

Before quitting the question of site, we may add that our attention has not been directed exclusively to those two, into the particulars of which we have entered above, but that no other presented itself possessing sufficient natural advantages to require any notice at our hands.

(2.) *Design of the Works*

Having determined on the site to be adopted, we propose to commence the construction of the western pier by building a causeway of large boulders taken from the reef to a level of 6ft. above high-water spring-tides, extending from the shore to low-water mark, with a protecting parapet. The design for this causeway is shown on the drawing-sheet No. 2, Fig. 7. From this, to extend a pier into 2 fathoms (12ft.) at low-water, by means of a timber framing filled in with stone, and constructed as shown on sheet No. 2, Fig. 6, omitting in the first instance the *béton* covering.

This would provide, at a cost, as we have estimated above, of from £75,000 to £85,000, a useful jetty, with a maximum depth at high water of 25ft., at which vessels could lie alongside in fine weather, until such time as the financial arrangements of the province would enable the works to be extended, when this portion of them could be rendered permanent by the addition of the *béton* covering—first on the outside and afterwards on the inside—bringing up the total cost of this portion of the work to about £125,000.

As we consider the extension of this framed timber pier beyond the point we have named would be to a certain extent experimental, we have included in our gross estimate an expenditure necessary to build the remainder of the western pier of stone, in the form of *pierre perdue*. At the same time we think it possible that it may be found practicable during construction to extend the timber jetty to a greater depth than we have ventured to positively recommend, thus effecting a considerable saving, but this is a question which can only be decided by actual experience. We have a precedent to some extent for the use of the timber pier in that constructed at Blyth. It is in about 20ft. of water at high tide, and has stood the full force of the north-east gales without any protecting-works, but we have yet to learn whether it can be extended into deeper water. An average section of the western pier, which may be adopted, is shown in Fig. 5, Sheet No. 2. This section, however, may be modified to have a perpendicular inner face, similar to that shown in Fig. 2, for a length sufficient to give berths for large vessels, without much increasing the cost. The section we recommend for the eastern mole is shown in Fig. 4. This is composed entirely of *pierre perdue*, and will be the last to be constructed. The reefs in the immediate neighbourhood of the works will probably produce a sufficient amount of material to meet the demands of the case on the plan proposed, but, in the event of its proving otherwise, abundance of material can be procured from Mikotahi and its vicinity, at the cost of laying down a temporary tramway, which, by concentrating the sources of supply, would not seriously increase the expense.

*Recapitulation.*

Having now explained the general conclusions at which we have arrived after a careful examination of all the facts in our possession, we may shortly state the results as follows. First, that, in our opinion, the most suitable site for the proposed harbour is that opposite the Town of New Plymouth, second, that a good harbour, fit to be run to as a refuge by all but the largest ships, and possessing all the qualifications for carrying on the provincial trade, may be there constructed for a sum of about £300,000, third, that the works may be executed in part according to the resources of the province, and that each additional portion will increase the value of the harbour in proportion to the sum expended, fourth, that the completion of the first section will give a useful jetty, sufficient in fine weather for the accommodation of the ordinary shipping business of the province at a cost of from £75,000 to £85,000, fifth, that the work may be so laid out, if required, that the western pier may be susceptible of still further future extension, so as greatly to increase the already large area of sheltered water, and render the harbour a safe refuge for even the largest vessels.

It now remains for us to offer to your Honour a few suggestions as to the financial policy to be pursued in connection with this work. We have had the honour of pointing out in our preliminary report, dated the 17th May, 1865, that the construction of this harbour must be viewed as a national work, and one of the highest necessity to the whole colony, from the absence of any natural harbour of refuge on the whole extent of the west coast of New Zealand for a distance of nearly 700 nautical miles, or any port in which a ship can in safety ride out a westerly gale, with the sole exception of the anchorage in Cook Strait, to run to which, even if they could always be "made," would in many cases involve a great sacrifice of time and westing." We, therefore, consider that the province has a very strong claim on the General Government for financial assistance in carrying out this project, and would suggest the following as a basis of arrangement: Debentures to be issued with a General Government guarantee for, say, £350,000, a block or blocks of the confiscated land in the province of that value being set apart as a security for the repayment of the capital amount. As this land is sold the proceeds to be devoted to the repayment of the loan. In the meantime the interest on outstanding debentures to be borne equally by the General and Provincial Governments. The debentures to be issued by instalments as opportunity may occur for placing them advantageously, and the work to be proceeded with in corresponding sections.

We may here point out the great advantages which will arise to the province by reducing the present expensive landing-charges, and by diminishing the risk of damage to perishable goods by water, and we would especially call attention to the great benefit accruing from the facilities which would be afforded by the harbour for sending and receiving shipments direct to and from England and the other colonies, in place of the present tedious and expensive system of transshipment by local vessels. Your Honour will be in a position to calculate the value of these advantages, which would undoubtedly be very great. A considerable revenue would also probably be derived from the customary harbour dues, and wharfage and other charges.

We append to this report a plan (Sheet No. 1) of the roadstead, showing the two projects we have considered, and sections (Sheet No. 2) of the various moles, &c., referred to in this report.