

the respective areas being 38 acres and 22 acres, or 60 acres in all. To the south of this is a small block, coloured red, and it is known as the 28-acre Block, and is so marked on the Map A. There is another much larger block, known as the Richmond Block, containing 722 acres; it appears coloured green on Map A. Next we call attention to the Awatoto Block, which contains 590 acres, and appears coloured yellow. Also there is the McDonald Block, containing 700 acres, coloured puce on Map A. Finally, there is a parcel of land known as the West Quay Reclamation Block. Its locality is shown on Map A, where it appears close to the South Pond, lying to the south-west of that area; it is covered in black stippling, and there is printed on this parcel of land, "About 73 acres of land being reclaimed." We shall refer to this hereinafter as the "West Quay reclamation."

#### METHODS OF RECLAMATION.

We have in the terms of the question submitted to us to consider by what arrangement any such reclamation could be most economically and satisfactorily accomplished. This may be the most convenient place to point out that the engineers and other experts who gave evidence before us on this problem described three different methods of reclamation that could possibly be adopted to make these lands habitable. The first was described by the witnesses as the "siltation method," and this is a term which we shall adopt herein for the purpose of description of the method. It consists in directing the natural processes by which the whole delta, of which these low-lying reclaimed areas are a part, has been formed. The process is to lead the waters of the silt-laden rivers over the land into prepared siltation basins. Napier South was reclaimed in this way. We shall not further refer to this method, because all the witnesses were agreed that this method would be slow, uncertain, costly, and altogether too risky under existing conditions. For instance, Mr. O. N. Campbell, Chief Drainage Engineer, in a report to the Hon. the Minister of Lands on this subject in 1925, speaking of the siltation method, says, "It would be practically impossible to elevate this land by this method above, say, the 22 ft. contour. Lands below this contour could, no doubt, be elevated to this level by the method, but the process would be slow and the cost much higher than is popularly imagined, and, moreover, the risk of damage to already settled lands would be too great."

A second method is to reclaim by suction dredging. Where this method is used there must be installed a dredging plant capable of dredging by suction the sand and silt deposits in the rivers and in the areas adjoining those which it is sought to reclaim, and depositing on the area which is being reclaimed, raising the level of this area to the required height. Mr. Campbell, in the report already referred to, describes this as an ideal method for the areas under review, stating that the sand and silt deposits would be excellent material for economical removal by this method. This method also has the collateral advantage in that it can be economically put into operation as an adjunct to some other scheme—*e.g.*, dredging a harbour, or cleaning out a silted up river-bed, or widening or straightening a river.

The third method described to us is known as the dewatering method. This is described most fully and is advocated in Messrs. Hay and Rochfort's report to the Harbour Board (Exhibit 44). The method can be most conveniently described by directing attention to the Awatoto Block, which appears coloured yellow on Map A. It may be stated that the average level of this block is low-lying. The first step towards reclaiming it by the dewatering method is to erect a retaining-wall or levee around it of sufficient height and strength to keep out flood-water from the contiguous rivers and areas. A draining-basin is then excavated at the lowest point, which in this case would be near the site of the High School, which will be seen marked at the northern end of the Awatoto Block on Map A. At the site of this drainage-excavation a pump-station is erected with an automatically-controlled, electrically-operated pump. This pumps the water over the levee, in this case into the sea and drains are cut through the block leading all surface water to the draining-point. This method is quicker than either of the other two, and is the cheapest; it has the disadvantage that the inhabitants of the area are living on a low level surrounded by an embankment, and are liable to dangers of seepage, burst banks, and failure of the pumping plant.

We desire here to point out that the areas we have been describing are not wholly lagoon-beds or swamps, but are areas which stand at the present time at various stages of natural reclamation. The North Pond and South Pond are tidal lagoons, and require an average of about 8 ft. of filling to raise them to the level of the surrounding areas. The 28-acre Block is almost completely reclaimed. The suction dredging-method has been employed here, and not a great deal of work is required to complete the reclamation of this area and get it ready for subdivision and roading. The McDonald, the Richmond, and the greater part of the Awatoto Block presented during the time that we were at Napier a rather swampy and waterlogged appearance, but we were assured and believe that in the summer-time these blocks are mostly quite dry, and large areas of them are leased for grazing and agricultural purposes. Furthermore, it should be pointed out that parts of the Richmond Block and practically the whole of the McDonald Block are what are known as salt areas, and they cannot be considered as completely reclaimed until the salt is washed out of the land, and this is likely to be a lengthy and somewhat costly process.

This completes a somewhat rapid survey of the material which forms the subject-matter of our present inquiry.

#### CONFLICTING INTERESTS.

We now desire to call attention to the fact that there are at least four different points of view from which the reclamation problem at Napier may be studied, and each of these was put to us in the course of the inquiry. Two of these points of view are peculiar to the Harbour Board, whilst one of them may be described as the point of view of the Napier Borough Council, and one as the point of view of