
Heritage Appraisal

Land South of Cardington Hangars

March 2021

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1.0 INTRODUCTION

- 1.1 Barton Willmore have been instructed by Gallagher Developments Group Ltd to prepare a Heritage Appraisal to support the promotion of the land to the west and southwest of Shortstown, at College Farm, Shortstown ("the Site").



Figure 1: Site plan taken from Shorts Park Vision Document (Barton Willmore)

- 1.2 Paragraph 185 of the National Planning Policy Framework, 2019 (NPPF) guides that plan-making should set out a positive strategy for the conservation of the historic environment recognising 'the wider social, cultural, economic and environmental benefits' conservation can bring as well as the 'opportunities the contribution the historic environment can make to the character of a place'.
- 1.3 Paragraph 189 of the NPPF requires applicants to describe the significance of those assets potentially affected by a proposed development. This assessment should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposed development on that significance.

- 1.4 This Heritage Appraisal is intended to be a 'living document', that will be updated as the proposals progress. At this stage, the document seeks to establish the baseline heritage significance of those assets potentially affected by development on the Site and to guide the emerging local plan review process with Bedford Borough Council (BCC).
- 1.5 The scope of this report does not include a consideration of the below ground archaeological potential of the Site.

Heritage Assets

Designated Heritage Assets

- 1.6 A desk-top review identified the following designated assets as having the potential to be affected should the Site come forward for development:
- Cardington Number 1 & Number 2 Sheds – Grade II* listed
 - Settlement site N of Chapel End Farm— Scheduled Monument
 - Site discovered by aerial photography S of village— Scheduled Monument
 - Manor Farm moated site— Scheduled Monument
- 1.7 The Site does not lie within a conservation area and there are none within proximity to the Site.
- 1.8 There are no world heritage sites, scheduled monuments, registered parks and gardens, wreck sites or battlefields in close proximity of the Site.

Non-designated Heritage Assets

- 1.9 At the time of writing BBC does not have an adopted Local List identifying non-designated heritage assets. No such assets have therefore been formally identified to date; however, they may be identified through the planning process.
- 1.10 An online search of the Bedfordshire Historic Environment Record (HER) has identified a number of entries within 1km of the Site, the majority of which do not add to our understanding of the heritage significance of the Site. Several entries on the HER relate to the airship works, RAF Cardington and associated military installations. Several entries also relate to the historic development at Shortstown associated with the airship works. These features could be considered by BBC to be non-designated heritage assets.

However, these have not been considered for the purposes of this appraisal on the basis that this is yet to be confirmed by the Council

Methodology

- 1.11 This document will set out a brief history of the Site and its surroundings together with a statement of significance of those heritage assets potentially affected by the proposed development. It will then go on to consider the potential impacts of development within the legislative and policy context.
- 1.12 The statement of significance set out in section 3 of this report has been informed by a desk-top review, archival research and site visits undertaken on 6 June 2019 and 24 February 2020.
- 1.13 The assessment of significance follows the heritage interest-led approach set out in the NPPF, comprising archaeological, architectural, artistic and historic interest. This has been guided by the definitions provided in the updated PPG. The assessment of the contribution made by the setting of the heritage assets follows the staged assessment approach set out in Historic England's guidance document GPA3.

Policy Framework

- 1.14 The full local and national planning policy is set out in Appendix 1; a summary of the relevant policy framework is provided below.
- 1.15 The NPPF sets out the government's planning policy with Chapter 16 providing policy guidance for conserving and enhancing the historic environment. The guidance recognises the importance of preserving assets in a manner appropriate to their significance and guides that any harm or loss to significance should require clear and convincing justification.
- 1.16 Paragraphs 195 and 196 set out two decision-making tests where proposals would lead to substantial and less than substantial harm respectively. Paragraph 195 guides that substantial harm to or total loss of significance should not be permitted unless that harm is necessary to deliver substantial public benefits that would outweigh that harm or loss, or other criteria are met. Paragraph 196 guides that where a development proposal would lead to less than substantial harm, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.

- 1.17 Implementation of the NPPF is supported by the Planning Practice Guidance (PPG) (2014 with updates).
- 1.18 The BBC Local Plan 2030 was adopted in January 2020. It sets out the vision, objectives, spatial strategy and policies for the future development of the borough. Policy 41S: Historic Environment and Heritage Assets is the relevant planning policy relating to heritage.
- 1.19 Historic England has also prepared a series of guidance documents which have informed this appraisal:
- Good Practice Advice in Planning (GPA) Note 1: The Historic Environment in Local Plans
 - Good Practice Advice in Planning (GPA) Note 3: The Setting of Heritage Assets (2017)
 - Conservation Principles for the Sustainable Management of the Historic Environment (Consultation Draft) (2017)
 - Historic England Advice Note 12: Statements of Heritage Significance: Analysing Significance in Heritage Assets (2019)

2.0 SITE CONTEXT

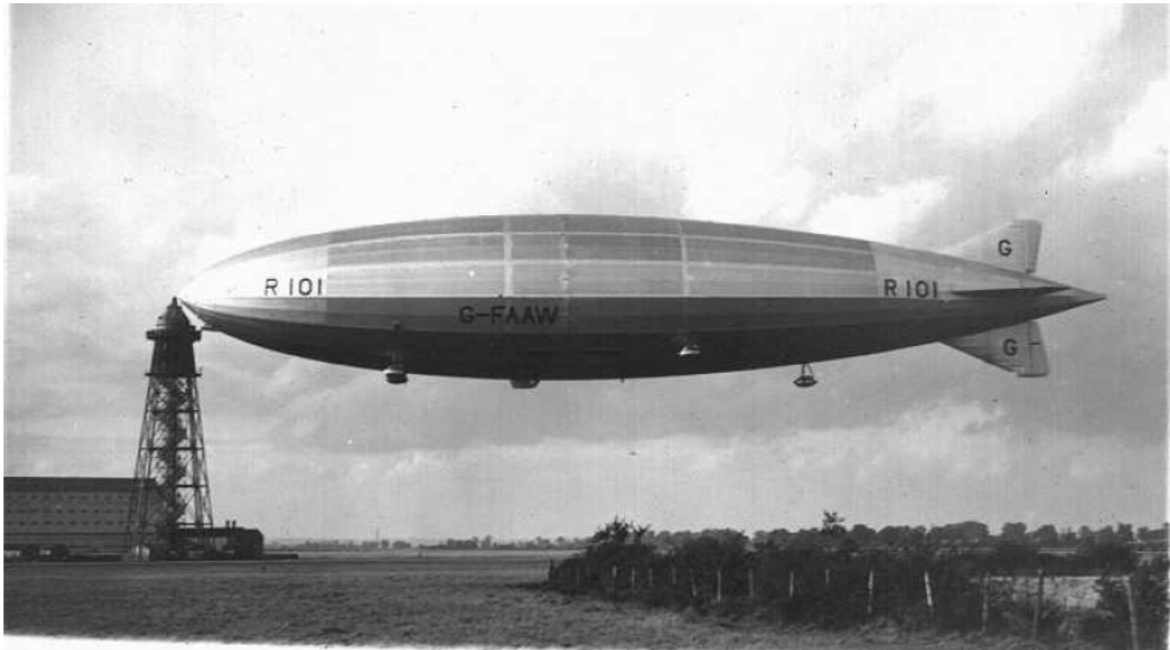
The Site

- 2.1 The Site is located to the west and south of the settlement of Shortstown, approximately three and a half miles southeast of Bedford. The settlement consists of the historic core to the east and north of the Site and more recent development to the east of the Sheds. The Site is currently in use as agricultural fields.

Brief History of the Site and Surroundings

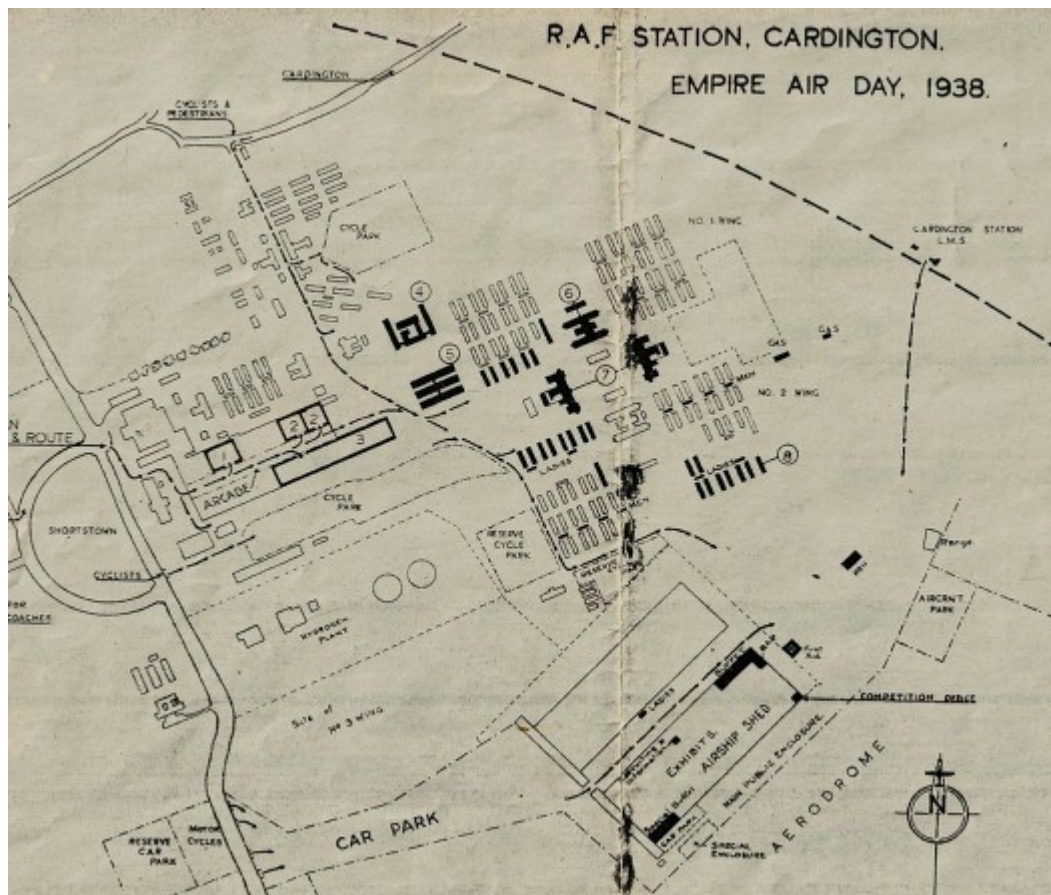
- 2.2 The 1887-92 Ordnance Survey (OS) plan of the area (Appendix 3. Fig.A) shows the area as open agricultural land with the settlements at Harrowden to the north, Cardington to the East and Cotton End to the south of what is now Shortstown.
- 2.3 Today the area is known for its association with RAF Cardington and the two Grade II* listed airship hangars. Cardington was one of the main sites in the UK involved in the development of airships in the early 20th century. In 1916, land at Cardington was purchased from the Whitbread estate by the Naval Air Service. At this time the military was looking to expand into airship construction and the Shorts Brothers were commissioned by the government to construct two large 'dirigible airships' at Cardington. The Shorts Brothers had established their aviation company, designing and building air balloons before diversifying into aircraft construction in 1908. The firm is believed to be the first company in the world to manufacture planes on a commercial scale.
- 2.4 The land at Cardington was selected as it was accessible by both road and rail as well as being positioned beyond the range of the German bombers of the time. A large workforce was available in Bedford and the valley in which the land was located was ideal for manoeuvring large airships safely. Initially the site at Cardington included one airshed, a gas plant, workshops and the 'Shorts Building' which housed the design team. A small village was constructed to house the workers, consisting of approximately 150 houses. The first phase of housing was completed in 1919 and followed the fashionable 'Garden City' architectural principles.
- 2.5 The early 20th century saw the suspension of airship production in the UK following the crash of airship R38 in August 1921. The site at Cardington fell out of use until 1924 when the government commissioned the construction of two new airships; one of which was to be built at Cardington. The construction of the R101 airships was part of a government

programme to develop airship transportation across the British Empire. Tragically, the R101 crashed on its maiden voyage in France in October 1930 and this resulted in the end of airship development in Britain. Operations at Cardington ceased, and the sheds became an aircraft storage base.



Photograph 1: Airship R101 with Shed 2 behind (www.airshipsonline.com)

- 2.6 In 1936, the site at Cardington was repurposed and RAF Cardington opened. The station was responsible for the construction of barrage balloons and it quickly became the RAF's main training site for balloon operators. The training of operators increased with the threat of war and by 1938 there was sufficient manpower to operate the balloon units around the coast. RAF Cardington continued to provide basic training of recruits until 1953.
- 2.7 The 1938 OS map of the area (Appendix 3 Fig.B) shows the early development of the houses in Shortstown, to the west of the main road. Directly opposite is the 'Short's Building' which was a focal point for both the town and the RAF base. At this time, the two hangars are not shown, most likely for reasons relating to national security. However, a plan produced for the Empire Air Day in 1938 (Fig.3) shows the extent of the airfield at Cardington and the two sheds are clearly shown to the south of the main RAF Station.



Photograph 2: 1938 map of RAF Cardington, issued for the annual Empire Day (www.rafcardingtoncamp.co.uk)

- 2.8 At the end of World War II, the base was used to train Dutch Airmen, with squadrons 320 and 321 being stationed here. In the 1940s the two sheds no longer formed part of the RAF site and were used once again for storage. The base continued its association as a training centre for the RAF until the 1950s. RAF Cardington declined in importance in the 1970s and was subsequently used by a number of organisations including the Fire Research Station, the Building Research Establishment and the Driving Standards Agency.
- 2.9 By the 1960s the base was also home to a gas factory, mechanical transport repair centre and other research facilities. A Russian map dated 1971 (Appendix 3 Fig.C) shows the extent of the settlement at Shortstown, the RAF base and the sheds. The 1987 OS plan (Appendix 3 Fig.D) shows the town and sheds as they stood prior to the residential development to the east of the historic core.
- 2.10 RAF Cardington officially closed in 2000 and fell into disrepair. New housing has been built to the north, on the site of the original base as well as to the east of the main settlement. The historic core of Shortstown remains discernible; however, it is now surrounded by modern development dating from the late 20th-early 21st century.

3.0 STATEMENT OF SIGNIFICANCE

Definitions

3.1 Heritage significance is defined in Annex 2 of the NPPF as:

“The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset’s physical presence, but also from its setting.”

3.2 Annex 2 goes on to provide a definition of archaeological interest as follows:

“There will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.”

3.3 The definitions below are provided in the updated PPG:

“Archaeological interest: As defined in the Glossary to the National Planning Policy Framework, there will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.

Architectural and Artistic interest: These are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically, architectural interest is an interest in the art or science of the design, construction, craftsmanship and decoration of buildings and structures of all types. Artistic interest is an interest in other human creative skill, like sculpture.

Historic interest: An interest in past lives and events (including pre-historic). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest

not only provide a material record of our nation's history, but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity."

3.4 The setting of a heritage asset is described in Annex 2 of the NPPF as:

"The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral."

Statement of Significance

3.5 The assessment of the contribution made by the setting of the heritage assets follows the staged assessment process set out in Historic England's setting guidance document (GPA3).

Cardington Sheds

3.6 As Grade II* listed buildings, the Cardington Sheds are listed at the higher tiers of designation and are therefore of high significance. The list descriptions note:

"...their vast size and form provide a uniquely important testimony to airship technology in Europe".

3.7 The heritage significance of the two sheds is derived primarily from their architectural and historic interest. The Sheds are rare surviving examples of early airship hangars, with only three of this date surviving throughout the UK. Shed 1 is one of only a few *in situ* examples in Europe of a pre-1918 airshed. Shed 2 is later, dating from 1928 and is formed from a shed transferred from Pulham, Norfolk, which was then enlarged to house the R100 airship. Their rarity, both nationally and internationally, means that the sheds as a group and individually are of exceptionally high historic interest.



Photograph 3: View looking east towards the western entrances of the sheds, taken from current entrance to the hangar site off the A600

- 3.8 No.1 Shed was designed and constructed by AJ Main & Co of Glasgow in 1916-17 for the purposes of constructing airships R31 and R32. It was then enlarged in 1926-7 by Cleveland Bridge and Engineering Company of Darlington, for the purpose of constructing and housing the new R101 airship. It measures nearly 250m in length and 55m in height and consists of 29 steel frame bays with side aisles. The enlargement of the hangar to facilitate the R101 airship included the addition of four bays and an increase in height. The shed is clad in corrugated steel sheeting which has been extensively repaired and replaced as part of previous restoration works. The doors to the west end open to the full height and width of the nave. The six staircases that lead to the gantries used in the construction still survive *in situ*.
- 3.9 No.2 Shed was originally built at Pulham in Norfolk during WWI for coastal airships and was constructed by the Airship Guarantee Co at Howden. The shed was transported to the site at Cardington in 1928 where it was also enlarged to the same dimensions as No.1 Shed. Also constructed of a steel frame with corrugated steel sheeting, the No.2 Shed consists of 29 bays and features double side aisles used for workshops. Similar to No.1 Shed 1, the doors are to the western end and open to the full height and width of the nave.
- 3.10 The engineering and technological advances associated with the construction of the sheds, the airships and later balloons built within them is important to our understanding of the development of airship technology in the early 20th century. By 1918, the number of airship sheds in the UK increased from 6 to 61, highlighting the strategic importance of airships as a deterrent to the U-boat threat. However, the economic depression that followed the end of WWI resulted in the closure of the Royal Airship Works at Cardington.

It was not until a renewed interest in the mid-1920s for the use of airships as a commercial means of travel that the works were reopened and tasked with constructing the R100 and R101 airships.

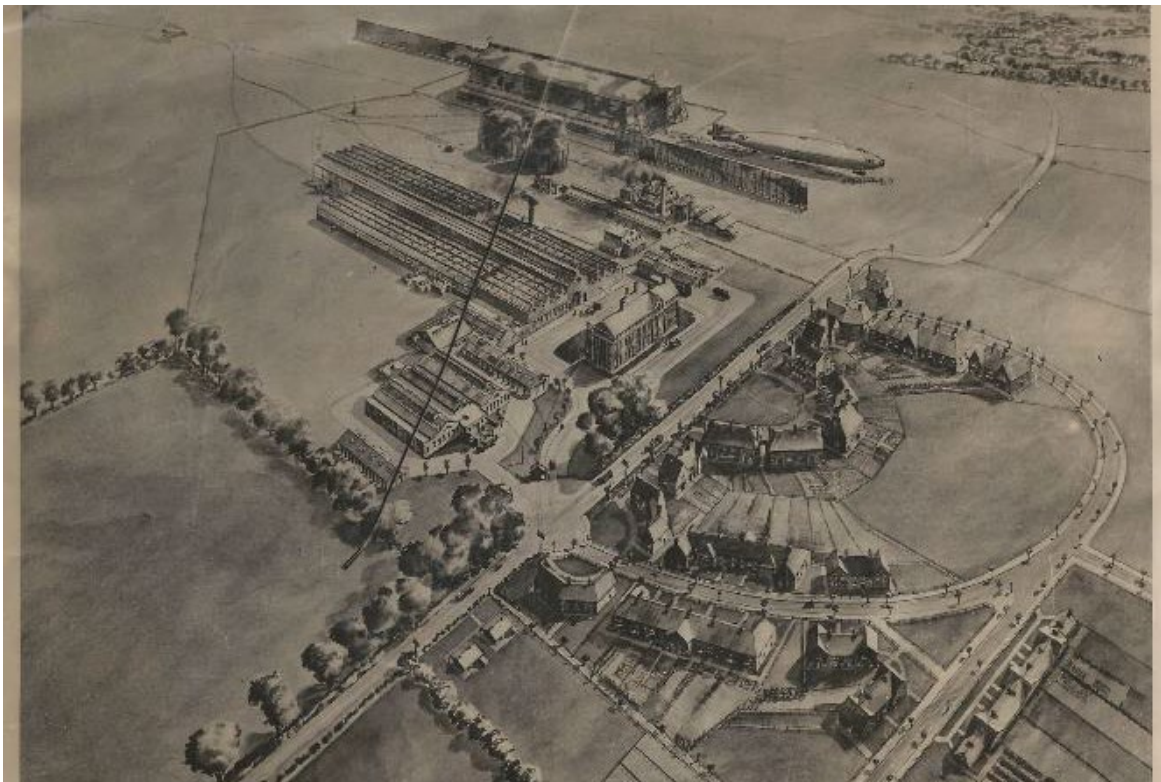


Figure 2: Artist impression of Shortstown c.1916 with hangars in the background (www.airshipsonline.com)

- 3.11 No.1 and No.2 Sheds are vast in size and when built they were some of the largest buildings of their type in Britain. Their industrial appearance and colossal scale result in them being landmark structures within the surrounding landscape. Their design and materiality are entirely functional in nature, their size being dictated by the size of the airships being constructed within them. The sheds do not display any particular architectural features of note and their architectural interest derives from their construction as a piece of large-scale industrial engineering.
- 3.12 Extensive repairs and restoration work have been carried out to both sheds. This work has secured their long-term preservation, and both now appear to be in a good state of repair. The sheds remain nationally and internationally important as a remnant of this unique period in aviation history.

Setting

- 3.13 The 'Good Practice Advice in Planning Note 3: The Setting of Heritage Assets' (2017) makes clear that setting attributes extend to both visual and non-visual considerations.

- 3.14 The setting of No.1 and No.2 Sheds is intrinsically linked given their close associative links. Historically, the sheds and the surrounding base to the north and airfield to the south shared a close associative and functional relationship. This has been significantly eroded through the loss of the buildings and infrastructure as well as the development to the north of the sheds. The loss of RAF Cardington and subsequent residential development has fundamentally altered the setting of the sheds.
- 3.15 Historically the land to the west and south of the sheds contained the remaining extent of the airfield associated with the development of the airships at the site and its use during WWII as an RAF base. Remnants of earthworks and features associated with the airfield remain visible on aerial photographs and satellite imagery. From archive research, the remnants of the tethering station and winch huts survive to the south of the sheds, outside the redline boundary.
- 3.16 Historic map evidence showing the extent of the RAF base at Cardington is limited given the military censorship in place at the time of the base being in active use. However, from the information available, it would appear that much of the surrounding area was left to grass as was typical in such locations.



Figure 3: Map extract from Google Earth [accessed 30 March 2020]

- 3.17 The settlement of Shortstown is located to the northwest of the Sheds and the RAF site was immediately to the north. Both were important features within the wider setting of the Sheds. Historically, the settlement of Shortstown, RAF Cardington and the sheds would have all shared a close function and associative relationship into the late 20th century. It

was only after the abolition of National Service in the 1960s that the dwindling presence of the RAF at Cardington meant there was a steady decline in the population locally and the base was closed in 2000.

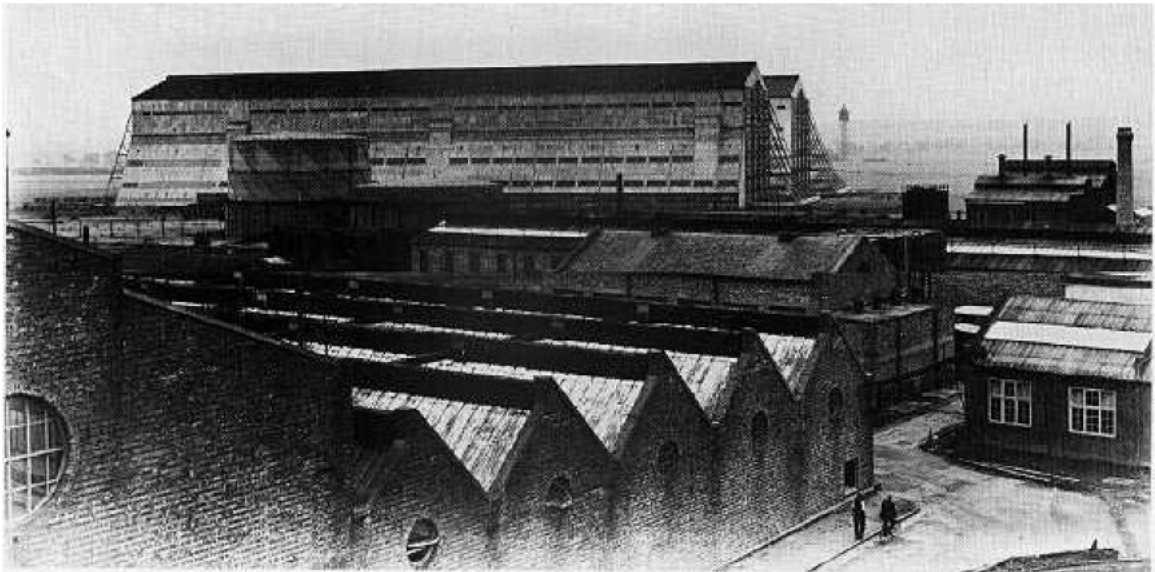


Figure 4: Historic photograph RAF Cardington, date unknown (www.masterbombercraig.wordpress.com)

- 3.18 Commissioned by Eustace and Oswald Short, the village of Shortstown was built in 1917 to accommodate staff working on the development of the airships in the newly constructed No.1 Shed. The village originally consisted of 150 houses designed by Mr J T Crackett, a Newcastle based architect known for a number of civic buildings in the northeast. The historic core of the village grew up around the social club (now the Shorts Building) which was constructed on 'The Highway' directly opposite 'The Crescent' which contains some of the oldest properties. RAF Cardington was located to the southeast of the settlement and comprised a series of buildings and structures that have since been demolished, with the exception of the social club.
- 3.19 More recently, the closure of the RAF base in 2000 has resulted in the extensive residential development of the land immediately surrounding the hangars to the north and development has also been consented to the east. The development to the east of the hangars on land that was previously open has resulted in a comprehensive change to the way in which the sheds are experienced, particularly when approaching along Southill Road to the southeast. Whilst this has resulted in a change to the setting of the Sheds, it should be noted that they were already viewed in the context of development of this nature with the historic settlement and RAF base previously forming part of their setting.
- 3.20 Due to the scale of the Sheds, they are considered landmark structures that are visible within the wider landscape. However, in the most part these long-distance views of the sheds from the south and south-west are mostly screened by the existing settlement at

Cotton End and the surrounding landscape. There are a number of viewpoints from the south-east in which the sheds can be appreciated within their wider landscape setting, seen above vegetation and built form in the intervening space (Fig.8 and 9).



Photograph 4: Long-distance view from the south-east along Southill Road looking north towards the sheds



Photograph 5: View from south-east along Southill Road looking north towards sheds

- 3.21 The view of the sheds that illustrates their scale and relationship to each other is considered to be from the western gable end. This is the elevation which features the doors to both hangars and is therefore important in understanding how they functioned as well as allowing an appreciation of their form. The view from the west across the open airfield is of particular importance, highlighting the scale and prominence of the buildings within their immediate context.

Contribution made by the Site

- 3.22 The Site is located primarily to the south of the Cardington Sheds with an area to the west included within the redline boundary. This area of open space contains the remnants of features associated with the airfield in the form of earthworks. The historic associative and functional relationship between the sheds and the airfield aids in an understanding and appreciation of the historic function of the sheds. However, this is no longer readily discernible within the landscape as a result of the loss of the airfield use, supporting infrastructure and consequent residential redevelopment of the surrounding area.
- 3.23 The main entrances to both sheds are found on their western elevations and the surviving airfield to the west contains remnants of its previous use as a series of earthworks, which are visible within aerial photographs and satellite imagery. This area to the front of the sheds is considered to be of sensitive allowing uninterrupted views to the principal elevation as well as historically being the main area in which the airships were manoeuvred.
- 3.24 Few of these features are readily discernible on the ground or within medium/long-distance views of the sheds and the site. Nevertheless, the remnants of the historic airfield and the openness of the landscape assist in our appreciation of the scale and prominence of the structures and in turn the airships historically stored within them. Whilst outside the site boundary, the retention of features such as the winch huts and other military features makes a further positive contribution to the significance of the sheds and the site as an important military base during both World Wars, albeit for different purposes.

Settlement site N of Chapel End Farm

- 3.25 As a scheduled monument, the Settlement site is designated at the higher tiers of designation and is therefore of high significance. The heritage significance of the asset

primarily derives from its archaeological interest as an area of crop marks and possible enclosures illustrative of a former settlement in this location¹.

- 3.26 The feature comprises two sections of single ditch forming a rough 'n' shape which are visible in historic aerial photographs and act as evidence of human occupation. The features relate to below ground evidence and are not readily discernible on the ground. The asset is therefore considered to be of high archaeological interest.

Setting

- 3.27 The asset is located to the south of Cambridge Road and is set within agricultural land. Its setting has changed over time with surrounding development, particularly that of Bedford, the A421, and Cardington. Although it still retains a relatively rural setting, this has been much encroached upon by these built-up areas which has altering the way in which the Site is viewed within the surrounding landscape.
- 3.28 The features are located c.1.8km to the north-east of the Site. The Site has no known functional or associative relationship with the asset. In its current form, the Site forms part of the wider rural context of the asset but is both physically and visually separate. As a result of the intervening landscape, vegetation and built form it is not considered that the Site offers any contribution as to how the asset is appreciated and understood as evidence of a former settlement.

Site discovered by aerial photography S of village

- 3.29 As a scheduled monument, the site is designated at the higher tiers of designation and is therefore of high significance. The heritage significance of the asset primarily derives from its archaeological interest as a complex area of crop marks illustrative of a former settlement or farmstead in this location likely dating from the Iron Age or Romano/British period².
- 3.30 The crop marks comprise circular and linear features, as well as rectangular enclosures and act as evidence of human occupation. The crop marks relate to below ground evidence and are not readily discernible on the ground, the earthworks did not appear on the most recent aerial photography on record dating from 2009. The asset is therefore considered to be of high archaeological interest.

¹ Bedford Historic Environment Record Entry 585 – available at <https://www.heritagegateway.org.uk>

² Bedford Historic Environment Record Entry MBB22090 – available at <https://www.heritagegateway.org.uk>

Setting

- 3.31 The asset is located to the north-east of Southill Road and is set within agricultural land. Its setting has changed over time with the development of Cardington, the RAF base, Cotton End and Bedford. Although it still retains a rural setting, this has been much encroached upon by these built-up areas, which has altered the way in which the Site is viewed within the surrounding landscape.
- 3.32 The crop marks are located c.375m to the north-east of the Site. The Site has no known functional or associative relationship with the asset. In its current form, the Site forms part of the wider rural context of the asset but is physically detached from the monument by Southill Road and the dismantled railway which lies to the west of the asset. Due to their close proximity, there is some intervisibility between the asset and the Site. However, the Site is not considered to make any contribution to how the asset is appreciated and understood as a series of crop marks.

Manor Farm moated site

- 3.33 As a scheduled monument, the site is designated at the higher tiers of designation and is therefore of high significance. The heritage significance of the monument primarily derives from its archaeological and historic interest as the site of a medieval moated manor house.
- 3.34 The monument consists of a ditch, c.10m in width enclosing an island of approx. 1.8ha with two causeways; one to the north east and one to the southeast. There is also evidence of medieval ponds within the island as well as foundations relating to the previous buildings within the site. As the island at the centre of the moat is largely undisturbed, it will likely retain evidence relating to the use of the site from the 16th century onwards. It is thus considered to have high archaeological interest.

Setting

- 3.35 The moated site is located to the west of Southill Road, set back behind hedgerows and a gate which provides access from the road. It is surrounded by agricultural fields and has a predominantly rural character with Cardington Shed's to the north. The landscape context of the monument has changed throughout the 20th century with the demolition of the structures on the island in the 1950s; the monument is now used for sheep grazing. The fields immediately surrounding the monument are essential to understanding the

moated site and its isolated nature in the landscape. The wider landscape provides further context for the isolation of the site but it not essential in the appreciation of the moated site and its archaeological and historic interest.

- 3.36 The asset is located c.1.6km from the southern boundary of the Site. The Site has no known functional or associative relationship with the asset. In its current form, the Site forms part of the wider landscape setting of the asset. As a result of the intervening landscape features and vegetation it is not considered that the Site offers any contribution as to how the asset is appreciated and understood as evidence of a former medieval moated manor house.

4.0 CONCLUSIONS AND HERITAGE IMPACT ASSESSMENT

The Vision



Figure 5: Concept Plan taken from Vision Document (Barton Willmore)

- 4.1 A Vision Document has been prepared which includes an indicative masterplan for the Site. This plan demonstrates one way in which development could be brought forward on the Site taking account of the surrounding context.

- 4.2 The Vision Document references the Garden City Principles upon which the original settlement at Shortstown was founded. The masterplan seeks to build upon this original vision and develop it further with strong links to the historic character of the area, taking its design lead from both the Garden City principles and the industrial/military character of the area.
- 4.3 The Site will be accessed from the existing highway to the north of Shed 1 and through the development to the east on which construction will start Summer 2020. This will minimise the amount of highways infrastructure required and avoid the need for new routeways being created across the western portion of the site.
- 4.4 The built form has been designed to be set back from the southern elevation of Shed 2 in order to provide a buffer between the shed and the development. Development would be further screened and physically separated by the existing substantial earthwork bund present along the southern boundary to the hangars. Pulling back the development blocks from the southwest corner, this ensures that the views towards the western elevation remain uninterrupted.
- 4.5 The introduction of development will result in a degree of impact on the openness of the Site and by extension the setting of the listed sheds. However, the masterplan has been influenced by the historic character of the Site and its surroundings. The indicative layout shows streets laid out in straight lines reminiscent of runways that were once present across the surrounding area, as well as development blocks which are more formal; taking their cue from a barracks style of development which would have once been present within RAF Cardington. A series of viewing corridors have also been created within the indicative layout which seek to preserve those long-distance views towards the sheds from the south and southeast.
- 4.6 The current open space to the west of the Site is considered to be sensitive allowing uninterrupted views to the principal elevation of the sheds. The masterplan shows no built form within this part of the Site, which has been protected within the indicative masterplan as a Heritage Park and seeks to retain and protect open and uninterrupted views towards the western elevation of the sheds as well as create a high-quality public space. This approach seeks to preserve the heritage interest of those earthworks found in this location and their contribution to the setting of the sheds. The design of the park has been influenced a desire to provide improved public access as well as interpretation of the surviving remnants of infrastructure associated with the hangars.

Impact Assessment

- 4.7 The assessment above seeks to identify the likely scale of impact resulting from development of the Site as shown on the indicative masterplan. A further, more detailed assessment would be required should any allocation be taken forward as a planning application.

Cardington Sheds

- 4.8 The setting of the sheds was linked to the surrounding area through the airfield to the south and west; the now demolished RAF base to the north and the settlement of Shortstown to the northwest. As noted previously, the redevelopment of the RAF Cardington site to the north and the development of the land to the east has fundamentally altered the immediate and wider setting of the listed sheds, bringing residential development within much closer proximity.
- 4.9 Whilst the development of the proposed allocation would result in a change in the wider landscape setting of the sheds; the principles set out in the accompanying Vision Document and masterplan celebrate the unique heritage of the Site and the listed sheds. This approach seeks to position the built form away from the western elevation of the hangars and create a high-quality area of open space, which is considered to preserve the heritage interest of the most sensitive part of the Site as well as provide additional interpretation to aid understanding of its historic significance.

Settlement site N of Chapel End Farm

- 4.10 Whilst the Site forms part of the wider rural landscape of the asset, it is visually and physically detached from the monument. As result of intervening landscape, vegetation and built form it is not considered make any contribution to how the asset is appreciated and understood as evidence of a former settlement. Furthermore, the proposed and consented Bellway site (Ref: 11/02686/EIA) will introduce further built form, separating the Site from the asset.
- 4.11 Whilst the development of the proposed allocation would result in a change in the wider landscape setting it would not be considered to adversely impact the way in which the asset is experienced and appreciated as below ground evidence of a settlement site. Should development come forward in the manner illustrated in the accompanying Vision

Document and masterplan it is not considered that it would result in harm to the setting, or by extension the heritage significance of the monument.

Site discovered by aerial photography S of village

- 4.12 In its current form, the Site forms part of the wider rural landscape surrounding the asset. However, the Site is physically and visually detached from the monument by Southill Road and the dismantled railway line. This perception of physical separation will be further increased through the development of the Bellway site as mentioned above.
- 4.13 Whilst the development of the proposed allocation would result in a change in the wider landscape setting it is not considered to adversely impact the ways in which the asset is experienced and appreciated as evidence of early settlement in the area. Should development come forward in the manner set out in the accompanying Vision Document and masterplan it is not considered that harm would result to the setting, or by extension the heritage significance of the monument.

Manor Farm moated site

- 4.14 Whilst the Site forms part of the wider rural landscape setting of the asset the intervening landscape features and distance means that the Site offers no contribution to how the asset is appreciated and understood as an example of a medieval moated manor house.
- 4.15 Whilst the development of the proposed allocation would result in a change in the wider landscape setting it is not considered to adversely impact the ways in which the monument is experienced as a significant moated site where the primary focus is on the archaeological potential below ground level. Should development come forward in the manner set out in the accompanying Vision Document and masterplan it is not considered that harm would result to the setting, or by extension the heritage significance of the monument.

Conclusion

- 4.16 In principle, it is proposed that the Site could be developed, subject to detailed design and landscaping proposals, with minimal harm being caused to the setting of the identified designated heritage assets, such that it is considered possible for the Site to be developed in a manner which would meet the legislative tests set out in the 1990 Act and the principles set out within the NPPF. It is therefore not considered that the heritage assets

detailed within this Heritage Appraisal would preclude the allocation of the Site for residential development.

APPENDIX 1

Heritage Decision-Making Framework

HERITAGE DECISION MAKING FRAMEWORK

Legislation

Planning (Listed Building and Conservation Areas) Act 1990

Listed buildings and conservation areas are protected by the provisions of the Planning (Listed Buildings and Conservation Areas) Act 1990. Section 66 requires that local planning authorities have special regard to the desirability of preserving the heritage significance of listed buildings when determining applications that have potential to affect the significance of listed buildings and their setting. Section 72 requires Local Planning Authorities to pay special attention to the desirability of preserving or enhancing a conservation area's character or appearance when exercising their planning functions.

Development Plan

Bedford Borough Local Plan 2030, January 2020

The Bedford Borough Local Plan 2030 sets out the growth and development of the county. It was adopted on 15th January 2020. Policy 42S sets out the approach to the Historic Environment:

Policy 41S - Historic environment and heritage assets

- i. "Where a proposal would affect a heritage asset the applicant will be required to describe:**
 - a. The significance of the asset including any contribution made by its setting and impacts of the proposal on this significance, and**
 - b. The justification for the proposal, how it seeks to preserve or enhance the asset/setting or where this is not possible, how it seeks to minimise the harm.**
- ii. This description must be in the form of one or a combination of: a desk-based assessment; heritage statement; heritage impact assessment; and/or archaeological field evaluation. Further information will be requested where applicants have failed to provide assessment proportionate to the significance of the assets affected and sufficient to inform the decision-making process.**
- iii. Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset or non-designated heritage asset of archaeological interest of demonstrably equivalent significance to a scheduled**

monument, consent will be refused unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

- a. the nature of the heritage asset prevents all reasonable uses of the site; and**
 - b. no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and**
 - c. conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and**
 - d. the harm or loss is outweighed by the benefit of bringing the site back into use.**
- iv. Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm will be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.**
- v. In considering proposals affecting designated heritage assets or a non-designated heritage asset of archaeological interest of demonstrably equivalent significance to a scheduled monument, involving their alteration, extension, demolition, change of use and/or development in their setting, the Council will include in their consideration as appropriate:**
 - a. The asset's archaeological, architectural, artistic and historic interest and any contribution to its significance from setting (including the wider historic landscape)**
 - b. scale, form, layout, density, design, quality and type of materials, and architectural detailing**
 - c. boundary treatments and means of enclosure**
 - d. implications of associated car parking, services and other environmental factors**
 - e. effect on streetscape, roofscape and skyline including important views within, into or out of heritage assets**
 - f. impact on open space which contributes positively to the character and/or appearance of heritage assets**
 - g. the positive benefits of the proposal in addressing heritage at risk.**
- vi. Where heritage assets are included on a Local List and are affected by development proposals the Council will afford weight proportionate to their heritage significance in the decision-making process to protect and conserve the significance which underpins their inclusion. Partial or total loss adversely impacting this**

significance will require clear and convincing justification.

- vii. The effect of proposals on the significance of non-designated heritage assets will be taken into account in determining applications for development. Applications which result in harm or loss of significance to non-designated heritage assets will only be supported if clear and convincing justification has been demonstrated. In making a decision, the Council will weigh the significance of the heritage asset affected against the scale of any harm or loss to it.**

- viii. Where applications are permitted which will result in (total or partial) loss to a heritage asset's significance (including where preservation in situ of buried archaeological remains is not necessary or feasible), applicants will be required to arrange for further assessment of and recording of this significance in advance of, and where required, during development/works. This assessment and recording must be undertaken by a suitably qualified specialist in accordance with a design brief set by the Council's Historic Environment Team. The work might include:**
 - archaeological and/or historic building fieldwork,**
 - post-excavation/recording assessment, analysis, interpretation,**
 - archiving with the local depository, and**
 - presentation to the public of the results and finds in a form to be agreed with the Council. As a minimum, presentation of the results should be submitted to the Bedford Borough Historic Environment Record and where appropriate, will be required at the asset itself through on-site interpretation."**

Other Guidance

National Planning Policy Framework (NPPF) 2019

The NPPF sets out government planning policy. Chapter 16 sets out policies for conserving and enhancing the historic environment.

Paragraph 189 requires applicants to describe the heritage significance of heritage assets potentially affected by proposed development. This should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. Paragraph 190 places an onus on local planning authorities to identify and

assess the significance on any heritage asset that may be affected, and to take this assessment into account when considering the impact of a proposal.

Paragraph 192 states that local planning authorities, in determining planning applications, should take account of: the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation; the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and the desirability of new development making a positive contribution to local character and distinctiveness.

Paragraph 193 advises that great weight should be given to an asset's conservation; the more important the asset, the greater this weight should be. It goes on to state that significance can be harmed or lost through alteration or destruction of the heritage asset, or development within its setting. Any such harm or loss should require clear and convincing justification.

Paragraphs 195 and 196 set out two decision-making tests where proposals would lead to substantial and less than substantial harm respectively. Paragraph 195 guides that substantial harm to or total loss of significance should not be permitted unless that harm is necessary to deliver substantial public benefits that would outweigh that harm or loss, or other criteria are met.

Paragraph 196 guides that where a development proposal would lead to less than substantial harm, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.

Paragraph 200 guides local planning authorities to look for opportunities for new development within conservation areas and within the setting of heritage assets to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.

Implementation of the NPPF is supported by the Planning Practice Guidance (PPG) (2019).

Best Practice Guidance

Good Practice Advice in Planning (GPA) 'Note 2: Managing Significance in Decision-Taking in the Historic Environment' (2015) provides information on good practice to aid decision-makers in the implementation of policy set out in the NPPF and PPG.

GPA 'Note 3: The Setting of Heritage Assets' (2017) sets out advice on managing change within the settings of heritage assets, including archaeological remains and historic buildings, sites,

areas, and landscapes. It advocates a staged approach to assessing significance and the impact of development within the setting of heritage assets.

APPENDIX 2

List Descriptions

CARDINGTON NUMBER 1 SHED AT RAF CARDINGTON

Grade II*
List Entry No 1114165
Date of Listing 29 January 1982
Details This list entry was subject to a minor amendment on 25/03/2013

TL 04 NE 179/3/58 29.01.1982

EASTCOTTS HIGH ROAD Cardington No.1 shed at RAF Cardington

II*

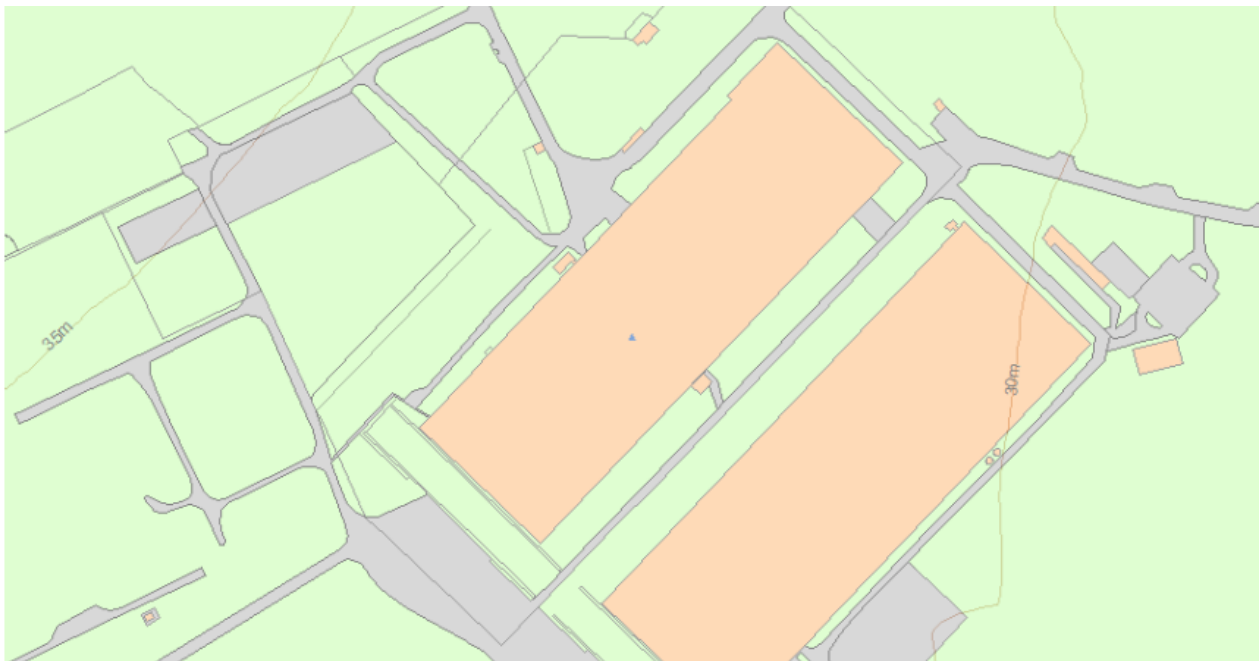
Airship hangar. 1916-17. Designed and built by A J Main and Co of Glasgow for the Admiralty, under supervision by their Directorate of Works. Enlarged in 1926-7 by the Cleveland Bridge and Engineering Co of Darlington. Dimensions 812' x 275' x 180'. Enlarged for the purposes of constructing and housing the R101 airship by the Royal Airship Works. 29 bays of steel framing, with side aisles and huge central nave: the 1926-7 alterations included the addition of 4 bays, the insertion of new raking struts and increasing the size of the vertical columns to heighten the roof. Six stairways lead up to 3 roof catwalks or gantries used in the construction of the R101. Clad in corrugated steel sheeting. Enormous doors moved by electric motors at the W end, opening to the full height and width of the nave.

HISTORY: This is one of only three airship hangars in Britain to have survived from the period up to 1918. It is the only in situ example of an airship hangar to have survived from the period up to 1918, adjacent to No.2 Shed – their vast size and form provide a uniquely important testimony to airship technology in Europe. As a consequence of the dismantling of airship sheds in Germany – the acknowledged leader in rigid airship technology in its formative phases – after 1919, and the demolition of other examples, Number One Shed is the only in situ example of an airship hangar to have survived in Europe from the period of up to 1918, enlarged for the Vickers-designed R100 airship in 1928. With Number Two Shed, a First World War hangar transported and enlarged on this site for the R101 airship – its vast size and form provide a uniquely important testimony to airship technology in Europe. Airship sheds of the period up to the late 1930s are very rare survivals in Europe, there being only one example, for example in France (on the Cotentin peninsula near Cherbourg) of this period. Despite the use of balloons as aerial observation platforms during the Napoleonic Wars and especially the American Civil War, it was not until 1979 that the Royal Engineers formed a Balloon Equipment Store at Woolwich Arsenal, which was subsequently moved to Chatham (1882) and then Aldershot (1890). Its operational and training units were combined as the Balloon School in April 1906, the same year witnessing the construction of the army's first airship shed at the Balloon School's new factory at Farnborough (demolished 1965) and in 1910-11 the erection of two more airship sheds (moved to Kingsnorth and demolished c1930) adjacent to a new Portable Airship Shed. The latter, a canvas-covered shed comprising in section a parabolic arch made up of rivetted box-section lattice units, was dismantled and now survives in two halves, the bottom half in a fabric shop and the upper half in a forge and foundry building: both of these buildings, erected in 1916-17 for the Aircraft Factory at Farnborough, are now listed grade II (as Buildings Q27 and Q25). Despite the fact that that country's total of 6 airship sheds had increased to 61 by November 1918 (a reflection of the strategic importance that the Admiralty in particular accorded to airships as a deterrent to the U-boat menace in Home Waters), only the examples at Farnborough (split in half as two factory buildings in 1916) and at Cardington (No.

1 Shed) – which include the resited hangar from Pulham in Norfolk incorporated into No.2 Shed – have survived. The resited elements of the shed from Mullion in Cornwall, now resited and functioning as a bus garage in Padstow, is not listable. East Fortune, south of Edinburgh has the most significance survival in Britain of technical buildings associated with an airship station.

Number One Shed is the only in situ example of an airship shed to have survived from the period up to 1918. It was constructed for the Admiralty as a 700ft hangar for the accommodation of the airships R31 and R32. Ramsey MacDonald's government, which first came to office in early 1924, envisaged the production of airships for imperial commerce as a mix of both public and private enterprise; the decision was consequently made to build two airships of 5,000,000 cubic foot capacity. This was a project which seized the popular imagination, R100, built under the contract of Vickers (who had been formerly involved in airship construction in Britain), being popularly known as 'the capitalist ship' and R101, built by the Royal Airship Works, as 'the socialist ship'. After 1926 the works on this site resulted from the Government authorisation of the projects for the R100 and R101 airships, which were to be used for an Empire-wide travel service. This shed was enlarged to a length of 812ft and heightened by 35ft to take the R101 in 1826/7, Number Two Shed comprising a shed brought from the site of Pulham in Norfolk and then extended to the required length. The sheds are both 180ft high.

After the R101 disaster of 1930, when the airship crashed on its maiden voyage en-route to India (its 48 dead including Sir Sefton Branker, the then Secretary of State for Air) the British government – under considerable economic pressure – terminated its support for the airship programme. The R100 was broken up inside the No. 1 Shed and sold for scrap in 1931. Cardington's fortunes revived after the formation of Balloon Command in November 1938, when it became the RAF's principal (barrage) balloon operations training centre.



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CARDINGTON NUMBER 2 SHED AT RAF CARDINGTON

Grade II*
List Entry No 1136810
Date of Listing 29 January 1982
Details This list entry was subject to a minor amendment on 21/03/2013

TL 04 NE 179/3/69 29.01.1982

EASTCOTTS HIGH ROAD Cardington No.2 shed at RAF Cardington

II*

Airship hangar. 1928. By the Cleveland Bridge and Engineering Co of Darlington, built for the purpose of housing the R100 airship which had been constructed by the Airship Guarantee Co at Howden and arrived at Cardington in December 1929. Dimensions 812' x 275' x 180'. The shed is an enlarged version of that built at Pulham in Norfolk in 1916 for costal airships and then transferred to Cardington in 1928. 29 bays of steel framing with double side aisles used as workshop annexes and huge central nave. Clad in corrugated steel sheeting. Enormous doors moved by electric motors at the W end, opening to the full height and width of the nave.

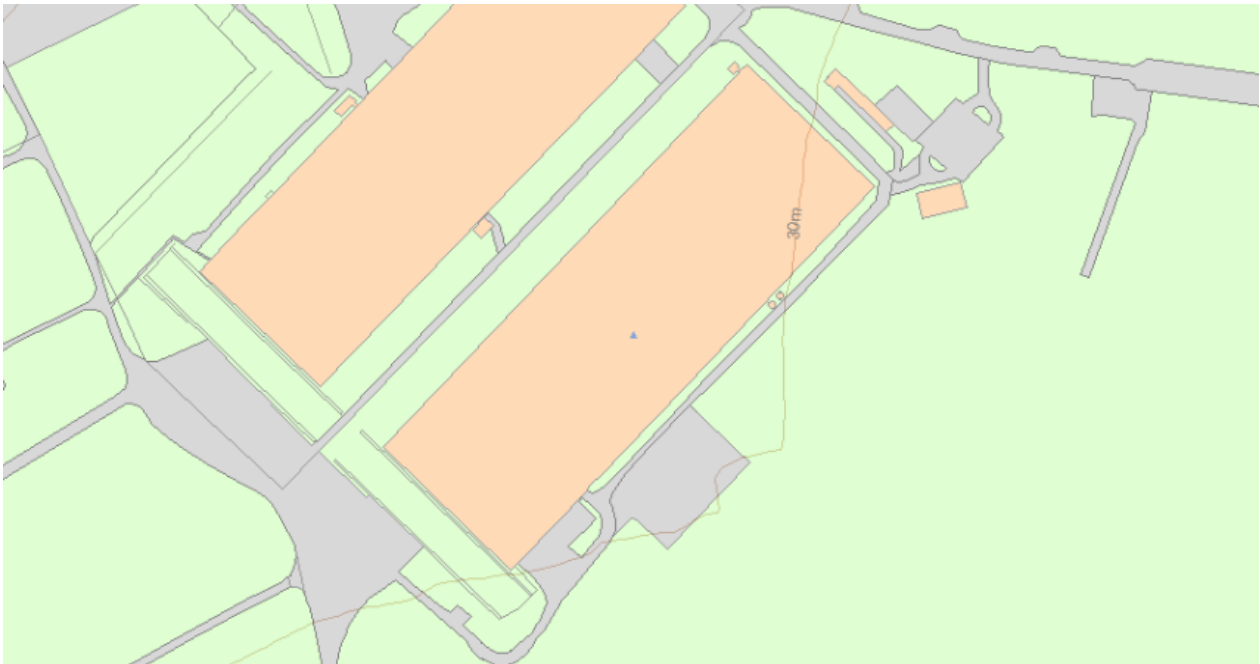
HISTORY: This is one of only three airship hangars in Britain to have survived from the period up to 1918. It was resited and extended for the purpose of constructing and housing the Vickers-designed R100 airship in 1928, and with Number One Shed comprises a uniquely important testament to airship technology and its political context in Europe.

Despite the use of balloons as aerial observation platforms during the Napoleonic Wars and especially the American Civil War, it was not until 1979 that the Royal Engineers formed a Balloon Equipment Store at Woolwich Arsenal, which was subsequently moved to Chatham (1882) and then Aldershot (1890). Its operational and training units were combined as the Balloon School in April 1906, the same year witnessing the construction of the army's first airship shed at the Balloon School's new factory at Farnborough (demolished 1965) and in 1910-11 the erection of two more airship sheds (moved to Kingsnorth and demolished c1930) adjacent to a new Portable Airship Shed. The latter, a canvas-covered shed comprising in section a parabolic arch made up of rivetted box-section lattice units, was dismantled and now survives in two halves, the bottom half in a fabric shop and the upper half in a forge and foundry building: both of these buildings, erected in 1916-17 for the Aircraft Factory at Farnborough, are now listed grade II (as Buildings Q27 and Q25). Despite the fact that that country's total of 6 airship sheds had increased to 61 by November 1918 (a reflection of the strategic importance that the Admiralty in particular accorded to airships as a deterrent to the U-boat menace in Home Waters), only the examples at Farnborough (split in half as two factory buildings in 1916) and at Cardington (No. 1 Shed) – which include the resited hangar from Pulham in Norfolk incorporated into No.2 Shed – have survived. The resited elements of the shed from Mullion in Cornwall, now resited and functioning as a bus garage in Padstow, is not listable. East Fortune, south of Edinburgh has the most significant survival in Britain of technical buildings associated with an airship station.

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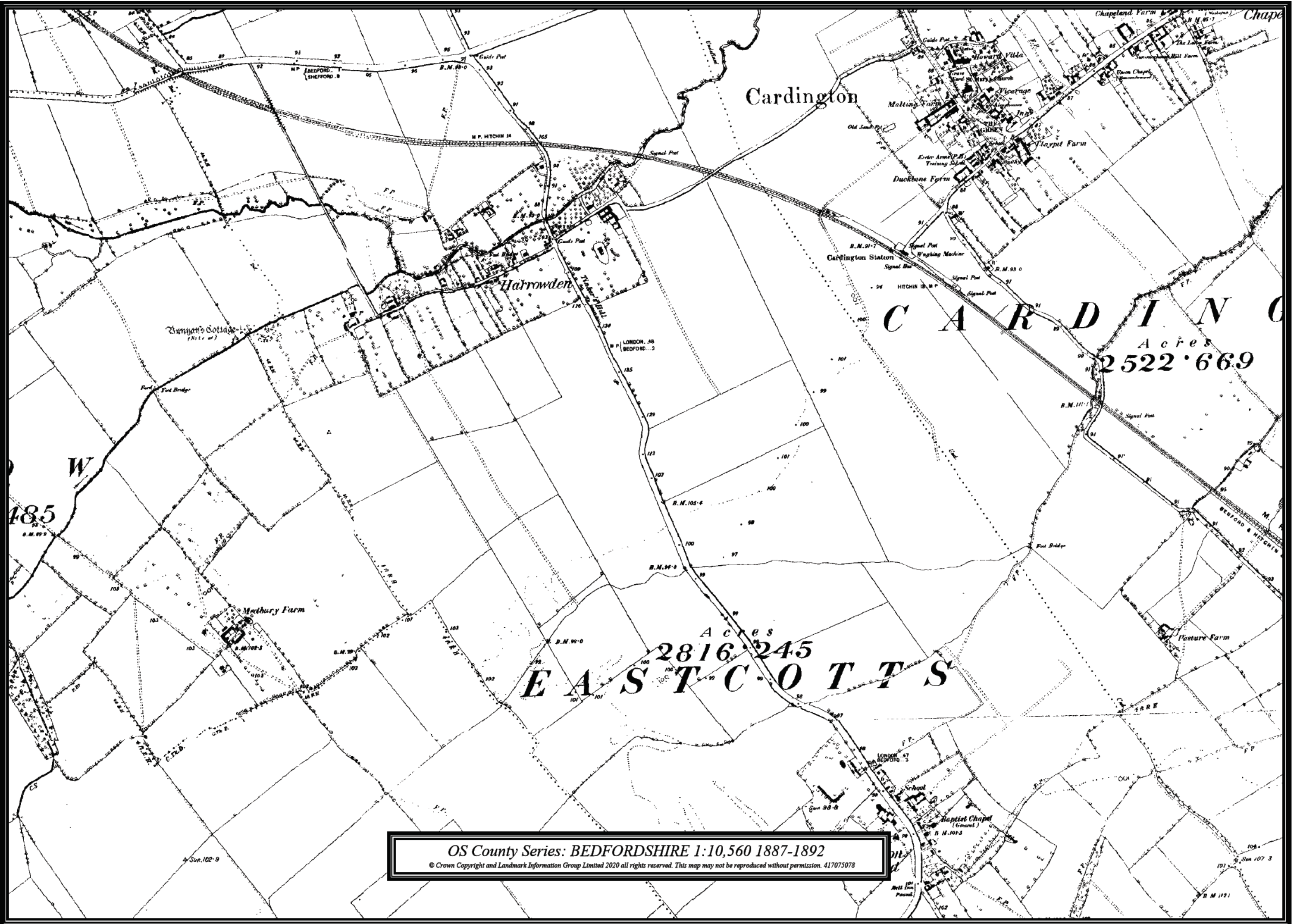
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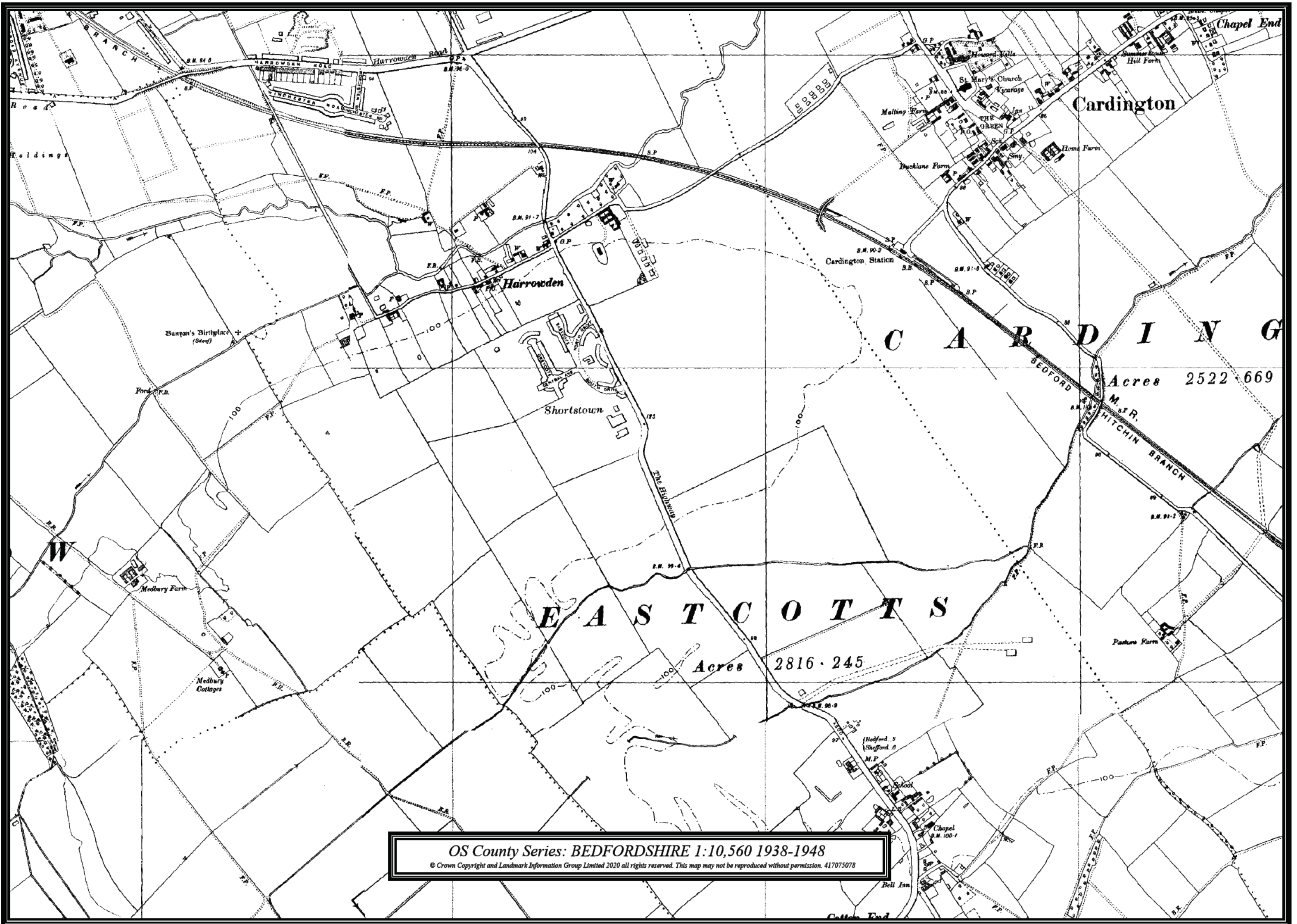
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APPENDIX 3

Maps



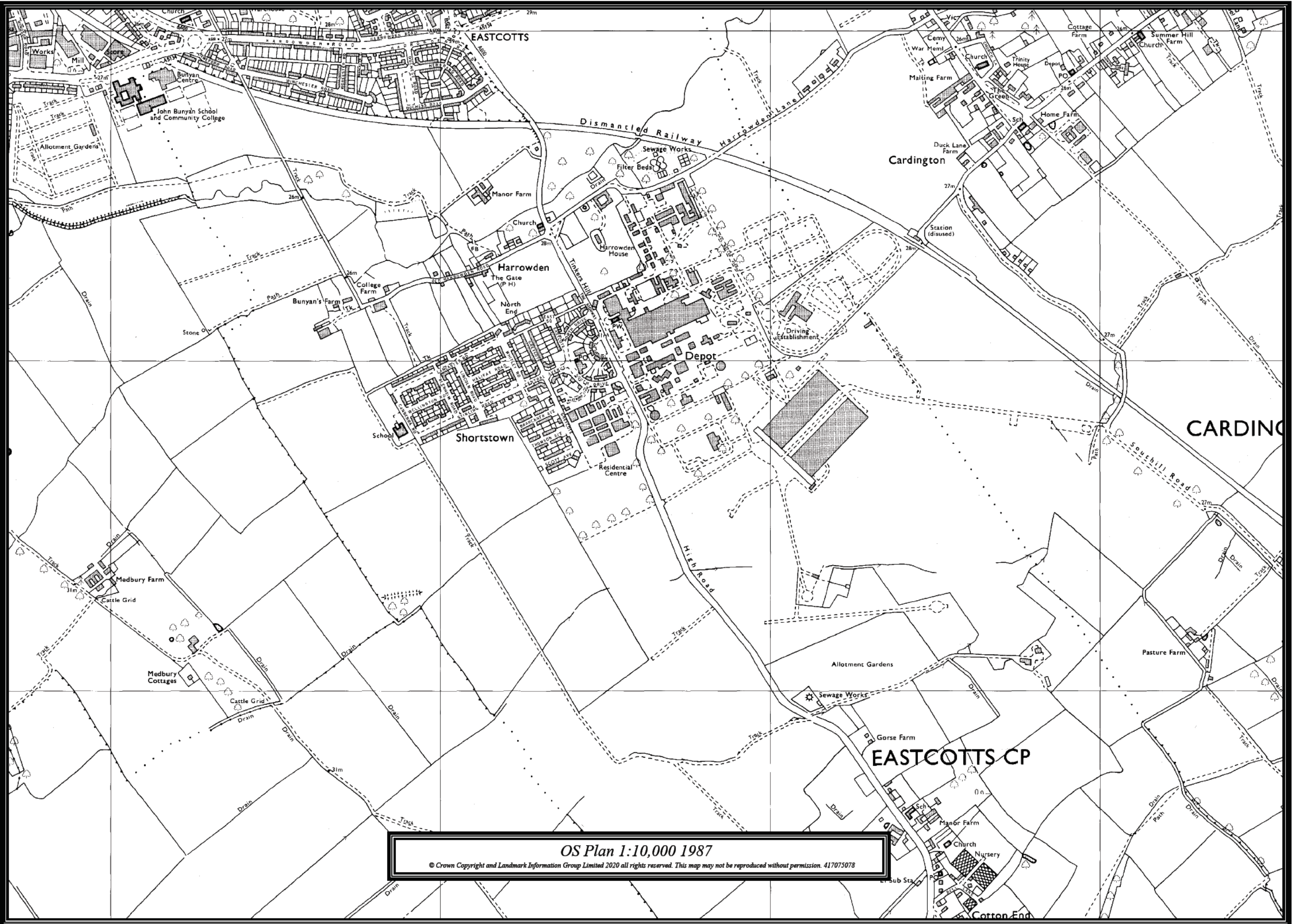
OS County Series: BEDFORDSHIRE 1:10,560 1887-1892
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Russian Map: Bedford 1:10,000 1971
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OS Plan 1:10,000 1987
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