Moturoa would be of any real use, and that the outlay necessary for this purpose would be far too great when compared with the result obtained. For this work we should not feel justified in recommending the construction of a breakwater of less strength than either of the alternative designs shown on the drawing, Sheet No. 2, Figs. 1 and 2 and either of them, with a railway and other appliances rendered necessary by the distance of the harbour from town, we believe, would cost, at least, from £150,000 to £200,000. This alone, when completed, could only be used as a pier in fine weather and then only for vessels of comparatively light draught.

To completely enclose this harbour, a mole projected in an easterly direction from Moturoa, and curving to south-east, would have to be constructed, in an average depth of from 40ft. to 45ft. of water, for a length of, say 800 yards. This, we estimate, would cost from £400,000 to £500,000. To these two amounts has to be added the cost of the eastern mole projected from the mainland in a northerly direction, which, with sundry other items of expense, would bring the total amount up to at least £750,000.

There are other considerations, irrespective of cost, affecting the merits of the harbour when constructed, as, for instance, the comparatively small area of deep water which could be enclosed even at this large expenditure. But, in view of the facts here adduced, we deem it unnecessary to enter into further details of this project, and conceive that it may be at once dismissed as impracticable.

After a close investigation we have decided to recommend the adoption of a site opposite to the Town of New Plymouth as the one best suited to all the requirements of the case. By adopting this site we avoid the necessity for constructing a railway Its proximity to the town will be convenient to the transaction of business, while at the same time diminishing the cost of carriage of goods, and we believe the whole cost of a good harbour on this site may be kept within the limits of £300,000. On referring to the plan, sheet No. 1, your Honour will see the general outline of the harbour which we propose to construct on the town site, and also, for the sake of comparison, the outline design on which our estimates for a harbour at Moturoa were based.

The main objections to the town site are twofold. First, the bottom there is much more rocky and irregular than near Moturoa, at which place there is a coating of greater or less thickness of sand, mud, and clay overlying the rocks second, the entrance will be more leeward in westerly gales.

The disadvantages arising from the more rocky nature of the bottom are not of sufficient importance to affect our preference for the town site. We need scarcely point out that this formation will necessitate constant modifications, during construction, of the designs accompanying this report. These it would be impossible for us to provide for in detail with our present information, but such modifications are only usual during the execution of similar works, and the designs we furnish may be accepted as a fair approximation to those which we consider should be adopted, and are, in our opinion, amply sufficient for the general guidance of any competent engineer who may hereafter be intrusted with the conduct of the works. After the completion of the piers, the only objection to the rocky nature of the bottom is the fact that it offers inferior holding-ground to vessels anchored under the shelter of the breakwater, but this difficulty can easily be overcome by laying down fixed moorings.

The leewardliness of the entrance is a more serious objection, as vessels failing to take it properly would require to be very smartly handled to prevent them going ashore. The entrance is, however, designed so as to be very easy to take, and, even if missed, a well-handled craft could, we think, be put on the other tack, if necessary, by club-hauling in time to save her. The somewhat less advantageous position of the entrance is, in short, one of the modifications which we have considered it right to recommend on economical grounds.

On the other hand, it is in favour of the town site that the piers cross the contour-lines nearly at right angles, so that the sheltered area is as deep, or even deeper, than the water in which the works are proposed to be constructed. This arrangement is greatly in favour of economical construction, and cannot, from the nature of the bottom, be adopted near Moturoa.

By the system of construction hereafter to be described, a portion of the western wall of the town harbour may be made to serve as a useful jetty to commence with, at a cost of about from £75,000 to £85,000 and the completion of the whole of this pier as shown on the plan would give, at a total cost of £250,000, a fair harbour of refuge for ordinary vessels, and would enable them to lie alongside for a great majority of days in the year and at all times to hold on safely to fixed moorings, while the completion of the whole work contemplated, at an expenditure, as stated above, of £300,000, would give a very snug harbour with about 120 acres total area of still water of the depths named in the following table:—

Between 1 and 2 fathoms	35 acres.
" 2 " 3 "	30 "
" 3 " 4 "	40 "
" 4 " 5 " ..	16 "
Over 5 fathoms ..	2 "
	123 acres.

A slight modification of the design is shown in red lines, which might be adopted at scarcely any increase of cost, as shown dotted. This modification admits of easy future extension should it be required, so as to form a perfectly safe refuge for vessels even of the largest class, and so to shelter the entrance to the harbour proper as greatly to obviate the objection as to its leewardly position. We have not minutely estimated the cost of this possible extension, but we believe that, even if it formed an integral portion of the design, the whole work could be completed within the sum at which we have estimated the cost of a harbour at Moturoa, while there can be no doubt that it would form a better and more convenient harbour