

BUILDERS' FIELD EXPERIENCES

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The problems arising from operations carried out in the reinstatement of buildings in the Inangahua and Upper Buller area were many and varied, but once a positive plan of procedure was adopted, work proceeded with a minimum of delay and was brought to conclusion, we feel, with satisfactory results for the people stricken through the disaster.

The initial problem that was encountered by the Contractor was the frustration experienced when efforts were being made to find out whose instructions were to be followed, who was to issue them, and when they were to be carried out. Once this information was ascertained and orders were placed, work commenced immediately and progressed reasonably smoothly. Even though it was understood that building activity could not take place whilst the region was still classed as a disaster area, with the possibility of further tremors, certain delays were caused because there did not appear to be a definite programme formulated at the earliest possible date. Once the administrators who subsequently supervised the reinstatement were installed near the site, then the operation was made relatively simple.

It was quickly learned that once the builders adopted the policy, advocated by Mr H. Yeatman of the Ministry of Works, that on-site assessment was the speediest way of finalising prices for each job, then work proceeded quickly and smoothly. Prior to this, establishment costs had been worked out for boarding men, travelling, site allowances, etc., and an establishment cost on a percentage of labour arrived at. The establishment costs proved to be almost that of the labour content in the jobs, as had been allowed for when pricing the work initially.

One factor that was felt as being important, and perhaps created concern, was the uncertainty about damage to drains, both from the possible danger to health and also the problem of assessing the reinstatement cost. One cannot imagine visible evidence of sewerage and the possibility of leakage underground going unattended in a city or built up area without immediate action by a Drainage Board, Health Department, or an appropriate authority.

So experience here shows that this should be attended to at an early stage of reinstatement, if only to make the area safer for supervision and demolition workmen. If a disaster such as this one had taken place during the summer in some localities the food (cooked and uncooked) that lay about both inside and outside dwellings for the length of time that it did, added to the previously stated condition, then a health hazard could become apparent in a very short space of time. This did not happen at Inangahua, probably because of the cool weather conditions (frosts, etc.), although the possibility was reported and kept in mind. Perishables such as food would have been better dumped after cost assessment by authorised officers, and the owner paid out by the Commission. Also, in respect of a city or large town, domestic animals could become something of a problem, and could perhaps be gathered up, suitably marked, and impounded outside the area until uplifted by the owners. This did not become a problem at Inangahua.

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Co-ordinating the work of subcontractors was sometimes made a little difficult through inclement weather, and at the commencement of operations, the road from Reefton to the disaster area caused some delays because of work being carried out on culverts, bridges and general road surface construction. However, this in itself was not a condition of major concern, but was simply a contingency which had to be allowed for.

The damage accruing from the earthquake was mainly through the houses or buildings being moved in one direction, approximately 18 to 24 inches in one case, and 12 to 18 inches in another, causing in some cases the most unusual degrees of distortion. Some houses had obviously been moved a greater distance than those mentioned, at a certain point in time, and then come to rest nearer to their original position at the cessation of movement.

Buildings constructed on concrete foundations (very few) were damaged to a much lesser degree than others built on concrete or timber piles, as these were pushed over at varying angles, and some were shifted completely. In a number of cases, chimney stalks were broken off at the junction of the interior and exterior because they had been held at that point by the timber, rafter, or wedges, instead of sufficient clearance being allowed. Where chimneys were of reinforced concrete construction, the whole unit, including the chimney block, in one or two cases had leaned completely over. These chimneys were mainly on outside walls.

Those houses sheathed with brick skins, and having roofs of concrete tiles were subjected to more serious damage than those with weatherboard sheathing and iron roofs. Of course tiles had crashed through ceilings, taking joists and other tiles with them, with the resultant smashing of furniture, walls and household effects. It was fortunate indeed that the 'quake did not occur during the breakfast hour.

A problem that arose during the time of maintenance of a particular group of four houses was that the inhabitants were allowed to return to their houses before the buildings were handed back by those responsible for co-ordinating the repair work and there were misunderstandings between the co-ordinators and the authority who owned the houses regarding some chimney repairs. This resulted in some chimneys being demolished and rebuilt by the owners' tradesmen because they had been known to be defective before the earthquake, although they had been reinstated by tradesmen under the direction of the co-ordinators.

This misunderstanding would not have occurred if the persons responsible had known more about the work in hand and the procedure that was to be adhered to. There could have been less discomfort to the occupiers and some unnecessary expenditure could have been avoided.

The cost of carrying out the reinstatement, as far as my own Company was concerned, was asked for by Mr Yeatman, and some information is contained in the following which may be of use to you:

We worked an average of 60 hours on 6 days of each week.

Two main gangs were employed, one accommodated at the Reefton Camping Ground (private meals), for the Inangahua area, and the other at Berlins Hotel, for the Whitecliffs area.

It costs approximately \$65.00 per week per man for both tradesmen and apprentices.

Considerable time was spent in trips to the area. Four trips were made before any work was actually started. In addition, seven trips were made by myself to liase with Mr Yeatman, price the respective jobs,

organise our own work, and that of subcontractors.

Prices for house materials:

Formwork	- 50c per sq. ft.	Piles	- \$2.00 each
Plastering (cement work)	- \$3.00 per square yard.		
Concrete	- \$28.00 per cubic yard.		
Chimneys	- Single \$180.00, double \$220.00.		

While householders had been severely shocked, the spirit they maintained throughout the reinstatement period was quite amazing, and we could only have the greatest admiration for the families affected.
