

DEVELOPMENT OF A SURFACE WAVE TESTING SYSTEM TO ANALYSE SOIL DYNAMIC PROPERTIES

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A low cost surface wave testing system to evaluate the soil dynamic properties has been developed. This has three major parts, namely the surface wave generating system, the surface wave detection and recording system, the computer-based analysis of the surface wave signals.

The surface wave generating systems consist of a transient impact source and a continuous surface wave-generating source. The tripod mounted heavy weight source has been used as the transient impact source and major part of the construction and assembling of the continuous wave source is completed except the assembling of the driving part.

The surface wave detection and recording system comprise of the vertical signal transducers to acquire the surface wave information and a computer connected to a data acquisition card to record the analogue geophone signals as digitised values.

The signals will be analysed first for quality and then to get the phase information and amplitude from which the shear modulus and damping characteristics may be determined.

Trial tests were carried out using the impact source and the results were verified using an approximate method based on the Standard Penetration Test results.

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