

## Guiding Principles For The 15-Minute City In Peripheral Areas: The Emc2 Model.

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*Developing a 15-minute City (15mC) is a new planning strategy for affordable and sustainable mobility. Through pedestrian-based proximity, inhabitants and city users should be able to walk to destinations catering to most of their daily needs (Moreno et al. 2021, EIT Urban Mobility 2022). Compact European urban cores have already implemented 15mC solutions with some success, as in Paris and Barcelona. However, the implementation of the 15mC is much harder in post-war car-dependent outskirts and suburbs, lacking some of its key morphological pre-conditions: centrality, density, proximity to services and public transport, mixed land use, quality of walking and cycling, and attractive public spaces. These pre-conditions influence people's behaviours through intermediate concepts like walkability, sense of place, ease of reach, and liveliness (Gehl 2011, Dovey et al. 2017). We think that interventions aimed at improving pedestrian accessibility alone, without addressing these morphological challenges, won't be able to successfully implement the 15mC in peripheral areas. What is needed is a new coherent framework to guide interventions on the different facets of the 15mC.*

*The Evolutive Meshed Compact City (emc2) is being developed to provide a workable urban model capable of ensuring the necessary coherence of a 15mC strategy in the urban peripheries. The emc2 model proposes to distribute compact urban form as corridor development along pre-existing main roads connected to wider-range mobility options and forming a meshed structure across the metropolitan area. This requires smart densification along these streets, which are further redesigned for pedestrians to become lively main streets (Bertolini 2020, Stähle et al. 2022, ADEME 2023).*

*The emc2 model can be specified through the implications of a few guiding principles, which could inform more specific urban planning and design patterns (Alexander et al. 1977).*

*A meshed foreground network of main streets is the backbone of an uninterrupted system of pedestrian public space, enhanced by multimodality. The foreground network is characterized by high values of network centrality at various scales, to catalyse the movement economy (Hillier 1996).*

*The network of main streets develops synergies (and should avoid conflicts) with ecological networks (namely blue and green networks) and with far-range mobility corridors (highways, railways).*

*Locally, the main street acts as an accessible, dense, and diverse centre for a neighbouring area. It is as such the focus of selective densification, and its activities benefit from the conditions created by multi-scalar network centrality.*

*The main street is pedestrian-friendly. Pedestrian friendliness goes beyond pedestrian movement and includes pedestrian stay, interaction, and perceived sense of place.*

*Ordinary streets and pathways create connective networks within the meshes of main streets to enlarge pedestrian sheds. Urban functions that do not have the requirements of the movement economy are accommodated within the mesh.*

*The presentation will focus on these guiding principles, showing how the emc2 model differs from other apparently related models like Transit-Oriented Development (TOD, Cervero et al. 2004) or the Neighbourhood Unit (Perry 1929). However, planning normally intervenes in the existing city, and contemporary urban peripheries in Europe are more or less prone to the requirements of the emc2 model. We will thus also present a framework to assess the potential of contemporary urban peripheries to develop the emc2 model. Indeed, many European urban outskirts already possess incipient networks of main streets, inherited from spontaneous growth, including pre-existing rural settlements and faubourgs. Where present, these networks could serve as the backbone of the peripheral 15mC, as foreseen by the emc2 model.*

## Feasibility Of Accessing Peripheral Centres By Regional Public Transport.

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