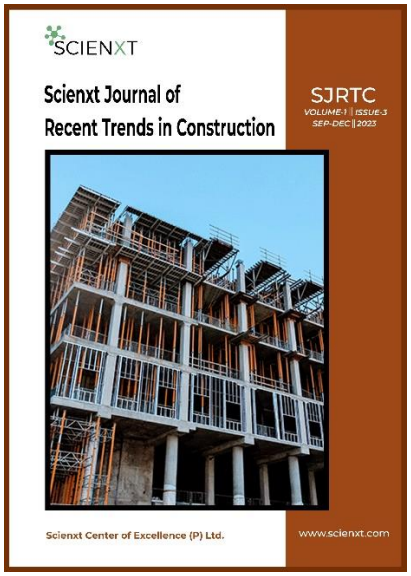

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Use of building derived material as an alternative material forreplacing soil in geotechnical enginerring

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Abstract:

This study investigates the potential of BDM in its virgin state for enhancing the geotechnical and mechanicalproperties of soft soil with low shear strength. A series of material and geotechnical tests carried out on soil replaced with different percentages of BDM include specific gravity, water absorption, standard Proctor's test, permeability test, and Triaxial shear box test. The results indicated that an optimum of 16–24% of BDM by weight can be added to soil to improve its mechanical and geotechnical properties such as shear strength andcompaction. It is observed that the strength of BDM decreases. The results of AIV and LA abrasion test on BDM exposed to chemicals show that the performance of the BDM deteriorates in the presence of heat. The results obtained from the proposed study can be used to promote the practical use of BDM in geotechnical applications. However, necessary precautions must be adopted for their practical application in ground improvement based on soil conditions.

Keywords:

Building Derived Materials (BDM), Triaxial shear test, Shear strength, GeotechnicalApplications.