

REFRAMING URBAN RESILIENCE IMPLEMENTATION: ALIGNING SUSTAINABILITY AND RESILIENCE

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66 Design for walkable neighbourhoods in Singapore using Form-based Codes

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Walkability is often regarded as a key resilience and liveability indicator for urban neighbourhoods and the city (Robertson and Hachem-Vermette 2017). Singapore often tops the rankings as the most liveable city in Asia, especially due to its easy access to public amenities (The Strait Times 2018). However, active mobility, including walking and cycling, only account for a minority of all ridership in the city (CLC and ULI 2017). This raises two key questions: 1) what factors hinder walkability in Singapore and 2) how can the built environment be improved to promote active mobility.

This study argues that the lack of detailed urban design guidelines impedes the creation of pedestrian-friendly environments, especially for public housing neighbourhoods that form the main urban landscape of Singapore. It then explores the possibility of using Form-based Codes (FBC) to improve walkability for the public housing neighbourhoods. Such codes have been repeatedly proved in the Western cities as an effective design guideline to regulate the built environment and create walkable neighbourhoods (Hansen 2014). However, they have never been applied in the Asian context.

Methodologically, this research first diagnosed main problems pertaining to poor walkability of public housing neighbourhoods based on a comprehensive review of existing studies and site survey. The problems then provide a lens to assess the literature and the best practices of FBC, identifying the strengths and limitations of applying such codes to Singapore's public housing neighbourhoods. On this basis, a framework and key principles for developing new FBC were derived, and new design guidelines were tested using two case studies.

This study for the first time explored applying FBC to high-density tropical cities in Asia. The research findings indicate that the FBC principles and methods for improving neighbourhood walkability are potentially useful for enhancing liveability and resilience of other similar urban environments.