

Bayswater to Northcote, and again across Little Shoal Bay to Birkenhead. These embankments would also carry tram systems, so that from the extremes of Cheltenham beach and Birkdale it should be possible to reach the town centre in about 15 or 20 minutes. Reference to the plans will show the location of these embankments. Behind the embankments the sea water would be held up to high water level, providing large salt water lakes of good depth, where at present great muddy areas exist at low tide. By providing locks in the embankments these lakes will be made available for vessels suited to the draught of water inside, but the main shipping wharves would be in the open harbour outside, preferably in the position indicated on plan.

We now come to another proposition, made possible by the construction of the embankments. Assuming it will be unnecessary to keep full tide level inside them, and allowing say two feet of water to be drawn off each tide, it is possible to obtain by means of turbines a very considerable amount of power, which can be readily converted to electricity. The calculations show that something like 18,000 h.p. hours per day can be thus obtained at neap tides, and of course much more at spring tides, and the cost of such power would be reasonably low. Unfortunately the tidal variations in point of time would not allow of direct use of the power, but herein lies one of the peculiar features of the position in that a convenient storage basin can be made, whereby the power can be adapted to the actual needs. So suitable are the conditions that the amount of power would probably serve a town almost the present size of Auckland and this is looking far enough ahead to justify the scheme. The method of operation would be as follows. During ebb tide the large turbines would be operating from the difference of level of water inside and outside the embankments, the turbines being coupled to pumps which drive a portion of the water into the storage basin. Other turbines coupled to electric generators would draw their water supply from the basin at such times as would suit the demand. As is well known, the efficiency of this type of plant is high, the upkeep low, and there are no fuel expenses to meet.

Now as to the railway. This is suggested on the plan and it will be seen that it starts at the wharves, skirts the seaward side of the town site, rising gradually into the low land at the head of Shoal bay and thence by gently rising ground through the Wairau area at the back of Takapuna. The distance to Helensville and the north by this railway is some 10 miles less than the existing route but unless convenient means of transport across the harbour are provided this would probably not attract many passengers from the Auckland side. I do not propose a bridge, but there is an excellent alternative in a system of train ferries such as exist in many parts of the world, so that passengers would be able to board the train in Auckland and thus be carried over the harbour where the train would disembark for the north. It need hardly be pointed out that the provision of a railway in itself would tend to the establishment of a town at its point of departure, and further, by tapping country at present badly served in this respect would bring produce also to the same point.

So much for the means of communication: let us now consider the results. Looking at the plan it will be seen that of the two curious lagoons in the Northcote district, one has already been noted as a storage basin site. The other is admirably adapted to be formed into the central business portion of the projected town. The concentration of railway, tramways, wharves, power site, and so on involves a working population thereabouts, and the establishment of stores, warehouses, commercial houses and the like. Some land would be reclaimed behind the road and railway embankment—perhaps 100 acres—excellently suited to these purposes. The banks, shops, offices, etc., would congregate in the lagoon area, and beyond this, on slightly rising ground would be established subsidiary shopping and warehouse places. Further back still, in the large area of nearly level land skirting the railway up into the Wairau would arise factories, and industries of various sorts would be carried on by the aid of cheap electric power. Breaking into this area and diversifying it are more elevated ridges, where one might expect closely settled residential districts, with such buildings as libraries, churches and other public buildings to be erected in commanding sites. Gradually, the concentration of effort, and the amount of business to be transacted would cause the larger part of the population in the four boroughs to find their employment in the new city. Traffic with Auckland would not be less, but greater, but its character might be altered.

The main outlines have now been stated and the next stage is properly the work of the town planner. I propose only to refer to some of the broader features under this head, and especially to the layout of the central business site in the second lagoon. I suggest that this would be surrounded by a stone or concrete breast wall, oval in plan, filled in on the landward side and a broad causeway constructed not less than two chains wide, and nearly a mile in circumference. The lagoon would be filled with water forming a shallow lake. On the land side would be the shops, offices, banks, insurance buildings, places of amusement and the like. Parallel with the oval causeway would run a minor street, whence supplies and deliveries to and from the shops, etc., would be made by back entrances. Several radial roads would join these main roads continued in some cases out to other inter-connecting roads. Four of these radial roads would be spacious avenues, leading up to open places which would be dealt with as in many of the great continental towns. In the lagoon a couple of small islands might be formed, beautified by trees and reached by narrow bridges. The tram system would complete the circuit of the great road, and by proper planning it would be seen how centralized and convenient shopping and business conditions can be made, as well as providing comfort and recreation possibilities.

Coming from Devonport there would be no need to cross the busy railway system about the wharves on the low level. The road would start to rise about opposite the ferry berths and would be carried on a viaduct to the higher ground where it would bifurcate to the business centre on the one hand, and towards Birkenhead and Northcote on the other. No doubt about this spot a transfer station would be established