

# Street Network Inter-Accessibility and Urban Sustainability. Measuring Urban Compactness with Various Spatial Analyses Tools

Akkelies van Nes (Norway)

**Key words:** Spatial planning; Urban renewal; Urban compactness, space syntax, safety, sustainable mobility means

## SUMMARY

This contribution demonstrate how various spatial analyses methods is able to identify and describe the spatial features of a sustainable city. As turned out, the spatial structure of the mobility network and the spatial relationship between buildings and streets influence several aspects related to compact and sustainable cities, such as building densities, degree of land use diversity, safety, the degree of the use of sustainable mobility means.

This broad subject will be approached in the following way: Firstly, the term sustainability requires some explanatory remarks. They will secondly lead to a discussion of urban sustainability. Thirdly, urban compactness and its impact on urban sustainability will be taken into consideration. Finally, urban compactness will be reconsidered in spatial configurative terms. As argued, sustainable design relies on holistic principles has to maximise urban compactness. Urban sustainability's holism cannot be applied to comprehensive urban contexts unless it accounts for spatial accessibility on all levels. Accessibility depends on compactness. Hence, urban compactness and thus accessibility can best be approached from a topological point of view, since compactness is a topological term. Examples from car based cities and pedestrian and public transport based cities will be used throughout the paper.

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