



**TEE BUN PIN**

**Research Summary:** Recent technological advancement of optical fibre sensing has led new ways in measuring the performance of geotechnical structures. The distributed sensing, namely Brillouin Optical Time Domain Analysis (BOTDA) is a novel technique of measuring strains in a continuous manner which has inherent distinct advantages over conventional point-based sensors. In bored pile instrumentation particularly, obtaining distributed strain profile is important when analysing the load-transfer and shaft friction of a pile, as well as detecting any anomalies in the strain regime. Features such as defective pile shaft necking, discontinuity of concrete, intrusion of foreign matter and improper toe formation due to contamination of concrete at base with soil particles, among others, may reduce the pile capacity. The objective of this research is to deploy distributed fibre sensors (BOTDA) in instrumented bored for different soil or rock strata. Data from the instrumented pile will be used to estimate the shaft resistance of bored pile and also issues related to locked-in stresses and creep. Method of analysis and interpretation of continuous strain data from BOTDA will also be studied in this research.

