

Figure 10: 2-D contour map showing the distribution of q_a (N/m²) in layer 1

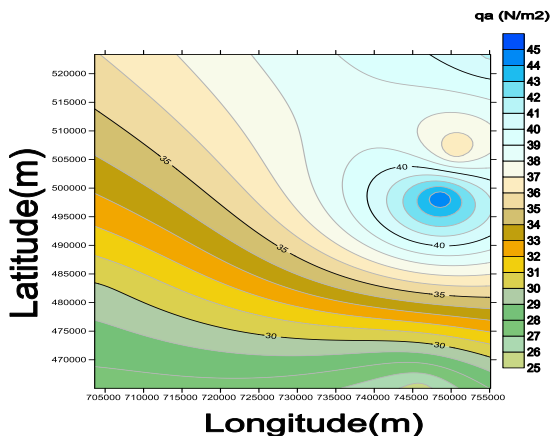


Figure 11: 2-D contour map showing the distribution of q_a (N/m²) in layer 2

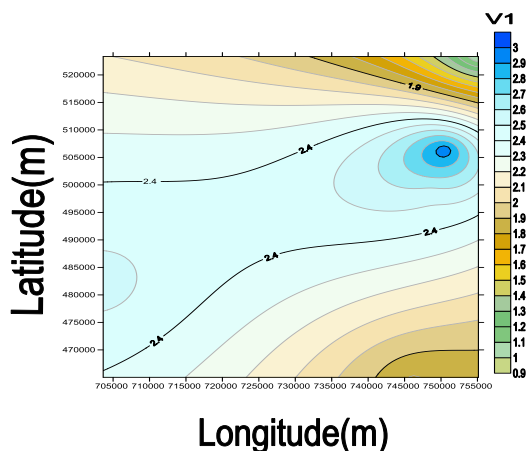


Figure 12: 2-D contour map showing the distribution of V_1 in layer 1

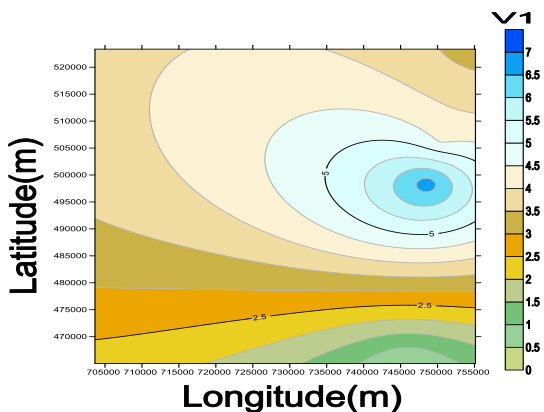


Figure 13: 2-D contour map showing the distribution of V_1 in layer 2

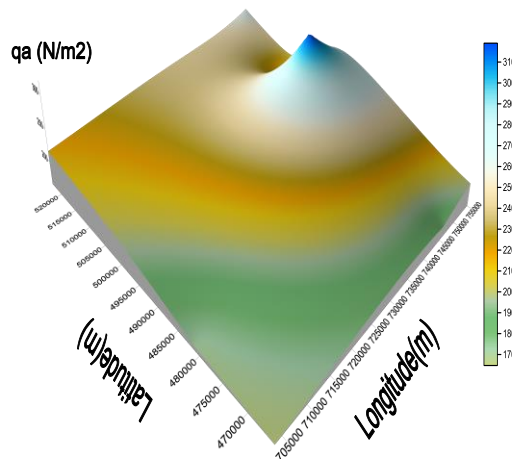


Figure 14: 3-D model showing the distribution of q_a (N/m²) in layer 1

6. CONCLUSIONS

The method of seismic refraction near surface was used to assess the vulnerability of the collapse of buildings. Seismic refraction is a useful and reliable geophysical method for geophysical and engineering study of near-surface conditions. This could be seen in its ability to recognise frail and incompetent ultimate potential of bearing and frail layers of engineering that do not help sustainable engineering. It is worth concluding that the engineers and road builders will make use of the inferred near-surface elastic, bearing capability and engineering parameters to create buildings / road that will stand the test of time. In addition, weak and inept sub-surface elastic, bearing and engineering geomaterials, which are the main cause of building / road failure in the region, must be removed and replenished with good engineering geomaterials such as laterite for better optimized near-surface characterisation for engineering projects. Description of the strengths of elastic, bearing ability and engineering parameters show fine, strong, and compressed rock basement. This will support structural works that would withstand the burdens on the structural works, minimizing the destruction of life and property and fast track the area's rapid economic development.

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