Politecnico di Torino

Honors Thesis

Master's Degree Architecture for Sustainability.

Abstract

Beyond Fast
Refurbishment Strategies to Respond to Socio-economic Burdens in Social Housing: the Case Study of Corso Taranto, Torino

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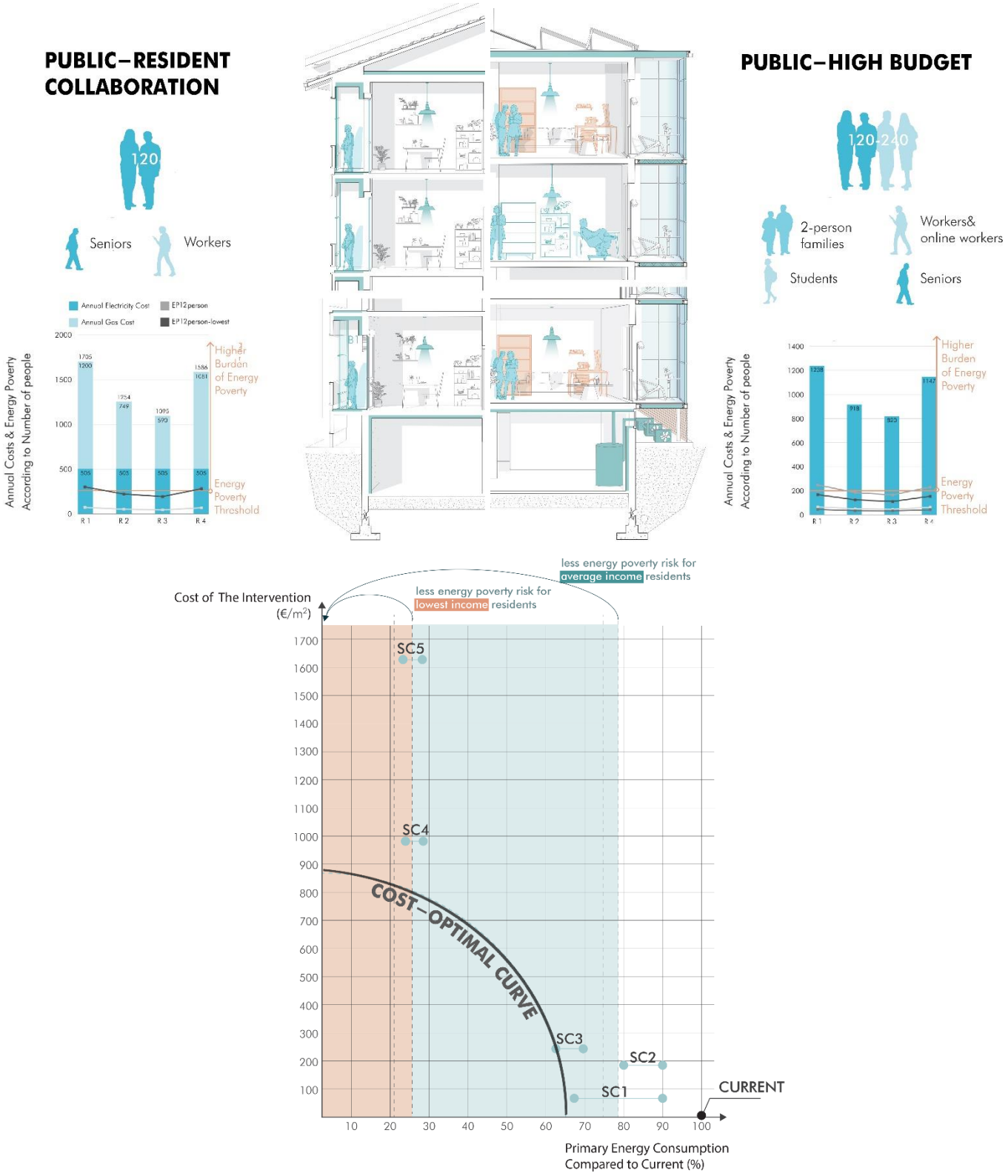
Energy bills are rising, as well as consumption, while families spend more than 10% of their income on energy bills, accounting for energy poverty. Residents must prioritize their needs to keep up with the rising costs. Inadequacy in reaching energy prices highly affects low-income groups, especially those residing in social housing blocks, wherein for each new resident, residualisation decreases income and purchasing power. The construction of social housing block stock for lower-income groups was rising, especially in Europe, after World War II, with the economic boom requiring a workforce. In the case of Italy, the boom had a significant impact, resulting in the emergence of many factories, particularly in Turin, notably the FIAT factories. To address the growing housing needs, new neighborhoods were established. These failed to respond to the needs of the people, who demanded different social and economic needs that currently need to be improved to cope with energy poverty. Considering the criticality of energy poverty in today's situation, the thesis focuses on explicitly co-housing units owned by a public body, such as a local government or a housing authority.

The reason is to have holistic design options and to satisfy multifamily needs with different needs and occupancy ratios while establishing multiscale regeneration strategies to respond to the least low-income people. The research explores Turin's public housing neighborhoods, specifically focusing on a case study of Corso Taranto. This examination aims to assess the viability of various methods and actions in this context, drawing comparisons with similar case studies. Initially, the study defines the existing problems through a thorough literature review and historical analysis of the case study. Then, the research sought examples of transformations with various goals in co-housing blocks across different contexts. The transformations are evaluated based on their economic viability and socio-demographic effects, and later examples are used to define the range of refurbishment costs, considering their feasibility. The applications are divided into block, floor, and apartment unit scales. The economic viability and socio-demographic effects are evaluated together with energy consumption simulations. Energy simulation is later calibrated to achieve as close an approximation as possible to the actual situation. Enhance the insight of energy simulations for various groups of residents with different incomes, considered to calculate energy poverty for different nuclear families, in support of the strategies designed. Based on the research's energetic and socioeconomic insights, the regeneration strategies are grouped into five future scenarios, depending on their actors and viability. The various funding scenarios are activated to create a neighborhood that responds to the socioeconomic needs of the residents. The actors for this scenario could be ATC or even the residents themselves. The difference between the actors and the budget combined with the energy simulation has shown the most optimal solution for the possible intervention scenarios. The results of the scenarios show that depending on the intentions, the situation can improve the economic or social conditions variably. A social-focused strategy, for example, could respond to the current family composition without requiring significant intervention, while the most expensive solution significantly improved energy performance. However, as can be

seen from the conclusion of this study; the optimal scenario for responsive socioeconomic design involves collaboration between residents and the public body, which can significantly reduce energy poverty in social housing while enhancing overall building performance with optimal funding.



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