

Alternative (bioclimatic) urban design for compact urban fabrics

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Considering the predominant pedestrian-focused contemporary urban renewal programs and the urban heat island effects in summer, the improvement of outdoor (thermal) comfort is crucial to ensure that public spaces are positively used. Incorporating bioclimatic urban design principles into common urban design practice is undoubtedly relevant for re-shaping public spaces into more comfortable units of urban life.

Bearing it in mind, this article argues that the application of bioclimatic principles, alongside all other public spaces qualities, into urban design projects can contribute to the creation of a different nature of public spaces – spaces that could function as alternative areas for citizens needs.

Focusing on compact urban fabrics, the correlation between facing materials and vegetation is highlighted as these are the (bioclimatic) physical parameters influencing a space's microclimatic performance considered as the most potentially workable in compact urban fabrics. A square in Porto, Portugal, is referred in order to illustrate the extent to which such relationship can affect thermal comfort and use.

Which alternative urban typologies can we think of for compact urban fabrics when considering the intersection of bioclimatic and common urban design? This paper concludes about the advantages of creating such alternative spaces, bearing in mind the referred combined qualities, in the context of urban renewal programs.

Keywords: bioclimatic urban design, urban renewal, thermal comfort, urban typologies