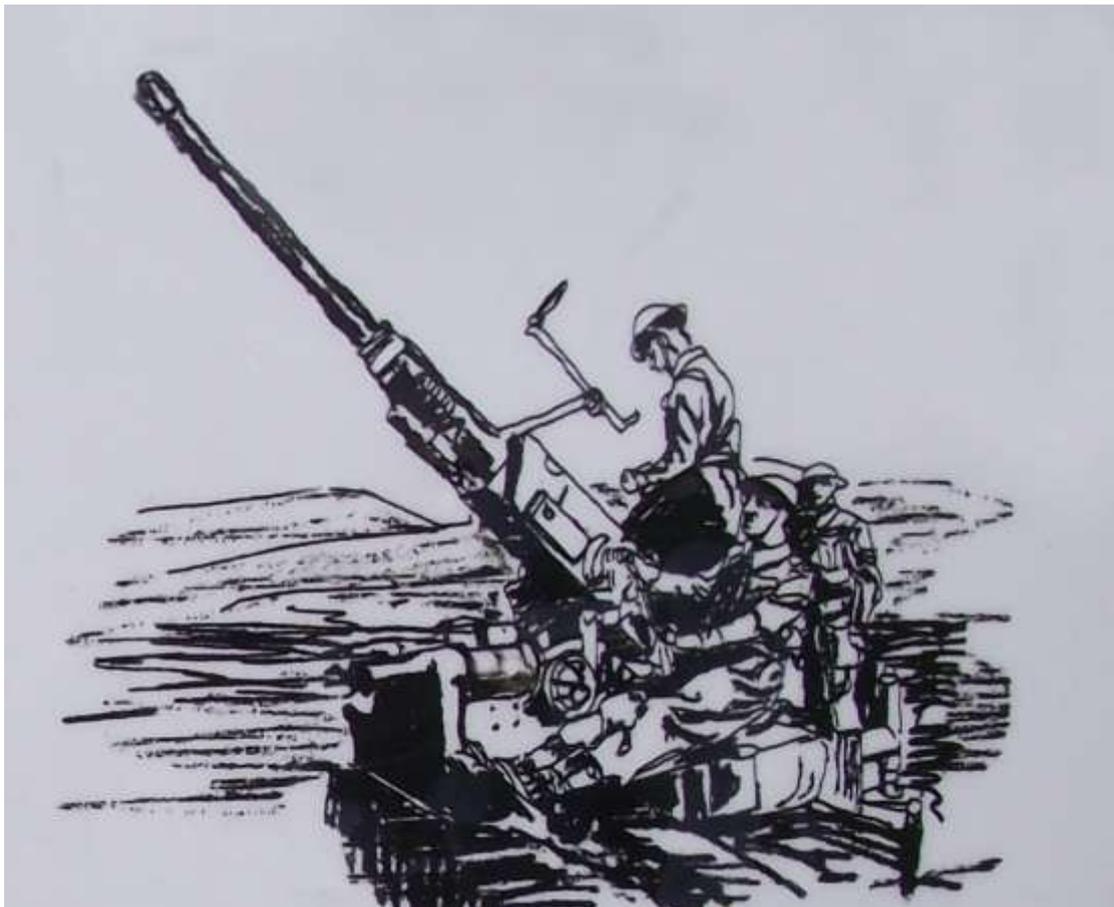


North Clyde Archaeological Society
Military Project 2015 >
On going report updated as work commences

South Ailey Farm Military Installations
Tam Ward. May 2015



Frontispiece. Illustration from Mugdock Park HAA gun site.

Abstract

*The remains of Heavy Anti Aircraft gun batteries (HAA) along with control rooms and ancillary buildings, surviving in the area of operations of the NCAS are currently being researched, surveyed and recorded by photography as part of NCAS **Military Project**. This report deal with the site at South Ailey Farm near Cove.*

Introduction

The River Clyde Estuary contains the largest number of HAA and other military coastal defence sites in Scotland. The heavily defended site of Scapa Flo in Orkney comes second in numerical terms to that of the Clyde.

North Clyde Archaeological Society (NCAS) are engaged in a Military Project to record the surviving remains of all periods in their area of interest, and to compile research on such sites with a view to publishing the results more fully in due course. The sites consist principally of former gun installations with ancillary buildings, although hospitals, POW camps and other sites also existed in the area.

Methodology

The buildings and their layout are surveyed using the taped offset method and/or measured as an upstanding buildings survey. Drawings are completed at appropriate scales and the entire sites are recorded by digital photography.

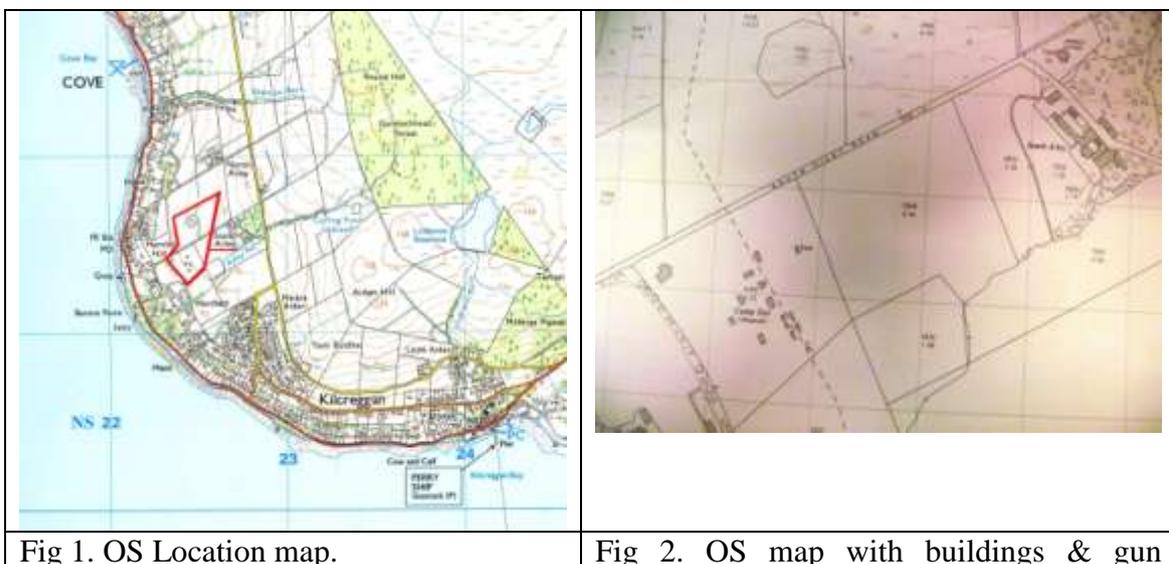
This project comprises of a survey of visible remains only and therefore some interpretations of buildings etc may be compromised by lack of data at particular sites. Many buildings now survive merely as rectangular concrete slabs and vegetation probably covers some of those, therefore understanding their original layout and function is difficult, although comparanda with other places where survival is better, and from other available information, may help in due course. This survey uses metric measurements however the original construction sizes were probably imperial.

SOUTH AILEY FARM SURVEY

Centred NS 22478 81617.

OS Explorer Map 1:25,000 Series. Loch Lomond South.

Fig 1



Possibly the best preserved WWII installations are located at South Ailey Farm (Figs 1-3) on the southern tip of Rosneath Peninsula. The site is comprised of four Heavy Anti Aircraft (HAA) gun positions, a control room complex, the radar mat site, all in Field No 1, and in Field No 2, ancillary buildings some of which stand as upstanding structures while numerous others are seen only as concrete foundations, all are located in the two fields to the west of the farm (Fig 3).



Fig 3 showing entire visible layout excepting the large building to the SW (see Fig 2).

Results

Ancillary Buildings. Figs 2 & 3.

A principal number of buildings, of which five are upstanding, four entire and one partial, and other rectangular concrete foundations, are located in Field No 2 to the south of the gun field (Field No 1).

Nine of these buildings are given as roofed on the OS Map (Fig 2) along with the complete perimeter fence line of the gun field, but excluding the radar mat and details of the gun positions and Command Post, also known as the Gun Operation Rooms (GOR).

SURVEY

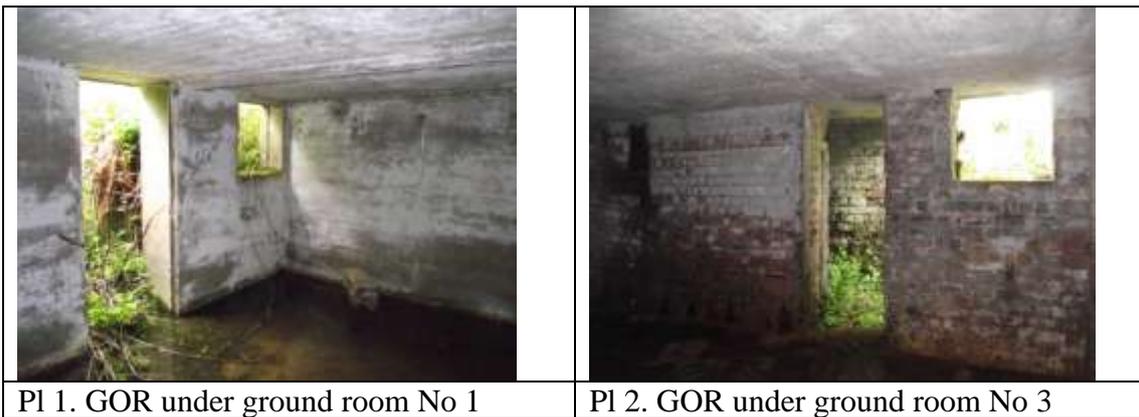
Gun Operations Room. Figs 3 & 4 and Pl's 1 – 5.

The GOR is extremely well preserved at South Ailey Farm (Fig's 3 & 4). The building complex is partially built below ground level, obviously for the protection of personnel; however spotters were required to operate in the open air and at roof top level with the main buildings; Rooms 1 – 4. (See Pl 24).

The complex is built with both shuttered concrete and bricks and the extent to which both materials were used will be readily appreciated on the plan. The rooms are all rectangular and measure internally 3.5m by 3m (R1), 3m by 3m (R2), 8.5m by 3m (R3) and 5.1m by 3m (R4), all are 2m high from concrete floor to concrete ceiling. Few details survive in any of the rooms apart from a cable floor duct in Room 4. Only R1 and R4 have small windows, two in the latter.

R1 is accessed via two short flights of concrete steps leading down from the higher levels; it connects to R3 by a single doorway. R2 has a single door leading to the lower level (yard?) and is next to the wider entrance to R3, the wider doorway is possibly to allow movement of larger sized equipment. Rooms 3 and 4 connect by a doorway and R4 is also accessed from outside and, similarly from the higher level via another stair which has a half landing. The stair leads directly to a covered porch area. The four rooms and porch are all roofed with shuttered concrete externally covered by a thick layer of bitumen.

The higher levels (PI's 3-5) comprise of the open air aspect of the complex and it is known that three principal spaces were designated for the equipment of Predictor, Telescope and Range Finder (none of which is fully understood by the writer at present but see PI 24 for wartime operations). The concrete 'pens' could have been accessed from the adjacent ground level as well as to Room No 1 via the stairs. Two voids were clearly not functional however the two spaces marked '?' on plan are not understood at present. Similarly the lower 'yard' area has a scarcement along the side of the Range Finder wall and may have been partially floored to the level of the pens. The Range Finder walls are 1m high and are 0.3m thick while the remainder of the pen walls are 1.2m high and slightly thinner at 0.25m.



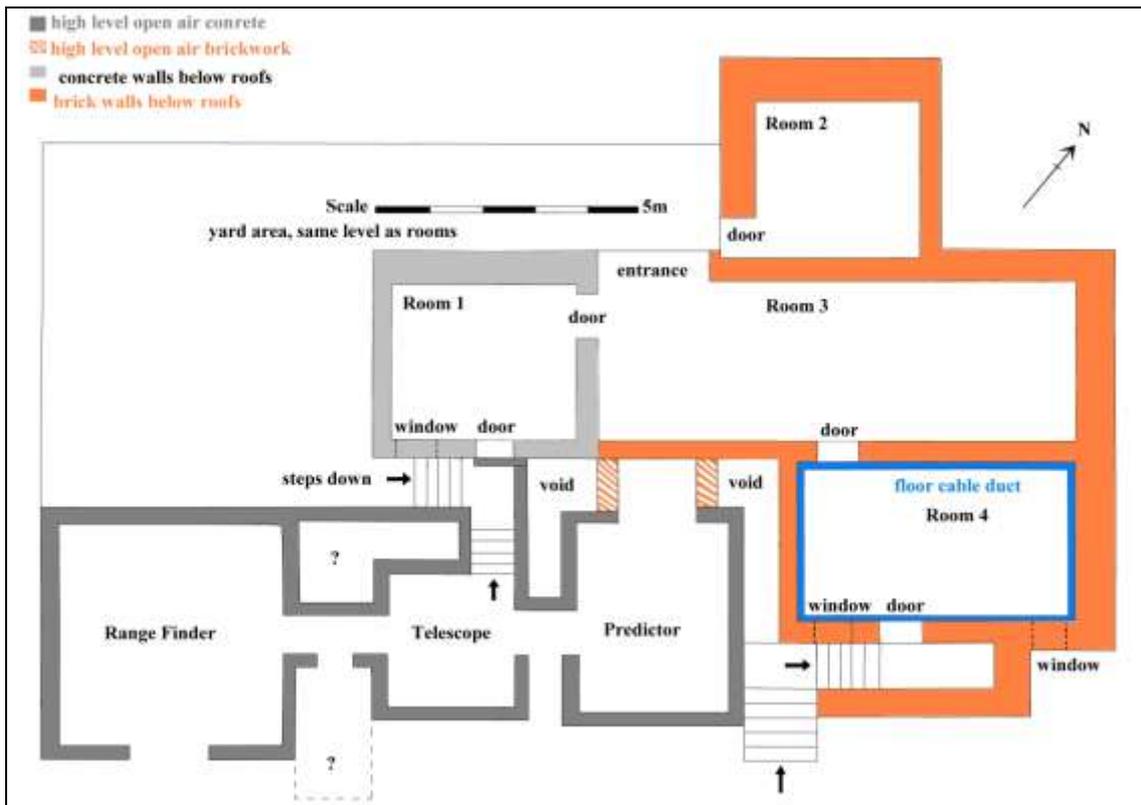


Fig 4. The Gun Operations Rooms



PI 3. GOR roof and instruments area.



PI 4. Range Finder Area.



PI 5. GOR roof and instruments area

Gun Positions. Figs 3 - 6 and Pl's 6 - 9.

The four gun positions are located to the north and west of the GOR and arranged in an arc with each gun site building being open to a tarmac road with runs around the GOR. Apart from their alignments they are identical in constructional details and comprise of the following components; four open cubicles diametrically opposed in pairs to one another and facing inwards, a room with a central pipe through the roof and a 'floor' scarcement, and enclosing double brick walls.

There are no details of gun fixings or floor surfaces within the gun positions.

The four cubicles and the small room are all covered by a shuttered concrete slabs which have been created over double brick built walls, all the walls are brick. The roofs overhang the walls by 50mm and are all 103mm thick. Each cubicle is 1.5m square internally and 1.4m high, three channels can be observed in some of the concrete floors to indicate a possible sliding arrangement (of shell racks?), the semi circular grooves are 50mm wide and 25mm deep and are equidistantly spaced running from front to back.

The room measures 4.5m by 2.3m and has a small aperture/window through the brick looking towards the estuary (in Gun No 1). The room is accessed by a 1m gap in the wall and has been protected by a short flanking wall. The pipe leading through the roof may have been ventilation (or a heating stove?). Two short wall stumps are on each side of the gun area entrance. None of the cubicles or the small room indicates they have had doors hung on them.

Surrounding each gun position is an embankment of earth running out about 3m and coming to within 0.5m of the wall heads.

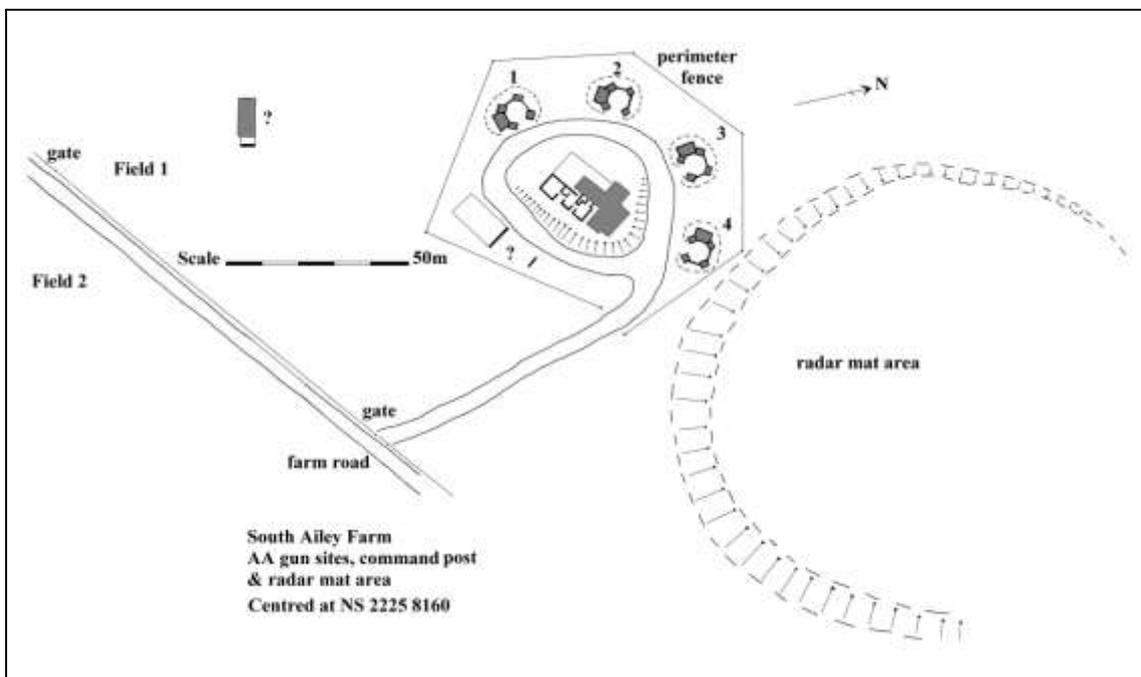


Fig 5. Field No 1



Pl 6. Typical gun position



Pl 7. Entrance to side room

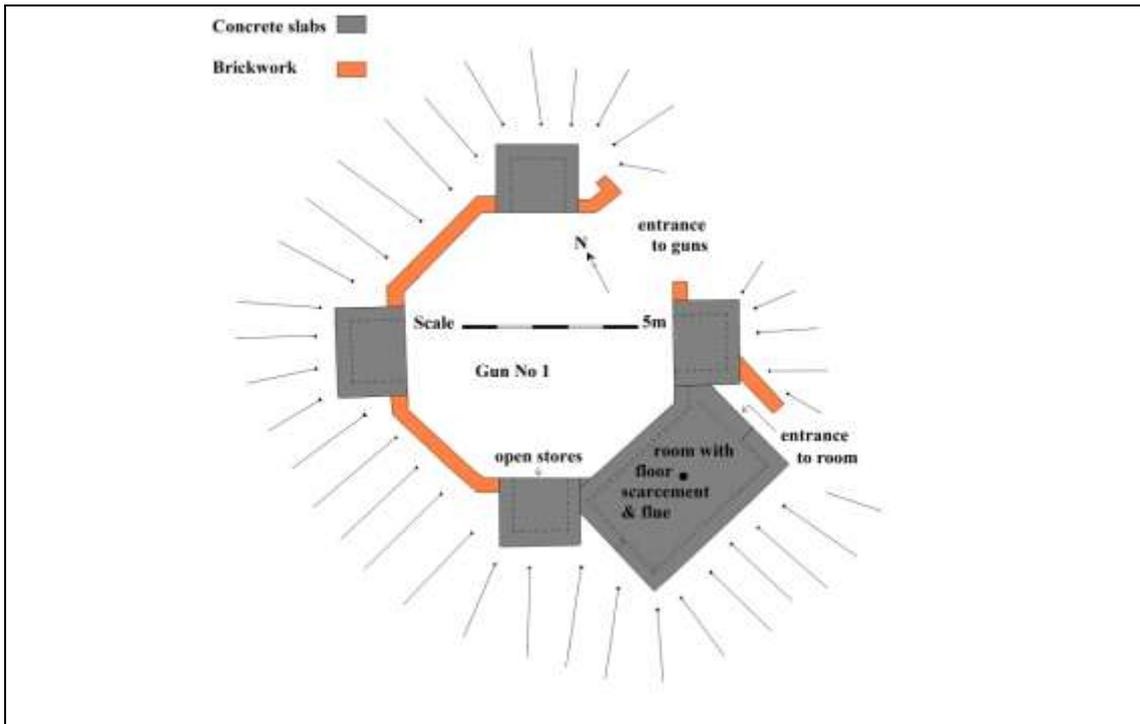


Fig 6. Gun No 1. Apart from orientation – the four gun sites are identical.



Pl 8. Typical gun room



Pl 9. Gun No 3 with perimeter fence and radar mat area beyond

Ammunition Stores? Fig 5.

The ammunition stores are assumed to be located immediately south of the GOR. They comprise of two? Almost completely ruinous buildings. A sunken area measures 13m by 7m and has a complete double brick wall at its western end, the wall appears to have been free standing from the building, further to the west another short but complete free standing wall survives. Nothing is observable between the walls.

Radar Mat Area. Figs 3 & 5.

Unfortunately, this area, although visible as a levelled piece of ground is extremely boggy and overgrown with a dense cover of regenerated trees and shrubbery. Nevertheless on the entire southern side an arcing scarp measuring up to 15m by 4m in height indicates its presence; there is no trace of the central platform upon which the radar equipment is known to have been placed. On the east side the platform the ground has originally been kept dry by an open brick culvert which survives there, the vegetation was too dense to allow its survey. The radar mat area was c 130m in diameter and was obviously bull dozed level from the otherwise sloping field.

Perimeter fence. Figs 2, 3 and 5 and Pl 9 & 10.

Concrete posts survive to indicate four out of six straight lengths of the security fence which apparently only surrounded the guns and GOR, the southerly two lengths of fence given on Figs 3 & 5 have been extrapolated from the OS map (Fig 2). Interestingly there does not appear to have been a fence around the radar mat area (although this may have been removed). Thicker concrete posts were used for strainers at corners and at the gates (Pl 9).

 <p>Pl 10.</p>	 <p>Pl 11. Looking south. Field No 2.</p>  <p>Pl 12. Looking north. Field No 2.</p>
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Buildings in Field No 2. Figs 2, 3, 7 – 11. Pl's 11-23.

The remains of twenty three buildings are visible in the southerly field, where the messing facilities and camp appear to have been built. However, only four (B1–4) have survived nearly intact with another (B6) in more ruinous condition. The remainder are seen as either concrete bases or very ruinous brick and concrete structures or platforms, a few brick manhole like features also exist.

Where walls survive they are all single brick construction, the concrete roofs have been shuttered over corrugated sheeting the matrix of which is seen where the roofs survive, the buildings have been painted white internally but with only the bare bricks showing outside. Shower cubicles and latrine walls have been cement rendered. All lintels are concrete but the window sills were made with half round bricks with a 50mm overhang, the same as the concrete slab roofs. Some buildings show evidence of drains, roof gutters and electrical installations, the latter appear to have been lighting only, in conduit tubing, and the buildings appear to have been supplied by overhead electric lines. No doors survive but several metal framed windows remain in situ, these come in two sizes 0.6m and 1.2m wide with an upper vent section. Floor details are mostly obscured.

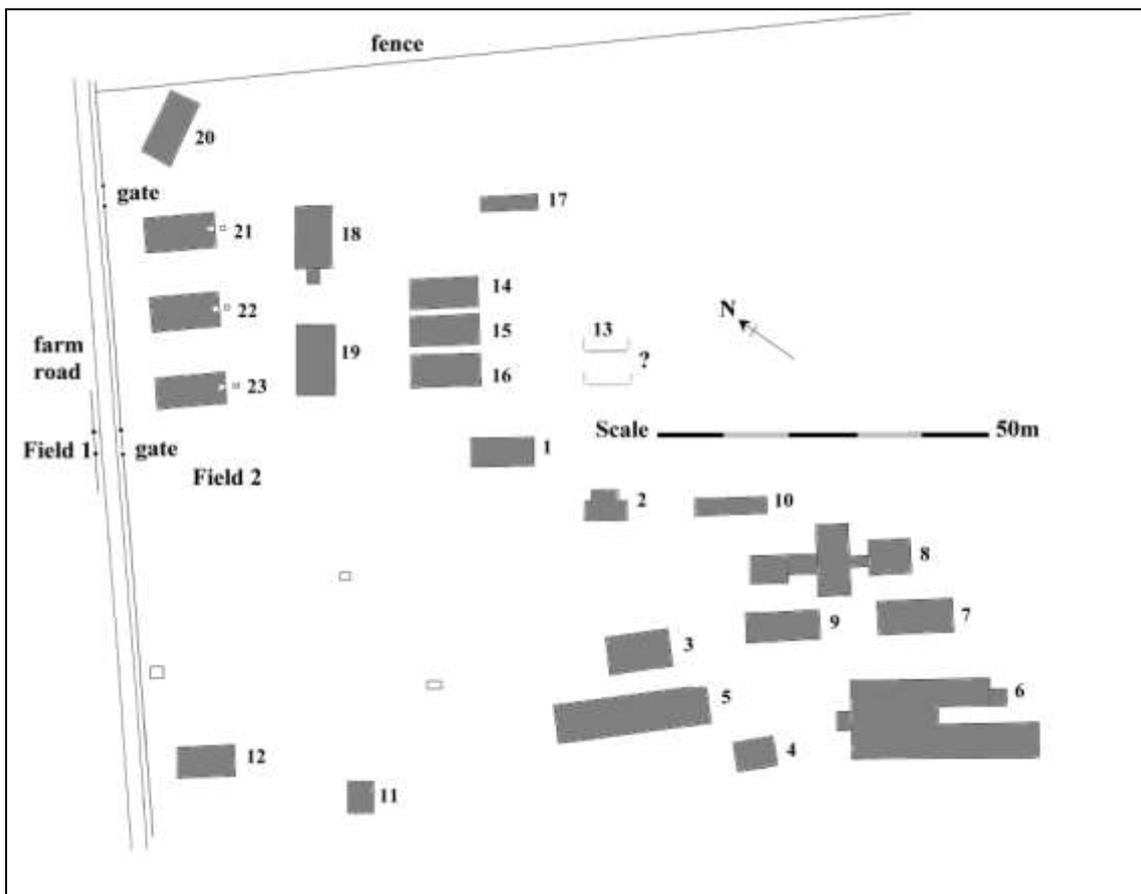


Fig 7. Field No 2 buildings. The Camp.

Building No 1.

Figs 7- 8 and Pl are 13-14.

The building measures 8.5m by 3.3m and had a single entrance 0.9m wide with a concrete step, two galvanised pipes rise on each side of the step and indicate they originally protected electric cables, the fuse box survives inside the entrance and the building was supplied by overhead cables. Two large windows serve each of the main rooms and there are two smaller windows in the southern gable wall, one of the metal frames survives here, and where two small chambers exist, these may have been toilets.



Pl 13. Building No 1 looking north.



Pl 14. Building No 1 light fittings.

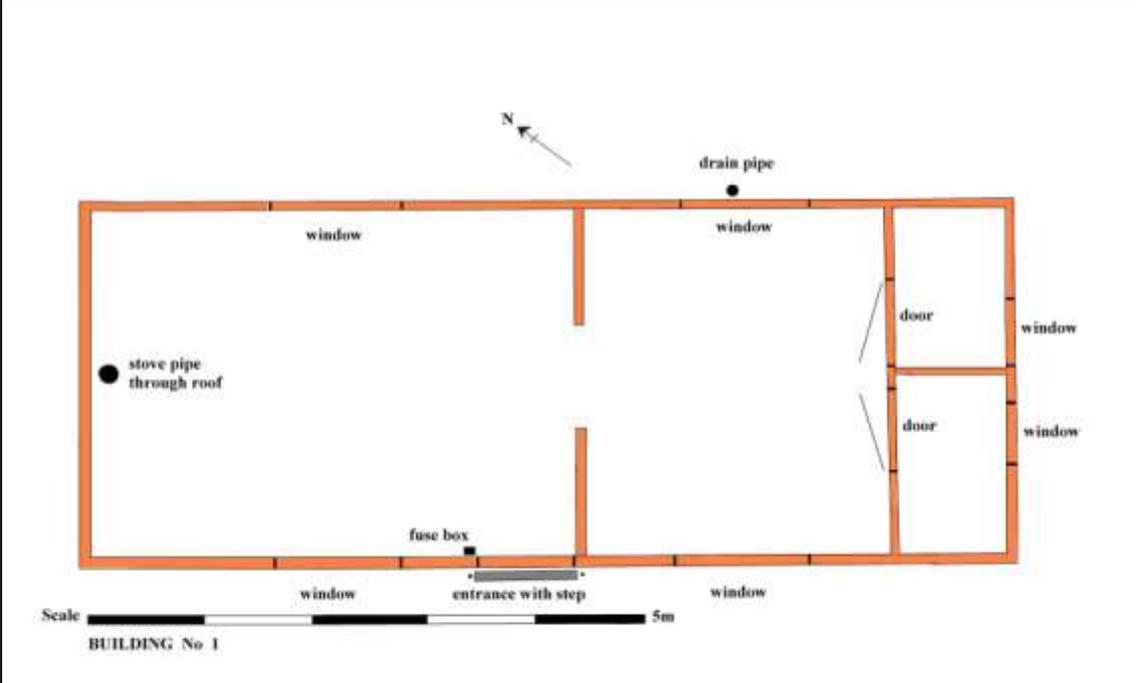


Fig 8. Building No 1.

Building No 2.

Fig 9 and Pl's 15-17.

Building No 2 measures 5m by 5.3m in total, it is a 'T' shaped structure and has a shower cubicle and toilet symmetrically placed on each side and with separate entrances, suggesting Ladies and Gents? Facilities. The central area has a stove? Pipe hole in the roof. A ruinous fuse box survives and the building was supplied by overhead line. LARKHALL bricks have been used in its construction.

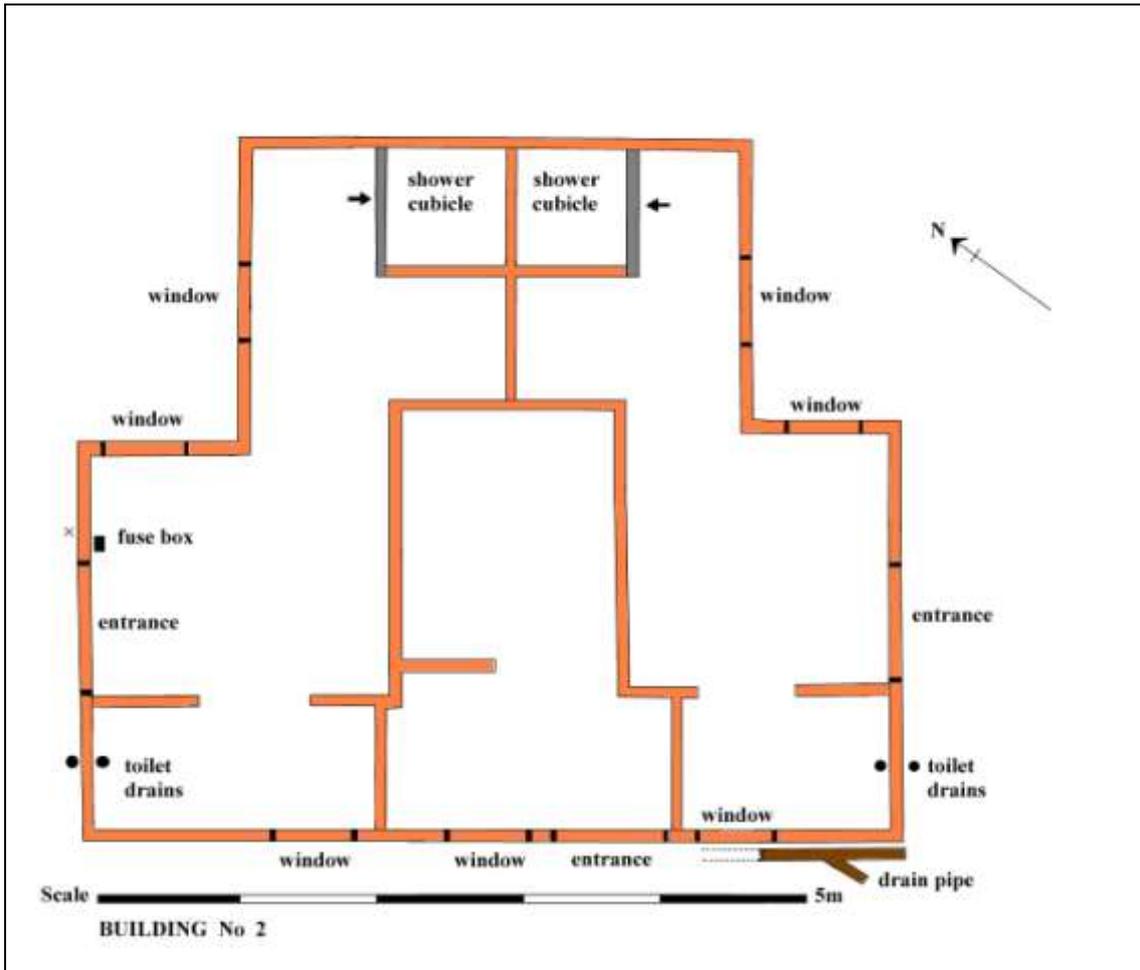


Fig 9. Building No 2



Pl 15. B2 with B1 beyond

Pl 16. B2 with B1 beyond

Building No 3.

Fig 10 and Pl 17.

Building No 3 measures 9.3m by 4.2m and also has two shower cubicles but here they are adjacent, two rooms are certainly cement rendered for urinals there fore this building was probably ‘male only’. The latrine rooms were originally built with a wide window in each but these were bricked up as part of the finished design. A chamber on the east side has a semi circular brick pillar built for a boiler? And above it there are three roof vents. The roof has a brick structure upon it and which still contains a galvanised water tank. The overhead supply is indicated on the northern gable.

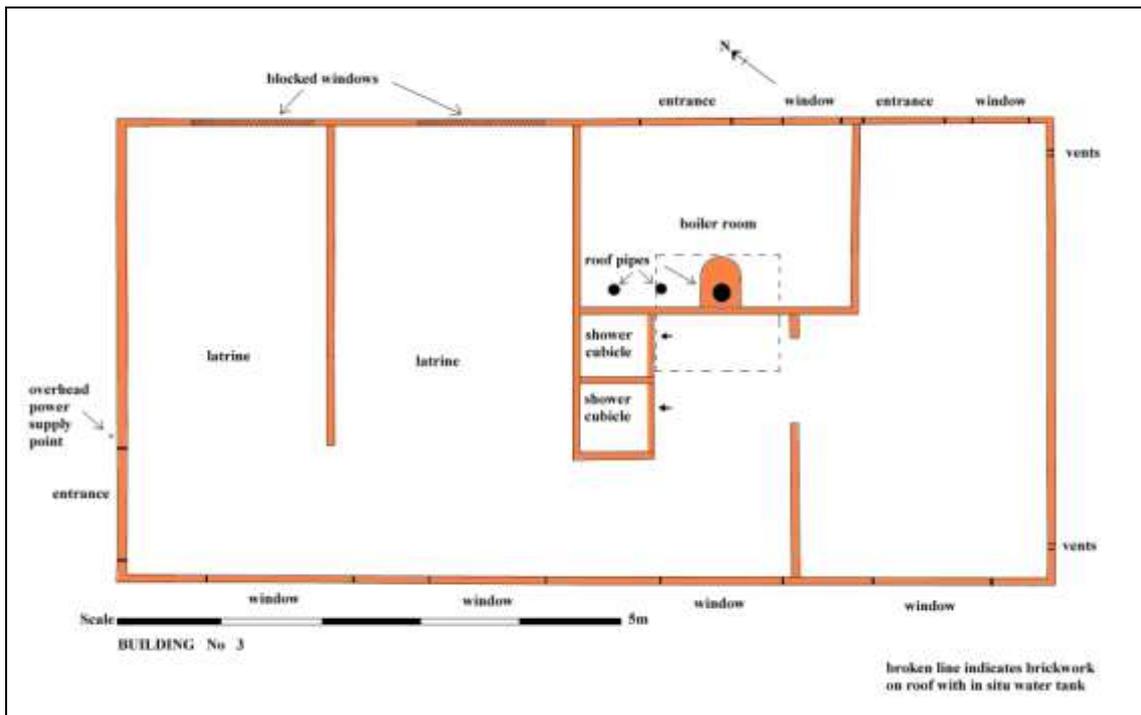


Fig 10. Building No 3



Pl 17. B3 shower cubicles



Pl 18. B4 as seen from B3

Building No 4.

Fig 11 and Pl's 18-20.

Building No 4 measures 5.8m by 4.1m and has been furnished with no fewer than twelve windows (Pl's 19-20), all being the smaller size (0.6m). It has a single entrance on the east side but originally had an opposing doorway which has been blocked up, presumably as a change of plan. A corner room has cement rendered walls up to 1m high and may have been a wash room or kitchen area. Two places have 'half walls and accesses' indicated by the surviving wooden frames and two trough structures survive on the floors. The overhead supply is indicated on the north gable.

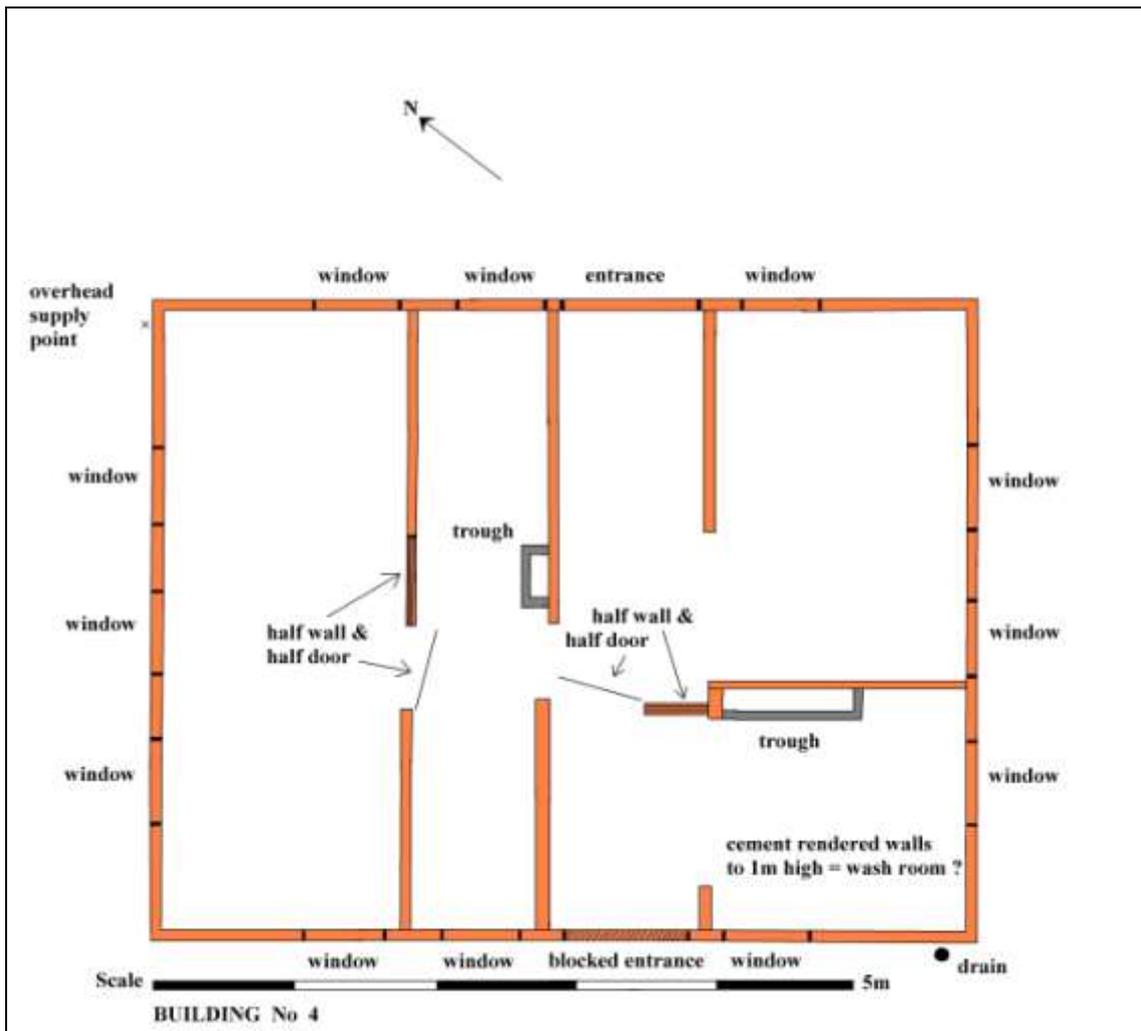


Fig 11. Building No 4



Pl 19. B4, B3, B2 and B1



Pl 20. Detail of B4 windows

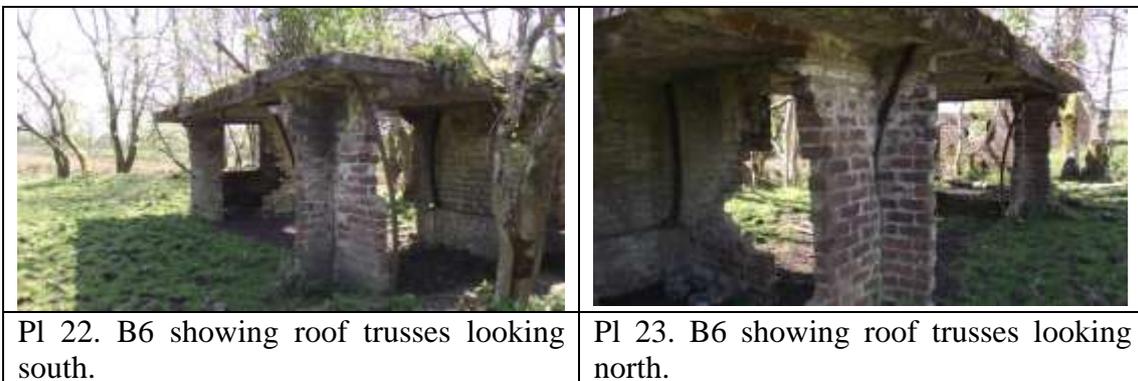
Building No 6.

Fig 7 and Pl's 21-23.

Building No 6 is much ruinous and covered in vegetation, however it measured approximately 30m by 13m overall. It certainly had single toilets projecting at each end as the remains can still be seen in each location. The only other principal detail is that the central brick area has been flanked by Nissen type structures and the curving roof trusses of angle iron survive partially in places. P M HURELL bricks have been used in its construction.



Pl 21. Building No 6 with B4 beyond.



Building No 8.

Fig 7.

Building No 8 is much ruinous but has measured 25m by 11m overall, however it appears to have been built as separate areas, possibly connected along the long axis.

Building No 17.

Fig 7.

The structure is given on the OS map as 'Tank' and it is obvious that it is the base and catchment walls for a tank, presumably for water to supply the buildings which stand lower down in the field.

A further building located below Field No 2, and adjacent the farm access road, appears to survive complete. It is also given of the OS map (Fig 2), this building is part of a working garage business and was not included in the current project.

The outline sizes of the remaining buildings; seen only as concrete bases, are given and it is assumed that many of them would have been Nissen type huts.

No 5	24m x 6m.
No 7	12m x 5m.
No 9	11m x 4m.
No 10	11m x 2.5m.
No 11	5m x 4m.
No 12	9m x 5m.
No 13	7m x indeterminate, more than one building?
No 14	11m x 5m.
No 15	11m x 5m.
No 16	11m x 5m.
No 18	10m x 6m with extension 2m square.
No 19	10m x 6m.
No 20	11m x 5m.
No 21	11m x 5m with 1m 'pad' = entrance side?
No 22	11m x 5m with 1m 'pad' = entrance side?
No 23	11m x 5m with 1m 'pad' = entrance side?

Building in Field No 2

The only other building is the one which survives in Field No 2 as a concrete base measuring 10m x 5m and has a free standing wall at one end, similar to the buildings assumed to be ammunition stores and near to the GOR.

Discussion/conclusion.

The Project is in its infancy and until all recorded sites are finally amalgamated into a single report, the results should be considered as interim. Consequently as research and data are gathered the Society perspective on the subject matter will inevitably change. Results on each location are intended to be made publicly available immediately through the Society web site.

As stated above the Clyde estuary was heavily defended during WWII and was known as a Gun Defended Area (GDA). The Heavy Anti Aircraft (HAA) batteries were directed and manned by the army Royal Artillery often with ATT support for detection and reporting.

Gun laying radar was introduced in 1940 and was progressively refined as the war continued. To eliminate interference and create an electrically uniform area, radar units were surrounded by wire 'mats'; these were rather crudely made with galvanised wire and netting, fixed to wooden poles in an octagonal arrangement of about 130 yards across.

The following is taken verbatim from a Power Point presentation by Geoffrey Stell of RCAHMS "Each gun battery was linked to the Gun Operations Room (GOR) through a command post which in turn directed the guns. The GOR was placed at the centre of an arc of gun emplacements (usually four or eight), the command post came to acquire a standard design including roofed plotting, telephone and rest rooms. An open enclosure contained the spotter's telescope, the height or range finder and a predictor (a manual computer), all designed to further process and refine the data for the GOR for local gun laying purposes".



PI 24. Showing army and ATS personnel operating the detecting equipment, see PI 5 above.

At South Ailey the arrangement is clearly seen and time will tell if all the Clyde AA gun sites to be surveyed are the same, although it is already known that the publicly displayed site at Mugdock Park overlooking Glasgow is different in its layout and design.

The GOR and gun positions have been defended from attack by the former being below ground level and the guns having an embankment surrounding them, this was clearly only for strafing fire as the roofs and walls of both the guns and GOR would not have prevented the penetration of even the smallest bombs.

Few aspects other than the obvious are understood at present, however the gun cubicles may be assumed to have contained ammunition and there is some evidence to suggest the main ammunition store was within the fenced compound and near the GOR, at South Ailey there is only one candidate for this and that is the ruinous building on the southerly side of the GOR.

The ancillary buildings at South Ailey which survive include at least the following; a tank structure, shower and ablutions blocks and other messing facilities.

The function of the larger building still in use is at present unknown.

Similar sites existed at Rosneath Castle Farm, Peaton Hill, Whistlefield, all on Rosneath Peninsula, Woodend, Helensburgh and two sites at Geilston near Cardross (all included in this Project).

Acknowledgements

NCAS are indebted to Mr Paterson of South Ailey Farm for permission to carry out the survey work.

The following members of NCAS participated in the survey work; Alasdair Jamieson, Sandra Kelly, Nick Maidment, Alastair McIntyre. Tam Ward conceived the Project produced the final illustrations and directed the work which was used as a training project in survey techniques.

References.

Much relevant data is available on several web sites, most especially 'Secret Scotland' at www.secretscotland.org.uk Detailed research for this Project is still to be carried out but it will include the records, including aerial photographs, of the Royal Commission for the Ancient and Historical Monuments of Scotland.