Towards Urban Densification

Using Shape Grammar to Develop Components for Retrofitting Street Design

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Abstract. Cities will have to become denser to accommodate expanding urban populations, creating a challenge for urban mobility. Existing urban infrastructure must be retrofitted to promote the use of collective and active modes of transportation. This article presents a prescriptive grammar, for retrofitting urban street design in the context of densification, based on patterns extracted from current guides and manuals. This prescriptive grammar is a crossover between concepts of shape grammar and pattern language, joining generative capabilities of geometric shape grammars with descriptive and prescriptive approaches commonly referred to as design patterns. An example is presented to illustrate its application.

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