Analysis of the impact on building and mobility energy consumption from derelict building rehabilitation in Lisbon

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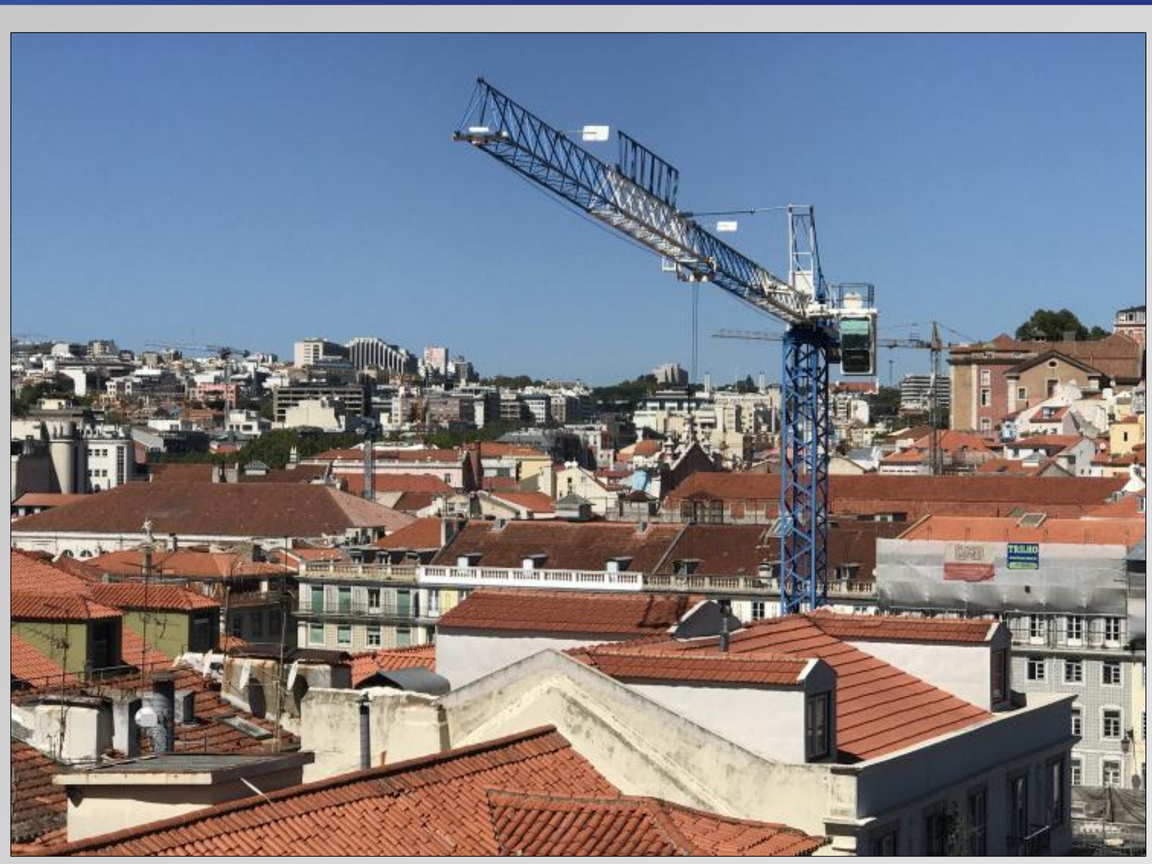
MIT Portugal

2022 Annual Conference

Objectives:

- Simulate building energy consumption and CO_2 emissions to analyse the impact of different energy retrofitting strategies on the buildings to be rehabilitated;
- Analyse the impact on mobility energy consumption and CO_2 emissions from the rehabilitation of the derelict building stock considering the origin of the new inhabitants and their mobility patterns;



Results:

- The building energy (end use) intensity for the base scenario (considering both typology and construction period) is shown on the left. Different scenarios will also be simulated, considering better insulation and windows and more efficient systems. Furthermore, an economical analysis will be performed to assess the most beneficial solutions.
- The image on the right shows CO_2 emissions per trip to Lisbon for the municipalities of the Lisbon Metropolitan Area by considering the frequency of this commuting, car stock characteristics and the distance of the trips. The mobility pattern to be adopted in the rehabilitated buildings zones will be studied and the emissions and CO_2 compared;

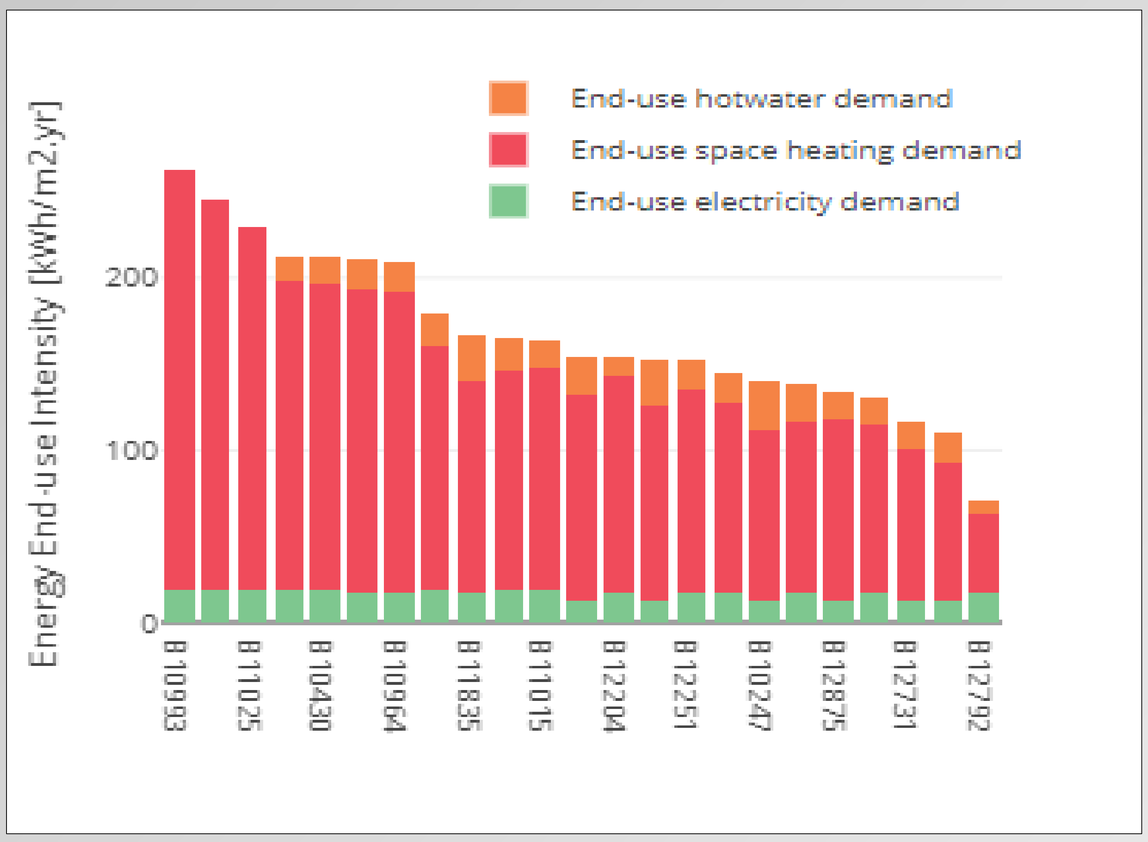


Figure 1 – Energy End-Use Intensity of the rehabilitated buildings

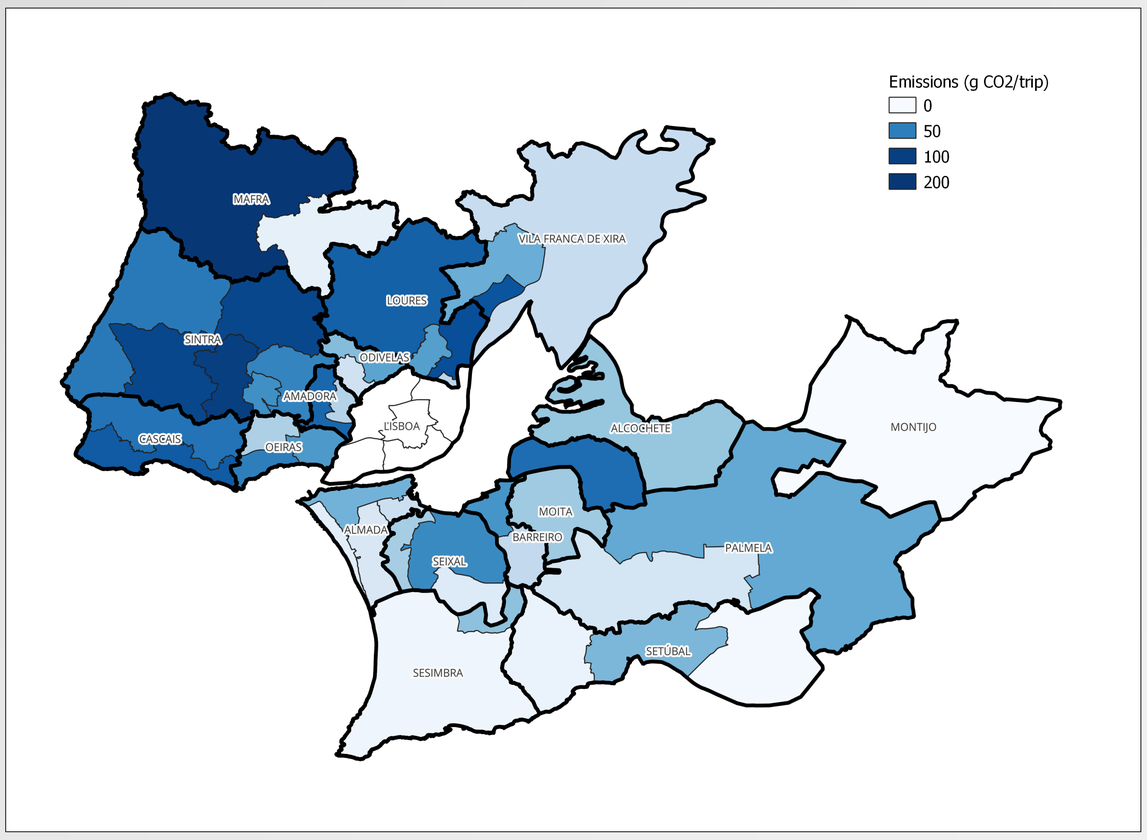


Figure 2 – CO_2 emissions per trip to Lisbon

Funded by:

FCT Fundação para a Ciência e a Tecnologia

MIT Portugal

under the Flagship Project: Project C-TECH - LISBOA-01-0247-FEDER-045919.| MIT Portugal Program Sustainable Cities