

Perhaps the best argument against the Authors' method of design is the fact that in other tests I have obtained ultimate loads which are much higher than those which would be predicted by the Authors' method. These results are given in the accompanying Table. The work referred to will shortly be described in a short Paper to be submitted for publication in *Géotechnique*, and although it is incomplete in itself, it would make a useful addition to that reported by the Authors. It is only by considering a collection of test results, which may be incomplete in themselves, that the correct method of design will finally be arrived at.

Yours faithfully,

H. Q. GOLDER.

The Secretary,
The Institution of Civil Engineers.

DEAR SIR,

In the Article "Earth pressure measurements in open cut: Contract D-8, Chicago Subway" (*Géotechnique*, III:6:248), by Messrs Wu and Berman, the Authors, in computing the total earth pressure by the general wedge theory have allowed, quite justifiably, for wall adhesion. However, in their computation of the earth pressure by the Rankine-Resal method, no modification was made to allow for the effect of wall adhesion. I would therefore point out that if the earth pressure in the clay is calculated from the expression $\gamma_z - 2.8c$, which allows for wall adhesion c_w equal to c (Packshaw 1946),* the total pressure for the conditions shown in Fig. 12 amounts to 101 kips per foot, which compares more closely to the measured value of 98.9 kips per foot than the figure of 93.5 computed from the general wedge theory.

In arriving at the figure of 101 kips per foot, the tensile zone on the pressure diagram has been neglected since such a procedure appears to be rational approach. If, however, this tensile force amounting to nearly 5 kips per foot is deducted, the total pressure is about 3 per cent lower than the measured value instead of 3 per cent higher.

Yours faithfully,

J. OWEN LAKE.

* Packshaw, S., 1946. Earth pressure and earth resistance. *J. Inst. Civ. Engrs*, 25:4:233.

The Secretary,
The Institution of Civil Engineers.

DEAR SIR,

In his letter regarding the Article, "Earth pressure measurements in open cut: Contract D-8, Chicago subway," Mr J. Owen Lake is quite correct in that the earth pressure computed by the Rankine-Resal theory, as modified by Packshaw to include the wall adhesion, would be closer to the measured earth pressure than that obtained by the procedure described in the Article. The Authors included the results of earth-pressure computations by the Rankine-Resal theory ignoring the wall adhesion, primarily because that is empirical procedure most widely used by practising engineers in the United States. It is not the Authors' intention to compare the Rankine-Resal theory with the general wedge theory. There would be no theoretical justification in using Rankine's theory for the computation of earth pressures against bracings of open cuts, since the deformation conditions of Rankine's theory are far from being satisfied.

The Authors wish to thank Mr Lake for pointing out the fact that the Rankine-Resal theory, when modified to include wall adhesion, gives results that are in good agreement with the measured earth pressures.

Yours faithfully,

T. H. WU.