

Low-Tech Perspectives applied to apartment renovation

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Introduction

Low-tech solutions are increasingly recognized for their potential to address global challenges like sustainability and resource conservation. The low-tech approach prioritizes human-centered, ecological design, aiming to simplify technology and focus on maintenance rather than replacement (Martin et al., 2022). This study examines how these principles can be applied to apartment renovations, particularly focusing on the practical challenges and innovative solutions proposed by four low-tech pioneers.

Methodology

- 90-min interviews focusing on practical applications of low-tech principles.
- Thematic analysis using methods described by Lejeune (2019)

The study uses elicitation techniques through a progressive evolution of an apartment floor-plan. A base layout was first presented and then enriched by new elements (cellar, garden, garage).

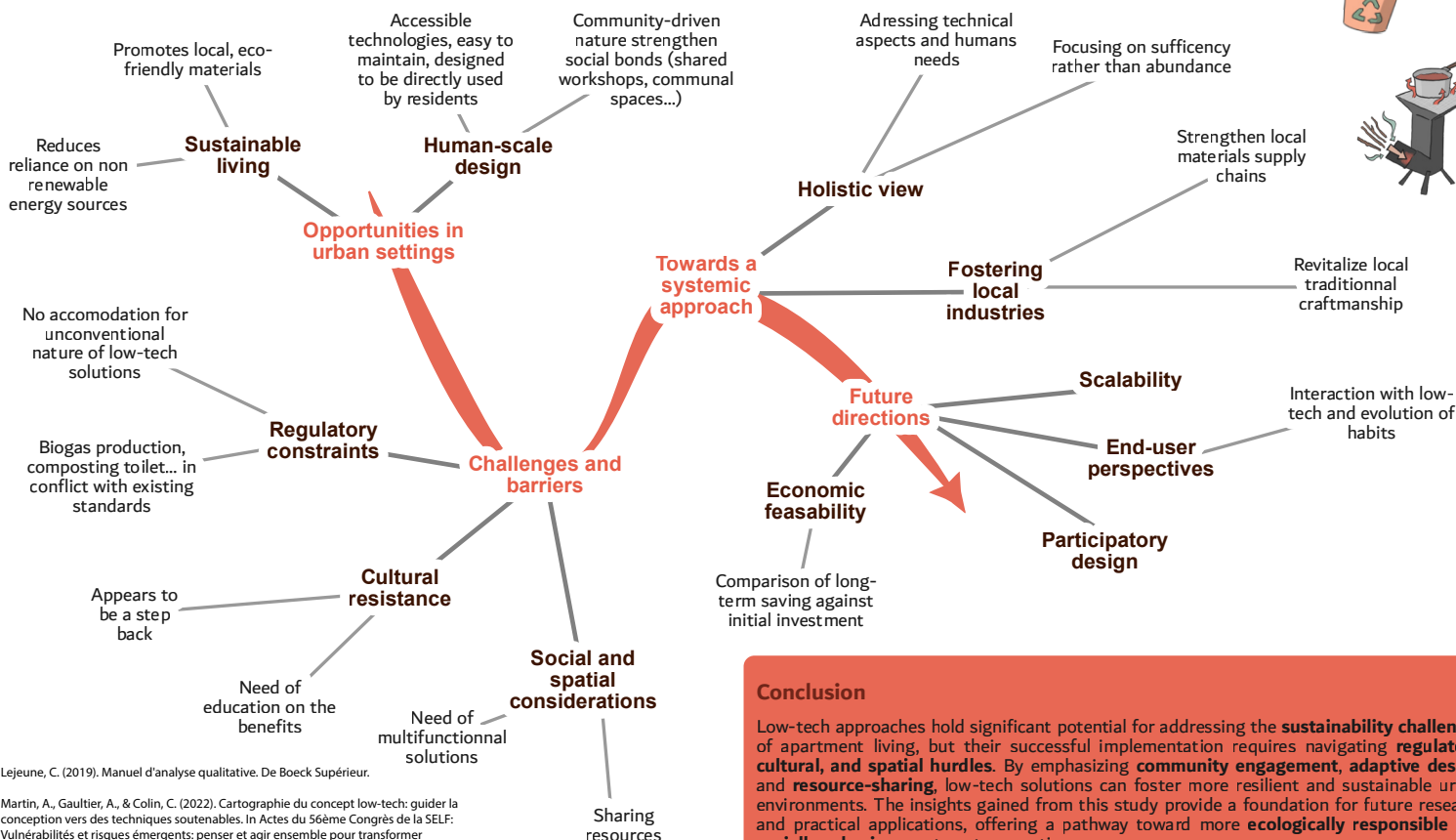
This dynamic approach allowed the evaluation of the adaptability of the interviewees and the flexibility of low-tech solutions in response to spatial and functional constraints.

This method helped capture deeper insights into how low-tech solutions could be applied to evolving apartment configurations, highlighting the importance of multi-functionality and adaptability in urban renovations.

Profiles

- Corentin de Chatelperron – Engineer & Innovator**
- Experience:
- Founder of the Low-Tech Lab
 - Lead on numerous ecological and sustainable projects, including a biosphere in Paris.
- Contribution:
- Pragmatic perspective on integrating low-tech solutions into urban settings
 - Experience in food production systems
- Gilles Giraudet – Architectural engineer**
- Experience:
- Expertise in sustainable architecture
 - Member of Low-Tech Lab in Liège
- Contribution:
- Modest approach fostering resource efficiency and collective engagement
 - Work on “La Maisonette” low-tech dwelling
- Jacques Tiberi – Lawyer & Low-Tech advocate**
- Experience:
- Former high-tech journalist, advocate for simple, sustainable living solutions
 - Currently renovating a farmhouse using low-tech principles
- Contribution:
- Blends legal, journalistic and practical knowledge
- Philippe Hébert – Engineer & Co-founder of Hellow**
- Experience:
- Hellow promotes sustainable low-tech living
 - Creates autonomous living spaces like the “Cocobam Tiny House”
- Contribution:
- Aligns personal values with sustainable principles with emphasis on material reuse

Discussion



Recruitment of participants

For this exploratory study, we employed an opportunistic recruitment strategy, contacting public figures active on the low-tech renovation scene. While the selection was not aimed at achieving broad representativeness, the participants' diverse backgrounds and extensive experience in the field provide valuable insights for understanding low-tech applications in apartment renovations. The profiles were chosen based on their active involvement in ongoing or completed low-tech projects and their ability to offer practical, firsthand knowledge on the topic.

While the sample size is small (n=4), these individuals are key stakeholders with significant expertise in applying low-tech solutions in various contexts. Their pioneering work in the field, combined with their diverse professional backgrounds (engineering, architecture, journalism, and innovation), ensures a rich and multifaceted understanding of the challenges and opportunities in low-tech renovation.

This opportunistic recruitment allows us to explore insights of real-world experiences and potential strategies, offering depth over breadth. Their inputs help frame hypotheses for future, broader studies.

Results

Needs analysis

Emphasis on the importance of distinguishing primary needs from secondary pleasures in renovation projects.

- Highlights the significance of questioning the need.
- Explores solutions focused on food production (integrating vegetables garden or collaborating with local farmers)

Space utilization

The interviewees proposed multifunctional and communal spaces to foster sustainability and community engagement. Innovative suggestions included a "mushroom shower" (for both hygiene and food production) and repurposing garages into communal workshops for tool-sharing and repairs.



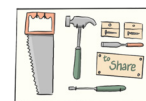
Material Usage

Participants stressed the importance of using local and bio-sourced materials. Commonly suggested materials included wood, straw, earth, and hemp, all of which are sustainable and readily available. Emphasis was placed on reusing or repurposing materials where possible, thus reducing environmental impact.

Low-Tech Solutions

Various low-tech solutions were proposed, such as:

- Water Recycling & Food Production: Spirulina tank showers and biogas systems for energy efficiency.
- Waste Management: Bokashi compost systems and phyto-purification for wastewater management.
- Energy Solutions: Rocket stoves and solar heating systems were recommended for eco-friendly cooking and heating.



Conclusion

Low-tech approaches hold significant potential for addressing the sustainability challenges of apartment living, but their successful implementation requires navigating regulatory, cultural, and spatial hurdles. By emphasizing community engagement, adaptive design, and resource-sharing, low-tech solutions can foster more resilient and sustainable urban environments. The insights gained from this study provide a foundation for future research and practical applications, offering a pathway toward more ecologically responsible and socially cohesive apartment renovations.