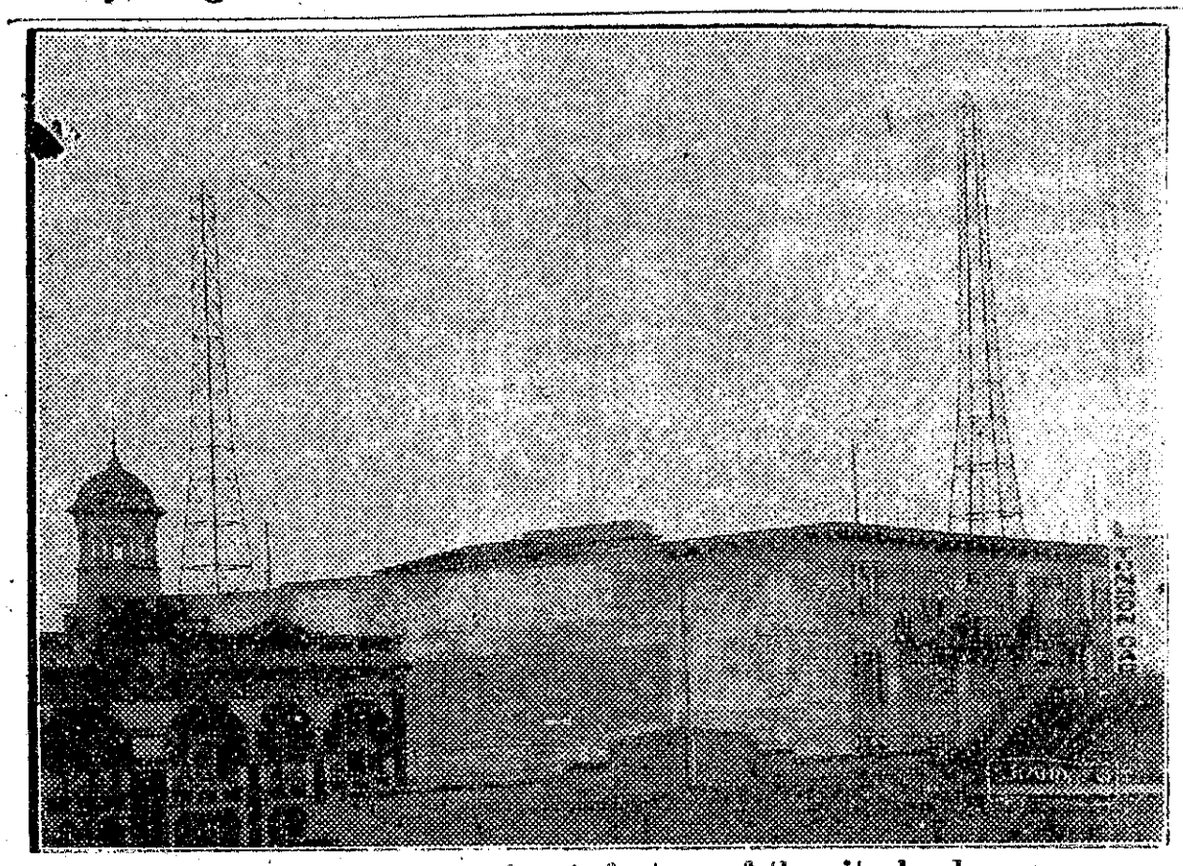

1YA, Auckland, a prominent feature of the city landscape.
—Photo., Andrew.

the conventional T or L antenna, the electric field returns to the base of the antenna through the ground, and if the ground is not of perfect conductivity a certain amount of loss is sure to occur.

If, however, additional down-leads are added to the antenna, and each down-lead connected to the ground through a tuning coil it will be seen that the number of paths for the return of the electric field is increased, and as these paths are effectively in parallel the total ground resistance is reduced. With multiple tuning it is necessary to adjust the down-leads so that they are in phase, and when this condition is obtained the point of maximum potential does not occur at the ends of the antenna as in the case of the T or L type, but somewhere along the flat top, and this fact tends to reduce absorption losses due to the proximity of towers or insulators. The input impedance of a multiple tuned antenna is greater than that of a T type by an amount equal to the square of the number of down-leads, and as this increased impedance is essentially useful on radiation resistance, and also as the earth resistance component is at the same time reduced it follows that the ratio of radiation to total resistance is materially increased and consequently a better antenna is the result.

Crystal Control.

IN the case of some stations, it has been noticed that changing over to crystal control has effected an improvement, in so far as the distortion form of fading has been reduced. While it is not considered that any of this form of fading which is at times noticeable from 2YA, is to any extent due to the transmitter itself, the company considers that no stone should be left unturned in the endeavour to effect improvements in this direction. Several specially ground quartz plates have been obtained ground accurately to a frequency of 713.9 kilocycles or 420 metres, and by the time this article appears it is anticipated that 2YA will be changed over to crystal frequency control, the first broadcast station of any size, we

Main studio at 1YA., Auckland. This is a handsome room, specially draped to give the most satisfactory acoustic properties.
—Photo., Andrew.