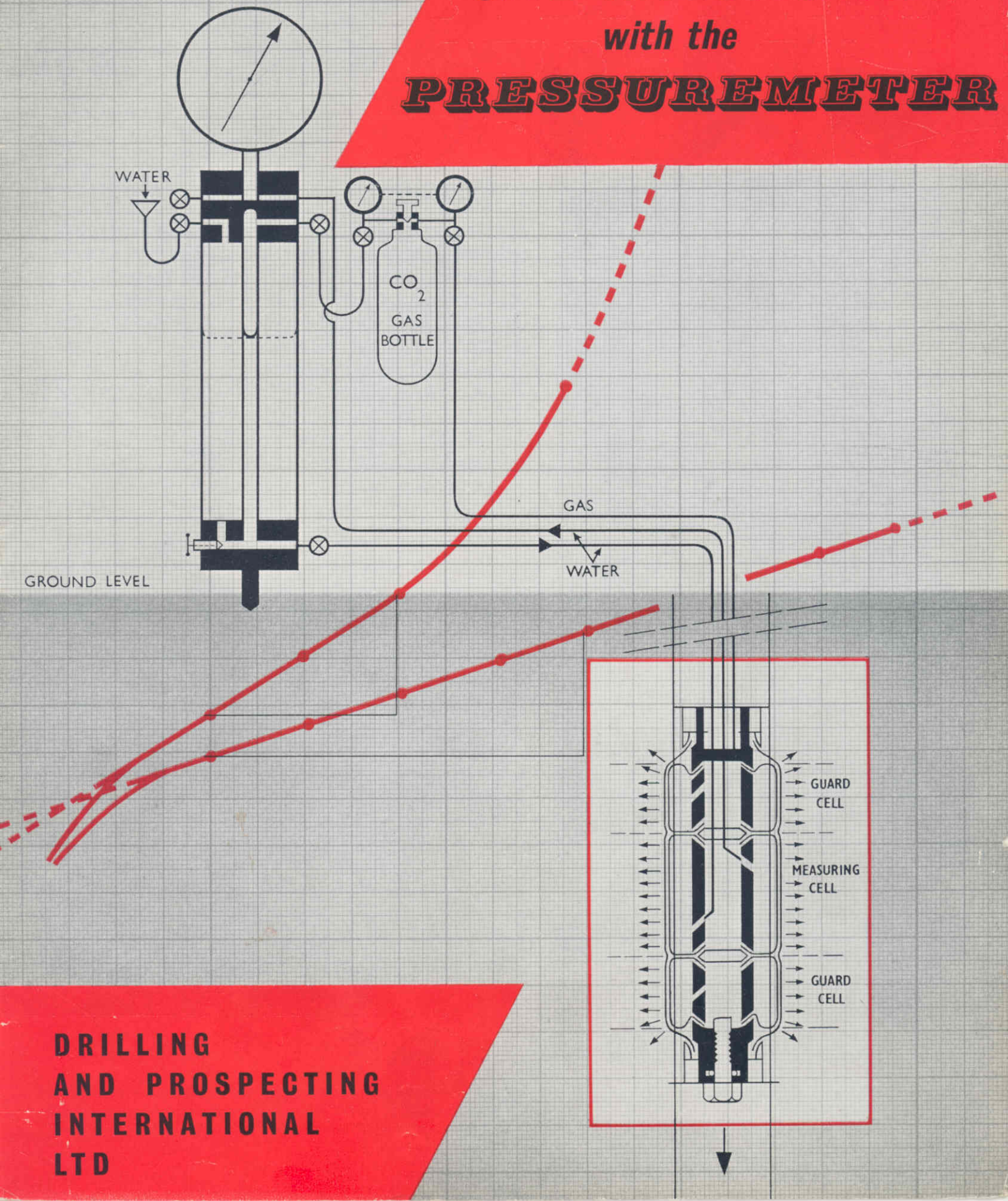
SITE INVESTIGATION
with the
PRESSUREMETER



DRILLING
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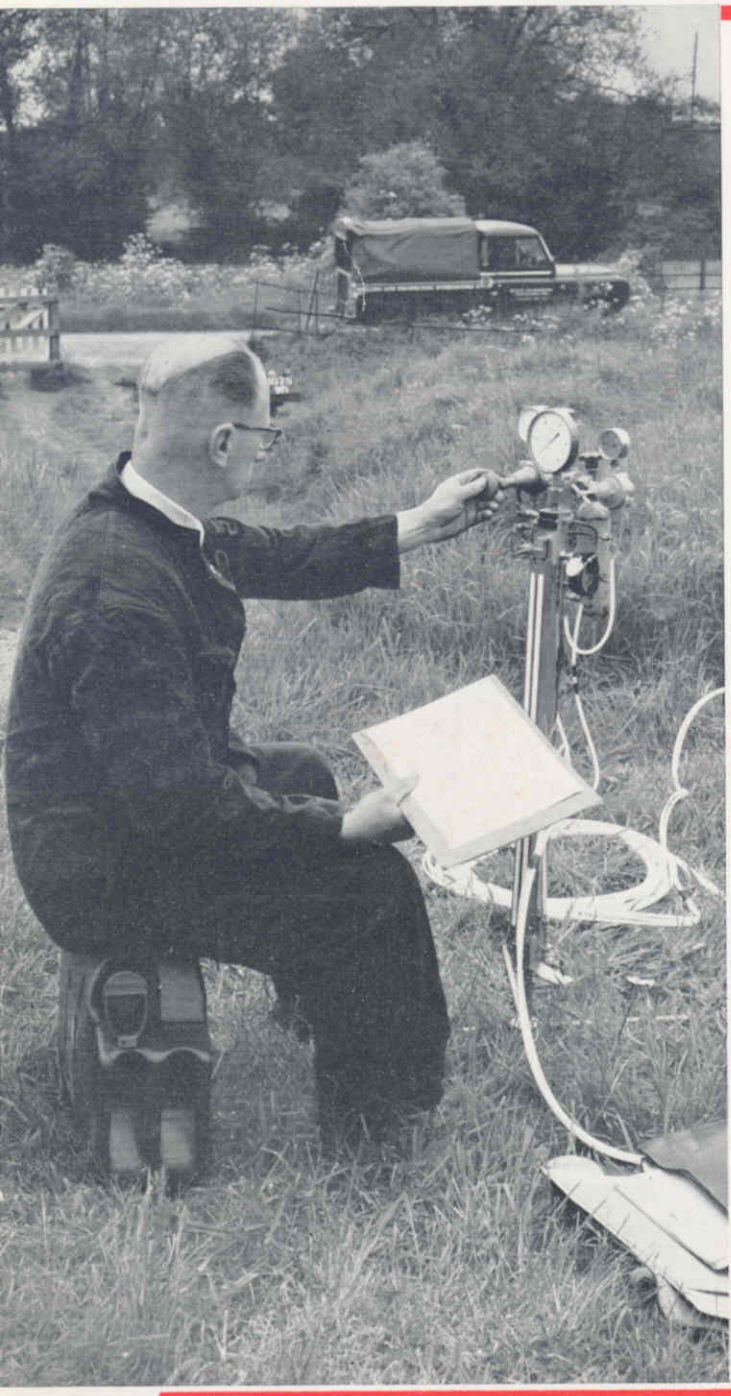
THE TYPE 'E' PRESSUREMETER



The Type 'E' PRESSUREMETER

* Can stress soils up to 30 tons per sq. ft.
* Can test soils at all depths.
* Can work at 100 times normal sensitivity if required for special problems.

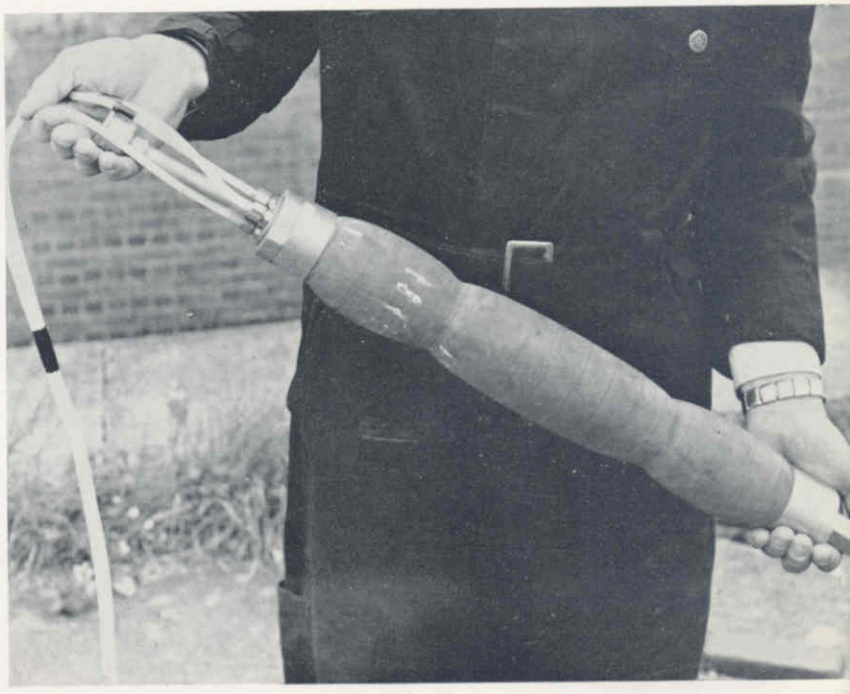
Principle

The pressuremeter probe expands radially under gas pressure to stress the walls of the borehole and cause them to deform. Water in the system measures the extent of the deformation at known pressures.

Analysis of the stress-strain curve plotted from the test gives all the mechanical properties of the soil needed for foundation design.

E Young's Modulus on first loading.
pl The ultimate bearing capacity.
pf The creep pressure.

From these parameters, it is possible also to derive C the cohesion for clays, and ø the friction angle for sands.



THE PROBE

A calibration test at the surface shows the action of the three cells—under an elastic protective sheath. The outer 'guard' cells are designed to eliminate end effects in the central 'measuring' cell.

Tests any soil in-situ above or below the water table

Method of Operation

A small diameter borehole is either bored or driven with a pointed tube or an open-ended drive sampler as the nature of the soil demands.

The test is carried out with two sizes of probe—the 44 mm. diameter for use inside a slotted casing or the 60 mm. for use against the borehole wall unsupported.

Tests are normally done at 4 ft. intervals up each boring, so as to get a full picture of all variations of soil strength and compressibility.

Pressure and volume changes are read to a standard timed programme, and **the preliminary results of the test are available at once on the site.**

The values obtained can be used to assess safe bearing capacities, using the criteria of stability and immediate settlement by classic methods.

CLAYS

A hand auger is normally used for depths of up to 30 feet. At greater depth the hole can be driven.

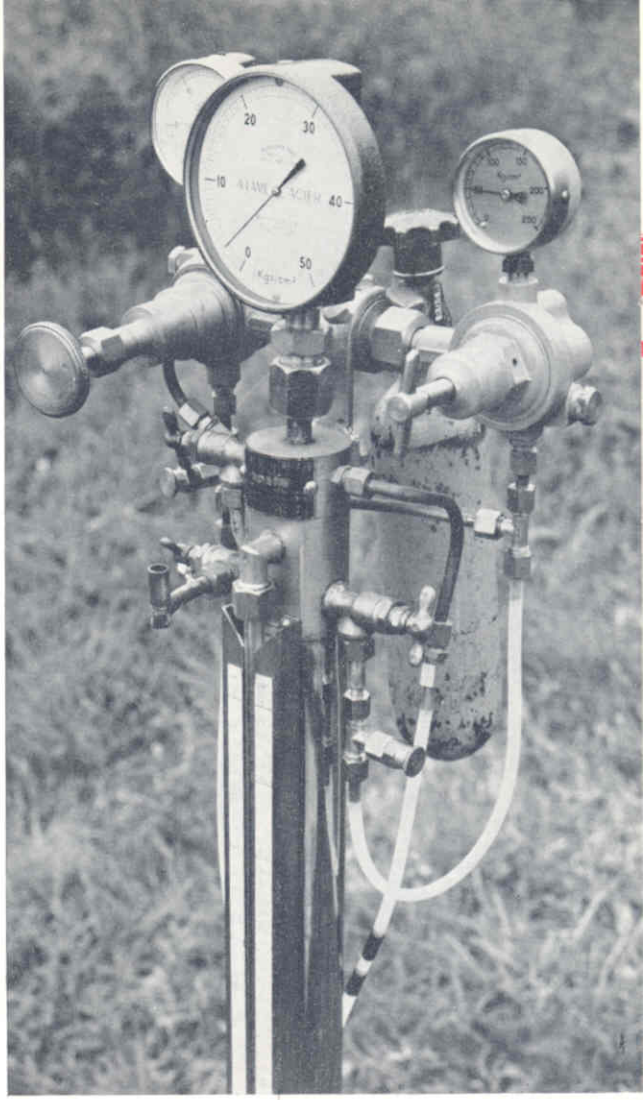
SANDS and GRAVELS

The borehole is made by driving a thick-walled tube with a light diesel hammer, towed as a trailer.

SILTS or PEATS

In bad soils below the water table injection can be used, in conjunc hand augers, to keep the borehole

Compensation for Depth effect



At depths below 30 feet, the hydrostatic pressure of the water column in the measuring cell system begins to be appreciable.

To compensate for this effect, an automatic regulating valve maintains any desired pressure differential between the guard cell–and measuring cell–systems.

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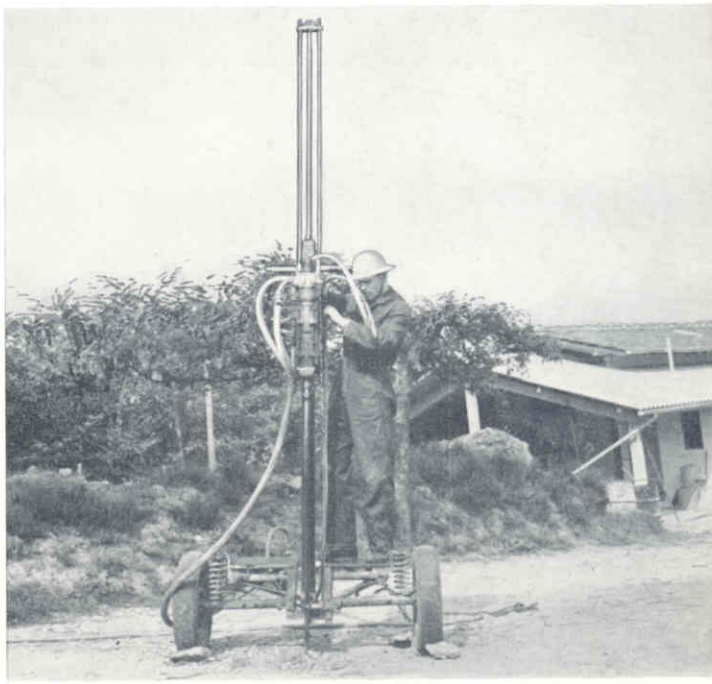
LOOSE SOILS

Drilling casing is used in soil liable to collapse. The bottom section is cut with 6 long slots, which deform under the pressuremeter test.

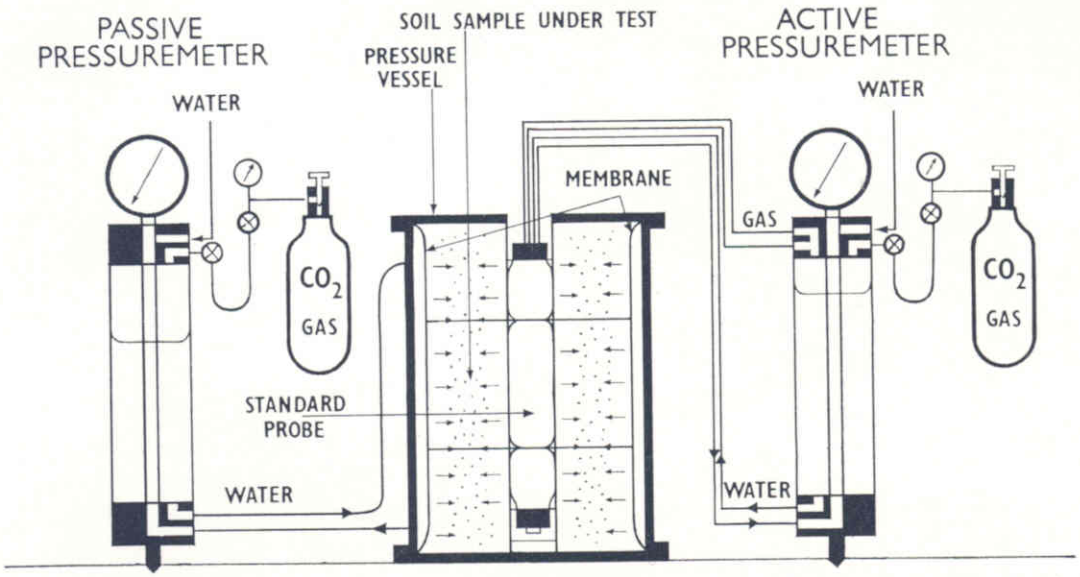


SOFT ROCK

The boring for the pressuremeter probe is made by conventional means, preferably a light air drill, towed as a trailer.

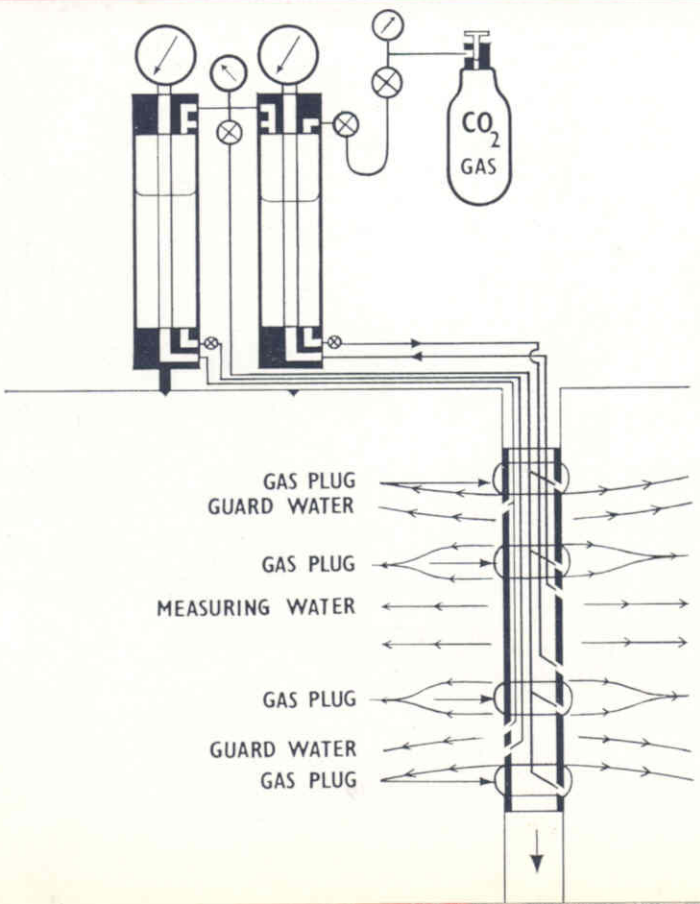
RECENT DEVELOPMENTS

The Inverse Pressuremeter



A pressure vessel, fitted with an internal expanding cylindrical membrane, is used with two pressuremeters for basic laboratory research on large samples, either of soil or other engineering materials such as asphalt, tarmac etc, and under rigorous temperature control if necessary.

The Pressio-permeameter



A double pressuremeter with a special probe squeezes water into a borehole at known pressures, and thereby measures the permeability of the ground at any desired depth, either above or below the water table. Guard cells neutralise end effects and air plugs at four places prevent leakage of water up or down the borehole.

Advantages of the Pressuremeter

1 Rapidity

A test takes less than 1 hour, and the results are available on the site immediately.

2 Mobility

The pressuremeter and related plant is light and handy, suitable for movement by air, or for use from boats, or as towed or pack equipment.

3 Versatility

One instrument can be sent to the site with the certainty that it will do the job whatever surprises the ground has in store.

4 Accuracy

Disturbance effects are reduced to a minimum. The type 'E' Pressuremeter can measure effects of great sensitivity, not hitherto observable.

5 Economy

The above factors combine to give direct and indirect savings in all types of site investigation.

Service

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WARWICK · ENGLAND
Telephone: Warwick 811. Telegrams: Construction, Warwick . . . for details of any of the following services:

1. SITE INVESTIGATIONS using the Ménard Pressuremeter and other modern techniques for in situ and laboratory tests.
2. EXTENDED HIRE of the Ménard Pressuremeter for commercial use, with a service for instruction in field use and evaluation.
3. HIRE FOR RESEARCH to Universities and Technical Colleges on special terms.

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