

The ditch is similar in size to those reported from the five other redoubts built by European colonists in 1843 and 1845 (Table 1). Precise dimensions cannot be given for Fort Ligar because nowhere on the site did the full extent of the ditch survive. At the east end of Area 12, where it appeared to be closest to the original ground surface, it reached a maximum width of 3.5 m and depth of 0.8 m. While the former may be close to the original width, the latter is certainly an underestimate. If it is assumed that the original depths of topsoil (layer 1) and weathered clay (layer 2) here were similar to those evident in the natural profiles found in Areas 1 and 4, approximately 50 cm would need to be added, bringing the depth of the ditch to about 1.3 m. This would still leave the Fort Ligar ditch shallower than any of the recorded examples.

Its profile also differs in shape from those illustrated for Fort Thorndon and Te Aro (Wards 1968:233-234). These show straight sides, sloping inwards at an angle of about 15 degrees from the vertical towards the flat base of the ditch. The irregular U-shaped profiles (Fig. 6) and relatively shallow depths recorded here suggest that digging of the Fort Ligar ditch was never completed. This is also suggested by the abrupt termination of the western end of the ditch in Area 11 (Fig. 5), and by the heaps of clay spoil which appeared to have fallen back into the ditch soon after it was dug.

Confirmation of these inferences was subsequently found in two documents amongst the Colonial Secretaries Inward Correspondence (1A 1/45 - 1829) held in the National Archives, Wellington. The first was a note from Governor Fitzroy to Dr Sinclair, the Colonial Secretary, dated 29 October 1845, requesting the Superintendent of Works "to estimate the expense of completing the earthwork of Fort Ligar". The second, dated the following day, outlines the work needing to be done. This involved completing formation of the embankment and glacis (a smooth slope leading up to the defenses) using "surplus earth to be dug from the ditch", cutting a drain to let off water from the ditch, and cutting clover turf to face the embankment. Fred Thatcher, Superintendent of Works, estimated that this would require the

Table 1

COLONIAL REDOUBTS 1843-1845

DITCH DIMENSIONS AND ESTIMATED AREAS

<u>Year</u>	<u>Redoubt</u>	<u>Width</u>	<u>Ditch</u>	<u>Depth</u>	<u>Area*</u>	<u>Source</u>
1843	Thorndon Redoubt, Wellington	5ft		5ft	-	1
1843	Clay Point, Wellington	9ft		-	-	1
1843	Fort Arthur, Nelson	12ft		8ft	>.41	1
1845	Fort Thorndon, Wellington	10 ft		7ft	.38	2
1845	Te Aro, Wellington	10 ft		6ft	1.23	2
			Range			
		5-12ft		5-7ft		
		1.5-3.7m		1.5-2.1m		
1845	Fort Ligar, Auckland	3.5m		1.3m	.25	3

* Estimates (see text) in hectares.

Sources: 1 Cowan 1922:93-94
2 Wards 1968:233-234
3 See text.

employment of 10 men for 117 days. Along with the construction of a drawbridge and gate the total cost was estimated at £102.16.8. This report was annotated the following day by Fitzroy with the words "To lie over", presumably indicating that the work was not to proceed, at least until his replacement, George Grey, assumed office the following month. No evidence has been found that the new Governor ordered completion of the work.

Although unfinished, the portion of ditch uncovered still provides valuable information. Even before final shaping it was wider than the ditches of most contemporary redoubts (Table 1), indicating that substantial earthworks were intended. The two corners in the ditch show that the Fort's design incorporated at least one flanking angle, to permit defensive fire along the southern perimeter. Whether these occurred elsewhere in the defences could not be discovered archaeologically. Exploratory trenching of the site covered sufficient area to leave little doubt that the 35 m of ditch uncovered was all that survived of Fort Ligar. To the north and east, where the other sides must have been, all subsurface traces had subsequently disappeared.

Reconstruction of the original size and shape of the redoubt has been made possible by the recent discovery that it is partially visible in an 1857 view across central Auckland by an unknown photographer (APL 1040). A detail from this (Fig. 7) shows the eastern parapet clearly visible between two houses (A and B) on Chapel Lane (Federal Street). The southern and northern sides extend across the block towards houses C and D. Between C and D, the western parapet seems partially to obscure view of Hobson Street. Judging by the light falling upon the surrounding buildings, the photograph was taken in the early afternoon. This permits some interpretation of the orientation and shape of the defenses. The portion of the northern parapet visible between houses B and E is in full sun, indicating an east-west orientation. The same applies to most of the southern parapet, extending west from house A. However, a southward bend in this feature is indicated by a short length of dark shadow just to the

ALBERT HILL IN 1857

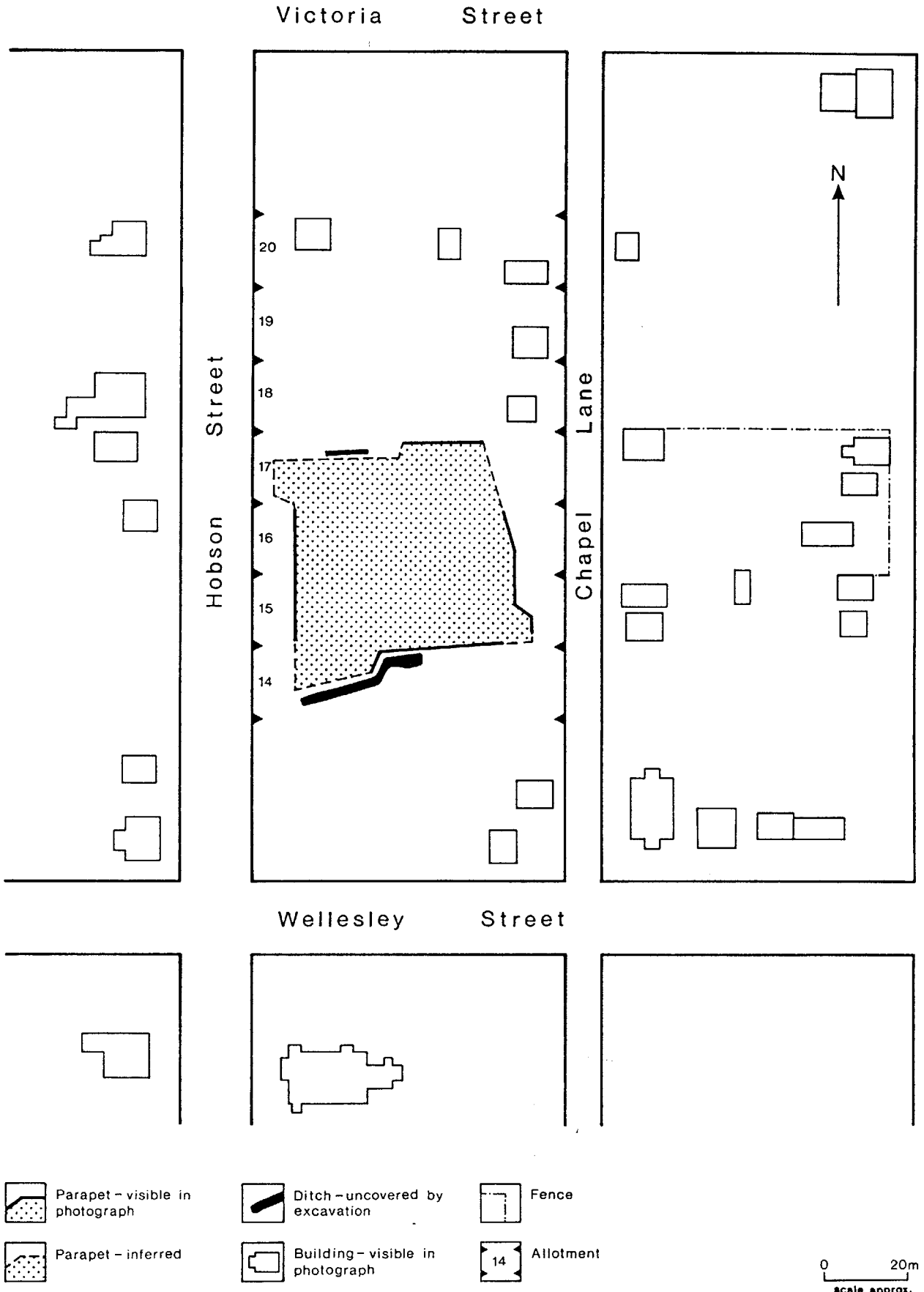
FIG. 7







(sectional enlargement from A.P.L. Neg. 1040 Auckland Public Library, N.Z.)



right and in front of house C. The estimated position of this bend (see below) suggests that it is the flanking angle identified archaeologically. Three breaks are apparent in the line of the eastern parapet. While these could be no more than breaches in the uncompleted defences, closer examination suggests otherwise. Variations in the darkness of the shadow cast by this parapet indicate that it was not a single, straight embankment. The lighter colouration apparent between the first and second breaks right of house A indicate that this portion of the parapet faced north-eastward, suggesting the presence of another flanking angle. Furthermore the darker area to the left (south) of this angle appears to be closer to Chapel Lane than is that to the right. To the north of the third break, the eastern parapet appears to angle north-westward away from Chapel Lane. No details of the western parapet are clearly visible. However, towards its southern end it appears to become a discontinuous series of earth piles. This seems to correspond with the archaeological evidence which suggested that the south-west corner of the redoubt was never completed.

Nearly all the buildings surrounding Fort Ligar in 1857 were still standing in 1866 (Note 2), enabling their location to be plotted from the Vercoe and Harding plan. Figure 8 shows these, along with the estimated positions of the parapets visible in the photograph, and the areas of ditch exposed by excavation. The shapes illustrated for the southern and eastern defences can be considered as reasonably accurate representations of their original form. Those proposed for the northern and western sides are less certain. It seems likely that both of these would have included flanking angles. There would appear to be little point in providing these only on the south and east sides when the redoubt was built, at least in part, as defence against an attack on Auckland from the north-west. This raises the possibility that Feature 1, the ditch encountered in Areas 5, 6 and 7 during phase one of the investigation (Fig. 1) could be a remnant of the northern perimeter defences. As already indicated, the size and form of this feature suggested that it was not intended to have a defensive



 Parapet - visible in photograph
 Parapet - inferred

 Ditch - uncovered by excavation
 Building - visible in photograph

 Fence
 Allotment

0 20m
scale approx.

function, but as there is now clear evidence that the redoubt's ditches were never completed, this cannot be entirely ruled out.

The reconstructed plan shows Fort Ligar covering some 50 m .x 50 m. This makes it smaller than the three best known of its contemporaries (Table 1). The estimate of "rather more than an acre" for Fort Arthur is from a contemporary description reported by Cowan (1922:94). Areas for Fort Thorndon and the Te Aro fortification were calculated from plans reproduced by Wards (1968:233, 234). The two 1843 Wellington earthworks were probably smaller than Fort Ligar. The first Thorndon redoubt was "not of any great size" (Cowan 1922:93), while the Clay Point earthwork was not strictly speaking a redoubt, being no more than "a parapet facing the sea - an emplacement and protection for ... guns" (Cowan 1922:94).

These redoubts all differed in design. Fort Arthur was the most elaborate. Its perimeter ditch and parapet formed an oblong hexagon with bastions at each angle, surrounding Nelson's Church Hill. An inner trench and a stockade around the hilltop provided further defences. In contrast, none of the Wellington fortifications was totally surrounded by ditch and parapet. In the case of the first Thorndon redoubt this was simply because the fourth side of its oblong perimeter was never completed. The Te Aro redoubt and Fort Thorndon both used existing buildings as part of their defences. The former was approximately rectangular in shape, the latter triangular, and incorporating a bastion and two other flanking angles in its perimeter. The design of Fort Ligar appears to fall part way between the more utilitarian and quickly constructed form of these Wellington examples, and the elaborate style of Fort Arthur.

The Artefact Assemblages and Later Site History

Assemblages of artefacts were recovered from 11 discrete contexts during excavation. These will be reported in detail elsewhere (Brassey 1989). They are discussed here only briefly in order to

define their archaeological context and postulate the manner in which they may reflect the later history of the site.

Only one of the assemblages appears to derive from the time when Fort Ligar was in existence. Material recovered from the fill of the defensive ditch (Feature 2) can be assigned with confidence to the period 1845 - 1859 during which the ditch remained open. The artefacts were all recovered from within or on the surface of Fill A. This lower component of the fill was a silty deposit which appeared to have washed into the open ditch. The sterile Fill B which sealed this layer was composed largely of the same yellow clay into which the ditch had originally been dug. This suggests that Feature 2 had been filled by pushing the defensive parapet back into the ditch. Wherever the surviving portion of ditch was excavated, these two fill components maintained the same composition and stratigraphic relationship, which suggests that the infilling occurred as a single episode. As indicated above, this seems to have occurred in 1859. Given that there is no evidence for Fort Ligar ever having been used for the purpose for which it was intended, it must be assumed that the material which accumulated in the ditch reflects casual use of the site while residential development gradually took place around it.

The remaining assemblages were recovered from features dug in the backyards of three of the sections into which allotments 14 and 15 were later subdivided.

Section 14C comprised the south-western quarter of allotment 14. The well (Feature 3), two rubbish pits (Features 4 and 5), and one wooden post (Feature 6), were encountered there. All four appear to derive from the period between 1859 and 1883.

The southern half of allotment 14 (Sections 14C and 14D) was first leased in August 1859. Mortgages were also taken out over both sections at this time, which may indicate that buildings were constructed there almost immediately. Building had certainly taken place by 1865, as the two sections were sold in February of that year

"with shops and houses" (Land and Deeds Registry, Deed No. 17D.553). The 1866 plan shows two buildings on the lot (Fig. 9A). The Hobson Street building is vaguely discernible in a late 1860s photograph (APL 44), and appears to be a two-storied wooden structure. Different buildings are shown on each of the 1882 and 1908 plans (Fig. 9:B and C), the latter being the building that survived until 1988.

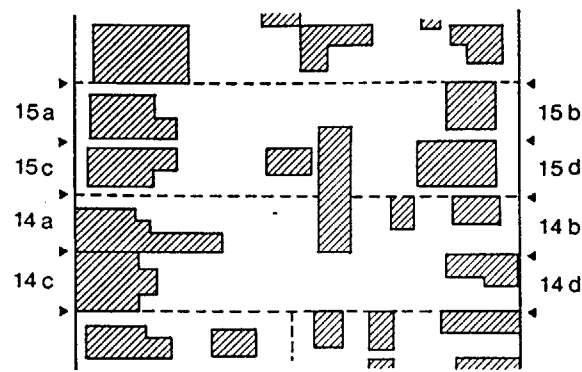
The excavated features were located well to the rear of these buildings. The wooden post corresponded in position precisely with a short north-south fence line shown on the 1882 plan. The three features to the east had been truncated after they were filled with rubbish. This ground lowering seems to have taken place in 1883. A photograph taken that year (APL 4062) shows the eastern halves of allotments 14, 15 and part of 16 being cleared and levelled prior to construction of the Chapel Street School.

Somewhat greater precision may be possible in dating the rubbish thrown into the well. It can be suggested that this feature would not have been filled until the provision of reticulated water obviated the need for householders to maintain private supplies. The first piped water to downtown Auckland, from the Domain, came on tap in 1866 (Firth 1967:11). It has not yet been established exactly when reticulation was extended to the Hobson Street ridge. However, the Domain supply was insufficient for Auckland's rapidly growing population (Bush 1971:64, 77, 129), and it seems unlikely that private supplies would have been abandoned until at least 1877, when the Western Springs pumping station came into service (Firth 1967:12).

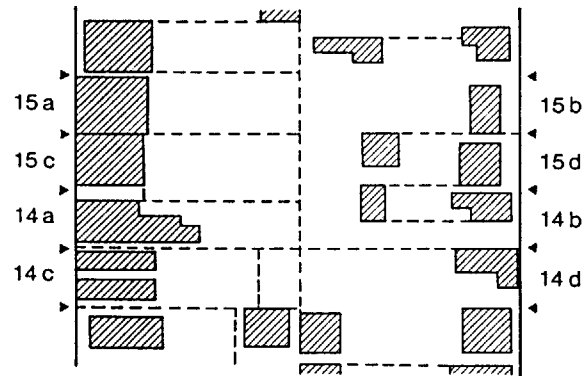
Section 14A: Three rubbish pits (Features 7, 8, 24) and two rubbish scoops (Features 22 and 23) were excavated in Area 12, which exposed the eastern half of this section. A two-storied wooden structure (APL 44) is shown at its Hobson Street frontage on the 1866 plan (Fig. 9:A). This may have been constructed as early as 1859 when a mortgage was taken out over Sections 14A, 148, 15C and 15D by the original lessee (Deed No. 6M.229). This building appears to have survived

DETAILS FROM CITY PLANS

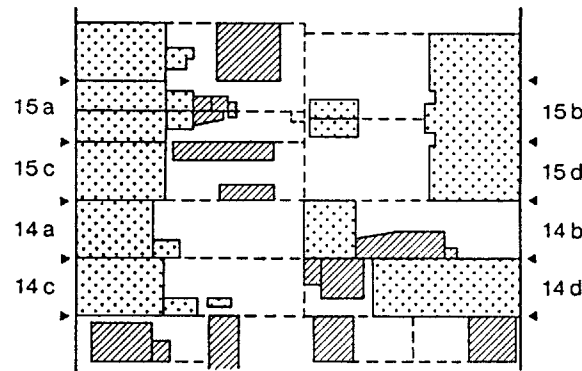
FIG. 9



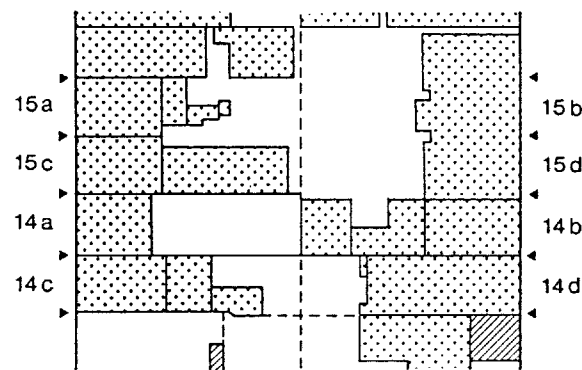
A 1866



B 1882



C 1908



D 1966



0 20m
scale approx.



until at least 1882 (Fig. 9: B), but had been replaced with a two-storied brick structure by 1908 (Fig. 9:C).

The excavated features were all recovered from beneath the foundations of a second brick building, covering the rear portion of the section. This was constructed at some time during the second and third decades of the 20th century (Note 1). As indicated previously, the two rubbish scoops may have been no more than clusters of material redeposited during construction of this building. However, the three deeper pits clearly predated it, as they were apparent only below the clay surface truncated by levelling for its foundations. The easternmost of these (Feature 24) could be the earliest rubbish pit on the site. It must postdate construction of Fort Ligar in 1845, because it cut through the base of the defensive ditch and Fill A immediately above. It was not clear, however, whether it also cut through Fill B, raising the possibility that it was filled with rubbish before infilling of the defensive ditch in 1859.

Section 15A: Area 10, in the north-eastern corner of this section, was the only part of the site on which the original ground surface remained. While this ensured survival of the greatest number and variety of features, it also provides the least adequate information for dating the assemblages.

The earliest possible date for these features is 1859, when the section was leased and mortgaged (Deed No. 8D.530). The single-storied wooden house (APL 44) shown on the 1866 plan (Fig. 9:A) had been replaced with another wooden structure by 1882 (Fig. 9:8), and with two double-storied brick buildings by 1908 (Fig. 9:C). The four large postholes uncovered by excavation (Features 9 - 12) fall precisely on the line of the post and wire fence separating the backyards of these last two buildings. However, none of the plans give any indication of what the smaller stakeholes (Features 13 - 19) might have related to. Nor is there any evidence on which to propose a latest possible date for the two rubbish pits (Features 20 and 21).

CONCLUSIONS

Fort Ligar has been totally overlooked in histories of early colonial Auckland for almost 100 years. The archaeological, documentary and photographic evidence reported here have been used to reconstruct the location, form and size of this earthwork redoubt, built for the protection of Auckland's citizenry after the fall of Kororareka in March 1845. Its location was clearly strategic, on the high ground commanding the unprotected western margin of the town. The ditch and parapet around its perimeter incorporated flanking angles to permit effective defence by musket fire, and the area within was large enough to shelter several hundred people. Its design appears to have been among the most elaborate of those constructed by New Zealand colonists in the 1840s.

However, the investigations also showed that Fort Ligar never achieved quite the grandeur that its designer intended. The ditch was not extended right around the perimeter, nor was it excavated to its full depth or final shape. A few scoria stones were found in the ditch fill, but these could hardly be construed as evidence for either the stone wall which was to have surrounded the redoubt, or the stone tower planned for its centre. Neither of these is mentioned in the Colonial Secretary's correspondence about the fort, and no interior structures are visible in the 1857 photograph.

Both the grand intentions reflected in Fort Ligar's design, and their incomplete fruition, offer insight into Auckland society and politics of 1845. The redoubt seems to have been constructed more to allay the fears of local townspeople than in real anticipation that the capital would be under attack. During March and April 1845 those fears were widespread and almost at fever pitch (Campbell n.d.:321; George n.d.:468-471; Platt 1971:122-127). A week after Kororareka, Fitzroy informed his Executive Council of the need to allay this alarm and satisfy the townspeople that "effective measures were at once being taken to safeguard the security of their persons and property" (Wards 1968:126). Fort Ligar was just such a measure - visible, reassuring,

physically occupying many of the townspeople, and at limited expense to the financially strapped Colony. However, when additional troops arrived in Auckland a few days later, half of them were sent to relieve the garrison in Wellington, suggesting that Fitzroy did not seriously believe that Auckland was under threat (Wards 1968:128).

Construction of Fort Ligar was abandoned before the end of July. This was clearly not determined by the course of warfare in the north, as the British troops did not achieve any substantive success during the winter of 1845 (Belich 1986:41-57). Nor is there evidence of any official instruction to halt the work. Rather it seems to reflect the decline of enthusiasm amongst the townspeople to ensure their own defence. Thus, in just the same way that work on the fort was commenced as a diversion for fearful citizens, it ended when their panic subsided.

Other features recovered during excavation provide a partial record of the later history of the site. They show the rapid expansion of the town beyond what had once been its periphery, and the gradual transition of the area from residential to commercial use. Forthcoming analysis of the material recovered from these features will provide valuable data on consumption and disposal patterns in mid to late 19th century Auckland. It will also confirm the proposed dating of the series of activities that have gradually destroyed all traces of what was once described (although perhaps in jest) as "a grand monument to the engineering skill of former days" (McDonald 1865:15).

NOTES

1. This building was recorded as an amendment on the Auckland City Council's copy of the 1908 plan. John Holloway, local historian, indicates that new buildings were recorded in this way until some time in the 1930s.
2. Survival of these buildings is recorded in the following photographs:

APL 44 - late 1860s;

APL 1038 - 1875;

APL 1020 - 1890s.

REFERENCES

- (a) Official Documents - National Archives
Colonial Secretary. Inward letters 1A 1/45 - 1829
- (b) Newspapers - Microfilm, Auckland Public Library.
- New Zealander 2 July 1845, 26 July 1845, 28 June 1848,
16 August 1849, 6 March 1852, 13 July
1853.
- New Zealand Herald 24 December 1884.
- Southern Cross 19 April 1845.
- Southern Cross Extra 25 October 1855
- (c) Plans -
- Vercoe J and (1866) Plan of Auckland, New Zealand. (APL
E W Harding D995.11 gmbs 1866 NZ Maps 18).
- Hickson T W (1882) Map of the City of Auckland, New Zealand.
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- Wrigg H E (1908) Plan of Auckland City. (ACC Plan Filing
Department).
- NZ Aerial Mapping(1966) Auckland Central Area. (NZAM 286/11).
- (d) Photographs - (Auckland Public Library)
- APL 1040 View West from Princes Street, 1857.
- APL 1403 View north-east from Partington's Mill,
1660.
- APL 44 East side of Hobson Street, from Victoria
Street. late 1860s.
- APL 1038 View west from Princes Street, 1875.
- APL 4062 Federal Street, 1883.
- APL 1020 View west from Princes Street, 1890s

(e) Books and Journals -

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