

embankments of the northern approach will afford scope for the use of modern mechanical equipment, such as drag-lines of the larger type employed by the Public Works Department. The whole of the work involved in stages I and II of the complete approaches and their ancillary works will cost approximately £1,000,000, although, as recommended earlier in this report, only stage I, costing about half the total sum, should be charged to capital, the balance being executed in phases as necessitated by increased traffic and financed out of revenue.

In our discussion of the southern approach to the bridge we made passing mention of its possible function as a link in a future waterfront road ultimately extending from St. Heliers to Whenuapai. This waterfront road is, of course, no part of the bridge plan, but we deem it worthy of mention because of its potential value as a tributary in the general system of approaches to the bridge. Similarly, we draw attention to the possibility that at some future time a waterfront road from Chelsea to the northern bridge-head at Northcote may be of value as part of the general system of approach roads on that side of the harbour, by-passing, as it would, the built-up areas. We do not, however, envisage industrial expansion to the same degree as on the south side; but we do foresee a considerable demand for residential sites in the more accessible areas along the waterfront, which would then be in close proximity to the city.

Our estimates make no direct provision for these waterfront roads on either side of the harbour, but their value to the general system of approaches suggests their inclusion in the contingent works which might be subsidized from the contingencies and development fund.

(8) ÆSTHETICS

The site does not lend itself to achieving symmetry in the spans, owing to the difference in level between the two abutments, one being on high land at Northcote and the other on a low reclamation. Furthermore, the highest part of the bridge structure is over the navigation channel, which is not centrally placed. Again, the composite design (part steel and part reinforced concrete) creates more difficulties than an all-steel superstructure in the achievement of ideal proportions; and the depth and cost of piers must be an overriding factor in the final determination of span lengths. Despite these limitations, however, it is considered that a structure proportioned as outlined in the plans accompanying this report conforms reasonably well with the requirements of æsthetics. We consider, also, that a large-scale work such as this deserves appropriate treatment of its site. At relatively small outlay the land adjacent to both bridge-heads could, and we think should, be converted into attractive gardens. As the cliff fronting Point Erin Park will require to be cut back to conform to the curve of the roadway, the opportunity should be taken to form terraces on the batters, and to establish shrubs thereon. Similarly, the terracing of Stokes Point, Northcote, would be worth while, and would enhance the appearance of the bridge.

(9) ADVISORY PANEL

We reiterate our view that the Government should assume the entire responsibility for the design, construction, and administration of the bridge and approaches, as it alone has at its command the necessary organization and resources for handling such a project. The project is, however, a matter of the greatest moment in the planning of metropolitan Auckland and will profoundly influence future plans. We therefore consider that the Government should seek local expert advice on the functional planning of a work of such vital importance to the whole metropolitan area. We suggest the appointment of a representative advisory panel of engineers, consisting of experts whose local knowledge and specialized skill and experience would very materially assist the Government. The panel should, we think, be a consultative but not an executive body, whose function would be to consider the many and varied aspects of the project affecting local and public bodies and metropolitan interests generally, and to