



Collaboration Projects with Defence Estates

In 2005 RCAHMS undertook three projects in partnership with the Ministry of Defence (Defence Estates). These projects represent the continuation of a fruitful relationship between the two organisations that started in 2002 with the survey of the Kirkcudbright Training Area in Dumfries and Galloway. It was the success of that survey that led to the more recent collaborative ventures.

Each of the projects undertaken in 2005 – at the Castlelaw and Dreghorn Training Area in the Pentland Hills south of Edinburgh, at the Barry Buddon Training Area in Angus, and at RAF Leuchars in Fife – was different in terms of the character of the monuments and/or buildings recorded, the methodology used in their recording, and the content and style of the subsequent reports. The surveys would not have been possible without the encouragement, enthusiasm and help of the Ministry of Defence staff at Catterick, Stirling and Rosyth, and the personnel at the respective properties.

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One of the features of the surveys that becomes apparent when they are considered collectively is the broad range of tasks undertaken by RCAHMS and the differences in the type of work that was carried out at each site. This is undoubtedly a reflection of the dissimilar characteristics of the topography, history of land-use and the current employment of the land and buildings in the respective survey areas, but it is also an indication

that the levels of information required by Defence Estates can vary greatly between properties.

At the Castlelaw and Dreghorn Training Area (CDTA), the project brief was to map and record all the visible archaeology within an area of almost eight square kilometres, to compile a digital photograph archive of that archaeology, to undertake a boundary survey of the area, and to complete a condition survey of the archaeology. In contrast, at Barry Buddon, an area of comparable size to the CDTA, work concentrated on a mid-19th century gunnery training room and an early-20th century gun-emplacement. At RAF Leuchars, emphasis was placed on the detailed survey and photography of a broad range of 20th century buildings.

This variety allowed the significant updating and augmenting of the RCAHMS database and collections, and had the additional benefit of adding to the experience and skills of the staff. For its part, Defence Estates has received a series of tools that will facilitate the more effective management of its properties, in the form of written reports, photographs, scale drawings and Global Positioning System-derived survey data.

Castlelaw and Dreghorn Training Area

The CDTA is situated towards the north-east end of the Pentland Hills, immediately south of Edinburgh and comprises an area principally composed of rough hill pasture, but with areas of improved ground to the north and south. There has been military activity here since about the First World War, which has left a rich legacy of remains, but the archaeological record of the area prior to the

Left: Oblique aerial photograph centered on the system of zig-zag practice-trenches on Castle Knowe, Castlelaw and Dreghorn Training Area. SC993165



One of the round-headed marker stones on the line of the Bonaly to Edinburgh water pipeline at Dreghorn. DP006682



A marker stone on the line of the Bonaly to Edinburgh water pipeline at Dreghorn. Probably erected in the late 18th or early 19th century, this stone has been damaged by gunfire from the adjacent rifle-range. DP006704



A boundary stone erected at Glencorse reservoir in 1819 on the march between land owned by the Edinburgh Water Company and Castlelaw Estate. DP006773



War Department boundary marker, Capelaw Hill. DP006354

RCAHMS survey consisted of little more than a handful of prehistoric monuments and several areas of rig-and-furrow cultivation.

Although the recent survey was able to add comparatively little to the existing record of prehistoric sites, it did gather a considerable amount of evidence that allows for a much clearer understanding of the later landscape. For instance, examination of aerial photographs in tandem with ground survey has demonstrated that rig-and-furrow cultivation was once much more extensive than previously thought. Further, discrete areas of curvilinear rig, potentially dating to the medieval period, can be differentiated from plots of straighter rig, which, here, probably date to the second half of the 18th century. It is now possible to demonstrate how arable cultivation retreated to, and was confined within new stone-walled fields around the end of the 18th century, and that the moor beyond effectively became a large sheep-walk.

Part of the evidence for sheep management at this time is in the form of circular stone folds, which seem to be direct replacements of turf stells, but a much longer history of stock control is implied by the presence of a series of small huts, some with enclosures attached. One of these structures, in the saddle between Castlelaw Hill and Fala Knowe, may be identified with a settlement called Castleroy, which is depicted on John Adair's map of about 1682.

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A further exciting aspect of the archaeology of the CDTA, which was hitherto unrecognized, is the presence, in the north part of the area, of a pipeline that was laid in the 18th century to supply drinking water from Bonaly Pools to Edinburgh. This pipeline is marked by a series of round-headed sandstone slabs to the west of the contemporary Green Craig Cistern (erected in 1789), while those to the east are square pillars with pyramidal tops. In the past, some of these markers have proved to be tempting targets to the users of the adjacent rifle-ranges.

Interestingly, Bonaly Pools, now Bonaly Reservoir, which sits just outside the north-west edge of the CDTA, is not situated within a particularly large natural water catchment area. Its success appears, at least in part, to have relied on a series of catch-drains dug across the contours of the north-west flank of Capelaw Hill to divert spring- and rain-

water into the reservoir that would otherwise naturally drain into the lower part of the valley. Two phases of catch-drains were identified during the survey, probably corresponding with the two periods of dam construction in the 19th century.

If the recording of catch-drains marked a departure from the types of archaeology usually encountered by field staff, then dealing with water-meadows was another. On the south-east flank of Capelaw Hill, the opposite side of the hill from the catch-drains, formerly cultivated land was converted, probably in the latter part of the 18th century, into a catchwork-type water-meadow. Irrigated pasture, which was designed to encourage an earlier and stronger growth of grass, was achieved here by feeding water from a natural spring, some 500 metres to the north-east, to the fields via a series of long parallel lades or gutters that were cut across the redundant rigs.

An extraordinary feature of the CDTA is the large number (about 50) of boundary stones recorded within and on the edge of the area. The earliest that can be confidently dated are those which once defined the march between Castlelaw Estate and land owned by the Edinburgh Water Company. When the Glencorse Reservoir was built in the early 19th century the boundary was redefined and marked with a series of high quality red sandstone pillars, each incised with the letters 'EWC' and 'C' on opposing faces and the date 1819 on top. The survey by RCAHMS succeeded in locating all but one of the 17 stones that are known to have existed in this series.

Another series of boundary markers, which defines the limits of the military land within which the CDTA is situated, offers an interesting contrast to the 1819 stones. Although essentially providing the same function, the later markers were made of concrete, cast in moulds, allowing each to be impressed with its own unique number, as well as the letters W and D, for War Department, flanking an upward pointing arrow.

There has been a military presence in the Pentlands for about 90 years, following the requisition of the Dreghorn Estate by the War Department in 1914. Of special significance are the remains of practice trench systems dating from around the time of the First World War. Unfortunately several trench-systems at Dreghorn have been largely destroyed, although they are recorded on vertical aerial photographs, but an almost intact system is visible at Castle Knowe (page 6). Here, it is obvious that the diggers of the trenches were following prescribed patterns, which were set out in the volume *British Trench Warfare 1917–1918*, published by the General Staff at the War Office.

What is not clear from the visible remains, however, is how deep the trenches were in an area where bedrock is never far from the surface. And the

apparent complexity of these trenches, dug in geometric patterns up to 90 years ago, contrasts utterly with the hundreds of short, shallow foxholes and bivouac trenches that are to be found across the whole of the CDTA and continue to be dug by troops still using the area for training.

Barry Buddon

Barry Buddon Training Area is situated on the north side of the estuary of the River Tay and, like the CDTA, contains extensive remains of military activity, though here it dates back to the 1860s, when a naval gunnery training school was first established. Here, RCAHMS undertook a measured-drawing and photographic survey of an original gunnery training room and a nearby heavy gun-emplacement that had been installed by the start of the 20th century.

The gunnery training room is a rare surviving example of a building that was constructed to replicate, at least in part, the gun-deck of a wooden Royal Navy warship. Thus the design of the building, which is now in use as a gym, is based around two gun-ports in the south-east elevation. Most of the original architectural features of the building survive, including, on the internal face of the wood-panelled wall to either side of each gun-port, an iron loop, which was used to attach the block-and-tackle that enabled the guns to be pulled back into position after recoiling and reloading, and perforated iron blocks once used to hold gun cleaning poles.

The heavy gun-emplacement is situated 350 metres south of the gunnery room and originally comprised a row of at least 16 muzzle-loading guns mounted on holdfasts set into concrete bases. Eight of these holdfasts survive on the top of an 80 metre long embankment and three others are set at a lower level, one to the east and two to the west. The remaining five holdfasts, at the west end of the row, are less well preserved.

Naval gunnery training room known as the 'Gunnery Gym', showing gunports in south-east side, Barry Buddon. DP004830





View along the line of early 20th century gun emplacements, Barry Buddon. DP004839

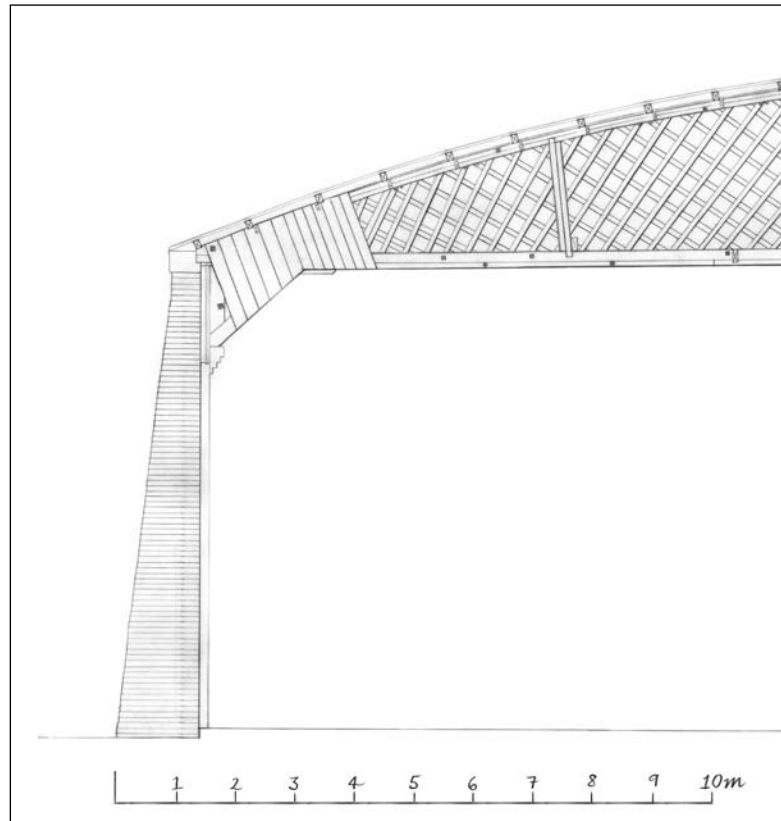
1938 Watch Office with meteorological section, RAF Leuchars. DP006245



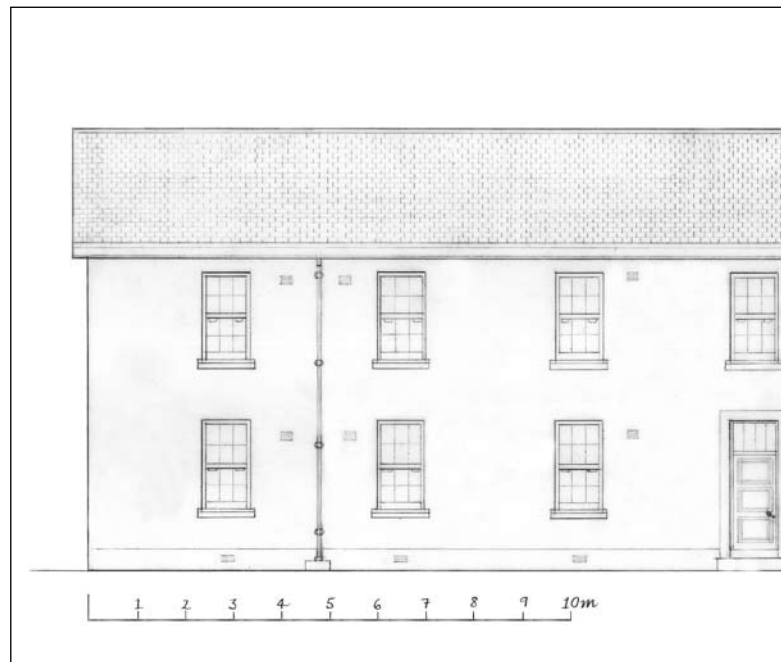
RAF Leuchars

RAF Leuchars in north-east Fife was one of the earliest aerodromes in Scotland, the War Office purchasing the land about 1918, and it has a long and varied history. Major expansions were made to the airfield in the 1930s, and during the Second World War it was used as a base for clandestine flights and bombing sorties to Scandinavia. Jet aircraft were introduced to Leuchars by 1950 and further modifications to the runways, buildings and other aspects of the infrastructure have been made in more recent times to accommodate the airfield's present role as the main Strike Command base in the United Kingdom.

RCAHMS's investigation at RAF Leuchars comprised a photographic survey of a large number of buildings, with several also subject to detailed measured survey. Particular attention was paid to two coupled

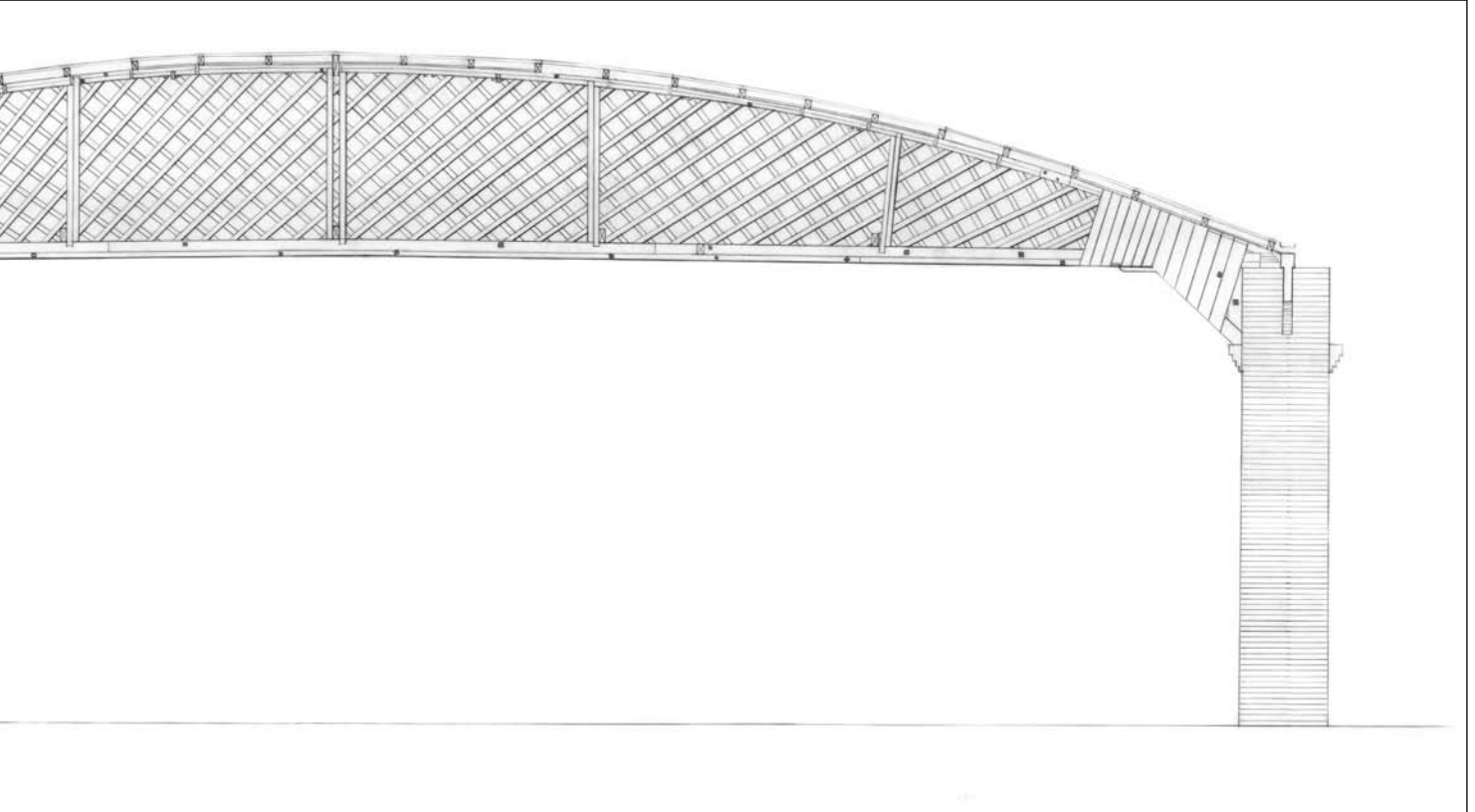


Measured survey drawing by RCAHMS of section through Belfast Truss roof, RAF Leuchars. DC45873

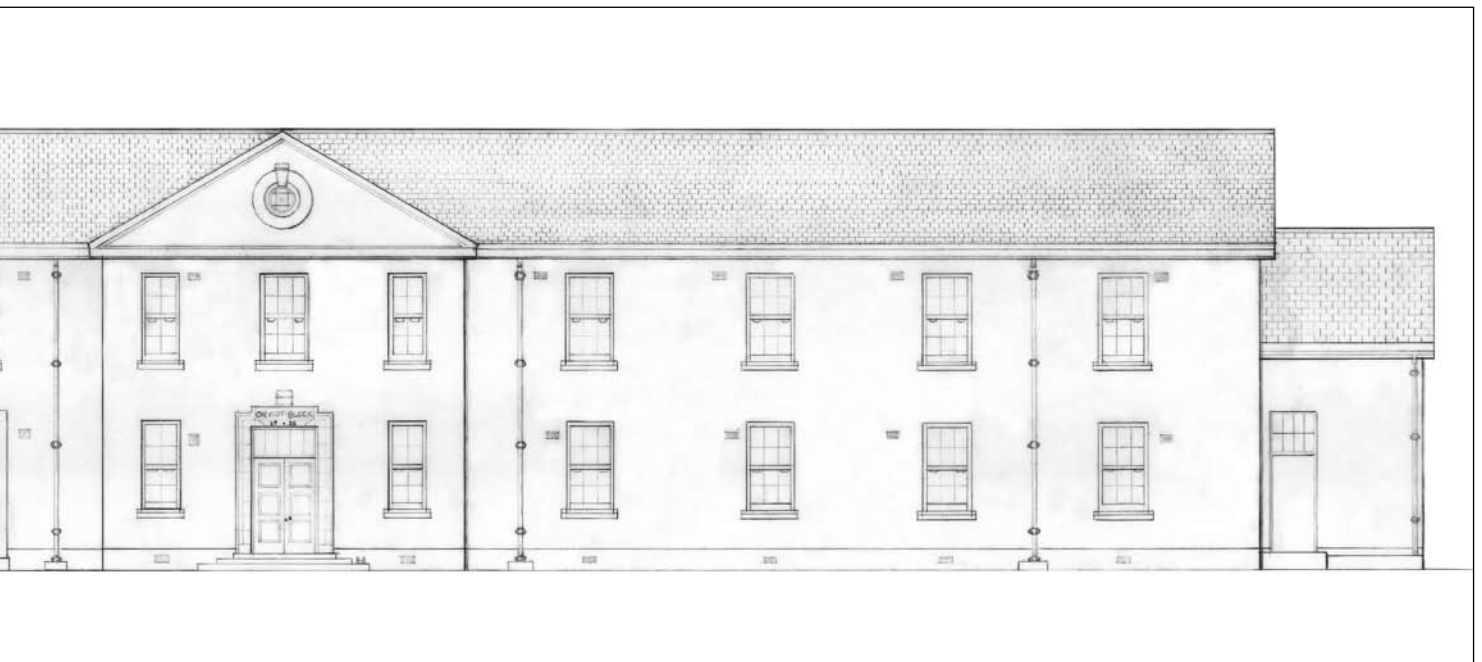


general service sheds (hangars) with Belfast Truss roofs, now the only surviving examples of their type in Scotland. These buildings date to 1918, and the intricate construction of the roof trusses, each comprising a lattice of thin, interlaced laminated pine strips, provided a stimulating challenge to our surveyors, not least because they were set some eight metres above floor-level.

Measured surveys were also carried out on the Control Tower, an 'austerity' type-C hangar



Measured survey drawing by RCAHMS of front elevation of 1935 barrack block, RAF Leuchars. DC45876



(1938–40), so called because the design used less construction materials than previous forms; a 1935 barrack block; and a type-27 pillbox, dating to 1940 and one of only seven pillboxes remaining from an original total of at least 21.

In the past 12 months RCAHMS has undertaken three very different forms of survey in partnership with Defence Estates. Each survey has required RCAHMS to utilise the depth and range of the skills and experience of its staff, and the results of that

work have been presented to Defence Estates in forms that will allow it to be a useful management tool. The success of the three projects, which saw a variety of challenges confronted and overcome, both in terms of survey and in the presentation of the results, was in no small part due to the advice obtained from Defence Estate staff, who, without exception, shared the interest in and enthusiasm for the work.

John Sherriff