From Concept to Fitting: Addressing AI's Operational Gap in the Intermediate Design Phase

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While Artificial Intelligence demonstrates broad efficacy in the early stages of design conceptualisation and visual representation, it often generates generic solutions that struggle to align with specific design intentions and site peculiarities, operating through abstraction processes driven by global databases.
This contribution investigates the role of AI in the transition toward small and medium scales, highlighting a significant operational gap in the intermediate phase of the design process. Through a critical literature review, the study reveals the asymmetry between AI's ability to rapidly generate concepts and its limited capacity to support contextual fitting and the production of technical and executive drawings required for the actual realisation of architectural works.
While current tools show promising results in metropolitan contexts characterised by rich digital datasets and existing models, their limitations become even more evident in minor, rural, or less digitalized contexts. In this scale transition, the architect's role remains pivotal: critical judgement is essential to assess coherence, guide design decisions towards context-appropriate solutions, and evaluate the relevance of generated proposals. Consequently, there is a clear need to develop AI models with enhanced contextual awareness, capable of supporting the design process while preserving the decision-making role of the architect.