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**Publication date**

2023

**Document Version**

Final published version

**Published in**

RE-DWELL Conference. "Housing co-creation for tomorrow's cities"

**Citation (APA)**

Croon, T., Hoekstra, J., & Dubois, U. (2023). Energy poverty alleviation in social housing: Prototyping policies with practitioners. In A. Diaconu (Ed.), *RE-DWELL Conference. "Housing co-creation for tomorrow's cities": Conference Proceedings* (pp. 15-22). Zenodo.

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# RE-DWELL Conference

“Housing co-creation for tomorrow’s cities”

**Grenoble, 8-9 December 2022**

**Pacte Social Sciences Research Centre, University Grenoble Alpes**

## Conference Proceedings

[www.re-dwell.eu](http://www.re-dwell.eu)

RE-DWELL “Delivering affordable and sustainable housing in Europe” has received funding from the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 956082

The European Commission’s support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

**RE-DWELL**

Deliverable 3.7 RE-DWELL Grenoble Conference

Version 1

February 2023

DOI [10.5281/zenodo.7705327](https://doi.org/10.5281/zenodo.7705327)

**Editor:**

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# Energy poverty alleviation in social housing: Prototyping policies with practitioners

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**Keywords:** energy poverty, social housing, co-creation, policy prototyping

## 1. Introduction

The European energy crisis of 2022 stresses the importance of protecting the most vulnerable households. Price peaks disproportionately affect households with low incomes, limited savings, and inefficient homes, and increased energy poverty: the inability to secure sufficient domestic energy services that allow for participation in society (Bouzarovski & Petrova, 2015).

Since European social housing countries have become increasingly residualised, a significant share of households in or at risk of energy poverty are being accommodated by social housing providers (Poggio & Whitehead, 2017; Walker, 2008). However, while most practitioners acknowledge that social housing providers (SHPs) have a responsibility in energy poverty alleviation, targeted intervention approaches have hardly been explored (Desvallées, 2022). The body of scholarship on energy poverty measurement has grown rapidly, but its use in practice has hardly been addressed (Bouzarovski et al., 2021). Sherriff et al. (2019) note that a possible explanation might be that insights from research are inadequately communicated to policymakers and practitioners. Charlier and Legendre (2021) add that the sense of urgency has substantially differed across countries.

This paper aims to combat these gaps, by proactively engaging with practitioners across Europe to find out which targeted intervention approaches are considered most effective, what their benefits and potential (regulatory) obstacles are, and whether these perspectives differ in different policy contexts. We indirectly examine the responsibilities SHPs are willing to accept within a 'just transition', and explore whether, and if so how, their apparent techno-economic approach to retrofit provision could be altered (De Feijter et al., 2019).

## 2. Policy prototyping

Generally, research strategies are based on either a deductive or an inductive approach to science (Bryman, 2016). While the former offers 'reliability' and the latter indicates 'probability', it could be argued that both miss the notion of 'possibility' (Barry & Hansen, 2008, p. 457). Peirce (1965) therefore developed his abductive approach to develop 'tentative explanatory hypotheses' or 'proto-theories' and initiate novel research trajectories. In policymaking, deductive approaches (testing policy interventions through randomised controlled trials) or inductive approaches (exploring why these did or did not work) could be complemented with abductive approaches (Bason, 2014). Exploring new policy interventions ('musement' in Peirce's words) and making provisional guesses on their effects are key (Kimbell, 2015).

Abductive approaches are often based on participatory research design. First, a carefully selected mix of participants is asked to become part of the ‘innovation journey’, de facto acting as ‘co-researchers’ and ‘codesigners’. As abductive policy experimentation requires a holistic perspective, it is preferable to select a diverse array of participants. Then, researcher and participants collectively delve into the subject matter, starting with a definition of the desirable outcome and gradually moving towards a hypothesis of an underlying structure comprising concrete rules, arrangements, and operations.

### 3. Research design

At the time of submitting this conference paper, the research process is ongoing. Nevertheless, the following section presents an overview of the research design.

#### 3.1 Focus groups

This qualitative research design incorporates six focus group sessions, referred to as ‘workshops’, as the primary data collection method. The focus groups take approximately three hours each, and their semi-structured design is set out below. They are planned in the fourth quarter of 2022.

##### **Introduction and benchmark**

In order for all participants to start the session with approximately the same understanding of the problem, we define energy poverty and describe its prevalence in social housing estates. Subsequently, we ask what data the SHP already collects and/or uses about experienced energy poverty in its stock, and what obstacles there are in collecting or using this data. We also ask participants to elaborate on current efforts of the SHP to mitigate the negative impact of the current energy crisis.

##### **Brainstorm and prioritisation**

To facilitate creative thinking, we divide the participants into three or four groups. Participants then engage in an open and candid discussion on which additional approaches their SHP could adopt. The approaches are recorded on sticky notes and displayed on a wall, and participants are asked to rank them according to their perceived potential. While part of the following semi-structured discussion is set beforehand to allow for comparison between SHPs and countries, there is room for discussion on other highly-regarded innovative approaches as well.

##### **Semi-structured discussion**

Preliminary interviews taught us several crucial approaches that have been adopted by SHPs in recent years, and we start off by discussing these approaches in detail:

- Prioritised retrofit: considering social factors (characteristics of households or neighbourhoods) besides technical or financial data in prioritising renovations.
- Strategic rent setting: considering the risk of energy poverty when setting rents, for instance based on a combination of energy efficiency and household income. Other ways of financial compensation (subsidising energy, direct allowances) can also be discussed in this round.
- Targeted allocation of dwellings: considering household income and other factors that increase risk of energy poverty (age, ability, composition) when allocating dwellings at the start of a tenancy.

However, we reserve sufficient time for the input from the previous session. After the discussion, the participants are asked to rank the various approaches again in terms of potential.

After these six focus groups are finished, the recordings are thoroughly analysed to provide insight in all possible policies and related deliberations, and to shed light on what incidental or structural obstacles must be further studied by researchers and/or addressed by policymakers before effectively targeted interventions are feasible.

### 3.2 Participant selection

The empirical research consists of six focus groups or ‘workshops’ in three different countries: France, the UK, and the Netherlands (Table 1). Conducting the research in different countries provides the opportunity to compare between regulatory contexts, and therefore to suggest which legislation facilitates targeted intervention in one country and obstructs it in another. We selected these three countries because of their traditionally substantial social housing sectors, and these six major SHPs because they might be able to exercise thought leadership due to their size and professionalism.

*Table 1. Participating housing associations*

Country	Region	Social housing provider	Rented dwellings
France	Countrywide	Polylogis	145,000
	Paris Metropolitan Area	Paris Habitat	125,000
United Kingdom	England	Clarion	125,000
	Greater London	Peabody	104,000
The Netherlands	Amsterdam Metropolitan Area	Ymere	75,000
	Rotterdam	Havensteder	45,000

However, their size also implies a compartmentalised organisation, which makes it even more important to select a diverse group of participants with a variety of backgrounds and perspectives. The six to eight professionals we select per workshop work in different departments and have supposedly different interests. Simply put, financial practitioners want breakeven results, legal experts want compliance with the law, and social workers want sufficient resources to protect vulnerable tenants.

Further analysis and discussion of these preliminary results will continue as part of the ongoing research undertaken in the RE-DWELL project.

### Acknowledgment

This research is carried out with the support of the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 956082. We also thank the Fuel Poverty Research Network, Housing Europe, the European Federation for Living, and the six participating housing associations for their continuous input and support.

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# Visualising equitable housing: A prototype for an equitable housing framework

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**Keywords:** equitable housing, qualitative housing, systemic model

## 1. Introduction

The growing housing crisis in Western Europe increases the pressure on conventional support measures and further reduces the accessibility to equitable housing. In housing projects, stakeholders in practice are often only confronted with a fraction of the project within their expertise. Yet, an overarching, interdisciplinary housing concept could lead to stronger and more equitable living situations and buildings.

This paper adopts the term *equitable housing* instead of affordable housing, as the term equitable contains qualitative, social, environmental, and financial aspects. While affordable housing is usually only perceived as the cost ratio of household income and housing costs (Winters, 2021) This interdisciplinary nature of equitable housing projects is also stressed in literature, where researchers often define extensive lists of criteria to explain equitable housing. From user participation to hygiene to water efficiency, criteria are often very widespread over different focuses and disciplines. (Gan et al., 2017; Karji et al., 2019; Mulliner et al., 2013; Olakitan Atanda, 2019; Zarrabi et al., 2022), leaving the concept scattered and complex.

Visualizing the complex and systemic nature of an equitable housing project in a comprehensible way could help stakeholders in defining an inclusive and equitable housing project. This research proposes a prototype for an equitable housing framework that could serve as a base for an open discussion between stakeholders in a housing project. The framework encourages them to think systemically and visualize their intentions. It can be used when designing, drawing up and analysing housing projects.

## 2. Methodology

An explorative international literature study was set up to establish an in-depth understanding of the different criteria for equitable housing. A series of twenty-one semi structured interviews allowed to further define equitable housing in the Flemish and Brussels housing practice. Among the interviewees were Architects, sustainability engineers, co-housing residents, social housing companies, cooperatives, and community land trusts. Together, the literature studies and the interviews resulted in an in-depth list of criteria for equitable housing projects. These criteria were then grouped into 15 dimensions. These dimensions are distributed over four categories: living, financing, dwelling, and using. The dimensions were then visualised in a framework that aligned with the goals of the research; simplifying the complex concept of equitable housing and encouraging systemic thinking.



### 3. Results and discussion

Fifteen dimensions were defined to structure and simplify the long complex list of criteria for equitable housing, derived from the literature study and the interviews (Table 1). Each paper of the literature review discussed dimensions such as comfort, neighbourhood, social contact, safety, responsibility, adequate living space, energy and water use. The other dimensions such as solidarity, the total cost of ownership, capital accumulation, initial price, scale and total cost of usership were not as important in literature but were mentioned and stressed by the interviewees. Table 1 shows the meaning of each dimension.

*Table 1. Fifteen dimensions of equitable housing (Gan et al., 2017; Karji et al., 2019; Mulliner et al., 2013; Olakitan Atanda, 2019; Paduart, 2012; Zarrabi et al., 2022)*

<b>Dimension</b>	<b>Meaning</b>
Comfort	Creating a healthy and comforting living environment, regarding temperature, daylight, hygiene, acoustics, accessibility
Neighbourhood	Providing enough services in the area, like schools, greenspace, work, public transport, healthcare, childcare
Social contact	Allowing social interaction without the invasion of privacy.
Safety	Creating a safe environment without the feeling of being controlled. Safety also includes protection from natural disasters and tenure security.
Solidarity	Financial inclusion of all stakeholders in the project. Reducing social inequity between inhabitants.
Responsibility	Involvement of all stakeholders in the project with the least amount of conflict. Allowing stakeholders to make informed choices.
The total cost of ownership	The cost that will be spent over time for (co-)owning the dwelling, including interest rates and life cycle costs.
Capital accumulation	Gaining financial security in the long run while living in a dwelling. This can be for example through cost recovery, shares, or (co-)ownership.
Initial cost	The cost spent at the beginning of a project, including building costs, and organisational costs.
Adequate living space	The space inside the dwelling in relation to the resident's needs, including individually used and shared spaces.
Scale	The number of housing units and other functions in the project.
Service life	Lifespan envisioned for (part of) the project, including also long-term project phasing and temporary use.
Energy and water use	Strategies for efficient energy and water use, including reducing the use of environmental resources.
Maintenance costs	Costs spent on repair and maintenance of the building.
The total cost of usership	The costs spent on using the project over time

Mulliner et al. (2013) describe how a group of criteria should be considered to develop equitable housing. This research approaches equitable housing as an equilibrium between interconnected dimensions. All dimensions are equally important or gain importance, depending on the project and its inhabitants. This is symbolised by placing the dimensions on a circle (Figure 1). The larger the radius of the circle becomes, the more of a certain dimension is present in the project. However, each dimension must have an upper and lower limit. For example, A minimum sum of maintenance costs is required to prevent a building from decay, i.e., lower limit. On the other hand, there is also a maximum sum of maintenance costs when stakeholders cannot afford the costs, or it is simply not worth it.

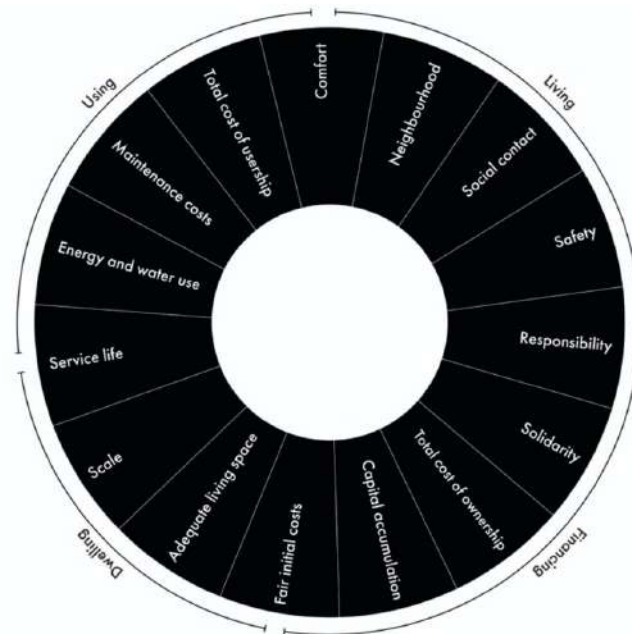


Figure 1. To create an equitable housing project, stakeholders should strive to stay in between the defined upper and under limits, i.e., in the black zone. Source: Authors

Finding solutions that balance both the lower and upper limits for the fifteen dimensions in the framework is thus key when developing an equitable housing project. The exact solutions are very context-specific and will vary depending on the project and the stakeholders involved in the decision-making. Defining one dimension will inevitably influence other dimensions, it is thus key for users to think systemically when using the framework.

The goal of this research was not to find a new definition of equitable housing but to bring together already existing knowledge and prototype a model that simply communicates this knowledge. The goal was also to allow stakeholders to think more systematically when addressing different disciplines, for example during a meeting where a group develops and discusses their housing concept with the architect. In further research, the prototype of the framework was adapted to a workshop format and tested based on actual projects.

## Acknowledgement

This research is funded by Fonds Wetenschappelijk Onderzoek (FWO) through the strategic basic research grant with grant number 1SD8521N.

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