The importance of the structural features (joints and faults) in the urban planning- Rio Claro, SP - BRAZIL.

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The theme of this research corresponds to the local hydrographic basin of the Corrego das Flores stream, a tributary of Rio Corumbataí (Basin of Piracicaba/Middle Tietê) located in the municipal district of the city of Rio Claro, São Paulo State-Brazil. The geology of the area is represented by two formations, the Corumbataí (Paleozoic sediments composed predominantly by siltstones and argillaceous sediments, with plan-parallel structure) and the Rio Claro (Cenozoic sediments composed of sandy-argillaceous material and conglomerate, with prevailing massive layers and some small crossbeds). Discontinuities in these two formations are represented by joints and faults, which are characterized by vertical/subvertical 70-90°, with two preferential directions NW-SE and NE-SW, secondarily N-S and E-W and normal faults (σ1 subvertical, (σ2 NE-SW, (σ3 NW-SE and trancurrent σ1 NW-SE, σ2 subvertical, σ3 NE-SW. These fault features are subject to ongoing continous slight movements, making them inappropriate building sites. The residences already built on these faults are commonly constructed by the residents themselves. Both the quality of the construction and materials in these structures are often substandard, making the residences more susceptible to structural damage. About 80% of the houses built above the faults have cracks associated with small displacements of the faults. Such a picture shows the importance of the studies of the Modern Structural Geology for the planning of building sites and urban projects. Knowledge of irregular and/or unstable geologic features can help avoid costly construction and repairs which, for low-income residents, can create a serious financial burden.