

CIVIL ENGINEERING

1. *Roads and Bridges*.—Construction of new forest roads and surfacing of existing roads during the year were as follows :—

Conservancy.	New Forest Roads.		Metalling or Other Surfacing.	
	M.	ch.	M.	ch.
Auckland	9	20	2	60
Rotorua	19	76	18	58
Wellington	13	45	1	26
Nelson	9	71	..	..
Westland	3	47	..	..
Canterbury	2	2	..	..
Southland	11	16	15	16
Total	69	37	38	0

The above figures do not include work on streets in State forest villages. In most of these cases the work is only partially complete, being dependent on the construction by contract of kerbing and channelling, storm-water drains, sewers, and water-mains.

Forest roads totalling over 850 miles were maintained in reasonable condition, but lack of man-power and suitable equipment still prevent attainment of the desired standard. Six miles of access tracks were constructed, and maintenance work was carried out on a further $7\frac{1}{2}$ miles. Six new road bridges and two pedestrian suspension bridges were constructed, and existing structures were maintained to as high a standard as possible with the limited man-power available.

2. *Water-supply and Drainage*.—The contractor has not yet completed the stand-pipe and reticulation for the Kaingaroa forest village; nevertheless, completion is expected at an early date. Reticulation has been completed at Waipa and Minginui Villages; while at Kotaki, Mamaku, Pureora, Karioi, Gwavas, Hammer, Ashley, Eyrewell, and Golden Downs various improvements have been effected, chiefly by way of extra storage, improved supply, or the installation of booster pumps for emergency fire-fighting service.

Many of the forest villages are not yet large enough to justify an expensive water-supply system which would give immediate fire-fighting pressures; in such cases good storage and a pump for boosting the pressure are provided. Storage by means of concrete-stave tanks has been provided at Wairango (for forest fire protection) Waiotapu, Hammer, Ashley, Karioi, and Gwavas. A number of small reservoirs have been created behind road fillings to provide supplies for fighting forest fires, while several domestic supplies have been provided or augmented with new bores.

Samples of water have been taken at regular intervals for analysis for the purposes of the pulp and paper scheme. A measuring weir to gauge the flow of a spring-fed possible source of supply for the pulp and paper mill was also constructed.

The provision of all reasonable amenities in forest communities is necessary in order to attract and retain the best type of employee, and one of the most important of these amenities is the installation of a water-borne sewage system. With the development of forest communities and improvements to water-supplies, sanitary drainage has been improved in villages and camps wherever possible.

ARCHITECTURAL

1. *Buildings*.—Very satisfactory progress has been made in three conservancies—Rotorua, Nelson, and Canterbury—with the provision of accommodation for both married and single employees, and also with the construction of essential workshops, garages, stores, &c. Difficulties are still persisting in the arrangement of contracts,