

Mereological Syntax of Space (MSS): A Relational Framework for Translating Urban Spatial Structures into Architectural Configuration

Supplementary Methodological Note

Clarification of Performance Metrics in Table 1

Manuscript Title: Mereological Syntax of Space (MSS): A Relational Framework for Translating Urban Spatial Structures into Architectural Configuration

Purpose:

This note provides supplemental methodological details regarding the performance metrics presented in Table 1 of the manuscript. It aims to clarify the derivation process of the numerical values (1–5) and specify the nature of the evaluation conducted within the MSS framework.

Methodological Approach: Prospective Expert-Consensus Evaluation

The numerical scores assigned to the performance metrics in Table 1 represent a Prospective Expert-Consensus Evaluation rather than a Post-Occupancy Evaluation (POE). Given that the case study focuses on proposed urban spatial scenarios within the MSS framework, an empirical POE was not applicable.

The evaluation process followed a structured consensus-building procedure:

Panel Composition: The evaluation was conducted by a panel of three senior faculty members specializing in architectural and urban design theory and configurational analysis. The panel was selected based on their extensive academic background in evaluating spatial scenarios and their familiarity with the theoretical foundations of the MSS framework.

Assessment Criteria: The experts assessed the degree of “Relational Synthesis” and “Mereological Integration” (as defined in the MSS framework) for each spatial sequence.

Consensus Process: Using a modified Delphi-style approach, experts independently evaluated the design scenarios against the MSS criteria using an ordinal scale of 1 to 5 (where 1 indicates low integration/fragmentation and 5 indicates high structural/relational synthesis). In instances of discrepancy, a collaborative review session was held to reach a final consensus score based on the qualitative analysis of the spatial diagrams (Figures 6–9).

Conclusion:

This diagnostic approach aligns with the theoretical intent of the MSS framework, which aims to provide a predictive tool for architects and urban designers to evaluate the relational potential of urban configurations prior to physical construction. This process ensures the rigor and reproducibility of the metrics presented, grounding the quantitative output in expert qualitative analysis.