

# The former RAF Coltishall: Statement of Heritage Significance

---



Dr Richard C. Maguire  
Lecturer in Public History  
The Landscape Group  
c/o School of History  
University of East Anglia  
Norwich  
NR4 7TJ

January 2013

LandScape  
group

## 1. Executive Summary

### Key Points for Information

- The aerodrome at the former RAF Coltishall began as an Expansion Period airfield (late 1930s) and was typical of its type.
- After the Second World War the airfield was subject to successive layers of modification to allow its aircraft to operate in the nuclear/Cold War context.
- In consequence, the military site is best understood as a hybrid Expansion/Cold War landscape.
- The site retains a number of late Expansion Period/WW2 (1935-45) aerodrome buildings and design features. None of these are, however, unique to the region or the country.
- The fighter pen type-A, which has already been scheduled, is a significant WW2 location and is of national importance.
- The military cemetery is an important memorial location connected with the site.
- The Cold War history of the site should be considered in the context of British nuclear weapons history, which shaped the site as we now see it.
- The station had two nuclear weapons-related roles in the early Cold War. The first was the interception of incoming Soviet nuclear bombers. The second was as a dispersal airfield for the British nuclear bombing squadrons.
- In the later Cold War the Jaguar squadrons also had a nuclear attack role, along with a conventional ground attack role.
- The Cold War landscape now dominates the site, although the Expansion Period buildings remain, they have been subsumed into this later landscape.
- The most important structures in the Cold War layers of this landscape are the blast walls and the missile ready-to-use stores, which need to be considered as part of an ensemble of structures along with the watch office, hangars, munitions storage 'igloos', engine facilities, paint spray facility and simulator building.
- The site should not only be considered as a former military location. The area has been used by people for at least 4000 years, largely for agrarian purposes.
- There are substantial prehistoric, Roman, Saxon, medieval and post medieval heritage aspects to the site, which should be given equal weighting, from a heritage perspective, to its twentieth century military aspects.

## 2. Index

### Contents

1. Executive Summary.....	2
Key Points for Information.....	2
2. Index.....	3
3. Index of Figures.....	4
4. Scope.....	5
5. Context.....	6
6. The Pre-Military History.....	8
a) Prehistoric.....	8
b) Roman.....	11
c) Medieval and Post-Medieval .....	13
d) Summary.....	15
7. The Expansion Period and World War Two (1938-45) .....	16
a) Expansion Period Aerodrome 1939-40 .....	16
b) World War Two Aerodrome 1940-45.....	22
c) Summary .....	25
8. The Cold War and After (1946-2012).....	26
a. The Early Cold War Aerodrome 1945-1962 .....	26
b. Early Cold War Modifications .....	29
c. The Later/Post Cold War Aerodrome 1963-2006 .....	32
d. Later/Post Cold War Modifications .....	33
e. Search and Rescue.....	34
f. Decommissioning and Post-Decommissioning History 2004-2012 .....	35
g. Summary .....	36
9. Physical Remains and Assessment of their Heritage Significance.....	37
10. Conclusion .....	40
Bibliography .....	42
Reports:.....	42
Maps and databases: .....	42
Books/Texts/Articles:.....	42

### 3. Index of Figures

Figure 1: The site of the former RAF Coltishall .....	5
Figure 2: NMP mapping of the archaeology of visible on aerial photographs of the former RAF Coltishall and surroundings .....	9
Figure 3: NMP mapping of the archaeology of visible southwest of the airfield .....	9
Figure 4: NMP mapping of the archaeology of visible to the north east of the airfield .....	10
Figure 5: Possible ring-ditch on airfield .....	11
Figure 6: Cropmarks to the east of former RAF Coltishall .....	12
Figure 7: NMP mapping of the archaeology of visible to the east of the airfield .....	12
Figure 8: Ordnance Survey First Edition of 1889 .....	13
Figure 9: Ordnance Survey map of 1946-51 .....	14
Figure 10: NMP mapping of the archaeology of visible on aerial photographs within the central area of RAF Coltishall overlain on the 1828 Scottow Enclosure map .....	14
Figure 11: Aerial view of the former RAF Coltishall .....	17
Figure 12: 1946 aerial view of RAF Coltishall showing Expansion Period Design.....	18
Figure 13: Early 1940s view of the aerodrome.....	19
Figure 14: Side elevations of C-Type hangars showing variations.....	19
Figure 15: Hangar 2 RAF Coltishall.....	20
Figure 16: RAF Coltishall watch office in 1969.....	21
Figure 17: Watch office, former RAF Coltishall.....	21
Figure 18: Munitions area, former RAF Coltishall.....	22
Figure 19: Fighter pen type-A, former RAF Coltishall .....	23
Figure 20: Remains of pillbox, edge of munitions area, former RAF Coltishall .....	24
Figure 21: New runway extensions under Construction in 1957 .....	27
Figure 22: Vulcan B2 nuclear bomber at RAF Coltishall, 1964. ....	27
Figure 23: De Havilland Venom at RAF Coltishall, 1955. ....	28
Figure 24: Gloster Javelins from RAF Coltishall taking off from Horsham St Faith 1957.....	29
Figure 25: Concrete blast walls and associated hardstandings, former RAF Coltishall.....	30
Figure 26: De Havilland Firestreaks in the ready-for-use store at RAF Coltishall 1961.....	30
Figure 27: Outside of a ready-for-use store, former RAF Coltishall .....	31
Figure 28: Lightnings of 226 OCU arrive at RAF Coltishall in 1964 .....	31
Figure 29: Instructors at the RAF Coltishall simulator and a view of the simulator in 1976...	33
Figure 30: Watch office with later Cold War additions, former RAF Coltishall .....	33
Figure 31: 'Igloo' munitions store, former RAF Coltishall.....	34
Figure 32: The site of HMP Bure at the former RAF Coltishall .....	35
Figure 33: English Heritage scheduling entry for the former RAF Coltishall .....	37
Figure 34: RAF Coltishall Conservation Area Designation .....	38
Figure 35: Buildings of interest at former RAF Coltishall.....	39

## 4. Scope

This Statement of Heritage Significance examines the entire area of the former RAF Coltishall, Norfolk and, where appropriate, the land immediately adjacent, if it has any related heritage assets. The area now in use as HMP Bure lies out of the scope of the study, however, it is referred to where necessary. The site under consideration, the former airbase at RAF Coltishall (TG 270 225) is located in the parish of Scottow, 15km (9 miles) northeast of Norwich, and 1.6 km (1 mile) northwest from the village of Coltishall. The site lies on a plateau at the confluence of the River Bure and a tributary called Stakebridge Breck.

The airfield site is fairly flat, lying at an average height of 18m OD, with the ground rising gently to the north. The site covers an area of approximately 260 hectares (642 acres). It lies on solid chalk, overlain with sands and gravels of the Norwich Crag foundation. The site is shown in Figure 1 below:



Figure 1: The site of the former RAF Coltishall

## 5. Context

The former aerodrome at RAF Coltishall was part of the military infrastructure created as a consequence of British involvement in the various global conflicts of the twentieth century. The initial construction phase was spurred by the Second World War. This Second World War aerodrome then provided the foundations for a Cold War airbase, which continued in use for post-Cold War operations until the station closed in 2006.

For the purposes of this report, the Cold War is defined as that period of global history from shortly after the end of the Second World War (1946) to the collapse of the former Soviet Union (1991), when a global strategic rivalry between the United States of America and the Soviet Union, and their competing political and economic ideologies, dominated international affairs. The defining characteristic of the Cold War, from a military and cultural perspective, was the increasing availability of the nuclear weapon, the potential use of which provided the ultimate background for all strategic military planning of the period. In this report I divide the Cold War into two parts. The first is the early Cold War, running from around 1946, when the wartime Grand Alliance of the USA, Britain and the USSR began to fragment, to 1962, when the conflict reached its greatest point of danger in the Cuban Missile Crisis. I then characterise the later Cold War period as running from after the Cuban crisis to the dissolution of the Soviet Union on 26 December 1991.

Between 1946 and 1991, the British government constructed an extensive array of buildings and structures around the UK, each aimed at fulfilling a specific role within a conflict that was marked by constantly changing technology. In a war characterised fundamentally by the threat of nuclear attack, the structures and locations relating to nuclear war formed the core elements in a network of military and quasi-military locations that covered the country's landscape. East Anglia was a critical part of this network and contained a very high density of such structures. Examples of these in the region include nuclear research facilities, such as that at Orford Ness in Suffolk, nuclear weapon storage bases, such as the RAF Barnham near Thetford, the airbases housing nuclear attack aircraft and their nuclear weapons, such as RAF Marham and RAF Sculthorpe in Norfolk, those that housed nuclear missiles, such as RAF North Pickenham in Norfolk, and those that were involved in the air defence of these nuclear assets, such as RAF Neatishead and RAF Coltishall. There were also military/civilian command bunkers, such as the Joint Norfolk County Standby & West Norfolk District Emergency Centre at Kings Lynn, the Broadland District Council Emergency Centre in Norwich, and the Regional Government Headquarters at Bawburgh, Norwich.

The archaeology and heritage of the Cold War has only become a matter of major interest and discussion in recent years. In the twenty-first century we can begin to consider the history of the twentieth century with some measure of detachment. Like the two other great global conflicts of the twentieth century, historians increasingly see the Cold War as an identifiable historical epoch, which spawned its own social, intellectual, political and cultural history. At the same time, the most recent research on the topic seeks to situate the

Cold War in the larger context of historical time, positioning it in the wider history of the twentieth century and before. In doing so it seeks to connect the study of the Cold War, and consideration of its effects with our understanding of the wider currents in military, economic, social and intellectual history.

While the twentieth century began with some degree of optimism, it was marked by a series of conflicts that set countries, ideologies, classes and ethnic groups against each other to devastating effect. These conflicts changed Europe's national boundaries, its societies and belief systems in a manner we are still only beginning to understand. The physical remains of these conflicts – the fortifications, the battlefields, the bunkers, listening stations, and the airbases – are now seen as important sources of historical evidence that assist us in our investigations into these events. There has also been a surge in public interest in the memorialisation and remembrance of the conflicts of the twentieth century, and when Cold War sites were constructed on former Second World War military installations, they can also be seen, by some, as part of memorial landscapes. These themes have informed the assessment of this site at RAF Coltishall.

The state of preservation of these diverse military and quasi-military civilian sites across the region, and country more widely, is extremely varied. Some sites remain in military use and are relatively well-preserved in consequence, although this is with the proviso that operational military needs may require historical sites to be altered or rebuilt. Some sites, such as Orford Ness, are under the protection of the National Trust. Others, such as the RAF Barnham nuclear weapon storage facility, are in private ownership and in an excellent state of preservation. Others, such as the former Thor nuclear missile site at North Pickenham and the Royal Observer Corps OC 6 Group Headquarters at Norwich have been largely destroyed.

Because it only ceased to be an active station in 2006, the majority of the former RAF Coltishall is in a relatively good state of preservation. Some areas have already been scheduled by English Heritage under the Ancient Monuments and Archaeological Areas Act 1979. These areas are, specifically: a World War II fighter pen, along with a group of Cold War blast walls and associated remains. These will be discussed in more detail in Section 7, 8, and 9 below. In 2010 both Broadland District Council and North Norfolk District Council accepted the designation of the site as a local Conservation area. The four hangars, water tower and watch office as well as the former officers' and sergeants' messes were proposed for local listing as part of this move, which was intended to provide these buildings and the area generally with some degree of protection from unsympathetic alterations which might impact adversely on it.

## 6. The Pre-Military History

As I have stated, most recent historical research on the Cold War, and on twentieth century conflict more generally, seeks to situate our understanding of war within the larger sweep of historical time, and to connect these conflicts with wider currents in human history. This approach is appropriate when attempting to make an assessment of the heritage significance of the site of the former RAF Coltishall. To understand the heritage significance of the site fully it is necessary to consider not only the recent military archaeology of the airfield, but also the long-term history of the landscape on which that military archaeology was imposed.

The former airbase has stood on the site for only seventy years, but the site has been in human use for at least 4,000 years. For the vast majority of the period of human settlement in East Anglia the site was not a military location at all, but an agrarian one. Fortunately, excellent recent work by Sarah Horlock of the National Mapping Programme has provided us with much greater understanding of the pre-militarised history of the site and I am grateful to have been able to make use of this work in this report. In consequence I have been able to construct an outline history of the site that places its recent military history in the wider context of the landscape's story.

I have divided this report into sections running from the prehistoric, through the Roman, Saxon, medieval and post-medieval to the point at which the site became a militarised landscape in 1938/9. I have then looked at the various stages of development of this militarised landscape, looking at its Expansion Period and World War Two development, moving then to early and late Cold War history and the period from 1991 to 2012.

### a) Prehistoric

The military site stands within an area that would generally be considered a likely one for prehistoric occupation, which in Norfolk tends to have been focussed on the neighbourhood of watercourses, especially the valleys of larger rivers and on lighter soils. Recent archaeological assessment of aerial photographs has established that, while there is, to date, no evidence of Palaeolithic or Mesolithic activity, the cropmarks identified on aerial photographs provide good evidence of Neolithic occupation (4000-2300BC), with sites of potential interest identified to the north, west and south-east of the airfield and on the airfield site itself. These have been mapped onto the site and its surroundings and are shown in their entirety in the map at figure two.

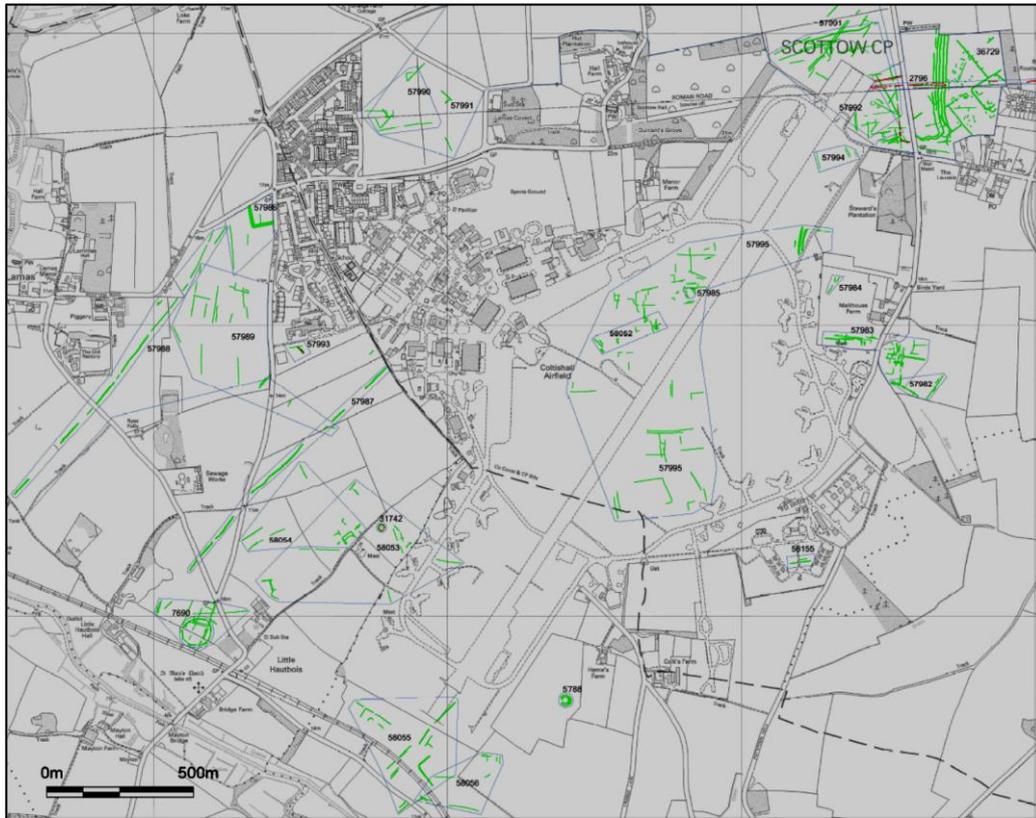


Figure 2: NMP mapping of the archaeology of visible on aerial photographs of the area (Base mapping © Crown copyright and database rights 2012 Ordnance Survey 100019340. NMP mapping ©NCC)

One of the most significant areas appears to be a Neolithic causewayed enclosure (NHER 7690) to the south-west of the airfield, overlooking the river (figures two and three).

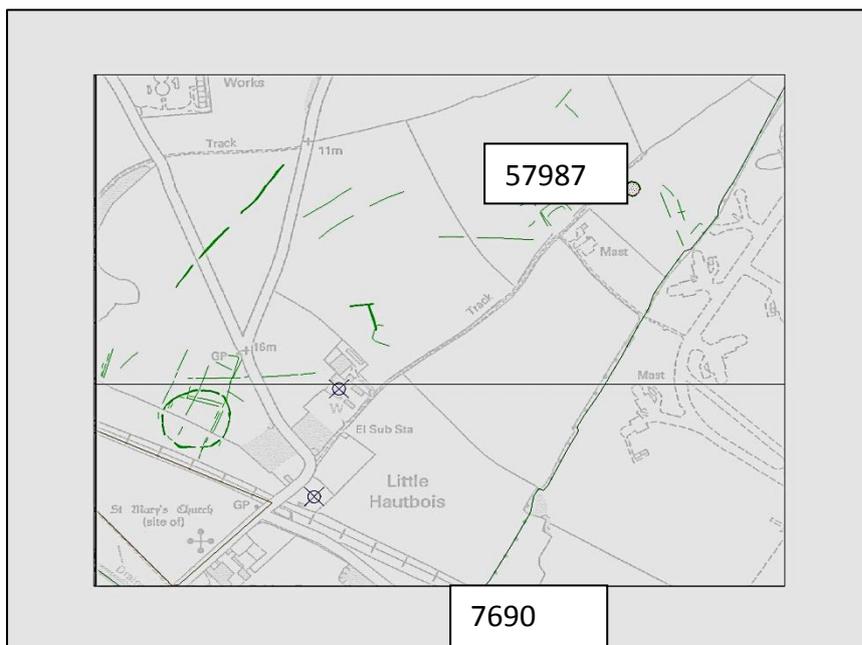


Figure 3: NMP mapping of the archaeology of visible southwest of the airfield on aerial photographs of the former RAF Coltishall and surroundings (Base mapping © Crown copyright and database rights 2012 Ordnance Survey 100019340. NMP mapping ©NCC)

Such monuments are relatively rare in Norfolk. There also appear to be large numbers of ring-ditches. Most of these are probably the remains of prehistoric barrow mounds.

There are also indications of possible multiple linear boundaries to the northeast of the airfield (NHER 36729), which were cut by the later Roman road (NHER 2796), and probably date to the Late Bronze or Early Iron Age (figure four).

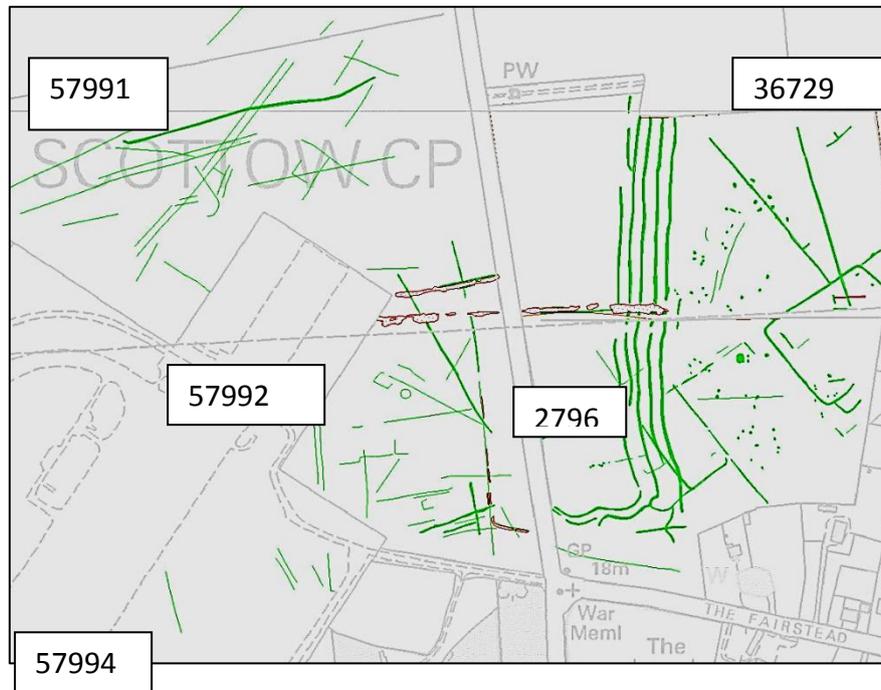


Figure 4: NMP Mapping of the archaeology of visible on aerial photographs to the north east of the former RAF Coltishall (Base mapping © Crown copyright and database rights 2012 Ordnance Survey 100019340. NMP mapping ©NCC)

Consisting of at least five parallel ditches, this feature seems to form a boundary that runs towards the airfield (there are no apparent traces within the airfield but these might have been destroyed by later land use). This boundary might have been used as late as 1828, as a portion appears to be in the Enclosure map of that year. North of the airfield is a broad co-axial field system that was previously thought to be Roman (NHER 57991), but in light of excavations of a similar site at Ormesby this may be from the Middle Bronze Age. Running generally from northeast to southwest or northwest to southeast the boundaries, enclosures and ditches of these field systems or systems are likely to have continued into the airfield site. This conclusion is also suggested by the ditches to the east of the airfield.

Aerial photography indicates the possible presence of a ring ditch within the airfield (NHER 57985 on figure two) but this remains a tentative identification at this time.

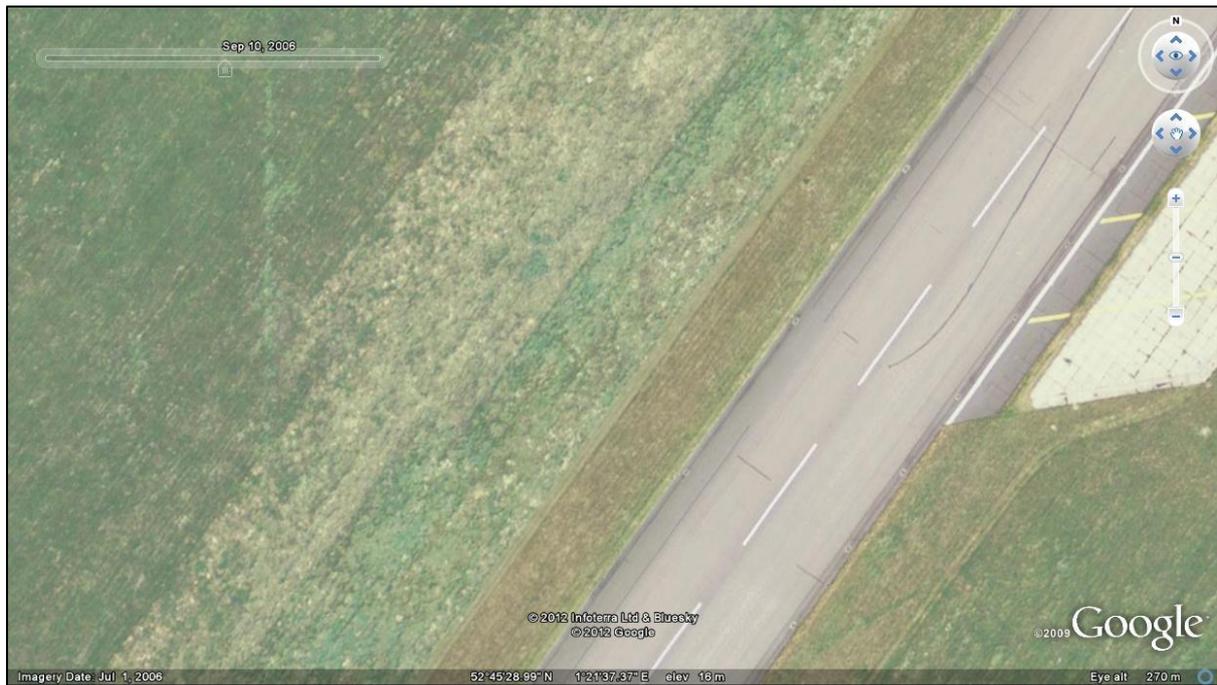


Figure 5: Possible Ring-ditch on airfield (Google Earth 2006)

These features along with others, when considered in conjunction with prehistoric objects such as struck flints and stone implements that have been found in the area, provide strong evidence that the location was one that saw substantial human settlement and cultivation during the Neolithic, Bronze and Iron Age periods.

### b) Roman

While the general evidence of Roman distribution in Norfolk suggests that there was little activity to the immediate east of the River Bure, the area around the RAF Coltishall site has provided some evidence of Roman activity. The site appears to have part of a cultivated landscape during the Roman period, which may have continued from the previous Bronze and Iron Age cultivation. It is around 850 metres south of a major Roman road (NHER 2796), which was partially excavated in 2005. A Roman villa and temple complex has been identified in the vicinity of the airfield site, as this is a potentially sensitive site it is not shown on any maps in this report. More work needs to be done on this, but to the east a dense area of crop marks area (NHER 57983 and 57992 on figures four and seven) may be Roman, although these marks might equally be medieval or post-medieval.



Figure 6: Cropmarks to the east of former RAF Coltishall (Google Earth 2006)

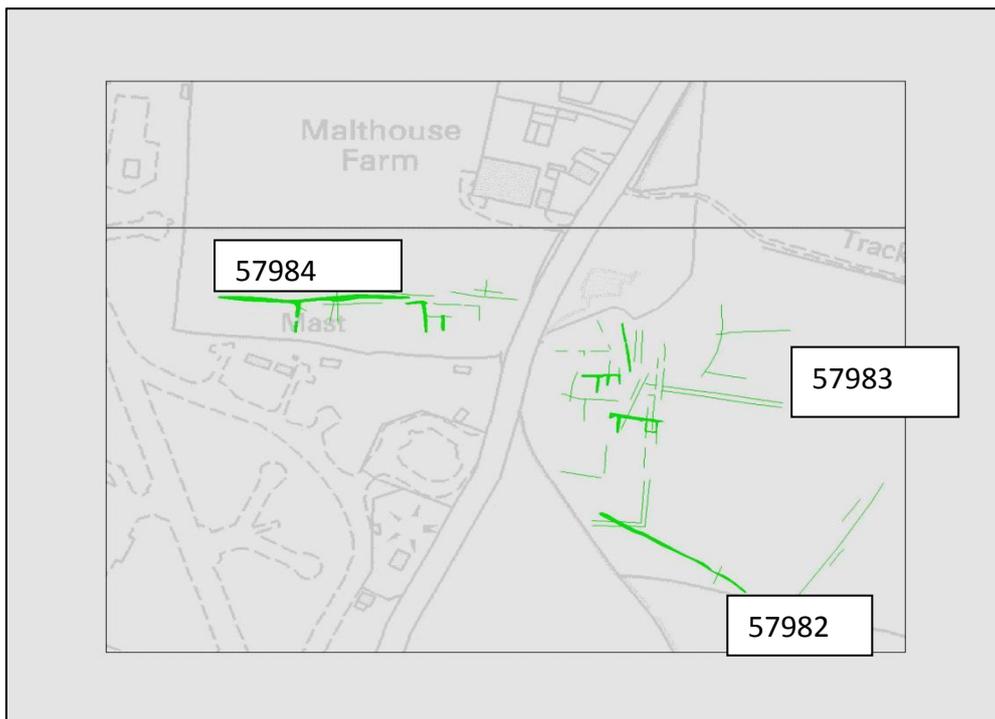


Figure 7: NMP Mapping of the archaeology of visible on aerial photographs to the east of the former RAF Coltishall (Base mapping © Crown copyright and database rights 2012 Ordnance Survey 100019340. NMP mapping ©NCC)

The presence of such field systems and enclosures in the environs of the site, along with the significant number of Roman artefacts recovered from the surrounding area, suggests that this cultivated Roman landscape probably also included that space now covered by the airbase

### c) Medieval and Post-Medieval

In the medieval and post-medieval periods the site seems to have been largely arable fields, well away from any known settlement sites, with a field system partly formed through piecemeal enclosure and retaining some medieval influences. A potential medieval or late Saxon to medieval moat-like site has been identified to the west of the airfield (NHER 57986 on figure two). It is visible as a group of cropmarks, soilmarks and earthworks which seem to form a broad L-shaped ditch some 10 metres across. These suggest original dimensions for the site of some 75 metres. These markings may represent a manorial site related to nearby Lamas, or might represent a military site that relates to the twentieth century history of the airfield. Further enquiry is required. Otherwise, there a number of vegetation marks within the airfield boundary indicating former field boundaries from the medieval to post-medieval periods.

The airfield is to the south of eighteenth century Scottow Hall and Park and it may be that the manor could have extended into the airfield site. Perhaps the most notable feature of this landscape was a linear common called 'Scottow Moor' in the Ordnance Survey First Edition of 1889 (figure ten).

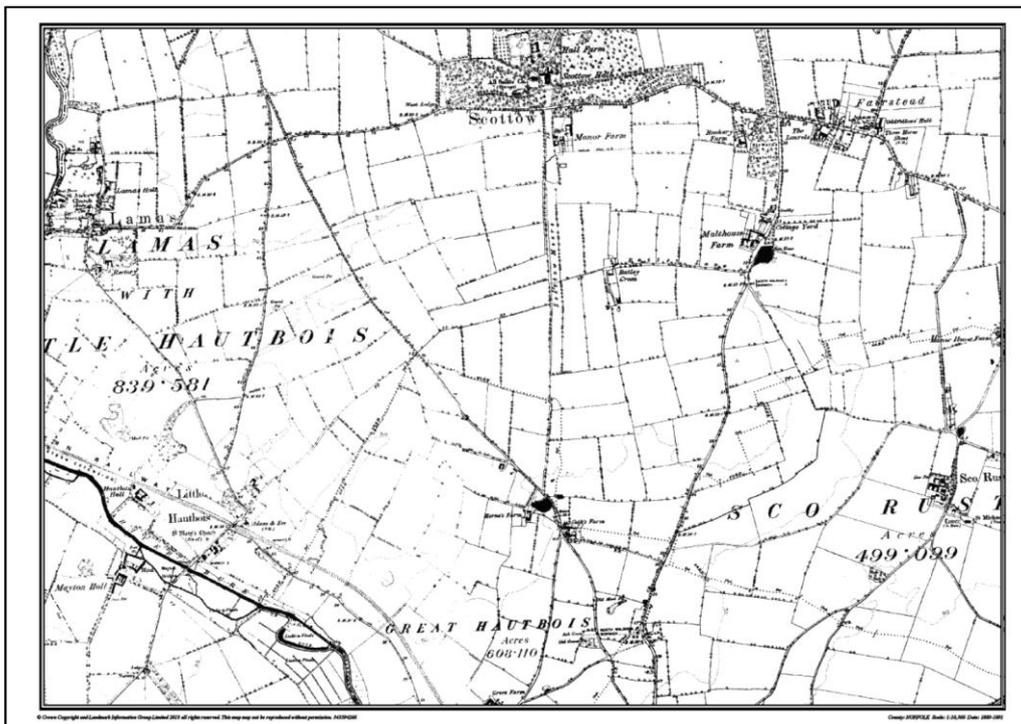


Figure 8: Ordnance Survey First Edition of 1889 (Copyright and/or Database Rights Old-Maps and Ordnance Survey Crown Copyright and/or Database Rights 2010. All rights reserved)

This moor seems to have lain directly to the south of Scottow and to have run toward a large pond that may have been used to provide water for livestock. A gap in the woodland shown on the 1891 and 1946 maps (figures eight and nine) provide evidence that the moor was incorporated into the landscape design of the Hall, although not lying within the Park.

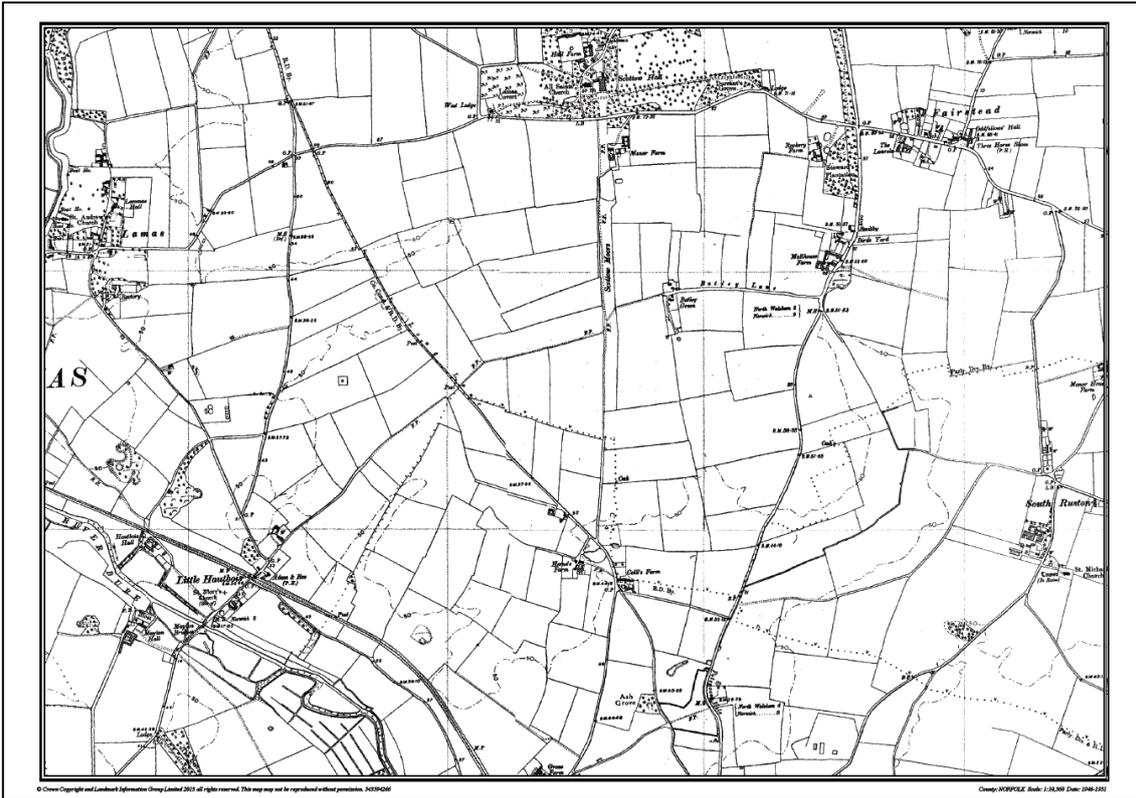


Figure 9: Ordnance Survey map of 1946-51. (Copyright and/or Database Rights Old-Maps and Ordnance Survey Crown Copyright and/or Database Rights 2010. All rights reserved)

Aerial photographs indicate ditch-like features within the airfield boundaries, some of which appear to correlate with the 1828 Scottow Enclosure map (figure ten) and the 1839 Tithe map, especially around the Batley Green area. Without further investigation definitive conclusions cannot be drawn on these features.

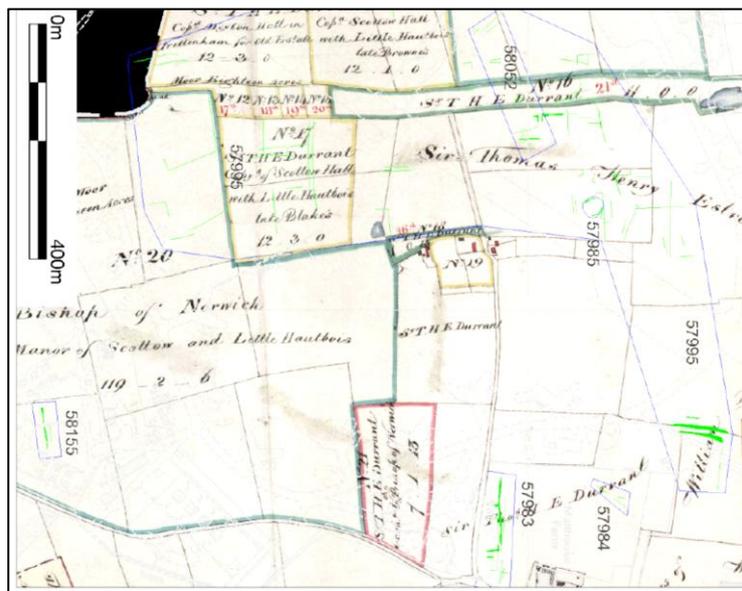


Figure 10: NMP Mapping of the archaeology of visible on aerial photographs within the central area of RAF Coltishall overlain on the 1828 Scottow Enclosure map (Base mapping © Crown copyright and database rights 2012 Ordnance Survey 100019340. NMP mapping ©NCC)

#### d) Summary

As with all these potential layers of heritage, the extent to which such remains may survive remains unknown, although the imposition of the military airfield on the site makes the possibility of their destruction a real one. Certainly, the construction of the airbase has already caused damage to the previous historic landscape; in addition to the arable land lost during its construction from 1939 onwards and the Batley Green farmstead, as well as the alterations to the view from Scottow Hall and Park, the new aerodrome also caused the clearance of historic lanes. These losses are clearly visible on the 1946 map (figure nine), which does not show the aerodrome for security purposes, but details the, now missing, landscape previously on the site.

This discussion highlights a number of important points:

- The site should not only be considered as a former military location.
- The area has been used by people for at least 4000 years, largely for agrarian purposes.
- There are substantial prehistoric, Roman, Saxon, medieval and post medieval heritage aspects to the site, which should be given equal weighting to its military aspects.
- The construction of the airfield destroyed some aspects of this pre-military landscape, but the presence of the airfield may also have preserved some.

## 7. The Expansion Period and World War Two (1938-45)

### a) Expansion Period Aerodrome 1939-40

These alterations to the existing landscape occurred because, as the British government faced the prospect of another general European war in late 1938, the site was chosen for a new military aerodrome, most likely because of the flat open plateau. The announcement of the construction of a military aerodrome was made in the latter stages of 1938 and construction began in February 1939, only months before the Second World War engulfed the continent. The base was conceived as a bomber station, and the first layer of RAF Coltishall can be firmly described as an Expansion Period aerodrome.

After the end of the First World War cutbacks in defence spending saw the number of military aviation locations in the UK fall from a highpoint of nearly 400 in November 1918 to just 27 operational airfields in the early 1920s. Gradually military planners were able to get agreement for an increase in of RAF numbers and the updating of these sites. It was only in the 1930s, as tensions in Europe increased, that the RAF entered a period of real re-armament and increase under the auspices of a series of evolving Expansion Plans. Eight of these were issued between 1934 and 1939 (the 'Expansion Period'), each being supplanted almost as soon as it had been sanctioned. The result was the construction of 50 brand-new airfields, along with the extension of dozens more.

The arrival of any airfield, even a grassed one, had an immense impact on the locality. The construction programme of the 1930s led organisations such as the Council for the Preservation of Rural England (CPRE) to place pressure on the Air Ministry to consider the way in which this impact might be mitigated. Standard designs for the new buildings were created in consultation with architects such as Edward Lutyens and submitted to the Royal Fine Art Commission. The consequence was that many buildings constructed in the domestic sites of airfields in this period were appealing neo-Georgian buildings, constructed in local materials; that sat well in the surrounding landscape.

RAF Coltishall was constructed late in the period, as war was erupting, and the effects of this timing mean that its architecture lacks some of the finesse of earlier stations, with a predominance of flat-roofed buildings, more austere finishes and lower specification in areas such as the junior ranks' barrack blocks. Nonetheless, it still contains the essential elements of an Expansion Period station, which can be seen clearly in early photographs (figure twelve). Central to this were the Type-C hangars, planned to stand alongside a grass flying field, the water tower, the officers' mess with entrance loggia, and the 'Villa'-type watch office (control tower). Examples of each can be found at various other locations across the country. At Coltishall, the domestic and technical buildings were constructed upon the gradually rising ground to the northwest of the flying area, in a design that typifies the period. Airfield design was heavily influenced by modernist ambitions for symmetry and spatial efficiency, which led architects toward organised designs, laid out in structured fashions, where buildings were close to each other to assist in the implementation of Fordist

notions of efficient time management. These ideas had, however, to take account of the danger posed by another modernist historical theme, industrialised destruction from the air, exemplified in organisations such as the RAF itself. In the interwar period large-scale bombing of enemy military installations and cities was seen to be the future of warfare and was a central part of RAF planning. With this in mind, 1930s airfield design sought to avoid buildings being placed too close together, because of the consequent vulnerability to air attack.



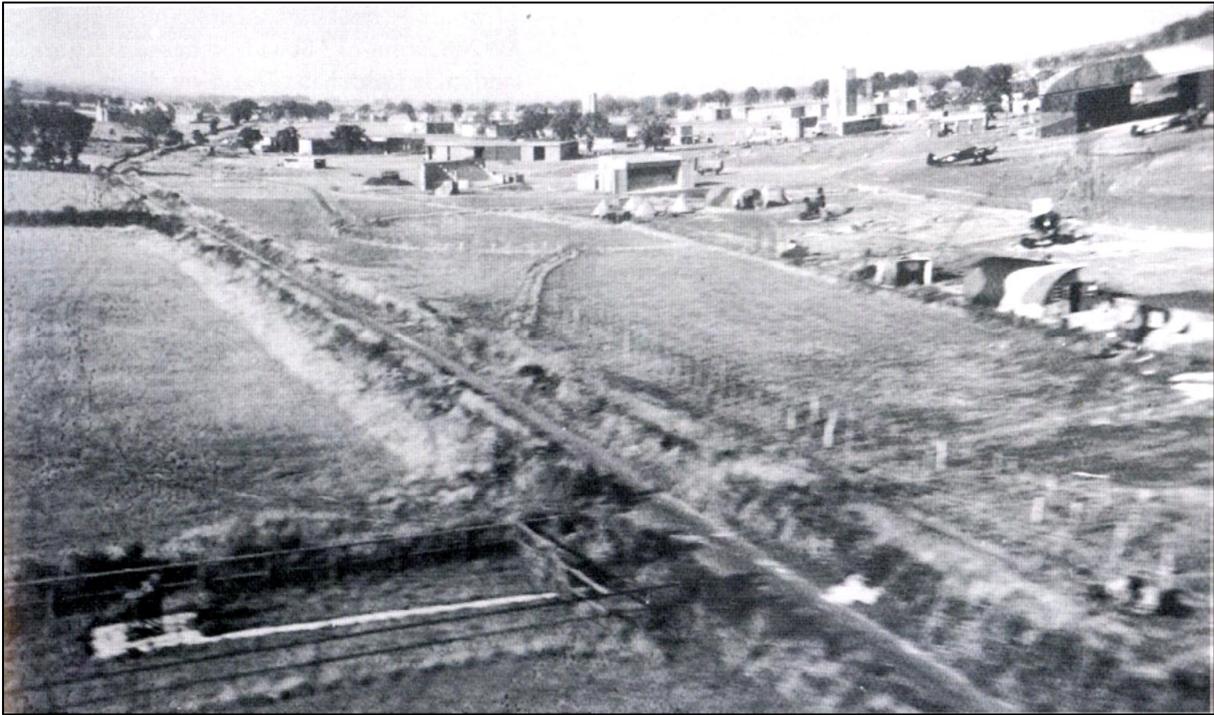
Figure 11: Aerial view of the former RAF Coltishall (©Mike Page)

The effects of these currents are visible in the remains of the Expansion Period aerodrome, especially if the 1946 aerial photographs of the airfield are consulted (figure twelve). Coltishall exhibits wide roads and spaces between buildings, for defensive purposes, while being laid out in a symmetrical fashion on a number of axes, for purposes of efficiency. One of these axes ran from the watch office to the main gate/guardroom, and included the medical centre and the station headquarters. The main axis ran from the watch office, through the hangars, across the parade ground and to the junior ranks' institute. Another ran between hangars one and two and passed through the centre of the officer's mess. A number of the Expansion Period buildings remain in good condition, for example the station headquarters, medical centre, the officers' and sergeants' messes, the hangars and some officers' housing (for example Barnby Road). The condition of the junior ranks' institute, now in the HMP Bure area, is unknown to the author.



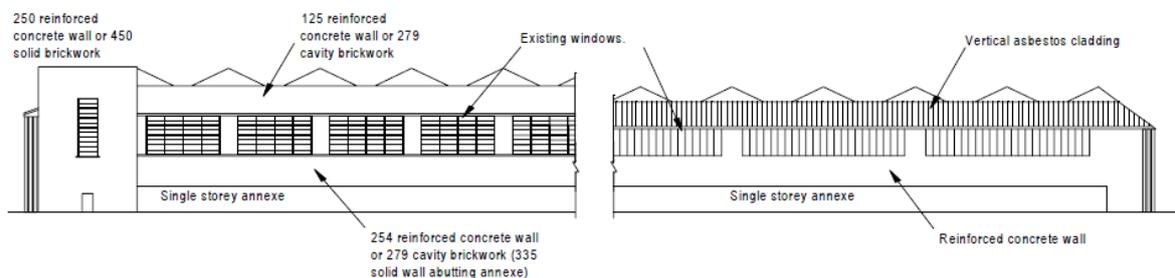
**Figure 12:** 1946 Aerial view of RAF Coltishall showing Expansion Period Design of married quarters, technical and domestic area to the north-west. Note the grassed World War Two runways and the dispersal pens around the perimeter to the north and south.

Many other buildings at RAF Coltishall, especially those in the technical area, were constructed in a far more austere and largely modernist style. These buildings, such as the H-shaped junior ranks' blocks, some stores, such as the Supply and Movements Squadron building, workshops and others, such as the Link-Trainer building, were made largely from reinforced concrete, which provided greater defensive capacity and provide them with a distinctive modern appearance. This characteristic is enhanced by a predominance of flat roofs with deep parapets that could be filled with sand to provide additional defence against incendiary bombs. The water tower at Coltishall was not brick-covered, as was characteristic of earlier Expansion Period stations - by the date of its construction bricklayers were in short supply, as were bricks. Instead, it was swathed in an Art Deco-style concrete sheath, with lodges to either side, and remains a notable visual landmark (figure thirteen).



**Figure 13:** Early 1940s view of the aerodrome. The water tower is visible in the top right of the photograph. (Source: RAF Coltishall Conservation Area Designation 2010)

Central to the 1930s aerodrome was the Type-C hangar. Over 150 such hangars were built on nearly 80 airfields between 1935 and 1939, in several versions. The dimensions (300ft long, 150ft span and clear height of 35ft), were intended to accommodate 100-ft span heavy bombers. Alterations in design saw the original internal height of 35ft (10.77m) later reduced to 30ft (9.246m) (figure fourteen). The original design, seen for example at Cranfield, had a large gable at each end and was finished in brick. Later versions were designed to deal with blast effect more efficiently and to save money.



**Figure 14:** Side elevations of C-Type hangars showing variations (Guide to World War II Hangars 03 – Type C Hangars Defence Estates, December 2001)

The type at Coltishall was a later version Type-C Protected (Ministry drawing numbers 8180/38 and 5533/39). These were built with a hipped end to each duo-pitch roof bay; having eleven hangar bays plus two half bays at each end. The ends of the hangars had a

pitched cantilever roof above the doors. Concerns over blast effect from bombing was evidenced by reduction in height of the windows to 3 metres (as opposed to 4.4 metres in earlier versions) in wider panels, doors which were sometimes filled with gravel (removed after 1945) and reinforced concrete lower walls. Other surviving examples of these hangars can be found at Newton (Notts.) and Binbrook (Lincs.).



Figure 15: Hangar 2 RAF Coltishall

The usual layout of hangars on Expansion Period aerodromes was four Type C hangars fronting the bombing circle and a fifth tucked in behind on the eastern side. This can be seen at many other locations, for example at RAF Newton in Nottinghamshire and RAF Marham in Norfolk. Five were due to be constructed at Coltishall, but only four were finished, the fifth was abandoned after being damaged in a German aerial attack. This affects the site as an example of an Expansion Period airfield, especially when viewed from the air (figure twelve). Views from the air also emphasise another aspect of expansion design. It was acknowledged that these large hangars were extremely vulnerable to attack, and a nominal gesture was made towards defensive characteristics by ordinarily clustering them in arcs, as opposed to straight lines. This was intended to make it more difficult for an enemy bomber to hit all the hangars with a single stick of bombs. This arc is clearly visible even in the truncated layout at Coltishall (figure twelve).

The watch office at Coltishall is a 'Villa' type, one of two types commonly found at Expansion Period airfields, the other being the 'Fort'. Villa-type watch offices were large buildings with two full stories, designed in an International Modern style, with wrap-around windows, large balconies and a meteorological section (figures sixteen and seventeen). Three versions were built, using different materials (brick, concrete and timber). Coltishall gained a concrete version (2328/29). Other examples exist of this type, for example at Newton and Wyton. The watch office as it currently exists has a number of later additions from the Cold War period (see below for details).



Figure 16: RAF Coltishall watch office in 1969 (© Steve Bond, Milton Keynes Aviation Society)



Figure 17: Watch office, former RAF Coltishall (R Maguire 2012)

The original grass flying field allowed for flexible use by bombers or fighters, as relatively low powered pre-war aircraft could make use of the prevailing wind. For obvious reasons, the airfield's explosives stores were located away from the main site on the eastern side of the flying field. These stores were of a standard layout, of two groups of six bomb stores and associated fusing buildings (figure twelve and eighteen).



Figure 18: Munitions area, former RAF Coltishall (R Maguire 2012)

### **b) World War Two Aerodrome 1940-45**

RAF Coltishall was originally envisaged as a bomber station, in line with the strategic rationale of interwar RAF doctrine, which focussed on mass-destruction using bombers. In May 1940 the base began to be adapted for use as a fighter station. The main impetus for this shift came from the threat to coastal shipping being posed by Luftwaffe aircraft after the fall of France. The station was placed in 12 Group and became fully operational on 23 June 1940. The main task of the station's aircraft in the early stages of the war and, in many ways, for most of it, was coastal and shipping protection. With shipping providing the lifeline for a British population that could not feed itself or produce the equipment needed to defeat Germany, this work was a vital element in the struggle. As the war progressed, the nature of operations at Coltishall altered. It was at various times between 1940 and 1945, the home for various squadrons engaged as follows:

- a) Defending Norwich (604 Squadron in 1940, for example)
- b) General area defence, night fighting and shipping protection (Squadrons including 25, 64, 66, 242, 72, 222, 257, 151, 604, 255, 68, 610)
- c) Offensive operations over France (222 Squadron in 1941 for example)
- d) Night bombing operations (141 Squadron in 1943)
- e) USAF fighter operations (346 Squadron in 1942, for example)
- f) Polish Squadron operations (316 Squadron in 1943 and 307 Squadron in 1945 for example)

g) Air Sea Rescue (5 ASR Flight)

In view of the varied reality of flying operations at Coltishall in the Second World War, the characterisation of Coltishall as a 'Battle of Britain' station does not describe the full story of station operations in the period.

The necessities of war saw changes to the spatial organisation of the station - dispersal. The compact nature of the 1930s aerodrome came to be seen as unacceptably vulnerable to enemy attack. As the war progressed aircraft were dispersed to remote sites around the base for their protection. One of these locations survives at Coltishall, a fighter pen type-A, built in accordance with Air Ministry drawing 11070/40 and designed to hold a single-engine fighter, such as a Spitfire or Hurricane (figure nineteen). The pen is scheduled by English Heritage. The pen forms an 'E'-shape, with 20m opening width, a single tarmac floor, an air-raid shelter, brick storage shed and enclosing walls, some 3m high, built in a protective arc.



Figure 19: Fighter pen type-A, former RAF Coltishall (R Maguire 2012)

The pen has two associated hard-standings to the southeast, which are included in the scheduling. Traces of other similar dispersal locations can still be seen on aerial images and become more obvious when compared with wartime photographs and the 1946 aerial image of the base.

Other passive defensive measures were implemented around the aerodrome. Concrete pillboxes were constructed on land around the airfield, a number survive (figure twenty). In

addition, three Pickett-Hamilton forts were situated on the airfield. These two-crew defensive structures were designed to be lowered to ground level while aircraft were operating, and raised by hydraulics in the event of a ground attack. The locations of these forts have not been established to date.



Figure 20: Remains of pillbox, edge of munitions area, former RAF Coltishall (R Maguire 2012)

The ground defence environment was controlled through the Ground Defence Operations Centre (GDOC). This was situated near the station medical centre and was protected by earth revetments. The GDOC then continued in use during the Cold War and post-Cold War period. It remains in good condition.

The airbase was also protected by the construction of satellite airfields built at Matlaske and Ludham and an alternative Operations Room at Catton. By 1941/2 bombing decoys had been constructed at Beeston St Lawrence and Suffield, to adversely affect enemy night attacks. These have now been lost. The base was also protected by camouflage. The classic modernist lines of 1930's airfields, so different to the natural disorder of nature, made them clearly visible from the air and so vulnerable to attack. It also made them difficult to camouflage. Attempts were made to disrupt the outlines of airfield buildings by painting them in browns and greens, the faint remains of which can still be seen on a number of buildings at Coltishall, such as the barrack blocks and the officers' mess.

Likewise, the flying field saw changes over the period of the war. By 1944 the grass flying field was equipped with three landing surfaces laid with Sommerfeld Tracking (a lightweight

wire mesh strengthened with metal rods that formed a prefabricated airfield surface and invented, ironically, by an expatriate German engineer). The outlines of the original runways are still visible in aerial photographs/satellite images. The C-Type hangars were also supplemented by a number of 'blister' hangars - arched, portable aircraft hangars of light welded steel. These no longer exist at Coltishall, but were steel-framed types. A surviving example of this type can be found at Northolt.

The war also saw a section of the small cemetery to the north of the airfield become the final resting place for RAF personnel of all nations, and Luftwaffe personnel, who died in this area. The plot was marked with a Commonwealth War Graves Commission Cross of Sacrifice and continued in use in the post-war era. In consequence, it also contains the graves of some RAF personnel at the base who died in service after 1945. Its location means that it is rather separated from the site.

### c) Summary

In summary:

- The site retains a number of late Expansion Period aerodrome buildings and design features; none of these are, however, unique to the region or the country.
- Although involved in the Battle of Britain, characterising it as such does not reflect the full range of involvement of the airfield and its personnel in the Second World War, during which its personnel carried out many tasks.
- The fighter pen type A is a significant WW2 location on the site and is of national importance. The traces of other locations are visible from the air.
- The site retains some other Second World War aspects.
- The military cemetery is an extremely important memorial location connected with the site.

## 8. The Cold War and After (1946-2012)

### a. The Early Cold War Aerodrome 1945-1962

In the initial period after WW2, Coltishall was home to the RAF's Polish Squadrons, and then it was designated a night fighter station. Its future, however, lay in its involvement in the geo-political conflict that came to be known as the Cold War. East Anglia's geographical position, relatively close to the Soviet Union, combined with the large number of existing military sites in the region that could be converted for use in the new conflict, meant that the region was to have a significant role in the Cold War. As the Cold War progressed, and the technology of warfare altered, these landscapes saw successive stages of new militarisation.

The nuclear weapon lay at the core of military strategy for those countries that chose to become involved in the Cold War. Fear of the threat posed by the nuclear weapons possessed by an opponent, and the desire to be able to launch a nuclear strike against an opponent, were key drivers in British defence policy between 1947 and 1991. To understand the changes that took place at locations such as Coltishall in this period it is necessary to understand the role of the site in the context of the British nuclear bombing force, and British nuclear history generally.

In the years immediately following World War Two, the proximity of East Anglia to the Soviet Union meant that American and British military planners made arrangements for American aircraft armed with atomic weapons be located in the region. Early nuclear-armed American bombers could reach Soviet targets from East Anglia should war break out. This American nuclear presence has continued thereafter, with bases such as RAF Sculthorpe in Norfolk being remodelled to accommodate B-29 bombers for example. After the British government decided that it should have nuclear weaponry, a decision taken during 1946-7, East Anglia was one of the natural locations for successive generations of British nuclear bombers and missiles to be located. The government's first nuclear weapon, Blue Danube, was stored at two sites in the UK, one at Barnham near Thetford, the other at Faldingworth in Lincolnshire. These sites were linked to the airbases where the V-force of strategic bombers – Valiants, Victors and Vulcans - was located. The ten main V-bomber stations (Finningley, Scampton, Coningsby, Cottesmore, Waddington, Wittering, Wyton, Marham, Honington and Gaydon) were all pre-war permanent airfields. These bases were remodelled significantly to accommodate the new heavy bombers, with longer runways of about 9,000 feet (2743 metres) capable of taking aircraft weighing 89 tons (91 tonnes) and larger hangars.

While Coltishall was not chosen as a permanent station for the V-force, it is now clear that the station had a key role in the projected operation of the V-Force. Government plans stated that at moments of increased international tension, the bombers of the V-Force would be dispersed to a selection of other RAF bases, with runways capable of taking them. The concept behind this approach was an extension of the idea of dispersal evidenced in the

World War Two fighter pen type-A at Coltishall, but on a nuclear scale. By scattering the V-bombers around the country, a pre-emptive Soviet nuclear attack would not be able to destroy the entire nuclear striking force and so British nuclear retaliation was assured. Coltishall's wartime runway was replaced in 1947 by a concrete one. It was strengthened and extended again during the late 1950s to become 7,500 feet (2,286 metres) long - sufficient to accommodate a V-bomber (figure twenty-one).

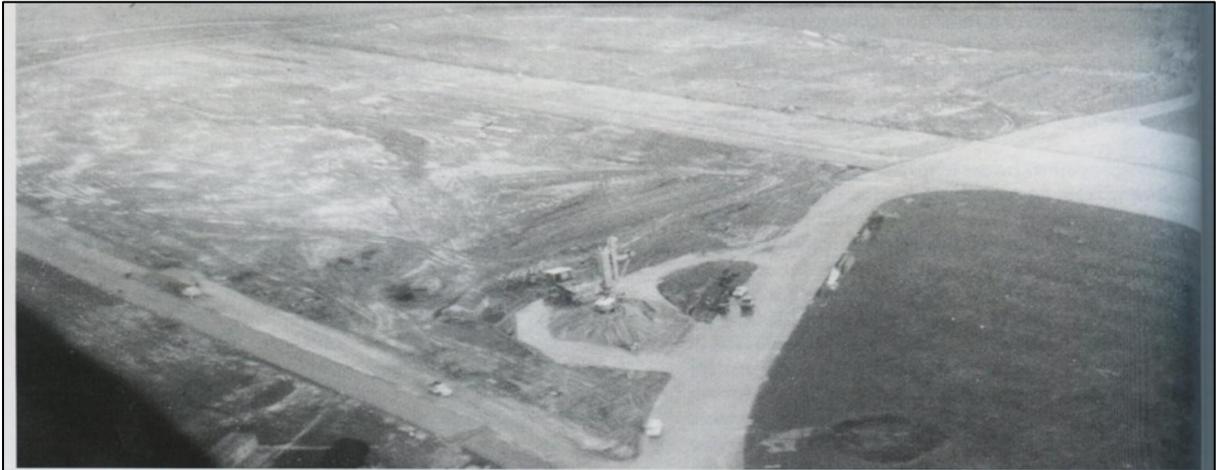


Figure 21: New Runway Extensions under Construction in 1957 (RAF Coltishall Conservation Area Designation2010)

After this alteration Coltishall was capable of acting as a dispersal airfield for Britain's nuclear strike force. Indeed, in a rare picture from 1964, a Vulcan B2 was photographed at RAF Coltishall carrying the new Blue Steel guided nuclear bomb during a Battle of Britain display (figure twenty-two).

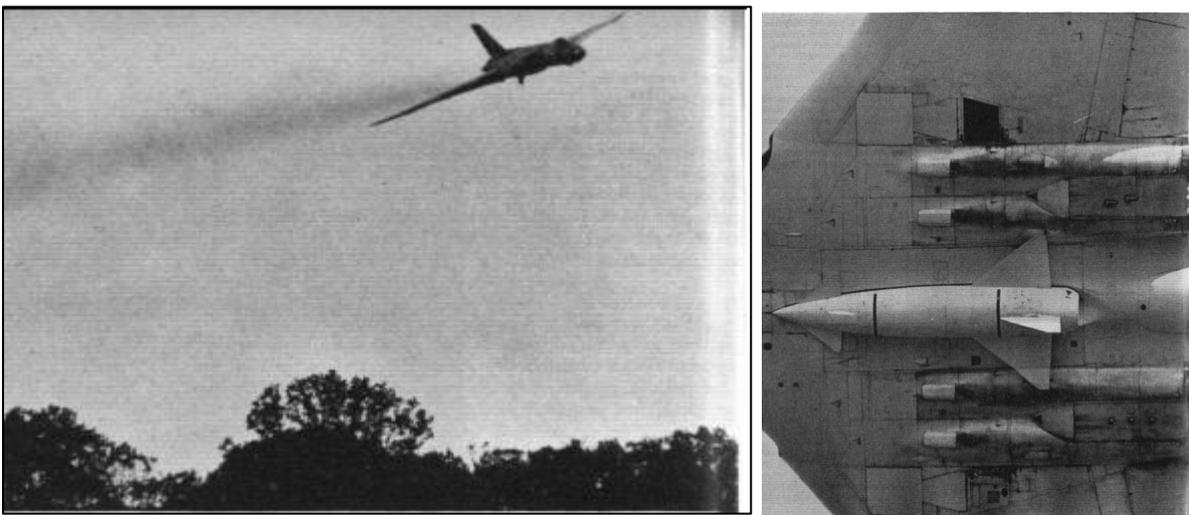


Figure 22: Vulcan B2 nuclear bomber at RAF Coltishall, 1964. The second photograph shows the Blue Steel guided nuclear bomb underneath the aircraft. (*Flight* 22 October 1964)

Two of Marham's V-bombers would have been dispersed to Coltishall in the event of impending nuclear war. After arrival, having already been loaded with nuclear weapons at

their home station, the bombers would be kept at readiness for immediate take-off. In this context, the extensive late 1950s alterations to Coltishall gain added importance. By this time the V-bomber force was operational and had a reasonable number of atomic bombs (British nuclear bombs were slow to be constructed and few in number throughout the 1950s and early 1960s) and the ability to launch a nuclear strike was the core of British defence policy. Coltishall was part of this strategy and its new runway ensured this role could be carried out. In a sense, in its selection as a dispersal airfield for nuclear bombers, Coltishall was returning to its originally envisaged function as a heavy bomber station.

The main early Cold War role for Coltishall's own squadrons was also related to nuclear weaponry, this time the air defence of the nuclear bombing force. In the first decade of the Cold War (1946 to 1956) the aerial threat to the UK was seen to be posed by piston-engine Soviet aircraft carrying atomic bombs that would be used against cities, military targets and manufacturing centres. Coltishall was well-situated to house aircraft that could intercept Soviet aircraft before they could threaten the UK. Squadrons such as 23 and 141 Squadrons operated in this role from Coltishall, flying aircraft such as the De Havilland Venom and the Gloster Javelin (figure twenty-three).



**Figure 23:** De Havilland Venom at RAF Coltishall, 1955. (*Flight* 1955)

From the mid-1950s RAF air defence focussed on the threat posed to British and American nuclear weapons from a Soviet pre-emptive strike. After the 1957 Defence Review made the ability to deliver a nuclear strike on the Soviet Union the core of British defence policy, air-defence was effectively about protecting the elements of the 'nuclear umbrella' from destruction on the ground. This included the V-force, which was seen as being increasingly vulnerable to being destroyed before take-off, as well as the nuclear munitions store at Barnham and, between 1959 and 1963, the THOR nuclear missile stations that were constructed across the region, at locations such as North Pickenham and Feltwell. The role of Coltishall's squadrons in what was termed 'resisting the first atomic raid of any future war' was practiced in exercises such as 'Vigilant' in 1957, where Coltishall's squadrons operated from Horsham St Faith, now Norwich Airport (figure twenty-four).



**Figure 24:** Gloster Javelins from RAF Coltishall taking off from Horsham St Faith in Exercise Vigilant, 1957. (*Flight* 1957)

During the 1950s and 1960s Coltishall's aircraft were, therefore, a critical element in the British nuclear weapons network. They worked in tandem with the radar stations that covered the United Kingdom in the Cold War (for example at Trimmingham and Neatishead) which were tasked to detect incoming Soviet aircraft before they threatened the UK and to direct fighter aircraft from stations such as Coltishall to their locations. In this role the interceptors flying from Coltishall supplemented the Bloodhound surface-to-air missiles (SAM) that appeared across East Anglia during this period.

#### **b. Early Cold War Modifications**

The airfield was substantially modified in the period from 1946 to 1963 to reflect its role in the nuclear world. As has already been stated, the runway was updated on a number of occasions. In 1947 an asphalt runway was installed, to allow jet fighters to operate from the airfield. As tactics evolved, operational readiness platforms were added at either end of the runway, allowing for some aircraft to be maintained ready for immediate response in an age when ever faster aircraft meant ever less time to respond to attack. In addition, additions were made to the watch office. The domestic accommodation was also extended as numbers at the airfield grew. A new barrack block was added, as were new officers' married accommodation and a housing estate for other ranks (Barton Road).

In 1956 John Laing and Co Ltd was awarded the contract to refurbish Coltishall's runways and taxiways. This work involved the runway extension, but also the construction of two groups of eight pairs of 'Y-shaped' hardstandings with concrete blast walls (figure twenty-five). The purpose of these areas was to protect the station's aircraft from low level strafing attack. As with the V-force dispersal role, these hardstandings were a continuation of the idea of dispersal. Each group was large enough to accommodate the aircraft of one squadron. In view of its aim of protecting the station's aircraft, one of these groups was placed surprisingly close to munitions storage area, to the east of the airfield. The other was placed to the south-west of the main runway. Other examples of such walls, but in less good condition, may be found in the region at Wattisham in Suffolk and Waterbeach in Cambridgeshire.



Figure 25: Concrete blast walls and associated hardstandings, former RAF Coltishall (R Maguire 2012)

The blast walls are also evidence of another defining characteristic of the Cold War – the advance of military technology. With its destructive apogee reached in nuclear weaponry, the era saw huge changes in a wide range of weapon systems and military-related technology. The blast walls reflected one of these, the shift in aircraft armament from cannons to missiles. Significantly, those at Coltishall stand in close proximity to the explosives storage area (ESA), which saw extensive upgrading in this period for the same reason. In Coltishall's case new missiles included the De Havilland Firestreak and the Hawker Siddeley Red Top. Firestreak was a British passive infrared homing air-to-air missile and was the first such weapon to enter active service with the Royal Air Force. It was partially replaced in service by the Red Top.



Figure 26: De Havilland Firestreaks in the ready-for-use store at RAF Coltishall 1961 (*Flight*, 31 August 1961)

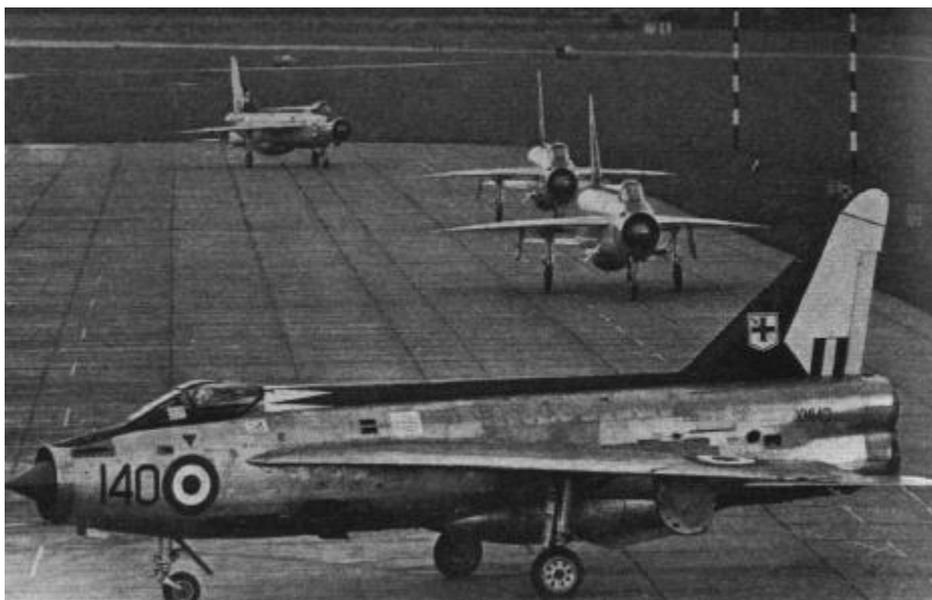
Both missiles were stored at Coltishall and a number of new buildings were, in consequence, constructed in the wartime bomb storage area. These included a missile preparation facility

and four ready-for-use missile stores which still remain in good condition (figures twenty-six and twenty-seven).



**Figure 27:** Outside of a ready-for-use store, originally used for Firestreak, former RAF Coltishall (note the blast walls to the rear of the store) (R Maguire 2012)

The movement of the Air Fighting Development Squadron of the Central Flying to Coltishall in 1959 led to the arrival of the *Lightning* at the station (figure twenty-eight). The advent of the Lightning, which was a vast leap forward in British fighter technology, twice as fast as the Hunter and with an operational ceiling (60,000 feet) far higher than any previous RAF fighter, saw more new building on the site, for example the parachute brake bay.



**Figure 28:** Lightnings of 226 OCU arrive at RAF Coltishall in 1964. Note the varied weaponry, Redtop on the first aircraft and Firestreak on the second and third. (*Flight* 1964)

The greater weight and performance of aircraft such as the Lightning was another reason for the strengthening and extension of the runway. As has been said already, it also fitted well with the airfield's secondary role as a V-bomber dispersal.

During the early 1960s the station accommodation was further expanded, both to assist in the retention of technical personnel after the end of conscription and to cope with the extra personnel from the expanding radar station of RAF Neatishead, who lived largely at Coltishall. A new estate of airmen's housing was constructed to the north of the existing wartime houses (Ormesby Road, Cromer Place and Hoveton Place).

### **c. The Later/Post Cold War Aerodrome 1963-2006**

Coltishall remained a Lightning station for the first decade of the later Cold War, until the arrival of the Sepecat Jaguar at the site in 1974. The Lightnings continued to operate in their air defence role. Until the Royal Navy's Polaris fleet replaced the V-bombers as the main British nuclear weapons force in 1967-8, the Lightnings had to continue to defend the V-bombers from any potential pre-emptive attack, but in an age of intercontinental ballistic missiles this was seen as an increasingly symbolic effort. Otherwise, the Lightnings were tasked with the general air defence of the UK.

The arrival of the Jaguar marked a change in role. The *Jaguar* was a single-seat ground attack aircraft, and the station operated as a Jaguar base for the remainder of its RAF life. The Jaguar period at Coltishall should be seen as a continuation of its nuclear/bomber history, rather than its fighter history. Although it is common to state that Jaguar was a fighter, this description needs to be clarified. A fighter aircraft is a military aircraft designed primarily to engage in air-to-air combat against other aircraft. Some fighters have secondary ground-attack capabilities, and some are designed as dual-purpose fighter-bombers, and while Jaguar might be pushed into the latter category, it was first and foremost a ground-attack aircraft. By the 1980s there were four designated air-defence airfields - Wattisham, Coningsby, Leuchars and Leeming - all of which received major upgrading of their infrastructure to carry out this role. Coltishall's later Cold War role was a home station for a deployable force of ground-attack aircraft, and throughout the Cold War its squadrons were allocated to Strategic Air Command Europe's (SACEUR) Strategic Reserve (Air). Their specific task was the support of ground forces in the defence of NATO's northern flanks in any general European war against the Red Army. The aircraft would not have fought from Coltishall, but from forward bases on the continent.

While Coltishall's squadrons were envisaged as engaging in ground attack initially with conventional weapons, it was also anticipated that at some point they might be required to deliver nuclear strikes just behind the forward edge of the battlefield, probably in Germany. From 1975 to 1998, when the RAF's last nuclear weapon, WE-177, was withdrawn from service, Coltishall's squadrons were given a nuclear attack role (National Archives Kew, AIR 2/18210). Each squadron was allocated eight WE-177 nuclear weapons, to be used in the event of instructions from SACEUR.

As Jaguar aged, it found a new role - tactical reconnaissance, which became the speciality of 41 Squadron. In the aftermath of the Cold War, Coltishall's Jaguar aircraft were involved in a number of operational deployments, where they provided conventional ground attack ability. They helped enforce the no-fly zone over northern Iraq in the early 1990s and performed a similar task over Bosnia in 1994, as well as both Gulf War operations.

#### d. Later/Post Cold War Modifications

A number of new buildings appeared on the station in anticipation of the arrival of Jaguars. These included a number of buildings designed for testing engines (both installed and uninstalled), a special paint shop, and a flight simulator. These buildings still remain in good condition.

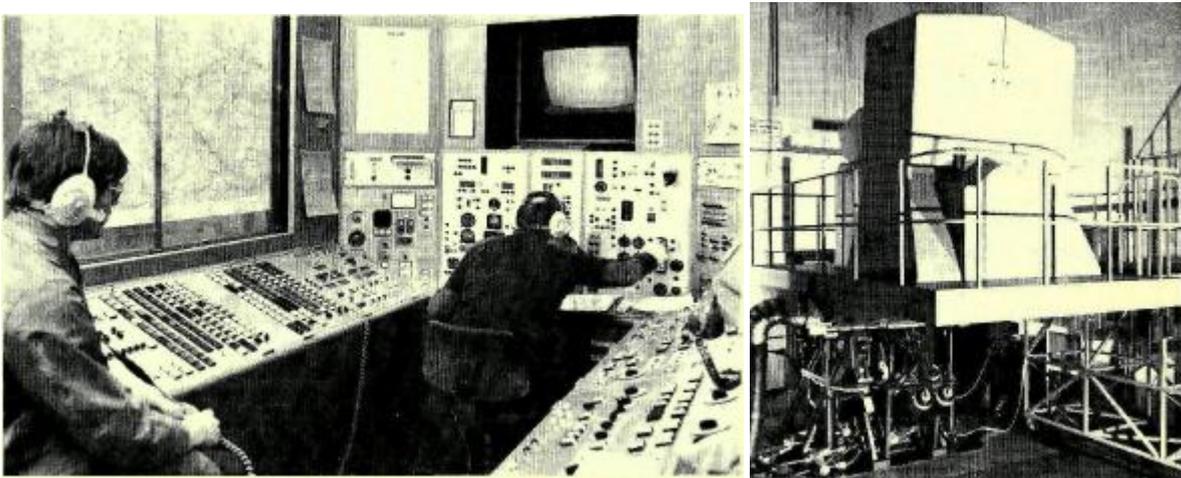


Figure 29: Instructors at the RAF Coltishall simulator and a view of the simulator in 1976 (*Flight*, 1976)

Extensions were also added to the watch office, including a metrological section and briefing room at around this time. Again these remain in good condition.



Figure 30: Watch office with later Cold War additions, former RAF Coltishall (R Maguire 2012)

The nature of the Jaguar, which was always envisaged as a deployable ground-attack aircraft meant that Coltishall was not seen as a location where fighting would take place from in the event of war. Many RAF stations, such as those designated as air-defence stations, saw huge building programmes involving the construction of buildings that were ‘hardened’ to give some measure of defence against attacks by modern weaponry, up to and including nuclear weapons. These included Hardened Aircraft Shelters (HASs), which were designed to withstand direct hits from 500 lb. bombs, along with other structures. Because Coltishall’s aircraft were not intended to fight from the base, this phase of development largely passed the station by, with the exception of the construction of the three standard NATO munitions storage ‘igloos’ at the bomb stores (figure thirty-one). Named for their distinctive shape, ‘igloos’ are ammunition magazines, generally built at ground level, with an earth covered roof, sides and rear, constructed in reinforced concrete and provided with a strong headwall and door(s). These structures can be used to store conventional or, in USAF bases, nuclear weapons and are bullet, theft, weather and fire-resistant, as well as ventilated.



Figure 31: ‘Igloo’, munitions area, former RAF Coltishall (R Maguire 2012)

#### e. Search and Rescue

RAF Coltishall was used as a search and rescue base from the Second World War, when Lysander and Walrus aircraft operated from the base. In the post-war years, this role was carried out by the detached flights from 22 Squadron and 202 Squadron. These flights flew a variety of helicopters for their Search and Rescue Duties, including Whirlwinds, Wessex and Sea Kings. Detached flights of the search and rescue squadrons generally comprised two

aircraft, with associated flight crews, engineers and administrative support staff. The flights at Coltishall provided 24-hour search and rescue cover throughout the year. The most visible remnant of this history is the helicopter pad.

#### f. Decommissioning and Post-Decommissioning History 2004-2012

In July 2004 the Ministry of Defence announced that the station would close by the end of 2006. In the following years the station's squadrons were disbanded or relocated and the Jaguar retired from service. No 6 Squadron moved to RAF Coningsby in Lincolnshire before disbanding in 2007. It was reformed to fly Eurofighters from RAF Leuchars in 2010. The badge of 41 Squadron was transferred to the Fast Jet and Weapons Evaluation Unit at the same station, while 54 Squadron became a reserve squadron at RAF Waddington. The station was closed on 30 November 2006. As part of the closure process the station buildings were stripped of their equipment as was the site more generally, for example the Jaguar training school was removed completely, as was the runway hydraulic arrestor. Overall, the building layout was left largely intact.

During January 2007, the Home Office began exploring alternative uses for the site. Having initially considered using the site for an immigration detention facility, it was eventually decided to construct a prison on the site. The Ministry of Justice took temporary control of the site during construction, which was completed in 2010.

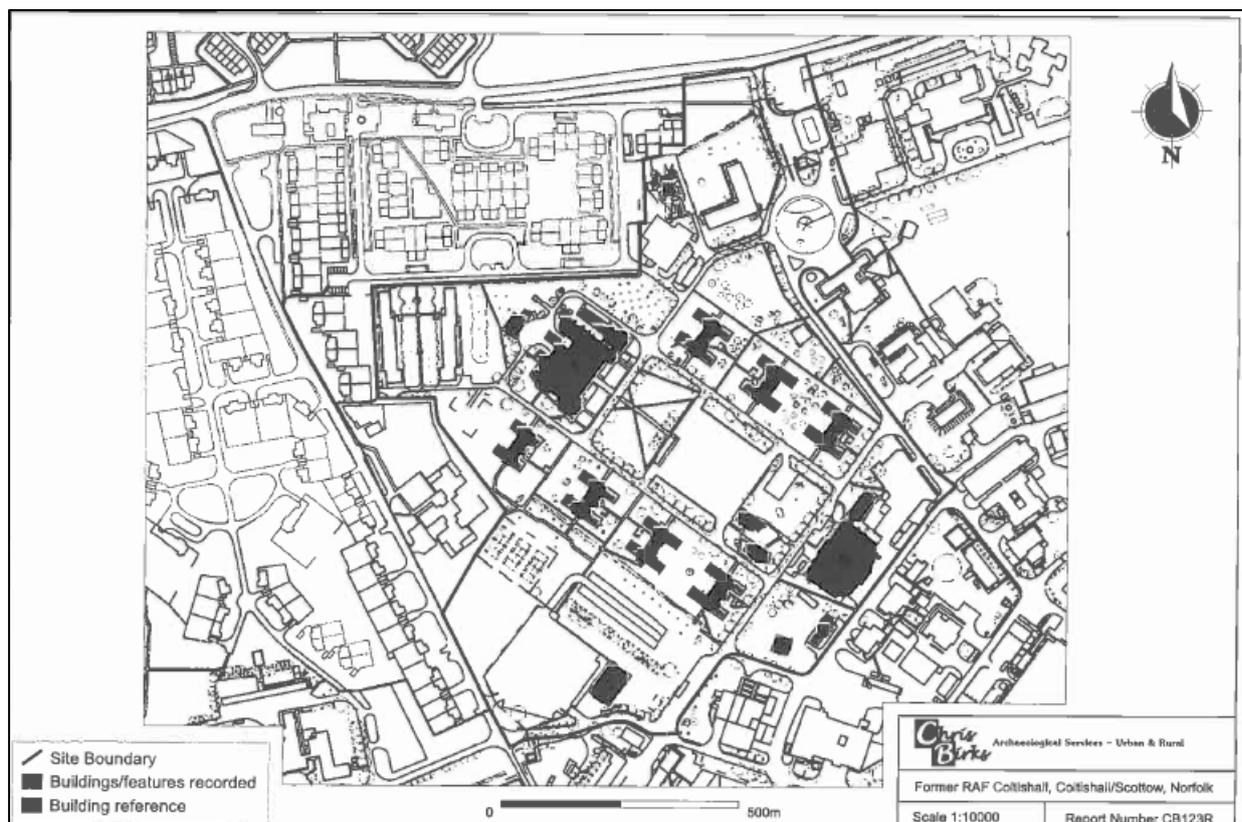


Figure 32: The site of HMP Bure at the former RAF Coltishall (©Chris Birks May 2008)

The prison, HMP Bure, was largely built in the domestic site. It is located in the area of the former airmen's H-blocks, along with the junior ranks mess and NAAFI social club. Although its use of the existing accommodation went some way to minimising its impact on the site, the construction of the prison has dramatically changed the character of the immediate area.

Bader and Miller barrack blocks were demolished in the building process and the creation of the fence-lines and security complex required for a prison has created a dramatic break in the Expansion Period characteristics of the main site that had survived through the Cold War to 2006, affecting the axis running from the watch office through the parade ground and junior ranks' mess. It has also placed some very interesting buildings, such as the water tower and those related to the lives of the enlisted personnel, out of public access.

#### g. Summary

- The Cold War history of the site should be considered in the context of nuclear weaponry and divided into two periods: the early and late Cold War.
- The station had two nuclear weapons-related roles in the early Cold War. The first was the interception of incoming Soviet nuclear bombers, a role that increasingly emphasised the defence of the aircraft carrying British nuclear weapons.
- The second early Cold War role was as a dispersal airfield for the British nuclear bombing squadrons.
- In the later Cold War the Jaguar squadrons also had a nuclear attack role, along with a conventional ground attack role.
- This nuclear history is an integral part of the story of RAF Coltishall.
- The Cold War landscape now dominates the site, although the Expansion Period buildings remain, they have been subsumed into this later landscape.
- The most important structures in this Cold War landscape are the blast walls, missile ready-to-use stores, which need to be considered as an assemblage of structures along with the altered watch office, modified hangars, munitions storage igloos, engine facilities, paint spray facility and simulator building.
- The presence of HMP Bure has detracted from the visual lines of the site, especially its Expansion Period features.

## 9. Physical Remains and Assessment of their Heritage Significance

As has already been stated some areas have already been scheduled by English Heritage under the Ancient Monuments and Archaeological Areas Act 1979. These areas are, specifically: the World War II fighter pen type-A and one set of Cold War blast walls and associated remains, as shown in the figure thirty-three below.

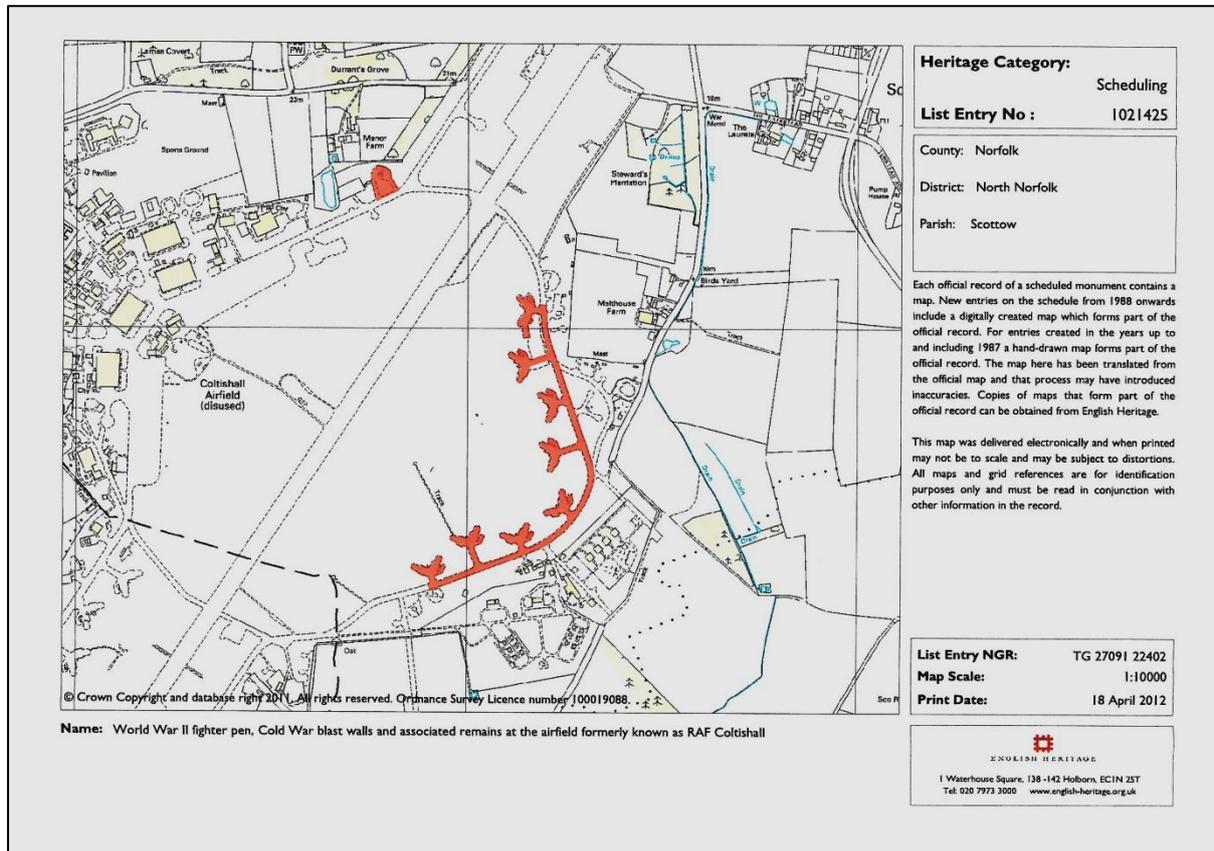


Figure 33: English Heritage Scheduling Entry for the former RAF Coltishall (©English Heritage)

In 2010 both Broadland District Council and North Norfolk District Council also accepted the designation of the site as a local Conservation area. The extent of the site included in this area is shown in figure thirty-four. The four hangars, water tower and watch office as well as the former officers' and sergeants' messes were proposed for local listing as part of this move.

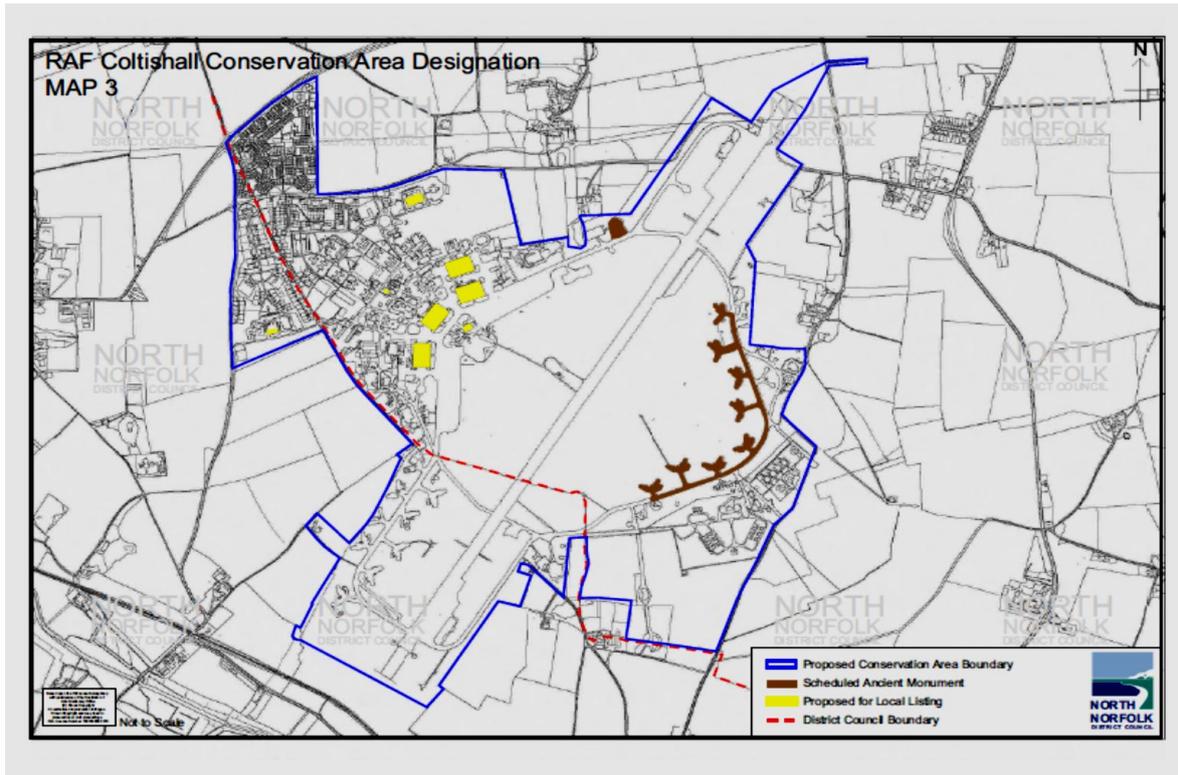


Figure 34: RAF Coltishall Conservation Area Designation (©North Norfolk District Council)

Within the timescale available for this report, it has not been possible to conduct a detailed building survey of the site. The list at figure thirty-five below is a preliminary one detailing the current status of what I would argue are some of the more interesting buildings on the site. It is neither definitive nor complete, but serves as a guideline. The building numbers refer to the 2005 site plan.

Building Number	Building Title	Additional Data	Condition
1	Hangar No 1	Aircraft storage/maintenance	Good
2	Hangar No 2	Aircraft storage/maintenance (modern roof)	Good
3	Hangar No 3	Aircraft storage/maintenance	Good
4	Hangar No 4	Aircraft storage/maintenance (modern roof)	Good
5	Station Armoury		Reasonable
7	Armament Engineering Flight		Poor
10	Explosive Storage Area (ESA) Pyrotechnic store		Poor
12	Main Supply		Good
16	Watch office	Air traffic control and Office	Good
21	ESA Seat Arm Bays	Ejection seat arming	Reasonable
22	25m Range	Firing range	Good

<b>27A-F</b>	Barrack Blocks	Within HMP Bure	Unknown
<b>32</b>	Ground Defence Operations Centre	Used throughout operational period	Good
<b>33</b>	Station Medical Centre		Good
<b>35</b>	Station Headquarters	Original expansion period	Good
<b>40</b>	Guard Room	Original expansion period with poor quality 1990s alterations	Poor
<b>41</b>	Sergeants Mess	Original expansion period	Good
<b>44</b>	Junior Ranks Mess	Within HMP Bure	Unknown
<b>50</b>	Officers' Mess	Original expansion period	Good
<b>56</b>	Parade Ground	Within HMP Bure	Unknown
<b>69/1 to A6</b>	ESA Bomb Stores		Average
<b>71</b>	ESA Incendiary Store		Average
<b>72</b>	ESA Missile Preparation Facility		Average
<b>93</b>	Fighter Dispersal Type A		Good
<b>134</b>	TACAN Tower		Good
<b>147</b>	Precision Approach Radar		Poor
<b>223A-C and 234 A-B</b>	ESA missile ready-for-use stores		Good
<b>224</b>	Explosive Test Area ESA		Average
<b>233 and 387</b>	GRMS /Wing Operations and Ops wing complex	Watch office extensions	Good
<b>260</b>	Brake Parachute Bay	Servicing of Lightning braking parachutes	Average
<b>320-2</b>	Storage Igloo Buildings		Good
<b>349</b>	Jaguar Simulator		Good
<b>378</b>	Jaguar Paint Facility		Good

Figure 35: Buildings at Former RAF Coltishall

## 10. Conclusion

The history of the former RAF Coltishall as outlined here is typical of those wartime RAF stations that continued in use after 1945. Generally speaking, there was a natural tendency for the government to look to the Expansion Period stations for Cold War needs, as they already possessed the necessary long-term infrastructure, and size, for Cold War operations. These Expansion Period aerodromes were gradually modified as required and became, what might be termed, hybrid Expansion/Cold War landscapes, as layers of militarised landscape were gradually added to Expansion Period foundations. Each developed variations at individual building level depending on the tasks they were allotted. For example, Coningsby was an Expansion Period aerodrome that functioned as a bomber station in World War Two. It then continued as a bomber station but housed the V-force in the early Cold War, before being closed for refurbishment during the 1960s to reopen as a base for Phantom fighter aircraft. It was then modified to operate first the Tornado and now the Typhoon. Coningsby, therefore, possesses a wide range of buildings of varied type, function and era. The same is true of Coltishall and the other Expansion/Cold War stations. Examples in the region include Honington, Wattisham, Marham, Mildenhall and Alconbury, as well as Wyton (which dates back to 1916). There are other examples across the country, for example, Wittering, Cottesmore, Binbrook, Waddington, Finningley, Kinloss and Scampton.

As has already been pointed out, because it operated as the base for a deployable force, the Jaguars, from 1974 Coltishall escaped some of the later modification that affected other stations, such as Coningsby, which involved the construction of buildings that were 'hardened' to withstand attacks by modern weaponry. Building did, of course, continue after 1974 to support Jaguar operations but the base can be considered a good surviving example of the ensemble of the structures that made up an Expansion/early Cold War Period airfield. The construction of the prison across one of the most attractive areas of this design has detracted from this, as have 1990s alterations to the front of the guardroom. The layout of the site retains, nonetheless, good examples of Expansion Period features, such as the wide, tree-lined avenues, neo-Georgian buildings and the water tower. Although, they are not unique in themselves, their presence is essential to understand the site and they should be retained in their current form as much as possible.

The watch tower is also in very good condition and provides a respectable example of its type, although again by no means unique. In the context of the site, however, it is an important element. It might be suggested that it could be stripped of its later Cold War extensions and returned to 1940s status, but this would then not fit with the hybrid Expansion/Cold War airfield. The tower needs to be understood alongside those other features of 1950s and 1960s operations highlighted above. The same is true of other buildings in the technical area, such as the hangars and GDOC. The perimeter track provides the link that joins the watch tower, hangars, blast walls, and ready-for-use sheds in an understandable context. The runway is a standard example of a runway type that can be seen across the country.

As was stated earlier, the abandonment of the fifth hangar during World War Two also affects the site's status as an example of an Expansion Period airfield.

This is, however, not a major problem for the site as the former RAF Coltishall should not be considered primarily as an example of a 'Battle of Britain' airfield, or even a Second World War airfield. It is true that the site retains some elements of the pre-1945 station, which are essential to understanding its entire period of operation. Furthermore, the loss of life suffered by service personnel and civilians in WW2 is memorialised by the cemetery. The former RAF Coltishall is, in reality, a good example of a hybrid Expansion/Cold War airfield structured to operate in the nuclear era. As such it is of regional significance, with elements of national significance - the scheduled monuments. The eight pairs of Cold War blast walls that have been scheduled are good examples of 1950s airfield defensive structures at a moment when aircraft were being equipped with guided missiles. They also have associated concrete aprons that provide insight into the operation of such dispersal areas. Other examples exist in the UK, but the Coltishall blast walls are significant in that their original dispersed nature is clearly visible. This contrasts with those at RAF Wattisham, for example, which are surrounded by later HASs, or those at Waterbeach which are in poor repair. The existence of another set of blast walls to the south west makes the concept of dispersal very clear. This effect is enhanced by the close proximity of the perimeter track to all of the blast wall complexes. This makes it clear both how aircraft could move from the locations to the main runway and also how the station's assets were divided to provide protection. This effect is further heightened by the close proximity of the missile ready-for-use sheds in the ESA, which were constructed at the same time, and held the new weapons that would have armed the aircraft protected by the blast walls. The aim of these alterations, to enable air defence aircraft to get successfully airborne in an age of nuclear weaponry is clear. This entire ensemble of structures and features – blast walls and hardstandings, ready-for-use sheds, and perimeter track constitute a regionally, and indeed nationally, rare example of 1950s and 1960s fighter operations in a nuclear age that are in very good condition.

LandScape  
group

## Bibliography

### Reports:

- Chris Birks, *Report on a Historic Building Photographic Recording at 'Former RAF Coltishall'* NHER 51594 (2008)
- Wayne Cocroft and Steve Cole, *RAF Coltishall, Norfolk - A Photographic Characterisation* (English Heritage 2007)
- Sarah Horlock, *Former RAF Coltishall and its Environs: Results of an aerial photographic Assessment and Mapping project (draft)* (Norfolk Air Photo Interpretation Team, 2012)
- Defence Estates, *Guide to World War II Hangars 03 Type-C Hangars* (2001)
- Department for Communities and Local Government *National Planning Policy Framework* (2012)
- English Heritage, *Conservation Principles Policies and Guidance for the Sustainable Management of the Historic Environment* (English Heritage 2008)
- English Heritage, *Understanding Place: Character and Context in Local Planning* (English Heritage 2012)
- English Heritage, *Historic Military Aviation Sites: Conservation Management Guidance* (English Heritage 2003)
- GICHD, *A Guide to Ammunition Storage* (Geneva, 2008)
- Lambert Smith Hampton, *Sale Particulars of Former RAF Coltishall* (London 2012)
- North Norfolk District Council, *RAF Coltishall Conservation Area Designation* (2012)
- Peter Watkins, *An Archaeological Desk-Based Assessment of Land at former RAF Coltishall, Norwich* (NAU Archaeology 2008)

### Maps and databases:

- Google Maps
- Ordnance Survey Map (1:10000, 1979)
- Defence of Britain Database Record
- <http://www.pastscape.org.uk>
- <http://archaeologydataservice.ac.uk>
- <http://www.historic-maps.norfolk.gov.uk/mapexplorer/>
- <http://www.old-maps.co.uk>

### Books/Texts/Articles:

- Flight Magazine* (1950-1990)
- John Baylis, 'British Nuclear Doctrine: The 'Moscow Criterion' and the Polaris Improvement Programme' *Contemporary British History*, (2005)
- Mike Bowyer, *Action stations revisited: the complete history of Britain's military airfields. Volume 1 Eastern England* (Manchester: Crécy, 2010)
- W D Cocroft and R J C Thomas, *Cold War: building for nuclear confrontation 1946-1989* (Swindon: English Heritage, 2004)
- Ken Delve, *The military airfields of Britain. East Anglia: Norfolk and Suffolk* (Marlborough: The Crowood Press, 2009)
- C Dobinson, *Fields of Deception: Britain's Bombing Decoys of World War II* (London: Methuen 2000)

- Neil Forbes, Robin Page and Guillermo Pérez (eds.), *Europe's deadly century: perspectives on 20th century conflict heritage* (Swindon: English Heritage, 2009)
- P Francis, *British Military Airfield Architecture from Airships to the Jet Age* (Sparkford: Patrick Stephens, 1996)
- Lawrence Freedman, *Britain and Nuclear Weapons* (London: Macmillan, 1980)
- Peter Hennessy, *The Secret State. Whitehall and the Cold War* (London: Penguin, 2010)
- Jeff Hughes 'The Strath Report: Britain Confronts the H-Bomb, 1954-1955', *History and Technology*, (2003)
- Matthew Grant, 'Home Defence and the Sandys Defence White Paper, 1957', *Journal of Strategic Studies* (2011)
- Margaret Gowing, *Independence and Deterrence: Britain and Atomic Energy, 1945-1952. Vol.1* (London: Macmillan, 1974)
- Richard Hough and Denis Richards, *The Battle of Britain* (London: Penguin, 2001)
- Mick Jennings, *Royal Air Force Coltishall fighter station: a station history* (Cowbit, Lincolnshire: Old Forge Publishing, 2007)
- Melvyn P. Leffler and Odd Arne Westad (Eds.), *The Cambridge history of the Cold War. Volume 1 Origins* (Cambridge: Cambridge University Press, 2010)
- Melvyn P. Leffler and Odd Arne Westad (Eds.), *The Cambridge history of the Cold War. Volume 2: Conflicts and Crises* (Cambridge: Cambridge University Press, 2010)
- Melvyn P. Leffler and Odd Arne Westad (Eds.), *The Cambridge history of the Cold War. Volume 3: Endings* (Cambridge: Cambridge University Press, 2010)
- R Maguire, 'Never a Credible Weapon': Nuclear Cultures in British Government during the era of the H-Bomb' *British Journal for the History of Science*, (2012)
- R Maguire, 'Scientific Dissent amid the United Kingdom Government's Nuclear Weapons Programme' *History Workshop Journal*, (2007)
- Holger Nehring, 'The British and West German Protests against Nuclear Weapons and the Cultures of the Cold War, 1957-64', *Contemporary British History*, (2005)
- N J McCamley, *Cold War secret nuclear bunkers: the passive defence of the Western world during the Cold War* (Pen & Sword Military Classics, 2007)
- Mike Osborne, *Defending Britain: twentieth-century military structures in the landscape* (Stroud: Tempus, 2004)
- Mike Osborne, *Twentieth-century Defences in Britain: Norfolk* (Lincs: Concrete Publications, 2008)
- David J. Smith, *Britain's military airfields* (Wellingborough: Patrick Stephens, 1989)
- Graham Smith, *Norfolk airfields in the Second World War* (Newbury: Countryside 1994)
- Owen Thetford, *Aircraft of the Royal Air Force since 1918* (London: Putnam, 1995)
- Stephen Twigge, *Planning Armageddon: Britain, the United States and the command of Western nuclear forces 1945-1964* (Amsterdam: Harwood Academic, 2000)
- Paul Virilio, *Bunker archaeology* (New York; Princeton, N.J.: Princeton Architectural Press, c2008)
- Steve Willis and Barry Holliss, *Military airfields in the British Isles 1939-1945* (Newport Pagnell: Enthusiasts Publication, 1982)
- N Wood, *Vectors of Memory: Legacies of Trauma in Postwar Europe* (Oxford: Berg 1999)

# LandScape group

Contact us:

The Landscape Group  
c/o School of History  
University of East Anglia  
Norwich  
NR4 7TJ

Email: [info@landscape-group.co.uk](mailto:info@landscape-group.co.uk)

Telephone: +44(0)1603 597170