the condominium are at the interpersonal level, since they belong to a group of people connected

¹ <https://www.nweurope.eu/projects/project-search/accelerating-condominium-energy-retrofitting-ace-retrofitting/>

by their shared rights on a single building. The condominium associations (the General Assembly of co-owners, the condominium board) is at the organizational level, because it is a system with specific objectives and with formal multi-level decision-making processes. The city/metropole is considered at the community level since it is a social place (in terms of sense of living, common values, culture, norms, language and problems) shared by the individuals. Finally, (French, in this case) society is the larger system possessing the means to control some aspects of the lives and development of their constituent systems (Bartholomew, Markham et al. 2016, Ramirez Tamez 2018, Sottovia 2018).

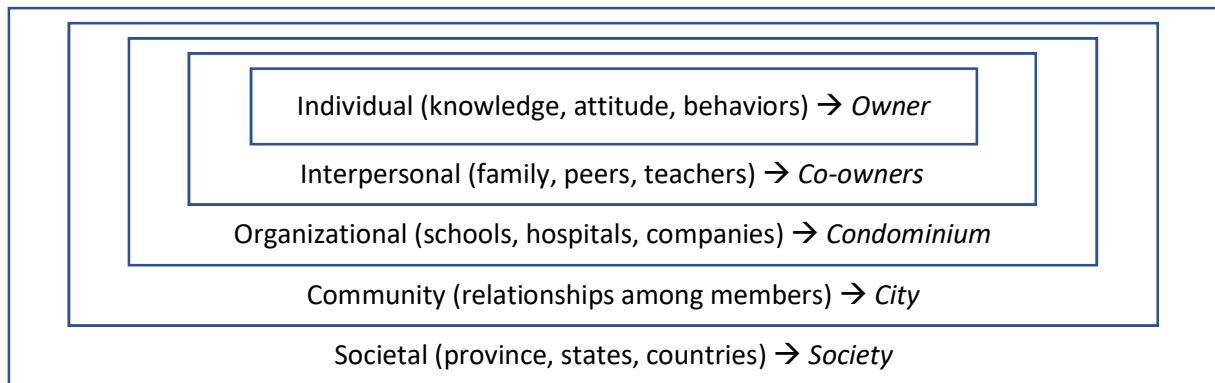


Fig. 2: The social ecological model (SEM) (Ramirez Tamez 2018).

1.3 Semi-structured interview

The analysis of this “in-depth case study” in Grenoble is conducted during a two-and-a-half-hour meeting in the ALEC offices, using a semi-structured interview of the focus group. Semi-structured interviewing is best used when you won't get more than one chance to interview someone. Conducted conversationally, the semi-structured interview is also often accompanied by follow-up why or how questions. The interviewer and respondents engage in a formal discussion, following an interview guide (mainly a list of questions and topics that need to be covered during the conversation), but with the added ability to follow topical trajectories in the conversation that may stray from the guide when this is appropriate, providing the opportunity to express views in one's own terms and identify new ways of seeing and understanding the topic at hand. (Longhurst 2010, Adams 2015)

As it is difficult to focus on conducting an interview and jotting notes, this meeting has been recorded, with all participants' consents, and later transcribed for the sake of analysis and reporting.

2 Case study

2.1 Focus group participants

In the development of this case study, stakeholders from these different scale levels were met:

- 3 members of the “*Conseil Syndical*” and its “*Commission travaux*”, themselves home-owners and co-owners, acted as representative of the co-owners of the condominium, therefore representing the **personal, interpersonal and organisational levels** in the SEM. Mr. DUCKI, ANDRE and VIGNAL are active members of the condominium board (“*Conseil Syndical*”) and the “*Commission travaux*”, an internal board in charge of following the renovation project and referring to the board and the General Assembly of co-owners.

- M. PARISET from the NEXITY Group, syndic² of the condominium. NEXITY is “the first integrated French real estate group involved in all areas of property development and services (residential real estate, corporate real estate, real estate services to individuals and to companies, networks and customer relations, urban developer”)³. This property manager represents, in the Social Ecological Model, the **organisational level** of the condominium.
- The architect, M. Pierre DESCACQ from TRICONIC, mandated by the condominium to oversee the renovation project, would also be considered part of the **organisational level**, although his organisational skills apply more to the project than the Social Ecological structure that is a condominium.
- Two members of the ALEC (Agence Local de l’Énergie et du Climat – The Local Energy and Climate Agency), including M. BOGOTTO, the first contact into this case study. They are “a local tool, a decision-making aid, a place for discussion and advice on energy, for all consumers in the Grenoble Metropole (Grenoble city and surrounding municipalities)”, which mission is to “contribute locally to the energy transition [...] by taking part in the development and implementation of public policies, stimulating innovative actions and forging partnerships, and providing everyone with personalized advice and support”⁴. They also support the Grenoble Alpes Metropole in its territorial policies, develop partnerships with communities (for technical supports and advice in shared energy), accompany social housing sectors and building professionals. In this project, the ALEC is the first contact for a condominium wishing to benefit from the “MURMUR” structure developed to stimulate and help the implementation of energy retrofit of condominiums. Financed by the Metropole, they provide co-owners with global assistance and technical help to realize initial assessments and personalized studies, recommend work packages, supply them with technical referential, and put them in contact with financial bodies. They quite clearly belong to the **community level** of the SEM.
- SOLiHA (“Solidaires pour l’habitat” - Solidarity for housing) was represented as an “associative movement”, an important actor of accompanied rehabilitation which missions include the “provision of solutions for decent and affordable housing for all”⁵, including condominiums inhabitants. They intervene in the MURMUR system by realizing the financial plan and the grant request on behalf of the condominium (for global incentives) and of each co-owner (for individualized incentives). They are, also, part of the **community level** in the SEM.
- One representative of the “Grenoble Alpes Metropole” administration and governance body⁶. This structure exercises major influence on a territory regrouping 49 municipalities centred around Grenoble, on domains such as waste management, mobility, economic development, water supply and treatment, equipment management, tourism, urban planning, environment protection, urban policies, energy transition, housing policies and energy supply. They are at the policy origin of the MURMUR program and participate in financing the ALEC and SOLiHA structures. They are representative of the **community and society level** in the SEM.

² Syndic is the francophone term for the property manager. This can be a volunteer (usual in smaller condominiums, or an external professional.

³ <https://www.nexity.fr/groupe/presentation>

⁴ <http://www.alec-grenoble.org/4189-presentation-alec.htm>

⁵ <https://www.soliha.fr/>

⁶ <https://www.lametro.fr/>

2.2 MURMUR Program in Grenoble⁷

The retrofit of the Manival Condominium has been realised within the MURMUR project, a support and incentive system for condominiums and owners of individual houses, implemented since 2010 in the Metropole of Grenoble.

The City of Grenoble and the Metropole is particularly active in sustainable development programs on many levels, encouraging people to improve the energy performance of their homes. It is one of the first French agglomerations to implement a “Territorial Climate Plan” seeking to reduce GHG emissions on its territory. Experimental and innovative actions emerged, in order to reduce energy consumptions in residential and tertiary buildings and to fight against energy poverty by providing financing schemes. The first operation took place in the “Big Boulevards” sector between 2005 and 2009, targeting dwellings (including 8000 in 220 condominiums), small shops and tertiary equipment. The success of this Operation, which exceeded the initial objectives, incited the Metropole to continue.

The first MURMUR program saw the light of day in 2010. At the crossroad between the “Air Energy Climate Plan”, and the “Local Program for Housing”, it targeted 150 condominium, sheltering around 5000 dwellings (out of the 65000 the Metropole counts), built between 1945 and 1975, in a territory covering all 49 municipalities of the Metropole. 60 million euros were invested, to save up to 60% on the heating bills of the targeted buildings. In the end, an average 35% of heating-related energy consumptions were saved, in the 84 condominiums which voted for retrofitting work packages (10 “Progressive”, 60 “Complete” and 14 “Exemplary”). MURMUR1 lasted for 4 years, and is described on the Grenoble Alpes Metropole website as an “action plan of an unprecedented amplitude in France, as far as quantitative objectives and financial support to individuals are concerned. It constituted an inspiring experience and key support for the development of eco-renovation platforms implemented afterwards in France.”

In 2016, the Metropole launched the MURMUR2 operation, with a broader field of action that included individual houses. This operation is now led in partnership with the French State, notably through financial support from the French Environment and Energy Management Agency, and actors from the banking, municipalities and building sectors. MURMUR2 saw 15 million euros invested to renovate 5000 dwellings. However, 2 years separated MURMUR1 and MURMUR2, without a programme. This, coupled with the financial crisis, caused financial difficulties for building companies, as condominiums stopped contracting them without the access to financial aid. As a consequence, first retrofits at the beginning of MURMUR2 were rather low-priced; prices then gradually increased.

The MURMUR program does not impose, but encourages the “Exemplary” solution as the highest step in the fundable energy retrofit of a condominium. The first step is a “Progressive” offer, which sees the façades insulated, and the windows of the common parts and stairways, changed. The second step is the “Complete” package, which adds the insulation of all heat loss areas insulated, including roof and floor. In this case however, the “Exemplary” project (including work packages such as a complete insulation of heat losses areas, replacement of all windows and installation of a complete ventilation system) was chosen by the co-owners’ General Assembly.

A third version of the MURMUR program is in preparation, as the Metropole has decided to implement its 2030 trajectory through a public service focused on energy performance. Renovation objectives will be increased, including for condominiums, but financing modalities are susceptible to change. Works

⁷ <https://www.grenoblealpesmetropole.fr/265-mur-mur.htm>
<http://www.alec-grenoble.org/9132-mur-mur-2-campagne-isolation-renovation-coproprietes-1945-1975.htm>
<https://www.grenoble.fr/demarche/599/659-campagne-d-isolation-mur-mur-2.htm>

have begun for a new accompaniment mode to be implemented in 2022, with the ALEC remaining a crucial open counter.

The Local Energy and Climate Agency (ALEC) takes many actions to implement the MURMUR program, among which actions destined to raise awareness on energy consumption and climate change (promotion, newsletters, inter-schools' contests, worksite visits, tests with thermal cameras or air quality devices, workshops and testimonials) and those seeking to give free, neutral and independent advice (to individuals or condominiums), about for example financial incentives, work measures, eco-gestures and behaviours. This condominium first participated in a **participatory workshop** where, instead of traditional top-down information, bottom-up expression is encouraged, for example where co-owners are asked what their vision of their building in ten years is (in terms of energy efficiency, but not only).

Here is a typical roadmap for a condominium in the MURMUR2 program:

1. Registration to the ALEC
2. Initial Assessment of the condominium by the ALEC
After analysing and auditing 40 condominiums (built between 1945 and 1975) in the MURMUR 1 phase, the ALEC decided to eliminate the complete audit phase altogether as it always gave the same results and work packages recommendations, which allowed them to save a whole year for condominiums, in the process.
3. Presentation meeting (with the condominium board and the syndic)
4. Visit on site and personalised assessment by the ALEC – no calculations, mainly visual.
The goal is to deliver a simple document to the condominium, *“not something too difficult to understand, with complicated numbers”*.
5. First technical committee, during which the assessment is presented to the partners (ALEC, SoliHa, the Metropole and the Municipality)
6. Collective informative meeting(s) with all co-owners
7. First vote to entrust an architect with the development of a renovation project
The rate of vote at this point is around 90%, which means that 9 times out of ten, the condominium votes to go further and see a full and detailed project
8. Validation of work packages during a second technical committee, with the condominium board, the architect, SoliHa and the ALEC.
9. Consultation of construction companies, definition of work programs, technical and architectural evaluation
10. Analyse of quotes by SoliHa, (collective and individual) financial simulations, meetings with the condominium board, counsellors in social and family economy...
11. General Assembly where co-owners, now completely informed on costs, vote to start the works.
12. Setting up of financial files by SoliHa
13. Renovation works
14. Follow-up by the ALEC (for example, when heat is provided by a collective system, the ALEC will meet with the syndic, the board and the heating operator) and SoliHa (to close the financial incentives files).

In France, individuals or condominiums who save energy can value these realised savings by selling them to energy suppliers through the “energy savings certificates” mechanism. Energy suppliers are required by law to realise energy savings (since 2010), and are therefore very interested in buying back energy savings made by others. Ambitious objectives imposed to energy suppliers mean that there is a high value attributed to every kWh saved. In the MURMUR mechanism, these energy savings are

handed over to the Metropole. “Due to the scale of the MURMUR2 mechanism, a significant volume of those certificates should be generated, representing approximately 770 GWh “cumac” (cumulated and actualised), meaning a total revenue estimated at around 5M€” (Grenoble Alpes Metropole 2020), which can be used by the Metropole to subsidise more works, creating therefore to some extent a revolving fund.

2.3 “The Manival” condominium: data sheet

Prior to the interview, a questionnaire was sent to the contact at ALEC, with the declared objective to know more about the case study beforehand, so as to spend as little time as necessary on the day of the meeting to understand the renovation project and the organisation of the condominium.

The condominium is called “Le Manival”, and is located in the municipality of Meylan. It is composed of 144 apartments, distributed in 4 buildings built around 1972. The apartments have an average surface of 82m², and around 33% of them are rented.

Costs for energy consumption related to heating are shared in the condominium based on dwelling areas, whereas costs related to Domestic Hot Water (DHW) consumption are distributed according to recordings on individual meters. Costs related to the renovation project are shared between co-owners based on dwellings areas, which relate to quotas of each owners on the common property.

The condominium first reached out to the ALEC in 2015, voted to start the works in 2017, and actually entered the retrofit phase in 2018. Decisions on the renovation project were voted by majority of article 24 of the Law of 1965, that is to say the majority of the present and represented at the general assembly.

All the works carried out were voted at a general assembly because they relate to common parts of the condominium. Only the replacement of old (private) apartment windows is the responsibility of each owner. Only the replacement of old (private) apartment windows remained the responsibility of individual owners, who were instructed of performance requirements expected by the MURMUR program (a global - frame and glazing - maximal U-value of 1.7W/m²K). The heating and DHW production systems had been replaced in 2015 and were therefore not included in the work packages.

The actual retrofit process was still in progress at the time of the meeting which took place in February 2020. The work packages that were finished on the four buildings are those related to the insulation of the roofs (by 14cm of polyurethane to reach a thermal resistance of 6m²K/W), and the lower floors on basements (16cm of mineral wool to reach a thermal resistance of 4m²K/W), as well as the collective ventilation system (hygro-adjustable and completely mechanical, with heat recovery) which only needed some final adjustments. The works in progress were the external thermal insulation of facades (with 11cm of resolic foam to reach a thermal insulation of 5m²K/W), completed with the treatment of potential thermal bridges (acroteria or parapet walls, vertical walls separating the balconies...).

There were no other “important”⁸ work packages – which could include for example interventions for stability, security, or salubrity reasons, accessibility to the disabled, necessary removal of dangerous materials such as asbestos or lead, works on (gas, electricity or water) networks...

The total cost of the project is 3.250.000€, and the expected outcome is a reduction in energy consumption of around 40% (corresponding to the average result of MURMUR projects).

⁸ Described in the questionnaire as work packages with an important energy impact, which initiated the will to renovate, or which were revealed as crucial in the development of the project or the decision-making process. They do not include normal maintenance, partial replacements or minor works.

The Manival condominium is part of a park of 8 buildings split between 3 co-ownership organisations. The first and oldest two buildings are the “Grands Crêt” condominium, which have not yet been renovated. The “Manival” organisation regroups the 4 buildings that have been built on a second phase. The “Emendra” condominium, lastly, occupies the last two buildings which have been renovated recently in the MURMUR1 program. All buildings are strictly identical, and are managed by the same syndic (Régis PARISSET for NEXITY).

For the Metropole **administration**, the “Manival” renovation was the first “Exemplary” project in the MURMUR2 program. It was the first condominium for which the administrative process (including specific financial schemes, particular new procedures, different modalities...) could be **implemented** and validated. Eagerness for actual results, mentioned by the Metropole, made this condominium renovation project a bit different on the administrative side.

*“The operation started in 2016, and the first vote by a condo was in 2017.
There has been a lot of support work, but very few substantial votes.
We were eagerly waiting to see projects shaped and materialised.
We knew we had a huge potential in stock, but never arrived to the phase where people decide.
I remember this phase as uncertain on process validation. Would the new support modalities,
new financing schemes, answer to needs?”*

(Focus group member from the Grenoble Alpes Metropole administration)

3 Interview

The interview started with the interviewers welcoming the participants, presenting themselves and the ACE Retrofitting project. All participants were seated in a boardroom layout. The meeting was recorded with the consent of the participants, all of which signed consent forms and completed a small identification questionnaire.

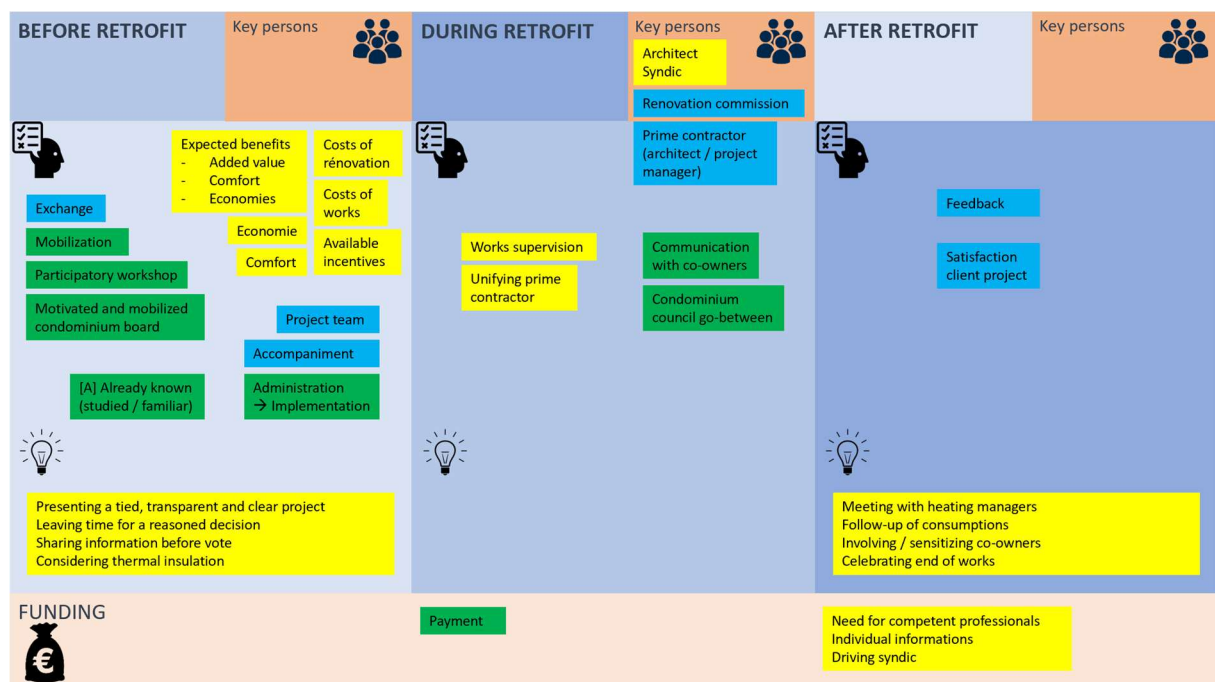




Fig. 3: Template for the focus group interview guidelines

The interviewers had prepared a poster, presenting the structure of the interview. Each participant was asked to write, on a maximum of 3 sticky notes, their thoughts for each part of the renovation

process. These thoughts could be about key moments, key actors, key meetings, problems they encountered... any first idea that popped to their mind when thinking back to these phases. Co-owners were given yellow paper; the syndic, blue paper; and all the others were given green paper. Those notes were then collected and assembled in the  section. The  section is set to receive advice that the participants would feel like giving to condominiums candidate to retrofit. The Fig. 3 above shows the result after the meeting.

3.1 Why this retrofit: Impulse and motivations

The syndic mentioned that the condominium board is often at the origin of the projects. In this case, co-owners nuanced that, although they were already pondering the possibility of this project, the impulse to start a retrofit mainly came from the ALEC, which invited them to meetings, workshops and trainings on energy retrofit of condominiums, which the co-owners' board decided to attend.

“That was the real starting point. That’s what motivated us, that’s how we learned.”
(André DUCKI, co-owner)

As mentioned, the ALEC is missioned by the Grenoble Alpes Metropole to organise these meetings and information session with condominiums. The Administration representative mentions that, as far as they are concerned, a condominium voting for a simple façade restoration is the worst-case scenario they are willing to avoid, and considers that their objective, through this service given by the ALEC, is to make condominiums at least consider thermal insulation in their discussions. Despite the impressive dynamics that exists in the Grenoble Metropole, and the tremendous potential in energy consumption reduction, many condominiums do not even consider it.

“The vote is theirs, but they should at least be aware of the insulation alternative, its costs and benefits.” (Grenoble Alpes Metropole)

The co-owners mentioned several foreseeable **benefits** of renovation, which became objectives and goals of the projects:

- **Comfort**, which, according to one of the co-owners, “is priceless”. The search for comfort has already been mentioned by several authors as an important incentive in retrofit, which is confirmed here as the first spoken motivation. Further than the obvious thermal comfort, the co-owner mentioned other forms of unexpected comfort, such as acoustic comfort:

“With double glazing, I did not think of that, there were less noises from outside. Less heat losses, and less noise from outside”. (Jacques VIGNAL, co-owner)

- **Economies** are an often-cited advantage of renovation. In this case, co-owners tended to compare energy (natural gas) consumptions with neighbouring condominiums, which is a well-known incentive (comparisons stimulate healthy emulation).

“We do this since 2012. In L’Emendra, they consume half as much as us... since they insulated.” (André DUCKI, co-owner)

- Also, a need for an **aesthetic upgrade** of the building was brought up when the group discussed the missed opportunity that represents a “simple restoration” of facades. In this case, while aesthetics was acknowledged as a motivation for retrofit by the co-owners, they also saw an upgrade of the façade as an opportunity to insulate:

“Either we had the buildings painted and had none of this added value, comfort or energy gains; or we did this [...] We did not just want a simple facades’ restoration, a face-lift, we found it absurd to do this without insulating, it was not coherent. And what was even more

incoherent, we had the example of the Emendra condominium, it would cost more to opt for a simple facades' restoration, without any kind of financial incentives, than an insulation project with incentives.” (André DUCKI, co-owner)

3.2 Supporting factors

3.2.1 Before retrofit: existing knowledge

The “existing knowledge” refers to the fact that previous experiences were used to answer questions that arose before retrofit, on different topics. In this case, for example, knowledge was mainly brought by the guidance team composed of the ALEC, SoliHa and the Metropole administration. Those structures have worked on this kind of projects since 2010 (since 2006, actually, with the first “Big Boulevards” experiment), which indicates that there is an “already ancient” know-how to mobilize.

The condominium also benefitted from the experience of the architect and his knowledge of another, nearby located, exact copy condominium, which participated in the first MURMUR program and renovated its buildings (“L’Emendra”, see above). The architect, M. DESCACQ from TRICONIC, had therefore available experience to lean on, and could build on the example of L’Emendra to avoid the traps and technical (and financial, as mentioned by SoliHa) difficulties encountered during this first condominium’s renovation.

“Everything was already traced, determined, the process was entirely integrated”.
(Pierre DESCACQ, architect)

This particular situation allowed, for example, to consider changing the way the insulation was fixed to the façade (nailed rather than drilled), which avoided a lot of worksite noise to occupants. Acoustic comfort during the retrofit was therefore increased, much to the satisfaction of the occupants.

Existing know-how can also exist among the co-owners: in this case, one of them even joined the renovation committee with the declared intent to put his own experience to good use:

“When the project was voted in General Assembly, I entered the Renovation Commission, because it seemed interesting, as a co-owner, and because it was kind of my job before retirement. I knew about construction sites problems, I could bring something to the table, for everybody. I therefore entered the Renovation Commission, and now I’ve been added to the condominium board.” (Jacques ANDRE, co-owner).

However, it does not seem to be considered essential. Another co-owner stresses that previous technical experience might not be the most important asset, because there already is technical expertise on the team, citing the project manager and architect, and a technical controller who they do not see often. The most important would be to act as link with other co-owners. SoliHa agrees that they should not interfere in technical talks, acknowledging that technical expertise in the co-owners’ circle might help them better understand what’s at stake, but also asking to find the right balance in the skills that are represented in the project team.

3.2.2 Before and during retrofit: guidance by professionals

Guidance is defined by the Cambridge dictionary as the “help and advice about how to do something or about how to deal with problems”. In this case, it refers to the help brought from outside of the condominium (the ALEC, SoliHa and the Metropole administration, mainly) to help the co-owners reach a decision, by answering questions, providing technical, financial and administrative information

and advising on the best available solutions. Based on existing know-how, this **guidance** is crucial for co-owners, who obviously are not all experts on retrofit, renovation works, energy efficiency or financing schemes.

“Without help to set-up the project, we could not have done it”. (André DUCKI, co-owner)

This professional support is important at any step of the process, starting from the first meeting with ALEC. Regular and frequent meetings before the vote are crucial to co-owners, who were grateful to the professionals and their skills, and were happy to see a real team spirit arise.

“What I found to be most important are those informative meetings beforehand, where all co-owners were invited. That’s where we got the numbers, asked questions etc. [...] People were satisfied to be able to share, to understand things that were not clear for them during the public meeting. [...] We had a project, all was set, people could understand and internalise the project before voting.” (André DUCKI, co-owner)

“We had your help, to explain to people the kind of help they could expect. Help was there, people came to the building, and all those who had questions could go ask them. They did not have to go in town. To a lot of retired people, slightly older, with difficulties to walk, it was reassuring.” (Jacques VIGNAL, co-owner)

The financing body, SoliHa, confirmed that they had on-site presence:

“We first had a collective information session, a public meeting before the General Assembly. Then we organised individual information, with people coming to see us, and presence organised on site. [...] We had a lot, a lot, a lot of people. A lot. I think almost all owners who live in the condominium. [...] We cannot do it every time. But in really big condominiums such as this one, during public meetings with hundreds of people, they might not dare to ask questions. On smaller meetings, we can solve most problems, but in those situations, we need to hear individual voices, people who came to express a need or a demand. [...] The individual accompaniment was a bit more thorough than usual” (SoliHa)

Public information is less frequent because SoliHa usually targets households with modest income, eligible for individual financial incentives. In this case, the information (on loan solutions) was intended for everyone, even for those with higher income.

Transparency in the guidance trajectory is mentioned several times as an important factor for success.

“You need to be able to explain the numbers and figures, explain everything, from the work measures to the architect fees, justify everything. What’s important in the guidance is to leave room for those who know. The syndic is like an orchestra conductor who does not know the partitions well, he needs an architect to steer him on the technical aspects. Same for the subsidies. We need to lean on experts” (Régis PARISSET, syndic)

“Transparency, lots of transparency. For everyone, because in any case things get into light. If the syndic tells lies, tries to hide things, it’s a trap, you always get caught. Transparency and exchanges. A condominium that doubts, that does not trust the syndic or the architect, is a condo that does not vote.” (Régis PARISSET, syndic)

The uphill, pre-retrofit phase is crucial for owners to get all the information from all stakeholders, architect, syndic, condominium board, the ALEC and SoliHa, in order for them to vote wisely, in full knowledge of the facts and amounts. This is a major goal, for the syndic and the financing body:

*“In the General Assembly, we did not face many remaining questions.
People arrived reassured and mobilised.
The assembly “sailed smoothly”. (Régis PARISET, syndic)*

However, the guidance did not stop there. The ALEC, SoliHa and the Metropole saw their involvement decrease during the renovation phase; the torch was passed on to the architect and the builders.

*He [the architect] organises meetings, practically every week, gathering almost all trades working on the building, and us. We can question them, they can react.
We get to meet the electrician, those who place windows, those working on the facades.
They come, even for ten or fifteen minutes. They tell us why they could not follow the planning, why they changed methods, etc.” (Jacques VIGNAL, co-owner)*

The syndic, particularly, is the one which guidance never really stops. He is there before the retrofit, often trying to convince the co-owners to engage in a renovation project. Not all building managers are motivated and proactive, but Régis Pariset mentioned that it is an objective of his organization to step up and take the lead in motivating other condominium boards.

*“At NEXITY, we want to tackle the problem. We have a huge stock to manage,
and we want to propose that kind of project to the boards,
which are not often as dynamic as this one.” (Régis PARISET, syndic)*

It is his job to then accompany the board during the pre-retrofit phase, to elaborate the project with the technical assistance, and to assist the board during and after the renovation phase.

*“It does not always go smoothly, sometimes, with one or two contractors,
it can get complicated, but we are there to make everything right.
And, in the end, it does get back on the right path.” (Régis PARISET, syndic)*

3.2.3 Before and during retrofit: mobilization inside the condominium

There is a link between information and explanations on the one hand, and **mobilisation** on the other, and both are key to success. The informative sessions that were organised in the early stages of the project appeared to convince some owners, who up until then did not participate to General Assemblies, to show up and voice their preferences. They gained interest in the project and, step by step, got mobilised to see the project approved. Their participation in the vote was crucial, since the decision is taken by the majority of the present and represented at the general assembly:

“Not voting counts as much as voting “against”. (Jacques VIGNAL, co-owner)

Gaël BOGOTTO from the ALEC organisation confirms that a crucial factor for success is the presence, inside the condominium, of a team of people who are **motivated and mobilized**, deeply involved, not necessarily savvy in energy retrofit at first, but who have a deep knowledge of the building. The financial body confirms that, when the syndic is a leader for this kind of project, but there is no support from the condominium, it does not work. They have to work as a group, and the condominium board needs to be enlightened, motivated and aware of the owners' interests. The syndic witnessed himself, when he used to work for SoliHa, that a strong condominium board (or even a specific “renovation commission”) is key. An inside “project team” that carries the project is a crucial success factor, along with a skilled technical assistance.

“It is not only a condominium board. It is not only a syndic, not only SoliHa, not only the Metropole, not only the architect. It only works if the ensemble works.”
(Régis PARISSET, syndic)

However, it seems that these particular positive dispositions from a condominium board are a matter of individualities.

“We have projects where it is completely different, not the same kind of involvement. I’ve never seen a board so devoted. We’ve faced problems... If it works, it’s thanks to them.” (Régis PARISSET, syndic)

Mobilisation must appear soon in the development of the project. It is actually one of the impulses that are necessary for the condominium board to start looking for answers to their questions, solutions to their problems. Examples were given of how mobilized people could influence the decision-making processes:

“They will regret this situation, at the “Grands Crêts” condominium. They will probably decide to retrofit quite soon. [...] There are new buyers, who see the other buildings retrofitted next door. We recently had a general assembly, and the topic was on the table. One or two people tried to say they were against it, but they did not expect that reaction in the room, some people telling them “No, listen, shut up, we want the project done, and we’ll bring back the topic again next year and the next.” (Régis PARISSET, syndic)

“One of the apartments below mine has been sold; when we voted the MURMUR project, the buyer came to the meeting to see the project voted; were it not, he would not have bought the apartment.” (Jacques VIGNAL, co-owner)

The co-owners admit that a set of motivated carriers is needed. They had a lot of meetings around the project, and took time to think things through and let the project mature. There does not seem to have been disagreements between the three representatives.

“We’ve always been a team. We’ve discussed, there has been some consensus, we always find...”
(Jacques VIGNAL, co-owner)

They also kept the dialogue with the other co-owners alive:

“We represent all the co-owners, and that is something we have integrated. Nobody decides for us or instead of us. We’ve decided on things I would not have done, if I were alone. We try to look at the well-being of the community, that’s why it works.” (André DUCKI, co-owner)

The works have been voted by a majority of 80%, which is quite impressive (even for the condominium board members), and is acknowledged by the administration body as proof that the condominium board has not been pushed to do anything or lead by a mechanism they could not control.

“It’s a voluntary decision.” (Grenoble Alpes Metropole)

They, however, humbly want to stress upon the fact that their task was made quite a lot easier by the structure formed by the ALEC, SoliHa and the Metropole.

“When you have teams like them, proposing a concrete and fixed project... telling you exactly what you are going to pay, what you are going to receive... It’s motivating, it really helps.” (André DUCKI, co-owner)

3.2.4 Financing scheme

Quite predictably, one of the concerns for the owners, before the retrofit, was the **cost of the works**. The architect provided the condominium board with three solutions corresponding to the three levels of subsidisation available in the MURMUR program (“Progressive”, “Complete” and “Exemplary”).

Then, the question that naturally arises among co-owners is about the available help, incentives and loan solutions covering the amounts that were not subsidised by collective or individual incentives.

There are two kinds of incentives: collective (same for all), and individual (depending on households’ income):

Table 1: Available incentives in the MURMUR 2 programme (Source: ALEC)

	Progressive	Complete	Exemplary
Collective incentives (Metropole)	600 €/dwelling (+ 200 €/dwelling for ventilation option)	1500 € / dwelling (+ 400 €/dwelling for ventilation option)	1500 € / dwelling +20% of work costs MAX 6500 €/dwelling
Individual incentives (Metropole + ANAH ⁹ + municipalities)	Modest income: up until 55% of remaining amounts subsidised Very modest income: up until 80% of remaining amounts subsidised		
	None	None	“Middle class” income: 15% of remaining amount subsidised
	Landlords: “controlled rent” mechanism + tax breaks		
Financing solution	Collective loans such as COPRO100 EcoPTZ (Zero Interest Rate Loan), individual or collective		

The collective incentives benefit all co-owners (occupants or lessors, legal entity or natural person), are calculated globally, thanks to fixed prices for each lot, then distributed among co-owners depending on their property shares. The first half of these incentives are paid when works are decided, commissioned and about to start, and can therefore be deducted from the fundraising calls. The other half is paid when invoices are submitted after works are paid for: they therefore have to be included in fundraising calls, but will be reimbursed, or deducted from following charges.

Individual incentives add up to the owners’ shares of the global incentive, but only concern:

- Resident owners which revenues do not exceed a specific threshold. These incentives are a percentage applied to the amount of the works, including the fees of the parties involved (project manager, architect, syndic...), but excluding taxes and global incentives.
- Landlords who adhere to a conventional “controlled rent” mechanism. The ANAH can finance around a quarter of the works, and the landlords obtain a significant tax deduction (30 or 70%) on their gross property income. In return, they agree to offer their property at an affordable rent (called “controlled”) to people with modest resources, for a minimum period of 9 years.

Incentives have decreased since MURMUR1, which in itself was an incentive to motivate owners of the Manival condo to “jump in the wagon” before those incentives are again decreased.

“It helped us push co-owners in the project.” (Jacques VIGNAL, co-owner)

⁹ National Housing Agency, a public institution which mission is to improve the existing private housing stock to “fight against social and territorial divides”. They encourage renovation and retrofit works to dwellings by granting financial subsidies to low-income households and struggling condominiums owners - <https://www.anah.fr/>

Around 700.000 € of collective financial incentives were distributed for this project, to which individual incentives must be added. The project costs, overall, around 3.250.000 €. The average amount to be paid by each co-owner (incentives deduced) is 17.700 €.

The “rest” of the costs are generally covered by loans, either individual or collective. Collective loans like the **COPRO100** are not obligatory but are the most used scheme, as experienced also by the Manival condominium (60 to 70% of them agreed to it, according to one of the owners). The possibility to secure a collective loan (not a mortgage) without collateral became an option for condominiums after the “Warsmann”¹⁰ law was adopted in France in 2012. These collective loans present some very interesting settings which help seducing co-owners. They are available to anyone, without any discrimination based on age, medical history or existing financial debts. There is no (employment or life) insurance involved. By permitting vulnerable (the old and/or sick, those who cannot afford / be granted individual loans...) people in the community to join, they allow for some kind of solidarity in sharing the risks. This solidarity has nevertheless its understandable limits, represented by the absence of any solidarity in payments (co-owners are not asked to pay for eventual bad payers).

“Individual loans are not always accessible. Sometimes banks do not loan at all.”
(Jacques VIGNAL, co-owner)

The ALEC and SoliHa structures are the only front-line contact to co-owners, thanks to the subsidization of the Metropole.

“It is an objective of the MURMUR program, a wish from the Metropole, that the ALEC would work as the unique welcoming and accompaniment counter, and that SoliHa would be the unique counter for information on subsidies. We go and find all possible and available financing schemes.” (SoliHa)

SoliHa, and the syndic, also find those collective loans solutions interesting. Money is made directly available by the bank to the syndic, funds are available quite quickly, works can be implemented and businesses can be paid more rapidly. In all other financing schemes, there is always a risk that funds are not made available in time by owners, or that the amount of administrative works to be done by the syndic slows the whole process. The COPRO100 collective loan reassures SoliHa and the syndic, the money is made available, and that the renovation can continue more easily than what could be done in the first MURMUR program. Reimbursement is made by monthly withdrawals from the loaning bank, directly from owners’ personal bank accounts

The loan is contracted with the “Banque Populaire Caisse d’Épargne”, without any kind of (national, regional or municipal) guarantee. The interest rate varies between each owner, according to the amount that they borrowed, and the duration they chose for the reimbursement (which could be 1 year, 3, 5, 7 or 10 years). On average, the interest rate for this project was 2.36%, all included. Reimbursements started immediately, and some owners have already finished to reimburse, even if the works are not yet finished on their building.

The “Exemplary” project appeared to be the most interesting one, getting the owners more financial incentives to get more works done. In the end, the condominium board first proposed the Exemplary project to the vote, and got the necessary approval for it. There was no point in proposing less ambitious projects afterwards.

¹⁰ Decree 2012-1078 of the 24th September 2012, taken in application of the article 2 of the law 2011-525 of the 5th of May 2011.

There seemed to be a clear “opportunity effect” around this operation. The condominium board, after seizing the occasion to decide on a project, thanks to the MURMUR program and the support from the ALEC, seized another opportunity presented by SoliHa on important financial incentives and effective financing schemes. It is acknowledged by co-owners that, without them, the project would not have been realised.

“Not to this depth, maybe. You wouldn’t have gone this far in choosing work packages. It is a major incentive.” (SoliHa)

The collective loan is voted in the condominium’s general assembly, with the syndic acting as a single “counter” collecting the information (bank details, IDs and individual forms specifying the amount of money and chosen duration for the loan) from all interested parties.

There are other sorts of “Eco Loan -Zero Interest Rate”, but these are less interesting because the syndic has to organise the reimbursement. Furthermore, this loan only finances the work measures that imply energy savings (not the necessary complementary works), and the collective incentives are not included.

Interestingly, the syndic declared:

“I am glad I did not hear a phrase that revolts me: “return on investment”.”
(Régis PARISSET, syndic)

To which one of the co-owners answered:

“We fought for that. We early on said “listen, if we start on that, some people are 90, there are lots of retired people, let’s not talk about return on investment, it is ridiculous anyway. Let’s insist on comfort, that’s all”.” (André DUCKI, co-owner)

3.3 Challenges encountered

3.3.1 Before retrofit

“Not so much.” (André DUCKI, co-owner)

“No, it went quite smoothly.” (SoliHa)

Gaël Bogotto from the ALEC confirmed that the pre-renovation phase had been a success story, with notably one of their best prior “participatory workshops”. The different members of the focus group praised each other’s competences, “motor” roles and will for communication and transparency in this success.

During the decision-making process, the Manival condominium faced some difficulties, not coming from the inside of the condo, but from the outside. In the neighbouring “Grands Crêts” condominium, several people who succeeded in stopping the project for their own buildings had indeed led a real campaign to demotivate other co-owners, and tried to do the same among the Manival co-owners:

“More than that, more than not wanting to see the project implemented on their buildings, they tried to denigrate the project to us, sent us pamphlets, saying it was foolish, trying to convince us not to insulate...” (André DUCKI, co-owner)

Most measures seem to have been agreed quite broadly. The one measure that demanded the most discussions inside the co-owner’s association was about balconies, which suffered from problems with

water leakages. A visual inspection (implying the necessity to get rid of balconies floor tiles) allowed owners to witness the damages, and to finally agree on their retrofit.

“We were not obliged to act on it. [...] we had a pretty big discussion on this. [...] While they were talking about this, they were not discussing other measures. [...] It was accepted by a small margin, but we are now happy to have decided to do it, when we see the state of the balconies slabs, we thank the architect.” (André DUCKI, co-owner)

The Metropole representative mentions a study, from researchers at the University of Grenoble who worked on analysing discourses during MURMUR meetings, and found that the most frequent word is “balcony”. The financing body representative agrees that it seems to be a frequent bottleneck.

“When we know there are no balconies in the building, we know we are going to succeed. With balconies, everything gets more complicated. And costs more, we have to be honest.”
(SoliHa)

Usually, balconies represent a problem because their thermal insulation implies a reduction of space. When balconies are narrow (in earlier-built buildings, they can be 50 or 60cm wide), if a substantial thickness is added on the outside of the wall, occupants fear that they will not be able to keep on using them. This is not the case here, as the balconies are wide, and no insulation is required on the outside of the apartment façade, which is only composed of large window frames.

“They are very important appropriated spaces for occupants, their outside piece of private land. Talks about them leave the domain of commonly-shared propriety, and enters the much touchier “privately-owned” space.”
(Pierre DESCACQ, architect)

The collision between personal and collective rights, possessions or spaces, is key when assessing the decision-making processes in condominiums. As the architect said, balconies are “outside pieces of private land). As long as works done on the building are limited to the outer shell, decisions can be easier to make. When works need to be implemented in private and personal spaces (like the installation of ventilation systems), apparent invasion of privacy can trigger difficulties.

“It can be intrusive” (SoliHa)

Although this fortunately was not problematic here, another example can be given in the replacement of windows, which are usually private property. Even when they rightly view it as necessary, some co-owners might consider the decision regarding their replacement as private, not collective.

3.3.2 During retrofit

The Administration was longing for this phase to take place:

“It’s the moment things got really real. We have blocked budgets for years, so that when condominiums voted and started the works, when funds were first called, we got to disburse, and everybody got reassured. Elected officials saw that budgets were being consumed, the mechanism started to work. Before that, during the preparatory period, there were functioning expenditures, now we finally get to pay the actual works. That’s been expected and awaited, that is what we are asked to do, on what we are judged. Each time a condominium enters that phase, we are happy.” (Grenoble Alpes Metropole)

One of the co-owners mentions that there were often **complaints**.

“People do not understand why they are two months late on the programme. They do not understand that some things cannot get done when it’s too hot or too cold, or when there are sick leaves in the workers’ team.” (Jacques VIGNAL, co-owner)

“We had a major problem with the mechanical ventilation system, a noise problem. We spent one or two months on this. [...] In the end, we had noise-reducing elements added, which solved the problem.” (André DUCKI, co-owner)

The architect confirmed this, although only the upper levels of the buildings complained. And it appeared that it was one of the few technical difficulties that could not be foreseen, nor answered by the example of the neighbouring already-retrofitted condominium, despite having hired the same company for it.

“We had to juggle budgets, because it has a cost. We had to balance everything so that it wouldn’t cost more in the end. It took some times, it was not foreseen to start with.” (Pierre DESCACQ, architect)

Negative aspects encompass administrative delays and prepayments (huge amounts are paid in advance, but subsidies are paid at the end of the works, which therefore have to be financed by co-owners. Some people (not only those with modest income) do not understand why they would have to pay those amounts they are entitled to receive. This can get more uneasy with modest income households, entitled to huge subsidies... For example, on a 20.000 € share on the works budget, they are entitled to 12.000 € of subsidies, and should be able to borrow the remaining 8.000 €. If they have to prepay 75% of their subsidies, they should have to borrow 17.000 €. Hence the interest of the collective loans.

Another complaint that came to the condominium board was about the delay between payment and actual works:

“It had been decided towards the end of a long meeting, and people were getting tired. Everybody said yes, including me. Then we came to realise... I can talk about it, I’ll be the last served in my building. We draw lots to determine where works would start, and very few things have been implemented in my building. And I finished reimbursing my part of the loan last July. So, people complained, sent mails to the syndic, asked questions...” (Jacques ANDRE, co-owner).

The general answer to this situation is that there is no one to blame. This was to be expected: works on a four-building condominium takes time, sometimes more than some people’s reimbursement period of the collective loan. In the end, co-owners have to accept that they live in a condominium, and that this situation is inevitable.

Generally, communication seems key in dealing with complaints. The renovation commission, which is an extension of the condominium board to people who have been voted in by the General Assembly, holds meetings every week, and is open to anyone wishing to ask questions or deliver remarks. The members of this commission, by considering themselves coordinators and links between the owners and the professionals, insure that all questions and remarks are asked, and all answers are transmitted. According to them, communication avoids problematic situations to worsen.

Gaël BOGOTTO from the ALEC confirms that it is something he can see in all reports, from all MURMUR condominiums. He acknowledges the crucial role played by the condominium boards, which relay complaints from co-owners and place themselves “between the hammer and the anvil”. It’s a real, crucial job, at any step of the project.

*“We could have seen someone coming with bad intentions.
You can usually find them in condominium, someone who can hurt the collaboration.
Someone taking the lead, with negative ideas, can derail the project.
A united condominium board is crucial, from preliminary studies to final works.”*
(Pierre DESCACQ, architect)

In all four buildings of the condominium, weekly reports were done by the architect, M. DESCACQ, were displayed in entrance halls and could also be sent by mail to those who ask, so that everybody could read them. According to one of the co-owners, 75% of occupants do not read them, so that some of them still come to the condominium board with questions that are answered in those reports.

*“I insisted on that. [...] If you do not tell anything to the people, it is not normal.
Those reports exist, if people do not read them, so be it,
but at least the information is there.”* (Jacques ANDRE, co-owner)

3.3.3 The Saint-André: potential failure factors

Grenoble Metropole highlighted (Billiotte, 2017) some reasons why some projects do not proceed to vote on the works, based on the example of another condominium in Grenoble, the “Saint-André” which, in September 2017, voted at 79% against their own renovation project. Failures factors encountered then (but not in the Manival condominium) are:

- Some co-owners found the process to be **too long** and complicated, and started losing hope and trust in the technical assistance team. Field operators, on the other hand, had **trouble maintaining a constant dynamic** in the relation with the condominium, between latency periods due to the beginning of the second version of the MURMUR program, and rush periods to obtain additional subsidies. There were periods of errors and uncertainties, and delays in responding to co-owners’ “insecurities”.
- The initiative to register the condominium in the MURMUR2 programme was taken by only a few members of the board, particularly dynamic and willing, who wanted the condominium to benefit from the opportunity effect brought by the MURMUR program and the subsidies. In the end, it was **not the project of the condominium, but the project of a few co-owners** who embodied the project, and became the clear referents (in good or bad) for both the co-owners and the field operators.
- The **financing scheme** is essential, and because of that, a very sensitive issue. Amounts to be finance can be considered high, depending on socio-professional categories. First estimations became references, and increases made afterwards were difficult to explain and to accept, to the point where the global project can be questioned and threatened. The lack of flexibility and simplicity in the subsidies and incentives mechanisms has also been a problem: in some cases, owners were discouraged from voting in favour of the project because their global incomes were a few euros above thresholds imposed to differentiate the levels of available incentives, making them pay thousands more euros in the end. **Flexibility and progressivity** in the incentive systems would see them decrease gradually when households’ income decrease. Current systems, with fixed thresholds, facilitate the implementation of retrofit project in condominiums with many financially vulnerable households, which can generate risks on global financial stability.
- **Technical constraints might** make it “impossible” to retrofit, whether because the operation would not be profitable or cost-effective, or because some facades at the street front cannot be thickened with outside insulation, or are architecturally complicated and difficult to insulate... In the case of the “Saint-André”, those constraints are related to the windows, as

their important areas, the wish to maintain wood frames, and the necessity to render those openings air tight, increased dramatically the costs of the works.

3.4 Results and perspectives for the future

Since the works have not been finished yet, only tentative results can be shared.

It is too soon to determine whether this project had an impact on the apartments' sale value. Gaël BOGOTTO adds that an apartment's value depends also a lot on its environment and location.

"We mainly talk about not devaluating the real estate prices, when you compare them to new constructions in the neighbourhood. There a lot of new buildings in the Metropole, and a lot of existing condominiums being retrofitted. They need to keep up, stay competitive." (Gaël BOGOTTO, ALEC)

SoliHa confirms that they would not dare and assure that prices would go up, but are more optimistic about the comparison with other existing condominiums which are not renovated.

"In the Metropole, there is a real renovation dynamic that has been carried out for fifteen years, even more. Renovations happen. We tell co-owners "pay attention, condos around you are getting retrofitted, or will be, and there are a lot of new buildings, if you do not want your building to be the last one to be looked at..." But does it mean prices will go up? It's hard to say." (SoliHa)

Among other positive results of the renovation, we can cite:

- The aesthetics of the buildings:

"People are happy with the results" (André DUCKI, co-owner)

- Social cohesion:

"Yes, you can say that. It forced us to discuss" (Jacques VIGNAL, co-owner)

- Answer to occupants' wishes:

"Most people who have works finished on their building are happy."
(Jacques VIGNAL, co-owner)

- The workers did a good job on the whole. The Administration confirmed a global upgrading of companies' skills and know-how:

"Especially on details, on implementation. At first, they were not always skilled on outside insulation, but it got better, thanks to MURMUR projects." (Pierre DESCACQ, architect)

Some reductions in energy consumptions have been observed already, and co-owners could provide numbers for that:

"In numbers – because that's what speaks to us – in 2018-19, for the Manival's two heaters, we spent 36.500 € per heater. The Emendra, for the same building but insulated, 23.000 €. And they do not have a condensing boiler as we do. [...] Before that, we spent 43.000 €, and we already went down to 36.000 €." (André DUCKI, co-owner)

It is estimated that these numbers will still evolve downwards. The architect thinks they will be lower than the neighbouring Emendra building's, because of the presence of cascade-controlled condensing

boilers, which can be regulated based on the demand. And two co-owners mentioned that heating curves had to be raised during the last year due to works on the windows and balconies.

At the end of the project, the ALEC will reprise its role of technical assistance, by implementing surveys, qualitative interviews, and follow-up on work costs and energy consumptions. The French government, through the ECOCITE program, finances this. As a counterpart for the subsidies, they ask for an opportunity to evaluate, and therefore monitor a sample of dwellings, through sensors placed inside and on collective systems. Only the condominiums which opted for “exemplary” renovations have a monitoring obligation, which is implemented by a private company.

“People are reassured by the fact that some apartments are going to be monitored by the ALEC. If we had to do the works by ourselves, we could not have the apartments monitored like that. They are going to see if the money that we have put into the works are an interesting investment, or if programs have to be modified. If there are defects or poor workmanship, they will see this better than us, and we will be able to use guarantees. It secures people, when you explain to them.”
(Jacques VIGNAL, co-owner)

“Monitoring is a little bit too heavy to be implemented in all projects. The bare minimum is to organise a meeting with the heating operator. The building has changed, things need to be adjusted, and the heating consumptions need to be monitored, to ensure that the savings are realised. The heating operator needs to be involved, but the better thing to do would be to involve all occupants and update them on the best way to use their dwelling, heating, ventilation...”
(Gaël BOGOTTO, ALEC)

Due to the electoral agenda, the members of the administration who decided on the MURMUR program and implemented it for several years, might not be able to witness the end of works and organise events to celebrate, and communicate on the results of the program.

The ALEC has started communicating on the results of the MURMUR programs so far. A first graph (see Fig. 4 above) shows the monitoring results (over 3 to 4 heating periods, after works) on 15 condominiums that joined the MURMUR1 program, including The Emendra.

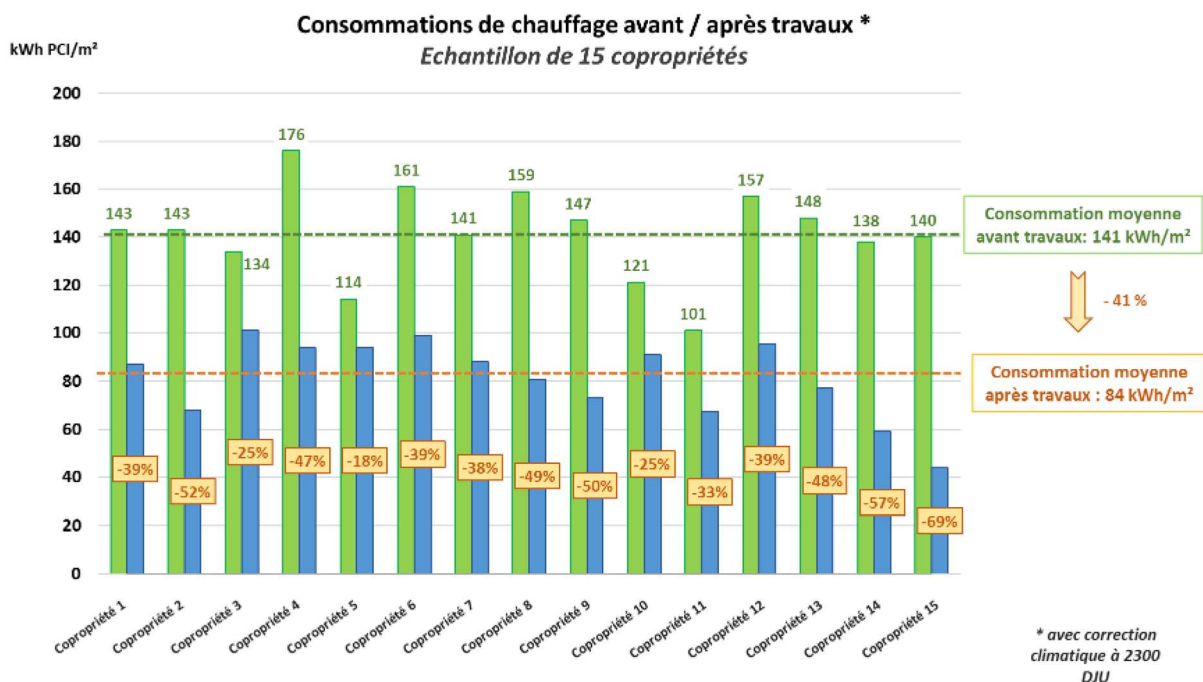


Fig. 4: Heating consumptions before and after retrofit in 15 MURMUR1 condominiums (source: ALEC).

It shows that the average reduction of energy consumption linked to heating (measured on gas meters) is -41%, with a slight difference between “Complete” work packages (-38% on average) and “Exemplary” work package (-48% on average).

A second graph (hereunder, see Fig. 5) shows the results of an online survey that was sent broadly and received 77 answers, targeting thermal comfort issues. Graphs on the left show the comfort estimation before retrofit, in winter (with more than 50% of respondents giving bad feedback on uncomfortable situation, see graph above) and summer (with 70% of respondents reporting discomfort, see graph below). Right graphs show the results after retrofit, where 90 of respondents estimated being comfortable in their homes, in winter (see graph above) and in summer (below).

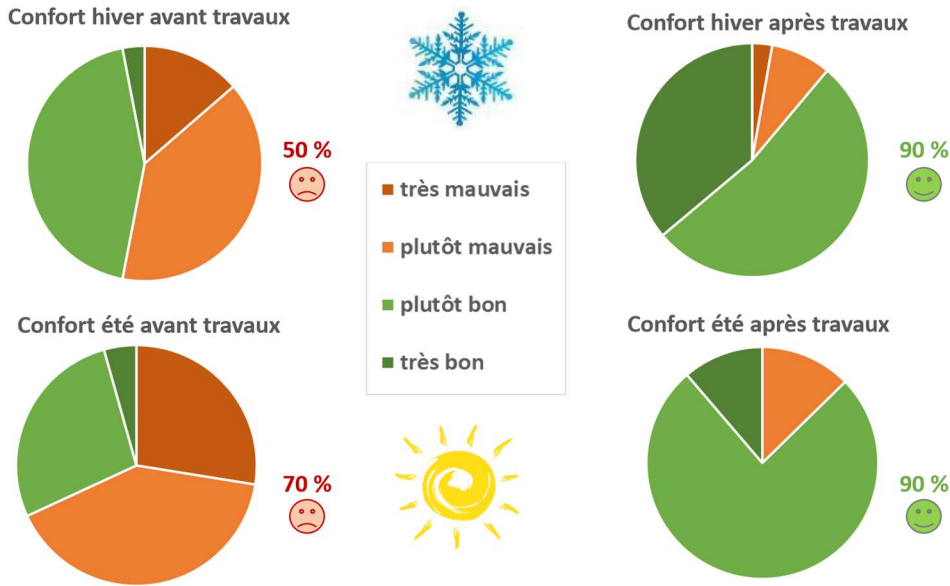


Fig. 5: Results of a survey on winter (above) and summer (below) comfort before (left) and after (right) retrofit (source: ALEC).

4 Conclusions

4.1 Enabling environment: socio-ecological model

As explained in chapter 1.2, creating an enabling environment for energy retrofit of condominiums implies the need to have in place a variety of actors and external factors (legislation, finances, etc.), which interrelations can be analysed using the **social ecological model** (SEM).

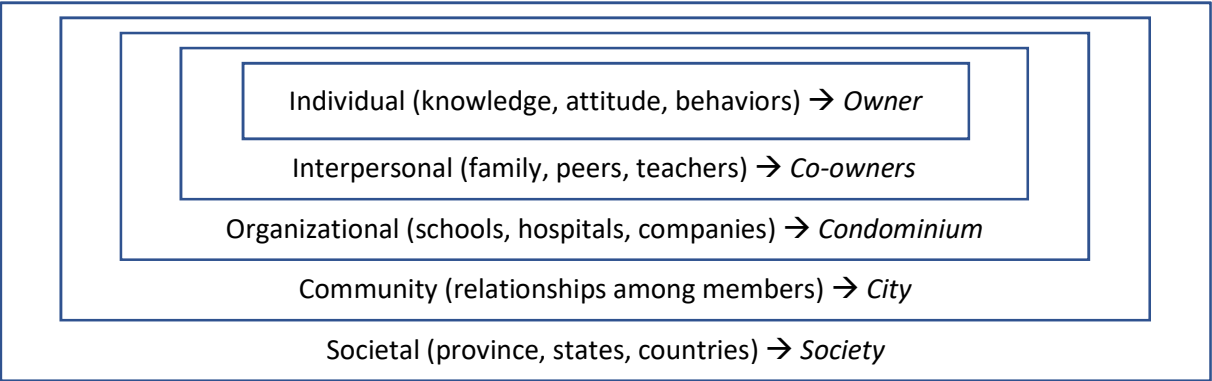


Fig. 6: The social ecological model (SEM) (Ramirez Tamez 2018)

The different success (and failure) factors creating the enabling environment in which this retrofit took place were discussed during the interview, and linked to the different levels of the social ecological model.

Policies are enabling factors that are implemented at the higher level (community and society), but have direct impact at lower levels (organisational and interpersonal). At the society level are laws, such as:

- the Law of 1965 which states that decisions on such important works as a condominium's building renovations have to be voted by the majority of the present and represented at the general assembly.
- The Law of 2010 requiring energy suppliers to realise energy savings, which gave life to energy saving certificates. Since then, those energy suppliers became very interested in buying back energy savings made by others, which in turn allowed financial success to renovation projects, and a revolving fund at the Grenoble Alpes Metropole.
- The "Warsmann"¹¹ law adopted in France in 2012, which created for condominiums the possibility to secure a collective loan (not a mortgage) without collateral.

At the community level of the SEM, local policies to enforce global plans targeting ambitious environmental objectives, and to provide important budgets to make them possible, were important too. Such policies have been implemented by the Grenoble Alpes Metropole for the past 15 years, based on the Territorial Climate Plan or the Air Energy Climate Plan: the Big Boulevard policy, the Local Program for Housing, and of course the MURMUR program.

The crucial availability of interesting **financing schemes** is coming from the society (through laws), community (through incentives mechanisms) and organisational (through banks) levels of the SEM. Condominiums (at the interpersonal level) are a special target group for financing bodies as they involve socio-economic diversity. At le Manival, a collective loan was used: the COPRO100. Such loans have a tremendous influence in alleviating the concerns many of those vulnerable households might face when having to find the money to finance their part of the project. They are available to anyone, without any discrimination based on age, medical history or existing financial debts. There is no life or income insurance involved, which is also interesting for older people. By permitting vulnerable (the old and/or sick, those who cannot afford / be granted individual loans...) people in the condominium to join, they allow for some kind of solidarity in sharing the risks. This solidarity has nevertheless its understandable limits, represented by the absence of any solidarity in payments (co-owners, at personal levels, are not asked to pay, at the interpersonal level, for eventual bad payers).

The **subsidies** and incentives (whether collective or individual) were also an important factor at le Manival, in the way they decrease the amount to be financed by co-owners, more so for vulnerable people. There might be some obstacles in threshold effects and delays in payments (they often are paid after the works are done), but these "monetary gifts" influenced the co-owners positively. By taking on the often-heavy administrative burden at the organisational level, SoliHa (financed by the community and society levels) helped to secure these subsidies.

Society and community levels also created other important financial factors to success at le Manival:

- The controlled rent mechanism, where landlords agree to make their newly-retrofitted property available at an affordable rent (called "controlled") to people with modest resources,

¹¹ Decree 2012-1078 of the 24th September 2012, taken in application of the article 2 of the law 2011-525 of the 5th of May 2011.

for a minimum period of 9 years, in return for the ANAH financing part of the works. This, however, is rarely used because “the controlled rent is quite low”, according to the ALEC.

- The significant tax deduction granted by the national authority on the gross property income of all owners who invested in the energy retrofit of their apartment (or the building).
- The Energy Savings Certificates mechanism granted to co-owners, where co-owners can sell their energy savings (which are given a market value) to the Metropole. The individual level is therefore helping the community and society levels to reach global energy savings objectives, and to generate a revolving fund for the Metropole which will be used to subsidise more works.
- The ECOCITE governmental plan, financing the monitoring phase after retrofit, which appealed to the co-owners as a possible way to check the outcome of the operation, and enter a comparison contest with their neighbours who already have retrofitted their condominium.

Enabling the renovation of condominiums also implies the necessity to **use or build capacity**, and to lean on adequate internal organisation. At the heart of this consideration is the ecosystem of key stakeholders, which can be divided in three main groups, depending on the level of the SEM in which they act.

At the **community level** of the SEM are the **professionals** acting as enablers, helping the co-owners to define the technical and financial aspects of the project:

- An active and willing (local or regional) government was involved, which not only shows political motivation, but also offers to condominiums the (technical and financial) services they need to reach these objectives.
- The financing bodies, represented by the banks and experts such as SoliHa and the ANAH, who helped owners to get incentives and round up the financial files. The ALEC confirms that it is crucial to offer co-owners the possibility to be in contact with skilled, competent people, who have a close look at the budgets.

At the **organisational level** of the SEM are those with skills to answer owners’ questions and complaints:

- The **technical assistance team**, mainly represented here by:
 - o The ALEC, a motivated and skilled team of experts paid by the administration, which goal is to motivate condominiums to renovate. They propose participatory workshops, contests, visits, promotion, newsletters, tests, testimonials...
 - o The architect or project manager, who took charge of the technical project, offered solutions and alternatives, followed the works, managed the workers, organised weekly meetings with the “renovation committee” of the condominium, informed on progress and delays, and generally acted as a crucial guide, federating people.
- **The syndic or property manager**, who acted at Le Manival as facilitator between various stakeholders and who was a motor to mobilize and motivate the co-owners. He was their advocate, administrative referent, and the project’s orchestra conductor.
- At this level can also be considered the **concierge**:

“Where there is a concierge, he has a very important role to play and should not be kept aside.” (Jacques VIGNAL, co-owner)

“It is something I’ve noticed in many condominiums: the concierge is fundamental.” (Pierre DESCACQ, architect)

At the individual and interpersonal levels, is the team of “**insiders**”, such as the condominium board and, in some cases of large condominiums such as this one, a specific “renovation committee”, which represents the clients of the project (they are “more important than the syndic, more important than

the architect”, according to the syndic). They were the essential link between the co-owners whose interests they represent, and the professionals who have the answers and explanations they seek.

In this case study, early **engagement** inside the condominium meant that socio-cultural acceptance at the lower levels of the SEM tended to be increased by the following elements:

- The guidance by skilled, motivated, and dynamic professionals. Their presence on site was also a plus for elders, which favoured social inclusivity. They encouraged dialogue, communication, transparency of information, and gave reliable answers to the co-owners’ questions.
- Although the experts were keen on maintaining a project dynamic, they valued the necessity to give time to owners, to let them appropriate the project, ponder the consequences, ask questions, get information, assimilate, understand... The difficulty lies in finding the right balance with the well-known problems triggered by a too-long process.
- The renovation project remained a voluntary decision, a process which did not feel forced on any of the owners. This tended to reinforce the sense of ownership.
- Examples of other condominiums that already did a retrofit, served as inspiration to these new candidates who felt that it was possible, and had access to their experience and the guarantee that positive outcomes will come after the difficult retrofit period. It is an existing knowledge on which all can lean. In some cases, these examples can go as far as proposing technical answers to particular problems that might arise. It has the benefit to inspire the architect, and to reassure the co-owners that solutions exist and are affordable.

These examples of previously renovated condominiums are not only causes, but also consequences of the enabling environment. This programme illustrates the “**opportunity effect**” that drives many condominiums in or around Grenoble to register and implement projects like this one. The opportunity is indeed given to them, to take advantage of the professional frame and coaching; of the skills and competences of the support teams that are offered, freely, by the administration; of the financial schemes and technical support that are so important to set up and “tie up” a complete and realistic project.

A programme like MURMUR, implemented for many years, has become a success factor in time, having already overcome many difficulties and dealt with the problems that could have made it a failure in its early stages. Proof is given by the numbers mentioned by the ALEC on the votes: nowadays, around 90% of condominiums entering the program vote “for” the attribution of the project to an architect, and around 70%¹² of condominiums which go through the entire process, vote positively for the work package at the final general assembly. This percentage decreases to 45%, however, if we consider the condominiums which have given up¹³ during the process.

The administration can take pride in the fact that the program is working. This condominium was the first of many others, in this second phase of the MURMUR program, which in itself is a very good result.

“Our objective was to retrofit 9 condominiums [within MURMUR 2], we had seven, in the end. This one was the first to vote “yes” to the works. They inspired others, which is what we want.

¹² These numbers come directly from the ALEC, who warns that they should be decreased by the end of the MURMUR 2 project, for several reasons: first votes have mainly happened in condominiums that were highly motivated and had already made progress in the process; work costs were lower at the beginning of the MURMUR2 program due to the slow economy recovery in the construction sector, and have increased with the workmanship workload; finally, the Covid19 sanitary crisis is expected to lower the number of positive votes in high-budget projects.

¹³ Reasons for these withdrawals may be diverse and due to different partners, such as the syndic (being a hindrance more than a help), the condominium board (losing motivation), or the architect (driving the project to another work program due to apparent complexity of the MURMUR program).

We are not attached to one condominium in particular, we have a global objective. We want more and more to join the dynamic. When we have a good example, we want it to be duplicated, and for other condominiums to be inspired.” (Grenoble Alpes Metropole)

There is therefore a **“snowball effect”**, where exemplar projects become inspiration for others to engage in the process. Co-owners and the architect confirmed that:

“A condominium came to see us recently, because their Assembly will vote on the MURMUR program soon. Like we did with L’Emendra, at the beginning. They came to give us information.”
(André DUCKI, co-owner)

“I had condominiums coming to see me too. They came to visit L’Emendra, they were reassured, and that was crucial in their decision to vote for their project.” (Pierre DESCACQ, architect)

4.2 Lessons and advice

Projects can only be successful if all actors are mobilized, motivated and competent, and are able to mobilize a **“team spirit”** to work as a squad. The project must remain collective, and all actors have to be aware that it is a win-win-win situation, that they all want to work for the same objective, which is to retrofit the building.

“If we do not speak the same language, we cannot work together.” (André DUCKI, co-owner)

The professionals must be the right experts, at the right place, and show “people skills” in the way they handle co-owners and assemblies. They have to be patient, mobilised, flexible, qualified, neutral, independent but kind teachers. The architect or project manager should be someone who does not shy away from projects involving complex structures of “clients”, and should therefore be seen as a crucial guide, whose role is also to federate people. The assistance team (whether technical, financial, administrative) must be competent, as they have to give the adequate answer to the questions that arise among co-owners, and must show reactivity when they inevitably hit an obstacle or encounter a challenge. The syndic needs to show all the qualities that are asked from professionals (patience, flexibility, qualifications, neutrality, teaching skills), but is allowed (even encouraged) to be mobilised for, and show loyalty to, the condominium’s interests. They are pointed out as an essential piece of the puzzle everywhere, when they are active and push the condominium board to act.

“We need to be able to lean on the right people. Trust and goodwill are what allow us to move forward”. (Régis PARISSET, syndic)

“Find professionals with skills and competences, who can give you the precise, individual and detailed information you seek. Without them, nothing seems to get done. It cannot work otherwise”. (André DUCKI, co-owner)

A motivated condominium board is essential too, as they can also entice the syndic to move and act. The implementation of renovation boards (small committee gathering co-owners who take mission to follow the retrofitting project on behalf of the whole condominium) has to be encouraged when it is possible, because they are generally composed of people who share a particular interest in the project, are sometimes coming from the construction world, and are more aware of the responsibility they assume. This team of co-owners has to be motivated in seeing the project delivered and mobilized to insure swift communication between stakeholders.

Only a condominium that trusts its support team will ultimately vote for the works to be implemented.

This tends to confirm the need for an efficient, frequent and transparent **communication** between all stakeholders. Professionals also need to be comprehensive about the necessity, for the co-owners, to have **time** to digest crucial information and appropriate the project. All actors must understand that they need to let time do its wonders, do not try to rush things, and let people absorb information and take ownership of the project. Time must be taken to explain the situation, to encourage more frequent dialogue, and to “tie” the project sufficiently to present it to the General Assembly.

Financing the renovation is a key aspect that could either win or lose the vote. Although transparency is essential on that aspect too, it might be wise to wait for the project to be sufficiently defined and developed before numbers are presented in General Assembly. A first phase of interaction between the professionals and the “renovation committee” (or condominium board) is necessary to settle on details, negotiate and finalize the project.

It is a difficult balance to find for the team of professionals. If the condominium feels abandoned (by a lack of response, for example), confused (by a project that does not feel technically mastered, or by financial numbers that change too often), or pressured (forced into a too-tight schedule, for example), bad press and distrust towards their professionalism and skills can rapidly spread, and create feelings of dissatisfaction, uncertainty, insecurity, indecision... Most likely, General Assemblies would then either vote against projects, postpone the decisions or, in the worst-case scenario, vote for a simple façade restoration without insulation.

For SoliHa,

“Projects take time” [...] “We get worried mainly that the condominium board would only vote a façade restoration, which would be dramatic. We would rather they did not vote anything, so that we can take time to accompany them again, reexplain things. The Metropole gives us some time for that. Some condominium will take ten years to decide on an energy retrofit, others will get there more quickly. But we have to give them the time. If they vote a façade restoration, we lose any opportunity for 20 years at least.” (SoliHa)

Conclusion

The enabling environment surrounding a successful retrofit is shown in this case study to be more than just providing process facilitation or a financing scheme. It is a combination of engaged co-owners, an active building manager (syndic), outgoing and patient building professionals, process facilitation, local, regional and national policies or laws, proper financing mechanisms, subsidies, communication and, in this case, prior examples. It takes time to put an enabling environment in place. For different locations across Europe, different enabling environments are needed. Clearly, this requires giving more attention to condominiums at the local, regional, national and European levels.

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