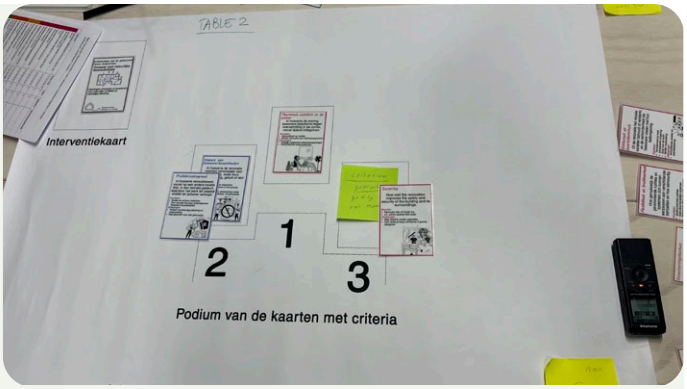
Integrating justice in renovation design: a co-creation serious game



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What does this guide offer to whom?

This participatory activity supports decision-making in the early stages of renovation projects. It helps mixed groups of stakeholders build **shared criteria** for evaluating renovation strategies. This takes place before the final design and implementation. The RENOlympics game can be useful for municipalities, housings associations, resident and tenant organizations, energy and sustainability consultants, designers, engineers and social professionals, working together in a mixed group. The participatory activity helps integrating equitable and resident-oriented criteria into renovation design strategies.

Summary

In disadvantaged neighbourhoods, residents prioritise **comfort, safety, and liveability** over energy savings. Renovation planning, however, rarely reflects this. Early design choices – such as which measures to select, in what combination, and in what sequence – do have direct consequences for residents' daily lives, financial burdens, and sense of being heard.

This multi-criteria approach helps ensure that renovation strategies respond not only to **technical feasibility**, but also to **what is fair and meaningful for residents**. It enables a **holistic assessment** of renovation measures at both **building and neighbourhood scales**. It accounts for environmental, economic, and social impacts simultaneously, **supporting trade-offs**.

In retrofit decision-making, **Multi-Criteria Decision Analysis (MCDA)** supports the structured comparison of alternative renovation packages through key steps:

Step 1. Define and rank what matters (e.g. energy, costs, comfort, construction impact)

Step 2. Assess the performances of alternative renovation strategies



RENOlympics game session at the ELZO workshop. Stakeholders from different sectors and professional roles ranking decision-making criteria during a test of the game. Source: researcher's material

What follows from this:

Renolympics: a card-based participatory approach to support collective decisions around renovation strategies

Participatory methods help stakeholders from different disciplines and levels of expertise learn from one another **and agree on priorities**. The developed game uses **two sets of cards**:

• Renovation measure cards (e.g., window replacement, insulation, heat pump, solar panels)

• Decision criteria cards (e.g., cost, comfort, environmental impact, fairness, liveability)

Participants can combine and compare options, explore their impacts, and discuss trade-offs in an **engaging and accessible way, even without technical knowledge**.

To download the card-based workshop material, please go to the link: Rechtvaardige & Effectieve Energietransitie | Just Prepare Research Project

Co-creatieworkshop over het ontwerp van energiebesparende renovaties voor rechtvaardige huisvesting - Just Prepare JustPrepare Learning Lab and Workshop

https://openresearch.amsterdam/en/page/136535/labsession-%E2%80%93-just-renovation-of-homes-in-the-energy-transition.



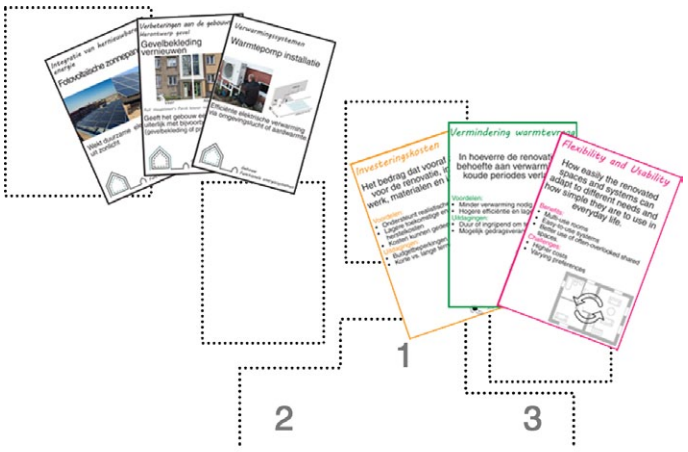

Figure 2 Podium board to rank the decision-making criteria in the RENOlympics serious game

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