

Computer rule-based model for housing and urban design

Sustainable, affordable, and participatory mass customized housing and urban planning

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The traditional approach to the design of a large housing estate is to design a limited number of types and then to repeat these based on market analysis. This approach led to uniform housing and rigid urban plans. Contemporary rule-based computer-aided design and manufacturing processes can overcome such flaws and produce, following a participatory process, customized houses and diverse urban environments that are sustainable and affordable. The goal is to give mass-produced houses some of the qualities associated with individually designed ones and to endow planned environments with the qualities associated with traditional settlements. These tools are particularly appropriate for contexts experiencing fast urbanization and help to mediate the dialogue among the different stakeholder of urban development processes: users, designers, town halls, developers, builders, and funding agencies.



Informal settlement: fast growth, participatory, customized, chaotic, with social problems



Planned settlement following a traditional approach: fast growth, non-participatory, non-customized, monotonous, with social problems



Traditional settlement: slow growth, participatory, customized, diverse



Planned settlement following a computer rule-based approach: fast growth, participatory, customized, diverse