Part 4: Station Buildings – Planning and Construction, 1938–45

4.1 Introduction and Notes on Sources

This is an overview of the planning of the buildings and construction, concentrating on Scheme 'L' designs, it is based on original Air Ministry site and building plans plus TNA Air Ministry (AIR) files.

4.2 Building Costs

The first group of six 'L' Scheme operational bomber stations (which included Horsham St Faith) to be built in permanent construction had been approved by the treasury on 26 August 1938 and detailed works services had been submitted by the Air Ministry on 14 October. The names of the next group of 'L' Scheme stations, consisting of three airfields also in permanent construction, were submitted to the treasury on 10 November 1938 for approval.

Table1: Scheme 'L' Operational Stations

Airfield	Cost £thousand	Date opened	Type	Group	Acres as in 1940	Hangars
Binbrook	749	26-06-40	Bomber	1	514	5C
Bramcote	772	04-06-40	Bomber	6	?	5C
Coltishall	736	00-05-40	Bomber*	12	534	4C
Leeming	761	03-06-40	Bomber	4	875	5C
Lindholme	732	03-06-40	Bomber	5	428	5C
Middle Wallop	735	16-04-40	Bomber*		569	5C
Newton	751	03-06-40	Bomber	1	509	5C
Horsham St Faith	742	04-06-40	Bomber	2	461	5C
Kirton-in-Lindsey	?	14-04-40	Fighter	12	352	3C (smaller version)
St Eval**	?	02-10-39	Coastal	10	?	3C, 1 Bellman
Topcliffe	750	00-09-40	Bomber	7	?	5C
Wick	?	22-09-39	Coastal	13	?	4C, 2 Bellman
Middleton St George	?	00-04-41	Bomber	4	591	1C, 1J

*Planned as a bomber station but used by fighters. **The St Eval hangars were non-protected

Table2: Building Cost for Binbrook, Bramcote and Coltishall – November 1938

Building	£		Building	£
Officers' Mess & Quarters	40,000		Sergeants' Mess & Quarters	20,000
Barracks	63,000		Dining Room & Institute	26,000
Sick Quarters & Mortuary	3,800		Decontamination Centre, Gas Defence Centre & SSQ Annexe	13,050
Guardhouse	4,000			
Armoury	5,500		Hangars (5 'C' type)	202,500
MG Range & Test Butt	3,000		Bomb Stores (144 tons)	25,000
Main Stores	7,500		Workshops & Engine Test House	7,800
MT, Fire Tender & Fuel Tanker Sheds	14,800		Subsidiary Stores	4,000
Works Services Accommodation	15,600		Station Offices & Operations Block	12,500
W/T Station & Masts	5,600		Petrol & Oil Storage	15,000
H/F / D/F Station	1,100		Standby Set House	2,000
Minor Services	1,300		Practice Bomb Store	400
1 Group III Officers' MQ	3,600		1 Group II Officers' MQ	4,100
7 Group V	14,700		2 Group IV Officers' MQ	5,200
68 type 'B' Airmen's MQ	40,800		1 Warrant Officer's MQ	915
Electrical & Mechanical Services	37,000		Recreational Facilities	1,850
Contingencies	30,385		Drains, Water Supply, Roads, Paths, Fencing & Sewage Works	92,000

Details regarding the costs of buildings to be built at the first six sites are unknown, but that for the next group of bomber stations (Binbrook, Bramcote and Coltishall) was the same regardless of site, as were electrical services, drains, water supply roads, paths fencing and sewage disposal. Where they differed considerably, was the preparation of the aerodrome surface, with Coltishall coming out the cheapest at £12,000. Bramcote was next at £18,500 and Binbrook at £25,000. Bramcote had an additional cost of £30,000 for the diversion of overhead electric cables which is bizarre as this was the reason that Lawford was dropped in favour of Coltishall.

4.3 Type Designs

The planning of the pre-war stations was achieved by using a system of standardised type designs for buildings which gave them uniformity and character. Although many of these originated during 1934 to 1936 under Schemes 'A'; and 'C', (such as the main stores, petrol tanker sheds, parachute store and main workshops), some of the Coltishall buildings are 1938 versions of the earlier designs whereby certain modifications have come about due to making them less vulnerable to near-miss bomb blast and for better protection against incendiary bombs with the use of patent fireproof roofs for example.

The requirements of both 'L' and 'M' Schemes also called for large increases in accommodation at existing as well as on the new stations. Under Scheme 'L', new buildings were required to cater for the increased scale of personnel to be accommodated. These included new a new type of barrack block, a combined dining room and institute and a sergeants' mess, all of which were connected to a centralised district heating scheme and fed from a modern boiler house instead of each building having its own boiler room. Another priority included the construction of facilities to safeguard personnel from the effects of gas weapons. This was mainly in the form of protected decontamination centres and a similar structure in the form of an annexe attached to the station sick quarters. Personnel who were just suffering from the effects of gas (unwounded) or had conventional wounds as well (wounded) could be treated. Air-raid shelters were constructed under Scheme 'M'. A major and significant change took place under these two schemes with the redesign of the (new) type 'C' aeroplane shed under Scheme 'L' and later Scheme 'M'; its subsequent replacement with a totally different design – the type 'J'. Furthermore, the watch office was significantly redesigned for the newly formed military regional control organisation of air traffic control.

Generally each building would have a set of plans, each having a unique reference number, such as the barrack blocks type 8/84 to drawing 1132/38 of 1938. The plans might be for architectural / general arrangement, deviations, superseding drawings, electrical and mechanical (M&E) and heating and ventilation (H&V) layouts.

The planning of the station and its infrastructure originated more or less from one design authority – the Air Ministry Works Directorate (AMWD) and its team of architects, civil engineers, M&E engineers, surveyors and lands officers. Most architectural design drawings of the expansion period were signed by either Archibald Bulloch (1934–35), PM Stratton, A Gilpin, AA Clements or JW Binge. A few of these personalities stayed with the AMWD post-war and went on to design new buildings (central armoury) and adapt existing buildings at Coltishall (such as the main stores).

Not only were the buildings standardised, but also the position of buildings in relation to each other; this was particularly important with regards to technical buildings and their locations regarding the hangars they served. A visiting pilot would be familiar with the layout of any expansion period station regardless of whether he had been there or not. This reduced stress and saved time in getting to the right place on the camp in the shortest possible time. Only the domestic buildings were modified slightly to suit the local geography, the position of the officers' mess for example, which is always south-facing and overlooking open countryside.

4.4 Technical and Domestic Accommodation Planning

RAF Coltishall is nominally symmetrical and planned around an upside down 'Y' with the tale of the 'Y' aligned on a NW/SE axis. The positions of the majority of pre-war buildings at Coltishall has been planned around a number of setting out lines, worked out from an origin out on the airfield, with the watch office, a hangar, armoury, works services building, parade ground and combined dining room and institute forming the central line. The positions of other buildings follow similar lines at various angles radiating out from the origin. There are two main groups – a technical group which is planned around a shallow arch or crescent that is dominated by the hangars facing onto the landing ground (the crescent-shaped hangar line is concave to follow the line of the imaginary bombing circle). Another reason is passive defence, whereby straight lines of buildings are wherever possible avoided.

The other group consists of the airmen's domestic buildings which are positioned further north-west and behind the technical area. These are arranged around a rectangular-shaped parade ground with two parallel 12 ft wide roads forming the tail of the 'Y' while the crescent main roads are 18 ft wide.

The final setting out plans for Coltishall are 12386–12391/38, and other known drawing numbers associated with station planning with regards to roads, paths and buildings are 2315–2322/39 and 5561–5563/39.

The site for the officers' mess, single quarters and married quarters conveniently occupies a north/south aligned triangular-shaped site that was partly formed by public roads with the mess building positioned at the southern end and married quarters positioned behind it to the north.

The south facing sergeants' mess is behind the guard and fire party house to the north-west and the airmen's married quarters is located north of the main site.

4.5 WWII Buildings

The majority of buildings constructed during WWII were temporary brick huts, permanent brick buildings, timber huts and Nissen huts. The majority of these were built around the airfield in support of airfield defence, the fighter pens and a group of buildings representing a flight. The only structures from this period that survive today are permanent brick buildings, notably three sleeping shelters. These structures became redundant at the end of WWII and consequently they do not have current building numbers.

4.5.1 Sleeping Shelters

Two of these (132 and 135), are 33 and 18-man versions (respectively) and are very difficult to find, being located on the other side of Heras fencing at the extreme west boundary line and almost completely hidden from view by trees and bushes. These are associated with a pair of fighter pens which are now foundation and crop marks as well as a wartime mechanical and electrical plinth plus one other building, but these could not be seen. The other sleeping shelter (170), an 18-man version, is easier to find as it is within the fenced boundary but is difficult to access and photograph – it is associated with a Blenheim fighter pen. They are permanent brick-built (13 in external walls) and a concrete slab roof of rectangular form with an entrance at either end which is an en external blackout porch. They have a central corridor with bunks arranged in tiers on either side – the 33-man version is subdivided into three compartments by brick walls with doorways. They are windowless but vented with high-level ventilation fans, one on either end wall. Today they are minus their bunks, building 132 retaining its ventilator fans.

Sleeping shelters NGRs – note that building numbers are as at 1944 shown on drawing 4293/44

- (132) TG 27268 23169 (135), TG 27261 23091 (170), TG 26563 22011

4.5.2 Other WWII buildings

There is an extant ammunition store (170) in the hedge line on private land located on the extreme southern end of the surviving track that used to connect Frogge Lane with Scottow Hall at approximately TG 26605 2216. Other buildings that may date from WWII but are not identified on the 1944 site plan relate to mechanical and electrical (M&E) plinths at the following locations:

- TG 26863 22203 (building identified in 2000 as 338)
- TG 27113 23043 (building identified in 2000 as 341)
- TG 26862 22203 (building with no number)

The latter building is an open brick-walled compound with internal dimensions of 13 ft 10 in by 14 ft 9 in. One wall is part of a building which has two rooms (12 ft by 11 ft and 10 ft by 11 ft). These have below-floor conduit pits. It is windowless but vented top and bottom. The roof is a concrete slab.

Plate 32: Interior view of sleeping shelter 135

Plate 33: Interior view of sleeping shelters 171

Plate 34: Electrical sub-station (no building number)

Plate 35: This presumed to be an airfield lighting M&E plinth (338)

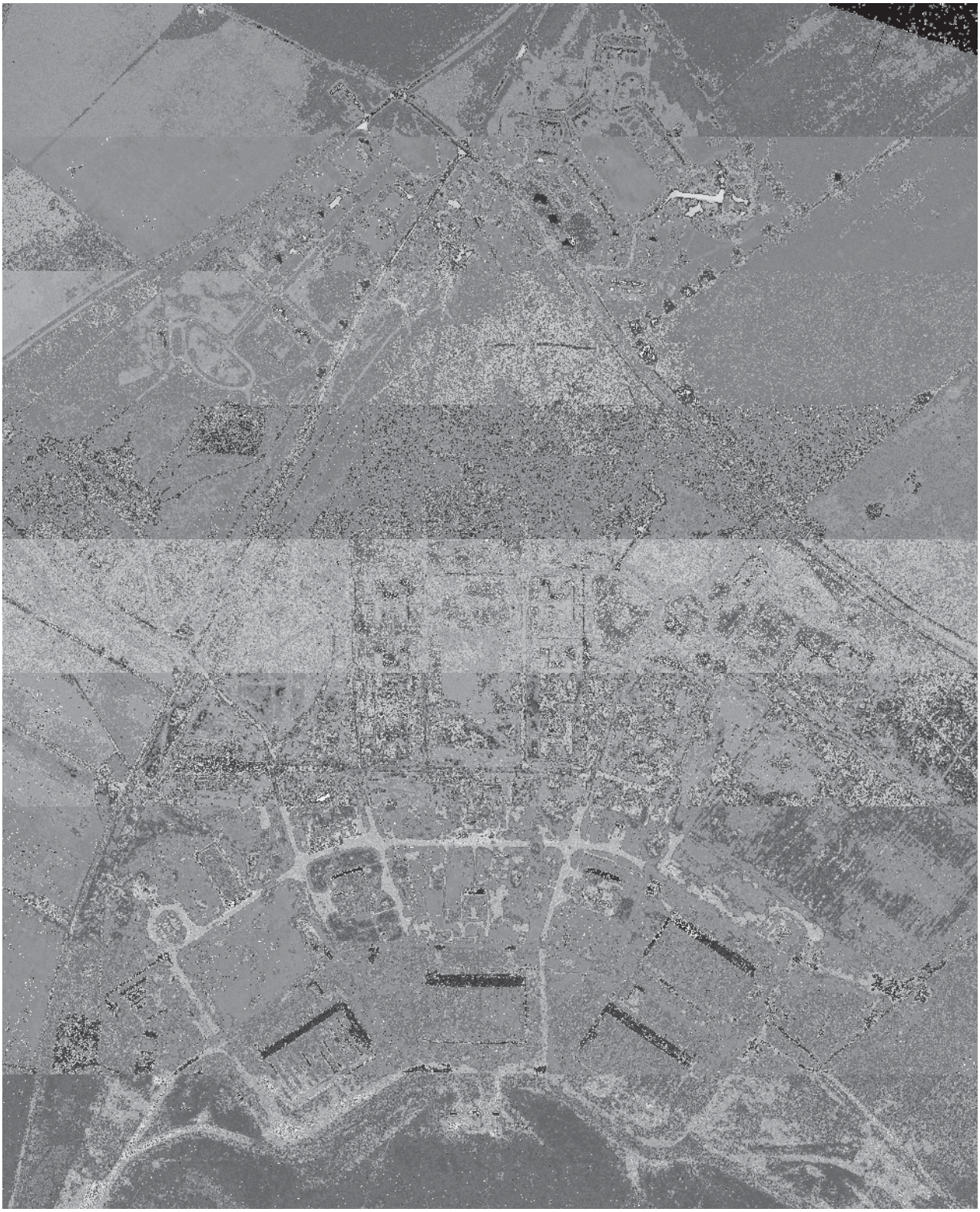

Plate 36: Aerial view of the main camp area, taken in May 1945

Note that the image has been rotated and that north is at the top right-hand corner.
Photo: English Heritage (03879 of 28-05-41)

Plate 37: Barrack blocks c.1951.

Plate 38: Station headquarters c.1951.

Photos: AHB

Plate 39: Interior of combined institute and dining room

Plate 40: Officers MQ c.1951

Photos: AHB