RAF COLTISHALL

A HISTORICAL APPRAISAL

PART 8

HANGARS AND CONTROL TOWER

PAUL FRANCIS

SEPTEMBER 2013

Front: Gulf War artwork inside Hangar 1

Document Version: V1, 15 Sept 2013

ABBREVIATIONS

AMWD	Air Ministry Works Department / Directorate
ARS	Air-raid Shelter
ATC	Air Traffic Control
BFI	Bulk Fuel Installation
COMCEN	Communications Centre
DoE	Department of the Environment
ESS	Electronic Servicing Squadron
EWS	Emergency Water Supply
LOX	Liquid Oxygen
M&E	Mechanical & Electrical
MPBW	Ministry of Public Buildings and Works
MSF	Mobility Supply Flight
ORB	Operations Record Book (RAF Form 540)
PACF	Propulsion and Components Flight
PSA	Property Services Agency
RC	Reinforced Concrete
RIC	Reconnaissance Intelligence Centre
RSJ	Rolled steel joist
TIALD	Thermal Imaging and Laser Designation

CONTENTS

PREFACE

This one section of a twelve part report which examines the infrastructure and airfield at the former RAF Coltishall, now owned by Norfolk County Council.

Part 8 is a stand-alone document examining the structures that make up and are located close to the hangar line. It is based mainly on primary sources such as original drawings preserved at Coltishall as well as fieldwork.

Most of the buildings were locked up and access was not possible. The fieldwork was mainly carried out between May and July 2013.

This part is dedicated to the memory of the three local civilians who were part of the workforce that were erecting hangar 3 and who were tragically killed as a result of enemy action on Monday, 19 August 1940. RIP:

Lawrence Wilfred Stone, age 31 George Middleton, age 32 Sidney Alexander, age 55

The above names were taken from the Commonwealth War Graves Commission listings of civilian war dead at The National Archives (not online). There is one other name not listed in the CWGC records who may have been killed that day – a Mr Burton but the details are unknown.

Part 8: Hangars, Control Tower and Associated Buildings

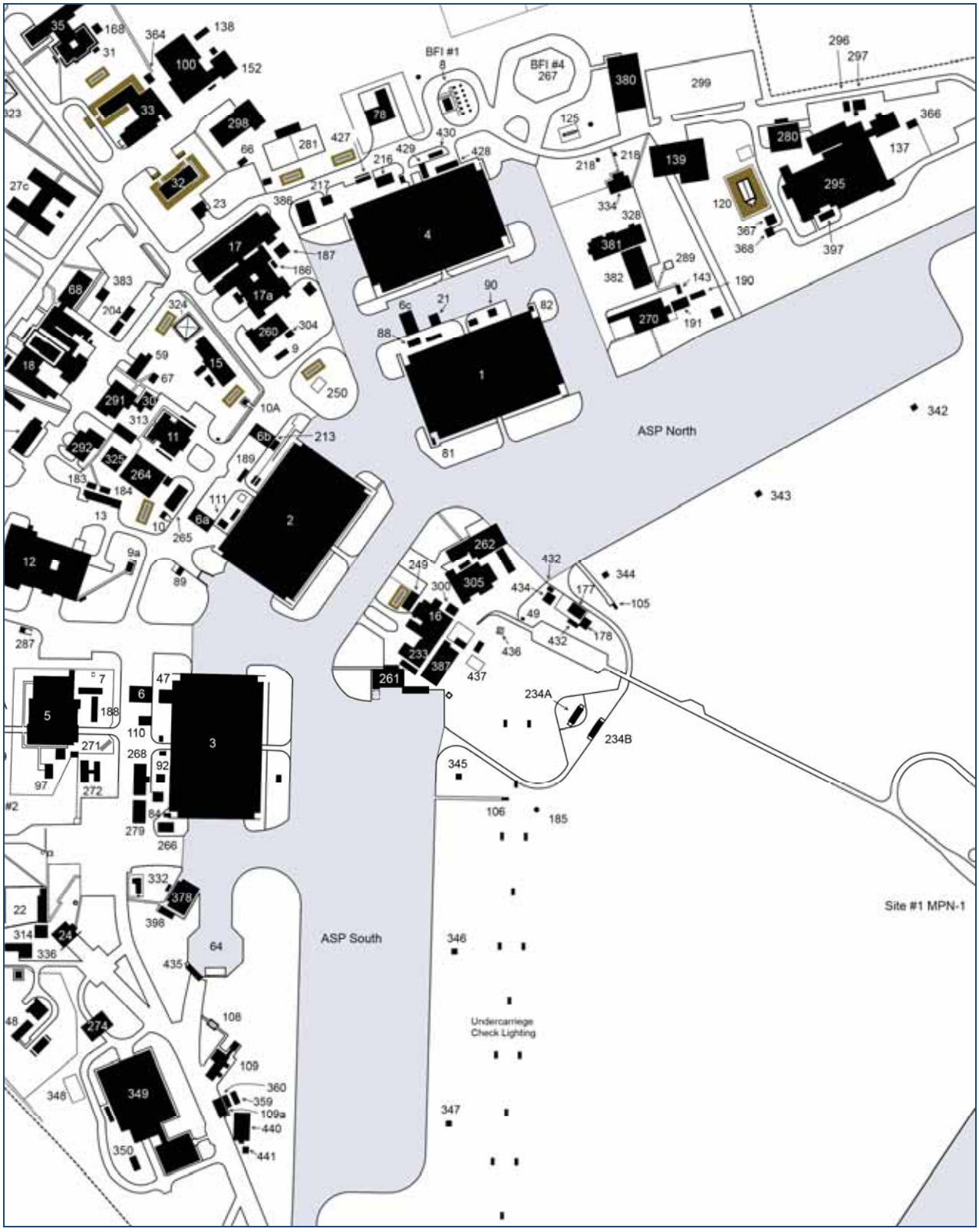
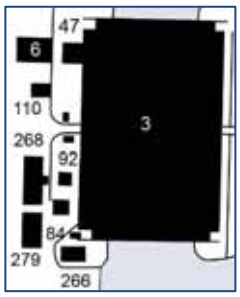


Fig 1: RAF Coltishall Technical site

8.1 Type ‘C’ Protected Aircraft Shed (1–4)



8.1a Introduction

The hangars at Coltishall are type ‘C’ aircraft sheds, the austerity versions of the taller original 1934 design. They are single storey, end opening with a rectangular-shaped planform, of steel and concrete construction, and a roof having characteristic hipped-shaped rafters. As originally built each one had single-storey near full-length annexes along the side walls. Originally known as aircraft sheds they are referred to as ‘hangars’ for clarity throughout this document.

8.1b Background

With many new stations of permanent construction required under the RAF Expansion Scheme, and anticipating the need to house larger aircraft, it was decided that a new standard hangar was required with a clear span of 150 ft, a clear length of 300 ft and a clear height of 35 ft. The design chosen to meet these requirements became known as the type ‘C’ aircraft shed and after many modifications became the standard permanent RAF hangar of the interwar period.

The majority of the first hangars which feature traditional gable ends were erected on existing RAF stations only – at the following airfields:

Aldergrove (1) Gosport (1) Sealand (2) Mildenhall (3) Northolt (1)

The first examples (gabled and hipped versions) were built with the steelwork clothed in brick of a class in keeping with other station buildings, as it was appreciated that structures of such dimensions would dominate both the station and landscape. The designers took public opinion into account and the architectural treatment and style was such that distant views of groups of plain engineering structures were avoided. This was further demonstrated by a change to the original 1934 design from the traditional gable ends of the roof trusses to the use of hipped-shaped rafters instead. Hangars featuring this form of roof construction were built on the new permanent RAF stations of Scheme ‘A’. The architect was A Bulloch and typical drawing numbers are 2029 –2034/34.

The layout and planning of the shed line was based on dispersal to avoid structures positioned in straight lines, so they were laid out in a crescent pattern facing the landing ground.

Hangars of this type were erected on all of the early permanent RAF Expansion Scheme stations. Although the clear height of 35 ft was excessive for fighter aircraft, it was felt necessary in case of a change in the function of the station.

The steel structure was different from the earlier type ‘A’ (1924) and ‘B’ sheds (1927) and consisted of lattice wall stanchions spaced at 25 ft centres, supported the main roof girders. There were no intermediate stanchions as lattice stiffening girders spanned the stanchions. The framing between the main girders consisted of roof trusses with apex framed into the top booms of the girders and valley gutters spanning the building between each main girder (ridge and valley). The original roof covering consists of timber purlins and timber boarding clad with asbestos slates.

Walls were initially clothed in brick but in 1936, in anticipation of enemy bombing, a change was made to reinforced concrete with hammer dressed or other type of textured surface. Large glazing panels were fitted to each bay for natural lighting. Lifting facilities were provided on the operational stations in the form of four cross-runways (two close to the centre capable of lifting 6 tons and one at either end with a lifting capacity of 1.5 tons). Main sliding doors at both ends of the shed are steel-framed and covered on both sides with steel plates; these were filled with gravel to afford protection from bomb splinters.

Single-storey annexes along both side-walls were provided as accommodation suites of offices for the squadron and flight commanders, rest rooms for air and ground crews, changing rooms, map and briefing rooms, armoury, wireless and instrument workshops. A typical bomber station had two hangars for each squadron, both identical but differing in the side annexe arrangement. No.1 shed had two 9-bay annexes

with one having a two-storey portion in the centre for office accommodation while No.2 shed had one single-storey annexe of similar length and a 6-bay annexe along the opposite side. Typical drawings of annexes for heavy and medium bomber stations are 5043/36 and 6045/36.

8.1c The Protected Version

By 1938 the size of heavy bombers had stabilised and as a result a major change took place to the design of the type 'C' shed which allowed it to be more economical in materials and enabled it to be built far quicker than the previous design. This was achieved with a reduction of 5 ft in clear height to 30 ft; another saving was the omission of the parapet wall hiding the roof trusses over the door bays. This version was known (unofficially) as the austerity aircraft hangar type 'C' and was constructed on the 'L' Scheme stations. All other features are the same for the earlier design type 'C' except that the austerity version has a half bay forming the door section, with the roof girder/truss structure slightly overhanging the door, whereas in the older type 'C' hangar, it terminates as a full bay and has a projecting door hood over the top rails. In both cases, doors stack along projecting door gantries supported by 'A' frame trestles. A standard protected shed therefore consists of eleven 25 ft bays and two 12 ft 6 in wide bays while a typical (bomber) older style type 'C' hangar consists of twelve 25 ft bays.

8.1d Coltishall

For those at Coltishall (and presumably elsewhere) the company of Banister, Walton & Co Ltd of Trafford Park, Manchester manufactured the steelwork for the hangars under contract M098. Drawing numbers 3061/40 to 3101/40, dated March/April 1939 applied in Coltishall's case, which were checked and passed between September and February 1940.

The actual hangar is to an Air Ministry design, 8421 to 8425/38, 9180/38 to 9192/38 and 9184–9895/38. The architect was AA Clements.

Wall stanchions consist of a pair of 15 × 6 in RSJs joined together by riveted angled lattice bars, these have a total length of 41 ft 3 in which gives a clear height of 30 ft 4 in with 3ft 8 in allocated for foundations and the remainder connects with the roof girders. The stanchions are cased in concrete up to glazing height and then exposed steel work, except for intermediate stanchions which are cased full height. Wall infilling between them is 14 in of reinforced concrete. Above the glazing, the exterior face of the concrete was originally over-clad with 'BigSix' (B6) corrugated asbestos sheeting but this has since been removed.

The original asbestos roof sheeting, steel gutters and asbestos badge boards to the roofs of all four hangars were removed and replaced with asbestos c.1977. Around 1998 and 2000, the roofs of hangars 4 and 2 (respectively) were completely re-clad with modern powder-coated steel sheeting that forms a flat roof over the trusses and girders (they are no longer appear on the outside as ridge and valley but inside the trusses and girders are as-built). The other hangars retain their 1977 corrugated asbestos sheeting.

8.1e The Mystery of Hangar 5

According to the entry in the ORB, for the day in which an enemy aircraft bombed near or close to the hangars, one hangar received minor damage although a number of workmen were killed. Hangar 3 certainly shows signs of bullet and bomb fragment damage to the inside of the door skin and wind girders on the west elevation. In fact one of these has gone through both skins of the door covering on its way through the sand filled door – the exit hole is turned outwards so we can therefore assume that the bullets and possibly a bomb had penetrated the roof of hangar 3 and exploded. It is assumed that the three workmen who were killed were working on this hangar.

Drawing 6959/54 records a survey of this site in preparation for the construction of the central armoury (5), dated September 1954. The drawing records that the only concrete slab present at this time was the west side entrance to a missing hangar. There is no mention of foundations for the hangar stanchions, the central heating ducting across the centre of the floor of the shed or of a floor slab. Furthermore, spot heights carried out on the site are recorded at 55.8 to 53.8 (to either end of the shed) in a north/south direction and span-wise dimensions of 53.7 to the east to 55.6 to the west (all dimensions are in feet).

Yet there is an Air Ministry drawing 2321/39 dated February 1939 that gives the floor level at 53.25. I believe that this reference is for the contractor to construct the floor slab at this height and not that the floor slab was constructed to this height.

I now believe that the entrance concrete pathways were built in preparation for a future hangar 5 but that is all.

8.1f As-built Annexes

A typical medium or heavy bomber squadron had two hangars. The main difference in the annexe arrangement between the older and austerity hangars is that the austerity version only had a suite of ground floor offices and workshops on both sides of the shed, whereas a pair of the earlier 'C' type had one hangar with a central part of an aerodrome side annexe having a first floor suite of squadron offices – the other hangar of the pair only having ground floor annexes.

The as-built annexe arrangement for both austerity protected type 'C' hangars of a medium bomber pair were similar in their sub-division and had the following arrangement (13180/38) – it is presumed that this configuration was built at Coltishall despite the fact that it was never a medium bomber station:

- Aerodrome side (left to right) – flight commander's office with flight sergeant, store, spare room, large locker room, covered way, pilot's room, navigation officer , CO's office, adjutant, sergeant major, and clerk's office
- Technical site side (left to right, looking at the annexe from inside the shed) – battery charging room with oil bowser, oil and paint and dope store, ground equipment (open area), store, W/T workshop, W/T store, auto-pilot workshop, covered way, equipment store, M/G cleaning and store, workshop area (open area) and toilets.

Had Coltishall been designed from the beginning as a fighter station, then it would have had something similar to Kirton-in-Lindsey which has three protected type 'C' hangars, but the size of these is on a reduced scale as they were constructed with eight bays plus two half bays as opposed to eleven bays plus two half bays. Each of these hangars was designed for one squadron of single-engine fighters, consequently Kirton-in-Lindsey was designed as a three-squadron fighter station. Furthermore, the annexe arrangement is quite different in that it has the first-storey annexe in the centre of the shed on the aerodrome elevation of all three hangars. The architect of the fighter version of the protected type 'C' hangar (12879/38) is Frank Lambert.

8.1g Extensions

Both annexes of all four hangars were adapted at ground floor level c.1966 when officers' toilets and ground crew toilets were added to the end elevations by altering the original room layouts.

8.1h Hangar 1

The south annexe had been extended at first floor level before December 1974, almost to the full length of the ground floor annexe. This was achieved in seven almost but not equal parts by expansion joints. From west to east the first floor was subdivided into four offices, navigation briefing room, cine room, combined training / briefing and aircrew crew room, stairs, operations, aircrew crew room and four offices plus a full length corridor. Construction is of brick over clad with 'Metricated' vertical metal cladding fixed to battens. The roof is a thin reinforced concrete slab clad in asphalt.

The first of the extensions to the north annexe took place roughly the same time as the south annexe – before December 1974. It consisted of a toilet and two airmen's locker and changing rooms at the eastern end of the north annexe, and at the western end was a flight safety office, library, trade manager's office and a toilet. Another extension, this time built at either end of the 1974 extension, took place in 1980, to a drawing (NAO/134/78/1) dated 1978. For details of construction see below. It included a new workshop and WIRE bay at the west end plus an SNCO's crew room and airmen's crew room at the east end.

The north annexe was again extended at first floor level, this time around 1981, when a locker room was added for 41 Squadron roughly in the centre of the annexe line. The existing roof was set to fall, so a

longitudinal bearing course of reinforced concrete was erected, first along the front and mild steel angle iron bolted to the existing mass concrete wall of the hangar. The floor consists of Omnia hollow concrete planks and these were placed above the bearing course and angle iron. The front wall is made up of cement rendered concrete block arranged as two leaves with steel framed windows, and the rear wall uses the existing shed wall. The roof is Woodcemax pre-felted steel-edged roof units overlaid with 1 in 'Purlroofer' deck insulation and 3-ply built-up roof felting. Access is via a steel stair inside the hangar and another on the outside. The extension was subdivided into a toilet, an aircrew changing and locker room and a servicing and storage bay. All of the extensions so described have collectively meant that the whole elevation of both annexes are two storey.

- NGR: (1) TG 2625 2313, (2) TG 2613 2303,
  (3) TG 2608 2289, (4) TG 2622 2323

8.1i Hangars 2 and 4 Extensions

The only extensions to the annexes of hangars (2) and (4), took place after July 1968, when two small heating chambers were erected at first floor level above both annexes. A floor beam slab (16 ft square) was erected over a bearing course and an angle iron framework erected above this. Inside was fitted an oil-fired warm air heating unit with an aluminium flue stack, extending above the roof of the hangar.

After 1980, hangar 4 had most of its floor slab taken up and replaced; also the span wise heating duct was broken out and replaced.

8.1j Hangar 3 Annexe Extensions

Hangar 3 east elevation remains as single storey, while the west elevation has a small first floor annexe (33 ft by 16 ft 4 in) at the northern end, originally designed as a ground crew locker room. It was arranged open-plan with three central rows of double lockers and single lockers arranged against both end walls. Construction is of cement rendered brick and concrete block cavity walls. The roof is a concrete slab covered in felt. Access is by an external steel stair case.

8.1k External Porches

Around 1970 it was decided to build external porches as part of a noise reduction exercise to the annexes to all four hangars. This was carried out in cement rendered concrete block walls and a roof of woodwool units covered in felt.

Plate 1: The site of hangar 5 showing a green field area in May 1941

There appears to be a shelter trench and what may be a defence post dead centre plus some cavities which may be natural or possibly bomb craters. Note the camouflage on hangar 3.
Photo: English Heritage (03879 of 28-05-41).

Plate 2: Hangar 1 with old-style roof covering

Plate 3: Hangar 4 with modern roof covering

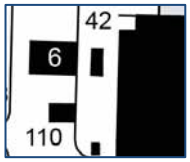
Plate 4: Hangar 3, showing the boiler houses

Plate 5: Hangar 3, close view showing the boiler houses

Plate 6: Hangar 1, artwork

Plate 7: Hangar 1, internal side wall view showing the first full bay with wind bracing

8.2 Petrol Tanker Sheds (6, 6A, 6B, 6C)



8.2a Introduction

The idea of fixed refuelling points was abandoned in 1934/5 and replaced with the RAF's mobile tanker system of refuelling aircraft. This then became the standard practice on all RAF stations. In order to garage the fleet, a petrol tank shed constructed of brick was designed by A Bulloch. The architect A Beasley designed a monolithic concrete version in 1935. Four petrol tanker sheds were built at Coltishall, one on the west side of hangar 3 – which would have been between hangars 3 and 5, plus two on the NW side of hangar 2 and one located between hangars 1 and 4. These are all 4-bay versions.

Scheme 'L' stations were the last to be given petrol tanker sheds as they are not a feature of Scheme 'M' stations.

The RAF's own tankers filled up with aviation fuel from the fuel installation and drove out to the aircraft that were dispersed out on the airfield.

Construction is monolithic reinforced concrete walls and roof with a parapet wall around the perimeter of the roof. A 9 in fire-wall separates each bay. Patent steel rolling shutters were fitted to each end of all bays and concrete hurters were positioned to protect the corners of each of the bays. All four sheds are 4-bay versions.

8.2b Building 6A / 468

In the winter of 2002, this shed had a first floor added to the existing roof space and functioned as an aircrew feeder unit who were dressed for flight. It therefore consists of a kitchen and servery and is accessed from an external steel staircase and a steel balcony. It was fabricated by Balsham Buildings Ltd and constructed by GF Tomlinson Construction Ltd. The structure then became building 468.

It is steel-framed clad with plastisol-coated steel roof and wall cladding.

- Footprint: (internal bay) 33 ft by 12 ft 7 in (10.05 by 3.83 m)
- NGR: (6) TG 26031 22920, (6A) TG 26068 23038, (6B) TG 26108 23090, (6C) TG 26205 23164

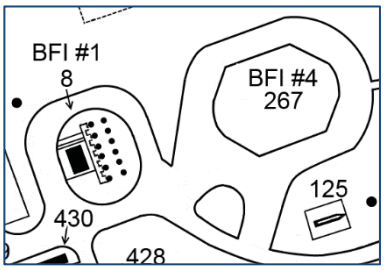
Plate 8: Petrol tanker shed (6B)

Plate 9: Petrol tanker shed (6C)

Plate 10: Petrol tanker shed (6A) and aircrew feeder unit (468)

8.3 Aviation / Bulk Fuel Installations (8, 267, 301 and 302)

8.3a Bulk Fuel Installation BFI #1 (8), and BFI #2 (301)



Both of these are the original WWII installations, designed by AA Clements in 1939 and are typical for a layout of a bomber station, both having a capacity of 72,000 gallons, whereas a pre-war fighter station would have had two 48,000 gallon installations. The buried 12,000 gallon tanks measure 9 ft diameter and 30 ft long.

Each consists of an elliptical roadway with a wide section on one side for two RAF tankers to park up and fill using stand posts and hoses. On the opposite side is a narrow road, where a petrol company tanker off-loaded via a set of six ground level pipes and valves. In the centre of the elliptical road, below the grass surface are the six 12,000-gallon B-4 type aviation tanks, which rest on a concrete raft buried underground. Originally, the pump house was underground, but in 1965 they were both converted to surface pump houses with external walls of 9 in brick and a concrete slab roof – the design of these buildings is 2232/52, they contained two 200 gallons-per-minute pumping units.

- Footprint: the site is approx 120 ft by 150 ft (36 m by 45 m)
  pumphouse: 26 ft 6 in by 14 ft 7 in (8.07 by 4.44 m)
- NGR: (8) TG 26235 23309, (301) TG 25903 22846

8.3b Bulk Fuel Installation BFI #4 (267), and BFI #3 (302)

In 1959 two new 48,000 gallon aviation fuel installations were designed (9015/59M, 10652-53/59J); one of these was built adjacent to the existing WWII installation (8) and the other (302) is located at the extreme west of the airfield which has its own gate from the public road. It consisted of an elliptical roadway around the site with an inner curb and four tanker hardstandings, arranged on the corners with two for off-loading and two for loading RAF tankers. At ground level there is a brick-built expense pump house but the one belonging to (267) has since been demolished. Below ground, within the centre circle, are four 12,000-gallon fuel tanks arranged in a row and just below the surface.

- NGR: (267) TG 26293 23327, (302) TG 27410 22843

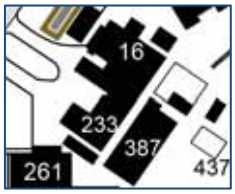
Plate 11: Bulk fuel installation #3 (302), general view

Plate 12: Aviation fuel installation (301), general view

Plate 13: Aviation petrol installation (8), showing the positions of six buried tanks

8.4 Watch Office with Meteorological Section / Control Tower (16)

8.4a Introduction



This 'watch office with meteorological section' family of buildings is a third generation building. They were designed between 1939 and 1940 and were built between 1939 and 1942. They fall into four distinct categories, based on construction materials; all have similar layout and architectural design characteristics that are not present on subsequent building designs. The group is represented by the following general arrangement drawings:

- 2328/39 monolithic concrete
- 5945/39 permanent brick and concrete
- 2423/39 steel frame and timber
- 518/40 temporary brick and timber (version 1) or temporary brick and concrete (version 2).

The last two designs are austerity temporary versions and are outside the scope of this report.

8.4b Concrete Construction 2328/39 and Brick Construction 5845/39

Permanent brick and concrete designs within this family were similar in appearance and internal arrangement. The concrete version was built on Scheme 'L' stations and is associated with the austerity type 'C' aircraft shed, while the brick version was built on Scheme 'M' stations and is associated with the type 'J aircraft shed. Neither design was ever known as 'Villa' type.

Built on attractive Art Deco lines, with a large proportion of the front elevation covered with metal folding windows, the control room had typical 1930s continuous streamlined curved-on-plan windows at the corners. This was both attractive and functional as it allowed more room on the balcony for personnel to turn the corner and gain access to the door to the control room. The watch office on the ground floor extended forward and supported the balcony above. This had a large number of closely spaced balustrades and rails, again typical of contemporary architecture of the period. In contrast, the roof of 2328/39 had a concrete parapet wall all the way round, while 5845/39 had a brick parapet wall on the front elevation and steel railings around the remaining roof area. Quite a number of buildings have been painted and therefore an easy way of distinguishing between the two types is to see if the parapet wall extends all the way round the roof (concrete) or if it is only on the front elevation (brick). The ground floor footprints are:

- 2328/39: 38 ft 4 in by 45 ft 7 in (11.68 by 13.89 m),plus a projecting staircase annexe at the rear 15 ft 9 in by 5 ft 4 in (4.80 by 1.62 m)
- 5845/39: 38 ft 7 in by 45 ft 10 in (11.76 by 13.97 m),plus a projecting staircase annexe at the rear of 5 ft 4 in by 16 ft (1.62 by 4.87 m)

8.4c 2328/39 As-built Description

Drawing 2328/39 is an undated 1/8 inch scale general arrangement drawing that identifies Frank Lambert, ARIBA of Works Area 8 and his signature is counter signed by J Binge, ARIBA. It is the monolithic concrete building, being built entirely of solid (no cavity) reinforced concrete (except for brick internal walls). All external walls are 14 in wide, thickly reinforced with steel bars, especially around window openings and beams which were all cast in situ using plywood shuttering. Interior walls are mainly 9 in thick. The drawing shows a floor of 4 inches of concrete laid on 6 inches of hardcore; the depth of foundations is unknown but may have varied from site to site.

The building's architectural treatment for exterior walls is based on a series of alternate 2 ft 10 in wide concrete columns and 3-ft-wide window openings (3 ft by 6 ft 9 in, 7-pane steel casements) at both ground and first floor levels – these are set inside continuous sill and lintel banding. The watch office has three 10 ft 4 in by 6 ft 9 in (20-pane) double glazed metal casements along the front elevation and the control room is continuously double glazed along the front elevation with curved-on-plan corners. The inner window casement stacks inside the control room at both ends and the outer casement stacks both ends on the

outside. This terminates as a glazed steel door in the side walls with fanlight at either end which gives access to the balcony. Other windows include three circular 2 ft diameter horizontally pivoted windows on the staircase annexe and a 1 ft 10 in wide 12-pane vertical casement at the rear which floods the stairwell with natural light.

The first floor and staircase is reinforced concrete slab work similar to 5845/39. Access to the roof is via the main staircase at the rear which opens out into a second storey staircase house which also functions as a balloon filling room. This structure has a projecting roof that forms a weather canopy over the entrance. The roof is nominally flat covered with asphalt, set to fall to two rain water outlets. There is a huge reinforced concrete upstand beam running the width of the building and access over this to the front section is via a galvanised steel steps arrangement.

All other features and internal arrangement is similar to 5845/39 (see below). Only one concrete version is listed, which is Leuchars in Scotland (Grade 'B').

8.4d 5845/39

The building was also designed by Frank Lambert; it is constructed with cavity brick external walls, 15 in wide with a pair of reinforced concrete columns hidden inside the brickwork (at both ends of the dividing wall of the watch office / passageway / forecast room and control room on the first floor). There is also a pair of 13 in square concrete columns between the watch office windows on the front elevation. Internal walls are mainly 9 in cellular brick for corridors and main rooms, while minor walls are 4.5 in brick. The internal finish generally is Portland cement up to dado height (4 ft) and then plaster while the watch office, teleprinter and met office have 'Ten Test' fibreboard lining for walls and ceilings.

The architectural treatment of the exterior side walls at ground and first floor level is based mainly on 3-ft-wide units, with alternate window openings and brick columns. Exterior elevation windows are chiefly type 'D' double opening 5-pane steel casements (3 ft wide, 6 ft 9 in high). Those at first floor are positioned between a pair of decorative continuous reconstructed stone bands which are the ends of the first floor and roof. Ground floor and first floor windows also have reconstructed stone sills. Between the upper band and the window (course of three bricks) is wire reinforcement. A corresponding interior elevation window is a (9-pane) triple-hung steel casement.

The roof perimeter consists of a 9 in brick dwarf wall capped in reconstructed stone which on some buildings runs continuously or on others, is only present at the front section and the remainder is finished in closely spaced wrought iron railings.

Wartime external modifications were few, but West Malling and Leuchars had an additional night-fighter control room built against the staircase house / balloon filling room on the roof to drawing 10342/42. Horsham St Faith had a Seco control room built on top of the roof of the staircase tower.

Two buildings are listed, Swanton Morley and West Malling (Grade 2).

8.4e Extensions to the Coltishall Building

The first post war extension was two-fold to the designs of Archibald G Gullan to drawings 2599/55, 3433/56 and 9548B/57. Firstly there was the addition of a visual control room (VCR) on top of the roof which partly utilised the upstand beam and partly on new concrete beams for supporting RSJ tie beams. It has a riveted and bolted steel framework with RSJ portal frames carrying double-glazed window units. Brick infill connects the lower part of the VCR to the old balloon filling room and staircase annexe.

The other extension was a new single-storey meteorological annexe of the same width as the original building and built against the front elevation to include an office for the met officer, forecast room, a store and a teleprinter room. This was brick built with flat concrete roof; the old watch office windows were removed and reused on the front elevation of the new extension. The railings along the front of the balcony were also removed and reused at the front of the extension, the sides having new railings.

The next additions occurred in 1967, when an extension was added on top of the roof of the 1957 meteorological annexe and this functioned as three offices for Flying Command personnel, plus a corridor. The old met section vacated their rooms on the floor below and these became an open plan operations room plus a small nuclear reporting room. In addition, another single-storey extension was added to the front to rehouse the met section. This continued along the west elevation to form a hall, met store and a kitchen. The front part was subdivided into two offices, teleprinter room and forecast room.
At first floor level there was a toilet above the hall and a corridor which joined the other office corridor and led to the approach control room – this uses the old balcony on the west wall (when you pass the toilets, walking towards the approach control room, you are on the balcony). At this point the old railings and windows that were shifted around in 1957 were lost for good. The curved-on-plan corners of the window opening of the original building at first floor level were bricked in at what was the front of the building and inside the approach control room – they exist today as angled walls. The balcony at the front still exists as part of a passage way and store.

The remaining part of the west elevation was then extended with a flat-roofed link-detached ground floor structure so that there is a passageway between it and the old building and this is used for access. The extension is subdivided into a plant room, GPO frame room and a radio equipment room.

8.4f Outside

In front of the building is the 40 ft square air-to-ground signal square and in front of this is the concrete airfield code marker plinth.

- NGR: (16) TG 26216 22974, Signal square TG 26237 22956
  Airfield Code letters TG 26247 22949

Plate 14: Visual control room (16), interior in 2005

Plate 15: Visual control room (16), interior in 2005

Plate 16: Visual control room (16), interior in 2005

Plate 17: Radar control room (16), interior in 2005

Plate 18: Radar control room (16), interior in 2005

2005 photos: Aldon Ferguson

Plate 19: Watch office with meteorological section (16), best side view showing extensions

Plate 20: Watch office with meteorological section (16), front elevation showing extensions

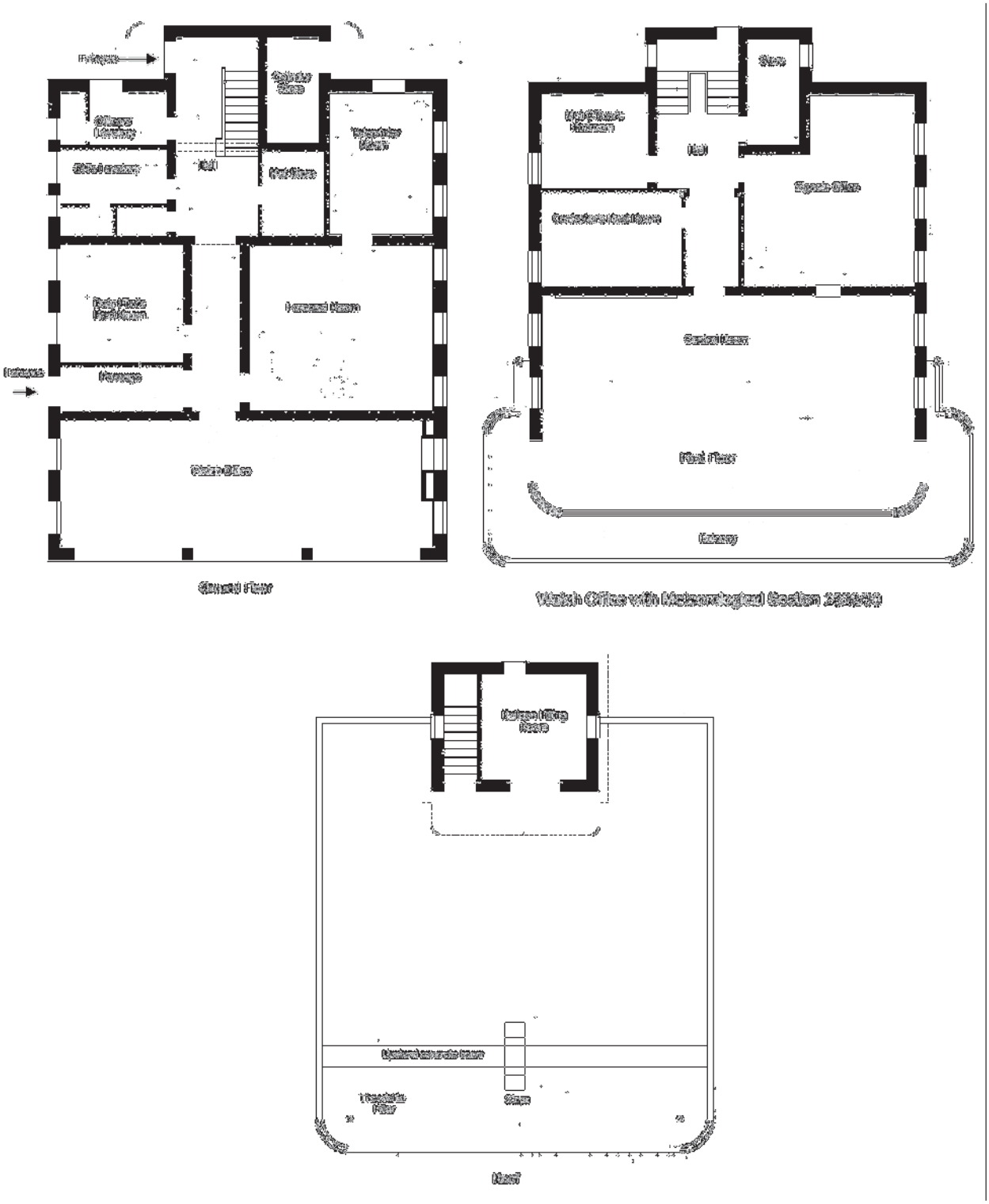
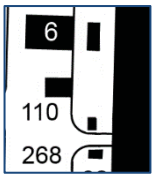


Fig 2: Watch office with meteorological section plan

8.5 Seat Arming Storage Bay (21, 97 and 110)



Seat arming storage bays are small single-storey rectangular planform buildings designed in 1974 and built by December 1975, under the DoE project manager WJ Keast. They consist of an open-plan room with either three or four equal-sized storage bays, plus a small ready-use cupboard that can only be accessed from the outside. External walls are based on a series of RC columns, one each at the corners and two in the centre of the longitudinal external walls. Wall in filling is 1 ft cavity brick / breeze block except for that at the rear wall of the storage bays and these are infilled with a double skin of 'Everite' corrugated asbestos sheeting – all walls are blind but are vented. The roof is a concrete slab set to fall in one direction with downstand beams along all four walls. Dividing walls between storage bays are half brick or concrete block, with piers supporting a steel door frame.

Building 21 is located on the north side of hangar 1 – it has four bays, (97) is south of the central armoury (5) and is three bays, (110) is to the west of hangar 3.

- NGR: (21) TG 26222 23166, (97) TG 25971 22870, (110) TG 26034 22904

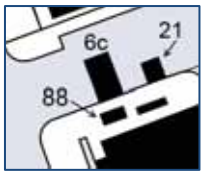
Plate 21: Seat arming bay (110)

Plate 22: Seat arming bay (21)

Plate 23: Seat arming bay (110), interior looking towards the asbestos walls

Plate 24: Seat arming bay (110), rear elevation

8.6 Hangar 3 Toilet (47) and Hangar 1 Toilet (88)



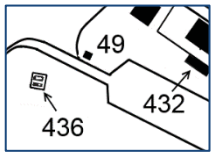
Hangar 1 and 3 toilets are small detached single storey structures with a rectangular-shaped planform. They are constructed of 11 in cavity brick, and subdivided into male and female halves, the female side being slightly larger. After 1990 building 88, became disused because the hangar annexes by that time had been extended to include toilets, both on the ground floor, and at first floor level (where appropriate), and so the toilet block became surplus to requirements, it was only brought back into use on open days. Building 47 became part of hangar 3 annexe with an infill extension so that it is no longer detached.

- Footprint: (47) 10 ft by 25 ft
- NGR: (47) TG 26044 22919, (88) TG 26209 23150

Plate 25: Toilet blocks (88)

Plate 26: Toilet block (47)

8.7 Cartridge and Pyrotechnic Store Cupboard (49) and Pyro Store (218A / B)



8.7a Cartridge and Pyrotechnic Store Cupboard (49)

This is located just east of building 305. It is a small brick-built single-storey building with a square-shaped planform to drawing 3580/54. It is constructed of concrete block walls; the actual cupboard is inside the brick structure and consists of a 14 SWG mild steel sheet box, separated from the brickwork by a 3 in cavity. The roof is a 3 in concrete slab and it is built on top of a 9 in thick concrete base. The access door is made from hardwood faced with mild steel sheeting.

- Footprint: 4 ft 9 in by 4 ft 5 in (1.45 by 1.34 m)
- NGR: (49) TG 26278 22967

8.7b Pyrotechnic Stores (218A and 218B)

This is a pair of similar structures to the above (same drawing) located to the north of building 334. These are constructed of roughcast cement rendered brick on a concrete floor slab and a 3 in thick roof slab. They have single access steel doors.

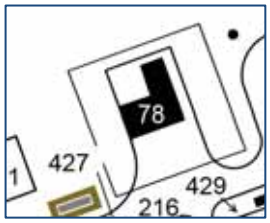
- Footprint: 4 ft 6 in by 4 ft 2 in (1.37 by 1.27 m)
- NGR: TG 26339 23275 (218A), TG 26329 23271 (218B)

Plate 27: Pyrotechnic store (49)

Plate 28: Pyrotechnic store (218A)

Plate 29: Pyrotechnic stores (218B)

8.8 LOX Bulk Store and Aircraft Oxygen Compartment Servicing Bay (78)



This structure and was a MPBW/ DoE design dated July 1973. The site which is fenced and gated has an 'L'-shaped planform and consists of a single-storey rectangular-shaped structure with a caged transporter servicing storage area which has a high and a low-level weather canopy. It is planned around a structural grid of 3.6 m squares, whereby square-section steel columns are erected in squares to carry beams that support a weather canopy over the open storage areas and this is linked in with the roof over the main building. It contained three LOX storage tanks containing 4,500 litres of liquid oxygen each.

The building is constructed of brick / concrete block cavity walls. The building is subdivided into a converter pack charging room, a compartment store, office and an oxygen component servicing bay. The roof is clad with woodwool slabs and that forming the canopy is believed to be 'Asbestolux' weatherboard sheeting.

- NGR: (78) TG 26183 23299

Plate 30: LOX bulk store (78)

Plate 31: Oxygen trolleys

Photos: Aldon Ferguson 2005

8.9 Compressor Houses (81–84)

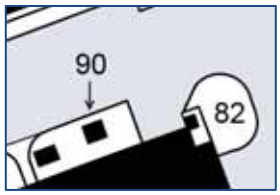
After October 1973, hangars 1 and 3 each had two small detached compressor houses known as (81 H1), (82 H2), (83 H3) and (84 H4). These are all similar, being constructed of a wall posts with louvered timber wall and door units. The roof is felted chipboard. The structures are fixed to a concrete raft.

- NGR: (81) TG 26221 23086, (82) TG 26285 23173,
  (83) TG 26109 22932, (84) TG 26049 22841

Plate 32: Compressor house (81)

Plate 33: Compressor house (82)

8.10 Transformer Houses (90–92)



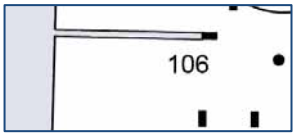
After April 1974, hangars 1, 2 and 3 each had detached monolithic concrete housings for transformers, known as ('T' 90), ('U' 91) and ('V' 92). They are square-shaped in plan, walls are 305 mm thick, and the roof is similar but cast to fall into the centre where there is a rain water outlet which leaves the building through the wall.

- NGR: (90) TG 26259 23169, (91) TG 26096 23049, (92) TG 26043 22865

Plate 34: Transformer house (90)

Plate 35: Transformer house (92)

8.11 Fire Section Store (105) and 6 Squadron Store (106)



These are two small similar single-storey brick shed-like buildings constructed on a concrete raft of windowless 4.5 in brick with external piers and a single-pitch roof clad with metal profiled sheeting. Access is at one end only with double timber doors.

- NGR: TG 26338 22973 (105) TG 26264 22848

Plate 36: Fire section store (105)

Plate 37: Fire section store (105)

8.12 Hangar Bunds (various, 111, 213, 216, ?)

These are brick or concrete dwarf walled bunds which either housed fuel tanks or hazardous chemicals; not all were allocated a building number.

Built in 1968, structure 216 was a large bund in support of four heating chambers above the annexes of hangar 4; it had two 12,000 gallon fuel tanks which were erected on concrete stools inside a detached 3 ft high brick walled catchment pit on the northern side of the hangar. The tanks have since been removed leaving the walled enclosure which is now a pond.

- NGR: (111) TG 26085 23033, (213) TG 26117 23084, (216) TG 26046 22883, (?) TG 26188 23259 (unnumbered, hangar 3)

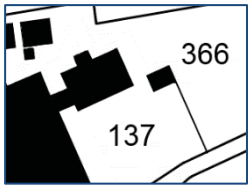
Plate 38: Hangar 3 bund

Plate 39: Hangar 1 bund

Plate 40: Bund 213

Plate 41: Bund 216

8.13 Thermal Imaging and Laser Designation (TIALD) Building (137)



8.13a Introduction

This is a facility in support of the TIALD laser designator pod used by pilots to target their laser-guided bombs onto hard targets. It was originally developed by Ferranti in the late 1980s and is now being phased out.

8.13b Description

The TIALD building was erected and handed over by the contractor RG Carter in May 1997; it was designed by Lambert Scott & Innes Ltd and the portal frames were manufactured by TSI Structures Ltd.

It is a single-storey building with a rectangular-shaped planform, constructed of steel portal frame arranged as 2.5 bays (two at 6 m centres and one at 3 m centres). Exterior walls are clad with refinished steel profile sheeting, and the roof is similar but also has transparent roofing sheets.

It contains a storage area, a workshop, office, and plant room and it is connected via a covered way to the electronic centre (295). The office is constructed of concrete block.

- NGR: TG 26511 23291

Plate 42: TIALD building in 2005
Photo: Aldon Ferguson

8.14 Mobility Supply Flight (MSF) PPP Store (139)

It is thought that this building was erected for USAF, in the event that American forces would take over the station during a war situation, whereby the resident squadrons would be deployed elsewhere in Europe. It is unknown what the acronym PPP stands for.

This is a single storey warehouse-like building with a rectangular-shaped planform, erected by RG Carter Ltd and fabricated by Johnson Industrial Buildings Ltd. It was originally just the warehouse building constructed in 1988, but an 'L'-shaped brick and concrete block office annexe was added in 1996.

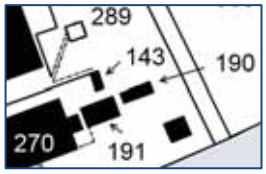
The warehouse is a steel portal frame, externally clad with insulated profiled steel sheeting; the roof is similar but also has a series of transparent roof lights. Main doors are a pair of roller shutter type door openings in the north elevation.

- NGR: (139) TG 26377 23271

Plate 43: MSF building (139)

Plate 44: MSF building (139)

8.15 41 Squadron Cabin (190) and Drying Cabin (191)



Building 190 is Vic Hallam or similar style prefabricated cabin; it is single storey with a flat roof and has one room. It is constructed of insulated pre-finish steel cavity walls and roof and is raised off the ground on telescopic legs.

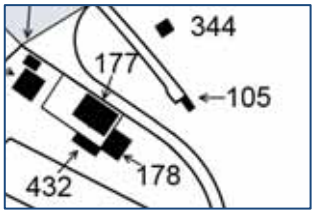
Building 191 is a Sureguard prefabricated single-storey steel cabin with flat roof and has steel window shutters; it is essentially two units joined together.
It is steel framed clad with insulated pre-finish steel cavity walls. It is supported off the ground on concrete beams.

- Footprint: (190) 31 ft 4 in by 9 ft 10 in (9.55 by 2.99 m),
  (191) 20 ft 2 in by 32 ft (6.14 by 9.75 m)
- NGR: (190) TG 26391 23182, (191) TG26380 23178

8.15 41 Squadron drying cabin (191)

Plate 45: 41 Squadron cabin (190) and drying cabin (191)

8.16 No.54 Squadron Line Offices (177) and Workshop (178)



These are two single storey prefabricated cabins, probably Elliot-Medway types resting on concrete blocks. Building 177 is the larger one and consists of four cabins joined together, while the smaller one is two units joined together. They are steel framed clad with insulated pre-finish steel cavity walls.

- Footprint: (177) 32 ft by 20 ft 6 in (9.75 by 6.25 m)
  (178) 20 ft by 18 ft 6 in (6.09 by 5.64 m)
- NGR: (178) TG 26301 22971, (178) TG 26314 22965

Plate 46: 54 Squadron line offices and workshop (177 and 178)

Plate 47: 54 Squadron line offices and workshop (177 and 178)

8.17 Main Workshop Dope and Paint Store (217)

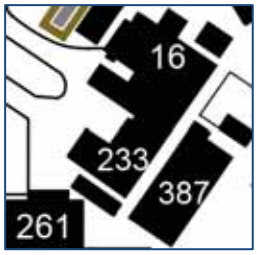
This building is single storey with a square-shaped planform; it has four rooms and a central corridor. It is constructed of windowless but vented 9 in cement rendered brick and it has a single entrance through a chain-link fence steel gate and a sloping concrete path. Internal walls are concrete block and the floor is a concrete slab. The roof is a made up of a series of steel purlins and is clad with profiled steel sheeting.

- Footprint: 20 ft 4 in by 19 ft 10 in (6.20 by 6.04 m)
- NGR: (217) TG 26150 23243

Plate 48: Main workshop dope and paint store (217)

Plate 49: Main workshop dope and paint store (217)

8.18 Ground Radio Servicing Flight and COMCEN Building / Wing Ops (233)



At the end of 1969 the Ministry of Public Buildings and Works prepared two designs for a link detached single or two storey annexe that was to be built against the SW elevation of the 1957 extension to the control tower. It would replace a Uni-Seco prefabricated structure (also numbered 235) which had a similar function. It was built in the end as a two storey building and constructed with external 1 ft 6 in brick cavity walls and has a flat roof of 'Metsec' roof trusses supported on an RC ring beam, trusses are at 10 ft centres and these carry 'Woodcefelt' pre-felted roof decking. The floor at first floor level is made up of pre-cast concrete Bison planks, internal dividing walls are Paramount partitions. Note that another source says it is an Ominia precast roofing units with Omnia planks.

Access is via two entrances on NE elevation, one to a workshop and the other to the main corridor and another from the same corridor that connects with the 1957 control tower extension. It is 'L'-shaped in planform and contains the following rooms:

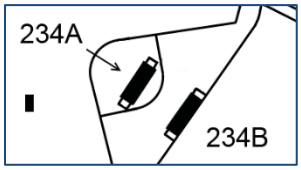
Ground floor: workshop, tech control, and crew room in the SW wing, crew room, CO's office, NCO's office, tele operating office, a traffic office, secure office and RAF OR's toilets.

First floor: lecture hall projection room and store in the SW wing, library, typists, SFSO, flight planning, cleaner's cupboard, other rank WRAF toilets, officer WRAF toilets and RAF officer toilets.

- NGR: TG (233) 26212 22949

Plate 50: GRSF and COMCEN building / Wing ops (233)

8.19 Armaments and Explosive Store Ready-Use Store (234A and 234B)



In 1974, the DoE / PSA designed a pair of single storey armaments and explosive stores which were built to the south-west of the control tower complex. They are single storey with a rectangular planform, consisting of two stores arranged back-to back. The each have single access via a concrete ramp and full height and width steel doors that side out along projecting gantries supported by outriggers.

A typical building is constructed of a set of concrete columns with cavity brick infill exterior window less but vented exterior walls and a central fire break wall dividing the building into two equal halves – entrances are in the end elevations. The roof is a reinforced concrete slab with downstand beams over the main doors.

Building 234A is actually constructed on top of the pre-war compass swinging circle.

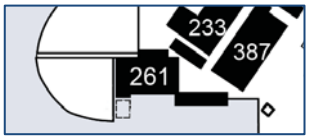
- NGR: (234A) TG 26313 22903, (234B) TG 26326 22894

Plate 51: Armaments and explosive stores (234A and 234B)

Plate 52: Armament and explosive stores (234A)
This is built on top of the wartime compass swinging platform

8.20 First-line Accommodation (261, 262 and 270)

8.20a Introduction



In June 1970, the MPBW designed a single-storey first-line accommodation building (262) on the east side of the control tower and three years later carried out a similar exercise for another on the west side (261). Each of these is actually two buildings, consisting of a store annexe and the main building. Building 270 (41 Squadron) appears to have been the last one built, which took place after June 1974 and was constructed adjacent to the RIC buildings. In more recent times a series of Thurston Sureguard galvanised steel prefabricated cabins were erected above the roof space to create a new first floor which is carried on an RSJ framework.

The original line buildings consisted of a pair of Uni-Seco huts with a brick built toilet annexe extension plus a small timber-framed equipment storage shed. These were removed for the construction of the 'new' building (261 and 262).

8.20b Main Building

The internal planning of building 261 (6 Squadron) is based on a central entrance south elevation with corridor and a large crew room to the north. On west side is an aircrew debriefing room, control room, NCO's office, a further office and a small pant room. On the east side of the corridor is a locker room, toilet, store and workshop.

The internal planning of building 262 (54 Squadron) is slightly different; first of all it was built around the existing brick toilet block annexe of the previous building and secondly, the room arrangement is different. The main entrance is located on the south elevation and this gives access to an 'L'-shaped corridor, on the west side are two NCO's offices, the toilets, NCO crew room with a kitchenette and, a store. To the east of the corridor is an aircrew debriefing room and a control room. To the north of the corridor is the standby crew room, plant room (access from outside) and a locker room.

Construction is of 11 in cavity brick / concrete block external walls with internal walls of 9 and 4.5 in concrete block, supporting reinforced concrete roof slabs of Bison planks with roof lights. Windows are galvanised standard module casements.

Building 262 had a link-detached extension built close to the SW elevation and this is joined by a connecting corridor. It functioned as a large open plan locker room but also included a drying room, shower and toilet. The building is constructed of GRC panels (glass fibre reinforced concrete) with high-level windows. Its date of construction is unknown.

- Footprint: 67 ft by 54 ft (20.42 by 16.47 m)
- NGR: (270) TG 26361 23171

8.20c Store Annexe

The store annexe for the three squadrons is the same, except that the one for 261 is link-detached while that for 262 is detached. It is a long, narrow building, subdivided into an oil store, cover store and a large tractor shed (each having a single main opening), plus a ground equipment garage (with three main openings). Construction is similar to the main building, except that the walls are blind but vented.

- Footprint: (261) 67 ft by 54 ft (20.42 by 16.47 m)
- NGR: (261) TG 26192 22929, (262) TG 26260 23021, (270) TG 26361 23172

Plate 53: 6 Squadron first-line accommodation (261)

Plate 54: 6 Squadron first-line accommodation (261)

Plate 55: 54 Squadron's first-line accommodation (262)

Plate 56: 54 Squadron's first-line accommodation (262)

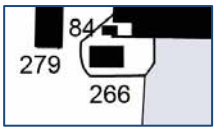
Plate 57: 54 Squadron's first-line accommodation (262)

Plate 58: 41 Squadron's first-line accommodation building (270)

Plate 59: 41 Squadron's first-line accommodation building (270)

Plate 60: 41 Squadron's first-line accommodation building (270)

8.21 No.6 Squadron Store (266)



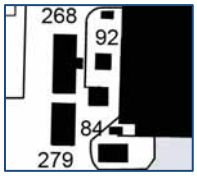
This squadron store (266) is built of two Thurston Sureguard prefabricated galvanised steel deployable buildings supported on concrete beams.

- Footprint: 20 ft 4 in by 32 ft (6.20 by 9.75 m)
- NGR: (266) TG 26047 22831

Plate 61: Squadron store (266)

Plate 62: Squadron store (266)

8.22 Hangar 3 Boiler House (268) and Oil Store (279)



Hangar 3 was destined in 1960 to become an inspection and repair hangar and approval was sought to provide a boiler house at Coltishall and Wattisham. The proposal was to provide heating by means of high-level radiant panels fed by hot water under pressure; the estimated cost at Coltishall was £36,500 and £43,000 at Wattisham (the extra cost at Wattisham being that the hangar was one of two blitzed during the war and its replacement roof was unlined). The chosen design was an off-the-shelf one previously built to heat Gaydon type hangars at RAF Gaydon and Coningsby.

The building is single storey with a rectangular-shaped planform, and consists of a single room housing four Allen Ygnis high-pressure steam heating boilers and pumps with flues connected with an external chimney stack. It is constructed of 13 in solid brick external walls (English bond) with steel replacement windows. The roof is a series of patent lightweight precast concrete roofing slabs and beams. There are two entrances to the building, both having timber double doors; windows are single glazed steel framed casements. The building has been extended on the north end elevation.

On the south side is a concrete walled berm (9 in wide and 5 ft tall) that has been extended in brick which housed the oil tanks, but these have since been removed.

- Internal Footprint: (268) 24 ft by 64 ft 4 in (7.31 by 19.61 m),
  (279) 23 ft 10 by 30 ft in (7.26 by 9.14 m),
  concrete brick extension 12 ft 10 by 12 ft 3 in (3.91 by 3.73 m)
- NGR: (268) TG 26030 22866, (279) TG 26031 22846

Plate 63: Hangar 3 boiler house (268), front and extended end elevation

Plate 64: Hangar 3 boiler house (268), internal view

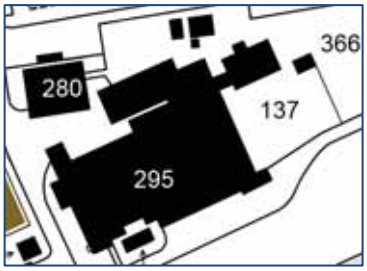
Plate 65: Hangar 3 boiler house (268), rear elevation

Plate 66: Oil Store (279) and hangar 3 boiler house (268)

Plate 67: Hangar 3 boiler house (268), boiler

8.23 Electronics Centre (295)

8.23a Introduction



The electronics centre is an AMWD type design dated 1961, and is a Fighter Command version to drawing numbers 3451/61C to 3472/61C. It is in two main parts consisting of the main building and a large administration block extension, dated 1963. This is built parallel with the northern side elevation and is joined to the north-east wing.

8.23b Main Building

The main building as originally built is single storey with a rectangular-shaped planform, and essentially consists of four 49 ft 3 in wide structural wings made up of a series of two rows of reinforced concrete columns at 15 ft centres and lateral beams forming a bay. Bays are connected together by longitudinal ring beams and the external wall infilling is curtain walling (since replaced) and cement rendered cavity concrete block along the ends of the wings, and internal walls are solid concrete block. The columns partly appear as external piers and the roof is an Omnia suspended roof manufactured by Hydraulic Precasts Ltd.

Two of the wings are parallel to each but separated by 6 -ft-wide corridors (aligned E/W) –the northern one is smaller at six bays and the other south wing is larger with ten bays. There is also an east wing and a west wing (both of six bays aligned N/S) – the east wing connects with the same longitudinal corridor and is separated from the smaller parallel wing by a N/S corridor; it extends northwards out from the main block while the west wing is roughly the same size as the ends of the two parallel wings.

In 1965, the smaller of the two parallel wings was subdivided into two equal halves, one was a systems check and test rig area (zone 2) and the other was a wireless workshop (zone 3). The larger parallel wing had a plant room, inner storage area (zone 5a) and an outer storage area (zone 5a), also two power rooms. The west wing functioned as an electrical and instrument workshop (zone 1) and the east wing was a radar workshop (zone 4). Offices for the bay NCO where required were often provided in the centre of the larger workshops and airlocks gave access to the storage sections which were clean rooms. The concrete floors in most of the rooms are covered with rather nice blue-coloured vinyl tiles.

Over the years the main building has had a few small extensions, including a cleaning room on the south-west corner and the plant room has been enlarged (both of these before 1974). Around 1986, an electronics countermeasures pod storage bay was added to the north elevation in rendered brick and concrete block construction with a timber roof.

8.23c Administration Block

The admin block is also single storey and is connected to the main building by a new corridor, which partly runs northwards adjacent to what would have been the west outside wall of the east wing of the original building. The corridor then runs westwards before turning north again to form an emergency exit. All rooms are accessed from the corridor; in 1965 this included a training and lecture room with technical library, orderly room, rest room, meeting room and toilets.

- Footprint:(extension) 41 ft 6 in by 90 ft 6 in (max) and 64 ft (min)
  (12.65 by 27.58 max and 19.50 m min)
- NGR: (295) TG 26480 23259, (137) TG 26513 23291

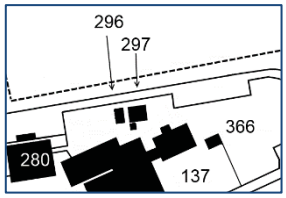
Plate 68: Electronics centre (295), south wing

Plate 69: Electronics centre (295), the radar power room
This is one of the more interesting rooms

Plate 70: Electronics centre (295), part of the west wing

Plate 71: Electronics centre (295), interior

8.24 Boiler House (296) and Oil Fuel Compound (297)



Building 297 is a dedicated boiler house for the electronics centre (295) and structure 297 is the oil fuel bund which is now minus its oil tank.
The boiler house is single storey with a rectangular-shaped planform, and has a detached brick-built exhaust stack. It was constructed in a similar manner to the electronics centre with cement rendered concrete block end walls, reinforced concrete columns, beams and curtain walling. The roof is also similar.

The building houses two boilers and heating pumps which were installed in 1989, the boilers being connected to a shared flue that exhausts through the chimney stack.

The walls of the oil tank bund are 9 in concrete which stand 5 ft high, it is now a pond.

- NGR: (297) TG 26494 23307, (296) TG 26487 23305

Plate 72: Boiler house (296) and oil compound (297)

8.25 No-Break Standby Set House (300)

Building 300 is a timber framed, trussed and clad 16 ft span prefabricated building of unknown type, clad with cedar wood strips. It was erected c.1961 and contained a single 50 kva engine alternator set, a fuel tank mounted on a stand, control gear and starter unit. All of these have been removed and the building now contains an uninterrupted power unit. There is one access point (originally two) leading to two rooms (15 ft 9 in by 16 ft and 7 ft 9 in by 16 ft); the larger one of these was the engine room, and has a quarry tile floor and a wall-mounted Supervents Ltd air inlet vent for the diesel engine.

- NGR: (300) TG 26232 22973

Plate 73: No-break building (300)

Plate 74: No-break building (300), interior

8.26 Fire Crash and Rescue Building (305)

In January 1966, the MPBW designed a 5-bay fire crash and rescue building consisting of the appliance room itself and an 'L'-shaped ground floor annexe. It is therefore a side opening (one side only) with main doors fronting the SE elevation, one set in each bay longitudinally.
It replaced the 1955-built fire tender bays.

The new appliance room which rises above the annexe was mainly arranged as an open plan garage, except for a bulk store which covered a full bay width longitudinally and just over one bay laterally. The annexe runs along the NW elevation as well as the SW side elevation. In its original form it contained a night-flying equipment store, a locker room, ablutions, a narrow drying room, crew room, office and a control room. In 1968, the control room was extended forwards in order to include a better view over the aerodrome.

In the 1990s, this area was utilized as a training area when a small control room extension was built against the SE corner of the appliance room and three bays of the vehicle bay were extended forward and instead of it now having three equal-sized garage doors, it has just two, one of them being larger than the other. This work was started after April 1991 and completed sometime later.

The original appliance room is constructed of two longitudinal rows of RSJ stanchions at 12 ft 6 in centres that carry lattice roof trusses. End walls have two pairs of similar stanchions. Roof cladding was originally corrugated asbestos sheeting but this was replaced during the 1991 refurbishment and is now profiled steel sheeting.

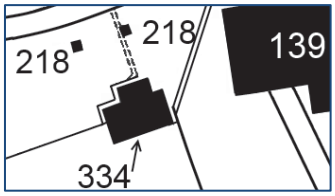
- NGR: TG (305) TG 26249 22993

Plate 75: Fire crash and rescue building (305), front elevation

Plate 76: Fire crash and rescue building (305)

Plate 77: Fire crash and rescue building (305)

8.27 Technical Information Flight Workshops (334)



This is a workshop building, designed by the PSA in January 1985. It consists of an open plan main workshop (with two large full-height roller shutter doors) on the south elevation, also a disintegrator with double doors, an office and a small plant room. At the rear is an annexe containing a smaller workshop and a darkroom. The building is steel framed nominally on one floor but has a mezzanine floor over the main workshop part of the building. External walls are cavity brick / concrete block. The roof is pitched over the main building and the rear annexe is single pitched, both of these at 18 degrees. The roof cladding is profiled metal sheeting.

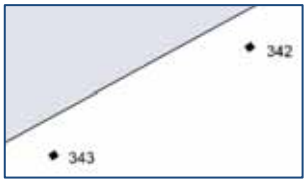
- NGR: (334) TG 26341 23253

Plate 78: Technical information flight workshops (334)

Plate 79: Technical information flight workshops (334)

8.28 Lighting Gantries (342–347)

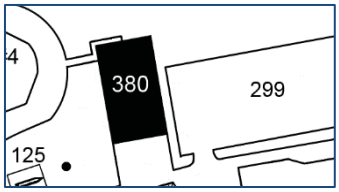
There are six lighting gantries – three are located along the edge of each of the two ASPs. These are 60 ft self-supporting tubular steel lattice towers manufactured by Tubewrights Ltd, erected onto individual concrete pad foundations 375 ft apart. They were originally erected at RAF Watton in 1964 and were subsequently dismantled and installed at Coltishall c.1970.



- NGR: (342) TG 26531 23110, (343) TG 26431 23053, (344) TG 26331 22995, (345) TG 26236 22866, (346) TG 26233 22752, (347) TG 26229 22637

Plate 80: Lighting gantry

8.29 Quickway Warehouse (380)



Building 380 was a general storage warehouse, thought to be second hand and relocated to Coltishall in the later 1990s. It is single storey with a rectangular-shaped planform consisting of a steel portal frame clad with insulated profile sheeting, with a similar arrangement for the roof which also has translucent roof lights. It is accessed by double doors and to the east of the building is a large roller shutter door.

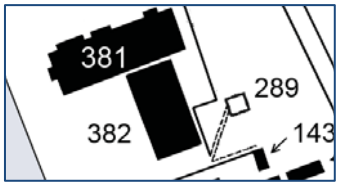
It is unsure exactly what it stored but it is known to have been used to hold a pre-investigation crashed aircraft on at least one occasion.

- NGR: (380) TG 26344 23319

Plate 81: Quickway warehouse (380)

8.30 Technical Information Flight Offices (381) and TIF Store (382)

8.30a Technical Information (TIF) Flight Offices (381)



The new TIF building was originally erected at the Glaxo site in Stevenage constructed by the Premier Building Group c.1990; in 1995 the building became surplus to Glaxo's requirements. In mid-1995 the building was bought by Laings the then site property managers at RAF Coltishall and re-erected there soon after. It is consists of a two-storey structure, each floor made up of twelve, 3 m sections which are joined together as a single structure It sits on a concrete encased brick plinths and was used for offices and photographic processing; it also has ablutions and toilets.

The building is a steel channel frame-and-post system with timber and plywood panel construction which externally face has a render finish and is internally lined with pre-finished boarding; the roof is similar. It is accessed from a main door in the end elevations at ground floor level and a staircase module which is attached to the north side elevation.

- NGR: (381) TG 26339 23219

8.30b Technical Information Flight Store (382)

The TIF Store (382) is a warehouse facility with roller shutter door access; it is single storey with a rectangular-shaped planform. It was constructed by Coleman Engineering (Structural) Ltd during April 1996 and consists of a steel portal frame arranged as five bays with a dwarf brick wall perimeter with a metal cladding system installed by Walker Roofing (Norwich) Ltd.

- Footprint: 39 ft 4 in by 78 ft 8 in (12 by 24m)
- NGR: (382) TG 26352 23202

Plate 82: Technical information fight offices (381) and TIF store (382)

Plate 83: Technical information flight offices (381)

Plate 84: Technical information flight offices (381)

Plate 85: Technical information flight stores (381)

Plate 86: Technical information flight stores (381)

8.31 Propulsion and Aircraft Components Flight Store (386)

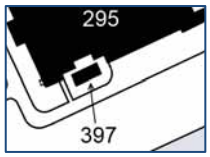
PACF was part of the Engineering & Supply Wing and was responsible for second line maintenance for the Jaguar aircraft including engines, external fuel tanks, tyres and wheel components, hydraulics and LOX. The PACF store is a tall single-storey storage facility with a rectangular-shaped planform consisting of a steel portal frame at 14 ft 9 in centres and a clear span of 29 ft. There are four bays. It has a single entrance with concrete ramp to a large double gate-like opening. The side walls are clad with pre-finished steel profiled sheeting fixed to a galvanised steel framework in-filled internally with a steel mesh – the mesh and galvanised frames could be the original cladding and the profiled metal sheeting might be over-cladding. The end walls are without the mesh. There is an upper section of translucent panels along the side elevations. The roof has a similar cladding arrangement as the end walls.

- Internal Footprint: 29 ft by 50 ft 9 in (8.84 by 15.47m)
- NGR: (386) TG 26138 23234

Plate 87: PACF Store (386)

Plate 88: PACF Store (386), interior

8.32 EES Locker Room (397)



Building 397 is a single-storey Hallamcabin prefabricated cabin, manufactured by Vic Hallam, (the cabin hire business Hallamcabin was taken over by the Wernick Group in January 1995).

It is a timber framed, clad with Plastisol Colorcoat steel sheeting on the exterior face and melamine faced hardboard on the inner face; the roof is external grade plywood covered in vinyl sheet, and the ceiling is melamine faced hardboard. It is supported on jack legs and has a brick skirt course.

- NGR: (397) TG 26473 23233

Plate 89: Hallamcabin locker room (397)

SOURCES (DRAWINGS)

9180/38	Type 'C' Aircraft Shed GA (1 to 4)
9185/38, 3059/40, 3061/40, 3062/40, 3063/40, 3064/40, 3082/40, 3083/40, 3084/40, 3085/40, 3086/40, 3088/40, 3090/40, 3091/40, 3092/40, 3097/40, 3101/40	Aircraft Shed Type 'C details (1-4)
GMN 38/90/SK1/1	Hangar 3 Toilets (3)
NAO/89/79/1	Hangar (1) Flying Clothing Locker Room 41 Squadron (1)
NAO/89/79/2	Flying Clothing Locker Room 41 Squadron (1)
NAO/134/78/1 NAO/134/78/2	Hangar (1) Alterations to Provide Additional Space (1)
AB1/1	Hangar (1) Additional Annexe Accommodation (1)
AD1/1	Compressor House to Hangars (1 and 3)
AD1/1	Concrete Housings for Transformers Hangars (1 and 3)
ADG/1	Proposed Soundproofing of Annexes to Hangars (1 to 4)
NAO/59/70	Soundproofing and Mechanical Ventilation to Hangar Annexes (1 to 4)
AB2/1	Provision of Ground Crew Locker Rooms (1 and 3)
NAO/60/66 NAO/61/66	Toilets and Washing Facilities for Ground Crew (1 to 4)
12453/59J	Boiler House Heating for Hangar (3)
AB4/3	Proposed Oil Fired Warm Air Heating (4)
AB4/4	Proposed Oil Fired Warm Air Heating Oil Catchpit for Oil Storage Tanks (4)
NAO/45/80/2	Replace Floor and Strengthen Heating Ducts (4)
AB4/1	Hangar (4) South Side as Existing (4)
NAO/91/78/1 NAO/91/78/2	Renewal of Roof Covering (1 to 4)
AB1/1	Bulk Fuel Installation No.1 Conversion to Over-Ground Pump House (8)
AB1/1 AB1/2	Control Tower (16)
9548A/57	Control Tower GA (16)
3279/58	ATC Building RC Design (16)
FTCW/49/B/66	Proposed Alterations and Extensions (16)
8736/39	Watch Office with Met Section (16)
XB4/1 XB5/1 XB9/1	Ejector Seat Storage Building (25)
AB6/1	Pyrotechnic Store (49 and 218)
AB1/1	Perspective View of LOX Store (78)
AB1/2	Plan and Elevations of LOX Bulk Store (78)
AB1/3	LOX Bulk Store (78)
AD/1	PPP Store (139)

XB8/1	Armaments and Explosive Store / Ready-use Store (234)
AK/235/1	Re-provision of GRSF (235)
AB235/1	Re-provision of Ops Wing (235)
AB235/2	Re-provision of Ops Wing First Floor (235)
AB1/1A	First-line Accommodation Plans (261)
AM1/1	First-line Accommodation, H&V Requirements (261)
10652/59J	Aviation Fuel Installation 48,000 Gallons (267 and 302)
9014/59/M	Aviation Fuel Installation 48,000 Gallon, Setting Out Plan (267 and 302)
9015/59/M	Aviation Fuel Installation 48,000 Gallon, Layout Plan (267 and 302)
2880/63/C	Fighter Electronics Building Admin Block Extension (295)
3451/61/C	Fighter Electronics Servicing Centre with Admin Block (295)
MB1/1A	Conversion of no break house (300)
AD1/1	Fire Crash and Rescue Building (305)
DB/1	Fire, Crash and Rescue Building ,Drainage (305)
XB1/1	Fire, Crash and Rescue Building, Steelwork (305)
XB1/2	Fire, Crash and Rescue Building, Foundations (305)
830147/4/2	Accommodation for 41 Squadron RIC Plans and Sections (334)
ELG/1	ASP Floodlighting (342–348)