

(b) BREAKWATER HARBOUR.

Again we answer Your Excellency's question in the affirmative. The evidence that we have heard satisfies us that it is practicable to construct a harbour suitable for the requirements of the Napier Harbour Rating District, as at present constituted, at the breakwater. Such a harbour as designed by Mr. Goodall consists of a basin at the foot of the north-western side of Scinde Island, enclosing a harbour of about 105 to 117 acres. The existing breakwater as shown on the lithographed Plan B of Commission's Exhibit No. 3, carried out to the Auckland Rock, which is shown on that plan, forms one of the enclosing arms of the harbour, whilst the mole outlined in green on the said Plan B, forms the other arm.

The other features of the harbour, if it is to be adequate, must be the presence of a swinging-basin sufficient for such overseas vessels as are likely to use the port, wharf and shed accommodation, and sufficient ground made by reclamation to accommodate such shore sheds and other buildings as are necessary to the working of the harbour. There must also be proper transport facilities in the way of access by road and rail for vehicular and railway waggons. There must be an entrance on a sailing-course on a line where sufficient depth can be given and maintained. We are quite satisfied that all these features are attainable, and that the attainment of none of them offers any great engineering or practical difficulty, and that such a harbour being provided would be a reasonably commodious, safe, and convenient harbour for the shipping of the port.

PART 13.—WHICH HARBOUR IS RECOMMENDED.

We now approach the second of the questions set out in Your Excellency's order of reference—viz., "If it is practicable to construct a suitable harbour at (a) the Inner Harbour, or at (b) the breakwater, which of such schemes would you recommend, as providing the best and most suitable harbour from an engineering, navigational, and economic point of view?"

We define the word "suitable" in this question as meaning a harbour (1) capable of admitting and harbouring in reasonable safety modern overseas liners drawing up to 26 ft., and (2) reasonably capable of being developed to accommodate vessels of greater draught when necessary.

Our answer to this question is that, taking into account the engineering, navigational, and economic factors that enter into the problem, weighing each in relation to the whole problem and to the other factors, we recommend the breakwater as providing the best and most suitable harbour. We propose now to marshal the facts and deductions that have led us to that decision, and we begin by pointing out that our conclusion accords with that of every engineer with experience of harbour-construction to whom the above question has been submitted.

When Mr. A. E. Jull, the present Chairman of the Napier Harbour Board, was giving evidence before us he was asked by Mr. Lusk, "How many engineers have reported in favour of a deep-water Inner Harbour?" Mr. Jull answered, "Six—Sir John Coode, Mr. James Abernethy, Sir John Hawkshaw, Mr. W. Culcheth, Messrs. Cullen and Keele, also Messrs. Bell and Scott." (For this question and answer see page 7, Notes of Evidence.)

There is no doubt that Mr. Jull, the Chairman of the Harbour Board, is the chief protagonist of the Inner Harbour scheme, and we therefore assume that the foregoing answer comprises the most inclusive list of engineers allegedly in favour of a deep-water Inner Harbour scheme that could be cited. We therefore propose to examine the claim that these engineers have reported in favour of a deep water Inner Harbour.

Sir John Coode: Report is dated 1880, described in opening paragraph as "Report on the works I should recommend in order to provide a suitable harbour for the port of Napier."

Recommendations: Inner Harbour; channel between piers to be deepened so as to have 10 ft. at low water; later, channel to be further improved by dredging to at least 12 ft. below L.W.S.T. At the time this report was written and this harbour planned, ocean liners of the dimensions and draught of those that now call at Napier had not even been thought of.

Mr. James Abernethy, Sir John Hawkshaw, Mr. W. Culcheth: We group these three engineers together. The first-named two were the English judges who awarded the Harbour Board's prize of £500 to the third named (Mr. W. Culcheth) for his report on harbour-construction at Napier. None of these gentlemen ever visited Napier. The information in the Culcheth report, and on which the judges made their award, is contained in a printed pamphlet which we have included in Commission's Exhibit No. 2, pages 1 to 5. It will be seen that this memorandum gives particulars of existing Inner Harbour works, and works in hand and proposed, and that it was accompanied by drawings of Port Ahuriri roadstead and harbour, and details of moles; also sections of borings in the inner lagoon. There is no mention or suggestion of the breakwater proposed in 1875 by Mr. McGregor. Mr. Culcheth, who, we repeat, never saw Napier, made a report, dated July, 1883, which he described as "a scheme for the improvement of the harbour." He states as one of the requirements, "To maintain depth of 20 ft. at low water in the channel between the moles and in the approaches thereto."

We include in Commission's Exhibit No. 3, as Plan F, a plan of comparative soundings from West Quay to the outer bar of the Inner Harbour. The black line at the top represents L.W.S.T.; the broken yellow line below it represents the depth of 12 ft., the maximum to which Sir John Coode proposed to dredge; the broken blue line next below that represents the 20 ft. depth to which Mr. Culcheth proposed to dredge; whilst the bottom line, a broken brown line, represents the 34 ft. depth to which Messrs. Cullen and Keele proposed to dredge to provide a channel for modern liners. The irregular lines in the corresponding respective colours represent the sea-bottom at various dates—e.g., the yellow in 1878, when Sir John Coode reported; the blue in 1882, when Mr. Culcheth