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Stabilising an Ordinary Stone House Ruin

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Many of us, in the course of our work, come across nineteenth-century farm house ruins, of little interest to their owners as a dwelling. Someday someone might want to restore the building to live in but not yet. If as archaeologists, we talk earnestly to the owner about stabilising their ruin to allow for the option of restoration, what are we letting them in for? Having stabilised quite a large ruin myself over the past 12 years, I thought you might like some facts and figures.

The house had been burnt out and left derelict in 1914, but the stone work had been well built by a qualified Scots mason George McKessar, turned dairy farmer, and the house would be well worth restoring, but not by me. It is now surrounded by regenerating native forest and macrocarpa plantings above Purakaunui, 15 kilometres north of Dunedin (Figure 1). The title history of the land has been typical of so much of the low fertility hill soils around Dunedin: initial division into 50-100 acre dairy and subsistence farms in the nineteenth century, amalgamations for sheep and mixed farming in the first half of the twentieth century, followed by a mosaic of lifestyle blocks, farm forestry and nature reserves. For a farmhouse ruin in east coast Otago,

the McKessar house is unusual for the quality of the stonework and the lack of post-1900 modifications.

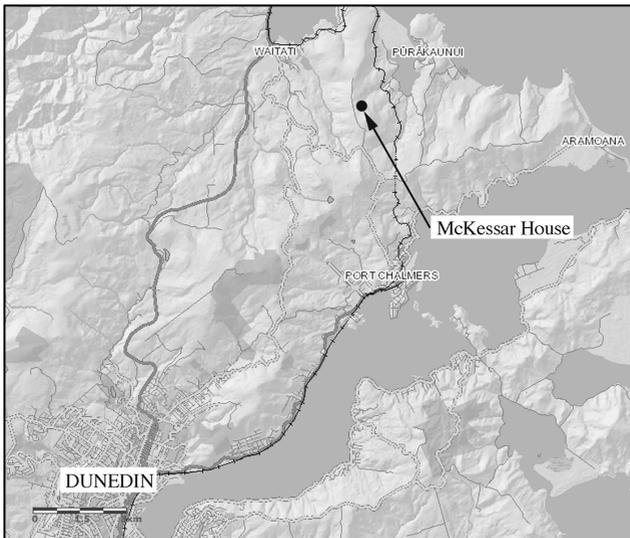


Figure 1. The location of the McKessar house ruin north-east of Dunedin (based on DCC Webmap).

The house itself was 15 x 9.3 m, with only two internal stone walls, i.e. about 40 m of walls, with 4 door- and 8 window-openings needing to be mended. Window

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lintels had been wooden with all but one burnt out, and no sign of stone arches. There was one small fireplace remaining, with a metal bar as lintel and the chimney flue within the wall, i.e. there were no chimney stacks in need of stabilising. Everything that was *not* built of stone - the roof, floors and window frames - had been 'salvaged' by nearby crib owners. Two 5 m sections of wall retained their gables. Most of the other walls still stood 2.6 m high and 450 mm thick (Figure 2). The rock was mostly naturally split Dunedin basalt from nearby paddocks, except for large, shallow, fully trimmed blocks (500 x400 across and 120 mm deep) for windows, doors and corners.



Figure 2. McKessar's house ruin before stabilisation work was undertaken.

Virtually no trimming of stone by chisel was needed – it was a matter of slapping on the clay mortar and picking the right rock off the pile of fallen material. We capped the tops of the walls with small flat rocks set with cement, that could be easily removed (Figure 3). The clay for the mortar was taken from the bank that had been cut at the back of the house, where it could be easily dropped into a wheelbarrow. We used 18 bags (20 kg each) of quick lime made up into lime putty which had to cure for 6-10 weeks before use, but for later work on an adjacent building (Hamel n.d.), we used freshly baked hydrated lime which heated much more slowly (though vigorously), and which could be used within days of mixing.

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Dunedin loessic clay made up most of the volume of mortar – 12 shovelfuls to 2 of lime putty and very little water – to make a malleable mortar. Pointing was done with a mix of white sea sand and lime putty - 3 shovels of sea sand to 1 of lime putty and a third of a shovel of clay for colour. Capping was done with 4-5 of sharp sand to 1 of cement. (Dunedin sharp sand is relatively yellow from the yellow quartz grains in it).



Figure 3. McKessar's house ruin after stabilisation work had been completed.

Costs? I did the project management myself, bringing in bags of sand and containers of water, but my four masons had to drive themselves from Dunedin to the site, requiring reimbursement for daily mileage. The rebuilding to the level shown in the second photograph, as well as pointing all the new work and pugging and repointing about a tenth of the older stone walls took 275 hours of qualified masons' work, spread over three weeks. Nearly 12 years later, the walls are standing well, the only maintenance required being a good spray every three years to kill seedling trees trying to take hold. Some repointing was done last year where some of the modern work had fallen out, due to the clay mortar being brought too far out on to the face. In order to be historically correct at the McKessar house, we used a high proportion of clay in the mortar, even adding some for colour in the pointing mixes. In terms of strength, I assume that sand, especially a coarse sand

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with plenty of fines, would have made a stronger mortar. When both are made with similar proportions of sand, lime mortar, however, does have only 21-23% of resistance to crushing that cement mortar has (Carter & Foster 1941).

Compared to the Otago Hotel at Skippers township (Petchey *et al* 2015), the McKessar house was very similar in age and design, but had a third gable. The Otago Hotel was built of schist, with weaker corners but had a similar history of dereliction, probably losing its roof 25 years later than the McKessar house. It is in much worse condition now, with more wall reduction and collapse, probably because of the higher rainfall and worse frosts at Skippers, the lower durability of schist compared to basalt and perhaps a lack of lime in mortar and pointing. The Hotel is just at that point where there is sufficient information left to carry the walls up confidently to a level where they could be capped temporarily to keep the water out.

Why bother? Returning to the conversation between the hypothetical owner of a ruin and yourself as an earnest archaeologist, choose your words carefully. If the owner's father was born in the ruin, pass briskly across the heritage/historic values – you never know what goes on in families. If you have found that Norman Kirk lived there as a boy, it might or might not help. I can more happily recommend the picturesque, particularly if the setting is reasonably wild as at Skippers (Petchey *et al* 2015). A ruin is more than a heap of stones. It creates a sense of the passage of time in a particular place and of our own culture, unique in this case to eastern Otago. Victorians actually built ruins as ruins to start with, in order to arouse poignant feelings of how short life can be. Admittedly I have tidied my ruin up so much, the sense of dereliction is reduced. Perhaps it's a cross between a picturesque ruin and a domestic sculpture.

References

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