

would be of great importance in this case, where so little space for berthing large ships is available in the port of Wellington. Beyond this point, towards the baths, the quay would be too much exposed to north-west winds to allow of ships lying alongside of it, and jetties would need to be built out from it whenever more room was wanted for the shipping. I might suggest that this subject should be fully considered before any plans for reclamation are allowed to be carried out, dealing, as they do, with the most valuable part of the port of Wellington.

The preservation of the foreshore from silting up by the use of silt pits to the sewers, I think, will not be found satisfactory, and the deposits could be removed cheaper and faster by a clam-shell dredge.

I have, &c.,

C. NAPIER BELL,

Member Institute Civil Engineers, Engineer, Lyttelton Harbour Board.

Enclosure 2 in No. 25.

Mr. H. P. HIGGINSON, C.E., to the Hon. the MINISTER, Marine Department.

SIR,—

Christchurch, 22nd March, 1882.

In compliance with instructions received, I have inspected that portion of Wellington Harbour that will be affected by the proposed Te Aro reclamation. I have carefully read the correspondence that has taken place, as well as the reports of evidence taken, and from which I gather that the question to be decided is as much a nautical as an engineering one.

The evidence given by the Harbourmaster and various shipmasters points conclusively to the fact that the Reclamation (if carried out to the line contemplated by the City Council) will seriously interfere with the navigation to and from the southern T's of the Queen's wharf, and at the same time so encroach upon the sheltered area made use of by nearly the whole of the smaller craft, that it will necessitate their removal to another anchorage.

The line of reclamation proposed by the City Council would enable vessels of light draught to lie alongside the breastwork, from the point of commencement at the Queen's Wharf, as far as the curve; beyond this point they would lie broadside to the north-west, which would render their position dangerous in rough weather. In consequence of this it will eventually become necessary to construct a series of wharves jutting out therefrom, and in line with the prevailing winds, which will monopolize the water space fully up to the Crown grant line. The area to the southward of the Queen's Wharf will, in consequence, be so far encroached upon as to allow no more room than will be absolutely necessary to enable steamers and sailing vessels to warp into their berths at the inner T's. It will be hardly possible for coasters to sail in under the lee of the Queen's Wharf and anchor as they now do during a strong north-wester, and at the same time it will oblige the whole of the small craft to find moorings elsewhere.

The only other sheltered positions that would be suitable are between the Queen's and Railway Wharves, and in the bay beyond Pipitea Railway Station. With regard to the former, I consider that the greater portion of the space must be kept clear in order to allow free access to the northern T's of the Queen's Wharf, and the approaches to the Custom House Quay, which, I presume, will be made available for coasters. The few boats now moored in this position are stated to be constantly in the way of steamers. It will, therefore, I am confident, be impossible to provide the necessary area in this locality. The latter position, beyond Pipitea, is, I am informed, shortly to be reclaimed by the Wellington and Manawatu Railway Company, so that it will not be available for the purpose.

It appears to me that coasting boats and yachts have a right to expect a full share of consideration in any arrangements contemplated for the improvement of both city and harbour, and that no work should be undertaken which would deprive them of their present shelter unless provided in a suitable position elsewhere.

After a personal inspection of the harbour, and consideration of the evidence adduced, I am firmly of opinion that the line of reclamation proposed by the City Council would monopolize the whole of the space now available for the shelter of the smaller craft. The line last proposed by the Marine Engineer would be a great improvement in this respect, as it would leave a larger area intact. I am, however, of opinion that the line of the breastwork to the reclamation should not be guided by the present depth of the water, but that it would be preferable to keep it in not more than 6 feet L.W.S., and then remove the silt by dredging until the necessary depth alongside the breastwork was obtained. The accumulation of silt and detritus is constantly going on, so that it will be absolutely necessary before long to face the question of dredging. The mode proposed by which to arrest the silt, by placing silt-traps at the mouths of the sewers, is, in my opinion, a very ineffectual way of meeting the difficulty. The removal of the silt would be very expensive, and if not constantly kept clear the silt-traps will be of no use whatever; probably this would be the case when most required, during a heavy rain. I consider that the silt can be removed in a more economical manner by dredging, while the possession of a dredge would enable the Harbour Board to keep the whole of the breastwork clear. A dredge of small size would be all that was necessary; in fact, a Priestman's crane with a patent dredging-bucket attached, if placed upon a barge or punt, would probably meet the requirements of the case. It appears to me to be more reasonable to maintain the existing wharfage and water area in an efficient state, than to continually encroach upon the harbour by reclamations—abandoning breastworks and wharves that have been previously of good service, and constructing new ones farther out at greater expense.

If the area proposed to be reclaimed is of vital importance to the city, I would propose that before it is carried out, that other suitable shelter should be provided for small craft, and that if this be possible it might meet the difficulty. I would suggest the construction of a sheltered basin at the eastern extremity of the Te Aro reclamation grant of about ten acres in extent. A breakwater of solid material could be run out from a point about twelve chains westward of the baths, measured upon the front line of the proposed future reclamation, at which point the reclamation should be stopped.