

1881.
NEW ZEALAND.

NEW PLYMOUTH HARBOUR BOARD INQUIRY COMMITTEE

(REPORT OF), TOGETHER WITH MINUTES OF PROCEEDINGS AND EVIDENCE, AND
APPENDIX.

Report brought up 10th August, 1881, and ordered to be printed.

ORDERS OF REFERENCE.

Extracts from the Journals of the House of Representatives.

THURSDAY, THE 7TH DAY OF JULY, 1881.

Ordered, "That a Select Committee be appointed, with power to call for persons and papers, to inquire into the financial position of the New Plymouth Harbour Board in respect of its present and future relations to the public creditor, and to report generally in the matter. The Committee to consist of Mr. Barron, Mr. Fulton, Mr. Moss, Mr. Montgomery, Mr. Murray, Mr. Ormond, Mr. Pitt, Hon. Mr. Richardson, Mr. Weston, and the mover. Three to form a quorum, and to report within one month."—(*Mr. Wright.*)

WEDNESDAY, THE 3RD DAY OF AUGUST, 1881.

Ordered, "That the New Plymouth Harbour Board Committee have leave to postpone the bringing up of their report for a fortnight. Also that the Committee be empowered to have the minutes of evidence printed."—(*Mr. Wright.*)

REPORT

THE Select Committee appointed by the House of Representatives to inquire into the financial position of the New Plymouth Harbour Board in respect to its present and future relations to the public creditor, and to report generally in the matter—having gone into the question referred to them; examined all available documents, plans, &c., bearing upon the subject; and having taken the evidence of the following gentlemen, namely: Mr. T. King, Chairman, New Plymouth Harbour Board; Mr. J. R. Rees, late Engineer, New Plymouth Harbour Board; Mr. McKerrow, Surveyor-General; Mr. J. E. FitzGerald, Controller and Auditor-General; Mr. John Blackett, Marine Engineer, &c.; Colonel Trimble, M.H.R.; Mr. Kelly, M.H.R.; Mr. L. Stowe, Clerk, Legislative Council; Mr. Sperry, Property-Tax Commissioner; Mr. John Goodall, Engineer, Timaru Harbour Board; Mr. John McGregor, Engineer, Oamaru Harbour Board; Mr. E. C. Jones, Engineer, Wellington Harbour Board; Captain Johnson, Nautical Adviser to Marine Department; Captain Fairchild, s.s. "Stella"; Captain Kennedy, s.s. "Hawea"—have directed me to report as follows:—

That the first design, prepared and submitted by Sir John Coode for the construction of a harbour at New Plymouth, was estimated by him to cost £928,730 for completion in its entirety, and was intended to enclose an area of 130 acres outside the 1-fathom contour line. As the New Plymouth Harbour Board at the date of this report (20th February, 1879) was, and still is, restricted in borrowing to a sum of £200,000, Sir John Coode was requested to indicate the manner in which that sum could be most advantageously expended. He recommended the construction of 2,110 feet of the western breakwater as far as *XX* on plan, by means of rock from Paretutu, placed as *pierre perdue*; the total length of the western breakwater being 3,755 feet. Subsequently, the engineer to the Harbour Board reported that, after trials made, the rock at Paretutu was found unsuitable for the work, on the ground that it could not be obtained in blocks of sufficient size. The Board thereupon abandoned the original design, sent their engineer to England to consult with Sir John Coode, and requested that gentleman to prepare an amended design for the construction in concrete of a portion of the western breakwater.

This amended design was prepared and forwarded to the Harbour Board by Sir John Coode, under date of 17th March, 1880, and comprises a concrete mole, extending 2,320 feet from high-water mark into a depth of 20 feet at low-water spring tides, and is laid down upon lines which correspond with a

portion of the western breakwater which formed part of Sir John Coode's original design. The construction of this length of 2,320 feet is estimated by Sir John Coode to cost £285,800; but this, he states, is exclusive of moneys expended by the Harbour Board previous to March, 1880, and which we find was about £8,000; and also exclusive of certain essential works, the cost of which could not be estimated by him for want of the requisite data, but which, according to the evidence of Mr. Rees, represent a further sum of £19,700 (he having stated that the total expenditure upon works *not included* in Sir John Coode's estimate is about £27,700), thus making a total of £313,500; this is also exclusive of a solid jetty to shelter the inner face of the pier, which Sir John Coode remarks "would be of great service during north-east winds, and would also serve to cut off 'range,' which would otherwise be experienced along the quay when the sea is coming home directly on to the works." The cost of a similar jetty, in the original design, was given at £34,500.

As regards the financial position of the Harbour Board, your Committee find that, by "The New Plymouth Harbour Board Ordinance 1875 Amendment Act, 1877," the Board was authorized to raise a loan of £200,000 upon debentures, carrying 6 per cent. interest and 1 per cent. sinking fund. That such power was preserved by the Harbours Act of 1878, which repealed the said Act (except clauses 15 and 19); and, amongst other provisions, repealed clause 17 also, which declared "That no approval shall be given by the Governor in Council to any harbour work proposed by the Board, unless the estimate of the cost thereof shall not exceed the amount hereby authorized to be borrowed,"—the sum authorized being £200,000. As security for such loan, the Board was authorized, under clause 15 above referred to, "to levy a rate annually upon all lands situated within the rating district (specified in the Schedule), provided that the maximum rate levied by the Board shall not exceed one shilling in the pound on the rateable value of the property."

And clause 19 declares that "all land revenue which the Board may receive under the provisions of the fourth, tenth, and twelfth clauses of 'The Financial Arrangements Act, 1876,' shall be set aside by the Board for the payment of interest and sinking-fund on any loan obtained by the Board, and for no other purpose."

The Land Fund, so appropriated by "The Financial Arrangements Act, 1876," was 25 per cent. of all revenue accruing from the sale, lease, or other disposal of waste lands within the provincial district.

The Committee find that the loan of £200,000 realized, after the payment of the charges and commissions incidental to floating it, the net sum of £185,366 3s. 1d., for which the Board has to provide £14,000 annually by way of interest and sinking-fund. That, hitherto, the Board has not exercised its rating powers, but has paid interest and sinking-fund out of land revenue, having received from that source £42,338 up to the 15th July last, of which £5,000 was expended upon works before the loan was raised, and £28,500 is in the hands of the Sinking Fund Commissioners. In addition to the above, the Board should receive during the next ten years £26,000, being 25 per cent. of the amount to be received on account of land already sold upon the deferred-payment system. It is estimated by the Surveyor-General that the land available for disposal in the future will be as follows:—

10,000 acres of open land, at £2 10s.	..	£25,000
100,000 acres of bush land, at £2		200,000

The percentage of which, payable to the Board, would be £56,250; and this amount, added to the £28,500 in the hands of the Sinking Fund Commissioners, and the £26,000 receivable as one-fourth of the amount due from the deferred-payment settlers, will give a total of £110,750, exclusive of whatever sum may be derived from the sale of the more rugged bush lands, as yet unavailable.

This amount would suffice to pay interest and sinking-fund for a period of eight years; at the end of which time the Board must have recourse to their rating powers. The amount which they may levy (upon the basis of the property-tax assessment) would amount to about £3,520; and, admitting the correctness of Mr. King's assumption, that the amount of the assessment would be doubled in eight years, when they will be compelled to impose this rate, the total annual revenue from this source would be £7,040, and the accrued sinking-fund at this period would be £20,000, plus interest, as against the loan of £200,000.

The receipts from land revenue being exhausted, and recourse being had to the imposition of the maximum rate allowed by law, there will remain an annual deficiency of £6,960, to be made good out of the ordinary revenue of the Harbour Board.

From the figures furnished by the Chairman of the Board, it appears that up to the 15th of July last, out of the total sum received from the sale of the debentures, £185,366 3s. 1d., no less a sum than £72,514 11s. 7d. had been expended upon plant and works, other than the construction of the breakwater itself, upon which a sum of £1,112 17s. 4d. only had been expended; but there was in stock cement to the value of about £2,500, included in the expenditure of £72,514 11s. 7d. The Board has, therefore, expended at least £70,000 in plant, works, and expenses, apart from the cement in stock and the root of the breakwater. They have, therefore, £115,000 as the total sum available for the construction of a work, estimated by Sir John Coode to cost £285,800; from which latter sum we must deduct £20,000, as a reasonable allowance for plant and contingent works: there then remains a net estimate of £265,800 as the cost of the work, leaving a deficiency of £150,000. Taking the more favourable statements of the engineers in charge of the Timaru and Oamaru breakwaters, we find that Mr. Goodall gives £77,950, as the cost of constructing 854 feet of breakwater at Timaru to a depth of 20 feet at low-water spring tides, or £91 5s. per lineal foot; to which he adds £10 5s. per foot for the extra height of the breakwater at New Plymouth, or a total of £101 10s. per foot.

Mr. McGregor gives £80 11s. as the cost per running foot of the 1,475 feet completed at Oamaru, to which he adds £11, additional cost per running foot of the New Plymouth breakwater, on account of the extra height, or £91 11s. per foot; and, although Mr. McGregor puts the present cost at Oamaru at £68 per foot, that is based upon cement at £4 3s. 6d. per ton against £5 1s. at New Plymouth, and beach shingle at 2s. 6d. as against 4s. for broken stone.

Applying the ascertained cost of work done at Timaru and Oamaru to the projected work at New Plymouth, and allowing for the increased height, the 2,320 feet to *F Y* will cost, at £101 10s. per

foot, L235,480; and, at L91 11s., L212,396, exclusive of plant in each case. The Board having only L115,000 available, there will be a deficiency in one case of L97,396, and in the other of L120,628.

Sir John Coode states that, "If the expenditure is confined to L200,000, then the pier can for this amount be carried only to a point 1,420 feet from low-water mark of spring tides, or 565 feet short of *Y Y*"

This is conditional upon a judicious expenditure of the Board's funds; and if, instead of L200,000 less L20,000 for plant, the Board has only L185,000, less L70,000 expended upon plant and unnecessary works—or L115,000 instead of L180,000—it is clear that not more than two-thirds of the lesser work indicated can be finished with the funds at the Board's disposal.

Upon the basis of the more favourable of the two estimates above referred to (that of Oamaru), the Board could not, at L91 11s. per foot, extend the work more than 1,257 feet from the starting point (high-water mark), and, with that length, would only reach a depth of 11 or 12 feet at low-water spring tides.

It appears, from the nautical evidence taken, and also from Sir John Coode's report of 20th February, 1879, that the work, if completed in full at a cost of L928,730, cannot be regarded as a colonial harbour of refuge; and the most that would be effected by the construction of the section to *Y Y* would be, that steamers of the class of the "Hawea" would, under ordinary circumstances, be enabled to load or discharge cargo; consequently the work cannot be regarded as other than of a purely local character.

Your Committee think it its duty to report that the work was commenced in a very irregular manner, and that a large part of the expenditure on account of plant was incurred without the approval of Sir John Coode, and before the Board obtained the sanction of the Governor in Council to the new design; and your Committee have to report that the evidence shows that a large proportion of this expenditure was wholly unnecessary, as is evidenced by the much smaller expenditure on plant for the breakwaters at Timaru and Oamaru.

The direct pecuniary advantage to be derived by the community, in return for the heavy charge of one shilling in the pound to be levied under the rating powers of the Board, appears to be small. Under existing circumstances, the cost of landing goods at New Plymouth is 10s. per ton, and the Harbour Board contemplate the imposition of a wharfage charge of 8s. per ton, in order to raise revenue to meet the payment for interest and sinking-fund.

There are other points in the evidence, bearing largely on the question, which the Committee think it better to leave to members to ascertain by a personal reference to the evidence itself.

The Committee, after a careful consideration of the evidence, and the facts thereby disclosed, have come to the following conclusions:—

1. That the cost of the work to *Y Y*, on plan "M.D. 404," being the shortest section of the proposed breakwater which would be at all beneficial, is estimated by Sir John Coode to be L285,800; and that the lowest estimate, based upon the cost of similar works at Timaru and Oamaru, would be L212,396. Therefore, as the total amount which the Board has available for the work does not exceed L115,000, there will be a deficiency on this basis of L97,396; whilst on Sir John Coode's estimate the deficiency will be L150,000.

2. That, as the funds at the disposal of the Board would only suffice to carry the work to a point which would secure a depth of 11 or 12 feet at low-water spring tides, which would practically be of little use for landing or shipping goods except during fine weather, the extension to *Y Y* would necessitate further borrowing being authorized by this House, and entail a still larger burden upon the owners of property within the rating district.

3. That the extension of the work to *Y Y* would only render the harbour available for use by vessels of the class of the steamer "Hawea."

4. That the evidence disproves the supposition that the proposed work would be of special value to the colony as a harbour of refuge; and the work must, therefore, be regarded as one of local rather than colonial character.

The Committee therefore consider the results from the proposed works would be altogether inadequate to the expenditure required; and, as but a very limited sum, not exceeding L5,000, has been expended upon the breakwater, apart from plant, the Committee recommend the Legislature to at once take steps to stop the further progress of the works, to take over the assets and liabilities, and, after providing for the latter, to devote the Land Fund to its ordinary purposes.

EDWARD G. WRIGHT,
Chairman.

10th August, 1881.

MINUTES OF PROCEEDINGS.

TUESDAY, 12TH JULY, 1881.

THE Committee met pursuant to notice.

Present: Mr. Barron, Mr. Montgomery, Mr. Moss, Mr. Murray, Mr. Ormond, Mr. Pitt, Mr. Weston, Mr. Wright.

The order of reference of 7th July was read.

On motion of Mr. Montgomery, and seconded by Mr. Murray, *Resolved*, That Mr. Wright be appointed Chairman.

On motion of Mr. Montgomery, *Resolved*, That the Chairman, and late Engineer, of the New Plymouth Harbour Board be summoned (by telegraph) to attend meetings of this Committee, for the purpose of giving evidence, bringing with him all books, documents, plans, reports, vouchers, minute-books, correspondence, and contracts in reference to the New Plymouth Harbour Works, now in course of construction; also, the present Engineer, if he can be spared without detriment to the works.

The Committee then adjourned.

FRIDAY, 15TH JULY, 1881.

The Committee met pursuant to notice.

Present: Mr. Fulton, Mr. Murray, Mr. Ormond, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Telegrams were read from the Secretary of the New Plymouth Harbour Board, informing the Committee that the Chairman of the Board will be in Wellington on Wednesday; and from Mr. Rees, stating that he will arrive by Tuesday.

On motion of Mr. Murray, *Resolved*, That the Chairman move the House to allow this Committee to sit on Saturdays and Mondays.

On motion of Mr. Pitt, *Resolved*, That the Chairman make application for a message to be transmitted to the Legislative Council, requesting permission for the Clerk of the Legislative Council to attend a meeting of the Committee in the matter of Petition No. 11, of Residents at Patea.

The Committee then adjourned till Wednesday next, at 10.30 a.m.

WEDNESDAY, 21ST JULY, 1881.

The Committee met pursuant to notice.

Present: Mr. Fulton, Mr. Montgomery, Mr. Moss, Mr. Murray, Mr. Ormond, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Mr. Stowe, Clerk of Legislative Council, attended as requested, and gave evidence relative to petition of Patea settlers; also handed in the petition, and papers connected therewith.

Copy of Mr. Rees' report, of 28th August, 1879; also copy of Sir John Coode's report, of 17th March, 1880, were read and considered.

The Committee then adjourned till Thursday, at 10 a.m.

THURSDAY, 22ND JULY, 1881.

Present: Mr. Fulton, Mr. Montgomery, Mr. Moss, Mr. Murray, Mr. Ormond, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

Minutes of previous meeting read and confirmed.

Mr. Rees, late engineer to the New Plymouth Harbour Board, was fully examined, and his evidence taken down.

The Committee then adjourned.

SATURDAY, 23RD JULY, 1881.

The Committee met pursuant to notice.

Present: Mr. Fulton, Mr. Moss, Mr. Murray, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

Minutes of previous meeting read and confirmed.

Mr. Thomas King, Chairman of New Plymouth Harbour Board, was present and partially examined in reference to the New Plymouth Harbour works, his evidence being taken down.

On motion of Mr. Pitt, *Resolved*, That the Chairman procure the attendance of the engineers of the Oamaru and Timaru Harbour Boards, for the purpose of giving evidence.

The Committee then adjourned.

TUESDAY, 26TH JULY, 1881.

The Committee met pursuant to notice.

Present: Mr. Barron, Mr. Wright (Chairman).

There being no quorum, the meeting lapsed.

WEDNESDAY, 27TH JULY, 1881.

The Committee met pursuant to notice.

Present : Mr. Barron, Mr. Fulton, Mr. Montgomery, Mr. Moss, Mr. Weston, Mr. Wright (Chairman).

Minutes of previous meetings read and confirmed.

Mr. Thomas King, Chairman of New Plymouth Harbour Board, was present and examined, his evidence being taken down; also produced certain papers received from New Plymouth Harbour Board office.

On the motion of Mr. Weston, *Resolved*, That the Auditor-General be called to give evidence, and state the grounds for paying to the New Plymouth Harbour Board the 25 per cent. of the gross land revenue of the Provincial District of Taranaki, and to produce all documents and papers bearing upon the question.

The Committee then adjourned.

THURSDAY, 28TH JULY, 1881.

The Committee met pursuant to notice.

Present : Mr. Barron, Mr. Fulton, Mr. Montgomery, Mr. Moss, Mr. Ormond, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Mr. J. E. Fitzgerald, Controller and Auditor-General, was present and examined in accordance with a resolution of the committee, the evidence being taken down.

Mr. Rees, late Engineer, New Plymouth Harbour Board, under re-examination, altered certain portions of his previous evidence before the Committee.

The Committee then adjourned.

FRIDAY, 29TH JULY, 1881.

The Committee met pursuant to notice.

Present : Mr. Barron, Mr. Fulton, Mr. Moss, Mr. Murray, Mr. Ormond, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Mr. Rees was further examined, and evidence recorded.

Mr. John Goodall, Engineer, Timaru Harbour Board, was next examined, and his evidence taken down.

The Committee then adjourned.

SATURDAY, 30TH JULY, 1881.

The Committee met pursuant to notice.

Present : Mr. Fulton, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Mr. John McGregor, Engineer to the Oamaru Harbour Board, was present and examined, his evidence being recorded.

The Committee then adjourned.

MONDAY, 1ST AUGUST, 1881.

The Committee met pursuant to notice.

Present : Mr. Fulton, Mr. Moss, Mr. Murray, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Mr. Kelly, M.H.R., who is also a member of the New Plymouth Harbour Board, was examined, and his evidence recorded.

Mr. John Goodall, Engineer of Timaru Harbour Works, was further examined, and his evidence recorded.

Mr. John McGregor, Engineer of Oamaru Harbour Works, was further examined, and also, under re-examination, corrected certain statements in his evidence of 30th ult., the same being recorded.

Colonel Trimble, M.H.R., was examined, and his evidence was taken down.

The Committee then adjourned.

WEDNESDAY, 3RD AUGUST, 1881.

The Committee met pursuant to notice.

Present : Mr. Barron, Mr. Fulton, Mr. Montgomery, Mr. Moss, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

A. Kennedy, Captain of s.s. "Hawea," was examined, and his evidence recorded.

John Fairechild, Captain of s.s. "Stella," also gave evidence, which was taken down.

Resolved, That the Chairman ask the House for an extension of time (viz., a fortnight), for the Committee to bring up their report; also that leave be given to have the evidence printed.

The Committee then adjourned.

THURSDAY, 4TH AUGUST, 1881.

The Committee met pursuant to notice.

Present : Mr. Fulton, Mr. Murray, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Order of reference of 3rd August was read.

Mr. John Blackett, Marine Surveyor, was examined, and his evidence recorded.

Captain Robert Johnson, Nautical Adviser to Marine Department, was examined, and his evidence recorded.

Resolved, That a letter be written to the Hon. Major Atkinson, stating that, should he desire to do so, the Committee will be pleased to hear any statement or evidence he can furnish *re* Harbour works, &c., New Plymouth.

The Committee then adjourned.

FRIDAY, 5TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Mr. Barron, Mr. Moss, Mr. Murray, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Mr. James McKerrow, Surveyor-General, was examined, and his evidence recorded.

Mr. E. C. Jones, Engineer, Wellington Harbour Board, was examined, and his evidence taken down.

The Committee then adjourned.

TUESDAY, 9TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Mr. Barron, Mr. Fulton, Mr. Moss, Mr. Murray, Mr. Ormond, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

Mr. John Sperrey Property-Tax Commissioner, was examined, and his evidence recorded.

A portion of the draft report, to be presented to the House, was considered. The Committee then further considered the basis upon which the report should be prepared.

The Committee then adjourned.

WEDNESDAY, 10TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Mr. Barron, Mr. Fulton, Mr. Montgomery, Mr. Moss, Mr. Murray, Mr. Ormond, Mr. Pitt, Mr. Weston, Mr. Wright (Chairman).

The minutes of previous meeting read and confirmed.

The draft report for presentation to the House was gone through clause by clause, and amended.

On motion of Mr. Fulton, unanimously *Resolved*, That clause No. 1—viz., "That the cost of the work to *Y Y* on Plan 404, being the shortest section of the proposed breakwater which would be at all beneficial, is estimated by Sir John Cooke to be £285,800; and that the lowest estimate, based upon the cost of similar works at Timaru and Oamaru, would be £212,396: as the total amount which the Board has available for the work does not exceed £115,000, there will be a deficiency on this basis of £97,396; whilst on Sir John Cooke's estimate the deficiency will be £150,000"—be agreed to.

On motion of Mr. Ormond, unanimously *Resolved*, That clause No. 2—viz., "That, as the funds at the disposal of the Board would only suffice to carry the work to a point which would secure a depth of 11 or 12 feet at low-water spring tides, which would practically be of little use for landing or shipping goods except during fine weather, the extension to *Y Y* would necessitate further borrowing being authorized by this House, and entail a still larger burden upon the owners of property within the rating district"—be agreed to.

On the motion of Mr. Pitt, unanimously *Resolved*, That clause 3—viz., "That the extension of the work to *Y Y* would only render it available for use by vessels of the class of the steamer "Hawea"—be agreed to.

On motion of Mr. Weston, unanimously *Resolved*, That clause 4—viz., "That the evidence disproves the supposition that the proposed work would be of special value to the colony as a harbour of refuge; and the work must therefore be regarded as one of local rather than colonial character"—be agreed to.

On motion of Mr. Barron, unanimously *Resolved*, That the concluding clause—viz., "That the Committee therefore consider the results from the proposed works would be altogether inadequate to the expenditure required; and, as but a very limited sum—not exceeding £5,000—has been expended upon the breakwater apart from plant, the Committee recommend the Legislature to at once take steps to stop the further progress of the works, and to take over the assets and liabilities, and, after providing for the latter, to devote the Land Fund to its ordinary purposes"—be agreed to.

Unanimously *Resolved*, That the Chairman do bring up the report this night.

On motion of Mr. Ormond, *Resolved*, That the Chairman interview the Government, and arrange, if possible, for a date for the consideration of the report.

On motion of Mr. Pitt, *Resolved*, That the Chairman do get the evidence printed by Saturday next, if possible, either at the Government or a private printing office.

THURSDAY, 11TH AUGUST, 1881.

The Committee met pursuant to notice.

Present: Mr. Fulton, Mr. Montgomery, Mr. Murray.

On motion of Mr. Fulton, *Resolved*, That, in the absence of Mr. Wright, Mr. Montgomery do take the chair.

The minutes of the previous meeting were read and confirmed.

The Committee then adjourned.

MINUTES OF EVIDENCE.

WEDNESDAY, 20TH JULY, 1881.

Mr. LEONARD STOWE examined.

1. *The Chairman.*] You, Mr. Stowe, are Clerk of the Legislative Council?—Yes.
2. There was an inquiry before the Legislative Council last session upon a petition from the residents of Patea?—There was a petition presented on the 14th July.
3. Will you produce the petition?—I think it is there. The 12th August was the date on which the petition was reported upon.
4. Would you put in the documents?—Yes. They comprise the reports of Sir John Coode, Mr. Carruthers, and Mr. Blackett; and the evidence of Mr. Sherwood; Captain Johnston, of the Marine Department; Mr. Rees, the Engineer to the Board; Mr. Bauchope, the secretary; Mr. Blackett, Major Atkinson, and Mr. Kelly; and also a letter from Mr. Rees.
5. Was not a report presented by this Committee?—Yes; on the 12th August, 1880, and it is printed in full in pages 107 and 108 of the Journals of the Legislative Council, 1880. On the same date Mr. Waterhouse moved, "That there be laid upon the table of the Council any report made by the Audit Department with regard to illegal expenditure." That motion was, with leave of the Council, withdrawn. On the 17th August Mr. Waterhouse moved, and it was resolved, "That, in the opinion of this Council, the New Plymouth Harbour Board should be called upon forthwith to repay to a special fund that portion of the land revenue which has been received by them and spent in a manner other than that provided by law; and that, upon their failing to do so, proceedings should be taken against the members of the Board, in their individual capacity, for the recovery of all moneys illegally expended by them."
6. What action was taken upon that resolution?—I do not know.
7. Can you say of your own knowledge whether the evidence upon which this resolution was founded is in the minutes of the inquiry before the Legislative Council?—I have not read the whole of the evidence, and I am not able to say.

THURSDAY, 21ST JULY, 1881.

Mr. J. R. REES examined.

8. *The Chairman.*] You were until lately the engineer of the New Plymouth Harbour Board?—Yes.
9. Will you identify the plans which are now on the table?—The plan marked M.D. 253 is the original one of Sir John Coode.
10. According to Sir John Coode's original scheme, what was the total estimate of the cost of the work completed?—I cannot give you that from memory.
11. You can refer to the figures in Sir John Coode's report in print?—The amount would be £928,730, and the area included within those works would be 130 acres.
12. On the 28th August, 1879, you sent in a confidential report to the New Plymouth Harbour Board?—Yes.
13. Will you explain to the Committee why you felt it incumbent upon you to make that report a confidential one?—I cannot exactly say now why it was; I believe it was to give the Harbour Board the option of doing what they pleased with it. I believe a suggestion was made that the matter should be confidential. It did not arise from myself; it was suggested by the members of the Board. Major Atkinson was Chairman at that time.
14. What was your own impression as to the necessity of making a confidential report?—I do not think I had any particular conviction about it. I was simply falling in with the views of my employers at the time.
15. Was there no conviction on your mind that the cost of the work would be likely to exceed the amount which the Board was authorized to expend?—I believe the rubble-mound scheme would have exceeded that amount. The Board had to expend £200,000. I was not well up in matters connected with the Board at that time.
16. Have you read the report of Sir John Coode of the 17th March, 1880?—Yes: that refers to the revised plans.
17. Will you please turn to that report and read from the place commencing "I estimate"?—
"I estimate the cost of the breakwater, pier, and root, if executed to the extent coloured red in drawing No. 1, which corresponds with the length out to *Y Y* referred to in my report of February, 1879, at £285,800. If the expenditure is confined to £200,000, then the pier can, for this amount, be carried only to a point 1,420 feet from low-water mark of spring tides, or 568 feet short of *Y Y*. The above amounts include the cost of all plant, and provide a sufficient allowance for all contingencies, sea-risk, and supervision. They are, however, exclusive of the outlay already incurred in the colony on works executed to this date, and do not cover the cost of the excavation necessary for the formation of the work-yard, as shown on Drawing No. 5, sufficient particulars in the way of levels not being available here to enable the quantities to be ascertained. Neither is the preparation of the surface of the work-yard included, nor the erection of the shed, workshops, nor the railway in the yard. The permanent line on the pier and root have, however, been provided for in the amounts named."

18. Now, will you be kind enough to inform the Committee what is the cost of the plant required or the work included in that estimate of Sir John Coode?—I can only give you the cost up to the 22nd March, 1881, as far as the data I have here. I take it the above amount includes the cost of all plant. The cost of all plant to the 22nd March last would be £33,224. To this amount is to be added the cost of freight from England—somewhere about £2,400 (I am speaking from memory); landing and storing, say £1,000; and erection of plant, say £2,000.

19. Then you think that Sir John Coode includes plant to the value of £38,624, or thereabouts?—That is the impression from reading this.

20. Will you now specify what is included in this £38,624?—Yes; I will read from the report of the Select Committee appointed to inquire into the cost of the preliminary work, the financial condition, and the terms on which the officers of the New Plymouth Harbour Board have been engaged. The principal items of plant are: Two Ingersoll's rock-drills, air-chamber, and compressor, £478; three stone-crushers, £642; three concrete-mixers, £284; two 22-horse power engines and two boilers, £735; one Goliath and steam travellers, £1,659; one 15-ton locomotive, £978; one 10-ton locomotive, £800; ten heavy trucks, £1,115; one locomotive steam-crane, £478; steam-crane gear, £112; one 5-ton steam derrick crane, £255; two 50-cwt. steam-cranes, £220; crane carriages, £110; one steam-winch and 10-horse-power boiler, £165; one Titan and 300 feet rails, £2,555; one 60-horse-power steam-barge, £3,272; one steam-launch afloat, £1,296; diving-dresses, air-pumps, &c., £320; mooring buoys, anchors, and chains, £305; steel and iron rails and other permanent way, £2,078; ironwork wagons, £182; lathe and tools, £25; shovels and picks, £280; two iron boxes for concrete blocks, £280; telephone, £56.

21. I would ask you, Mr. Rees, are you thoroughly satisfied that in Sir John Coode's report his estimate of £285,800 includes the whole of these items?—You will find the items in his last bill of costs of 1880.

22. There is no allusion to this estimate in the bill?—The only difference between my plan and that recommended by Sir John Coode is that in mine there were ten heavy trucks, to cost £1,115.

23. *Mr. Weston.*] That is the only difference, though they were quite irrespective of each other?

Yes. I did not see Sir John Coode's estimate till I arrived in New Zealand.

24. *The Chairman.*] Did Sir John Coode's estimate include a steam-launch?—No, it did not.

25. Did it include a 60-horse-power steam barge?—No; the steam-power of the barge was ordered after I left for New Zealand.

26. Well, there are three important items in this list of plant which you now acknowledge were not included in Sir John Coode's estimate?—I made the first statement without consideration. The steam launch was ordered after my arrival in 1880.

27. Now, can you tell the Committee what was the total expenditure at the date of Sir John Coode's report?—I could not give the slightest idea.

28. How long have you been engineer on the works?—Two years.

29. How long were you engineer before the 17th March, 1880?—Eight or ten months. I went on in June or July, 1879.

30. And during that time you took no means to ascertain?—Oh yes; but I cannot tell you from recollection. I have no data to go upon now.

31. Can you state approximately, within £1,000, the amount expended by the New Plymouth Harbour Board at the date of Sir John Coode's last report?—I should say somewhere about £7,000 or £8,000.

32. Sir John Coode states in his report that these estimates are exclusive of the outlay already incurred in the colony?—Yes.

33. You say that is not more than £7,000 or £8,000?—I do not think so. I was engaged by the Board in July, 1879, and left in October; and up to that date I do not think more than £1,500 was expended by me. I returned to the colony the following June, and do not know what money was spent in the interim.

34. Whether the amount so expended was £7,000 or £8,000, or £30,000, it would be in addition to Sir John Coode's estimate?—Yes.

35. And, in addition to that estimate, there would also be the three items of trucks, 60-horse-power barge, and steam launch, representing £5,683?—It would be in addition as far as items, but not as far as cost.

36. And the expenses for freight, landing, and erection would also be in addition?—I cannot say if Sir John Coode included that in his estimate.

37. These items are not included in his estimate?—No.

38. Therefore the cost which you have given here, being the cost in England for these items, whatever charges were incurred for freight, &c., must also be in addition?—Yes.

39. The £7,000 or £8,000 which you say was expended at the date of this report, and about £7,000 or £8,000 for the cost of these three items, would also have to be added to Sir John Coode's estimate of £285,800?—Yes.

40. Bringing the amount up to £300,000?—Yes.

41. Will you now be kind enough to refer to the amended plan, M.D. 404, bearing date March, 1880, and state to the Committee the extent of the work which Sir John Coode proposed should be carried out by this estimate?—From high-water mark to the point *Y Y*—£285,800.

42. That being a part only of the original scheme?—Yes.

43. Are any works included in that amount beyond the mole itself?—No, I think not. I think that is simply for the work between those two points.

44. It does not include any of the piers at right angles or thereabouts indicated on the dotted lines?—No.

45. Then in the absence of any of these jetties there is nothing to prevent the seas from the north-east sweeping along the whole line to the breakwater?—Nothing. Of course the seas are never heavy in that direction. It is only three and a half miles from this point to the land.

46. Would not the seas from north-north-east sweep into this bight with considerable force?—No, not with very great force.

47. Then, if not with great force, what is the meaning of that part of Sir John Coode's report where he says, "In the absence of a jetty of this character some temporary inconvenience from wave scend and undulation will occasionally be experienced; but seeing that a suitable work, if placed in the position of the outermost jetty or somewhat more to the north-east and nearer the end of the pier, would require to possess considerable strength in order to adapt it for resisting the heavy seas to which it would be exposed"? Now, if there is not a great "fetch" in the direction from north-by-east, or north-north-east, Sir John Coode is wrong in his inferences?—It would be almost a contradiction.

48. Do I understand that in your opinion Sir John Coode's report in that direction is not well founded?—I am not disposed to say that. If a heavy sea comes in from the north-north-east, no doubt great inconvenience would be felt by vessels lying inside; but, when I say there is no heavy sea upon this jetty, I am speaking comparatively. Any sea that has to get up in a distance of three and a half miles cannot of itself be a heavy sea; it is simply impossible. There is no doubt that the jetty there would be a vast convenience.

49. In the absence of such a jetty, would vessels be able to lie alongside that quay with a strong wind from the north-north-east?—Yes, with landward springs.

50. And you think you could put springs of sufficient strength to hold vessels?—Yes, undoubtedly; because if vessels were lying along the wall the sea would operate between the wall and the vessels, and assist the springs.

51. Will you state the depth at low water at the termination of the proposed work—Y Y?—From 19 to 20 feet. There is no record of the depth at the end, but inside it is 18 feet, and just outside 20 feet.

52. And what is the depth at a point 565 feet inside?—Between 15 and 17 feet.

53. With a depth of water of 15 to 17 feet, what draught of vessel would be safe in lying there?—They would require 3 feet 6 inches under the keel.

54. Then that position would only be safe for a vessel of about 12 or 13 feet draught of water?—Yes.

55. And that at the extremity of the work?—Yes.

56. What is the depth 500 feet inside the last point under consideration?—Somewhere about 13 feet.

57. Then, if the work should be restricted to the £200,000 referred to by Sir John Coode, the accommodation would be limited to one or two vessels drawing from 10 to 12 feet of water?—Yes, unless they hauled off at dead low water. These soundings were taken at dead low water spring tides.

58. The hauling-off would only refer to the number of vessels, and would not be of advantage to any vessel of greater depth?—No; certainly not.

59. Have you read Sir John Coode's report on the Waitara Harbour?—No.

60. Are you aware what class of vessels frequent that harbour at the present time?—Small steamers drawing perhaps 7 feet.

61. Are you acquainted with the harbour?—Well, I do not know much about it.

62. I would like you to state the cost of making concrete blocks at New Plymouth; I mean all the ingredients—cement, sand, gravel, and broken stone?—The total cost per yard in moulds would be somewhere about 18s. or 20s.

63. What is the cost per yard of the sand used for the purpose?—I can give you no definite estimate.

64. I want the details showing how this 20s. is arrived at?—I could not give it you from memory I could give it you to-morrow

65. You can put it in to-morrow, but in the meantime give as nearly as you can from memory the cost of the materials you have used—not your estimate for the future?—The stone costs 3s. per yard for breaking; but I would rather not give you details now, because I might mislead you. The total cost for that already done is 26s. 2d.

66. And that has been for concrete mixed, and placed *in situ* at once?—Yes; not made into blocks, but made under circumstances which would rather increase the cost than otherwise.

67. Will you state what this cement will cost per ton?—Five guineas delivered on the works.

68. Are you aware what cement costs delivered at Oamaru and Timaru?—I am not.

69. Would you expect the cost to be greater at New Plymouth than at Oamaru, for instance?—I should.

70. And also greater than the same material at Timaru?—I should.

71. On account of transhipment?—Yes. I may as well tell you that in the contract entered into with McEwen, of London, the specification is: Cement to stand a tensile strain of 350 lb. per inch; fineness, 2,500 meshes to the inch; and weight not less than 112 lb. per bushel. The cement already received—1,500 casks—has been tested by the agents for the Indian railways in London, and the breaking strain of White's cement is 480 lb. per square inch; that of Knight, Bevan, and Stery's cement, I think, was 375 lb.

72. Are you aware of the strain required by either the Timaru or Oamaru Harbour Board for their cement?—I am not.

73. You are not aware that they require the cement to stand a strain of 1,000 lb.?—The usual strain for a briquet of $2\frac{1}{2}$ sectional inches would be about 1,000 lb. Upon about 200,000 tons supplied to the Liverpool docks, the tests all averaged from 900 lb. to 1,200 lb. per $2\frac{1}{2}$ inches.

74. Then, according to the data you have given in that respect, the cement should stand a strain of about 440 lb. per square inch. If it is to stand a strain of 1,000 lb. for $2\frac{1}{2}$ inches section, that would be 440 lb. for the inch?—I am not well acquainted with the size of the briquet.

75. Assuming that you are correct in stating it to be $2\frac{1}{2}$ sectional inches, then the standard strain would be 440 lb. per square inch upon that basis?—Yes.

76. That being so, the standard fixed for the cement for the New Plymouth Harbour works—350 lb.—is much below what you have stated to be, in your opinion, the standard test?—Yes; it would appear so.

77. Of course you may be wrong, but assuming you are right?—I tell you why I may be wrong in that assumption of 1,000 lb.: the cement manufacturers complained of the excessive strength I required in the specification. I believe the test in the Liverpool docks is 320 lb.

78. That briquet [sample produced, stated to have stood the test of 1,665 lb.] having stood the test of 1,665 lb., how much is that per sectional inch—it is a briquet of $1\frac{1}{2}$ inch square?—740 lb. precisely to the sectional inch. I do not think there is such another test on record. I can assure you in tests of thousands of tons there was never such a test attained yet.

79. *Mr. Pitt.*] What is the highest test you have known?—The same sized briquet would be about 1,250 lb. This briquet might have been made of exceptional merit.

80. *The Chairman.*] How far has the New Plymouth Breakwater advanced from the root?—It has advanced 270 feet including the root.

81. It has not yet reached low-water mark?—No; not yet.

82. *Mr. Pitt.*] What has been the expenditure upon the work as far as it has proceeded up to the present?—I cannot give you beyond the 22nd March—£23,218.

83. Has this expenditure you have mentioned been incurred in work independent of preliminary expenses in floating the loan, &c.?—Actual work and wages.

84. What is the expenditure for plant and machinery?—£33,224.

85. How much for plant alone?—That includes all the plant, timber, and about £2,300 worth of cement. I have taken my figures from the printed report that I have given you.

86. *Mr. Fulton.*] What has been the cost of the preliminary works?—The whole of the preliminary works up to the 22nd March have cost about £23,000.

87. And these are not included in Sir John Coode's estimate?—No; fully seven-eighths are completed. Of course, in speaking of the state of the works I am speaking of the present day; in speaking of the cost, I refer only to the 22nd March. At that date the Board thought proper to take away my timekeeper and storekeeper, and of course I had no means of ascertaining the cost of the work.

88. *The Chairman.*] As these works excluded from Sir John Coode's estimate are now about seven-eighths finished, and as £23,000 has been expended on account of them up to the 22nd March last, can you state approximately what has been expended since?—£1,000 or £1,600.

89. Then, £24,600 having been expended in doing seven-eighths of the extra work, the total cost of those extra works not included in Sir John Coode's report would be about £27,700?—Yes; that would be about it.

90. You have read "The New Plymouth Harbour Board Amendment Act, 1877," I presume?—I do not know much about it.

91. I should like you to read the latter portion of clause 17 [Clause read—restricting borrowing to £200,000.] Sir John Coode having reported in March, 1880, that his estimate was £285,800, that was in excess of the amount sanctioned by this Act?—It appears so.

92. And that clause distinctly provides that no work shall be approved unless the estimate is within the £200,000?—Yes.

93. The point I wish to arrive at is on what ground the Board proceeded to purchase the plant. I ask whether you were aware of the fact that a difficulty existed as to the purchase of the plant prior to obtaining the sanction of the Governor in Council?—No.

94. That being so, would you explain what this paragraph in Sir John Coode's letter just read means? He says, "I have taken it for granted that (as Mr. Rees himself suggested to me) the Board will not incur the expenditure requisite for securing the special plant until the modified designs have been submitted to and approved by the Governor in Council."—That arose in this way: Sir John Coode raised the difficulty. I said, "There is a difficulty in the matter, and the Board will not take action until they are satisfied."

95. When Sir John Coode states that this question was suggested by yourself, you wish the Committee to understand that is not exactly the fact?—No. Sir John Coode said nothing could be done in this matter until the Order in Council was obtained.

96. When you were made aware of that difficulty did you communicate with the Board?—I telegraphed to the Board, and they instructed me to purchase the plant: that was in March.

97. *Mr. Pitt.*] Did you purchase it then?—Yes.

98. Has the whole of the plant necessary for the work been purchased?—Yes, substantially.

99. *Mr. Ormond.*] How much of this £35,000 worth of plant was bought in March or April?—The greater portion. Contracts were entered into for the bulk of it.

100. *Mr. Weston.*] What work has been already done by the Harbour Board?—A jetty has been built to the northward of Barrett's Road, distant about 60 chains from the works. This jetty is connected by a line of railway with the works; a cement store and workshops have been erected; block-yard prepared; machine shop for concrete-mixing built; quarry ground excavated, and quarry otherwise prepared; and 270 feet of permanent work done.

101. The permanent work has not yet reached the sea?—It is beyond high water, but has not yet reached low water by about 70 feet.

102. Is this 270 feet actually completed?—Yes; practically it is completed.

103. *Mr. Fulton.*] You just now gave us the estimate of the actual cost of cement per ton at £5 5s. I see in your report of the 28th August, 1879, you estimate the cost, landed at New Plymouth, to be £4 2s. 6d. Can you give any reason for the advance?—At that time I had not had communication with the English manufacturers, and I based my calculations upon the cost of the cement supplied to the Kurachee Harbour Board.

104. To what extent would this affect the estimate?—This would increase the estimated cost by £4,500.

105. *The Chairman.*] How many yards of concrete are there in that mole?—95,000 cubic yards.

106. How many yards of concrete are made by a ton of cement?—Roughly, about 7 yards.

107 Then, taking 7 yards to the ton, there would be about 13,500 yards of cement required for the whole work?—Yes.

108. And, as the difference between your first estimate and the second one is £1 2s. 6d. per ton, the extra cost of cement alone would be about £15,200?—I estimated the amount about £4,500.

109. *Mr. Weston.*] In your opinion will the Harbour Board have to purchase very much more plant to complete the work?—It is all purchased.

110. Just give me your opinion with regard to the permanency of this work if it were done, regard being had to the action of the sea, and your knowledge upon the subject?—I should say with perfect safety I should recommend that concrete *in situ* should be used for that portion of the work from low water to the top of the work, so as to make it homogeneous from beginning to end, the same as the Aberdeen and Fraserborough Harbours. It is much cheaper and better; in fact all harbour works are built that way now. No harbour is being built such as Sir John Coode suggests.

111. Would there be any likelihood of danger to vessels lying alongside the jetty if concrete blocks *in situ* were placed?—No.

112. *The Chairman.*] You gave as an estimate £38,624 as the approximate cost of the plant?—Yes.

113. Can you state what has been the cost of the plant used at Oamaru for the works there?—I cannot; but the conditions requiring the use of plant in the two places are so different that no comparison can be drawn.

114. You wish the Committee to understand the work to be much more costly at New Plymouth?—Yes; that is if the Taranaki breakwater were constructed in the same manner as at Oamaru, then the Taranaki work would cost a great deal more.

115. What is the difference in the mode of construction?—The whole of the Taranaki work is done by steam and machinery.

116. We understand by that that at Taranaki the rock has to be quarried and then crushed for the purpose of mixing, while at Oamaru there is abundance of material without that process?—Yes; and there is another thing. At Oamaru they object to incorporate with their blocks large pieces of stone. Now, the best mode is to incorporate as many large pieces as possible, because you get the strongest work at the least cost.

117 You do not know of your own knowledge what they are doing at Timaru or Oamaru?—No.

118. And that they are using large blocks of stone in conjunction with smaller ones?—No.

119. Will you tell the Committee whether, in the plant which you purchased for this £33,224, the engines—Goliath and Titan—were approved by Sir John Coode?—They were not. My instructions were to purchase that which I considered necessary for the work.

120. What assistance did you obtain, to enable you to select these particular machines?—A gentleman of the name of Lyon, who designed a good deal of the London Mint machinery. They have been tested to 40½ tons.

121. Have they been travelled with that load upon them?—The Titan is not intended to travel at all with a load. The locomotive takes the block underneath the Titan.

122. Are you aware that the machines in use for works of this class in Timaru and Oamaru have been subject to a test of 60 tons?—I am not aware; but this Titan can pick up a block, as far as strength goes, of 70 or 80 tons.

123. *Mr. Weston.*] How long would it take, in your opinion, to complete the work to *XY*?—It can be completed in four years by day labour. It is not a work which can be let by contract, unless you let the whole of it, and then, of course, the contractor who had capital enough to undertake it would require £25,000 profit upon it.

124. *The Chairman.*] What wages have you been paying up to March last?—From 5s. to 6s. per day for labourers; 7s. for quarrymen and gangers; and £4 per week each for two foremen.

125. Did the men get any other consideration?—No. I believe it is the intention of the Board, on my recommendation, to erect cottages for them; because it is almost impossible for men to do work of this nature without living on the spot. The cost would be about £200, and the cottages would be let to the labourers. About sixty or seventy are necessary for the work, and I shall have to find accommodation for about forty men. The men will not be in separate cottages, but in separate rooms.

126. Are the men paid in wet and dry weather?—Only for the time they work.

127. *Mr. Montgomery.*] Can you get good labour readily at 5s. or 6s.?—The day work has been satisfactorily done.

128. *The Chairman.*] You prepared certain estimates, which were given in your confidential report to the Harbour Board. I would like you to state what proportion of those estimates represented labour?—It is impossible to give an exact calculation now.

129. How much was represented by wages at that time?—Roughly, I should say, deducting £90,000 for cement and plant, the rest would be labour.

130. That is, taking your estimate of £195,000, and deducting £90,000, the rest would be labour—£105,000?—Yes.

131. Then I see you state also that a reduction of 1s. per day in the price of labour represented a difference of £25,000 in the cost of constructing the work?—Yes.

132. Then, wages being 7s., the estimate of the total cost of labour would have been £175,000, or seven times £25,000. If your estimate is correct, the total cost of labour must have been £175,000?—On what estimate was that?

133. It occurred in your evidence before the Committee last year. Can you reconcile the discrepancy?—No.

134. The effect would be, if any reliance is to be placed in that statement, that the labour, when it was 7s. per day, would have amounted to £175,000, and that, as the total estimate was £195,800, there would have been only a margin of £20,000 for all materials. That is all I wish to ask. Do you desire to make any statement?—Only this: I believe the work can be completed, for the money which the Board now has, to *XY*.

135. Can you state what money the Board have?—I think £112,000 to £119,000. I am fully convinced that, with proper management and inspection, the work can be finished for the money the Board have got.

136. What is the total length?—2,320 feet, I think.

137. Do you know anything of the cost of the works at Timaru and Oamaru, and the length to which they have been carried out?—I do not. I am quite convinced that with concrete *in situ* and block work, the work can be done in Taranaki, with the plant as purchased, for under 22s. per cubic yard. I have carefully estimated every item.

138. When you state so positively that you have carefully estimated every item, you should be able to state how much would be represented by labour and how much by cement?—It does not follow that I should retain in my memory all the details of this estimate. The report was laid before the last Committee.

139. You have stated that the cement costs £5 5s. per ton, and that a ton will go to 7 yards. How much is that for cement per yard, taking the figures you have given?—Fifteen shillings.

140. Then 7s. will represent every other charge.—Yes.

SATURDAY, 23RD JULY, 1881.

Mr. THOMAS KING examined.

141. *The Chairman.*] You are the Chairman of the New Plymouth Harbour Board?—I am.

142. How long have you held that position?—I was first elected Chairman on the 20th July, 1878, and continued so until the 15th February, 1879. I was again elected on the 20th December, 1879. Between the two last dates I was not Chairman.

143. Were you a member of the Board during that time?—No.

144. Have you read this report by Mr. Rees, dated the 28th August, 1879, marked "Confidential"?—I have not seen it before to my knowledge.

145. It is not addressed to any one in particular, but it must have been sent to the Chairman, because it commences, "I feel I should fail in my duty to your Board"?—I was not Chairman at that time, nor a member.

146. You remember the Board decided to send the engineer to England to consult with Sir John Coode?—I know it was so, but I was not a member at the time.

147. Can you state the reasons for sending him?—I really cannot, except upon common report. It was found the quantity of rock in the Sugarloaves was not sufficient to carry out the rubble breakwater. I know that is the reason why he was sent to endeavour to induce Sir John Coode to alter the rubble-mound to a concrete section.

148. Did the fact that they were not able to obtain the necessary stone at Paretutu lead the Board to suppose it could not carry out the original design?—I have no doubt it was so. I am only speaking now from hearsay.

149. *Mr. Fulton.*] Who was Chairman at that time?—Major Atkinson. I think he was made Chairman on the 15th February; at a subsequent period he came down to the session, and was succeeded as Chairman by Mr. Benjamin Wells, who is now dead. Major Atkinson was Chairman from the 15th February, 1879, until probably June of the same year.

150. *The Chairman.*] Who were the other members of the Board in August, 1879?—Speaking from memory, there were Mr. Standish, Mr. Caverhill, Mr. F. A. Carrington, Mr. Thompson (Collector of Customs), Mr. Banks. I forget who the other two were now, but I can ascertain, and tell you later.

151. Was Mr. Kelly a member at that time?—No. Of course Major Atkinson and Mr. Wells were members, because they were Chairmen successively.

152. At what date do you say you resumed the position of Chairman?—The 20th December, 1879.

153. Then, you were Chairman at the time Mr. Rees was instructed to purchase certain plant in England?—I was.

154. Was he instructed to consult with Sir John Coode as to the designing of that plant?—These instructions were given before I was Chairman. When I became Chairman, it was after Mr. Rees had gone to England. I presume it was with the knowledge of the Board. I merely carried out the wishes of the Board. When it was proposed Mr. Rees should bring out the plant, I presume it was to bring it out in accordance with the previous arrangement. I know nothing of my own knowledge as to the history of the transaction.

155. You had access to all documents relating to the Board?—Certainly.

156. And to this document, where Mr. Rees was instructed to consult Sir John Coode as to designing the plant?—I believe he was.

157. That he was instructed to consult Sir John Coode as to the designs for the plant?—Yes. A letter had been previously written to Sir John Coode, saying he was not to consider himself the consulting engineer to the Board, because the Board could not afford to pay him a constant salary.

158. It was understood he was specially instructed to design the plant?—Quite so.

159. You know that from the correspondence?—Yes.

160. Can you say whether Mr. Rees acted upon those instructions—whether in point of fact the plant which he purchased is the plant that was planned by Sir John Coode?—It was not.

161. *Mr. Pitt.*] Was Sir John Coode consulted?—Most assuredly he was consulted; but I understand Mr. Rees found great difficulties in getting designs from him. The time was passing away.

162. Then he did not have Sir John Coode's designs?—No.

163. Then, in purchasing the plant without Sir John Coode's designs, did he depart from his instructions?—A telegram was sent to him to purchase the plant and hasten back.

164. Do I understand the Board relieved him from his former instructions?—No; certainly not.

165. As I understand your answer, he was distinctly instructed to consult with Sir John Coode as to the designs for the plant?—Yes.

166. And that afterwards he purchased plant of which Sir John Coode had not approved?—He did.

167. In that respect was he not departing from his original instructions?—Oh, yes; most certainly

168. Was that with the sanction of the Board or not?—It was merely done by telegram. As I state, the time was elapsing. It was very expensive to communicate by telegraph, and it would take four or five months to correspond by letter. A telegram was sent to him to purchase the plant and hasten back. Then he purchased the plant we have now. The Board could not say at that time whether he would have the plans of Sir John Coode or not.

169. It was not the intention of the Board that he should purchase plant other than that approved by Sir John Coode?—No.

170. Do you identify these plans? Is this, marked M.D. 253, the original design prepared by Sir John Coode for the rubble-mound with rubble from Paretutu?—Yes.

171. And that plan has since been abandoned by the Board?—The rubble-mound has been abandoned. The new design is on the same lines as to the area of water enclosed. It has been altered from a rubble mound to a concrete section.

172. And this plan was practically abandoned when Mr. Rees was sent to England?—Yes.

173. And this plan, marked M.D. 404, signed by Sir John Coode in March, 1880, I take to be the plan upon which the Board is now working?—Yes.

174. Indicating a concrete mole 2,320 feet long?—Yes—to Y Y

175. Being a section only of the original design for the harbour at New Plymouth?—Yes.

176. Then the Board, having abandoned the first plan at the period of Mr. Rees's departure to England, continued with no authorized plan before them until this second was submitted?—That is so.

177. At what date was this amended design approved by the Board?—I cannot give the date, but it was submitted to the Government and approved by them, I know

178. September 30, 1880, is the date of approval by the Government?—Then a small time before that probably. It would be three months coming out, at all events.

179. I want you to state, within a month, if you can, when this second plan was laid before the Board and adopted by them? Speaking approximately, how long before September, 1880?—I should say, probably three months. I think, if I recollect, they were here in the office some time before being approved.

180. Then, you would say, in June or July that plan was before the Board?—Yes.

181. What was Sir John Coode's estimate of the cost of the work on the amended design?—I think £285,800.

182. *Mr. Pitt.*] With the piers, or without them?—To Y Y

183. The jetties?—With the jetties, I think.

184. *The Chairman.*] Sir John Coode says in his report, "It must be borne in mind, however, that the plan now proposed will provide a fendered quay of 1,500 feet in length along the harbour face of the pier from the inner boat-steps to the seaward termination; jetty accommodation for berthage purposes is not therefore required in this design, as in that which accompanied my report of February, 1879. Although a solid jetty, formed so as to shelter the inner face of the pier, would be of great service during north-east winds, and would also serve to cut off 'range,' which would otherwise be experienced along the quay when the seas were coming home directly on to the works. In the absence of a jetty of this character, some temporary inconvenience from wave 'scend' and undulation will occasionally be experienced; but seeing that a similar work, if placed in the position of the outermost jetty, or somewhat more to the north-east, and nearer the end of the pier, would require to possess considerable strength in order to adapt it for resisting the heavy seas to which it would be exposed, the provision of such a jetty would largely increase the expenditure, and I have therefore considered that the erection of jetty accommodation should be determined hereafter, upon completion of the pier to Y Y"?—Then it is £285,800 without the jetties.

185. What funds were at the disposal of the Board in June, 1880? State it approximately, and you can correct it afterwards, when you get the documents?—I do not think I can state it from memory

186. You can state probably, in the absence of the books, whether the amount was equal to Sir John Coode's estimate for the amended design?—No, it was not.

187. *Mr. Pitt.*] How far short, approximately?—Certainly more than £100,000, because the proceeds of the loan were only £185,000, in round numbers.

188. And a portion of the money was already expended?—Very little.

189. Still a few thousands?—Possibly; I could not say

190. *Mr. Fulton.*] Not in plant?—No, nothing in plant at that time.

191. *The Chairman.*] Can you say how the Board proposed to raise the balance of the funds necessary for the work?—Well, I think the general feeling of the Board was that this was only part of the larger work—the commencement of it—to be supplemented in the course of time, and that the best thing to do was to go as far as they could with what they had upon designs that would be a part of a great future work, which had been waited for for years.

192. And the ultimate cost of which would be somewhere about £928,000?—Well, yes; including the eastern mole. A great proportion of that would be for the eastern mole—over £400,000—the necessity for which is possibly in doubt. That is a kind of luxurious attachment to it.

193. *Mr. Pitt.*] That would be £400,000 out of £928,000?—Yes; but it is not an important work.

194. That leaves £528,000, and you have only £185,000 to commence with?—The figures are larger, I think, than are warranted in the circumstances.

195. *The Chairman.*] The Board was aware it was about £100,000 short of the necessary funds to carry out the amended design, and that amended design had to be submitted for approval by the Governor in Council?—Yes.

196. You have stated already that approval was given in September, 1880?—Yes.

197. Are you aware of the terms of "The New Plymouth Harbour Board Ordinance 1875 Amendment Ordinance, 1877"?—That was repealed, I think, by "The Harbours Act, 1878," except clauses 15 and 19.

198. You felt no impediment in proceeding to expend the money although the design for the work had not been approved by the Governor in Council?—We presumed that, Sir John Coode having been the designer, no objection could be or would be made to any alteration he might propose.

199. *Mr. Pitt.*] Do you consider you are working under the Act of 1877?—No, the Harbours Act of 1878, certainly.

200. You do not consider you are under the Act of 1877?—No.

201. *The Chairman.*] Under what Act were you authorized to raise the loan of £200,000?—Under the Act of 1877, I presume, but not the expenditure; the expenditure of the loan would be under the Act of 1880, because the money could not be expended out of the loan until the loan was raised.

202. *Mr. Pitt.*] The New Plymouth Harbour Board has no special power under the Harbours Act?—No, I think not.

203. *The Chairman.*] But, under the Act of 1877, the New Plymouth Harbour Board was restricted as to the amount it should borrow?—Yes, to £200,000.

204. And now you claim to work under "The Harbours Act, 1878," without restriction. Is that what I understand?—No, nothing of the kind. The Board has not any power to raise more than £200,000. At the time of the passing of the Act of 1878 the loan had not been raised, and we prepared fresh debentures under that Act.

205. *Mr. Pitt.*] Can you tell under what Act the approval of the Governor in Council was given?—Under "The Harbours Act, 1878," I presume. Certain alterations by Mr. Rees have also been approved of, the block ground, for instance. I may say that the debentures for the loan had all been prepared, but not sent, in 1878, and they were all cancelled and fresh ones sent under the Act of 1878.

206. *The Chairman.*] Then, from your view of the case, the Legislature has sanctioned the expenditure of the full amount necessary for the completion of the harbour?—No, I do not think that.

207. You are under the impression that no legal impediment exists to the prosecution of the entire work, except as to funds?—No.

208. *Mr. Murray.*] What was the reason for the departure from the original plan for the completion of the breakwater by rubble work?—The work was suspended. The Board found, from information it received, that the quantity of rock available was not sufficient for the completion of the work according to Sir John Coode's plan.

209. How did the Board become aware of that fact?—Through the information of some engineer, I presume.

210. What engineer?—I cannot say whether it was Mr. Irvine or not.

211. Who is Mr. Irvine employed by?—He was employed and paid by the Board. I presume Sir John Coode got his data from the local engineer, as to the rock available, and founded his first plan upon that. He was there only two or three days himself.

212. Can you tell the Committee the expenses incurred with reference to this rubble plan, and also any outlay that might have been made in carrying out that plan?—I can only say by reference to the books. Not a very large amount, I presume. Some of the work done would be available for continuing under the new plan.

213. Was there any other reason than that you state for the change?—None whatever.

214. It was not understood the rubble work would not be sufficient to resist the waves?—I have heard various opinions expressed, but I do not think the Board seriously entertained any such feeling. The design for the rubble mound proposed by Sir John Coode was a very costly and troublesome one, no doubt, and to carry it out would be a very long and tedious process.

215. You have found the stone at Paretutu is not so excellent as Sir John Coode was led to suppose?—There is not so much of it. The nature of the stone is not ascertained. The stone at present used is from the Fishing Rocks—large rocks supposed to contain a sufficient amount of stone for carrying out the concrete breakwater as far as F Y.

216. Are you not aware of the report, which stated that the stone was much less suitable than was expected?—I have read it, probably.

217. Surely you, as Chairman, would be acquainted with such an important document as Sir John Coode's report?—Of course I must have known it at some time; but subsequent events have lessened my recollection of it.

218. *Mr. Pitt.*] When was the £200,000 borrowed?—It must have been in November, 1879, because the first coupons were due on the 1st May 1880.

219. Why, in 1879, did you only borrow £200,000?—Because it was all the Board were entitled to borrow.

220. Were you so advised by your solicitor?—I presume so.

221. This saving clause of the Harbours Act, section 3, kept in force this Act of 1877 as regards your works, as being a work authorized?—Yes.

222. And are you still under the impression that £200,000 is all you were authorized to borrow?—Decidedly, that is my impression. By the provincial Ordinance £385,000 might be borrowed; but that was repealed.

223. Is your solicitor of opinion that you have any further authority to borrow, the Governor in Council having approved the works?—I cannot say.

224. Mr. Rees purchased the plant in England before you had the Order in Council. Was the purchase, therefore, authorized?—I stated before, the alteration was made by Sir John Coode, and we presumed the Government would sanction it. We had suffered very much for years through the delay. Current expenses and everything was running on; and if we had kept Mr. Rees in England six months longer it would have caused a very great loss. We thought it wiser to do the thing at once, and instructed him to purchase the plant and come back.

225. *Mr. Weston.*] You took the risk of altering the thing?—Yes; as men of business, we were not confined absolutely within the four corners of the Act; and, if we had attempted to do so, there would have been a greater cost than there was.

226. *Mr. Pitt*] How do you mean the four corners of the Act?—The Act is so very stringent that in many cases you are compelled to infringe upon it to a slight extent, and must act upon your own judgment. We were convinced the change would be approved, and acted upon it.

227 You evaded the Act at the time, at all events?—Yes, in all good faith and honesty

228. Were Sir John Coode's amended estimates before the Government at the time that Order in Council was issued, in September, 1880?—They must have been.

229. *Mr. Fulton.*] It seems, from a reply you made to a question, you have not thoroughly read the later report by Sir John Coode, in March, 1880. Upon what lines, then, has this work been carried and is now carried on?—Upon Sir John Coode's lines.

230. But not upon this last report of Sir John Coode's?—The works are upon the lines of this plan and report. There may have been trivial modifications, but the main part is entirely on Sir John Coode's plans.

231. *Mr. Pitt.*] Can you say what are the modifications?—One very considerable modification is that the block ground has been altered from one side to the other. I have no hesitation in saying that is a source of very great saving. The block ground proposed by Sir John Coode was a very costly one, as it required the removal of a vast quantity of sandstone, which has been avoided now. By Sir John Coode's plan the stone would have to be brought down from the quarries, and go here [indicating on plan] to be made into blocks, and then go back again to the breakwater.

232. *The Chairman.*] Has that modification caused any additional outlay?—No, a very material decrease.

WEDNESDAY, 27th JULY, 1881.

MR. THOMAS KING, Chairman, New Plymouth Harbour Works, re-examined.

233. *The Chairman.*] You are now, Mr. King, in possession of the papers belonging to the Board?—I am.

234. Will you put in the last balance-sheet that has been prepared?—I will. The last one is to the 31st December, last year. This other brings up the expenditure to the 15th July of the present year.

235. Can you furnish a schedule of the plant described by Sir John Coode as being requisite for the construction of the breakwater?—I put in the specification of Sir John Coode, which describes all the necessary machinery. There is one 30-ton portable steam overhanging setting machine or "Hercules," one 30-ton steam "Goliath," two steam portable concrete mixers, three Blake's patent stone-breakers, one tank locomotive engine, one semi-portable engine, ten wrought-iron skips, three single and one double diving apparatus, six wrought-iron tipping boxes, one Michael cement testing machine.

236. That is the lot?—That is the lot.

237. Can you now inform the Committee how much of the expenditure, up to the 30th June last, comprises work included in Sir John Coode's estimates?—There is the item, "Plant and materials, £39,000;" that comprises all the machinery.

238. Can you say, first of all, whether you have obtained all the items you just now enumerated?—I think so. I cannot say the machines are precisely those Sir John Coode recommended; but they are analogous machines, at all events.

239. Have you the diving apparatus?—Sir John Coode has not mentioned there anything about a vast number of other requirements at all, such as railways, that are absolutely necessary. That is not enumerated at all. He has only enumerated the special plant.

240. Have you provided all that special plant?—Yes, all that; and also a large quantity of rails and other things, and locomotives.

241. What I wish to arrive at is this: Sir John Coode has specified certain special plant in his report of the 30th March?—Yes.

242. Have you obtained all that?—Yes.

243. I want you to tell me the value of it, apart from anything else, if you are able to do so?—I have got the invoices, but they will take some time to go through.

244. But you can supply the information later?—Yes; I will do so.

245. That will be the net cost of the items specified by Sir John Coode, as shipped?—Yes.

246. Is Sir John Coode's estimate of what was requisite exclusive of all previous expenditure?—I think it would include plant Mr. Rees had purchased with his knowledge.

247. What amount have you to pay annually for interest and sinking-fund upon your loan?—£14,000 per annum.

248. What is the amount the Board can raise annually by virtue of its rating powers?—At the present moment, say, £5,000 per annum.

249. That is based on the assessed value of the district?—Yes; £4,000 to £5,000. Of course it is an increasing amount annually.

250. That is on the maximum rate of 1s. in the pound?—Yes; I think it was somewhat over £4,000 two years ago.

251. Then there will be a difference of between £9,000 and £10,000 to provide annually from the land revenue, or other sources?—Yes, taking it on the present basis; but the rating power will extend over a much larger area from year to year.

252. The difference is between £9,000 and £10,000?—Yes. That is to say, taking it on the basis of two years ago; but the area is much extended now, and values have much increased. The Waimate Plains will come within the rating power, and, therefore, within a very few years the rating power will prove double what it is at present. Considering the increase of population in the district, the rating power will extend over the amount—will probably be double the sum I stated, in a very few years.

253. Naturally; but for the present the difference has to be made up out of land revenue?—Land revenue and the Harbour Fund.

244. What is the amount of the Harbour Fund?—It consists of rent from certain endowments, which is not a very large amount, and also the interest on the unused loan.

255. Can you state what the rents amount to?—Say, £200.

256. And the amount at present receivable from moneys on deposit?—Well, at present, the interest is about £3,500 a year; but that of course diminishes, as the expenditure continues.

257. Can you now state how much you have received in the shape of land revenue?—£42,338, in round numbers.

258. How has that been disposed of?—£5,000 was used on works in the first instance, before the loan was raised, and £37,338 Os. 10d. has been paid over to a body called Sinking Fund Commissioners.

259. How came this sum of £5,000 to be expended on works?—Well, at that time it was a question whether the loan would be raised or not. We did not know what land revenue was coming in, and we might have been able to carry out the work without raising a loan at all.

260. But this sum of £5,000 was received subsequent to the passing of "The New Plymouth Harbour Board Ordinance 1875 Amendment, 1877"?—That I cannot say. Part might have been; but part was before. It was prior to June, 1877, this expenditure of £5,000 took place.

261. Then this £37,338 Os. 10d., I take it, represents 25 per cent. of the gross land revenue?—Yes.

262. Have the Commissioners of Audit made any protest against the payment of that?—I have never heard of their having done so.

263. You are not aware of it?—I am not at all aware of their having done so. I never heard anything of the kind.

264. Are you aware of the terms of "The Financial Arrangements Act, 1876"?—No; I am not.

265. You say you have seen no communication from the Audit?—No communication or indication of any kind.

266. Will you now inform the Committee where is the seat of the chief settlement in Taranaki?—New Plymouth.

267. That is the chief centre of town population?—Of the town population.

268. Where is the rural population chiefly located—the farming population?—Well, it is all round on the seaboard, and inland.

269. Will you indicate on that map?—It is scattered along the coast. All this country [indicating] is occupied, except these uncoloured portions. All this, for instance, alongside the railway is occupied.

270. The tendency of settlement is alongside the railway?—Certainly, at present. But it will extend on both sides as time goes on.

271. Considerable settlement has taken place on the Waimate Plains?—Yes.

272. That being the case, will Waitara or New Plymouth be the nearest point of communication between these settlers and the seaboard?—At present, with the railway, it is farther from New Plymouth than from Waitara; but with the harbour at New Plymouth, the position will be reversed, practically. The distance between the rail and the road is very trivial. The road now is used almost as much as the railway.

273. If the settlers at Waimate have to make use of the railway as a means of communication with the seaboard, will Waitara or New Plymouth be nearer, dealing with the railway as it stands now?—As at present, of course Waitara; nearer by four miles.

274. I would ask you now whether the work carried out by the Harbour Board has been under contract, in accordance with clause 67 of the Harbours Act?—Everything that could be done by contract has been done by contract—roads, tramways, supplies of firewood, and everything of that kind.

275. All the labour has been day labour?—Yes; day labour. A good deal could not be done except by day labour—the quarry-work, for instance.

276. Will you now tell us what endowments are vested in the Board?—There is the Mount Elliott Reserve, valued at £3,500—that was on the 31st December, 1879—I think you will find it the same in 1880. There is the Kawau Pa, valued at £3,000; Mount McCormick and Woolcombe Terrace, 2 acres, £100; 18½ acres of Native land at Moturoa, £750.

277. Have any of these endowments been acquired by expenditure from the Harbour Fund?—At the Kawau Pa Reserve, £2,000 has been expended in levelling the land and protecting it from the ravages of the sea.

278. Nothing on the Mount Elliott Reserve?—Nothing.

279. What amount of land have you reclaimed from the sea at Kawau Pa?—I suppose, an acre—something like an acre—but the other part was hilly, and had to be levelled. It was useless in its former state; so the reclamation really covers the whole area.

280. Did you obtain special authority for that reclamation under clause 148 of the Harbours Act?—I believe so. I was not on the Board at the time.

281. Have the returns been furnished by the Commissioners of Audit, as required by clauses 204 and 205 of the Harbours Act?—The accounts have been audited throughout. I think I find here that Mr. McAlister, the Provincial District Auditor, certified to the accounts of 1879, and I think Mr. Rennell certified to the accounts of 1880.

282. Has a list of all the securities been furnished?—It has not been; but the matter is exceedingly simple. It can be furnished at any moment. Only one purchase has been made.

283. Can you say what amount you expect to receive annually from the sale of land on the Waimate Plains?—I have not the faintest idea. I can tell what we have received.

284. Be good enough to do so?—From June, 1877, to the 1st July, 1879, £10,881 6s. 8d.; July to December, 1879, £1,214 6s. 9d.; for the year 1880, £1,660 8s. 7d.—that is all during the year;

for the three months ending 31st December, 1880 (that was only received this year), £7,963 4s. 5d.; for the three months ending the 31st March, 1881, £15,618 14s. 5d.: making a total of £37,338 0s. 10d. since June 30th, 1877

285. Then this land revenue has been derived from the sale of lands on the Waimate Plains?—From the whole of the provincial district.

286. My question was, how much has been derived from the Plains?—I have no idea. All the details can be got from the Government, who have them; so I cannot answer the question at all.

287. From your knowledge of the land sales in the district, can you say how much approximately?—No, I cannot; because there are some lands in the Inglewood District, and others on deferred payments. You would have to get the return from the Government. Of course a large proportion of that to the 31st March came from the Waimate Plains, but I could not say how much: there have been large sales alongside the railway

288. Can you say what amount you expect to receive annually from the lands that have been sold on the Waimate Plains?—I can form no idea whatever. It entirely depends on how the Government sells the land, and whether by deferred payment or otherwise. I should say the greater part of the revenue has come in.

289. By rating the land on the Waimate Plains, what do you estimate the return would be?—I hope we shall not require to rate those lands for very many years to come. No rate has been imposed, and there is no probability of one for some years at all events. I estimate according to the best of my judgment that no rate will be necessary for the next five years, and I hope not for a longer period. The Sinking Fund Commissioners have now £28,500 on interest at 5 per cent., and £3,500 will accrue from the Harbour Fund as interest: this amount does not include any return to the 31st June last. I have no means of estimating what is still to be derived from the sale of Waimate Plains. There are 9,000 acres at Parihaka to be sold in August; a fourth of the proceeds of that will accrue to the Board. I can form no estimate for the future except in very general terms indeed. I cannot say how the sales will be conducted, or the prices the Government will put on it. Nothing has yet been received from a rate on land. There has been no rate at all. That sum I previously gave is the estimate exclusive of the Waimate Plains.

290. Well, if it is so much outside of the Waimate Plains, how much would it be if the Waimate Plains were included in the rating?—I cannot estimate that; because it is not merely the land on the Plains, but at Parihaka and elsewhere, that would be under the rating power of the Harbour Board.

291. Would all that district be more advantageously served by Waitara as a harbour?—I think not. I apprehend, when the harbour is constructed at New Plymouth, Waitara will cease to be of use, just like the case of Kaiapoi and Lyttelton. Kaiapoi was very useful until the Lyttelton tunnel was constructed; but after that it could hardly compete with Lyttelton.

292. *Mr. Weston.*] What is the mode, or contemplated method, of dealing with the funds of the Board?—I have here the total of receipts and expenditure, and the accounts of the Sinking Fund Commissioners—what is called the No. 1 Account. I will put that in.

293. Is this sum of £28,409 13s. 1d., which you stated to be the balance in the Bank of New Zealand, is that carried to the Sinking Fund Commissioners?—To the Sinking Fund Commissioners' No. 1 Account. There are two Sinking Fund Commissioners' Accounts; No. 1 is for the convenience of receiving interest, managing deposits and paying the coupons as they become due. The Commissioners were appointed for this financial business for greater convenience, because cheques can only be signed by the Board. I think it was on the 30th September last, a sum of £2,000 out of No. 1 Account was placed to the credit of the Sinking Fund Commissioners' Account No. 2. That is the real Sinking Fund Account.

294. Is that the whole of your procedure in regard to the management of the accounts?—I may say the Bank of New Zealand, with whom we bank, gives no interest on the current account for the proceeds of the loan; therefore I suggested some time ago that, as the Sinking Fund Commissioners would require bonds from time to time, it would be desirable to invest part of the Harbour Board funds for their purchase, and £8,000 worth should be purchased by the No. 1 Commissioners, which could be purchased from them from time to time by the Sinking Fund Commissioners.

295. And that has been done?—That has been done. £7,500 worth of bonds were purchased by Sir F. D. Bell. They were purchased at 106 and 105½. Previous ones were purchased at 97½; but there was a general rise in these and all other New Zealand securities.

296. In that way you think the Harbour Board Estate will be made the most of?—Unquestionably

297. *The Chairman.*] I should like to understand clearly the positions of what you call the Commissioners No. 1, and Commissioners No. 2.—Commissioners No. 1 are wholly the agents of the Board, and they pay £2,000 per annum to Commissioners No. 2, who are the real Sinking Fund Commissioners. It is simply an arrangement to save interest, and to give cheques without their being signed by the Board.

298. Who appoints the No. 1 body?—They are appointed by the Board.

299. And are removable by the Board?—I presume so.

300. Who appoints the No. 2 Commissioners?—The Board appoints them, under the Act.

301. *Mr. Weston.*] How long do you estimate it will take to complete the works to *Y Y*?—I have no idea at all.

302. *The Chairman.*] By the report of the Select Committee of the Harbour Board, made in March last, it appears the Board were of opinion they have sufficient funds to complete this breakwater to *Y Y*. Is that so?—That was the opinion of the Board at that time. It was based on the estimates of Mr. Rees.

303. And is the Board of opinion they have sufficient funds to complete the work to *Y Y*?—They were at the date of the report, March 31st last.

304. They were relying upon Mr. Rees's estimate in that respect?—They were.

305. And not on Sir John Coode's estimate?—They were not. I may say that report of the Committee was never adopted by the Board. It was only laid on the table.

306. Then are we to understand the Board disagree with the report of the Committee?—No, I cannot say that. Only the report was not adopted by the Board. My opinion on this has never varied one way or the other. All I say is that we want a harbour in the future. Whether we are able to reach *Y Y* or not now is not material. The work is of the first importance, and, however far it may be carried now, it is hoped that some day there may be the necessary means available to carry it further. I have no means of judging whether the present funds are enough to go as far as *Y Y* or not. When Mr. Rees came from England, he furnished a report showing how large savings could be effected in the work, and that it could be carried as far as *Y Y* with the funds in hand. The savings were in the amount of wages, the altered position of the block ground, the cost of cement, and other things. I may say, now, that I have not held it as a matter of the first importance whether the work should go a specified distance or not. I have been perfectly satisfied the work should go on on the contemplated lines.

307. And do what you can?—And do what we can. However far the work may go, it will be of substantial utility, because the mole as constructed will be useful at all times when boats can discharge in the roadstead. It would be of absolute practical service in south-west and south-east winds, which are the principal ones. In north-west winds, which are the worst there, vessels could not discharge in the roadstead, nor could they with only the beginning of the mole.

308. *Mr. Weston.*] Are contingencies likely to form a very heavy item in the future?—I think not; I think they have nearly come to a close.

309. You have no reason to suppose there may be an accident, or anything washed away?—I do not think so. Everything has been substantially erected, and the block ground has been supported by two extra yards in height.

310. *Mr. Fulton.*] You stated you have been carrying on the work, not on Sir John Coode's estimates, but on estimates supplied by Mr. Rees, did you not?—Slight alterations have been made. The main lines are Sir J Coode's, which were adopted by Mr. Rees. When the plans were sent to the Government for their assent, Mr. Rees's estimates were sent with them; and I think it will be found they passed the amounts in accordance with his estimates, and with his alterations. They indorsed his alterations, in fact. As I said before, the alteration of the block ground is the cause of a very material saving.

311. Seeing you have been following out Mr. Rees's scheme, how is it you got rid of him?—Well, we thought he was not so good an officer as he was supposed to be; we were dissatisfied with him, in fact. We did not think he was carrying on the work so economically as it might have been, and that a better man could be found. Mr. Rhind was put in his place, whose very good testimonials I have submitted. I am not able to speak myself, but, in the opinion of competent persons, he is doing the work remarkably well, and I think we should have to go very far to get his equal.

312. Has Mr. Rhind made any alterations again?—Mr. Rhind said he was perfectly satisfied with Sir J Coode's report. Sir J Coode has recommended blocks for the whole work, on getting to a certain depth of water. I think Mr. Rhind prefers to put the works above water *in situ*, as has been done in other harbours, and which is more economical and more effectual.

313. *Mr. Weston.*] You are following out Sir J Coode's plans, I suppose?—Yes, as nearly as may be, under the circumstances. There are, necessarily, minor deviations; but the main lines are entirely Sir J Coode's.

314. *The Chairman.*] Have you consulted Sir John Coode as to the proposed deviation in the mode of construction?—No.

315. Your total expenditure to the 15th July appears to be £77,527 9s. 11d.?—Yes.

316. Of which you have expended on the breakwater proper—that is, the root of the breakwater—£1,112 17s. 4d.?—Yes.

317. Then, the difference being £72,414 12s. 7d., has been expended on plant and contingent works?—Yes.

318. Including road-making, tramway construction, opening of the quarries, and improvement of Harbour Board reserves?—Yes.

319. And the work has not yet reached low water?—To low water, I think, at neap tides—just verging on low water.

320. *Mr. Weston.*] Are the reserves likely to be made more productive in a reasonable time?—The Mount Elliot Reserve is a very valuable one. The Government propose to take away a part of the frontage to increase the railway-station. I do not know how much they will require. They have the power to take it without giving us any compensation.

321. Is there any probability of the reserves being made more remunerative to the Board?—I have no doubt they will become so, by the fact of the construction of the harbour. It would be unwise to put them in the market at the present time, because no terms could be obtained except on long leases. The Kawau Pa Reserve would be valuable. We have several times thought of letting it, but have restrained ourselves, because we want to see the mole carried further out first. Mount Elliot will be very valuable.

322. *Mr. Fulton.*] Have you any report from the present superintendent of works, as to what extent the money at present at your disposal is likely to carry the work?—No; we never asked him to report on it.

[*Documents put in.*]

STATEMENT OF RECEIPTS AND EXPENDITURE of the NEW PLYMOUTH HARBOUR BOARD, to 15th July, 1881.

				<i>Receipts.</i>							
				£	s.	d.	£	s.	d.		
Land revenue, not paid to Sinking Fund								Port charges, not paid to Sinking Fund			
Commissioners	4,165	14	11	Commissioners	...	...	10 13 3	
Interest, ditto	895	9	8	Refund, Wages on board "Adamant"	...	...	87 11 0	
Rents, ditto	576	11	8	Loan, proceeds of	...	...	190,102 7 8	
Interest, ditto	445	19	8					
Beach revenue	24	3	6					
Launch	11	3	0					
								<u>£196,319 14 4</u>			

find that, at the cost of £5 1s. per ton, the difference in the cost will be £10,347 I was asked to explain (Questions 131 to 134) how it was that a reduction of 1s. per diem on wages would make the sum of £25,000. At the time, I was unable to call to mind how the statement was based, or where I made it; but I afterwards found it was made before a Committee of the Legislative Council last year, and the statement was to show that 1s. per diem—that is, 6s. instead of 7s.—would reduce Sir John Coode's estimate of £285,800 by £25,000—namely, cement, £57,000; plant and material, £48,000: total, £105,000. That leaves £180,000 to be expended on labour, one-seventh of which would give £25,700, and I called it £25,800. This did not refer to an estimate of mine.

324. I would ask you to show how you make up this £5 1s.?—The contract price for cement, delivered in Wellington and insured to New Plymouth, is 13s. 10d. per cask for all the English cement required for the works, or £4 3s. per ton; freight, 2s. per cask, or 12s. per ton; landing, 1s. per cask, or 6s. per ton: that represents £5 1s. per ton.

325. Where do you land it?—At the works. That is the price at which it is placed in the store on the works.

326. On what basis was it that you formerly said that the cement would cost five guineas?—At the time I was under the impression that those were the figures. I spoke from memory.

327. Then, taking your revised estimate, the price of cement will be £5 1s. per ton?—Yes.

328. You have read Sir John Coode's specification, I presume?—Yes.

329. According to that specification, Sir John Coode states that 4 cubic feet are required for each yard of made concrete?—Yes; but I think he contradicts that statement.

330. Then you have advised the Committee of the New Plymouth Harbour Board that you could carry out the work at the breakwater at a cost of about 22s. per yard?—Unquestionably. There is not the slightest doubt about it.

331. You have stated that the total quantity of concrete in the breakwater to *Y Y* is 95,000 yards?—It is rather less than that.

332. How much of that is to be put into bags?—I could not tell you that from memory.

333. Look at this schedule, and see [Sir John Coode's schedule of quantities handed to witness]. Sir John Coode says 12,764 yards below low water.

334. How much is to be put in the apron?—3,421 yards.

335. The cement in the blocks is to be used in the proportion of 4 cubic feet of cement to each yard of concrete?—Yes, according to Sir John Coode.

336. And the cement required for the concrete in bags will require one-third more?—Yes, according to Sir John Coode.

337. Or $5\frac{1}{3}$ feet per cubic yard?—Yes.

Mr. J. E. FITZGERALD examined.

338. *The Chairman.*] You are Auditor-General?—Yes, Controller and Auditor-General.

339. The New Plymouth Harbour Board Committee wish you to explain to them why 25 per cent. of the gross proceeds of the land revenue of the Provincial District of Taranaki is paid over to the Harbour Board?—It was paid over originally under "The New Plymouth Harbour Board Endowment Act, 1874," which authorized as much to be paid over, as the Provincial Council of New Plymouth should determine, up to 25 per cent. Then the New Plymouth Harbour Board Ordinance of the Provincial Council fixed the amount at 25 per cent. That was the Ordinance of 1875.

340. In repealing the New Plymouth Ordinance of 1875, a particular clause affecting the apportionment of the land revenue was preserved?—I do not remember that that Act was repealed.

341. Perhaps you would prefer making a statement to the Committee on the subject?—I am doubtful as to the exact point on which the Committee wish for information.

342. The Committee would like you to consider the bearing of clause 10 of "The Financial Arrangements Act, 1876," the latter part of which declares that nothing in this section shall be deemed to authorize the issue of Treasury bills for the purpose of making good any deficiency in the percentage of Land Fund payable to the District of Taranaki under "The New Plymouth Harbour Board Endowment Act, 1874." That appears, standing by itself, to be very clear, because if this Land Fund is deemed to be a first charge no deficiency can possibly arise; let the revenue be as small as it may, there can be no deficiency?—There was a difference of opinion between myself and the Solicitor-General on that point. The Committee will perceive that the provisions of "The Financial Arrangements Act, 1876," were such as inevitably to raise a difficulty not easy of explanation, because, by the first five subsections of section 4, certain charges were placed upon the Land Fund which were of a fixed nature. Then came in the old provision that the 25 per cent. should be paid over to the Harbour Board, which was protected by subsection (6) of that same section, which says, "In the case of Taranaki the Land Fund should be charged with the percentage payable under 'The New Plymouth Harbour Board Endowment Act, 1874.'" That constitutes this a charge upon the Land Fund of Taranaki. But the Committee will perceive that, the other charges being of the nature of fixed charges, and this being a percentage, the question must arise as to which was to be the prior charge. Was it to be upon the gross proceeds of the Land Fund, or upon the net proceeds after the charges contained in the first five subsections were paid? Then the question is again seriously complicated by section 10, which authorized the raising of Treasury bills, but contained a proviso that "Nothing in this section shall be deemed to authorize the issue of Treasury bills for the purpose of making good any deficiency in the percentage of Land Fund payable to the District of Taranaki under 'The New Plymouth Harbour Board Endowment Act, 1874.'" Of course in the one case, if the fixed charges were paid first, there might be no deficiency; but, if the 25 per cent. was paid first, there might be one; it would therefore seem as if the House intended that the 25 per cent. should not be a primary charge. Then section 12 says, "Nothing in this Act contained with respect to the appropriation or division of the Land Fund shall be deemed to alter or affect the liability of the colony to the public creditor, or to affect any permanent appropriation of or charges upon such revenue under any law in force in the colony." Upon that the Solicitor-General relied, that the 25 per cent. was 25 per cent. upon the gross Land Fund. There was a memorandum of the

Solicitor-General's to that effect, which I have not here, but which I will endeavour to obtain. [A copy of the memorandum was subsequently sent in. It runs thus:—"Mr. Batkin,—It seems that the effect of section 12, 'Financial Arrangements Act, 1876,' is to preserve the charge upon the Land Fund created by 'The New Plymouth Harbour Board Endowment Act, 1874.' I think these fourths are a first charge on the sales.—W. S. REID.—8th August, 1877."'] In April, 1878, I addressed the following memorandum to the Treasury:—"Commissioner of Audit to the Treasury.—It must be admitted that the operation of section 12 of 'The Financial Arrangements Act, 1876,' is distinctly contradictory to the limitation imposed by the 10th section in respect of the New Plymouth Harbour Board. Is it not the maxim of interpreting Acts of Parliament, that a later provision in the same Act overrides the earlier, except where the one is general and the other specific? Does not a special provision, as to a particular case, always override a general provision which might otherwise have included it?—J. E. F'G., C.A., 30th April, 1878." Upon this, Mr. Batkin, then Secretary to the Treasury, wrote as follows:—"Memorandum on minute by Mr. FitzGerald, 30th April, 1878.—The Solicitor-General has given it as his opinion that the effect of the 12th section of 'The Financial Arrangements Act, 1876,' is to preserve the charge upon the Land Fund created by 'The New Plymouth Harbour Board Endowment Act, 1874,' and that that charge is a first charge on the land sales. A confirmation of that opinion may be found in the fact that the Legislative Council, after having had the subject investigated by a Select Committee, endeavoured to insert a provision in the New Plymouth Harbour Board Ordinance Amendment Bill to the effect that the Colonial Treasurer should not pay over to the Harbour Board any portion of the land revenue of Taranaki, until he should have first deducted the several charges enumerated in the subsections 1, 2, 3, 4, and 5, of section 4 of 'The Financial Arrangements Act, 1876.' The proposed amendment was inadmissible, because it purported to affect or limit a charge upon the revenue; but the fact of it having been attempted to make this charge rank *after* the charges created by the Financial Arrangements Act would appear to confirm the opinion that, as the law stands, it ranks before them.—C. T. BATKIN, 2nd May, 1878." On the 4th May, this memorandum was indorsed with the words "I agree," and initialled by Mr. Ballance. There was another memorandum from Mr. Batkin to the Colonial Treasurer, in which he wrote:—"In connection with the question raised in the papers 377/2604 (the fourth of land revenue payable to the New Plymouth Harbour Board, under 'The New Plymouth Harbour Board Endowment Act, 1874') I beg to call attention to section 6 of 'The Financial Arrangements Act, 1877,' which enacts 'that a separate account shall be kept of the land revenue accruing within each county; and there shall be paid to such county out of the Consolidated Fund, quarterly, a sum equal to 20 per centum of such land revenue so accruing in each county,' and to submit for the decision of the Hon. the Colonial Treasurer, whether the sum payable out of the Consolidated Fund is to be equal to 20 per cent. of the gross land revenue accrued within the county, or 20 per cent. of that revenue *after deducting from it the fourths payable to the New Plymouth Harbour Board*. My own opinion is that each county is entitled to a sum equal to 20 per cent. of the gross land revenue accrued. If this be so, it will be seen that 45 per cent. of the Land Fund of Taranaki is given back to the district. The question requires immediate decision, in order that the 20 per cent. payment for the March quarter may be made without delay.—C. T. BATKIN.—2nd May, 1878." A memorandum initialled by Mr. Ballance, and dated the 4th May, 1878, says: "Act upon the construction that 20 per cent. of the amount of land revenue, *after deducting the fourth to Harbour Board*, is payable." The Committee will understand that under "The Financial Arrangements Act, 1876," there was to be a division between certain fixed charges and a percentage charge; whilst, under "The Financial Arrangements Act, 1877," there were no fixed charges, but two percentages. Then the question arose: which was to be considered the first charge. If they were both calculated upon the gross proceeds, 45 per cent. of the Land Fund would be handed over to New Plymouth, of which 25 per cent. was to be devoted to the Harbour Board. Subsequently, another question has arisen: that is, whether the confiscated lands on the Waimate Plains were to be included, and upon that there is a long opinion. It has never been raised by the Audit, but by the Attorney-General and the Treasury. A minute to the Treasury was written on the 8th of May, 1878, to this effect: "It may be presumptuous to differ from the opinion of the Solicitor-General, but I cannot think that the whole facts have been under his consideration. The rule of law, in apparently contradictory provisions, is *generalibus specialibus non derogant*. The 12th section is general; the 10th section is special, and stringent. The Harbour Board is to get its share, if there is any; but if it can only get it by *borrowing money*, then it is not. The 10th section clearly contemplates a case in which the Harbour Board was not to get a share: there can be no other meaning to those words. But if the 12th section *overrides all*, then there is *no* case in which the Harbour Board would be without the subsidy. But, whatever be the effect of the Act of 1876, there is no doubt as to the meaning of that of 1877. The appropriation of one-fourth of the land revenue by the Harbour Board Act of 1874, and of one-fifth by "The Financial Arrangements Act, 1877," are both specific endowments, which do not conflict with one another, and are both equally in force. The deduction of the harbour endowment out of the fifth seems to me directly contrary to the law. The vouchers are passed because the sum claimed is within that appropriated."—JAMES EDWARD FITZGERALD, Commissioner of Audit." A memorandum from Mr. Batkin is attached, referring the minute to the Solicitor-General, as to the question raised in the first paragraph. The Solicitor-General replied as follows: "I do not think there is any real difference between the view taken by Mr. FitzGerald and myself. His statement of the rule of law is quite correct, and would apply in the case before me. The opinion I gave before was to the effect that section 12 of the Financial Arrangements Act preserved the charge upon the Taranaki Land Fund, created under "The New Plymouth Harbour Board Endowment Act, 1874." I am still of that opinion, and I do not think this conflicts with section 10 of the first-mentioned Act. If there is no Land Fund in Taranaki, or a deficiency, then section 10 comes in and prevents the fund being created, or the deficiency supplied, by Treasury bills. Section 12 left the general law in operation unaffected by the general terms of section 4; but section 10 is a special provision to meet exceptional cases, and would take effect as I have pointed out. My opinion only bears on the first paragraph of Mr. FitzGerald's memorandum, as

requested.—W. S. REID.—25th May, 1878.” What I understand the Solicitor-General to mean is this: that section 12 was a general provision, which should prevail supposing there was no deficiency; but, supposing a deficiency arose, and the question arose whether that deficiency should be raised by Treasury bills, then he thought the rule I had laid down would apply.

343. Will you put in those papers?—Yes.

344. Then it was simply upon the interpretation of the 12th clause that the money has been paid?—The payments that took place before the Act of 1877 no doubt took place (if any) under the Solicitor-General's opinion. Section 4 of the Act of 1876, if I remember rightly, was repealed. Section 6 of the Act of 1877 says: “A separate account shall be kept of the land revenue accruing within each county, and there shall be paid to such county out of the Consolidated Fund, quarterly, a sum equal to 20 per centum of such land revenue so accruing in each county.” The question which arose was this: Was the 25 per cent. a prior charge to that? And the decision of the Government was that it was. Mr. Batkin again writes: “There is yet another question in this matter requiring decision. It is this: Is the New Plymouth Harbour Board entitled to one-fourth of the gross proceeds, or of any part of the proceeds, of lands sold on deferred payments.” Mr. Ballance adds: “To include proceeds deferred-payment land.”

345. *Mr. Pitt.*] The 4th section of the Financial Arrangements Act says: A separate account shall be kept of the Land Fund accruing within each district, which shall be charged with certain sums; and the 6th subsection says: “In the case of Taranaki, with the percentage payable under ‘The New Plymouth Harbour Board Amendment Act, 1874;’” but there is nothing in that section to show that Taranaki is to be treated exceptionally in respect of the matter in the preceding five subsections?—Nothing.

346. Your opinion is, that the Land Fund should have been charged with the matters mentioned in the first five subsections before the money by “The New Plymouth Harbour Board Endowment Act, 1874,” was paid over?—No; my opinion was, that if the effect of that arrangement was to cause the borrowing of money on Treasury bills, in that case the 25 per cents. could not be a first charge. I held that, where a deficiency arose, the 25 per cent. was not a first charge.

347. Then you are of opinion that the Land Fund was subject to the first five subsections of clause 4 of “The Financial Arrangements Act, 1876”?—I am of that opinion, because the Act is contradictory to itself; therefore, you must interpret any special provision as over-riding any general one; and the Solicitor-General concurs with me in that maxim.

348. *Mr. Montgomery.*] Then you think the 12th section, though conflicting with the 10th section, did not over-ride that?—No; because I hold the proviso in the 10th section to over-ride the 12th section.

349. Then that clears up the matter till 1877?—Yes.

350. I see by the Act of 1877, that section 4 of the Act of 1876 is repealed, but the 12th section is retained. I see, in clause 4 of “The Financial Arrangements Act, 1877,” that “nothing herein contained shall affect the 11th and 12th sections of the Act of 1876”?—Yes; it is under the 11th and 12th sections, which are not repealed by “The Financial Arrangements Act, 1877,” that I continued to pass the payment. The question could never arise again; because, as both the charges are percentages, there never could be a deficiency.

351. *The Chairman.*] Are the Committee to understand that the repeal of the 10th clause of “The Financial Arrangements Act, 1876,” removed all difficulties?—Yes; but that was only a temporary thing—for one year.

352. Is the Committee to understand that at present Taranaki not only receives 25 per cent. of the total land revenue for the purposes of the Harbour Board, but also received 20 per cent. for general purposes, up to the time that the 20 per cent. was generally removed?—I do not think there has been any change made, since Mr. Ballance's decision that the 20 per cent. to the county was to be after deducting the 25 per cent. to the Harbour Board.

353. You were proceeding to say that a question had arisen, as to whether the New Plymouth Harbour Board was entitled to 25 per cent. of the money from the sale of the Waimate Plains?—The question was raised in the memoranda which I will read. Major Atkinson wrote, on the 6th January, 1881, for the opinion of the Solicitor-General, the following memorandum:—

Section 17 of “The New Plymouth Harbour Board Ordinance, 1875,” reads: “From and after the passing of this Ordinance there shall be paid to the Board, in the terms of ‘The New Plymouth Harbour Board Endowment Act, 1874,’ one-fourth part of all revenues arising from the sale, occupation, or other disposal of the waste lands of the Crown within the province.” “The Public Revenues Act, 1875,” section 16, enacts: “The revenues arising from lands confiscated from the Natives under the authority of ‘The New Zealand Settlements Act, 1863,’ and any Act amending the same, shall be, and on and from the first day of July, one thousand eight hundred and seventy-five, be deemed to have been, Land Fund within the meaning of ‘The Public Revenues Act, 1867.’ Provided that until after the thirtieth September, one thousand eight hundred and seventy-six, the revenues arising from the sale or other disposal of confiscated lands within the Province of Taranaki shall not be deemed to be land revenue for the purposes of ‘The New Plymouth Harbour Board Endowment Act, 1874,’ or for the purposes of any Ordinance constituting a Harbour Board in the said Province.” Under section 6 of “The Public Revenues Act, 1867,” “Land Fund” is defined as the revenue now or hereafter payable on account of the sale, &c., of waste lands of the Crown. In “The Waste Lands Administration Act, 1876,” section 14 provides “that the Governor may from time to time, by Proclamation in the New Zealand Gazette, proclaim the confiscated lands within any land district to be waste lands of the Crown; and from and after the coming into operation of this Act no confiscated lands or any interest therein shall be sold, leased, or otherwise disposed of except in accordance with the provisions of the laws relating to the sale, letting, disposal, and occupation of the waste lands in force within the land district in which such confiscated lands are situated.” This clause was, however, repealed by “The Land Act, 1877” section 3. Section 5 of the last-named Act declares: “Crown lands shall include all lands heretofore designated ‘waste lands,’ Crown lands, and ‘confiscated lands’ respectively.” “The Financial Arrangements Act, 1876,” section 4, reserves to the New Plymouth Harbour Board the percentage payable under its Endowment Act; and sections 11 and 12 save previous legislation appropriating the proceeds of sales of specified blocks. The Financial Arrangements Act of 1877, section 4, re-enacts sections 11 and 12 of “The Financial Arrangements Act, 1876.” “The Financial Arrangements Act, 1878,” by section 3, continues appropriations of land revenue for particular purposes, and, by section 4, provides that revenue accruing to the New Plymouth Harbour Board under its endowment Act shall not be affected by the 20 per cent. payable out of land revenue to counties under section 6 of the Financial Arrangements Act of 1877. By “The West Coast Settlement (North Island) Act, 1880,” section 5, “all lands in the West Coast Land District which have not been heretofore reserved, granted, sold, or otherwise disposed of, and which shall not be granted, or set aside, or made reserves as aforesaid, shall be deemed

to be Crown lands." The Solicitor-General is requested to give his opinion whether, under the existing law, the New Plymouth Harbour Board is entitled to one-fourth of the land revenue derived from sales of land within the Provincial District of Taranaki taken under the New Zealand Settlements Act, and known as confiscated lands.

This is the opinion given by the Solicitor-General on the 13th January, 1881:—

I have carefully considered the various statutes bearing on the above question, and am of opinion that, as the law at present stands, it must be answered in the affirmative. The matter was quite clear up to the date of the passing of "The Public Revenues Act, 1878," which repealed "The Public Revenues Act, 1875." Section 16 of the latter Act had expressly stated that the moneys derived from the sale, &c., of confiscated lands should be deemed Land Fund; but, in the case of Taranaki, and for the purposes of "The New Plymouth Harbour Board Endowment Act, 1874," the benefit of this enactment was not to accrue till after 30th September, 1876. The term "Land Fund" had been defined by "The Public Revenues Act, 1867" which was repealed by the Act of the same name in 1878, and no other statutory definition of Land Fund has been given. Indeed, there was no need to do so, as "The Public Revenues Act, 1877" had repealed the section of the Act of 1867, which defined the expression "Land Fund;" and it further declared that all moneys payable to the Government should be paid into the Public Account. This account was divided into two funds—the Consolidated Fund and the Public Works Fund; and this enactment is repeated in the Public Revenues Act of 1878, and is now law. Again, "The Land Act, 1877," expressly brought all lands formerly included within the expressions "waste lands," "Crown lands," and "confiscated lands" under one common denomination of "Crown lands." From the date when this Act came into force, therefore, it would appear that the distinction between the various classes of land ceased, and that the proceeds of sales, &c., of Crown land was properly called land revenue for the purposes of the several Financial Arrangements Acts, and has been administered accordingly. The express enactment contained in "The Public Revenues Act, 1875," having been repealed, as stated above, the question really is, whether there is authority to continue payments to the Harbour Board subsequently to the passing of "The Public Revenues Act, 1878." To determine this point, recourse must be had to the Financial Arrangements Acts which contain the authority for disposing of the land revenue. "The Financial Arrangements Act, 1876," provided for the special percentage of Land Fund payable to the New Plymouth Harbour Board (section 4), and sections 11 and 12 gave permanent appropriations of or charges upon such Land Fund. The Amendment Act of 1877 made all land revenue (with an immaterial exception) part of the consolidated revenue of the colony, and expressly kept alive sections 11 and 12 of the original Act of 1876. Lastly, the Amendment Act of 1878, section 3, provides that all revenues accruing from the sale of *waste or other lands* of the Crown, which by any Act or Ordinance are appropriated to or charged with any proportion of such revenues, shall continue to be so appropriated. I do not quite see the need of this provision, as the Financial Arrangements Act of 1877 had already done all that it purports to do. It is true the expression "waste or other lands of the Crown" is used; but this may be explained by the fact that this section is repeated verbatim from "The Public Revenues Act, 1877," section 14, which passed two days before the Land Act of the same year; and the latter Act brought all lands of the Crown into one category, as has been already stated. Again, the 4th section of the Financial Arrangements Act of 1878 defined the term "land revenue" as not including land sold on deferred payments, nor that part of the land revenue of the District of Taranaki which is required to be paid over to the New Plymouth Harbour Board. Had the Legislature intended to restrict the payment to revenue derived from a particular class of land, here was an opportunity to do so; but the existing law was left to its operation. Bearing in mind, therefore, that in 1875 revenue derived from the sale and disposal of confiscated lands was declared to be "Land Fund;" that, in 1877, Land Fund as a district fund ceased to be, and the revenue derived from the sale, &c., of Crown lands became part of the Consolidated Fund; that confiscated lands were in the same year declared to be included in the term "Crown lands;" and, looking to the terms of the Financial Arrangements Acts, there seems to me sufficient grounds for saying that the New Plymouth Harbour Board is entitled to one-fourth of the land revenue derived from sales of land within the Provincial District of Taranaki, taken under the New Zealand Settlements Acts, and formerly known as confiscated land.

354. *Mr. Pitt.*] Although the confiscated lands are deemed to be Crown lands, yet the New Plymouth Harbour Board Endowment Act of 1874 stated they were only entitled to the revenue arising from the waste lands of the Crown. I understand the Solicitor-General to mean that the subsequent interpretation of the terms to be Crown lands, without, as it might have done, introducing a special limitation, was an indication that Parliament meant the law to stand without limitation?—There was an opportunity for them to say "We do not mean confiscated lands."

354A. I should consider the confiscated lands brought under the denomination of Crown lands for the purposes of this Act. I should hardly have thought that affected an express provision that the Harbour Board should only have a fourth of the revenue derived from waste lands. I mean that the alteration including confiscated lands in the term "Crown lands" did not make confiscated lands waste lands?—Yes. There is no doubt that a very substantial alteration would be effected in the terms of the contract with the Harbour Board, and a benefit for New Plymouth. This is Mr. Whitaker's opinion:—

"The New Plymouth Harbour Board Endowment Act, 1874," enacts that, "there shall from time to time be paid over to such Harbour Board one-fourth, or such less part as shall be fixed by the Legislature of the said province (Taranaki), of all revenues arising from the sale, occupation, or disposal of the waste lands of the Crown within the said province." A provincial Ordinance was subsequently passed fixing the amount at the one-fourth. No doubt at that time revenue arising from confiscated lands was not included by the terms "revenue arising from the sale, &c., of the waste lands of the Crown." (See especially "The Public Revenues Act, 1867.") But "The Land Act, 1877," brings lands theretofore designated "waste lands," "Crown lands," and "confiscated lands" respectively under one denomination—namely, "Crown lands." If this were all bearing on the subject of provisions of the special Act, the New Plymouth Harbour Board Endowment Act would not, in my opinion, be affected by the general Act—"The Land Act, 1877"—and the revenue arising from confiscated lands would not by the latter Act be brought within the operation of the former. But there are other enactments affecting the question to be considered. Section 16 of "The Public Revenues Act, 1875," enacts "that the revenue arising from lands confiscated from the Natives shall be deemed to have been Land Fund within the meaning of 'The Public Revenues Act, 1867;'" but provides that, till after the 30th day of September, 1876, the revenue arising from the confiscated land within the Province of Taranaki shall not be deemed to be land revenue for the purposes of "The New Plymouth Harbour Board Endowment Act, 1874." Since the Act of 1875 the Legislature has treated the revenue from confiscated land as ordinary land revenue, and has drawn no distinction between the one and the other. But as "The Public Revenues Act, 1878," repeals all the previous Public Revenues Acts, including the Act of 1875, the question arises whether such repeal destroys the right then existing of the New Plymouth Harbour Board to the fourth of the whole revenue derivable from Crown lands, as defined by "The Land Act, 1877," including those confiscated. I am of opinion that, under the provisions of "The Public Revenues Act, 1878," and "The Interpretation Act, 1878," the rights of the New Plymouth Harbour Board to such fourth is preserved, and still exists. I have not gone into the question as to whether the fourth of the land revenue, as appropriated by "The New Plymouth Harbour Board Endowment Act, 1874," at its passing is still payable, as that is not disputed; but I have confined my opinion to the solution of the question raised by Mr. Waterhouse in the Legislative Council on the 27th August, 1880, in reference to revenue from confiscated lands, and which question I promised should be considered by the Law Officers of the Crown.

355. *Mr. Montgomery.*] Have confiscated lands in any other provincial district been treated as waste lands of the Crown when the 20 per cent. was given to counties?—I could not answer that question.

356. Did not some of the counties in Auckland get portion of the proceeds of land formerly confiscated and afterwards declared to be Crown lands?—I should think the administration would be the same as in this case.

Examination of Mr. JOHN REES.

357 *The Chairman.*] In your confidential report of 1879 you estimate the cost of the concrete in connection with the New Plymouth harbour works at 30s. per yard?—Yes.

358. You stated also that you added 8s. 3d. to the cost at Kurachee as contingencies?—Yes.

359. Therefore you must have estimated the cost at that place at £1 1s. 9d.?—Quite so.

360. Are you quite sure that the cost of the concrete at Kurachee was not £1 6s. 4d.?—I estimated it at £1 4s.

361. Sir John Coode, in his report, specified that 4 cubic feet of cement were required for a yard of concrete finished, and would be in the proportion of 1 in 7. Sir John Coode fixed that proportion, did he not?—I think Sir John Coode amended that, and made it 1 in 9.

362. What was the proportion of cement used at Kurachee?—One in 10.

363. When you stated that 1 ton of cement would make 7 yards of concrete, you adhered practically to the report of Sir John Coode?—Yes, practically.

364. You have stated that 1 ton of cement will make 7 yards of concrete?—Yes, about that.

365. As regards labour, what would you estimate the difference of labour between England and New Plymouth?—About 1s. a day.

366. I want to know the proportion: for instance, if you have labour at 6s. a day for eight hours at New Plymouth that would be 9d. an hour, would it not?—Yes.

367. And at 5s. for eight hours 7½d.?—Yes.

368. In England, taking the wages at 3s. per day of nine hours, the cost would be 4d. per hour?—Yes.

369. Can you state whether a day's labour in England in 1875 was nine or ten hours?—I cannot say.

370. It would not be less than nine hours?—I should not think so.

371. Then, assuming that the labour at Kurachee and England was the same for this class of work, the cost of labour at New Plymouth would be double that at Kurachee?—Yes.

372. The cement at New Plymouth you stated would cost 14s. 5d. per yard?—The actual cost would be 15s.

373. You told the Committee on a former occasion that 1 ton of cement would make 7 yards of concrete?—Yes, I think I said about 7 yards.

374. You first told us that the cement would cost £5 5s. per ton, now you say it would be £5 1s.?—Yes.

375. Then, if the cement costs 14s. 5d. per yard, that would leave you for all other materials, labour, and contingencies 7s. 7d.?—Yes; but the average cost would be 22s.

376. Then if 22s. is the average cost per yard of concrete, 7s. 7d. is the average margin for everything outside the cement?—Yes.

377. Does that include levelling under water and divers' expenses?—Yes.

378. You have stated that the estimated cost of cement used at Kurachee was £4 3s. 9d. per ton, and was used in proportion of 1 in 10?—Yes.

379. Therefore the cement per yard of concrete cost 8s. 4d.?—Yes.

380. And, as the cost of concrete was £1 6s. 4d. per yard, as was shown by the engineer in charge of the work, the rest of the work, exclusive of cement, would cost 18s.?—Yes.

381. If the facilities for obtaining sand and other material at New Plymouth were the same as at Kurachee, and labour at the former place was double that at the latter, it would amount to 36s. per yard?—Yes, about that.

382. If your cement at New Plymouth was to cost 14s. 5d. per yard, that, added to 36s., would give a cost of £2 10s. 5d.?—Yes.

383. Or, if labour at New Plymouth should cost no more than at Kurachee, it would be 18s., plus 14s. 5d., making a sum of £1 12s. 5d.?—Yes.

384. The total quantity of concrete in the breakwater if carried out to Y Y, I find from Sir John Coode's plans, will amount to 98,802 yards, and, on the basis arrived at on the works at Kurachee of 50s. per yard, would amount to £247,005?—Yes, if the conditions were the same.

385. Will you state the cost of the plant provided for by Sir John Coode's schedule, indicated in list prepared and signed by Mr. King?—£9,000.

386. The list produced is a correct one, and contains the special plant as mentioned in Sir John Coode's specification?—Yes.

387. The cost of the erection would amount to?—£2,000.

388. And the cost, exclusive of erection, £11,000?—Yes.

389. That added to the cost of concrete would bring it up to £260,000, leaving a margin of about 10 per cent. for contingencies, and would be very nearly the estimate given by Sir John Coode?—Yes.

390. Can you state, from your own knowledge, what price per yard Sir John Coode attached to the concrete work?—I do not know; I asked him, but could never get a reply.

391. What margin have you allowed for removing sand from the site of the breakwater?—Well, there is little or no labour required.

392. Have you made any allowance for levelling the bags under water?—No; there is no necessity for it.

393. Sir John Coode stated in his specification that the weight of concrete in bags should be 14 tons: what was the weight you stated?—We propose to have 50-ton bags.

394. Sir John Coode says that the bags should be levelled by divers, and that a certain amount of boring should have been done for the object of ascertaining what the bottom was like. Can you state if any borings have been made?—Yes; it was done at low water, and the divers found a hard bottom.

395. How long were the divers engaged?—For several days.

396. Has that information been sent to Sir John Coode?—Not since I have come from Home.

397. But this is information he has asked for?—The business between Sir John Coode and the Board has ceased. We do not consider him in the matter at all. I do not consider there is any relationship between us.

398. Then, in point of fact, the New Plymouth Harbour Board have set aside Sir John Coode's advice, but at the same time are carrying out his designs?—The Board did not comply with his request.

399. The Board have not given him the information he required?—No, not to my knowledge.

400. I suppose when the blocks are in the water they form a wall of obstruction to the waves?—Yes; so also do the bags.

401. The cost of levelling the blocks by divers is included in your margin of 7s. 7d. per yard?—Yes.

402. If it was found necessary to remove the sand from the foundation to a greater depth, that would add an additional cost of the work?—Yes; but it is one of contingency.

403. You are not prepared to say what this additional expense is likely to be?—No.

404. Does the quantity of 95,000 yards, which you gave the Committee on your first examination, comprise everything?—I think so.

405. Have you added up the figures in Sir John Coode's estimates?—I should say I had, but not lately.

[Document put in.]

SIR,— I enclose herewith statement showing details of how I arrive at my estimate of 22s. per cubic yard of concrete, but to fully comprehend these items it is necessary that the plans showing the method of working should be referred to. I may add that the cost of mining and breaking the stone to suitable sizes is based upon the cost of similar work at Holyhead Breakwater and the quarries of Portounshean (Duke of Argyle's property, Inverary), the former costing 9d. per cubic yard and the latter 8d.—I have, &c.,

Wellington, 29th July, 1881.

E. Wright, Esq., Chairman, New Plymouth Harbour Board Committee.

J. B. REES, M.I.C.E.

Daily Charge.

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Concrete Mixing-house,—												
3 stone-breakers and 3 concrete mixers *							1 driver†	...	...	0	10	0
1 man attending in-coming trucks	0	6	0				1 locomotive driver	...	...	0	5	0
1 man feeding stone-breaker	0	6	0				1 stoker	...	...	0	4	0
3 men mixing cement and sand	0	18	0				5 cwt. coal, at 2s.	...	...	0	10	0
1 man attending mixer	0	6	0									
1 man attending skips	0	6	0				Setting Blocks with Titan—					
1 man running out trucks	0	6	0				1 driver	...	...	0	10	0
3 gangs as above at	2	8	0	7	4	0	1 stoker	...	...	0	8	0
Engine-house,—							7 cwt. coal, at 2s.	...	...	0	14	0
1 driver	0	11	0				Oil, &c.	...	...	0	6	0
1 stoker	0	8	0				2 divers (required only for that portion of blocks under water), say half-day	...	...	1	0	0
½ ton coal, at 40s.	1	10	0				4 men attending on divers	...	...	0	12	0
Oil, &c.	0	6	0				Supervision	...	...	
				2	15	0						
Moulding Blocks,—							Cost to provide 120 cubic yards daily			£24	6	0
1 man and horse running skips	0	12	0									
1 driver of steam-traveller	0	10	0				Or say, per cubic yard	...	...	0	4	0
3 men in moulds	0	18	0				Sand and gravel, per cubic yards of concrete	...	...	0	1	2
2 men erecting moulds	0	12	0				Mining, blasting, and loading	...	...	0	2	4
Coal, 5 cwt., at 2s.	0	10	0				Haulage of stone to breakers	...	...	0	0	6
Oil, &c.	0	3	0				3 cubic feet of cement	...	...	0	13	7
				3	5	0						
Loading blocks on trucks with hydraulic Goliath, and running same to Titan—3 men, at 6s.	0	18	0				Total cost of concrete per cubic yard	...	...	£1	1	7

Examination of JOHN GOODALL.

406. *The Chairman.*] You are engineer of the Timaru Harbour Works?—I am.

407. What has been the total amount of money spent on those works?—We have spent on our works about £72,000, exclusive of secretary's salary and supervision, and cement on hand about one thousand tons, value £4,650. The supervision would amount to £3,000. The secretary for a very long time had other duties, and fulfilled the secretaryship for the works for £50 per annum.

408. What plant do you possess?—The only plant of any value is the steam-crane, which cost us £3,200, and a Priestman's dredger, which cost £1,565, and sundry other items £600.

409. For what object did you get the dredge?—We procured the Priestman's dredge to remove sand from front of our works. Now we have it it will be useful for a variety of things: it is very useful for loading ships.

410. Have you none of the plant used in mixing the concrete?—No; it all belongs to the contractors; all but two special appliances.

411. Can you state approximately what is the value of the plant in the hands of the contractors?—I should say £1,000. I know one contractor bought it from another for £750, so that I do not think it is worth more than the sum I have mentioned. Of course horses are not included in that sum.

* Stone-breakers and mixers are so arranged that the stone goes direct into the mixers and thence to skips, without handling.

† Locomotive engaged part of day only; rest of day running stone.

NOTE.—Concrete in bags costs about 3s. per cubic yard extra, as shown by the returns of the Aberdeen and the Fraser-borough Harbour Works.

412. Then the figures you have given, putting the contractors' plant at £1,000, represent a total of £6,365?—Yes.

413. And you find no difficulty in prosecuting the work with that limited plant?—No, not at all.

414. What have you done for this £72,000?—We have extended our works 674 feet from low water.

415. What are the weights of your concrete blocks?—Twenty-eight and a half tons, and some thirty tons.

416. What precautions have you made against sand silting up?—We have made none. We send the diver down to examine the foundation previous to laying blocks, and latterly he has reported no large amount of silt in front; at any rate, not sufficient for using the dredger.

417. I suppose the action of the waves clears it away?—Very nearly.

418. Have you had any part of the walls washed away?—Never.

419. Your works were undermined at the south side, were they not?—Yes, until we made provision against it. Now, however, nothing of the sort occurs.

420. The apron-blocks, I suppose, are continued on the outer side of the breakwater?—Yes.

421. It has been found necessary to make this addition to keep the main part of your work from being undermined?—This addition was to prevent the foundation-blocks from being undermined.

422. Is No. 3 contract similar to No. 2?—Yes, with the addition of a wave-breaker.

422A. What depth of water have you at the end of No. 2?—Eighteen feet six inches at low-water spring tides.

423. How far will contract No. 3 extend your works?—One hundred and eighty feet further, with a depth of 20 feet at low spring tides.

424. At what cost have you estimated the works?—When No. 3 contract is finished I calculate the cost will be £77,950, not including plant and supervision.

425. Do you obtain your gravel and sand cheaply?—The sand costs us 1s. 8d. per yard of concrete, and the gravel 1s.

426. Can you say what is the cost per yard of concrete?—It costs 30s. 8d. per yard, and including contingencies and supervision about 32s. 6d.; that is based on the cement costing £4 13s. per ton.

427. How many casks of cement go to the ton?—About five and a half.

428. What is the cost of cement per yard of concrete?—About 16s. 6d. for every yard; then there is storage and damage, which would bring it up to 18s.

429. What proportion of cement do you use to the finished mass?—We use about 1 in 5.

430. What is the weight per bushel?—115 lb. or 116 lb. I have cement that averaged 110 lb., and found it very good indeed.

431. *Mr. Weston.*] What pressure will it bear?—I never tried it. Our test is a tensile strain of 1,000 lb. to the $2\frac{1}{4}$ square inches. We decline to use it if it does not reach that.

432. *The Chairman.*] Do you know anything of New Plymouth?—I only passed by it.

433. Can you say whether the risk for contingencies would be greater there than at Timaru?—I could not speak on that subject: people in general, however, say that Timaru is the worst place.

434. You have no reason to suppose that the risk will continue as you proceed with the work?—No; from the plans of the New Plymouth works I should consider the sea would require to be much smoother than at Timaru.

435. What is the rise and fall of tide at Timaru?—It varies; but about 7 feet in springs.

436. At New Plymouth the rise and fall is 12 feet; such being the case, it would add to the expense of constructing the breakwater?—Yes; the difference between 7 feet and 12 feet.

437. What would be the additional cost of raising the wall 5 feet higher?—£10 5s. per foot run of the breakwater.

[Document put in.]

TIMARU HARBOUR BOARD.

STATEMENT of Expenditure from January, 1877, to 30th June, 1881.

			£	s.	d.	£	s.	d.
Landing Service—Plant and repairs only	..	...	..	..	..	2,943	0	1
Breakwater—								
Preliminary expenses	...	...	1,672	3	9			
Three contracts	...	...	29,468	8	9			
Extras	...	...	3,006	14	8			
Cement	...	...	41,548	11	3			
Sea-wall, diving, boring, &c.	...	...	847	11	0			
						76,543	9	5
Wharf	..	...	..	..	..	3,586	14	3
Plant—								
Crane and repairs, rails, &c.	..	...	4,021	11	3			
Diving apparatus	..	...	357	10	4			
Crane-dredger	..	...	1,565	8	11			
Stores, furniture, &c.	..	...	610	7	10			
Moorings, buoys, and hawsers	..	...	1,054	16	3			
						7,609	14	7
Harbour Department and lighthouse	...	...	..	..	..	1,676	12	3
Salaries and expenses	...	...	..	..	..	4,749	1	9
						£97,108	12	4

Timaru, 13th July, 1881.

E. & O.E.—W J TENNENT, Treasurer.

SATURDAY, 30TH JULY, 1881.

Mr. JOHN MCGREGOR, examined.

438. *The Chairman.*] You are engineer to the Oamaru Harbour Board?—Yes.

439. Are you a member of the Institute of Civil Engineers?—No.

440. Had you any experience in harbour works prior to doing this work at Oamaru?—Yes; I was engineer to the Harbour Board at Port Chalmers, and previously I was employed on the Liverpool Dock works at Home.

441. How long have the works in Oamaru been in progress?—I think it is nearly ten years since they were started.

442. How much of the breakwater has been constructed?—I think about 1,450 feet, and there is about 300 feet to do yet. On the 31st December last there were 1,350 feet done.

443. Does that represent an average progress of 100 feet in six months?—No; the progress now, if a steady supply of cement could be kept up, would be about 30 feet per month.

444. What depth have you reached at low water?—At present about 19 feet 6 inches.

445. What has been the total expenditure to date?—The total cost of the breakwater up to the 31st December was £111,800; but since then we have put on another hundred feet, the cost of which was about £68 per foot. In round figures the breakwater is now costing £68 per foot, which includes supervision, cement, and everything else.

446. Can you state what has been the cost per lineal foot for the whole of the work, including all the charges up to the 31st December last? The money expended on the breakwater up to date amounts to £111,800. The average cost from the starting point, including supervision, has been £122 per lineal foot.

447. What has been the expenditure upon plant?—About £9,000, excluding cement and stores. The principal items are the travelling-crane, which cost about £2,000. It was built in Dunedin, and I think it is worth £2,500. I think the contractor who built it lost money by it.

448. What are the other items?—There is another steam locomotive for hauling blocks from the stacking-ground down to the breakwater. All the rails on the breakwater are included in the plant. The locomotive cost £700. There are also a great many trucks, which cost in the aggregate about £500. Then there are the concrete-mixers and the engine and machinery connected therewith, which would cost about £1,000.

449. I am asking you for these particulars for the purpose of comparing them with the New Plymouth Harbour Board's works: you understand that?—Yes. The heavy rails on the breakwater and the cement-sheds should also be counted. We have also a lot of ballast-wagons. The balance of the £9,000 is represented by plant, such as moulds in which the concrete blocks are made, and other things of that kind. There are also two small cranes. The whole plant belonging to the Board is valued at £5,662, and there is £3,442 worth of plant belonging to the present contractor, making altogether about £9,000 worth.

450. What has been the total amount expended for engineering charges and supervision?—About £10,500, extending over a period of nearly ten years.

451. The other expenses appear to amount to £2,580?—Yes; that amount will be covered by incidental expenses.

452. Will you explain the item of expenditure on wharfage, £40,103?—The wharfage reclamation cost £34,655, and the railway £4,316, making a total of about £40,000 altogether. We had first of all to make a railway from the shingly beach down to the breakwater, which is an extensive work—we had to do this in order to get the shingle, and we built three concrete walls near the breakwater.

453. What portion of that charge is fairly due to the construction of the railway?—None whatever. The breakwater could not be made without this expenditure on the railway. I may state also that this railway serves the purpose of working the ordinary traffic in connection with the railway system.

454. Will you state the cost of the cement used?—We are paying the present contractor £4 5s. 3d. per ton for cement, delivered in Oamaru.

455. And what is the cost of the other materials used in making the concrete?—About 14s. 6d. per foot, including the labour and shingle and sand; the cost of shingle and sand would be about 2s. 6d. a yard, and the broken stone from the quarry would cost about 4s. 6d. The balance is for labour. I am speaking of the cost per cubic yard of gravel and stone, and not of a cubic yard of concrete. In the blocks which are moulded on shore we use very little stone, but in the concrete that is deposited as a monolith we use very small stone.

456. Would not the cost of sand and gravel per yard of concrete be something between 3s. 6d. and 4s.?—Including the stone and the gravel, it would be about 4s. I do not think we put more than one-third of the stone in the cases.

457. Then the difference between 4s. and 14s. 6d. represents the labour?—Yes; and that labour includes the placing of the blocks in position.

458. A large proportion of your concrete is put into monoliths *in situ*?—Yes.

459. Would the cost be greater or less if you had to make it all in blocks?—There is only a difference of 6d. per yard as far as the labour is concerned; but by using large stone the Board save the cost of cement.

460. Then the monoliths are cheaper?—Yes, because you save a portion of the cement.

461. How many yards of concrete do you make with 1 ton of cement?—We use $7\frac{1}{2}$ tons of cement to every lineal foot of breakwater.

462. How many cubic yards are included in a lineal foot of the breakwater?—One ton of cement will make from $5\frac{1}{2}$ to 6 cubic yards of concrete.

463. Would you consider it safe to make the proportion 1 in 9 or 1 in 10?—No. I have tried that, and failed.

464. In what proportion did you try it?—Our present proportion is 1 in 6. I made experiments, and the result was that it would not be safe to make them poorer than 1 in 8.

465. Do you mean 1 in 8 of the loose materials, or 1 in 8 of the finished block?—I refer to the finished block.

466. But from your experience of this work you think the proportion of 1 in 6 is a fair and proper proportion to insure the durability of the work?—Yes.

467 Have you met with many accidents to the work now in progress in the shape of damages?—Very few We have a special account for repairs. I may explain to you that when these works were commenced it was impossible to get a contractor to undertake to construct the breakwater and maintain it, and therefore, on behalf of the Board, I accepted the responsibility of saying that the contractor's responsibility should cease as soon as he had completed a small portion of the work.

468. How much money has been spent upon repairs?—Only a few hundred pounds.

469. What is the nature of the bottom of the harbour?—It was formerly a hard rock, but now it is softer. The rocky bottom extended about 600 feet, but now it is very compact.

470. You have not been troubled with any sand in the foundations?—There is a uniform layer of fine sand at the bottom, but the sea removes the sand immediately in front of the breakwater.

471. Are you acquainted with the works at New Plymouth?—I have not been there since the breakwater was commenced, but I know the place where the works are.

472. And you know the exposed nature of those works?—Yes.

473. Would you consider it equally favourable with the condition of the works at Oamaru?—Yes, if the bottom were equally good. I do not think there would be any difficulty in constructing a breakwater there.

474. Do you consider the works at Oamaru would be exposed to gales of the same frequency and violence as those at Cape Egmont would?—Yes. I think the gales at Oamaru are as heavy as they are anywhere in New Zealand.

475. But are they as frequent at Oamaru as the north-west and south-west gales are at New Plymouth?—Yes, I think so.

476. Then the difficulties at New Plymouth would not be materially greater?—No, I think not, apart from the bottom: I do not know what the bottom is at New Plymouth.

477 Have you seen Sir John Coode's last report, dated March, 1880, on the New Plymouth Harbour works?—No. I may say that Oamaru is very well protected from the south-west by the Cape.

478. Then the progress they would make in the construction of the breakwater would be regulated by the weather, to a certain extent?—Yes, there is no doubt about that.

479. And if the works at New Plymouth are less sheltered than they are at Oamaru, there would be more delay?—Yes.

480. What is the weight of the cement which you use?—One hundred and twelve pounds to the bushel, there being not less than 1,000 to the $2\frac{1}{4}$ square inches.

481. What does that mean per inch?—About 440 lb.

482. You say that the total plant at Oamaru, including that belonging to the contractor, cost about £9,000?—Yes.

483. And if the cost of the plant at New Plymouth has been £37,000, would you consider the amount reasonable or excessive?—I think it excessive. I think about £10,000 worth of plant would be sufficient for work like that.

484. *Mr. Weston.*] Have you, on your works, all the plant that you require?—We have all the plant that we want except one small crane, which would be used for lifting purposes at the stacking ground. The cost of such a crane would be about £1,000.

485. *The Chairman.*] Will you look over the list of plant at New Plymouth and say to what extent you consider it superfluous?—At New Plymouth they have a 60-horse-power steam-barge which cost £3,272, and I do not think that is necessary. Then, again, there is a steam-launch afloat which cost £1,296, and which I do not consider necessary. Then there are three stone-crushers: I do not think that more than one of these machines is required. I do not see what use they can find for three concrete-mixers: we have only one of these at Oamaru, and it is quite sufficient to keep the works going. Then there are two 22-horse-power engines and boilers. I think a single eight- or ten-horse-power engine would be sufficient, with one locomotive. I think that on the whole Sir John Coode's estimate of the plant required is quite sufficient, and that all the other things mentioned in the list are superfluous.

486. Would the fact of their having to break up their stone at New Plymouth add materially to the cost of their plant?—Yes, it would increase the cost a little; but with three stone-breakers they would be able to crush the stone very cheaply.

487 What would be the difference between getting gravel from the beach, and quarrying stone and crushing it?—The quarrying can be done for 2s. 6d. per yard by us, but the Government do the hauling for us. The Government do not do the hauling in New Plymouth.

488. What would be the difference, supposing the hauling distance was the same?—I have always understood that crushing could be done by Blake's machines at 6d. per yard; but, of course, it would depend on the toughness of the stone.

489. Did I understand you to say that it cost 1s. 3d. per yard to put shingle into the wagon?—Yes, because the men lose a good deal of time in travelling with the trucks.

490. Now, I ask you again, what is the difference in cost as between gravel obtained from the beach at Oamaru, and stone that has to be quarried and crushed, irrespective of haulage?—I think about 1s. per yard would be sufficient.

491. You have seen Sir John Coode's design?—Yes.

492. On page 20 of the specifications, he shows the method which is to be adopted for the depositing of the concrete in bags on the ocean bottom?—Yes.

493. Now, knowing the time it takes to mix a given quantity of concrete and deposit it in bags, what would you think of the propriety of depositing 50 tons in one bag?—Of course you would require specially-sized boxes. I think you would require a hopper-barge to deposit large masses.

494. You would not contemplate lowering a bag of 50 tons of concrete by means of the cranes?—No, not by the cranes used for setting the blocks; but large masses have been lowered by means of a hopper-barge.

495. In depositing bags containing 14 tons with a crane, you can proceed without waiting for a smooth sea, I presume?—No; it is not safe to lower any weight into the water if there is a heavy sea.

496. So that your operations are practically confined to smooth waters?—Our operations are governed by the weather entirely

497. Would there be any more difficulty attending the lowering of masses of 50 tons in bags by means of hopper-barges than there would be in lowering masses of 14 tons by means of cranes?—Yes, we should require to have very smooth water, and it is likely that the work done by barges would be much slower.

MONDAY, 1st AUGUST, 1881.

Mr. T. KELLY, M.H.R., examined.

498. *The Chairman.*] You are member of the House of Representatives for New Plymouth?—Yes.

499. And also a member of the New Plymouth Harbour Board?—Yes.

500. Are you aware of the contents of clause 17 of "The New Plymouth Harbour Board Ordinance 1875 Amendment Act, 1877," by which the Governor in Council was precluded from assenting to any plans the amount of which exceeded the amount of the loan authorized?—Yes.

501. Are you aware that this was repealed by "The Harbours Act, 1878"?—I think it was. That Act, I think, repealed all the sections of the Act of 1877, except sections 15, 19, and the schedule; and it repealed also the New Plymouth Harbour Board Ordinance, except section 17

502. Can you state on what ground clause 17 of the Act of 1877 was repealed?—I do not know. It was done by a Consolidation Bill brought in by the Government, and they repealed such sections as they thought fit.

503. You personally are not aware of any reason for repealing it?—I was not consulted, and I do not know what the intentions of the Government were. All I know is that they brought in a Consolidation Act, and I presume they repealed all they thought was not required for actual operation.

504. What is the annual charge imposed on the district to meet interest and sinking fund on the loan?—One shilling in the pound on the annual value.

505. But what is the amount required to meet interest and sinking fund?—£14,000.

506. What amount will the authorized rate of 1s. in the pound produce, taking the present assessed value?—I should say about £4,000.

507. In what way would the Board propose to make up the difference between the £4,000 and the £14,000?—To meet that there would be the Land Fund and the harbour dues.

508. The receipts from the Land Fund will, I presume, be an uncertain amount?—For some years it will be considerable, in my opinion.

509. And what sum does the Board expect to raise by the harbour dues?—I think about £3,000 a year of net revenue.

510. You are of course aware that Sir John Coode's estimate for a complete breakwater is very much in excess of the loan that was authorized?—Yes.

511. Is it considered that the loan already authorized will suffice to carry this breakwater to such a point that it will be a real benefit to the district?—Yes; we are advised so by Messrs. Carruthers and Blackett, and Sir John Coode. In a letter which I wrote to the last-named gentleman, in my capacity as Chairman of the Board, in 1879, his attention was specially drawn to that point; and in his reply he states that the work can be done for £200,000, so as to be beneficial.

512. How far does he propose to carry out the breakwater for £200,000?—The Board anticipate being able to carry out the breakwater to the point marked *Y Y*, which will give a depth of about 20 feet at low-water spring tides, or, in ordinary tides, 25 feet.

513. You say that the Board anticipate being able to carry the breakwater out to *Y Y* for the £200,000, taking Sir John Coode's estimate as a basis?—Yes. According to his first plan, rubble could be used, but that plan was abandoned, and his next estimate for carrying out the work to *Y Y* was £285,800; but we are advised that his estimate of the cost of concrete was too high, and that the work could be done for £200,000.

514. By whom are you so advised?—By Mr. Rees, who was the Board's engineer at that time.

515. Has the Board confidence in Mr. Rees and his estimates?—The Board, as it is now constituted, has lost confidence in him, and has dispensed with his services. The former Board, however, had every confidence in him.

516. Therefore the advice tendered is that of a gentleman in whom the Board has lost confidence?

We lost confidence in him because it appeared to the Board, as lately constituted, that the expenditure on preliminary work was excessive, and it was discovered that there was a discrepancy between the estimates given of the cost of the plant and preliminary works and the actual cost. In short, the Board considered that money had been expended which ought not to have been spent.

517. Had the Board also lost confidence in Mr. Rees' estimates?—Yes, we did lose confidence in him in connection with some of them.

518. Are you aware that Sir John Coode's estimate of £285,800 for the construction of the breakwater to *Y Y* does not include all the items?—Yes.

519. And that there would be a considerable additional charge?—Yes.

520. Can you say how much?—No; it is a long time since I saw Sir John Coode's estimate.

521. And you are aware that his estimate of £285,800 is exclusive of the amount which had been expended at New Plymouth up to the date of the report?—There was little or no expenditure then. The larger expenditure began when the engineer went to England. About £10,000 would have covered the whole expenditure of the Board, including the cost of the works.

522. Can you state what amount of cash the Board has available, towards the payment of this £285,800 and additional charges?—The amount of cash and material, such as cement, &c., would be about £120,000, but that is exclusive of plant and material.

523. What would be the value of the material which you have on hand?—About £2,000 or £3,000 worth of cement and fuel, besides small tools and stores.

524. If there is any reliance to be placed on Sir John Coode's estimate, you are a long way short

of funds to carry out the works to *Y Y*?—Yes. If I recollect rightly, he estimates the cost at about £3 per yard, including everything; and, if that will be the cost, we have not enough funds to go on to *Y Y*.

525. Failing in the necessary funds to carry the works to *Y Y*, how do the Board contemplate raising further funds?—That question has never been entertained by the Board. The Board think they have sufficient funds for the work.

526. Then they are going on the principle of doing all they can with the money in hand?—Yes, and the work is being done as cheaply as possible.

527. But without having any clear knowledge of how far the money would carry the work?—The cost of the work has, of course, to be ascertained. The Board were advised by their engineer, whom they pay, that the work could be done for the money.

528. In using the words "their engineer" do you refer to Sir John Coode, or Mr. Rees?—I refer to Mr. Rees in respect to the cost of concrete.

529. *Mr. Pitt.*] I understand you to say that the Board lost confidence in Mr. Rees because they could not trust his estimates?—Yes, some of his estimates, and for other reasons.

530. *The Chairman.*] You are aware that there is a very wide difference in the estimates of Sir John Coode and Mr. Rees?—Yes.

531. Which of those estimates are you proceeding on?—We are proceeding on our own knowledge of the cost of work already done. About 100 feet of the breakwater is being constructed; and when that is done we will be able to judge as to what the cost will be, and check past cost of work.

532. Is there an engineer in charge of the works at present?—No; but we have a foreman, who has been accustomed to that kind of work in Aberdeen, as foreman in charge.

533. And you would found your estimate of the ultimate cost of the work on the 100 feet which he is now constructing?—Yes. I may say that the root of the work already down cost 22s. a yard, and both will enable the Board to estimate the cost of future work.

534. This 100 feet you are now constructing, and the root already constructed, are built up with concrete placed at once *in situ* in the moles?—Yes.

535. How is it proposed to construct the breakwater itself?—The base will be a semi-fluid concrete in bagging up to low water, and on that there will be 30-ton blocks.

536. Do you think the cost of concrete, made and placed *in situ*, would bear a fair proportion to the cost of concrete made in blocks, and afterwards carried out and deposited?—It would cost more to place it in blocks; but I would inform the Committee that all the work has hitherto been done by hand, and not by machinery. When machinery is used, as it shortly will be, the cost will be less as compared with that done by hand labour.

537. The machinery will be used for the purpose of breaking up rock for the purpose of making concrete?—Yes.

538. That would be an additional item, as compared with the cost of concrete at those places where they have shingle to deal with?—Yes, to a certain extent; but it depends on the suitability of the material to make concrete. Some takes more cement than others.

539. It would cost less than stone that has to be quarried and broken for the purpose?—Yes, everything else being equal.

540. Have you any idea what the works at Oamaru and Timaru have absolutely cost per lineal foot?—I believe 33s., at both places, per cubic yard.

541. But what has been the cost of the breakwater at those places?—When I was there it was costing 33s. a cubic yard in deep water; but at the commencement of the work they could do it much cheaper.

542. But the bulk of your breakwater will, I presume, be in deep water?—About half of it will. The water does not deepen so rapidly as at Oamaru or Timaru.

543. *Mr. Pitt.*] You say you are constructing these works under the charge of a foreman?—Yes.

544. Are you aware that these large blocks which are deposited *in situ* are liable to slip?—I do not see how that is possible.

545. Are they rectangular blocks that he is constructing?—No, not yet. It is at present built up on the spot; but that is the plan to be carried out when low-water mark is reached.

546. Are you aware that at Oamaru a different system is pursued, and the blocks are not rectangular?—No, I am not aware of that.

547. Then that is a matter which you have not considered—I mean the liability of the blocks to slip?—No, I have not. The blocks being laid horizontally, cannot well do so.

548. Are you a civil engineer?—No; but I have had some experience in engineering matters. I have studied the subject.

549. Do you think the Board is justified in doing without a properly-qualified engineer?—No; and I have no doubt the Board will procure a consulting engineer as soon as it can. There is great difficulty in getting a competent man. It is not a question of payment, but of competency.

550. *Mr. Moss.*] I think you said you have carried out the breakwater 100 feet?—It is more than that. It has been carried out about half-way between high- and low-water mark; and the 100 feet I have referred to is now being added to that.

551. How far will it have to be carried before it can be made useful?—It will be useful when it reaches 6 feet at low water.

552. How far will it have to be carried out before small vessels can go alongside?—It must be carried out some distance further before a vessel as large as the "Hawea" could lie alongside.

553. The Board, I understand, is acting on the principle that, if they cannot go as far as *Y Y*, they will be able to make the mole useful for vessels of the size of the "Hawea"?—Yes.

554. *Mr. Fulton.*] Has the Board ever considered the expediency of letting any of the work by contract?—No; we are advised by both Sir John Coode and Mr. Carruthers that the Board could do the work far cheaper itself. The difficulty that might be experienced with regard to contractors is the risk of having to compensate them for alterations of design, and for delay, &c.

555. But have the Board considered the question of letting small portions of the work by contract?—Yes, as regards the quarrying of stone; but no decision has been come to yet on the subject.

556. In the purchase of materials, such as cement, do you call for tenders?—Tenders were called in England, and the lowest was accepted; the price being 13s. 10d. per cask, delivered in Wellington.

557 *Mr. Pitt.*] What is the extent of the tender for quarrying which is now being considered by the Board?—The question is, whether 20,000 yards of quarrying should be let. The difficulty seems to be that, if the contract was let, there would be the risk of the men permanently employed on the staff of the Board being idle sometimes; because the contractors would naturally provide their own men to do their work; and if our men were prevented by bad weather from working at the breakwater they would have nothing to do.

558. *Mr. Fulton.*] Speaking from your experience as a Taranaki settler, is day labour as cheap as contract labour?—As a general rule not; but some work can be done much cheaper by day labour. Of course, in special work of this character, the contractor would have to charge a high price, in order to cover any loss he might make, owing to storms, &c.; and it might be found that he could do the work for half the amount of his contract. The Board are of opinion that they should first try what they themselves can do the work for.

559. Supposing you were letting out a contract for the quarrying of 20,000 yards of stone, do you not think you would get tenders from other places than Taranaki?—Yes; no doubt we would.

560. Are you aware that at Oamaru and Timaru the breakwaters are being made by contract?—Yes.

561. And that they get their shingle by contract?—Yes; but if the Board's engineer is a good man he can do the work quite as well and as cheap as the contractor's engineer. It depends entirely on the management.

562. *Mr. Weston.*] Mr. Rees wrote a confidential report to the Board, in which he gave an estimate of the cost of the work, did he not?—I have only been a member of the Board for a short time.

563. But have you seen this confidential report?—No. I do not recognise it, as I have told you. I have only recently become a member of the Board; but, if it has been published, I may have read it in the local paper.

564. In that report he says that, in his opinion, there is ample money in the Board's hands to carry out the breakwater to *Y Y*. Does the Board attach much value to that opinion?—No; the late Board respected his opinion, but the present one does not place so much reliance on it.

565. Then I suppose that want of confidence was really the cause of your seeking for another engineer and getting rid of him?—We considered that he had not used proper discretion in the expenditure of money belonging to the Board.

566. And you doubted his professional capacity?—We considered that the money was being wasted, owing, principally, to a want of proper organization among the men, and excessive plant.

567. You have employed Mr. Rhind?—He was selected at the instance of Mr. Rees, in England, to act as foreman of works, in placing concrete in bagging for the New Plymouth Breakwater. He had previously been foreman of works at Aberdeen, in connection with the construction of the South Pier, which is built of concrete.

568. But, in the meantime, he is acting as your engineer?—No; he is simply foreman of works.

569. He is acting practically as your engineer?—Yes; in carrying out Sir J. Coode's design.

570. In your opinion, is he competent to act both as engineer and clerk of the works?—As far as I have seen hitherto, he is a very good general foreman; but my own opinion is that the Board ought to have a consulting engineer, which it has not at present; but there is no great engineering skill required.

571. Is the Board taking steps to secure the services of a consulting engineer?—I cannot say, because all this has occurred since I left Taranaki; but I notice that the papers state the Board had the subject under consideration.

572. *Mr. Murray.*] Are jetties requisite to enable vessels to lie alongside the breakwater with safety, and also to assist in loading and discharging vessels?—I think a short jetty would be required.

573. What do you estimate the cost of such requisite jetties will be?—I think about £5,000 would be enough to provide a jetty that would enable vessels to discharge.

574. You are aware that Sir John Coode's estimate for a jetty of that sort is about £34,000?—That is a solid jetty which he provides for. I am only speaking of a short jetty, to enable vessels to come alongside, when I say that it could be built for £5,000.

575. If the balance of the £200,000 is insufficient to complete the works so that they can be used, how do you expect to obtain the additional funds required?—If we find that the money will not make the works to *Y Y*, we shall have to make it shorter; that is all. The question has not yet arisen.

576. What is the opinion of the rural districts of Taranaki about these harbour works?—There are various opinions; but the majority are in favour of the works.

576A. What would be the chief imports and exports, and what do you think would be the annual tonnage of each?—I cannot tell you what the chief imports are, but the chief exports are butter, sheep, cattle, and grass seeds.

577 *Mr. Moss.*] From whom did Mr. Rees purchase the plant in England, without Sir John Coode's approval?—The bulk of the plant was purchased from Shanks and Co., of Arbroath, Scotland. That firm supplied about £12,000 or £14,000 worth, and the rest was obtained from different persons.

578. Was the fact that the bulk of the plant was got from the firm you have named, partly the cause of the difference between the Board and Mr. Rees?—No; he made the purchase with the consent of the late Board. The members of the Board are elected every two years, and a new Board was elected last February. The previous Board, which was elected in February, 1879, gave Mr. Rees instructions to purchase any plant he thought proper, after conferring with Sir John Coode; but, as he represented that Sir John Coode was throwing obstacles in his way, and that he could not get on satisfactorily with Sir John Coode, the Board acceded to his request that he should be allowed to act on his own responsibility, and without reference to Sir John Coode. When the present Board came

into office, they thought he did not exercise proper discretion in dealing with the money of the Board, in the matter of purchasing plant, &c.; and they considered, also, that he should have consulted some engineer of eminence in England in making his purchases.

579. *Mr. Pitt.*] How do you account for the fact that the present Board is dissatisfied with Mr. Rees, who is an engineer himself, for not consulting with another engineer in England before making his purchases, while at the same time the Board is carrying on the works without an engineer at all?—The cases are not parallel. Mr. Rees had no special knowledge of the marine tools required; while it is quite natural that the Board should carry on the works when they have a good practical foreman, without an engineer, as the work is already designed for him, and it only requires a practical knowledge of construction. We have found that people who call themselves engineers are of little practical use, and are often not fit to carry out works. The Board has found it very difficult, so far, to get a good engineer, possessed of scientific and practical knowledge, even though a good salary was offered.

580. Is any member of the New Plymouth Harbour Board a qualified engineer?—No, not civil or marine engineers.

581. *Mr. Moss.*] Does the Board feel perfectly sure that the work, as they are doing it, will withstand the action of the sea, and that the mole will remain intact?—The Board are quite satisfied that the work, carried out on Sir J. Coode's design, will resist the action of the sea.

582. Do you not think that, if you had a competent engineer on the spot, he might be able to suggest some improvement on Sir John Coode's plan, which even that gentleman himself would approve?—My own opinion is that a skilful engineer ought to supervise the work; but, at the same time, I hold that any man who has been accustomed to the work in the capacity of a general foreman can carry it on in that capacity, satisfactorily, with the plans of the designer of the work before him.

583. *Mr. Weston.*] Then the natural inference is, that an engineer is only required to make designs?—Yes; I think the practical work is done by the practical foreman, or contractor, from the engineer's design.

584. Then the engineer need not be a practical man; but, if you have a practical man, an engineer is not required?—I can quite understand that both an engineer and a foreman are required. The two should work together, and each be separate and distinct from the other. I am of opinion that you require both a scientific and a practical man to mature and execute any large work.

585. *The Chairman.*] What, in your opinion, will be the benefit conferred on the residents of the Waimate Plains by the proposed harbour works?—The breakwater will enable steamers from all parts of the colony to discharge at all states of the tide, and goods consigned to residents there can easily be sent on by railway. It is only seven or eight miles from the Normanby Railway-station to the Plains.

586. Is the distance by rail from Hawera to New Plymouth greater or less than the distance from Hawera to Patea?—The distance is greater to New Plymouth; but the benefit which the settlers in the Hawera District and the Plains will receive would be direct communication with the best markets of the colony, and a direct outlet for their surplus produce.

587. Have the people at Hawera or Patea raised any objection to being rated by the New Plymouth Harbour Board, for the purpose of paying interest and sinking-fund on the loan?—I do not know whether they objected officially. They knew, when they bought the land on the Plains, that they were liable to be rated; but they have raised no official objection, so far as I know.

588. Do you think that the settlers there being liable to pay this rate has affected the price of land in the district?—No, not at all.

589. What benefit will the residents of New Plymouth derive from the reduction of the landing charges?—It is not so much the reduction of charges they will benefit by, as the certainty of shipping and landing goods and passengers. There would not be much difference in the landing charges; probably only a few shillings per ton.

590. What is the present landing charge?—Ten shillings a ton.

591. And, when you estimate your revenue at £3,000, at what rate are you calculating?—About 8s. a ton, delivered in New Plymouth.

592. Therefore the contemplated commercial advantage to the settlers is represented by the difference of 2s. per ton?—Two shillings would represent the lowering of the charges; but the great advantage would be in the greater certainty of landing goods and passengers.

593. You said that McEwan and Co. had a contract for supplying the cement?—Yes.

594. Through whom did the engineer invite tenders for the supply of the cement?—He informed the Board that he sent to all the manufacturers of cement and asked them to tender.

595. Did not McEwan and Co. receive the tenders?—I am not sure.

596. Are they cement manufacturers?—No. I think Mr. Rees received the tenders himself.

597. *Mr. Pitt.*] What, in your opinion, will be the effect of the settlement of the Waimate Plains on the imports and exports of New Plymouth?—Trade will be increased, now that there is communication by rail. The great bulk of the trade between outside places and the Hawera District will go through New Plymouth. The residents in Patea and Hawera will certainly be benefited, by a larger choice of markets, by direct steam communication from New Plymouth, both inwards and outwards, and greater certainty, and consequently lower charges for carriage.

Mr. GOODHALL, Engineer of Timaru Harbour Works, re-examined.

598. *The Chairman.*] Can you state, for the information of the Committee, the cost per foot run of the Timaru breakwater, so far as completed, taking all costs and charges into consideration?—No. 1 Contract, which extended a distance of 310 feet, cost £80 6s. 4d. per foot run; No. 2 Contract, which was 364 feet long, cost £86 9s. 3d. per lineal foot; No. 3 Contract, when completed, will be 180 feet long, and will cost £92 5s.

599. And the total height of the breakwater, under No. 2 Contract, is about 36 feet?—Yes.

600. And of No. 3?—About 2 feet more. About 38 feet.

601. There being a depth of 20 feet at low water?—Yes.

602. What is the width of your breakwater?—36 feet at the base, and 28 feet at the top.

603. *Mr. Moss.*] Do you think it desirable, or even practicable, to carry out works of this kind without some skilled engineering supervision?—Well, that is a rather personal question. At the same time, I think it is utterly impossible.

604. We will put it in a different way. Perhaps that was an invidious way. Take these works at Taranaki: Are not these works liable to accident; and might it not even be found necessary to modify the original plans when carrying out the work? In order to do that you must have some professional engineer to supervise the work?—That is really where the point is. A clerk of works, or a skilled overseer, might carry on the works with perfect safety as long as all went right. But untoward accidents will occur sometimes; and, even if a clerk of works might propose a remedy, it might not prove to be the right one. In my own case, when we had gone on about 100 feet our crane broke down, and delayed our works a fortnight. Being shallow water, with the shingle shifting up rapidly behind, the case was difficult, but had to be dealt with promptly. A clerk of works, in that case, would have sent for an engineer, and the works would have been delayed and valuable time lost. I ordered the contractor to put down blocks immediately, and to carry the crane over this until he got on solid bottom. Unless there had been an engineer there at the time that could not have been done. That is one instance. Then, we found it necessary to give modified instructions to the contractor. The plan was to put down the blocks right up, and the heavy monoliths on the top; but, finding the bottom to change, I directed the contractor to go on putting down the blocks, and to allow them to settle before putting on the top. I believe, if an overseer had been in charge of the work, he would have gone on in the same style on that bottom; and the result would have been, when the blocks subsided, the heavy monoliths would have toppled over, and a very heavy extra cost been entailed.

Mr. J. McGREGOR, Engineer-in-Charge of the Oamaru Harbour Works, re-examined.

605. *The Chairman.*] You have stated that the breakwater at Oamaru is not at present costing more than £70 per foot?—Not quite £70. About £67 19s. 9d.

606. What would be the increased cost of a breakwater, if increased 5 feet in height on account of the extra range of the tide?—I think about £11 per foot.

607. On that assumption, the work at New Plymouth would cost about £80 per foot with that additional height?—Yes.

608. And that is also on the assumption that cement and other materials cost the same in both places?—Yes; it would be similar.

609. Then, if cement and other materials cost 4s. to 5s. per cubic yard additional, at New Plymouth, how much would that add—approximately?—I cannot give it at the moment, but it can be easily worked out.

610. Well, if cement and other materials cost 4s. or 5s. per yard more at New Plymouth than at Oamaru, the cost of concrete per foot run would be considerably greater?—Yes.

611. *Mr. Moss.*] You have been working at these works at Oamaru a long time?—Between nine and ten years.

612. Have you ever found it necessary to deviate much from your original plans, or to make changes of any kind?—Oh, yes; though not any very great changes. The general design has always been preserved, but a good many details have been modified.

613. Could that have been done without professional or skilled supervision? Could a clerk of works have done that?—The modifications were the result of careful observations, and careful watching of the action of the sea on the works as they progressed. The modifications were devised to meet contingencies, as they arose. The nature of the bottom has played an important part in the alterations to the design.

614. Is it usual to carry out heavy works of this kind without skilled professional supervision?—Certainly not. I never heard of such a case.

615. Would you consider it right to intrust the prosecution of the New Plymouth Harbour Works to the charge of a clerk of works—merely an overseer, who is not a professional?—Certainly not. No man with that training could meet the contingencies likely to arise in a work of that kind.

616. Although he might be a good inspector?—Yes.

617. *The Chairman.*] What has been the average cost per lineal foot of the Oamaru breakwater, for the 1,350 feet completed last December?—£82 16s.

618. And the 1,475 feet complete to date?—£80 11s. The cost is somewhat reduced, as the work has advanced, because present prices are somewhat lower.

619. What was the amount of work executed, when the Oamaru Board had expended about £70,000?—We had the railway made from the shingle beach to the breakwater, had all the plant requisite for the work, and about 700 lineal feet of the breakwater was constructed.

620. What are the relative values of clean shingle from the beach as compared with crushed stone, for concrete?—Shingle costs about 2s. 6d. per yard. I am of opinion that stone taken from quarries and crushed by machinery would cost about 4s. per yard.

621. In which 2s. 6d., in your case, I think, you include certain tramways?—The contractors make their own tram to the shingle beach. The cost was a little more there, perhaps, than it would be in other places, for this reason: The contractors have to send out ten or twelve men with the trucks, which are brought in by the Government locomotive; and thus a good deal of time is wasted, which would not occur if the contractors brought them in themselves. The trucks go over the ordinary line, and are hauled by the Government engine.

621A. The cost would have been less than 2s. 6d. if the tram had been provided for the contractors?—The tramway is provided, but the haulage is not.

622. The Government haul in the trucks?—Yes.

623. At New Plymouth, the Board will have to construct its tramways to these quarries. The tramways for the shingle at Oamaru, I understand, are provided by the contractor?—From the main line.

624. And a certain portion of the tramway is included in this 2s. 6d.?—Yes; I think it is fair to say that.

625. If the Board provided that, the cost of gravel would be somewhat less?—Yes. It would be also somewhat less if the Board or the contractors had the hauling in their own hands, because, as it is, they cannot get at it when wanted.

[Document put in.]

SIR,—

Oamaru Harbour Board, Oamaru, 15th July, 1881.

In reply to your telegrams of the 12th and 14th instant, I have the honor to forward to you printed statement of total expenditure to date of last balance; and, for your further information, I append the following details abstracted from our accounts, as made up to the 31st December, 1880.

Total length of breakwater completed at that date, 1,350 feet; in addition to which there is 1,230 feet of concrete wharfrage.

	£	s.	d.
Cost of 1,350 feet of breakwater, including cement	111,068	10	5
„ Wharfrage and reclamation	34,655	4	6
„ Railway	4,316	12	6
„ Blocks at lagoon	1,132	0	0
„ Plant and sheds	5,622	9	11
Advanced on Contractor's plant and materials, present contracts	1,672	3	6
North wall, present contract	364	9	5
	<u>£158,831</u>	<u>10</u>	<u>3</u>

The present contract price for cement delivered at the works is £4 5s. 3d. per ton. The material for concrete (exclusive of cement) is provided by the contractor, together with all labour in the construction of the breakwater, at the price of 14s. 6d. per cubic yard. The shingle and sand is estimated to cost them 2s. 6d. per yard, and the broken stone about 4s. 6d.

Should you require any additional information to the foregoing, please wire.

I have, &c.,

THOMAS FORRESTER, Secretary.

E. G. Wright, Esq., M.H.R.,
Chairman, New Plymouth Harbour Committee, Wellington.

Colonel TRIMBLE, M.H.R. for Grey and Bell, examined.

626. *The Chairman.*] Will you state what you consider the advantages to be derived by the general public, by the construction of the harbour works at New Plymouth?—I have always been of opinion that they will be of no material advantage to the general public.

627 On what grounds?—First of all, I think the works that are possible, with the money at the disposal of the Board, will not afford protection in anything but the fairest weather to shipping. I believe with a swell in the sea that ships could not lie alongside of the breakwater; and I doubt if they could lie inside the breakwater, even under the protection of the proposed wharves.

628. Are you aware that in Sir John Coode's amended plan the wharves are omitted from his estimate?—No; I was not aware of it.

629. This drawing, "M.D. 404," is Sir John Coode's amended plan for a concrete breakwater, at an estimate of £285,800, and is exclusive altogether of these jetties?—Yes.

629A. I will read a part of Sir John Coode's report [Extract from report read] So you see the jetties are excluded?—Yes. What he calls "range" is owing to the swell of the ocean. I well remember, nearly thirty years ago, I saw in the Mersey a vessel beaten to pieces in St. George's Basin. The River Mersey has no such swell as the Pacific Ocean; and the docks at Liverpool are all protected by basins: that is to say, there is an entrance basin outside the dock itself, with the mouth only to the river. I think it was in 1852 that there was a very high tide, with a strong North wind blowing up the river. I saw a vessel knocked to pieces against the wall to which she was attached. In ordinary times, of course, such a thing would not occur; but as soon as there is a heavy swell such a thing is always liable to happen. When coming to an open sea like this I consider you have no chance at all except by running to sea, in the event of a heavy swell or gale. And I take that view of the matter from the case I tell you of.

630. You ascertain, by this report, that there is no protection, in the shape of a pier at right angles to the main breakwater, such as you thought was provided?—Such as I thought was provided. I think, in fair weather, the work would enable passing steamers to land their cargoes without the jetty.

631. Have the settlers within the rating area of Taranaki, that is the area subject to rating for the purposes of this harbour, expressed disapproval of the work at any time?—A portion of them, in 1877, I think, sent petitions to the House, signed by about 300 *bona fide* farmers, against proceeding with the Bill then before the House.

632. On the ground of the rating clause?—On the ground that the expenditure could not be afforded, and that the expenditure they were about to make would not produce a harbour that would be of material value to the province. But some farmers, men residing south of New Plymouth and immediately round the town, and a few scattered over other parts of the country, went with the town people in favour of the harbour. There were two parties, in fact, on the subject, which was the cause of very considerable agitation at the time.

633. The project was mainly supported by the town people of New Plymouth?—Yes; and the farmers immediately round the town, and farmers south of New Plymouth—that is, towards Stoney River.

634. Have they seen any reason to change their opinions since?—When Parliament passed the Bill we agitated no more. We gave up agitation. We thought we had fought and lost, and that it was a hopeless matter to fight any longer. So I am not prepared to say at this moment what the opinion of the people may be.

635. Can you say whether the Board have expended money on works outside their legitimate work of harbour construction?—That I cannot say.

636. Are you aware that they have expended money in reclamation works?—Yes; I do not know how much. I think something like £2,400 or £2,600, in reclaiming a piece of land north-east of the Huatoki River. I think originally it was intended to spend a great deal more than that. I am

speaking entirely from memory, but I think it was something like the sum I named that they have spent.

637. Considering the limited funds at the disposal of the Board for prosecuting harbour works proper, do you think they were justified in spending £4,423 upon improving certain endowments?—Does that sum include the reclamation at Huatoki?

638. I think so; the Kawau Pah.—The reclamation in 1878 I always thought, under the circumstances, was not justified. I thought they had too little money for their work. Parliament had allowed them to proceed with the work; and I thought all the money they had to spare ought to be devoted to the work Sir J Coode had planned—to carry it out as far as their funds would allow them to go.

639. What class of vessels can at present enter the Harbour of Waitara?—Anything drawing 8 feet. They frequently come in with more than 8 feet, but that is not safe. I have here certain figures showing the average depth of water on Waitara bar, from 1872 to 1878 inclusive. Vessels drawing considerable depths have been in. The “Rangatira” was in twice. There have been times when vessels drawing 16 feet could enter; but that was exceptional. This paper shows the shipping of the port for these years, and the average depth of water for certain years. [Paper put in “A.”]

640. And what advantage would the district gain by the construction of the New Plymouth breakwater—the District of Taranaki, the entire district—in the event of the Harbour Board not being able to prosecute that work beyond 13 feet at low water?—In fine weather steamers would be able to land their goods and passengers at high water.

641. Would there be any commercial gain to the community in the way of a reduction of landing charges?—It would save boating charges. The boating charges are now about 10s. per ton. It would save a large proportion of that, of course.

642. Could the Harbour Board, in your opinion, afford to forego these landing charges, and meet their engagements with their creditors?—That would depend very much upon what Land Fund they receive, and the proper management of that fund when they do receive it. I reckon that the Land Fund would amount to something like the amount of their debt, if they could get the money in one sum, so as to clear off their debt.

643. That is, if they could at once realize all the Crown land in Taranaki?—Yes; if they could at once do it. But then it is an uncertain question. They do not know from year to year how much of it will be sold.

644. But if all was sold?—If all was sold at once, sufficient would be received to about clear off the debt. I have not the document before me, but Sir W Fox and Sir F D. Bell gave an estimate of the value of the land for sale, and—I am speaking from memory in reference to that document—I think they rather understated the fair value of the land. Making allowance for that, then the result would be something like what I say.

645. What improvements do you propose to effect in Waitara Harbour, by the expenditure of the £20,000 which you now seek authority to get?—If the Bill passed, it would do the whole of the inside works proposed by Sir J Coode, lengthen the present wharf, and so give still further accommodation, and, perhaps, get a dredge. But, I may say, there is very little chance of the Bill passing in its present state. Sir J Coode does not recommend a dredge to be got immediately, as, if the minor works were carried out, the channel would scour out considerably.

646. What extra depth is expected from the construction of these training walls inside the bar?—Sir John Coode does not say; but, alongside the new wharf we have erected, the scour has been very great, amounting to several feet.

647. *Mr. Pitt.*] It has not undermined the wharf?—No. But, if we had known the scour would have been so great, we would have made the piles 3 feet longer. Mr. Thompson, an engineer, has recommended, if the wharf is continued, the piles should be 3 feet or 4 feet deeper, and considerably stronger—far stronger than originally intended.

648. You anticipate, I presume, by that expenditure to so far improve the Waitara as to bring in vessels of greater draught than at the present time?—Considerably greater. When vessels are inside the river, there is a considerable depth. There are two points where vessels have difficulty [witness showed this on Sir J Coode’s plan, and made several explanatory remarks]. It is a sand bar. Sometimes there are 20 feet of water on the bar in a flood. When the flood goes away the sand accumulates on the bar, but sand does not accumulate in the river.

649. What do you think will be the effect of the settlement of the Waimate Plains, and the construction of the Patea Harbour? Will it have any effect upon the commerce of New Plymouth, the imports and exports, with these proposed works?—The imports and exports of Waitara are increasing every month. The Plains were being supplied from Hawera; Hawera being supplied from Waitara, until the roads were broken up by the bad weather. Now, the trains are running to Normanby, though not in their normal state of running yet. In another month the line will be open to Hawera for passengers and light traffic, and then goods will run direct to Hawera, and from Hawera be despatched to the Plains by metalled roads—the main road is metalled.

650. I want to find out this: Will supplies be drawn from Waitara, Patea, New Plymouth, or Wanganui?—They have been drawn mostly from Waitara. There are certain reasons for it. Waitara is only 120 miles from Onehunga. It is better to drive cattle to Waitara, and ship them to Auckland, than run considerably more than double risk in sending them to Auckland by the longer sea-voyage from Patea. The argument with regard to Wanganui is still stronger. A case came under my notice a short time ago, which will illustrate this position. A man had some sheep to send from Waitotara to Auckland, and was sending them to Wanganui to ship. A gentleman belonging to Waitara said, “Why not send them to Waitara?” He had been paying 3s. 6d. per head from Wanganui. So my friend said, by sending them to Waitara he could send them for 2s. a head. He did not believe it; but my friend said, “I guarantee, if you send the lot, you shall have them shipped for 2s. a head, which is the price I am paying.” So he sent down a cargo, and saved the whole of the difference. It was as expensive to drive the animals to Wanganui as to Waitara. And he saved 1s. 6d. a head on the freight, and saved the difference between a certain voyage of ten or twelve hours and a voyage by which, as we

have seen by the newspapers, sheep and cattle have been starved. Patea, of course, would be nearer than Wanganui; but, other things being equal, the argument would apply the same as to Wanganui. It would be a shorter passage, of course; but Waitara is the shortest of all.

651. So long as Auckland draws supplies of live stock from Taranaki, Waitara will be the natural shipping port?—Yes. I do not mean to say it would not apply to New Plymouth, provided the harbour works can be made right. Then, of course, it would apply to New Plymouth also. The merchants of Auckland were formerly cut out by the merchants of Dunedin and Wellington, who sent goods to New Plymouth by the Union Company's boats; but now Auckland people, through Waitara, are supplying the district, where formerly Dunedin and Wellington people were supplying it. And freight between Onehunga and Waitara is only 12s. 6d. per ton, which it has been for a considerable time. It has been as low as 10s. This is by steamer. There are about four steamers a week. I have here a considerable amount of testimony, from captains from time to time, as to the ease with which Waitara can be made. This is what Captain Francis, of the "Benclough," says: "I am of the decided opinion that the entrance is much more safe of access than rivers upon the west coast of the Middle Island to which I have been a constant trader for the past two years. I do not think, from what I have seen of this river, that the bar could ever become so dangerous as those upon other coasts of the colony; as the Waitara River possesses considerable natural shelter, which prevents even a heaving sea fetching home." Captain Renner went into Waitara with the "Rangatira," which was a heavy-draught steamer. He told me it was the easiest bar harbour in New Zealand, in his opinion. He told me, at very little cost it could be made good for vessels of 10 or 11 feet in his opinion. Since then he has commenced running to Waitara again. I saw him about six months ago, and he then repeated what he told me (as I have just stated) four years ago in Wellington.

[Document "A." put in.]

Waitara River.						
Shipping Inward.—In 1877	...	...	...	...	...	3,321 tons.
" 1878	...	...	...	...	...	5,472 "
" 1879	...	...	...	...	...	8,623 "
" 1880	...	...	...	...	...	9,899 "
" To 30th June, 1881 (6 months)	...	...	...	...	...	7,715 "
Average depth of Water on Bar.						
1872	...	...	...	...	9 feet 8 $\frac{3}{4}$ inches.	
1873	...	...	...	...	9 feet 4 inches.	
1874	...	...	...	...	8 feet 6 $\frac{1}{2}$ inches.	
1875	...	...	...	...	8 feet 0 $\frac{1}{2}$ inch.	
1876	...	...	...	...	8 feet 7 $\frac{5}{8}$ inches.	
1877	...	...	...	...	9 feet 0 $\frac{1}{2}$ inch.	
1878	...	...	...	...	9 feet 1 inch.	

WEDNESDAY, 3RD AUGUST, 1881.

Captain A. KENNEDY, of the steamer "Hawea," examined.

652. *The Chairman.*] How many years have you been acquainted with the coast of New Zealand?—Nearly twenty-eight.

653. Are you well acquainted with the site of the proposed harbour works at New Plymouth?—Yes.

654. With reference to the plan "M.D. 404," of the position of the work which the New Plymouth Harbour Board are authorized to construct, I will read an extract from Sir John Coode's report, *re* No. 1 Drawing. [Extract read]. From that extract you gather that there are no jetties which are indicated within the dotted lines at present authorized?—Yes.

655. How far, in your opinion, would vessels lying alongside of that jetty be affected by any "range" coming in, during heavy gales?—A certain degree of swell would be felt in some weather; in heavy weather there would be a "range." It would be damaging if there was no jetty accommodation, that is, without something to break the sea from coming round the point. We experience the same thing in Oamaru sometimes. The "range" would be increased, or more felt, when a vessel gets near the bottom.

656. But is not the Oamaru breakwater more sheltered than this?—No.

657. What would be the effect on a vessel lying alongside the breakwater, with a heavy sea from the north-east?—She would be end on; but there is never a heavy sea from north-east there. Vessels can lie alongside the quay there when a north-east wind is blowing, with perfect safety.

658. *Mr Pitt.*] How would a north wind affect it?—The wind very rarely comes from the North; it nearly always comes from north-east.

659. *The Chairman.*] What would you consider safe water under a vessel's bottom, when lying there?—About 5 feet would be safe water at low water.

660. *Mr. Weston.*] What is the draft of your vessel?—Twelve and a half feet.

661. *The Chairman.*] In the absence of any cross jetty, would the extremity of that breakwater be a convenient berth for any boats that may arrive?—It would be a convenient berth, but there would be more swell in heavy weather than when lying further in.

662. What position in the line of that breakwater would you select as most favourable for mooring a vessel?—Inside the dotted lines, showing the position of the outermost jetty.

663. What is your opinion of the New Plymouth Harbour, as indicated by the section shown on that plan, as a harbour of refuge?—I believe it would afford refuge from the westerly gales for small vessels, with local knowledge. These gales would come straight in. But the heaviest seas we have are from north-west, but they do not last long.

664. Do you think that ocean-going vessels, approaching New Plymouth from the westward, would run for New Plymouth or for Cook Strait, in the event of a gale?—No ship would run down for a place like New Plymouth in a gale, especially without local knowledge.

665. Then, as a harbour of refuge, it would be limited to the coasting trade?—Yes.

666. Is the holding-ground within the limits of the harbour good?—It is very rocky, with the exception of a small piece near the landing-place. The anchorage is not good.

667 *Mr. Weston.*] You say it would be difficult in westerly weather for vessels to lie at full length there, on account of the "range"; how often do you suppose that would happen?—Perhaps not half a dozen times in the year.

668. Would a vessel, then, be compelled to pass the port?—No; she could manage it, by slacking off from the wharf.

669. So that in the heaviest weather vessels could remain under the lee of the breakwater?—Yes.

670. If the works were continued to the lighthouse, would the price be very much increased?—I do not think it would be affected much, either one way or the other.

671. In the event of this work not being carried beyond the first jetty, as shown by the dotted lines, what class of vessel could come with safety alongside it?—Only a very small vessel; a vessel like the "Hawea" could not do so, beyond the innermost jetty.

672. What class of vessels will be able to use this breakwater, that will be able to call at *Y Y*?—Vessels drawing about 13 feet.

673. Could the "Wakatipu" call there?—No; but she might at high water.

674. What is the draft of the "Wakatipu"?—Seventeen feet.

675. How much water under her bottom would she require?—About 5 feet at high water.

676. *Mr. Pitt.*] At low water could the "Wakatipu," when loaded, lie alongside the jetty at front of mole, *Y Y*?—No; I do not think it would be safe for her to do so.

677 *Mr. Weston.*] How many vessels could lie alongside this wharf, the "Hawea" being one of them?—That would be simply a matter of calculation, depending on length and draught.

678. *Mr. Fulton.*] Supposing there was heavy westerly weather, and this harbour was spoken of as a harbour of refuge, and a vessel was caught in a heavy westerly gale: would it be safe for a vessel to run into this port?—Yes; I think it would be quite safe, supposing that the breakwater was extended to *Y Y*.

679. Then, in your opinion, would there be enough room for a vessel, without local knowledge on the part of the captain, to swing round and haul out under the shelter of the jetty?—No; there would not be much room; she would require to anchor close under the breakwater.

680. *Mr. Montgomery.*] If a vessel ran in in a gale, and swung round, would she be safe at low water if she dropped her anchor?—Yes, for vessels drawing 15 feet it would be safe, under such circumstances; 60 fathoms of chain would be enough; 30 would not do.

681. Would you depend on the chance, of a vessel running in there and dropping her anchor in a gale of wind; would you depend on the anchor holding firm?—Yes.

682. *Mr. Barron.*] I think you would consider yourself safer at sea?—Yes.

683. It would be impossible for a vessel like the "Wakatipu," or any drawing more than 12½ feet, to be absolutely safe?—Yes; in heavy weather. A vessel under that draught would be safe in any weather. My remarks apply chiefly to sailing vessels; steamers of suitable draught could always get in and out.

Captain JOHN FAIRCHILD, examined.

684. *The Chairman.*] You are in command of the steamer "Stella"?—Yes; I have been twenty-one years on the New Zealand coast. I am pretty well acquainted with the site of the proposed works at New Plymouth.

685. If you will refer to the plan "M.D. 404," indicating the extent of the works which the New Plymouth Harbour Board are authorized to construct, you will see what proportion the limit of the work now authorized bears to the original design of Sir John Coode?—I do not think that unless Sir John Coode's work is carried out entire there will be much shelter.

686. When you speak of Sir John Coode's entire plan, do you mean to refer both to the eastern and western arms?—The western arm, as being carried out by the Harbour Board, is not so long as Sir John Coode's original proposal, but I think the whole will have to be done before it will be safe for a ship to lie under.

687. Would captains of vessels, approaching from the westward, be inclined to run for shelter to that harbour or to Blind Bay?—They could not possibly get into New Plymouth in stormy weather; no vessel could do so without danger of going ashore. Even if Sir John Coode's plans were carried out, ships running for refuge would go to Blind Bay.

688. Then, even as a harbour of refuge, it would be useful only for small vessels?—Yes.

689. You think the captain of a vessel not acquainted with the locality would not run for it?—I do not think that even one, who was acquainted with the harbour, would run for it in bad weather; I mean the captain of a sailing vessel. I think a vessel drawing about 11 or 12 feet could lie at the extremity in fine weather.

690. What draft of vessel would be able to moor alongside that breakwater?—About 11 feet, or, possibly, 12 feet.

691. Then you think 4 or 5 feet is the necessary margin between the ground and the vessel's bottom?—Yes.

692. What is the nature of the bottom?—Pretty hard; but you do not go far before you come to rock. As far as I know the rocks are covered. We have found some portions of rock sticking up above the mud. The points of the rocks could be easily smoothed off.

693. Do you consider the holding ground good?—Yes; but a vessel would not hold there to her anchor. The holding would be to the breakwater, by rings and bolts.

694. In the absence of any jetty at the end of the breakwater, would the "range" be likely to cause any damage to vessels moored to the breakwater?—There would have to be wood-work to rest against. The work would not afford that protection if made to *Y Y*, as it is proposed now, which would be given if Sir John Coode's plans were carried out. No vessel could lie there except in the very mildest weather.

695. *Mr. Montgomery.*] If it was to be allowed to be constructed as far as *Y Y*, what would be the

value of the harbour for landing cargo?—I think in ordinary weather small vessels and steamers could lie there, if the breakwater were run out to *F F*. They could land cargo with safety during five days out of the seven. I do not think it would be safe for a sailing-ship to go in there and be moored. Sailing-ships could, of course, go in in fine weather, and land their cargoes, but I doubt whether a ship of any size could go in in bad weather, in fact I am pretty sure it would require more water.

696. *Mr. Weston.*] What would be the effect if the breakwater were carried out another 400 feet from *F F*?—That would lessen the “range” by half, and it would actually make the harbour half as big again.

697. Would or would not vessels lie alongside the breakwater with as much ease if that were done?—Yes; with much greater ease. But I doubt if sailing vessels would be safe, if the breakwater were carried out to the lighthouse.

698. In a south-west wind, how far could a vessel lie distant from the breakwater, with safety?—It is the north-west winds we have to fear.

699. How often during the year, do you suppose, a steamer would be unable to approach the breakwater, if it were completed to *F F*?—I should think about three times a month.

700. *Mr. Moss.*] It is not a breakwater which is being put up there, but a wharf, which would be suitable for vessels in ordinary sea?—Yes; that would only apply to vessels that were prepared to leave at any moment.

701. Could a steam-tug lie there safely?—No; unless she lay in the Waitara she would not be safe in bad weather.

702. Could a tug-boat run into the Waitara when it would be too rough to lie under shelter of the breakwater?—Yes.

703. *Mr. Pitt.*] Would that breakwater be available for a vessel loading for London from New Plymouth?—No; unless there was a steamer lying alongside ready to tug her off.

704. Supposing the breakwater were extended to *F F*, what would be the benefit?—I think there would be some benefit.

705. Without this eastern mole?—Yes; I think coasting steamers would use it five or six days out of the seven.

706. *Mr. Barron.*] You are sure that steamers lying there would have to be prepared to go away at any moment?—Yes; but coasting steamers never lie at Taranaki except during the day, and with heavy north-west weather they could not lie at the breakwater; but, fortunately, the north-west winds do not last very long.

707. What shelter is there at Opunake? Has that port any advantage over New Plymouth, as a place for shipping?—It has not at present; but it could be improved by running out stone-work. I dare say in a hundred years' time it will be a great port. We could get better port accommodation at Opunake than New Plymouth for about one twentieth the cost.

708. *Mr. Weston.*] Can you give any information with regard to the Waitara Harbour? Could vessels the size of the “Hawea” be enabled to get there?—I do not think so; the sands shift to the extent of thousands of tons in one day. I do not think any money would make a satisfactory harbour at Waitara.

709. What vessels could get into Waitara?—Those drawing about 7 feet or 8 feet are about as much as can be depended upon.

710. Would vessels drawing 7 or 8 feet experience any delay in entering or getting away from that place?—No; except that which you would experience at ordinary bar harbours.

711. Can any of the Union Company's steamers get into Waitara Harbour?—None.

712. Could the Waitara be made available for the Union Company's steamers?—I do not think so; it would cost too much money.

712A. How does that effect the channel in the river—has the channel been dredged at all?—I believe it has been dredged in one place, but all the rest of the river is much deeper than the bar.

713. Then the river is likely to remain in the same condition as it is now—that is to say, it is not likely to become less useful?—It is not likely to become less useful unless there is less rain. The Manawatu, Otaki, and other rivers on the coast are becoming less useful in consequence of the want of flood-water from rains. But if the Waitara goes on for the next fifty years as it has been going on for the last twenty years, it will be of very little use.

714. Then the value of the Waitara River is by no means a matter of certainty?—It may not decrease in usefulness during the next fifty years at the rate which it has decreased during the past twenty years.

715. *Mr. Moss.*] There is another harbour on the West Coast called Kawhia; is that a good harbour?—That is the best on the West Coast, except Kaipara.

716. Is it a harbour that you think would make a good harbour of refuge?—Yes; in olden times it was always considered a harbour of refuge.

717. Why is it not so considered now?—Probably the Natives would frighten away anybody who went there. I may say that about once a year, during the last ten years, I have taken soundings at Kawhia. I sounded there about six months ago.

718. What is the depth at the entrance?—Fourteen feet at low water; but you could always depend upon 10 feet added to that at high water, at the least. I have never found it shift; it is a sandy harbour, but the sand has never shifted.

719. There is limestone country around it, I believe?—Yes. I know it is a really good harbour.

720. Could a vessel of any size enter the harbour?—A vessel drawing 16 feet or 17 feet could enter Kawhia Harbour in any weather, at high water.

THURSDAY, 4TH AUGUST, 1881.

Captain ROBERT JOHNSON, Nautical Adviser to the Marine Department, examined.

721. *The Chairman.*] What is your official position, Captain Johnson?—My present official position is Nautical Adviser to the Marine Department.

722. Are you well acquainted with the site of the proposed harbour works at New Plymouth?—I am pretty well acquainted with it, and the proposed plan.

723. You hold a certificate as master mariner?—Yes; a Board of Trade certificate.

724. How long have you been acquainted with the coast of New Zealand?—Since 1858. For the first three years, till 1861, I had command of a steamer principally trading on the coast; and since that I have been in the Government service, first as Admiralty Mail Agent, and then Warden of the several Marine Boards; and I have been in the Marine Department ever since. When this plan was approved of I was Secretary to the Department.

725. Do you think the works shown on the plan before you—M.D. 404—would in themselves suffice for the construction of a harbour of refuge at New Plymouth?—In the first place I do not think a harbour of refuge is wanted in this locality at all. If the whole of Sir John Coode's plan was not adopted, I do not think vessels would make use of it as a harbour of refuge, except in exceptional cases, and then only by small steamers.

726. If I understand you rightly, it would be necessary to construct the whole of the works indicated on Sir John Coode's original designs?—Yes; the present plan to *Y Y* will give very slight protection, and then only in fine weather. The wind that sets the heaviest sea into that bight is west-north-west, and that sea would prevent vessels lying alongside. There might be slight protection, but very little.

727. In your opinion, vessels of a certain class might find shelter behind that mole, but could not moor alongside in bad weather?—Yes; no warps could possibly hold the ship in bad weather; if a ship had a warp strong enough for heavy weather, it would tear out the ship's bits.

728. Then you regard the work, as a harbour of refuge, as one that is not required?—Yes.

729. Do you regard this as a work that would afford a harbour of refuge for vessels running on the coast?—Not this particular part of the design itself. It would be no great protection.

730. And, if completed in its entirety, what class of vessels would be likely to run for it?—Small steamers might occasionally use it as a harbour of refuge, but very seldom.

731. Would ocean-going sailing vessels be likely to run for a harbour of that character?—No, certainly not. An English ship would never make for that harbour, because Cape Egmont is only twenty-five miles off. A south-west wind draws into a north-west through the strait, and, if a vessel is bound through Cook Strait, of course she would go with a fair wind; and if she was bound for the westward, she would keep on the port tack, and clear the land altogether. A true north-west wind blows into the bight at New Plymouth, and sends in a heavy sea, and there would be no protection. A steamer that would take advantage of it would probably be a little steamer coming from the North, passing Taranaki, and meeting with a strong south-west wind. That is the only course she would be pursuing to take shelter there. In my opinion, the mole to *Y Y* without any further extension would afford but little shelter, even for small steamers, from a north-west wind, on account of the range of sea which would be running in.

732. Looking at the depth of water inside that breakwater, what class of vessels could safely make use of it in ordinary weather?—About the size of the "Hawea," a vessel drawing about 14 feet in fine weather; but in rough weather there would be too little water—too little margin under the bottom—for safety.

733. *Mr. Pitt.*] What is the nearest point to the shore, where a vessel the size of the "Hawea" could lie with safety, from *Y Y*?—In fine weather, within 1,250 feet of the starting-point of the breakwater, and, in heavier weather, about 1,500 feet; but it would depend somewhat upon how heavily she is laden.

734. Are you well acquainted with the nature of the bottom?—I have never anchored near the site of the works; but where I have anchored—off the town—the ground is rocky and covered with sand.

735. Is the bottom entirely covered with sand, or are there lumps of rock protruding?—There are rocky places off the landing-place, off New Plymouth.

736. What is the meaning of the letter "R" marked on the plan?—The gentleman who made this plan is here, if you wish to ask him about it. He is Engineer to the Wellington Harbour Board. The letter "R" stands for "rock" on marine charts.

737. Then, supposing this work is not continued beyond the site of the nearest pier to the shore, it would be practically useless?—Except in fine weather, for small steamers.

738. Could the "Hawea" be safely taken there?—At the top of high water, in fine weather; she could not lie there at low tide.

739. *The Chairman.*] Are you acquainted with the coast at Opunake?—I went there in the Hinemoa, and got what information I could from the local people, and I think I have a pretty good knowledge of it now.

740. Do you think a harbour could be more readily and cheaply constructed there than at New Plymouth?—I am not quite sure. The information I got is very indefinite, as to the direction and size of the reef, which partly overlaps the entrance. The principal boatman at Opunake told me the Hinemoa could get over the reef, and that the reef did not overlap the harbour entrance; but captains of ships say it does, and that there is very little water on it. I have since recommended the Government to make a survey of the place, and I understand they are going to do so. I am not in a position to say very much about it.

741. Do you know anyone in the Port of Wellington who has more precise information?—No; it would only be a matter of opinion at the best, as I believe no one has ever sounded the reef with any degree of accuracy.

Mr. J. BLACKETT, Marine Engineer for the Colony, examined.

742. *The Chairman.*] What is your Christian name, Mr. Blackett?—John.

743. What position do you hold?—I am Marine Engineer for the colony.

744. You are well acquainted with the site of the proposed harbour works at Taranaki?—Yes.

745. You reported as to the feasibility of constructing a harbour on that spot in 1875?—Yes, along with Mr. Carruthers.

746. And you recommended the construction of a breakwater with rubble-stone?—Yes.

747. Have you any reason to suppose that proper rubble-stone is not obtainable now?—I have no positive information about it.

748. Do you know what steps were taken to prove whether rubble in sufficient quantities could be obtained or not?—I only know by reading the report made by Mr. Rees, the then engineer to the New Plymouth Harbour Board, that he made a drive into the Paretutu, the proposed quarry for the stone, and that the making of that drive proved to him that the stone is not suitable.

749. After the drive was constructed, do you know whether a blast was put into the quarry?—No; I do not remember that that was done.

750. At the time you reported and recommended the use of this stone, you had, I presume, made some inspection of the quarry?—Yes; we inspected the hill and the large masses of stone lying at its base, and apparently similar stone lying on the beach in the vicinity, which led us to infer that the mass of the hill would be suitable for the breakwater.

751. And beyond Mr. Rees's report you have no information to warrant you in any change of opinion?—Not beyond that.

752. Do you concur in the accuracy of Sir John Coode's estimates for the cost of construction of the first design?—I never went into that at all.

753. You never considered it?—No.

754. That rested with Mr. Carruthers?—No; it rested with Sir John Coode. His prices were based upon information he got in the colony.

755. And you were never called upon, either yourself or Mr. Carruthers, to verify?—No.

756. Is the work now being carried on in Taranaki subject to Government inspection of any kind?—Not that I am aware of. If it was, I think I should know.

757. You are aware, no doubt, that Sir John Coode has prepared amended designs for the construction of a portion of the work in concrete?—The amended design was prepared on the representation of the engineer (Mr. Rees) that the rubble was unsuitable.

758. Have you been called upon to verify Sir John Coode's estimates for the second design?—I cannot say that I have.

759. Have you done so?—No.

760. You have not in any way checked those estimates?—I cannot say that I have.

761. Then, in submitting Sir John Coode's amended design for the approval of the Governor in Council last year, were you not called upon to support the application by any estimates?—I cannot say exactly how it was done, but I think it was in general terms. My reports I generally confine to the kind of work—as to its being such as can be carried out, irrespective of cost; and, at the time these new plans were submitted to the Governor in Council, they were accompanied, as far as I can remember, by elaborate reports from the engineer (Mr. Rees), to show that Sir John Coode's estimates of the cost of concrete were based upon wrong data—that is, as to the cost of cement, price of labour, and materials—and that, therefore, although Sir John Coode thought the concrete work would be more expensive, he (Mr. Rees), taking the lower price of materials and labour into account, endeavoured to show that the work could be carried out at very much less cost than Sir John Coode estimated.

762. To whom did Mr. Rees make these representations?—They were made to the Harbour Board, and then forwarded to the Government, I suppose: that would be the routine.

763. They forwarded their application to the Government, based on Mr. Rees's estimates?—Yes; Mr. Rees's estimates would accompany it.

764. And you, as Marine Engineer of the colony, were not called upon to say whether you concurred with Mr. Rees's or Sir John Coode's estimates?—I do not remember that I was; I should have to refer to the papers.

765. You are aware that the New Plymouth Harbour Board are at present limited, in their authority to borrow, to £200,000?—I understand that is the extent to which they are supposed to go—the extent of their authorized powers.

766. Are you aware that they only realized £185,000 as the net proceeds of the loan?—No; I am not aware.

767. Well, having realized £185,000 as the net proceeds of the loan—and having expended £72,514 before commencing the actual construction of the breakwater, do you think they are in a position to complete the work to *Y Y*, according to the amended design of Sir John Coode, with the balance of the funds at their disposal—£113,000?—I should not like to give an answer to that question; I have not information enough to go upon.

768. Have you not seen the details of the design?—Yes. Having £185,000 to spend, necessarily whatever they did would be included in that, and a sum must be spent in plant and opening the quarry; therefore I cannot say whether the balance would finish it or not.

769. Will you consider the plans and the amount of concrete required for the construction of the breakwater, and state your opinion?—That would only be in the shape of an estimate from me—only an opinion—I have nothing whatever to guide me as to the cost. The engineer, or some one more connected with the work and what has been done, would be better able to give that information.

770. The breakwater to *Y Y* includes about 98,000 cubic yards of concrete. Do you think, with your knowledge of the character of the work, and as a marine engineer, that they would be able to put down 98,000 yards of concrete at a cost of £113,000, exclusive of preliminary expenses?—That is a question I should not like to answer off-hand.

771. Will you furnish an answer to that question?—I can furnish an answer and give my opinion after obtaining more information.

772. Are you aware what similar works of the kind have cost at Timaru and Oamaru per cubic yard?—I can only speak from memory. I do not know what it cost at Timaru at all. At Oamaru it used to cost 40s. at one time: so I was told by the engineer, Mr. McGregor.

773. I find, in your evidence before the Committee of the Legislative Council, that you speak of the estimated cost of the portion of the breakwater now proposed as being £160,000. That, I presume, referred to the rubble breakwater?—The questions asked at last year's Committee were of such an

extraordinary character that I cannot charge my memory. They never seemed to get at the true bearings of the thing at all; so that I should not like to answer what it referred to.

774. Will you state when the plans, upon which the New Plymouth Harbour Board are now proceeding, were submitted for the approval of the Governor in Council?—On the 28th September, 1880.

775. Then, if the New Plymouth Harbour Board, prior to that date, expended large sums of money in the purchase of plant for the execution of this work, would that be in excess of their authority under the Harbours Act?—I should imagine so.

776. Clause 148 of the Harbours Act declares that no land shall be reclaimed from the sea or in a harbour without the authority of the Governor in Council. Are you aware that the New Plymouth Harbour Board have reclaimed certain lands?—Only at the root of the breakwater, I think.

777. Should they have reclaimed any land from the sea except in immediate connection with the breakwater, would that be outside their authority?—I should imagine so.

778. And they have not, within your knowledge, made any application for such authority?—It would have come before me if they had.

779. Are you aware of the amount of Sir John Coode's estimate for the breakwater on the revised plans?—Looking at Sir John Coode's report, I see it is £285,800.

780. And are you aware that the Harbour Board were restricted in their borrowing powers to £200,000?—Yes, I understand so—that is, for the present.

781. Then who is responsible for recommending works for the approval of the Governor, the estimated cost of which is so much in excess of the money authorized to be borrowed for construction?—Well, I scarcely know how to answer that. Such plans, as a rule, pass through my office, and through me to the Minister, with a recommendation; but it refers more to the kind of work than to the estimates. I do not make myself responsible for recommending that the work will cost any more or less than the sum named.

782. Then you do not recognize any official responsibility in that particular?—I do not.

783. When the plan which was approved by the Governor in Council on the 28th September, 1880, was forwarded to your office by the New Plymouth Harbour Board, did they forward any letter or application at the same time?—As far as I can remember, the plans were first sent down to me with a letter from Mr. Rees; but without any official letter from the Harbour Board. That is as far as I can remember.

784. And can you remember the purport of Mr. Rees's letter? Did he make application, on behalf of the Board, for the approval of the Governor?—I cannot remember the terms of the letter of Mr. Rees; but the Harbour Board were advised that this letter was out of order, and that they should forward an official letter from the Board, asking for approval.

785. *Mr. Pitt.*] You are aware that the Board dispensed with Mr. Rees's services as engineer?—Yes.

786. Do you know the foreman of works now in charge of the breakwater?—No.

787. Have you ever seen him?—No.

788. At all events, probably you are aware he is not a professional man—that he merely came out as overseer?—I believe Mr. Rees brought him out to the colony to act as clerk of works or foreman.

789. In your opinion, is it prudent to have a work like that carried on under such a man, without a competent engineer in charge of the works?—I should not recommend such a plan being pursued.

790. *Mr. Fulton.*] Have you had any means of forming an opinion as to Mr. Rees's capacity as an engineer, from work that he has executed there?—Of course I can tell you my own experience of Mr. Rees. He was in the Public Works Department for several years on railways, roads, and other works; but beyond that I have no knowledge of his capabilities.

791. Have you had any means of forming an estimate as to the correctness of his calculations and estimates?—No; I cannot say that I have. I am not aware of Mr. Rees's experience or history, beyond what I have had to do with him in the Public Works Department.

FRIDAY, 5TH AUGUST, 1881.

Mr. JAMES McKERROW examined.

792. *The Chairman.*] You are Surveyor-General of the colony?—Yes.

793. And you are acquainted with the Provincial District of Taranaki, and the character and quality of the land there?—Yes.

794. Can you inform the Committee how much open land is available for sale there at the present time?—There are only about 10,000 acres of open land; but, of course, there is a vast quantity of forest land. The open land is known as the Parihaka Block.

795. What is its value?—From £2 to £3 per acre.

796. Then, when that has been disposed of, practically all the open land available for settlement will have been sold?—Yes.

797. The rest of the land being bush land, do you anticipate that it will be sold by the Crown freely?—Yes; I anticipate that about 100,000 acres of bush land behind the Waimate Plains will be sold. This district is now being surveyed and opened by road-lines, and it is likely to be sold within the next two years, at an average price of £2 per acre. One-third of this area, however, will be offered for sale on the deferred-payment system, the proceeds being receivable over a period of ten years. The other forest lands in the Taranaki Provincial District are generally in very rugged country, the settlement of which is proceeding at a comparatively slow rate, and they cannot be expected to realize more than about £1 per acre.

798. Can you state what extent there is of what you term "rugged bush land"?—Yes: including the confiscated territory and Crown lands proper, there will be about 560,000 acres of bush land.

799. Is the land that has already been alienated by the Crown in Taranaki chiefly open land or bush land?—It is chiefly bush land.

800. And what price did it realize?—From £1 to £1 10s. per acre.

801. Did much of it realize £1 10s. per acre?—Yes; a considerable area along the Mountain Road realized close on £2.

802. That is adjacent to the line of railway?—Yes. I may say that the Waimate Plains realized on an average £6 per acre.

803. Can you say how much they realized in the aggregate?—The cash received for cash sales and deposits on deferred-payment sales has been in round figures £90,000, and there is a sum of £40,000 due by instalments extending over ten years. That is on account of the deferred payments. In the other portions of the Taranaki Provincial District there is a sum of £64,000 due in a similar manner under the deferred-payment system.

804. Can you say whether any portion of this sum of £104,000 due on deferred payments will be payable to the New Plymouth Harbour Board?—Yes, 25 per cent. of the land revenue must go to the credit of the Board.

805. And if 33½ per cent. of the proceeds of the land sold under the deferred-payment system goes to local authorities as well, what amount will be receivable by the Government?—The balance of 41½ per cent., after allowing for the cost of opening road-lines.

806. Will the 41½ per cent. to be received by the Government be sufficient to cover the expenditure incurred by the Government in connection with the surveys and the opening-up of road-lines?—It will pay the cost of the surveys and the cost of opening up the road-lines, and the administration of the department. I may remark that this opening of bush land by preliminary works is absolutely essential to the sale of lands of this character for settlement. Bush lands without road-lines are, at the price fixed by law, as unsaleable as a piece of the Pacific Ocean; but, with road-lines cut so that the settlers can see the land, there is no difficulty in selling it, as the settlers follow on along the road-lines.

807. What area of bush land do you think it would be practicable to sell annually in the colony if road-lines were cut through it? Do you think there would be any great demand?—It depends very much on the district it is in. I have been speaking heretofore of the Taranaki District, but I may tell you that hitherto very little settlement has taken place on the west coast of the Middle Island, whether road-lines were cut or not. That particular region is so deluged with rain that settlers do not take to it at all readily.

808. Has enough land been taken up on the west coast of the Middle Island to pay for the construction of the road-lines?—Not yet; but the most expensive tracks are the first sections of the ultimate lines, so it would be hardly fair at this stage to give an opinion regarding them.

809. Seeing that 25 per cent. of the £104,000 comes from settlers who have bought land on the deferred payment, and is given to the New Plymouth Harbour Board, and 33½ per cent. to the local authorities, and that the balance only suffices to pay the cost entailed upon the colony, there can be no profit whatever to the Government?—None whatever, except the indirect profit arising from the settlement and cultivation of the land.

810. *Mr. Murray.*] Do you think the harbour works at New Plymouth are enhancing the value of the lands in the district which have been sold by the Government to any appreciable extent?—Not in the slightest degree, in my opinion.

811. Then, in fact, the State is not being recouped any portion of this 25 per cent., which is paid to the Taranaki Harbour Board, by the increased prices that the lands there may realize?—No. Indeed, it is within my knowledge that it has had the opposite effect, of deterring people from taking up land in Taranaki. People who would have made excellent settlers went to the place with money in their pockets; but they abandoned all intention of taking up land, immediately they discovered that they might have to pay this rate of 1s. in the pound for the harbour works. I may say, however, that, if the harbour works are a success, the value of property in Taranaki will be greatly increased.

812. *Mr. Weston.*] Can you give the Committee an idea as to what the character of this bush land is?—The character of the bush land behind the Waimate Plains is this: the surface of the land is a beautiful slope, practically level. The soil is nice free loam, with a good deal of vegetable matter near the surface. All cleared lands have taken grass freely and readily. The land is very well watered, and I do not know of any other portion of the colony which is better adapted for the location of small settlers.

813. Is the land heavily timbered?—No; it generally consists of a few large rata trees on each acre; but the rest of the land is covered with light soft woods and undergrowth of scrub, which is very easily cleared away. It can be felled for about 35s. or 40s. an acre.

814. And for that reason, you think, the land is more likely to be sold?—Yes.

815. There is a block of bush land marked on the plan which sold very well?—Yes; you refer to a block of 9,000 acres, which fetched from £1 10s. to £3 17s. per acre.

816. Where is that block?—It is west of the Waingongoro River, behind the 25,000 acres Native Reserve, and opposite the Eltham Railway-station.

817. Is there much building timber on the bush land behind the Waimate Plains?—No.

818. In your opinion, would there be enough building-timber to meet the requirements of the settlers for building purposes?—Yes; but I may remark that the settlers there have hitherto found it cheaper to get their timber from the Manawatu mills.

819. *The Chairman.*] When the railway is extended to Patea, will the trade of the Waimate Plains gravitate towards Patea or Waitara?—I think it will be divided between the two places, with a tendency towards Patea. A great deal will, of course, depend on how the rates of freight from Wellington and Auckland are arranged.

820. How far are the bulk of the settlers on the Waimate Plains distant from Opunake on the one side, and the Normanby Railway-station on the other?—They are much nearer Normanby than Opunake. Taking Manaia Township as the centre of the Waimate Plains, it is only distant by good roads nine miles from Normanby, and the same from Hawera; while from Opunake it is distant twenty miles, also with a good road.

821. Are you acquainted with Opunake?—Yes, I have been there once or twice.

822. And, from your observations on the spot, do you think that harbour could be easily improved?—Yes, I think that if there were an expenditure of £5,000, or £10,000, on it, it could be very greatly improved, and sheltered from the westerly winds.

823. Are there any natural reefs that would facilitate the improvement of the harbour?—Yes; and there are plenty of blocks of stone handy for any stonework that might be required. The stone is very hard, and boulders of large dimensions are lying on the beach. This stone is well adapted for the construction of a breakwater.

824. Should the New Plymouth harbour works prove a success, would that port draw the trade from Patea and Waitara?—I do not think it would affect the trade of those places very materially. I look upon the New Plymouth harbour scheme as one that is more likely to make New Plymouth a harbour of refuge for ocean-going ships, but the trade of the district would be carried on principally with the two ports of Manukau and Wellington, by means of coastal steamers trading to Patea and Waitara.

825. And, with railway communication through the districts leading to those ports, do you not think the commerce of the place would be fairly met?—Yes, it would be very well met.

826. What, in your opinion, is the nature of the exports from New Plymouth?—Fat stock, dairy produce, and wool.

827. Do you think the district is better adapted for grazing purposes than for the growth of grain?—Yes, on account of the moisture of the district. There is a heavy rainfall there, and I think that as far as wheat, for instance, is concerned, there would always be a risk in harvesting it. Still there would always be a considerable quantity of grain grown each year. In fact, there has already been a mill established at Hawera.

828. But you think that, from the nature of the soil and climate, it would, in the main, be more profitable to raise stock than to grow grain?—Yes, I think so. But as the ground, after a time, will get very foul, from its richness as grazing ground, cultivation will become necessary to sweeten it. I may say that the Natives grow maize successfully there; and all root crops grow luxuriantly.

829. *Mr. Barron.*] What is the extent of lands still in the hands of the Natives in the Provincial District of Taranaki?—1,250,000 acres.

830. And is that land of equal fertility to that which has been acquired by the Government?—Parts of it are; but, area for area, the Native land is as good as that which has been acquired by the Crown.

Mr. E. C. JONES examined.

831. *The Chairman.*] You are Engineer to the Wellington Harbour Board?—I am.

832. Will you look at the map on the table, which is a plan of the New Plymouth harbour works. Did you make the survey for that work and prepare that plan?—I made the survey; but the map is a copy of the plan I drew.

833. Did you take the soundings indicated on the site of the harbour works?—Yes.

834. The letter *R* occurs on this map in certain places. Will you state what that letter is intended to indicate?—Yes; it indicates a rocky bottom.

835. What is the general character of the bottom within the district included in the proposed harbour works?—It is mostly all rock, covered with sand and shell. It is not covered in all parts. It is an uneven bottom, and the rock protrudes in some places. The sea is so heavy there at times that it shifts the sand about, and where you would find rock to-day you would find none to-morrow. I took a section along the line of the breakwater.

836. What depth of sand did that section indicate?—I do not remember now, as it was in 1877 that I made the survey.

837. Have you had much experience in the construction of works similar to the proposed works at Taranaki?—I have had general experience as an engineer for over twenty years.

838. What, in your opinion, would be the approximate cost of the concrete work for a mole of that character?—I am not prepared to say without some consideration.

839. Could you furnish the Committee with your opinion on the subject in the course of a few days?—Yes, I will do so.

[*Document put in.*]

SIR,—

Westminster Chambers, Wellington, 8th August, 1881.

In compliance with your request, I have the honor to state that, basing my calculations upon information herein-after referred to, the cost of concrete for the New Plymouth breakwater, as designed by Sir J. Coode, will be as follows:—(1.) The whole of the block-work will cost £2 12s. 6d. per yard. (2.) The parapet wall, and other parts shown in the plans to be constructed *in situ*, will cost £2 10s. per yard.

The following shows details of this:—

	Concrete in blocks.			Concrete <i>in situ</i> .		
	£	s.	d.	£	s.	d.
Cement	1	6	3	1	6	3
Quarrying, breaking, loading and carrying stone, and getting sand	0	9	0	0	9	0
Mixing and making blocks	0	2	6			
Mixing				0	2	0
Setting	0	2	0	0	1	0
Railroad	0	1	0	0	0	6
	2	0	9	1	18	9
Contingencies (one-eighth)...	0	5	0	0	4	10
Profit and management	0	6	9	0	6	5
	£2	12	6	£2	10	0

My calculation is based upon the information supplied to me that the Harbour Board at New Plymouth have imported Portland cement at a cost of £5 1s. per ton, and that they have formed a railway from the works to the quarry, and that they have all the necessary plant for such works.

I have, &c.,
EDGAR JONES,
Engineer.

To the Chairman, New Plymouth Harbour Works Committee.

TUESDAY, 9TH AUGUST, 1881.

Mr. JOHN SPERREY, Property-Tax Commissioner, examined.

840. *The Chairman.*] Can you furnish this Committee with particulars as to the rateable value of the property within the New Plymouth Harbour Board rating district?—I will hand in an estimate showing the capital value of the land, as assessed under "The Property Assessment Act, 1879," included in the area defined in the second schedule of "The New Plymouth Harbour Board Ordinance 1875 Amendment Act, 1877." This shows that the capital value is £1,046,276, and the annual value, £70,279.

[Document put in.]

Property-Tax Department, Wellington, New Zealand, 9th August, 1881.

CAPITAL value and annual value of land, as assessed under "The Property Assessment Act, 1879," included in the area defined in the second schedule of "The New Plymouth Harbour Board Ordinance 1875 Amendment Act, 1877" :—

Capital value	...	...	...	£1,046,276	Annual value	...	...	...	£70,279
									JOHN SPERREY.

APPENDIX

Sir JOHN COODE'S REPORT on the NEW PLYMOUTH HARBOUR.

SIR,—

5, Westminster Chambers, London, S.W., 17th March, 1880.

Adverting to previous correspondence, I have now the honor to inform you that, after receiving from Mr. Rees particulars of the relative proportions of stone of different sizes procurable from, and in the vicinity of, Paretutu, which particulars were supplemented by the Board's telegram of the 6th December, it became evident that the stone available in the locality was not suitable for a rubble-mound section, as had appeared to be so probable. The information supplied by Mr. Rees was to the effect that the trials had proved that seven-tenths of the stones would be of less size than 20 cwt., two-tenths from 20 cwt. to 30 cwt., and one-tenth over 30 cwt. Under these circumstances there was no other course open than that of altering the mode of construction, by substituting a concrete work for one of rubble stone (*à pierres perdues*), a course which I felt should only be adopted as a matter of necessity arising from the proved necessity of stone of suitable sizes, knowing, as I did, that such a change must inevitably lead to considerable expenditure for a given length of work.

I may remark that the result has fully demonstrated the propriety of making the preliminary investigation recommended in my report of the 28th February, 1879, with a view to determine the quantity and quality of the stone that would be available.

Acting upon the instructions contained in your letter of the 3rd October ultimo, and after due consideration of the whole matter, I have prepared such designs as I have considered to be necessary to meet the requirements of the case; that is to say, that whilst the works I have now to recommend are of sufficient strength to resist the force of the seas to which a breakwater in such an exposed situation must, of necessity, be occasionally subjected, they possess a proper, but not more than a proper, margin of safety to resist exceptional gales. I have, at the same time, so arranged the form and details of the structure that for the whole of that portion of its length, which is in more than nine feet at low-water of spring-tides, the profile on the inner or harbour face will serve as a quay, adapted for the berthing of vessels, and for discharging and taking in cargoes, or landing and embarking passengers when lying alongside, protection being afforded, so far as practicable, by the sheltering parapet on the seaward face. A line of railway would be laid throughout the whole length of the pier, and along the berthing portion a second line would be provided. These would, I apprehend, be connected with the general railway system of the colony. The position and direction of the breakwater pier, as now recommended, are precisely the same as proposed adoption in my report of the 28th February, 1879.

A section formed with concrete blocks set with sloping bond is not, in my opinion, adapted to meet the requirements at New Plymouth. This system has its advantages in some positions—in fact, I am at present carrying out an extensive breakwater of this character in one of the Crown colonies; but it is not, in my view, adapted for a work which necessitates the provision of a high sheltering parapet, which latter would inevitably be seriously cracked and dislocated were it to be erected on a base specially subject to and adapted for settlement, as in the case of a structure arranged with sloping blocks. I therefore propose (as will be seen from the drawing), in such portion of the pier as would be formed with a vertical face, and adapted for berthing, to employ massive concrete blocks, placed as "headers" throughout, having horizontal beds with both longitudinal and transverse bond.

The mode of construction I have to recommend for adoption is fully set out on the seven sheets of drawings, and described in the specifications sent herewith. The extent of the work recommended for execution is coloured red in drawing No. 1; the letters *Y Y* on this sheet correspond in position with similar letters on the plan which accompanied my report of the 28th February, 1879.

From the starting-point out to about low the "root" and harbour walls would consist of concrete deposited in mass, a sufficient quantity of Portland cement for which can, I understand from Mr. Rees, be obtained in the colony. These walls might be started on the return of the Resident Engineer in anticipation of the arrival of the special plant. During the execution of this part of the pier, and the formation of the work-yard, shops, and sheds, the special plant, "designs for which have been matured," might be proceeded with, so that, upon the arrival in the colony of the machinery, the pier proper, seaward of the root, might be forthwith commenced, and carried on in accordance with the drawings and specifications.

It will be seen that the section next beyond the root consists of a substructure of bags of concrete, which would be deposited in suitably-contrived boxes of the character shown in Drawing No. 7, and thus brought up to low-water mark, and then levelled off to receive the superstructure, formed of massive blocks of Portland cement concrete.

The adoption of bags of concrete for the under-water portion of the pier will afford considerable advantages over the employment of blocks, as they would readily conform to the shape of the bottom upon being placed in position from the top, with but little aid from divers—a point of considerable importance near the shore, where, on most occasions, there would be a belt of surf, which would considerably interfere with diving operations. From the termination of the mode of construction last alluded to, the pier would be formed entirely of concrete blocks, except the foundation layer, which would consist of Portland cement concrete, covered up to a sufficient extent only to form a level bed to receive the foundation blocks. Simultaneously with the construction of the root, the laying out of the work-yard should be proceeded with in the manner shown in Drawings Nos. 1 and 5, and described in the specifications.

It will be observed that the position of this yard has been determined so as to remove it as far as practicable from the influence of sand-drift. Immediately to the south-west of the southern portion of the yard, where in all probability some bare sand will be found to exist, I would recommend that this surface should be covered with quarry *débris* as the excavations are carried on; the planting of the remainder of the sand being proceeded with as early as practicable thereafter. The covering of the base patches with quarry *débris* will prevent the passage of drift sands over that portion of the point which lies to the south-west of the work-yard. On the general drawing, No. 1, I have shown by dotted lines an extension of the breakwater to the same point as indicated in the plan which accompanied my report of the 28th February, 1879. I have also laid down the position of three jetties, which correspond with regard to sights, length, and with width the jetties shown on the report-plans last referred to.

It must be borne in mind, however, that the plan now proposed will provide a fendered quay of 1,500 feet in length

along the harbour-face of the pier, from the inner boat-steps to a seaward termination. Jetty accommodation for berthage purposes is not, therefore, required in this design as in that which accompanied my report of February, 1879, although a solid jetty, formed so as to shelter the inner face of the pier, would be of great service during the north-east winds, and would also serve to cut off "range," which would otherwise be experienced along the quay when the seas come home directly on to the works. In the absence of a jetty of this character, some temporary inconvenience from wave "scend" and undulation will occasionally be experienced; but, seeing that a suitable work, if placed in the position of the outermost jetty, or somewhat more to the north-east and nearer the end of the pier, would require to possess considerable strength in order to adapt it for resisting the heavy seas to which it would be exposed, the provision of such a jetty would largely increase the expenditure; and I have, therefore, considered that the question of jetty-accommodation should be determined hereafter, upon completion of the pier to Y Y, when the demands of the trade may be sufficient to justify the further outlay which would be required. In the meantime any temporary inconvenience must be borne with.

The design for the pier has been arranged so that the permanent railway and the parapet can be completed, step by step, as the pier advances. It would thus be available for trade-purposes as it proceeds. The steam setting-machine, for laying the block and bags, will be adapted for travelling from the shore to the outer end, after the parapet has been formed, and over special rails laid on the pier for its accommodation. I look upon it as a matter of great importance, in a work of this magnitude, that provision be made for its utilization as it advances seaward. In order, however, that this may be accomplished, the parapet and road-surface must follow in the block-setting. The course I would propose to adopt with regard to the supply of Portland cement is that which is observed by the Crown Agents for the Colonies in similar cases, viz., to issue invitations towards the end of each year, provision being made for the testing of each cargo according to the terms and conditions of the specifications by a competent inspector before its shipment. I am confident that, by the observance of this mode of procedure, not only will the cement be delivered at a less cost, but the quality will be beyond question, a sufficient quantity will be assured at all times, and disputes with the contractor cannot arise, having regard to the provisions of the specifications. The main items of special plant required in this case are one large overhanging setting-machine, or "Hercules," to be employed for placing in position the heavy blocks from the "scar" end of the works, and constructed to meet the several conditions of this case as regards plumb, radiation, and lift; two travelling concrete-mixing-machines adapted for the block-yard, as designed; and a large traveller, or "Goliath," suited to the weight of the blocks and the span of the yard, as now determined.

The course which I unhesitatingly recommend the Board to follow for obtaining these machines, as being decidedly the best, is that competitive tenders be invited from not less than three of the firms of largest experience and highest reputations as makers of this kind of plant, the tenders being based upon drawings and specifications prepared by me for the purpose, and the lowest offer accepted. In this way the best obtainable guarantee would be secured for the supply of the most effective appliances for carrying out the work: and I need not here enlarge upon the great importance of employing only such appliances, knowing as I do, from extensive experience, how greatly economical and expeditious execution of works of this class depends upon the use of machines especially adapted to serve the object in view. The tenders for the plant should be sent by the contractors to the Agent-General for the colony if arrangements can be made, and payment might be effected through him, or by a financial agent of the Board, as may be preferred.

The course which I have here indicated is that which is invariably adopted for harbour works in the Crown colonies, and in every case experience has fully confirmed the wisdom of this course.

I have taken it for granted that, as Mr. Rees himself suggested to me, the Board will not incur the expenditure requisite for procuring the special plant until the modified designs have been submitted to and approved by the Governor in Council. In order, therefore, to save time while this is being done, I have arranged (Mr. Rees concurring in the view that this is the best course under the circumstances) that the drawings for the special plant shall in the meantime be advanced to completion, and specifications prepared ready for inviting tenders as hereinbefore indicated, immediately that your Board may write or telegraph if they decide to act upon the recommendations hereinbefore named.

I may mention that the leading features of these machines have been necessarily considered and settled in their earlier stages simultaneously with the drawings of the works to be executed by them.

Estimate.—I estimate the cost of the breakwater pier and root, if executed to the extent coloured red in Drawing No. 1, which corresponds with the length out to Y Y referred to in my report of February, 1879, at £285,500. If the expenditure is confined to £200,000, then the pier can for this amount be carried only to a point 1,420 feet from low-water mark of spring-tides, or 568 feet short of Y Y. The above amounts include the cost of all plant, and provide a sufficient allowance for all contingencies, sea-risk, and supervision; they are, however, exclusive of the outlay already incurred in the colony on works executed to this date, and do not cover the cost of the excavation necessary for the formation of the work-yard, as shown on Drawing No. 5, sufficient particulars in the way of levels not being available here to enable the quantities to be ascertained; neither is the preparation of the surface of the work-yard included, nor the erection of the sheds, workshops, nor the railways in the yard; the permanent line on the pier and root have, however, been provided for in the amounts named.

I have, &c.,

JOHN COODE.

The Chairman, New Plymouth Harbour Board.

Sir JOHN COODE to the CHAIRMAN of the HARBOUR BOARD, New Plymouth.

SIR,—

5, Westminster Chambers, London, S.W., 19th March, 1880.

In view of the contingency of a possible delay in the arrival of the P and O steamer which is leaving Southampton to-day, I now write by Orient line to inform you that I have sent by the former vessel, as a parcel, a case addressed to you containing the modified design for harbour works at New Plymouth, which I have prepared in accordance with your letter of the 3rd October ultimo. By the same steamer I purpose sending to you, through the post office (*via* Suez), my report on the whole question as it at present stands, together with a specification and estimate of cost of the works now recommended.

I must here ask your indulgence whilst I express my regret that Mr. Rees's report to the Board of the 28th August last should have been withheld from my knowledge for some time subsequent to his arrival in England. At the first interview with him on this business on the 8th December, I requested him to inform me "step by step of the phases which the matter had assumed from the time of the receipt of my report in the colony up to the date of his leaving," but he did not then make the slightest allusion to the fact of such a report having been made, nor of his having formally submitted to the Board an estimate of the cost of a work in concrete as compared with a rubble-mole, nor did he do so in a written statement sent me on the following day, in compliance with the above request, nor at a subsequent interview on the 16th December; and it was only on the following day (17th December) that I, quite accidentally, became aware of the existence of such a report, and of its having appeared in a colonial paper. I then wrote Mr. Rees (18th December), and received a reply from him, dated the 19th (Nos. 1, 2, and 3).

The report in question entirely ignores the recommendations contained in mine of the 28th February, 1879, to the effect that the adoption of the rubble-mound section was contingent upon the existence of stone in sufficient quantity and of proper quality being clearly established, or at least approximately ascertained. To this no allusion is made by Mr. Rees in his report, nor does he suggest a reference of the matter to me, as I consider he should have done, in view of the results of the investigations which I had recommended as to the character of the rock. Your Board, however, has evidently viewed the matter in a different light, and I recognize and fully appreciate the action taken thereon. The reticence imposed upon Mr. Rees with regard to his report of the 28th August ultimo, whilst reasonable and judicious under the circumstances so long as he remained in the colony, might and, as I venture to think, should have been removed immediately on his arrival in this country, and without his having to await here a written permission from the Board before even mentioning the matter to me.

It is very important that I should put the Board in possession of the state of the case in respect of the expenditure to be incurred in executing the work in concrete, and this is the more desirable seeing that the amount stated by Mr. Rees in his report of the 28th August ultimo is quite inadequate for the purpose: first, because, as I have informed him, the section from which his quantities were calculated is deficient in respect of stability; and, secondly, because the rate put down by

him as the cost of concrete does not contemplate the use of a sufficient proportion of cement to obtain blocks of the requisite strength for a structure of the kind required in this particular case; nor does he make due allowance for all the absolutely unavoidable contingencies attendant upon the carrying out of such a work, and for which provision must be made in framing a reliable estimate for this, as for all marine works of the class.

I may here mention, briefly, what is stated more at length in my report, that the preliminary quarry operations, as described by Mr. Rees—supplemented by a telegram from your Board—having shown that a sufficient quantity of suitable stone for the formation of the proposed breakwater as a rubble-mole, cannot be obtained, it became necessary to modify the first design, and substitute a structure of concrete masonry for the mound (*à pierres perdues*) and it is to this structure that the drawings, specification, and estimate above referred to will apply.

On the 5th February I asked Mr. Rees to furnish me with a statement of the plant which he had up to that time ordered (No. 4), and received this answer from him on the following day (No. 5). Having thus been made acquainted with the particulars of the plant and stores ordered by Mr. Rees, it was arranged between us that no further action should be taken in the way of ordering plant until the amended design had been approved by the Colonial Government and the Commissioners; but, at interviews which I had with Mr. Rees on the 4th and 5th February, when I showed him my sketches for the concrete pier, and mentioned to him the probable cost of the work, it was determined (to save time) that I should proceed, during his voyage out, with the completion of the contract, drawings, and specification for the special plant, so that, upon the receipt of a telegram to that effect, competitive tenders might be obtained by the Agent-General, or otherwise, as thought fit, for the supply of such special machinery as is required for works of this character, thus avoiding unnecessary delay. It was, therefore, with no little surprise that I received from Mr. Rees, on the 17th instant, a letter dated the 5th (Nos. 7 and 8), in which he expressed a desire to give me a cheque, before leaving for the colony, for my professional services in connection with the amended design, out of the unexpended balance of the £6,000 placed to his credit. As it appeared to me that Mr. Rees did not rightly understand his position with regard to myself as Consulting Engineer, and in view of the fact that the question of the design, the ordering of the further plant, and the engineering conduct of the works required, in the interests of the Commissioners, to be placed on a proper basis, such as usually observed in cases of an analogous kind, with which I, in common with other consulting engineers, have to do, I deemed it best to send my papers direct to the Board, and to forward tracings, which will be ready this evening, of four of the working drawings to Mr. Rees at Plymouth, where he will embark by the vessel which takes this letter. This course I explained in a letter addressed to Mr. Rees on the 17th (No. 9).

I may mention that I have no desire to order the special plant, nor to do more in connection with it than to prepare the drawings and specifications, to enable tenders to be obtained, and to have the conduct of its inspection during progress and on completion; and this appears to me to be a reasonable view, if I am to be held responsible for the satisfactory working of the machines, which latter is all important in an undertaking of this class, both with regard to economical working and rate of progress.

Whilst altogether disclaiming any desire to urge my professional services upon the Commissioners, it is incumbent upon me to state most clearly that, although I have provided in the drawings and specification for such works as appear to be best adapted to meet the requirements of the case, much will depend upon their local conduct; and I must distinctly decline to be held responsible in any degree for the satisfactory issue of this undertaking, unless I am furnished periodically with the usual reports and particulars of progress, so as to be able to watch the effects produced, and, if necessary, to direct any change in the mode of procedure—such, for instance, as modifying the level of the foundations, or otherwise, as may appear desirable during progress. I have thought it necessary to place this matter clearly before the Board: it will be for them to determine what course they will pursue. In the meantime I shall proceed with the completion of the drawings of the special setting-machine and other plant, as arranged, so that, should the amended design receive sanction, tenders for the work may be obtained by the Agent-General, should your Board so instruct.

I have, &c.,

The Chairman of the Harbour Board, New Plymouth, New Zealand.

JNO. COODE.

CORRESPONDENCE between Sir JOHN COODE and Mr. REES (referred to in the foregoing letter from Sir John Coode to the Chairman of the Harbour Board, dated the 19th March, 1880).

(No. 1.)—Sir JOHN COODE to Mr. J. R. REES.

DEAR SIR,—

5, Westminster Chambers, London, S.W., 18th December, 1879.

Referring to your calls here on the 8th instant, and again on the 16th, and also to the conversations which I had with you on those occasions, with reference to the proposed harbour works at New Plymouth, I asked you at the first interview to inform me “step by step of the phases through which the question of harbour improvement had passed from the receipt by the Commissioners of my report of the 28th February last up to the time of your departure for England.” You thereupon placed me in possession of what had been done in the way of preliminary arrangements, and opening out the quarries, &c., in order to test the quantity and quality of the stone, as recommended in my report; but you made no reference whatever to an important aspect of the case, with which I (quite accidentally) became acquainted yesterday, and which has caused me some little surprise—namely, a report to the Commissioners of the 28th August, in which you entered at length into the proposal for a rubble-mound, and suggested, in lieu thereof, the substitution of a concrete work. At our first interview I ought, I consider, to have been placed fully in possession of the fact that such a report had been presented to the Commissioners; but, putting this matter aside, the object of my writing now is to ask you to furnish me with a copy of your said report, and also with any you may have subsequently presented to the Board, and copies (or originals to be returned) of any designs, sections, or other official documents and estimates which you may have laid before them upon the subject of the proposed works, or of any modifications thereof; and I will thank you to forward these to me at your earliest convenience; also a memorandum of the proportions of stone of different sizes from one ton upwards, as nearly as you can judge from the recent workings, so that I may have an opportunity of investigating the case prior to our next interview, which was arranged for Saturday, the 20th, but which, under the circumstances, I would now suggest should be postponed until 1 o'clock of Tuesday, the 23rd. Upon the receipt of these papers, and after our interview, I shall be in a position to consider fully whether or not the data with which you will then have furnished me will be of such a character as to justify a departure from the mode of construction described in my report (which was only recommended after very careful consideration, and a lengthened experience in the execution of works of identical character both in this country and in the colonies); and, if so, what particular form of concrete structure will be best adapted to meet the requirements of this case. I understand that this expresses the desire of the Commissioners, as intimated in the letter of introduction which you brought from the Chairman; and I need only say that, if the investigations should prove that it will be to the interests of the works that a concrete structure should be adopted, I shall have not the slightest hesitation in recommending the same, notwithstanding the views expressed in my report of the 28th February last, which it must be remembered were given subject to the result of testing Paretutu. When sending forward the documents asked for above I will thank you to let me have at the same time any information in your possession with reference to the proposal to employ convict labour on these works, and the extent to which such labour may be expected to be available; also the terms upon which it would be afforded. No reference is made in your letter of the 9th instant to any of the above particulars.

J. R. Rees, Esq., Cannon Street Hotel.

Yours faithfully,

JNO. COODE.

(No. 2.)—Mr. J. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

London, 19th December, 1879.

I have to acknowledge receipt of your letter of the 18th instant, to hand this day at 2 p.m. Some time in July last (I write from memory as to date) I was instructed by the New Plymouth Harbour Board to carry out the suggestions contained in your report of the 28th February, 1879, relative to the quantity and quality of stone in Paretutu, and it was in carrying out those instructions that I obtained the information forwarded to you in my letter of the 9th instant. With reference to my report to the Harbour Board, dated the 28th August, 1879, and to which you refer in your letter as above, I was requested by the Board to consider that report strictly confidential until they (the Board) deemed it expedient to publish it. My letters by last New Zealand mail came to hand late last night, as they had been addressed to Upper Clap-

ton, under cover to the brother-in-law of the Secretary to the Board, and I did not receive them until my return from Sheffield last night, where I had been since my interview with yourself in the early part of this week, and which will account for their late delivery; and it was by a letter then received that I had the first intimation that my report of the 28th August might be considered by me as available for the purposes of my visit to England; and I was engaged writing to you upon the subject when your letter of yesterday came to hand. In accordance with your desire I enclose herewith a copy of my report of the 28th August, 1879, and the only one written to the Board upon the subject; but, as it is the copy furnished to me by the Board, will you kindly take a copy of it. No designs or sections whatever were submitted by me to the Board; but, should you desire it, I can prepare from memory a sketch similar to that upon which I prepared my estimates contained in my report of the 28th August, above referred to. With respect to the proportion of stone of different sizes, as nearly as I can judge an outside estimate would be about as follows, viz: Under 20 cwt., seven-tenths; 20 cwt. to 30 cwt., two-tenths; over 30 cwt., one-tenth. With reference to the employment of convict labour I do not think that any such labour will be available for years to come, if at all. With respect to your appointment for 1 o'clock on Tuesday next, the 23rd instant, I shall be most happy to conform to the time most convenient to yourself, and any further information in my power I shall be glad to afford.

Yours faithfully,

J. R. REES,

Sir John Coode, C.E., London.

Resident Engineer, New Plymouth Harbour Board.

(No. 3.)—Sir JOHN COODE to Mr. J. R. REES.

DEAR SIR,—

5, Westminster Chambers, London, S.W., 20th December, 1879.

I have yours of yesterday, and am glad to note the explanation you give as to the reason for your not making any reference to your report of the 28th August, and which I regard as satisfactory. It would be well that you should send me in course of Monday a sketch such as you suggest you could prepare from memory, showing the basis on which the estimates contained in your report of the 28th August were founded, together with any particulars of your estimates.

Yours faithfully,

JOHN COODE.

J. R. Rees, Esq., Cannon Street Hotel.

P.S.—The copy of your report to the New Plymouth Harbour Board shall be returned to you on Monday.

(No. 4.)—Sir JOHN COODE to Mr. J. R. REES.

DEAR SIR,—

5, Westminster Chambers, London, W.C., 5th February, 1880 (Thursday afternoon).

I have now finally come to the conclusion that, under the circumstances, the course which (subject to further consideration) was settled to day will be the best to pursue. I shall therefore proceed with the completion of the requisite drawings and specifications, &c., for the works according to my last design, and a revise of the estimates thereupon, so that you may leave for the colony with them not later than the first week in next month; and immediately thereafter, to save time, I shall have prepared the drawings and specifications necessary for obtaining tenders for the special plant adapted to meet the exact requirements of the works to be executed. I still feel it to be requisite that I should have a complete list of all the plant and stores (if any) ordered by you to this time, with particulars of any that you may have in contemplation to order before you leave England, as was promised yesterday, and must therefore ask you to be good enough to let me have this forthwith. As matters stand, it is obviously in the interests of the Board that I should be made cognizant of what has been done, and that I should have the approval of what may be now proposed, before any further action is taken in the matter of supplies of plant and stores. I need scarcely say that I shall be quite ready to facilitate your action in this matter.

Yours faithfully,

JOHN COODE.

J. R. Rees, Esq., London.

(No. 5.)—Mr. J. R. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

Cannon Street Hotel, London, 6th February, 1880.

In reply to your letter of the 5th instant I beg to furnish you with a list of the plant, &c., already purchased by me for the New Plymouth Harbour. It is not my intention to take any further steps in this matter until the Board have decided what action they will take relative to your last design. Will you kindly inform me of the probable length of time that it will occupy to prepare ready (including time occupied in designing) for shipment the special plant such as you would design, also the probable cost, so that I may make the necessary arrangements relative to payments.

Yours faithfully,

J. R. REES.

Sir John Coode, C.E., 5, Westminster Chambers, London.

100 tons 56-lb. steel rails, 30 tons 40-lb. iron rails, 10 tons galvanized iron; galvanized rivets, screws, &c.; 10 dozen English navy shovels, 90 dozen American navy shovels, 950 feet second-hand tubes; 12 sets points and crossings, 1 in 7½; fish-plates and spikes; octagon steel, ½ ton; quarry hammers, &c.; mining picks, 40 dozen; wood pulley-blocks, iron pulley-blocks; manila and tarred rope, 2 tons; wire nails, 20 kegs; spike nails, 5 cwt.; 2 8-horse-power steam-boilers, 1 10-horse-power steam-boiler, 1 7-inch horizontal steam-winch, 2 crane carriages; window-frames, cast, 18; galvanized tubing, 2,200 feet, 1½ inches; galvanized tubing, 60 feet, 2½ inches; coil chain, 1 ton; 48 tons 40-lb. iron rails; steam crane, grab, and other gear; portable forge, bellows, &c.; set of smiths' tools, grindstone and trough; bolt ends, 6 cwt.; 4 small turntables for trucks, 2 rock-drills; 12 sets points and crossings, 1 in 5½; 2 tons bar-iron, telephone and fittings; battery, &c.; 15 tons light rails, 18 lb.; 2 clocks for offices, iron-work for 15 3-yard trucks; 2 steam-cranes, 2½ tons each; mooring buoy, anchor, &c.; 250 feet 1½ indiarubber tubing. Accompanying letter of 6th February, 1880.

(No. 6.)—Sir JOHN COODE to Mr. J. R. REES.

DEAR SIR,—

7 Westminster Chambers, London, S.W., 7th February, 1880.

I have your two letters of yesterday, and quite concur in the propriety of your not now taking any further steps in the matter of plant, &c. With regard to the respective quantities and prices per cubic yard of concrete in blocks and bags, you shall have these when the drawings have been completed and the quantities finally worked out therefrom. As intimated to you on Thursday, the drawing which you saw in skeleton was of a preliminary character; the details will now be thoroughly gone into and settled for adoption. I may have to communicate with you again in course of next week on the subject of levels of ground, &c., as bearing upon work-yard arrangements.

Yours faithfully,

JNO. COODE.

J. R. Rees, Esq.

(No. 7.)—Mr. J. R. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

Cannon Street Hotel, London, 16th March, 1880.

Mr. Matthews's letter to me of the 6th instant is only this evening to hand. As intimated to you, I left London on Friday, the 5th, at 8 p.m., and returned this evening, which will account for my not complying with Mr. Matthews's request. The enclosed letter should have been posted to you before I left London, but on my return I found it still on my table.

Yours faithfully,

J. R. REES.

Sir J. Coode, Westminster.

(No. 8.)—Mr. J. R. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

Cannon Street Hotel, 5th March, 1880.

Referring to our interview on the 2nd instant, when I was informed by you that the revised plans for the New Plymouth Harbour would be handed to me on the afternoon of the 18th instant, I have written to the Board, *via* Frisco mail (which will arrive in the colony some twelve days before myself), that I leave London with your revised plans on the 18th March. As I shall be returning to the colony before having concluded the purchase of all the plant, and as a considerable part of the £6,000 credit is still unexpended, I think, to save the Board the exchange upon the amount that will

be due you for the revised plans, it would be better that I should give you a cheque for the amount at our final interview. If you cannot afford me the information asked for in my letter of the 4th, possibly you might include it in your report to the Board.

Sir John Coode, C.E., Westminster.

Yours faithfully,
J R. REES.

(No. 9.)—Sir JOHN COODE to Mr. J R. REES.

DEAR SIR,—

5, Westminster Chambers, London, S.W., 17th March, 1880.

Referring to your letter of the 5th, at hand only this morning, enclosed with yours of the 16th, I could not, under any circumstances, consent to submit to you for settlement my professional account for the preparation of my revised design and working drawings, &c., in connection with these works; indeed the time has not yet arrived for framing such an account, seeing that the detailed drawings of the special machines and plant have yet to be completed, although the general character and sketches for the machine have been determined. These will now be forwarded and finished. You will remember that I decided some weeks since (you concurring) that this was the best mode of procedure in the interests of the Commissioners. In view of all the circumstances of the case I have now decided, after full consideration, to send the drawings, specification, report, and particulars of estimate direct to the Commissioners, feeling, as I do, that by the adoption of this course their interests will not suffer in any degree, whilst, at the same time, my position in the matter would be put upon a proper basis, which at the present moment is certainly not the case, having regard to your application for my professional account at this stage of the business, as appears by your letter of the 5th instant, to hand this morning. The drawings will therefore be despatched from Southampton by the P and O. steamer sailing to-morrow,* the parcel being set forward this evening. From the sketch drawing, which I showed you some weeks since, you are already acquainted with the general mode of construction I am recommending the Commissioners to adopt; nevertheless, as you may wish to consider your working arrangements for carrying out my recommendations during the voyage to the colony, I am having tracings prepared of such of the drawings as will serve this purpose, and these will be completed in time to post to you on Friday evening at Plymouth, care of the Orient Steam Navigation Company's agent there, so that you will doubtless receive them in good time on Saturday.

J R. Rees, Esq., Cannon Street Hotel.

Yours faithfully,
JOHN COODE.

* Since the above was written it has come to my knowledge that, in consequence of alterations by the P and O. Company, the steamer does not leave Southampton until to-day.—J COODE.—19th March, 1880.

Sir JOHN COODE to the CHAIRMAN of the NEW PLYMOUTH HARBOUR BOARD.

SIR,—

5, Westminster Chambers, London, S.W., 25th March, 1880.

I have to acknowledge the receipt of your telegram of the 20th (Saturday), which was delivered here on the 22nd, and was then forwarded to and received by me in the country on the following day. It reads as follows: "Please let Rees see copies of plans." I could, of course, have no objection whatever to offer to Mr. Rees seeing my office copies of the plans, the originals of which were sent to you on the 17th instant, but, on the contrary, as explained in my letter to him of the same date (copy of which has been forwarded to you), I have furnished for his use and reference tracings of four of the sheets which show more particularly the details of the work. These tracings were prepared only just in time to send to Mr. Rees, to Plymouth, where I understood he was to join the "Aconcagua," which sailed from that port on the 20th instant. They were intended for his reference during the voyage, in order that he might consider the working arrangements to be undertaken upon his return. But it appears that after going to Plymouth he decided to postpone his departure, and, upon sending him a letter to the Cannon Street Hotel, London, telling him of the receipt of the Commissioners' telegram, I find he has returned there. I shall have to address to you a further letter upon the subject of the above at a later date.

I have, &c.,
JOHN COODE.

The Chairman of the New Plymouth Harbour Board.

Sir JOHN COODE to the CHAIRMAN of the NEW PLYMOUTH HARBOUR BOARD.

SIR,—

5, Westminster Chambers, London, S.W., 2nd April, 1880.

Adverting to previous correspondence, and more especially to my letter to you of the 19th ultimo, with its enclosures, I beg now to forward, for the information of the Board, copies of further letters from and to Mr. Rees, and have to submit the following remarks thereon:—

As to Mr. Rees's letter of the 20th ultimo I have to observe: (1.) With regard to Mr. Rees's proposal to pay my professional account on the plea of saving exchange on the colony, I regard this as an altogether frivolous and insufficient ground for adopting such an unusual and unwarrantable course. (2.) With regard to Mr. Rees's mission to England, I may say that, according to the Board's letter addressed to myself, the object of this was stated in the following terms: "The Board find local difficulties in carrying out your plan in its entirety, and, as they deem it of importance that you should have full information before you to enable you to form an opinion thereon, they have resolved to send Mr. Rees to give you the benefit of his local information," adding that "advantage might be taken of Mr. Rees's visit to England to select the necessary plant for carrying on the work; and the Board will esteem it a great favour if you will facilitate his action in this matter." It should be explained that the special plant for such works cannot be found in the market, and therefore cannot be "selected," but must, in all such cases, be made to order for the particular works on which it is to be employed. (3.) As to his having "patiently waited week after week" to receive the plans from me, and with reference to what he designates as his "long detention in this country," I feel it necessary to say that, after having heard Mr. Rees's account of the character and sizes of stone available, and having definitely decided what course to adopt, and prepared the preliminary sketches, and framed an approximate estimate of the cost of a work in concrete, as the first step towards the preparation of the complete designs, I showed these sketches to Mr. Rees, and informed him very early in February that the cost, as nearly as could then be seen, would be somewhere about £280,000. I also intimated to Mr. Rees that I had it in contemplation to send a telegram to this effect to the Board, in order to ascertain whether, in view of this large increase in cost, it would be their wish that the arrangements should be proceeded with for obtaining the special plant, cement, &c. Mr. Rees doubted the utility of sending such a telegram, and expressed himself as confident that the Board would hesitate to authorize the ordering of the special plant until the revised drawings had been before the Governor in Council, and had been sanctioned (see reply to question 93); indeed, he added, "it would be scarcely legal for the Board to do so." He stated further that the Board would much prefer that he should not return to the colony until the plans were completed. As this seemed to be reasonable, I acquiesced in this arrangement. Not a day has been lost in the preparation of the documents since the matter was taken up in my office: it was proceeded with at the earliest practicable moment, after Mr. Rees's arrival in England, consistent with the pressure of other urgent professional work in hand at that time. (4.) As to his statement that the designing of the special plant was to be left in my hands on his embarkation to New Zealand, "unless in the meantime I [he] received the instructions to complete the purchase," I regret to be obliged to say that no qualification or reservation whatever of the kind was made or even suggested at the time by Mr. Rees. I could not for a moment have been a party to any such qualified arrangement, as the Board will at once understand on reference to the distinct and well-considered advice, founded on lengthened and varied experience, which I have given on this head in my report of the 17th ultimo. (5.) What the "many difficulties" may be to which Mr. Rees adverts I am at a loss to understand: none have been interposed by me, and, if he has encountered any such in any other quarter, I cannot doubt that they might have been readily overcome if he had brought them to my notice; but I am constrained to say that, from the very commencement of his interviews with me up to the present time, Mr. Rees has been most reticent in the way of furnishing particulars with reference to his action in respect of procuring the plant, and has not exhibited such frankness in this matter as I should have expected from him, as Resident Engineer, to me, as designer of the works. (6.) With regard to the concluding paragraph of Mr. Rees's letter of the 20th ultimo, dated from Plymouth, in which he states that he had "already arranged for the shipment of the whole of the plant," I desire to point out that the copies of the drawings which I furnished to Mr. Rees were handed to him at Plymouth on the 20th, the day his said letter was written. It seems clear therefore that, as, according to Mr. Rees's statement, the plant was ordered on the same day that the drawings of the revised design were received by him, he

must have made preliminary arrangements; and I cannot help feeling that it will be the view of the Commissioners that I should at least have been informed of what was being done in this respect, being confident, as I am, that it would have been greatly to the Board's interests in the economy and progress of the works if they could have had the benefit of my experience in several similar cases.

With a desire to understand, if possible, what is the real position of this matter, which information I conceive the Board would not wish to have withheld, I wrote Mr. Rees on the 23rd ultimo (No. 11.), asking for his replies to four queries, and informing him that he could see the drawings if he were to call here. This he did on the 27th ultimo, and saw Mr. Matthews, in my absence in the country. I understand that Mr. Rees then declined to supply verbally the information I required, and I have not yet received his answers. I am therefore up to this moment quite in the dark as to what has been or is being done, and therefore wrote to him on the 31st March (No. 16.), sending a copy of the specification and bill of quantities, and asking to be fully informed, and to be furnished with his replies to my queries. This letter he has simply acknowledged, without sending the requisite particulars (No. 17.)

Whether Mr. Rees does or does not intend to leave for the colony by to-morrow's steamer I am unable to say.

In view of the fact mentioned by Mr. Rees in his letter of the 20th ultimo that he had ordered "the whole of the plant," I have suspended any further action in the preparation of the drawings referred to in the concluding paragraph of my letter to you of the 19th ultimo.

I trust I need scarcely assure the Board that it has been very distasteful to me to have been compelled to enter thus at length, or even at all, on such matters; but the action of Mr. Rees has left me no alternative either in justice to myself or to the Board and their best interests.

I have, &c.,

JNO. COODE.

The Chairman, New Plymouth Harbour Board, New Zealand.

(No. 10.)—MR. J. R. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

Plymouth, England, 20th March, 1880.

I have yours of the 17th instant, which I regret to observe is based upon an entire misconception of the suggestion contained in my letter of the 5th instant. This letter I found on my table on my return from Scotland, the hotel-messenger having neglected to post it. The arrangement I proposed was simply, as I thought, a matter of convenience, and to save my principals exchange on the colony; and I do not think it can by any means be construed into a desire that you should submit to me your professional account. I further extremely regret that you should have deemed it right to depart from the arrangement made by yourself respecting the plans, which by appointment were to be delivered to me at 12 o'clock on Thursday last. You are aware that my mission to England was to receive those plans, and act upon them in terms of my authoritative instructions from the Board, which have been duly conveyed to you, and that I have patiently waited week after week in order to receive those plans from you. With respect to your remarks, "You will remember that I decided some weeks since (you concurring)," &c., I beg respectfully to inform you that what I did concur in was that I should not take further action relative to the purchase of plant until I had received the decision of the Board respecting your revised plans, and that after having received them (the revised plans) from you I should embark with them to New Zealand, thus consequently being unable to complete the purchase of the special plant, the designing of which should then be left in your hands, unless in the meantime I received the instructions to complete the purchase. It was also further arranged that you should deliver to me the plans on Thursday, the 18th instant, at 4 o'clock, but, on the suggestion of your Mr. Matthews that possibly I might wish some point in the drawings explained by you, the hour was altered to 12 o'clock, so that I might see them in your office. Your forwarding the plans direct to the colony without showing them to me as promised, so that I might consult you on any special points, still further delays my return, and it is with extreme reluctance that I feel myself obliged to add that I must leave with you the entire responsibility of my long detention in this country, and the many difficulties which have occurred in carrying out my instructions. Having received by telegram instructions from the Board to complete the purchase of special plant adapted to your revised plans, I have, as the authorized agent of the Board, to request that you will not commit the Board to any liability in the preparation of designs for special plant, as I have already arranged for the shipment of the whole of the plant in three months.

Yours faithfully,

J. R. REES.

(No. 11.)—Sir JOHN COODE to Mr. J. R. REES.

DEAR SIR,—

5, Westminster Chambers, London, S.W., 23rd March, 1880, 1.30 p.m.

Yours of the 20th March, written from Plymouth, was received here yesterday afternoon, and was forwarded to me in the country, coming to hand this morning, just as I was leaving for town. In the interests of the Board I have to request you will let me know: (1.) At what date did you receive the Board's authority to order the special plant? (2.) When was this special plant ordered? (3.) What machines, or articles of special plant, have been ordered? (4.) From whom (respectively) have the said machines or articles been ordered? I think it right to point out to you that, by your having ordered the special plant without any reference to or consultation with me as to its character, the benefit will be lost to the Commissioners of my experience of many years in the designing and arrangement of special machinery for works of this class. I also desire to point out that another result of the action you have taken in this matter renders comparatively useless the expenditure of a considerable amount of time and consideration which have already been given to the designs for special plant. I have a telegram from the Board (also received in the country this morning), asking me to allow you to see the copies of the drawings, which you can do on calling here.

Yours faithfully,

JOHN COODE.

J. R. Rees, Esq.

P.S.—The bearer will wait a reply to the above queries.—J. C.

(No. 12.)—MR. J. R. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

Cannon Street Hotel, 24th March, 1880.

I have to acknowledge receipt of your letter of the 23rd instant. With respect to the information you therein request I will take an early opportunity of replying thereto. Thanking you for your permission to see duplicates of the New Plymouth Harbour plans, may I ask when it will be convenient for me to inspect them.

Yours faithfully,

J. R. REES.

Sir John Coode, C.E., 5, Westminster Chambers.

(No. 13.)—Sir JOHN COODE to Mr. J. R. REES.

DEAR SIR,—

5, Westminster Chambers, London, S.W., 25th March, 1880.

I have now (2.30 p.m.) just received your letter of yesterday's date, and shall be glad to show you the drawings this afternoon, or any other time convenient to yourself. Please send word by bearer when you will call. I shall be glad to receive your replies to my queries as early as you can conveniently send them.

Yours faithfully,

JOHN COODE.

J. R. Rees, Esq., Cannon Street Hotel, E.C.

(No. 14.)—MR. J. R. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

Cannon Street Hotel, 25th March, 1880.

If convenient to yourself, I will call at your office on Saturday next at 11 a.m.

Yours faithfully,

J. R. REES.

Sir John Coode, C.E., 5, Westminster Chambers.

(No. 15.)—Sir JOHN COODE to Mr. J. R. REES.

DEAR SIR,—

5, Westminster Chambers, London, S.W., 25th March, 1880, 4 p.m.

I have your letter of this date, and note your purpose calling here at 11 a.m. on Saturday to see the revised

drawings. I shall be out of town myself on that day; but my chief assistant, Mr. Matthews, will be here to see you when you call at the time named, and will then show you the drawings.

J. R. Rees, Esq., Cannon Street Hotel.

Yours faithfully,
JOHN COODE.

(No. 16).—Sir JOHN COODE to Mr. J. R. REES.

DEAR SIR,—

5, Westminster Chambers, London, S.W., 31st March, 1880.

Referring to your call here on Saturday last to look at the drawings, when you saw Mr. Matthews during my absence from town, I regret to find that you did not, at the same time, afford such verbal explanations as were asked for, to remove as far as practicable the doubts and uncertainties which now surround this business, which explanations I considered I was entitled to ask in view of my interpretation of the wishes of the Commissioners, as expressed in their letter of instructions to me. I trust, however, that you will, in course of to-morrow, reply fully to the queries in my letter of the 23rd instant, as I feel that no information ought to be withheld from me as the engineer and designer of the works; neither can I conceive it to be the wish of the Commissioners that I should be kept in the dark, as I am at present, with reference to what has been and is being done, nor what possible motive can exist for such secrecy, nor for the adoption of the anomalous and altogether unlooked-for mode of procedure which you have seen fit to adopt with regard to arranging for and ordering the whole of the special plant, without conferring with or consulting me upon a single particular.

As there was not time at the interview on Saturday for you to look through the specification and bill of quantities of the works, which I have prepared and sent forward to the Commissioners with the drawings, I enclose herewith a duplicate copy for your information.

I understand from Mr. Matthews that you intend to leave for the colony on Friday next, the 2nd April.

J. R. Rees, Esq., Cannon Street Hotel.

Yours faithfully,
JOHN COODE.

(No. 17).—Mr. J. R. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

Cannon Street Hotel, London, 1st April, 1880.

I have to acknowledge and thank you for the enclosures (duplicate specification and bill of quantities) contained in your letter to me of the 31st March, 1880.

Sir John Coode, C.E., 5, Westminster Chambers, London.

Yours faithfully,
J. R. REES.

Sir JOHN COODE to the CHAIRMAN of the HARBOUR BOARD, New Plymouth.

SIR,—

5, Westminster Chambers, London, S.W., 9th April, 1880.

Referring to my letters to you of the 19th ultimo and the 2nd instant, I have now to supplement this correspondence by sending (annexed) a copy of a letter from Mr. Rees, dated the 2nd instant, wherein he declines to furnish me with the information I had asked for, until he had first consulted the Board.

It is evident that Mr. Rees has persistently kept me in ignorance with respect to this matter of ordering the special plant, on which so much of the economical execution of the work depends, and as to which he must have known that he was acting in opposition to the views I had expressed to him, and contrary also to a distinct arrangement, stipulated for on my part in the best interest of the Board, and come to between us; for I must here repeat, what I stated in paragraph 4 of my letter to you of the 2nd instant, that no such qualification or reservation as has been stated by Mr. Rees was ever made or suggested by him to me; and I may add that Mr. Matthews, my chief assistant, who was present at my interviews with Mr. Rees when the question of the ordering of the special plant was considered, entirely corroborates this statement. I cannot for a moment suppose that the Board will sanction or approve Mr. Rees's action in this matter.

The Chairman, Harbour Board, New Plymouth.

I have, &c.,
JOHN COODE.

No. 18.—Mr. J. R. REES to Sir JOHN COODE.

DEAR SIR JOHN,—

Cannon Street Hotel, 2nd April, 1880.

In reply to your letter of the 23rd March, I have decided first to consult the Harbour Board before complying with your requests.

Sir John Coode, C.E., 5, Westminster Chambers, London.

Yours faithfully,
J. R. REES.

MR. REES'S REPORT ON THE NEW PLYMOUTH HARBOUR WORKS.

(Confidential.)

SIR,—

New Plymouth, Harbour Board Office, 28th August, 1879.

I feel that I should fail in my duty to your Board did I not record, for their information, my estimate of the cost of the proposed harbour works as designed by Sir John Coode; and, at the same time, to point out that possibly a more economical section might be adopted. I have entered upon this course with considerable diffidence, and, in consequence, have not hastily arrived at conclusions, but have accepted the figures and calculation of well-known civil engineers, whose statements have been subjected to the criticism of the Institution of Civil Engineers at their meetings of the 1st February, 1876, and the 9th November, 1875, presided over respectively by G. R. Stevenson and T. E. Harrison, Presidents of the Institution.

Having now examined Sir John Coode's plan and report since their return from Wellington, with the view of ascertaining the probable quantity of rubble-stone, &c., required for their completion, I find that to build the western mole from A to Y Y will take 545,000 cubic yards; and this quantity is arrived at in the following manner—namely, the quantity of rubble, according to Sir John Coode's report, required to complete from A to B is 800,000 cubic yards measured in the mound, and the calculated quantity from the drawings between Y Y and B is 119,000 cubic yards, thus leaving 681,000 cubic yards to complete from A to Y Y; but, as the 16 cubic feet of stone, measured in the solid, will occupy 20 feet or about when in the mound, 545,000 cubic yards will be required to complete to Y Y. I think, in forming an estimate of the probable cost of this work, labourers' wages should be calculated at not less than 7s. and quarrymen's at 7s. 6d. per diem. And at these rates, if the same economy in working be practised as was observed at Holyhead Breakwater—namely, 3s. 5d. per cubic yard for the first 2,200 feet (with labourers' wages at about 3s. per diem), as given by H. Hayter, Esq., M.I.C.E., but according to Sir John Rennie, in his Treatise on Harbours, the cost of Holyhead rubble is stated at 5s. 6d. per cubic yard—would give, according to Mr. Hayter's figures, with wages at 7s. per day, 8s. per cubic yard, allowing that the cost of staging here does not exceed the cost of that used at Holyhead, namely, 5d. per ton of stone. But I estimate the staging for the New Plymouth Breakwater will cost £40,000, or 1s. 1d. per ton, being at the rate of 1.46s. per cubic yard of stone. This item will give an additional charge against the stone of about 8d. per cubic yard, or a total cost of 8s. 8d. per cubic yard, or £236,166. The foregoing only takes into consideration the difference of between here and Holyhead wages, and cost of staging, but there are other items of expense which will show an equally wide margin of difference. Again, there is yet another item of cost to be considered. I refer to the loss and re-erection of staging and the displacement of material during heavy gales. I do not think it necessary to prove that the stone once shifted beyond the limits of the mound will be entirely lost to the work, and should this loss not exceed 5 per cent. the work may be considered fairly successful in this respect. This then will add 27,250 cubic yards, at 8s. 8d. per cubic yard, or £11,806 + £236,166 equals £247,972 as the cost of the work to Y Y, without any accommodation whatever for loading or discharging, based upon the supposition that the quarry at Paretutu will prove as easy to work as the Holyhead Mountain; but this supposition is, I fear, open to grave doubts. The quarries at Holyhead consisted of quartz compact with well-defined joints, the quarry faces having a height of about 120 feet. In the proposed quarries at Paretutu (which must form the principal source of supply) we have exactly the opposite of these conditions—namely, excessive height (exceeding 300 feet), the material shattered throughout, and not well-defined joints, with limited face and excessive stripping. In the

foregoing the figures are based upon the known cost of one of the largest works of its class in the world, costing £1,285,000 (Holyhead Breakwater), and in a country where every facility was at hand to enable large works to be economically carried out.

In taking this subject into consideration, it may possibly be of service to you to bear in mind the probable cost of an alternate section, for which purpose I beg to submit to you the following estimate for a western mole of concrete blocks and rubble combined, and also an estimate for the same work, but built entirely of concrete blocks :—

							£
Section A, from A to Y Y, concrete blocks and rubble combined,—							
From A, in Sir John Coode's plan to 9 feet at low water, 87,000 cubic yards of rubble, at, say, 8s. 6d. per cubic yard	...	...	...	...	...	...	36,975
From 9 feet at L W to Y Y, 1,610 feet of concrete blocks, 59,607 cubic yards, at 30s. per cubic yard	...	...	...	...	...	...	89,410
Staging from A to 9 feet at L W—viz., 726 feet, in twenty-five bags...	...	...	...	...	...	...	4,116
Plant	...	...	...	...	...	...	50,000
Preliminary charges on offices, sheds, &c.	...	...	...	...	...	...	10,000
Landing-stage and roadway	...	...	...	...	...	...	14,000
							<hr/>
							£204,501
Contingencies	...	...	...	...	...	...	10,000
							<hr/>
							£214,501
Section B, entirely of concrete blocks,—							
From A to Y Y with 1,000 feet of stage and roadway, 73,885 cubic yards concrete, at 30s....	...	...	...	...	...	...	110,827
Landing stage and roadway	...	...	...	...	...	...	14,000
Plant	...	...	...	...	...	...	44,000
Preliminary expenses	...	...	...	...	...	...	10,000
							<hr/>
							£178,827
Contingencies	...	...	...	...	...	...	17,000
							<hr/>
							£195,827

The price of concrete blocks, cost of plant, &c., is derived from the report on the Kurachee Harbour Works by Mr. W. H. Price, M.I.C.E., read before the Institute of Civil Engineers on the 9th November, 1875; and, as the report above referred to gives detailed cost of each particular of a large work successfully completed, a better guide in the matter could not be obtained. I may add that, in estimating the cost of Sections A and B, I have added 8s. 3d. per cubic yard to the cost of the concrete-block-making and setting at Kurachee, so as to allow a very fair margin for contingencies. The cost of Portland cement at Kurachee was £4 3s. 9d. per ton; landed here the cost would be £4 2s. 6d. Should your Board deem it expedient to go further into this matter, I will prepare the necessary plans and detailed estimates of the probable cost. The estimates herewith have been prepared from sketch sections and plans, which have enabled me to give you a reliable estimate.

I have, &c.,

J. R. REES,
Engineer.

