

1895.

NEW ZEALAND

PORIRUA LUNATIC ASYLUM:

COPY OF CORRESPONDENCE RELATIVE TO INSPECTION OF WORKS.

Laid on the Table by the Hon. Mr Seddon by leave of the House.

No. 1.

The ENGINEER for DEFENCES to the ENGINEER-IN-CHIEF.

New Zealand Defences, Wellington, 10th July, 1891.

Porirua Asylum.

SIR,—

1. I have to report that on Tuesday last, the 7th instant, the Hon. the Minister for Public Works sent for me and directed me to take over the charge of the works at this asylum.

2. Having asked the Minister if he had already spoken to yourself on the subject, upon his replying in the affirmative, I informed you verbally on leaving the Minister's room of the tenor of the interview, and thereafter placed myself in communication with Mr Holmes, C.E., your officer in present charge.

3. I arranged to visit the works on Friday, the 10th instant, it being necessary for me, before making any useful visit to the ground, to study and make myself conversant with all the plans, specifications, papers, &c., connected with the contract.

4. I visited Porirua accordingly in company with Mr Holmes to-day. Just before going on the work I told Mr Holmes that I merely wanted to see things for myself on the ground on this occasion, as I had no written authority to formally give me official standing. I therefore requested that he would inspect and give orders himself exactly as usual on his visits, and not allude to any change of control.

5. I was present on the works accordingly merely as a casual visitor who had happened to come out with the Engineer, and in that capacity was enabled to stroll about and see everything that had been done and was being done or proposed without any one having any idea of special purpose.

6. Availing myself of the advantages of this position, I observed and noted some matters which it appears to me desirable to submit at this stage.

A. The clay through which the foundation trenches have been excavated is fairly compact and solid, while somewhat of a nodular nature. The actual foundation-bottom of trenches, I was informed, is on the bastard rock, which is the characteristic formation in Wellington and vicinity. There is nothing to prevent a building of the character and height of this asylum being founded thereon with confidence without special provision.

B. The whole of the concrete foundations were in to the full height throughout, and no opportunity therefore was afforded of seeing the actual foundation-work in operation. Apparently the concrete is good and solid, and I have no reason whatever to doubt that it is so, but could not express an opinion without seeing one or two walls cut through.

C. Upon these concrete foundations the brickwork has, over the greater portion, been brought up to damp-course level and asphalted. The damp-course (made to specification) is somewhat brittle and porous, and requires surface-treating with tar and sand. Mr Holmes informed me that he has already arranged for this.

D. The rest of the brick foundation-courses were in course of being put in, and the work was busily going on to-day in one particular block. There are some special remarks which I desire to make hereon, which will be found further on. (See F.)

E. The appliances, sheds, kilns, &c., for brickmaking from the clay obtained on the site are fairly good. The bricks turned out are, as far as I can tell by impromptu means of examination, sound and solid, and fairly well burnt, and an average sample, defective only in exact regularity of shape and degree of burning. I was informed that this clay will not stand more than a certain temperature in the kiln, accounting for both shortcomings. Special care is taken with the face and moulded bricks.

F *Special remarks referred to under D.*—The surface of the concrete foundation was more or less strewn with nodules of clay, and joined with clay-paste. The bricklayers were laying the lowermost bricks thereon, without the concrete surface being properly cleaned, and with only partial bedding course of mortar. The Inspector of Works was in active supervision. I stood and watched the work as a casually-interested stranger for some time. The bricklayers went on quite happily, and the Inspector stood over them. He said nothing. I regarded the proceedings with

much astonishment. Leaving this trench, I went to another in a similar stage. Same thing was going on. The Inspector came over, stood by, but said nothing. I strolled away, and came back again in a quarter of an hour. No change. Strolled away and came back again in half an hour. No change. Concrete foundations now nearly covered with bottom course of bricks. On each occasion I was by the bricklayers a quarter of an hour at a time, and the Inspector passed to and fro from one trench to another. The men received no check or direction to clean the concrete. After this repeated examination, and regarding the whole proceedings as most reprehensible, I walked over to Mr Holmes, who had been all the time since my arrival busily engaged with the contractor setting out, &c., at a distant angle of the building, and had not been at the bricklayers' end at all, and quietly told him what was going on. Mr Holmes told me he had spoken about this before, and he at once went over and stopped it, of course. At the same time I noted that the bricklayers were being allowed in the Inspector's presence to grout in the foundation-course in a manner no doubt convenient to themselves and profitable to the contractor, but which is not permissible in a building of this importance. It is also contrary to the specifications. I noticed also that workmen engaged in filling in the trenches about the foundation-courses were not ramming the stuff, but shovelling loosely up to height. I do not say ramming had not been done, but it was not being done to-day, nor did the Inspector check the loose shovelling. I noticed also that the mortar used by the bricklayers was not uniform, one-third of it, say, was about right, the other two-thirds far too wet for its proper application.

All these are matters absolutely for an Inspector's continual presence, and not for an occasionally visiting officer. They are of unquestionable importance in the foundation-work of a large and substantial building like this, and there should be no possible room for doubt as to the competency, firmness, judgment, and practical knowledge of the Clerk of Works employed. Had I been present in official authority, I should have suspended the Inspector on my own authority forthwith.

I am sorry to have to speak so strongly, but am compelled to do so, because, if I have to take over charge of these works, I must decline to be held responsible for work supervised by an Inspector who cannot, after what I saw to-day, be equal to the position. It is not unlikely that cracks, &c., due to uneven settlement, may occur in the walls when they are erected. If so, such damage and other possible eventualities will be attributable to the novel practice of allowing a film of clay to interpose here and there between the concrete foundations and brickwork bottom course. I know nothing about this Inspector whatever, and do not remember ever to have heard his name or seen him before. I did not speak to any one on the works, except quite casually to the hut "boss" about his firewood, and so on, nor did any one on the works speak to me.

As regards the laying-out and arrangement of the work, the orders given and on record, and the functions legitimately the work of the Resident Engineer of the works, you will perhaps allow me to say that, if my visit had been in the capacity of, say, an inspecting officer, I should have been quite satisfied, subject to a few minor points more due to personal equation than actual difference of opinion.

With regard to any instructions to take over the charge of these works, having received direct orders to that effect from the Hon. Minister, it behoves me to obey forthwith, and I am prepared to do so accordingly, but I wish under this head to mention some essential matters.

A. On taking charge at the present stage, and therewith responsibility for the subsequent building, I must formally satisfy myself as to all foundation-work done to date of taking-over. For this purpose the walls must be cut through in my presence in one or two test places, and the contractor will have to be advised accordingly, and the reason explained, and, of course, he must be paid for the cutting and replacing.

B. Although I may take charge, I will take no general responsibility for an important building like this if the person whom I must most trust and rely upon is one who, as upon my visit of to-day, shows serious unfitness at the outset of the work. The Inspector should be changed immediately.

C. The architect-draughtsman who designed the building requires to be entirely allotted to this work alone. There are numbers of details and sketches now already necessary, and the demands will henceforth be continuous. There is three months' steady work at least for a draughtsman the whole of his time, and that at once. It is most injurious to be behindhand with the detail-drawings required. It interferes with the proper progress of the work, and is a most fruitful source of mistakes, alterations, disputes, extras, and all sorts of trouble and dissatisfaction generally, not to mention the inevitable claims on account of non-supply of drawings at settling-up. I do not see how these are, one or all, to be avoided unless the designer of the building is absolutely set aside for the time named to attend to nothing but the details.

D. It is immediately urgent that the heating system and the cooking and drying apparatus should be elaborated and ordered, and the contractor at once supplied with all information as to lines of trenches, openings in walls, &c. These are very important matters. Mr Holmes has specially studied them for some months in view of this building, and has the question in grasp. The whole subsequent comfort and convenience of the asylum depends upon their efficient and perfect arrangement and emplacement in detail. I need not remind you that these are specialist questions, which are in general Home practice referred even by the leading architects to heating-engineers, with copies of the plans and specifications at the time tenders are called for, so that their special sketches and specifications may be attached to the contract when it is taken up. In the colonies these facilities and opportunities do not afford themselves so readily, but, between the time for deciding to call for tenders and the contractor actually requiring the information, there is always time to work up the subject as far as is required. Now, in this case I shall be called upon actually at a day's notice (the contractor is now pressing daily for sketches and details of the heating-system, and the cooking apparatus must be ordered at once) to issue full instructions and specifications and orders under both these heads. While not saying that I have not some general knowledge of this sort of thing, I am not in the least ashamed to add that I am not at all prepared at a day's notice,

and with all my other work and demands on my time, to sketch plans and to write specifications for heating and cooking for a large asylum, and that I must have some time, if I am to take immediate charge, to look very carefully into both subjects, and may have to delay the progress of works in consequence, for which claim will of course be made. It is not for me in any way to question the Hon. Minister's orders, nor have I any intention of doing so but it is only my duty and reasonable service to point out the possible drawbacks of swopping horses in the middle of the stream, as to which these cooking and heating apparatus are in point. Before I can assume charge in accordance with my instructions, it is essential, and is legally necessary, that I should do so by and with due authority (See clause 1 of General Conditions, interpretations, fourth paragraph.) The established form of this required notification is a writing under the Minister's hand. Otherwise I have, and shall have, no *locus standi*, and the contractor would be perfectly justified in asking who I was, and refusing to recognise me.

8. I wish to point out that on taking charge I shall have the defence-works of the colony, the parliamentary buildings work, and the Porirua Asylum under my control, and that my available staff for all these works will consist of a junior clerk. Unless I am given the command of a larger staff it is transparently obvious that not one of these things can be at all properly attended to, and that all three will have to take their chance. I must, therefore, press for proper staff.

I have thought it right to report fully so that I may take up my orders on defined lines. I shall be obliged if you will do me the favour to lay this memorandum before the Hon. Minister.

I have, &c.

ARTHUR BELL, M.Inst.C.E.,

Engineer for Defences.

The Engineer-in-Chief, Wellington.

No. 2.

MEMORANDUM for the Hon. the MINISTER for PUBLIC WORKS.

Public Works Department, Engineer-in-Chief's Office,

Wellington, 21st July, 1891

Re Porirua Lunatic Asylum Contract.

WITH a view of inquiring into the matters relating to the manner of carrying out the works on the above contract, to which attention has been called by Mr. A. Bell in his report dated 10th instant, I proceeded to Porirua yesterday morning and made a careful examination of the work done and material deposited on the ground by the contractor for the construction of the building. It was found that the whole of the ground for the site of the building had been excavated and levelled off to the grade-lines for the base of the structure, the concrete foundations for all the main walls were in, and, with the exception of two small portions of the outer-walls of the principal fronts, the brickwork of walls had been carried up to the height of the damp-course, which was also laid on all the walls that had been prepared to receive it.

Regarding the character of the work done, I may explain that the excavation of about 9ft. in depth from the original surface of the ground at the site of the building has removed all the soil and most of the clay down to the soft bed-rock over nearly the whole space occupied by the building; so that it was not necessary, except in three or four places, to go deeper than shown on contract drawings in order to obtain solid ground on which to place the foundation.

As now in position and completed, the concrete foundations appear to be properly constructed of good materials, thoroughly mixed, deposited, and consolidated in accordance with the terms of the specification, consequently there is no necessity for having the walls cut through, as suggested by Mr. Bell, in order to admit of an examination being made of their construction, as this can be seen by merely excavating down to the base of the concrete on each side of the walls wherever it may be desired to test the quality of the work done.

There is now only a small portion of the upper surface of the concrete foundations on which the brickwork has not been started. It is therefore difficult to judge of the extent of the faulty work mentioned by Mr Bell as due to the neglect of the contractor to keep the surface of the concrete clean and free from clay before commencing to lay the first course of bricks thereon. That portion of the concrete now visible is clean enough, however, though discoloured by the clay washed from the sides of the trench by the rain, and in places where the trenches have not been filled in alongside of the brickwork, the surface of the concrete is clean, so that it does not appear that any considerable portion of the surface of the concrete was fouled with clay when the brickwork was commenced, and this, though liable to make an imperfectly cemented joint between the concrete and brickwork, is not likely to cause unequal settlement resulting in cracks in the walls of the building.

The bricks used in the construction of the walls so far appear to be of fair quality, and the mortar is in accordance with the terms of the specification. But the workmanship throughout is of a very inferior character, no care whatever having been taken in starting the brickwork to keep the courses perfectly fair and level, consequently, the bed-joints are in some places too thick, or of unequal thickness, and no reasonable attempt has been made to keep proper bond, even in the face-work of walls, all of which indicate that the contractor is careless or indifferent regarding the character of the work he performs, however faulty and otherwise inferior it may be, providing it is accepted and passed by the Inspector, who should have pointed out the defective work to the contractor, and required him to alter it, and, in the event of his instructions not being immediately complied with, to report to the Engineer, so that steps might be taken to compel the contractor to carry out the work in a proper manner. It is, however, no part of an Inspector's duty to personally direct the workmen employed on the contract. The contractor only, or, in the event of his absence, the responsible foreman on the works, should be communicated with on all matters relating to the management and execution of the works contracted for.

Detail drawings of some of the most important works in the building have already been prepared and supplied to the contractor, and others are in hand, so that it is not anticipated that

there will be any difficulty experienced in furnishing the drawings of details as they are required by the contractor from time to time as the work proceeds. There is consequently no necessity for keeping the architectural draughtsman solely employed on this work.

The cooking and heating appliances of the asylum are not included in the contract, but the plans of these are being prepared by Mr Holmes, and should soon so far be completed that the position of the small portion of the work included in the contract can be set out and the apparatus and piping ordered at an early date.

In the first clause of the General Conditions of Contract provision is made for the contractor being notified of the appointment of a person as Resident Engineer, who is to have the principal local charge of the works, therefore it would be necessary to inform the contractor if any change of Resident Engineer is made during the progress of the works. It is, however, implied by Mr. Bell that he made it a condition of his undertaking the supervision of the asylum contract that he shall be appointed an Engineer-in-Chief, and have independent charge of the contract, with an increased staff under his control. There is, I consider, no necessity for increasing the present staff on account of the Porirua Asylum contract, nor to set up a separate staff for the purposes of this work.

WILLIAM H. HALES,

Acting Engineer-in-Chief.

The Hon. the Minister for Public Works.

No. 3.

MEMORANDUM for the RESIDENT ENGINEER, Wellington.

Public Works Department, Wellington, 24th July, 1891.

Re Porirua Lunatic Asylum Building.

IN reporting to the Minister the result of my inspection of the works at the above-mentioned building on 20th instant, I could not reasonably avoid commenting unfavourably on the very inferior character of the workmanship displayed in the bricklaying work generally. No care seems to have been taken in starting the work to keep the courses perfectly fair and level, consequently the joints are, in some places, too thick, or of unequal thickness, and no reasonable attempt seems to have been made to keep proper bond even in the face-work of walls, all of which indicate that the contractor is careless or indifferent regarding the character of the work he performs.

As regards allowing this inferior work to go on unchecked, no doubt the blame rests, in the first instance, on the Inspector of the works, but the Minister feels that he cannot hold you to be entirely blameless in the matter, and I am, therefore, to specially call your attention to the urgent and absolute necessity of adopting all reasonable safeguards to see that the work put into this important building is of the very best character, and to direct you to personally visit the works as frequently as your other duties will admit of, and much more frequently than you have done hitherto, and to use the utmost care and vigilance with the contractor to insure a good job being made with the works.

As regards the Inspector, you will please admonish him for allowing such inferior work to go on without either stopping it or reporting the matter to you, and tell him, please, that if anything of the kind occurs again he will be at once suspended, and the matter reported to the Minister.

W H. HALES,

Acting Engineer-in-Chief.

The Resident Engineer, Wellington.

No. 4.

MEMORANDUM for A. D. BELL, Esq., Engineer for Defences.

Public Works Department, Wellington, 27th July, 1891.

Re Porirua Lunatic Asylum Buildings.

AFTER carefully reading your memorandum of the 10th instant, reporting your visit to the above-mentioned buildings and detailing the several matters that came most prominently under your notice when there, and having since received a full report from the Acting Engineer-in-Chief in reference to the matter, I have now come to the conclusion that it will probably be best for the works to be carried out under the more immediate personal supervision of the Acting Engineer-in-Chief, and I have therefore requested Mr Hales to himself make regular visits of inspection thereto.

Under these circumstances, therefore, it will not, I think, be necessary for you to take any further action in the matter, so kindly regard my previous directions for you to take charge of the work as cancelled.

R. J. SEDDON,

Minister for Public Works.

A. D. Bell, Esq., Engineer for Defences.

No. 5

New Zealand Defences, Wellington, 27th July, 1891.

Porirua Asylum.

SIR,—

I have the honour to acknowledge the instructions contained in your memorandum of this date with regard to the above buildings.

I have, &c.,

The Hon. the Minister for Public Works.

ARTHUR BELL.