

I think the Crown should retain the land until it is made apparent that any proposed dealing with the land will at once be proceeded with. . . . The Crown may grant land under the sea to be reclaimed, but it has been held that the reclamation must be completed in a reasonable time after the making of the grant."

6. I should go farther, and recommend a closer approximation to the English practice. It would be a most proper arrangement that any such grants should only be made by Act of Legislature, due notice having previously been made, by advertisement and otherwise, of the intention to apply for such an Act, so that all interested parties might have ample opportunity to oppose should they consider it in their interests to do so. The Government of the colony would oppose, promote, or remain neuter, according as they should be advised that the proposed work would be injurious, beneficial, or innocuous as regards the navigable portion of the harbour. At Home, all such Bills are primarily submitted to the Board of Trade, and by it referred to the Admiralty; the Admiralty, if the case be a difficult one, calls in some eminent engineer, and after receiving his report, they inform the promoters of the Bill whether they will or will not oppose the Bill in Committee.

7. In support of these views, I must shortly sketch the modern theory of tidal harbours. It is maintained by engineers that all tidal harbours (whether the embouchures of rivers or mere arms of the sea) have their channels scoured out and kept open mainly, if not entirely, by the currents of ebb and flood; consequently, every acre of land reclaimed from the sea between the levels of low and high water must diminish the scour by excluding tidal water, and so must, theoretically at least, injure the harbour. I could quote from the writings of many of our greatest engineers, but it would take too much time. Their opinions are summarized by Mr. Bald, when he says "I hold that every inch of water excluded from a harbour must injure the navigation."

8. This is the general theory. In practice, it is not denied that reclamation, if judiciously conducted, on proper lines and in a regular manner, need not be injurious, and may, indeed, be beneficial; because the lines of embankment may be laid out in such a manner as to guide the tidal currents and confine them always to the same channel, which may thus be maintained at the same depth, or even deepened, by a smaller body of water than entered the harbour previously, because before the works were constructed the water may have been diffused over many and winding channels, whereas the works may confine the tide currents to one comparatively straight course.

9. If the works of reclamation be carried out in an irregular manner, however, even though well designed for the benefit of the harbour when completed, they may do great damage while in progress. A small piece of land reclaimed here and there, with probably sharp corners and re-entering angles, would so completely disturb and break up the normal run of the tide currents, as probably to injure the channel very seriously—perhaps even to a greater extent than the works when finished would be able to repair. Hence the importance of the Attorney-General's stipulations that the reclamation should be completed within a reasonable time.

10. I shall now refer to the particular cases before me.

*Auckland Harbour.*—In order to show more distinctly the nature of the application for a grant of a portion of the north shore of Auckland Harbour, I have laid down the areas as accurately as the information enabled me, on the accompanying chart. The portion tinted blue, on the south side of the harbour, has been already granted "in trust for the improvement of the harbour." The portion surrounded by a dotted red line, and tinted pink, is the area applied for by His Honor the Superintendent in 1867, and which the Secretary of Crown Lands recommended should not be granted. That his advice was sound, a simple inspection of the chart will at once show. (I believe it has not previously been laid down on any chart or plan showing soundings.) The area asked for covers the fairway of the harbour at the entrance, almost extending to the five-fathom line on the south shore, while in the upper part of the harbour it actually covers the whole of the water area, and extends to the low watermark on the south side. The portion surrounded by a pink line (approximately parallel to low watermark, and ten chains outside of it), and tinted purple, is, as nearly as I can delineate it, the area which Mr. Domett now proposes to grant. This is reasonable in amount, but the line is objectionable from an engineering point of view. On the assumption that it may all be reclaimed in time, it will simply have the effect of pushing the present high-water margin a certain distance into the harbour, and there repeating its present objectionable features. Thus the reclamation would displace tidal water without any compensating guiding action on the currents of ebb and flow. The portion, also surrounded by a continuous pink line, and hatched in pink, is what I should prefer to grant. It will be observed that the bounding line is drawn on easy curves which touch the extreme points of the shore; were the whole of the hatched area reclaimed, I believe the currents would be so much more regular that the harbour would not be injured, notwithstanding the considerable diminution of the water space. I believe, moreover, that the embanking and ultimate reclamation of mud flats of one portion, while forming a noble harbour endowment, would actually benefit the harbour, as the water ebbing from that extensive inlet must at present seriously interfere with the water flowing from the upper portion of the harbour, and force it over to the southern shore, there to deposit its silt. The area I propose to grant extends into various depths up to 10 and 12 fathoms, so that there would be ample choice of site for a graving dock or patent slip.

It might, however, be considered that the hatched area eastward of Stokes' Point would be amply sufficient to grant at present. I have less difficulty in recommending a grant in Auckland Harbour, as it is more an arm of the sea than an ordinary tidal harbour. It has no bar, and such an ample depth of water, that only very extensive interference with the tidal area would be likely to be injurious to the harbour from a nautical point of view, provided, of course, that the works were carefully laid out on proper lines.

11. *Tauranga Harbour.*—The harbour of Tauranga is very different. It is purely a tidal harbour, its channels being kept open solely by the scouring action of the currents. An amount of reclamation which would be innocuous at Auckland would probably damage Tauranga Harbour to an extent that would necessitate continuous and expensive dredging in order to keep the channel open. The accompanying chart shows (tinted pink) the area included between high watermark and a line 20 chains therefrom, and it shows the absolute necessity of considering such questions on a chart, and not on a land survey plan which shows neither low water line nor soundings.