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## Geospatial Analysis of Geotechnical Data Applied to Urban Infrastructure Planning

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### ABSTRACT

The urbanization process inside the State of São Paulo (Brazil) facilitated, in approximately five decades, the migration of thousands of peasants to the urban areas of great industrial centers inducing and requesting, at the same time and very often, an amplification of the systems of local urban infrastructure not appropriate for the natural potential of the physical territory. In this content, the city of São José do Rio Preto (State of São Paulo) with little more than 350.000 inhabitants, currently faces serious problems related to the urban planning originating from the unusual occupation and without previous study of suitability. Therefore, the present paper intends to guide and indicate the areas whose potential of urban development leads to an occupation suitable for the construction of shallow foundations in residential buildings of single floor, using an interpretative chart produced by the software GIS-SPRING-4.0 developed by Instituto Nacional de Pesquisas Espaciais/INPE (Brazil), and based in the methodology of geotechnical mapping developed by the department of geotechnical engineering of EESC/USP (Brazil). The chart for shallow foundation shows that a large portion of the studied area presents serious relationship problems with layers of highly collapsible soils.

### KEYWORDS

GIS, geotechnical mapping, urban planning, urban infrastructure, shallow foundations

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