

Collaborative Housing as Challenge for Smart Technologies

- Recent decades have seen a rise in collaborative urban housing that emphasizes shared values activities, and spaces among residential communities. The solutions range from socially driven cohousing to commercial branded coliving.
- At the same time, smart digital technologies are permeating the built environment. Examples include technologies for energy management, access management and space reservations, information sharing, and mobile applications for residents.
- Research and practice have overlooked the role of smart technologies in collaborative housing, which shifts focus from individual households to residential communities as users of technologies, and from singular smart dwellings to shared spaces and technologies. Moreover, the contrast between property technologies and the smart home is highlighted.

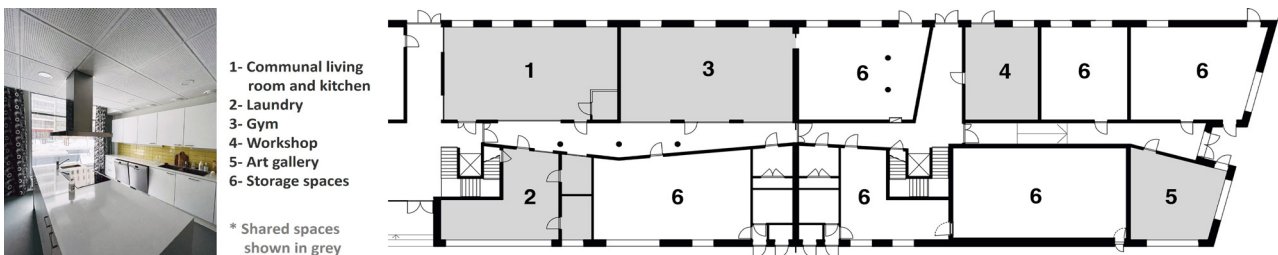


Figure 1. Collaborative housing typically relies on shared spaces, such as a common living room, exercise room, hobby space, laundry, and communal outdoor areas.

The Lived Experience of Smart Technologies in Collaborative Housing

Findings from a qualitative study in a large Nordic social rental cohousing block demonstrate how technologies shape the use of shared spaces and social relations among tenants, facility managers and landlords. The technologies in focus included mobile resident application, electronic locks, space reservation system and digital info screens.

The study revealed:

- 1** The lack of a shared vision or resident participation in selecting and/or designing the technologies, and feeling of a lack of control by both residents and managers.
- 2** The residents' relationship with the technologies was ambivalent: they were considered as essentially useful and the standard in new housing but difficulties in using them or inaccessible solutions had led to minimal or non-use and increased exclusion.
- 3** The technologies, such as the access management system, provided an interface to the shared resources, enabling remote programming of the building in different ways and regulation of access, but also creating barriers and obscuring the spatial logic.
- 4** While ostensibly supporting sharing, the space reservation system with its rigid rules worked against open and flexible utilisation of space, asserting control beyond intent.

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The official top-down information and communication technologies were contested by a mix of more informal and interactive channels such as messaging apps and social media.

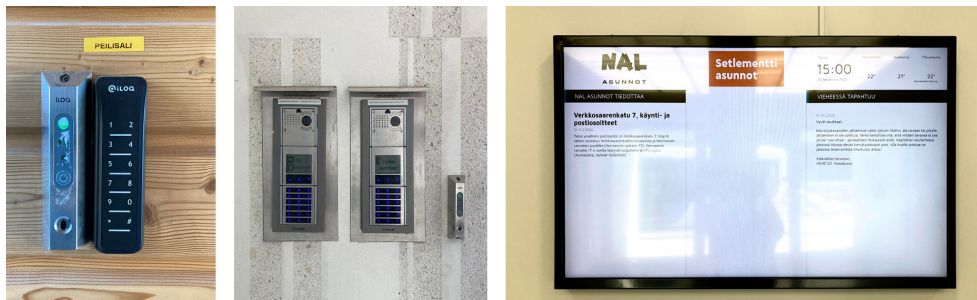


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Guidelines for Implementing Smart Technologies in Collaborative Housing



Design for Local Fit:

Align the embedded technologies in housing projects with local community values and practices from the early design phase.



Grasp the Diversity of User Needs:

Implementing technologies for shared use requires nuanced knowledge on diverse technology users and their living practices.



Acknowledge the Role of Service Providers:

It is important to recognize information and communication technology service providers as key intermediaries in housing.



Enhance User Control:

Transparency and user control in the complex technological assemblage including its rules and data should be enhanced.



Enable Adaptability:

Openness and modularity of the technologies should be considered to enable adaptation over time.



Collaborate:

This is a systemic design challenge that requires collaboration between housing developers, technology and service providers, and housing communities.

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More information: Pirinen, A., Ehrenberg, N., & Mäkinen, R. (2025). Sharing space, time, and technology: the lived experience of smart home technologies in cohousing. *Housing Studies*, 1–23. <https://doi.org/10.1080/02673037.2025.2454544>.

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