Abstract: With the increasing of population and the reduction of available land, more and more construction of buildings and other civil engineering structures have to be carried out on weak or soft soil.In this project we are going to describe about the effect of lime and some Geo-technical properties of expansive soil stabilized with the optimum percentage of Quarry dust. Black cotton soil is one of the major soil deposits of India. These soils are very expansive in nature, these expand highly when comes contact with the water.This study is carried out with an intention to evaluate the effects of Quarry dust and lime on the geotechnical properties of the locally available expansive soil from Vaddeswaram. Tests which are to be carried out on the sample of soil dealt with specific gravity, compaction, California bearing ratio, unconfined compressive strength and shear strength. These tests are to be conducted at both non-stabilized and stabilized states by adding 2%, 4%, 6%, 8% and 10% of lime in addition with 5%, 10%, 15%, 20% and 25% of quarry dust. The results show the effect of quarry dust and lime on geotechnical properties of the soil samples strength. Also it may be estimated that this is an efficient way of reducing costs, without losing the strength gains and water sensibility.

**Abstract of final publilshed paper:**The focus of this report is to study the feasibility of stabilizing soil by using rice husk ash and coconut coir fibre, thus re-using the waste materials and providing an economical and eco-friendly method of soil stabilization. Soil stabilisation is a system to treat the soil to improve the performance of the soil. The capacity, rice husk ash as stabilizing additive to expansive soil is evaluated for the enhancing engineering properties of expansive soil. The Assessment includes the dedication of the swelling capacity, plastic limit, liquid limit, plasticity index, cohesion & compaction characteristics of the expansive soil. For the soil which lacks enough stability, various stabilization techniques can be adopted. Various percentage of rice husk ash and coconut coir Fibre (5% to 25%). the practices were executed on 5 proportions 5% ,10%,15%, 20% and 25% with the sample. The optimum value of the assessment is found at the proportion of 15% in table 3i.e.the value of unconfined compressive strength is 142kN/m2.Expansive clays are very problematic soils and not suitable for construction. Because of the change in volume when it exposes to water. Usually in rainy season, they absorb water and swells and in summer it shrinks.

**Introduction of quarry dust mixes**: The availability of buildable land is decreasing day by day in India due to population growth, rapid industrialization and scarcity of land with good natural bearing capacity. This leads to construction of buildings on poor soils which eventually lead to structural foundation failures. The expansive soils are the one which are more problematic for construction and are predominantly available in majority places in Andhra Pradesh. These soils undergo swelling and shrinkage as the moisture content changes in it. Due to high swelling and shrinkage, these soils pose lot of problems to the structures founded on them. For a safe construction, it is necessary to improve the quality of ground by adopting some suitable ground improvement techniques. Many innovative foundation techniques have been devised as a solution to the problem of expansive soils. The selection of any one of the technique is to be done after detailed comparison of all techniques and adopting a well suited technique for the particular system. Lime and Cement are commonly used as stabilizers for altering the properties of expansive soils. From the recent studies, it is observed that solid waste materials such as Quarry dust and flyash are used for this intended purpose with or without lime or cement.

**Introduction of lime stone** : For any land-based structure, the inspiration is incredibly necessary and has got to be sturdy to support the whole structure. so as for the inspiration to be sturdy, the soil around it plays a really essential role. So, to figure with soils, we'd like to own correct information concerning their properties and factors that have an effect on their behavior. the method of soil stabilization helps to attain the desired properties during a soil required for the development work.

**Introduction of project model paper**: Expansive soils are soils or soft bedrock that increases in volume or expand as they get wet and shrink as they dry out. In India this Expansive soil is called “Black Cotton Soil”. Colour of this Soil is reddish brown to black and this helps for cultivation of cotton, so is called black cotton swelling soil covers about 30% of the land area in India. They are also commonly known as bentonite, expansive, or Black Cotton soil. In India Black Cotton soil also known as regurs and are found in extensive regions of Deccan Trap. They have variable thickness and are underlain by sticky material locally known as “Kali Mitti”. In terms of geotechnical Engineering, Black Cotton soil is one which when associated with as engineering structure and in presence of water will show a tendency to swell or shrink causing the structure to experience moments which are largely unrelated to the direct effect of loading by the structure.