



# Archaeology West - Contract No. C245 Building Recording – Departures Road, Paddington Station

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## **1 Introduction**

- 1.1.1 This document reports on the historic building recording of the Departures Road area of Paddington station (NGR TQ 265 813). The main recording work was undertaken in 2009 by Scott Wilson Ltd on behalf of Crossrail. The main report was prepared by Rebecca Lane. Fieldwork was carried out by members of the Scott Wilson Heritage team.
- 1.1.2 Further limited recording was undertaken by Oxford Archaeology during the development works in the form of a watching brief. The results of this are included at appendix 4.
- 1.1.3 The Departures Road area is located to the southwest of Paddington Station, adjacent to the mixed-date buildings which form the departures range. To the southwest and running parallel to Departures Road is Eastbourne Terrace, which is set at a higher level than the station. Buildings along this road comprise a mixture of modern buildings and some 19<sup>th</sup> century properties, generally several stories in height. At the southern end, Departures Road is bounded by Praed Street, which runs along the front (southeast) façade of Paddington Station and at right-angles to Departures Road and Eastbourne Terrace.
- 1.1.4 Departures Road appears to be a sunken feature given the higher level of the adjacent Eastbourne Terrace, but sits at the same level as the rest of Paddington Station to the northeast. Its south-western side is formed of a large brick retaining wall, surmounted by railings, which forms the boundary between the road and the pavement of Eastbourne Terrace. Towards the centre of Departures Road is a canopied area with a large curved roof structure supported against the departures side buildings to the northeast and on pillars incorporated into the railings to the southwest. This now forms the main taxi rank for Paddington Station, giving access to the station via a large centrally placed arcade in the departures side buildings.

## **1.2 Aims and objectives**

- 1.2.1 The building recording has been undertaken in accordance with the Specification for RCHME (English Heritage) Recording in Departures Road (CR-SD-WES-CN-AE-00006) issued as part of the City of Westminster Heritage Agreement (see below). The main recording was carried out between the summer of 2008 and March 2009.
- 1.2.2 The aim of the survey was to provide a record of the structures prior to the redevelopment of the area, including the demolition of the retaining wall, railings and canopy. It also aimed to identify significant archaeological features reflecting the form and function of the area at the various stages in its development. The report interprets the findings of the metric and photographic survey in light of the documentary research undertaken.

## **1.3 The Heritage Agreements**

- 1.3.1 There are five Heritage Agreements between the Nominated Undertaker, the City of Westminster, and English Heritage, detailing the heritage

requirement for the Crossrail works that affect listed buildings within Paddington Station.

1.3.2 These are:

- The agreement covering works affecting MacMillan House;
- The agreement covering the canopies in Departures Road attached to Macmillan House and railings between Departures Road and Eastbourne Terrace;
- The agreement covering works affecting the London Street Deck;
- The agreement covering works to mitigate settlement that may potentially affect parts of Paddington Station; and
- Works affecting Paddington Underground Station (Praed Street).

1.3.3 The Heritage Agreements set out the requirement for building recording works within Paddington Station and form an integral part of the overall works package. There are two Heritage Agreements that require building recording.

1.3.4 These are:

- The agreement covering the canopies in Departures Road attached to Macmillan House and railings between Departures Road and Eastbourne Terrace; and
- The agreement covering works affecting the London Street Deck.

1.3.5 The provisions of the Heritage Agreements relating to building recording at Paddington Station are set out in Appendix 1, Schedule 1, Part 2, Sections 2 and 4 of the Heritage Agreement for Departures Road.

1.3.6 The Heritage Agreement requires the recording of two structures to RCHME (Royal Commission on the Historical Monuments of England) level 3 in Departures Road. These include:

- Eastbourne Terrace retaining wall and railings as required in section 2; and
- Departures Road canopy as required in Section 4.

## 1.4 Recording Procedure

- 1.4.1 The specification of works submitted and agreed by the several parties sets out the methodology for recording. The level 3 record required for Departures Road is an analytical record. This includes a measured survey of the building, which comprises a plan of the Departures Road area, including reflected roof structure, and elevations of both sides of the retaining wall between Departures Road and Eastbourne Terrace, and the railings surmounting it. A section through the canopy and railing wall has also been provided, and plans of 44 trusses, representing one drawing of every variation in truss form observed on site. These were compiled using a combination of laser scan survey and hand survey and then checked on site for accuracy and enhanced to illustrate archaeological features. The drawings were subsequently reproduced in AutoCAD for integration into the report. Plans are presented at 1:100, and elevations at 1:50. In the canopy, trusses have been drawn at 1:20. Phased plans and elevations have also been provided at 1:50.
- 1.4.2 A comprehensive photographic record has been undertaken using medium format and digital cameras. Black and white medium format photography was used to record the elevations and general images of the trusses, and general images of internal spaces. Colour digital images were used to replicate the medium format record and record details of fixtures and fittings, and any detail of construction and phasing. A record of the photographs taken has been made of photographic archive sheets (Appendix 2). The photographic archive has been collated, and will be submitted to the Greater London Historic Environment Record with additional copies deposited with the National Monuments Record (Swindon). In addition, an OASIS form will be filled out for the works.
- 1.4.3 A written description of the buildings was produced using the measured and photographic survey information and notes taken during on-site observation. This has identified features of archaeological and architectural interest and evidence for the chronological and structural development of the area.
- 1.4.4 The written record was supplemented by documentary and historical research comprising an examination of the relevant documentary (primary and secondary), pictorial and cartographic sources. These sources were critically examined and integrated into the overall interpretation of the site. Sources were consulted at a number of locations including the Network Rail Archive (York), the National Railway Museum and Westminster Archives.

## 2 Historical Background

### 2.1 Paddington Station and the Great Western Railway

2.1.1 The construction of Paddington Station should be seen in the context of the 'railway mania' of the late 1830s and 1840s – a period when competing railway companies, spurred on by intense speculation from shareholders, fought to expand the embryonic British railway system to provide the best and fastest services for passengers and the greatest profits for themselves. Hundreds of separate companies were founded, many of which failed to raise the money to even begin line construction. The Great Western Railway Company was founded in Bristol in 1833 with the intention of linking the city to London, and ensuring the continued success of the port as a trading centre. It was to become one of the most successful and well-recognised of railway corporations, but initially it faced the same problems as every other ambitious company, with the challenge of raising the necessary finances to begin construction of the line. One of the earliest decisions of its board was to hire the young Isambard Kingdom Brunel (1806-1859) as Chief Engineer to survey and design the line. Brunel's influence on the Great Western Railway line was critical, as he both chose the line to be taken and, famously, the broader gauge used which significantly increased the costs of the line. The company received its Act of Parliament in 1835, and construction could therefore commence. The first section from London to Maidenhead route opened in 1838 and by 1841, the line from London to Bristol was fully open.

2.1.2 Crucial to the success of such lines to the capital was the siting of the London terminus. Land in the capital was, as always, at a premium, but it was essential to bring any line as near as possible to the city in order to provide attractive routes for passengers. Initially the Great Western Railway entered into negotiations with the London and Birmingham Railway to share their proposed terminus at Euston, but the railway companies were typically suspicious of each other and ultimately, terms could not be agreed. Various locations were postulated for a separate GWR terminus, including Vauxhall or the south bank of the Thames adjacent to Westminster and Waterloo, but eventually Paddington was selected. However, the construction of the permanent station was delayed due to cost and until 1845 the line operated from a temporary station slightly further west than the current station. By 1850 however, it was agreed that construction of the permanent station should begin.

2.1.3 The location of the station was designed to take advantage of a number of factors. It was situated close to the Grand Union Canal, which provided a useful trade link, and its location in a shallow basin minimised the burden for locomotives as they pulled into the station (Plate 1). In agreeing to sell the land, the local parish vestry also stipulated that the station be built at the lower level, with two bridges constructed to allow traffic to travel over the railway lines.

2.1.4 Brunel's early design work for the station shows that initially, he intended a grand façade to the southeast, but following the example of other railway companies the board insisted on the incorporation of a hotel at the 'end' or

southeast of the site. Access to the station area was therefore limited to the northern and southern elevations of the station, preventing the grand approach that Brunel had envisaged. The design of the hotel, moreover, was given to another architect, Philip Charles Hardwicke (1822-1892). This may have been because Brunel was too busy to oversee this element personally (Brindle 2004, 36), but it further curtailed Brunel's influence on the overall style of the building.

2.1.5 Despite these pressures and limitations, Brunel's design for the station was both innovative and architecturally impressive. The external elevations over which Brunel did have control were relatively modest, with low ranges of buildings in a classical style. Inside the train-shed however, Brunel's roof design created an architectural set-piece to rival any other London station. The decorative ironwork was overseen by an architect, Matthew Digby Wyatt (1820-1877), who Brunel requested to assist him, possibly again due to pressure on time. Fox, Henderson & Co., who had been responsible for construction at Crystal Palace, were appointed to construct the station. Work began in 1851, and a staged programme was agreed upon, whereby the departures and arrivals sides would be completed separately. Construction of the departures side was started in 1851, with the intention of going into operation first. However, there were considerable delays, and the departures side was not open for trains until January 1854. The arrivals side was completed later in the year.

2.1.6 The completed station is shown on Stanford's map of 1862 (Plate 2). This shows the layout of the train lines under the three spans of the main roof, with detached buildings to the north and south providing the necessary ticket offices and passenger accommodation and the further block to the east indicating the Great Western Hotel.

2.1.7 Following the completion of the fitting out of the station in 1857, no further significant works to expand the capacity of the station were required for 50 years. However, while passenger capacity remained adequate, there was an increasing demand for office space. This led to the construction of a series of additional office blocks along the southern side of the station, infilling between the original buildings. In 1876, a building was constructed between the western offices and the ticket office building. In 1878-80 Brunel's original Eastbourne Terrace was expanded with the addition of a second storey and a loft above. In 1880 this range was again extended, further to the east infilling the original carriage entrance into the departures side with more accommodation. By the early 20<sup>th</sup> century the company were also purchasing residential properties on the southern side of Eastbourne Road for conversion to further office accommodation.

2.1.8 In the early 20<sup>th</sup> century the station saw two phases of significant alteration. The first, in 1909-1916 entailed the construction of three additional platforms to the north of the station, entailing the widespread re-arrangement of the arrivals side. This was enclosed within a roof designed to match Brunel's earlier three-span railway shed, creating an additional span to the north of the originals. The 1910s saw the peak of railway travel in Britain, and by the early 1920s many smaller railway companies faced financial difficulties. The government instigated a wide-ranging reorganisation of the railway companies – consolidating the smaller lines to create the 'Big Four'. Great Western alone retained its former corporate identity, but was put in control of

additional lines related geographically to its previous area of influence. By the late 1920s the Great Western Company faced difficulties in raising the capital needed for further work to the station. In 1930, further alterations were undertaken with a substantial government loan. Amongst other things, this saw the infill of the final gap between the hotel and the Eastbourne Terrace with a large nine-storey office block. This created a continuous façade along Eastbourne Terrace. Both extensions to the east also included an extension to the canopy which covered Departures Road, between the retaining wall and the façade of the departures building.

2.1.9 During the Second World War, the station suffered significantly from bomb damage. In 1941 a bomb hit Departures Road, demolishing half of an office block, and part of the canopy over Departures Road. In 1944 further bombing damaged the northern span of the main train shed and the lines underneath. In 1948 the railway companies were nationalised. Struggling with the consequences of the war, the government had little to invest in the system, and much of the war damage at the station was not made good until the mid-1950s. The gap in the Eastbourne Terrace façade was infilled with a two storey building. Further repairs were undertaken in 1968-1969 when much of the original Paxton roofing was removed from the main railway shed and replaced with contemporary glazing. Further restoration, again focussing on the train shed roof, was carried out in the late 1980s and early 1990s.

## **2.2 Eastbourne Terrace and Departures Road**

2.2.1 Departures Road has a distinctive form, largely born of the lower position of the station in relation to the surrounding streets. This is a product of the original design for the station, the lease of the land to the Great Western Railway Company specified that the station should retain the low position of the land, using bridges to span the lines further to the west. Following the decision to include a railway hotel in the design of the station, Brunel's design of the exterior of Paddington Station was limited to the facades to the north and south. Brunel's chosen design suggests that following this, his architectural focus turned inwards, with the roof of the railway shed creating the main architectural set-piece of the station. His design for the façade of the departures side building was only two storeys high, which when combined with its sunken position in relation to Eastbourne Terrace, means that the building forms a low-key entrance to the station. Correspondence from Brunel to one of his assistants indicates his intentions for Departures Road:

'I have been for some time past trying to see if I could not adopt your plan of putting the offices over the range of buildings of the booking office, and two new features – an inclined plane parallel with Eastbourne Terrace and a glazed roof covering thereto ...' (Brunel to Saunders 1851, quoted in Brindle 2004, 112).

2.2.2 Construction of the departures buildings, including the canopy, commenced in late 1851, due for completion the following year. The programme met with significant delays, and the departures side did not open to trains until January 1854. These delays were generally caused by a huge pressure of work on Fox, Henderson & Co., the contractor appointed to undertake the construction work. In March 1852, they appeared before the board of the



Great Western Railway to answer to the problems on site. At that time they indicated that the approach road to Eastbourne Terrace was due to be completed within ten days, demonstrating that these works were carried out relatively early in the construction process.

2.2.3 As constructed, the Departures Road ran the full length of the station parallel with Eastbourne Road. To accommodate the different road heights the road sloped downwards from both ends towards the departures building, creating a level central area from which the main station entrance and booking office was accessed. The road was surfaced with small stone sets (Brindle 2004, 112) which were designed to help horses gain purchase on the inclines from the station entrance. Where the road fell away, a large brick retaining wall was provided against Eastbourne Terrace. This was surmounted by elaborate cast iron railings. Two openings in the railings allowed access to stairs built against the retaining wall, allowing direct pedestrian access from Eastbourne Terrace to Departures Road. Also incorporated into the railings were supports for the roof structure, which was supported on the station side by a projecting cornice on the departures building. The canopy sat in the centre of the elevation, covering the whole frontage of the departures building. At its eastern end, the roof structure had large pediment running above the road with a centrally placed clock around which ran the words 'Great Western Railway' with 'Departure Platform' below. This was supported on its southern end by a large rusticated column. The roof structure was an unusual variant on the Paxton-style ridge and furrow glazed roofing employed elsewhere in the station (Plate 3). This featured glazed roofing sloping from an apex in the centre of each bay. Between each bay ran a low gutter, which elsewhere on the station was supported from below. The canopy over Departures Road, however, had distinctive curved trusses rising above the line of the glazing and supporting the guttering from above. The guttering then discharged rainwater into the canopy supports in the railings, which were hollow and acted as downpipes, discharging water into the underground drainage system.

2.2.4 As noted above, the original departures building was a detached block located centrally along the departures axis of the station. Following the opening of the station, demand for office space for the expanding Great Western Railway Company led to the construction of a series of further office buildings alongside the original departures building. In 1878-1880 the departures building was expanded with an additional storey and loft, and a seven-bay extension to either side of the original departures building. This expansion however, still proved inadequate for the company, and a further block was added to the east again in 1880. This was used to provide an extension to the canopy on Departures Road, but retained the original departures entrance sign on its eastern façade (Network Rail Plan MF33767 and 33913). By the end of the 19<sup>th</sup> century, the original building and associated canopy had been subject to considerable change, but retained a cohesive design faithful to Brunel's original and unusual design for the area. This is illustrated in an early 20<sup>th</sup> century photograph of the area, taken from the junction of Eastbourne Terrace and Praed Street (Plate 4). The phases of extension to the departures side building are evident in the distinct blocks rising behind the canopy, but it is notable that the canopy presents a unified design with the uninterrupted line of railings along Eastbourne Terrace. The Paxton-style roof has similarly been replicated.

2.2.5 In the early-20<sup>th</sup> century some modification was undertaken on the original design of the retaining wall and associated railings. Undated drawings from the Network Rail archive (DMFP60017493, DMFP60017494 and DMFP60017610) indicate a redesign, the main feature of which is the construction of large piers on the southern side of Departures Road (Plate 5). At lower level, against the retaining wall, this constituted large brick buttresses which were built up against the original retaining wall. These supported rusticated piers were of brick faced with render. They rose up through the railings, which were presumably modified to fit. The reason for this alteration appears to have been some inadequacy in the provision of support of the roof and in the provision of rainwater goods. The re-design included the provision of larger downpipes, incorporated into the brick piers. These were substantially broader than the original downpipes which were provided within the railings, presumably reflected a perceived inadequacy in the original provision. The paper design includes a series of 50 piers, one for each bay of the 'Paxton' roof. However, there is a further plan in the archive dated 1940 (Plate 6, MF17975), which shows the Departures Road canopy in its contemporary state. This indicates that some modifications were made to this design prior to its construction, with only half the number of piers added; one for every two bays of the Paxton-style roof. Presumably this was felt to still provide an adequate support and rainwater system.

2.2.6 Shortly after the 1940 plan was drawn up, the Departures Road area suffered significant damage. In April 1941, a bomb destroyed part of the 1880s office block and the eastern end of the Departures Road canopy. A contemporary photograph shows the extent of the damage (Plate 7). This indicates significant damage to the retaining wall as well as the destruction of the buildings and associated area of canopy. The image also indicates that most of the railings surmounting the east and centre of the retaining wall had been deliberately removed prior to this date, probably due to metal collection as part of the war effort. A further photograph from 1944 indicates that some of this damage was rectified relatively quickly, with repairs to the retaining wall complete by this time (Bryan 1997, 16). This presumably

represented the repairs needed to keep the area in use. After the war, the destroyed section of canopy was proposed for replacement in 1946 (Network Rail MF25703) but this project seems to have been delayed and it was finally replaced following the nationalisation of the railways in 1948 (Plate 8; Network Rail MF15840). This reconstruction also saw the removal of the surviving Paxton-style roof, replaced with a very different style of canopy, although respecting the proportions of the original with the re-use of the surviving wrought iron girders which had been used to support the guttering. They were re-used internally as conventional roof trusses to support a curved roof of contemporary materials. To the east where the canopy had been destroyed, a further 21 new trusses were added. The roof covering included glazed panels to the north running the full length of the canopy to the north, and lighting the walkway underneath. The remaining area was covered in corrugated sheeting.

2.2.7 The additional 21 trusses returned the canopy to its original extent and covered the area of the first (1880) expansion, but did not incorporate the second stage of expansion, the buttresses of which were left unoccupied in the retaining wall. The newer trusses form a lighter structure, reflecting the smaller loads of the contemporary roof. It is not clear whether the section of the original Paxton-style roof was removed and replaced at the same time, or at some point in the following decade.

2.2.8 The restoration of the railings on top of the retaining wall were finally undertaken in 1956-7 (Plate 9; Network Rail R70896). The missing sections of railings were replaced with modern copies, similar in style, but using a different material and a simpler overall design. The new railings also sat on more conventional brick parapets, rather than the distinctive curved cast-iron base used for the original railings. Original railings to the west of Departures Road were retained. Thereafter, only minor maintenance and modifications were undertaken; such minor repairs to the trusses were carried in 1985 (Network Rail N17936). This included the repair or part renewal of the surviving 19<sup>th</sup> century trusses, although the extent of this renewal is not known. Additional wind braces were also added in the westernmost canopy bay, reflecting the additional loads on this exposed area of the roof structure.

### **3 Fieldwork Results**

#### **3.1 Site description**

3.1.1 Paddington Station is orientated on a northwest to southeast alignment. For the purposes of the report however it has been aligned to the cardinal points. Thus the long elevation along departures road is assumed to be orientated west to east, with the main station to the north and Eastbourne Terrace to the south.

3.1.2 Departures Road runs parallel with Eastbourne Terrace to the south of Paddington Station. It is a long roadway, some 375m, which slopes downwards from either end towards the centre to provide access to the station, which sits at a lower level than the surrounding streets. To the west, this is accessed from Eastbourne Terrace, and to the east it meets with the junction of Eastbourne Terrace and Praed Street. To the south the roadway is defined by a large brick retaining wall, which divides the road from Eastbourne Terrace which runs at a higher level to the south. This is surmounted by a series of railings which mark the boundary of Departures Road from Eastbourne Terrace. In the centre of Departures Road, piers in the retaining wall support a roof canopy, which sits over the main entrance point to Paddington Station; an open arcade in the centre of the departures building to the north of Departures Road. The roof canopy consists of a series of 44 trusses, of mixed date and style. To the north these are supported on a projecting cornice running along the departure building.

3.1.3 This description therefore focuses on three distinct areas of fabric; the railings along Eastbourne Terrace, the retaining wall between Eastbourne Terrace and Departures Road, and the roof canopy over the central section of Departures Road. For the purposes of the report, these three areas have been described separately.

3.1.4 It should also be noted that, given the length of Departures Road, for both the retaining wall and railings the description has been divided into three sections reflecting natural divisions in the fabric. These have simply been labelled east, central and west, and reflect the natural divisions in the fabric between the open roadway to the east and west and the central canopy section (Figure 1). It is hoped that these will help to clarify the description, and allow easy cross reference between the three descriptions.

#### **3.2 Eastbourne Terrace railings (south facing elevation)**

3.2.1 The railings run the full extent of the retaining wall from west to east. For the purposes of the report each section (west, central and east) has been described with panel numbers working from west to east. The detail of the railings and the associated numbering is shown on Figure 2.

##### **3.2.2 Western section**

3.2.3 The western section of railings is the oldest extant set to be examined. The railings run for 143m from the junction of Eastbourne Terrace with Departures Road, to the western end of the canopy, marked with a large rendered pillar. The railings sit on an unusual curved, cast-iron base (Plate

10). This appears to be an original feature. The western section encompasses 47 panels of railings, with one panel (panel 3) modified to create a gap for pedestrian access from Eastbourne Terrace to Departures Road. Generally each panel consists of 21 balusters between each post (Plate 11), although the last (47<sup>th</sup>) panel is shorter, with just 19 balusters.

3.2.4 The posts are of octagonal profile, 1.78m high surmounted by an orb and spear finial. Running outwards from each post are one low level and two high-level horizontal rails which link the panels together. The balusters are circular in profile and run through the three horizontal rails. At their base, below the low level horizontal rail each baluster has a bulbous profile. Where the balusters run through the two high level horizontal rails they form squares which are infilled with a crossed ornamentation. Above the horizontal rails the balusters are surmounted by an alternating pattern of fleur-de-lis and spear-head finials.

3.2.5 Several of the panels have small variations from the typical designs. In some cases this appears to be a case of damage and repair but some may be original variations to the design.

3.2.6 In panel 5, the pattern of alternating finial heads is interrupted, with three fleur-de-lis finials together (Plate 12). This is presumed to be a repair, although the central finial, the one which would have been replaced, appears very similar to its counterparts on either side. This may represent an early repair. In panel 42 it was noted that two of the balusters are bolted to the cast-iron coping (Plate 13) with metal straps. This is assumed to be an early, if not original feature as the strapping appears to be in the same material as the original railings, and the rivets used to attach them are of a large rounded form, similar to those seen at higher level on the posts where they attach to their adjacent panels. In panel 44, a metal strapping or clamp was noted to have been attached the low level horizontal rail (Plate 14). This is assumed to be a relatively early repair, again apparently using cast-iron.

### 3.2.7 Central section

3.2.8 The central section of railings have some similar architectural detailing to those in the western section, but are substantially different in form, rising much higher to form a barrier adjacent to the canopy roof over Departures Road. They also represent a much later period, being reconstructions of the original railings that stood in this area. This is indicated by their simpler styling, although retaining some similarities to the originals, and also their construction in steel rather than cast iron. The railings in this area sit on a low brick wall, with is surmounted by a cement coping. Each bay of railings is divided by one of the rendered piers which support the roof structure. These project outwards slightly beyond the coping of the low wall. They are of brick, but rendered and styled to appear rusticated, with a series of regular indentations giving the impression of large stone blocks.

3.2.9 In all, there are 20 bays in the central section, with two railing panels in each (Plate 15). Each bay has a central post which has a squared profile. Towards the top the post tapers slightly, and is then surmounted by a foliated finial. The posts do not run into the brick wall below, but sit on a low level rail which runs from the two brick piers either side. A panel of railings

sits to either side of the post. These have two different sets of balusters of differing heights set in an alternating pattern. The taller balusters run up to two high-level horizontal rails just below the top of the post (Plate 16). Between the rails and the posts a series of simple circles have been used to create a decorative effect. The lower balusters run to half height, where two horizontal rails run across each panel with the same crossed decoration seen on the original railings in the western section. Both the lower and higher balusters are surmounted with fleur-de-lis finials, of a similar, although slightly simplified form, to the original railings to the west. However, those at high level are substantially larger. No damage or repair was noted on any of the railing panels.

### 3.2.10 Eastern section

3.2.11 The eastern section of railings reflects a coherent set of railings of the same date as those in the central section. Again some effort has been made to match these to the original railings in the western section, although the forms have been slightly simplified (Plate 17). These run for some 100m, from the eastern end of the canopy which is marked by a large rendered pillar, to the junction of Departures Road and Eastbourne Terrace close to the Praed Street junction. The railings sit on a low wall, built of a brick similar, but slightly yellower in colouring to that used on the retaining wall. This is surmounted by a cement capping which overhangs the walling. It is of a simple squared design. The railings are generally 1.35m high, with regular posts creating a series of panels; 53 in the eastern section. The posts are of a squared profile, 1.6m in height, with tapering upper ends surmounted by a foliated finial identical in form, although slightly smaller than, those seen on the posts of the central section. Each panel has a series of alternating balusters, square in profile, with the same spear and fleur-de-lis finials as seen on the original railings in the western section. This is also the case with the crossed design used between the two high level horizontal rails. The bases of the balusters are more simple however, running into the low level rail with no additional ornamentation. The individual balusters also do not bond into the coping below, sitting instead on the low level horizontal rail which runs into the posts to either side of the panel.

3.2.12 Some damage and repair to the railings was noted, despite their more recent date. Panels 16 and 36 both have missing finials, in both cases one of the fleur-de-lis finials appears to have broken off. In panel 51 there is a further missing fleur-de-lis finial and also three spear-heads running together (Plate 18), suggesting that a further missing finial was replaced with the alternative spear-head design.

## 3.3 Retaining wall (north facing elevation)

3.3.1 The retaining wall incorporates a number of buttresses, the majority in the central section but with some further irregular buttresses in the eastern section. For ease of reference, each of these has been given a letter reference starting at A at the western end of the central section and running through to Y in the eastern section. These letters appear on the drawing of the elevation (Figure 3).

### 3.3.2 Western section

3.3.3 The western section of the north facing elevation consists mainly of the brick retaining wall surmounted by the original railings as described above (Plate 19). The walling slopes downwards from west to east, so that it reaches a depth of 3.1m adjacent to the western end of the central section. The brick is a standard size 19<sup>th</sup> century red brick laid in English bond (one row of headers to every row of stretchers). This relatively secure bond reflects the important structural role of the wall, bearing the load of the higher ground level on Eastbourne Terrace.

3.3.4 As with the original railings which sit upon it, this reflects one of the less altered areas of Departures Road, with relatively little in the way of later insertions. There are no buttresses in this area of the retaining wall, and it therefore runs uninterrupted for most of the western section. At the eastern end however, two recesses have been inserted into the wall, the disrupted brickwork around them indicating that they are not original (Plate 20). These have cement lintels and large metal grilles.

### 3.3.5 Central section

3.3.6 The central section of the north facing elevation is again chiefly characterised by the large brick retaining wall dividing Eastbourne Terrace from Departures Road. In this section, and because of the relatively level ground surface of Departures Road in this area, the retaining wall is of a consistent depth, of approximately 3.8m from east to west. Generally the wall has a battered profile, projecting outwards towards its base. This is probably another structural feature designed to make the wall strong enough to retain the higher ground behind. Throughout the central section the retaining wall is subdivided by a series of buttresses. These are square in profile, and project outwards. They do not batter as the retaining wall does, so appear considerably thicker at the top, as the wall slopes away. As noted above, these have been assigned a letter starting with A at the western end, and finishing with U at the eastern end of the central section (V to Y are described as part of the eastern section). These buttresses have some consistent features, and where possible comparable features have been noted. There are minor but significant variations in many of them however.

3.3.7 Buttresses A and B, and the bay in between them, are rendered (Plate 21). This appears to be a relatively late feature, certainly not original. It is not clear what purpose this render has, but it may reflect a degrading of the surface brickwork in the area. This covering prevents detailed inspection of the walling, but it is notable that the stringcourse which runs at high level along most of the bays in the central section is absent from this bay.

3.3.8 The bay to the east of buttress B is rendered again, and contains a staircase, allowing pedestrian access from Eastbourne Terrace to Departures Road (Plate 22). Because of the stair, the wall does not batter, running straight downwards instead. The stair itself appears to have modern detailing, but certainly reflects an original part of the design for the Departures Road area. The stair runs downwards from west to east, with two flights of ten steps and a small intermediate landing area half way down. The treads and risers are now concrete, and the railing running along its northern edge is of a modern, utilitarian design with rounded balusters

joined by a high and low level rail. Where the stair projects northwards from the main elevation the underside has been infilled with a small room encompassing the area under the stair and running further back under the Eastbourne Terrace railings. The interior of this is described below (see section 3.3.4) but the exterior is again rendered up to the level of the top of the door. The brickwork is exposed above this, and a brick stringcourse is present. This is 0.21m in depth comprising two rows of stretcher-laid brick to top and bottom, with bricks laid at an angle in between to create a dog-tooth type pattern. This only appears on the area around the door, and does not continue onto the adjacent side panel of the stair. It is of the same form as that observed further west on the elevation, and suggests that this area of brickwork under the stair represents part of the original fabric of Departures Road.

3.3.9 The staircase obscures the lower part of buttress C and continues into the adjacent bay. The visible section of buttress C is formed of exposed brickwork, with distinctive bull-nosed bricks used on its external corners (Plate 23). This is presumably due to the proximity of the buttress to people passing up and down the stair. The bay to the west of buttress C is also rendered (as with the two previous bays) and has no visible features. Again it lacks any indication of a stringcourse, and because it contains part of the stair it again lacks the usual battered wall profile. However, at the western end of this bay, adjacent to buttress D a small area of the fabric of the wall is exposed, and follows a battered profile, projecting outwards from the main face of this bay. The adjacent buttress D is also of exposed brickwork (Plate 24). This buttress is the first to have the majority of its surface exposed. It is of red brick laid in Flemish bond (alternating headers and stretchers in each row), as opposed to the English bond of the retaining wall behind. At lower level it has no features, but at high level it has a band of cement. This is the same depth and at the same height as the stringcourse noted on the stair (see above), and which commences on the main elevation in the bay to the west of buttress D. Close examination suggests that the stringcourse actually courses behind the buttress, and the cement area indicates the infill of the shallower area in front of the stringcourse. Running into the buttress through the cement is a downpipe, which above this point runs down exposed against the side of the buttress (and the pier above) from the guttering which runs along the southern side of the roof. This suggests that the buttresses carry the rainwater goods, allowing them to issue into an underground drainage system.

3.3.10 The bay adjacent to buttress D has a stringcourse running at high level (see Plate 24). This is of the same form as that on the staircase to the west, and is formed of three lines of brick, the upper is laid in stretcher bond, the lower in header bond and in between, the brick is laid at a 45 degree angle to form a diamond or dog-tooth style patterning. This runs the full length of the bay. The bay also batters with the standard incline of this area of the retaining wall. Buttress E and its adjacent bay to the west are of the same form as that just observed (Plate 25). The buttress has the same area of render at the level of the stringcourse, but in this case, there are no associated rainwater goods.

3.3.11 Buttress F is of the same form as buttress D, again including a downpipe which sits against the upper level of the buttress (and the pier above) but curves into the buttress in the cement area adjacent to the stringcourse.



This suggests an alternating pattern, with only every other buttress designed to carry rainwater goods. The adjacent bay again has a stringcourse, but there are no further features.

- 3.3.12 Buttress G is of the same proportions as those to the west, and similarly includes the high level cement course, although following the alternating pattern of rainwater goods it does not incorporate a downpipe. At low level the buttress is distinctive for the inclusion of a rendered section, some 1.4m high used to form the same pattern of rustication seen at high level in the piers supported by the buttresses (Plate 26). This is the only buttress which has this feature. There is no indication that the render ever ran the full height of the buttress, although it is possible that such render could be removed without causing visible damage to the brickwork. The adjacent bay has no unusual features, and has the standard stringcourse running at high level.
- 3.3.13 Buttresses H and I follow the standard alternating pattern of features; H has a downpipe and I does not. The intermediate bay has no unusual features. The bay to the west of buttress I, however, includes a small recess with a wooden door set approximately 0.75m above ground level (Plate 27). This contains a modern fire-hydrant.
- 3.3.14 Buttresses J to N and the associated bays in between, follow the same pattern observed with alternating rainwater goods and no other unusual features. The bay adjacent to buttress N however, has the same arrangement as the bay between buttresses C and D, except in reverse (Plate 28). Adjacent to buttress N therefore is a short section of walling, approximately 0.25m wide which batters with the same incline as the remainder of the retaining wall. Beyond this, the walling runs straight downwards. This is not rendered, and there appears to be some disturbance to the brickwork in this area (see Plate 28). Buttress O beyond this is of an unusual form (Plate 29). At high level it has bull-nosed brick to the exposed corners, the same arrangement as on buttress C. Below this however, the buttress slopes outwards with a smooth surface. At its base it has a small cement section. In the bay adjacent to O is a projecting section of walling, rendered in a rusticated style. Like the bay between buttresses B and C, this has a doorway to a small room (Plate 30). That between O and P, however, does not project as far outwards and internal inspection of the wall revealed that it was constructed of modern breeze block (for internal description see below). The arrangement of buttresses N and O and their associated bays indicates that this area was the original location of the second stair, which is shown in this area on historic plans. Although removed some time in the mid-20<sup>th</sup> century, small surviving elements indicate its position in relation to the retaining wall. They also suggest that it was identical in form as that to the west.
- 3.3.15 Buttress P returns to the standard arrangement seen further west, although with patching around the downpipe which indicates that this downpipe has been replaced (Plate 31). The bay adjacent to buttress P likewise follows the standard arrangement, with the high level stringcourse and battered profile.
- 3.3.16 Buttress Q is again different. It is wider than the standard buttresses and has no rendered course at high level (Plate 32). The pier which it supports sits recessed from the edges of the buttress, whereas elsewhere the edges

of the pier line up with edges of the buttress below. East of this larger buttress Q, the walling of the adjacent bay lacks a stringcourse. This indicates that buttress Q marks the original end to the canopy, and that the stringcourse terminates at this point because further walling was originally outside of the canopied area. Buttresses R, S and T are all plain, without any render patches and the adjacent bays are similarly without features (Plate 33). Buttress U marks the current termination of the canopy. It is again very plain, although much broader, supporting a larger pier which marks the corner of the canopy. A junction in the middle of the buttress indicates that this unusual width is due a process of widening undertaken, with a later phase of brickwork discernable in the eastern side of the buttress (Plate 34). The bay between buttresses T and U shows some areas of slightly different brickwork, although this has been well matched to the original coursing pattern of the brick (see Plate 34). This may indicate the rebuilding of the retaining wall following the bombing damage in 1941. The features of the area from buttresses R to U indicate that this was the position of the 1880 extension to the canopy. Buttress U marks the end of the central section, and the additional buttresses (V to Y are described in the eastern section below).

### 3.3.17 **Eastern section**

3.3.18 The eastern section of the north facing section of Departures Road chiefly mirrors the western section with a brick retaining wall, sloping upwards to the east where Departures Road rises to meet Praed Street. This wall runs for approximately 100m and is laid in English bond. Towards the eastern half it runs largely uninterrupted, but where it deepens towards the west a series of brick buttresses are built up against it. Following on from the central section these have been labelled V to Z.

3.3.19 Buttresses V to Y are all of the same, relatively plain, form, with little in the way of exterior decoration. Buttresses V to X are regularly spaced, some 5.5m apart and follow the same bay rhythm as the buttresses in the central section (Plate 35). Buttress Y is 2.2m from buttress X, just under half the distance. This, and the cornice on the building opposite, indicates that these buttresses originally supported piers for the final extension to the canopy roof. The three intermediate bays between buttresses V, W, X and Y are all plain, with no continuation of the stringcourse observed in the central section for example. The only observable feature is a line of yellow brick placed centrally in each of the bay. This appears to be a re-build or repair to the earlier bays. It could be the result of some of the bomb damage, which affected this end of the canopy particularly badly, however the regularity of the feature and the relatively small re-built areas suggest it is more likely to be due to the deliberate removal of a previous feature; possibly a rainwater downpipe associated with the canopy roof that formerly sat over this area.

3.3.20 Immediately to the west of buttress Y is a doorway, set into the retaining wall (see Plate 35). This is covered with a sliding metal door. The interior of the room is described elsewhere (see section 3.3.4).

3.3.21 The remainder the retaining wall is relatively featureless, although there is one further buttress (Y) located a considerable distance from the others. This is also broader and lower than these, and appears to relate to the shoring of the retaining wall at some point. Elsewhere the brickwork of the

retaining wall is relatively featureless although there is a notable feature at the top of the walls. The retaining wall predominantly uses a typical red brick, but the top of the wall has a layer of yellow brick approximately 0.2m in depth. This relates to the low brick wall visible from Eastbourne Terrace upon which the railings are sitting. This is a later, post-war insertion, but the brickwork is the same distinct colouring as the centrally placed repairs in the buttresses to the east. This may indicate that the former features (possibly downpipes) in this area were removed at the same time as the post-war repairs to the railings.

### 3.3.22 **Rooms in the retaining wall**

3.3.23 Three rooms are located in the current retaining wall. Their location is shown on the plan (see Figure 1), although more detailed layouts are provided in Figure 4. One of these (room A1), is located under the current staircase and a further room (A2) represents a room under the former stair location. A further room (A3) is further east along the retaining wall and appears to be a later insertion.

3.3.24 Room A1 is accessed through a replacement timber door in the projecting wall under the current staircase. Internally the room has a large vaulted ceiling of brick, now with a large structural crack at approximately the level that the room begins to project outwards beyond the main elevation of the retaining wall (Plate 36). The walls of the room are of brick, and one notable feature has been built into the eastern elevation. This is a small recess approximately 1.2m from ground level with a timber framing (Plate 37). The purpose of this is unknown. To the western side the room includes a metal workbench built up against the elevation, this appears 20<sup>th</sup> century in date. To the rear (south) the room has some modern machinery

3.3.25 Room A2 is accessed through a replacement door in the north elevation. This elevation now runs parallel with the main elevation of the retaining wall, but this clearly represents a later insertion as although rendered to appear as ashlar stonework externally, internally it is revealed to be constructed of cement blocks (Plate 38). As with room A1 the ceiling is again formed of a large vaulted brick arch, with some evidence of the brickwork having been cut back against the northern elevation. The interior of the room is brick which has been whitewashed. The only current feature is a large high-level pipe.

3.3.26 Room A3 is accessed via a steel sliding door in the north elevation. This room is constructed of breeze block with a flat ceiling consisting of a series of reinforced steel joists (RSJs) packed tightly together, running east to west over the room (Plate 39). The floor and lower portion of the room are currently obscured by large amounts of debris. At higher level, the only observable feature was a series of metal hooks to the eastern end of the south wall.

## 3.4 **Departures Road roof canopy (plan)**

3.4.1 The roof canopy over Departures Road is supported to the south by I-section RSJs which rest on the piers above the retaining wall (Plate 40). To the north it is supported on further reinforced steel girders which rest against a cornice built into the wall above the ground floor of the departures building.

3.4.2 These girders support a series of 44 trusses, which in turn support the curving roof structure. These trusses divide into two sections. To the west is a series of 23 historic trusses which reflect part of the original roof structure of the area. To the east are a further 21 1940s trusses, which were added following the Second World War to replace the section destroyed by bombing. The plan (see Figure 1) shows that the two areas have a different layout. The 23 historic trusses are spaced according to the piers below, with two trusses per bay, one directly above the pier (although still resting on the RSJs which run continuously along the top of the piers), and one centrally placed within the bay. The exception to this is in the second bay from the west, where the location of the stair means that two trusses have been used in the bay, one either side of the gateway leading to the staircase. A further notable exception is truss 8, which rests on the 4<sup>th</sup> pier from the west. Here, two trusses have been used side by side on the pier (Plate 41). This feature is coincident with a set-back in the Departures Road building just after the truss. It is not clear whether the additional truss therefore represents a shoring of the structure at a perceived weak point relating to the change in the building to the north. To the east, the 1940s trusses are spaced differently, at a regular spacing of approximately 3.0m which does not respect the bay pattern set by the piers.

3.4.3 As noted above, 23 pre-war trusses surviving in the current roof configuration. These have a number of variations. The 23 divide into two broad categories, here described as type 1 and type 2.

#### 3.4.4 Pre-war truss: type 1

3.4.5 Nineteen (trusses 2-8a, 9 to 12, 14 to 17 and 19-22) are type 1. This is characterised by a trough base formed of several sections of cast iron riveted together by plates of two different widths (Plate 42). Truss 2 (Figure 5) is typical of this arrangement and other truss examples are given in Figures 6, 7 and 8. The trough rests on the I-section joists to the south and north. Above runs a curved T-section beam. This is braced against the trough by eight struts; four vertical struts are regularly spaced along the truss and four diagonal struts are spaced in between two in the centre, which cross which provide additional bracing and two running from the top of the outer struts to the base of the inner struts. The struts are riveted to the exterior of the trough (Plate 43). Running along both edges of the trough are a series of irregularly spaced holes (Plate 44). These appear to be a residual feature relating to the original structural arrangement of the trusses in association with the original ridge and furrow roofing.

3.4.6 Of these 19 trusses, several show some variation from this basic pattern, indicative of various repairs and alterations. Trusses 3, 12, 14, 15, 16 and 20 all have replacement ends represented by sections of trough with no residual holes (see Figures 6 and 7 for example trusses and Plate 45). These are riveted to the remainder of the trough by a metal plate with distinctively larger rivets. It is notable it is only the ends of the troughs which appear to have been replaced in this manner, possibly because these are subject to more damage from exposure to water.

3.4.7 Another variation is in the occasional use of struts which run into the interior rather than the exterior of the trough (Plate 46). Truss 17 has this feature

(Figure 7). This is generally a feature of the second style of historic truss (see description below), but on these trusses is probably indicative of a replacement strut.

#### 3.4.8 **Pre-war truss: Type 2.**

3.4.9 Four trusses (1, 8b, 13 and 18) belong to the second type (Figure 9). This is of the same overall form as type 1, with a trough base of the same proportions. It is also riveted together, although with less sections; three instead of the typical four in type 1 (Plate 47). The plates that join them are larger, with larger rivets used. The upper struts and beams are of identical form to type 1, but the struts are attached to the inside of the troughs rather than the outside. Most notable is the complete lack of the residual holes on either side (Plate 48).

3.4.10 It is possible that the variations are simply the result of a more widespread repair to the trusses than those in the previous category, but the style is very consistent. It has been suggested that these may represent trusses associated with one of the subsequent extensions to the original roof. If so, it is unclear how the troughs were fixed to the glazing of the roof, as they clearly lacked the means used in the original indicated by the residual holes.

#### 3.4.11 **1940s truss**

3.4.12 Trusses 23 to 43 are of this later type (see Figure 10). The proportions of this truss must have been determined by the decision to retain the original trusses in the 1940s roof, and the curved beam is therefore of the same proportions. A similar pattern of bracing has also been used. However, the base is a much slimmer T-shaped girder, as opposed to the distinctive trough form of the earlier trusses (Plate 49). This reflects the different, internal, role that the 1940s trusses were intended for.

#### 3.4.13 **Other features**

3.4.14 A number of additional features have been added between various trusses. Notable at the western end, between trusses 1 and 2 and at high level above the curved beam, are a series of diagonal braces (Plate 50). These are of a modern form, and appear to have been added to strengthen the roof structure in this area.

3.4.15 Additional straight horizontal braces have also been added between trusses 3 and 4. These are at low level, between the troughs at the base of the trusses. Between trusses 19 and 20 additional bracing has also been provided (Plate 51). It is not clear what purpose most of these inserted braces have played. Although some appear to be relatively old, there is no indication that they pre-date the 1940s modification of the roof structure, and it is most likely they relate to structures such as signage, modern versions of which are visible elsewhere on the roof structure.

#### 3.4.16 **The roof**

3.4.17 The 44 trusses support four high level L-shaped purlins which in turn support the main roof structure. This is still in its 1940s form; predominantly of corrugated metal sheeting but with two rows of glass panels to the north,

adjacent to the departures building (Plate 52). Towards the west the glass panels include a number of small hatches which appear to allow access from the adjacent flat roof into the interior of the roof structure for maintenance purposes.

## 4 Discussion

4.1.1 Consideration of the archaeological and historical evidence for Departures Road reveals that the structures associated with this area of the station have a complex structural history. This can be divided into six phases and these, an

### 4.2 Phase One: Construction 1852-1854

4.2.1 Construction of the Departures Road area took place as an integrated part of the construction of the departures side of Paddington Station between 1851 and 1854. In fact, documentary evidence suggests the area had been constructed by 1852, reflecting the relatively simple construction of the area in comparison to the more complex structures associated with the main train shed to the north. As laid out Departures Road consisted of a roadway sloping upwards to the west and east, with a large, level central area. This was defined to the south by a brick retaining wall. The walling would have been continuous with no buttresses. In the central section, under the roof canopy, this incorporated a distinctive high level stringcourse providing a decorative feature to the wall which would have been viewed by the majority of people entering the station. Outside the canopy, the walling was of plain brick with no ornamentation. As constructed, the retaining wall also incorporated two stairs, symmetrically arranged against the elevation. These also included two rooms, one underneath each stair. It is uncertain what their original purpose was, but the 1940 plan of the site shows that the western room was used as a 'meter house'.

4.2.2 The archaeological evidence indicates that the majority of this retaining wall survives in the current structure, with minor repairs to the eastern end due to later bomb damage. Similarly, the western stair survives, although the upper elements of it were renewed in the 1950s. The room underneath also survives in its original form, as does the room under the former location of the eastern stair, albeit in truncated form.

4.2.3 The retaining wall was surmounted by a series of ornate cast iron railings. These sat on a distinctive rounded cast iron base and included balusters with alternating finials of spear and fleur-de-lis heads. In the central section, the railings included balusters and posts running to double-height providing support for the roof canopy over the entrance to the departures building. The double height posts also provided the original means of removing rainwater from the guttering on the roof of the canopy. The archaeological evidence indicates that the western section of the railings represent the only surviving area of original railings, including the cast-iron base upon which they sit. In the central and eastern section the railings have been completely replaced.

4.2.4 Also part of the original construction phase was a distinctive Paxton-style ridge and furrow roof, with wrought-iron trusses at the junction of each bay to support the guttering from above. The archaeological evidence suggests that 19 of the original trusses survive, albeit in a different arrangement reflecting the modern roof they now support. There is historical and archaeological evidence that these original trusses have been subject to

repair which has seen many of the original elements replaced, but generally this appears to have been on a like-for-like basis, so that the original form of the trusses is still appreciable.

### **4.3 Phase Two: Extension 1880**

4.3.1 In 1880 the continued demand for office space at the station led to the construction of an additional range to the departures side building. As part of this an additional eight bays were added to the roof canopy over the Departures Road area. Archaeologically, this extension can be observed in the additional buttresses (P to U) which, although actually belonging to phase 4, define the area over which this additional phase of the canopy was constructed. It is notable that the bays between these buttresses do not make use of the original dog-tooth stringcourse. It has been suggested that some of the historic trusses which survive incorporated into the modern roofing, which have subtle but appreciable differences from the majority of surviving historic trusses, may relate to this additional phase of construction. It is possible that four of these (trusses 1, 8b, 13 and 18) do relate to this phase, although the archaeological evidence for this is not definitive as there appears to be considerable variation in the historic trusses due to a process of repair and restoration.

### **4.4 Phase Three: Extension, undated (late 19<sup>th</sup> century)**

4.4.1 Historic evidence indicates that following this 1880 extension a further extension, of seven bays was added. There are no direct records of this extension, and the exact date is uncertain, but historic photographs from the early 20<sup>th</sup> century show this additional canopied area, prior to the alterations carried out in phase 4 (see below). With little surviving fabric from these two phases, it is challenging to attempt to date them in relation to each other. It is possible that these further seven bays represent a modification of the 1880 extension, i.e. that 15 bays were constructed at this date rather than the planned eight for which the drawings survive. However, in the absence of definitive proof that this was the case, these bays have been assigned a separate phase.

4.4.2 Archaeologically the evidence for this phase is again the series of buttresses (V to Y) which although belonging to phase 4 define the area covered by the additional canopy. None of the trusses can belong to this phase, as this extension fronts the extension building which projects forwards from the departures building and the trusses and canopy was therefore significantly narrower in this area.

### **4.5 Phase Four: Modification of the roof canopy, undated (early 20<sup>th</sup> century)**

4.5.1 Undated historical records identify early 20<sup>th</sup> century modifications to the Departures Road roof canopy, which also affected the railings and retaining wall underneath. These show that the original roof supports which were incorporated into the railings, and which doubled as downpipes for rainwater, were replaced by large rendered brick piers which included broader rainwater downpipes against their north facing elevations. Although the drawings are undated they must post-date the early 20<sup>th</sup> century photograph (see Plate 4), which shows all three phases of the roof canopy



supported on the original system of cast iron posts. Although the plan drawings for the modifications show one pillar for each bay of the ridge and furrow roof, a subsequent plan from 1940 and the archaeological information indicate that in fact as constructed a pillar was only added every other bay.

4.5.2 The surviving archaeological evidence of this phase of construction is chiefly represented by the series of buttresses constructed against the retaining wall. Their later date is confirmed by the fact that the original stringcourse runs behind the buttresses, and that they are built in a different brick bond from the original wall. The pillars they support appear to have subsequently been rebuilt but their location and form is that of the originals. Subsequent alterations mean it is not clear what, if any, effect this modification had on any of the trusses or associated fabric in the canopy roof, but it appears that any such alterations were of a nature that means they cannot be identified in the surviving archaeological record.

#### **4.6 Phase Five: Second World War damage and subsequent reconstruction**

4.6.1 On 17 April 1941 the Departures Road area was damaged by the explosion of a parachute mine in the roadway. Historic photographs indicate that this bomb damaged the eastern end of the central section, demolishing part of the Departures Road building and the associated area of the canopy. The subsequent restoration of the area was a slow process, due to the continuing wartime restrictions and post-war Austerity budgets. A photograph from 1944 however, seems to indicate that damage to the retaining wall was repaired during the war, probably as part of basic works undertaken in order to ensure the area remained in use.

4.6.2 Following the end of the war, the canopy was reconstructed in 1948, although along much more modest and utilitarian lines than previously. This included repairs and alterations to the retaining wall, including an extension to buttress U, which now formed the end of the canopy, leaving the last bays of the former extent of the canopy unused. These alterations also saw the removal of the second, eastern staircase, which had been damaged by the bombing. The 1946 plan of the site indicates that the room underneath this stair was truncated, but remained in use as a 'waste paper store'.

4.6.3 Documentary evidence indicates that the remainder of the Paxton-style roof was removed for the insertion of a new roof. This may well indicate that although the western section of the roof was not destroyed by the bombing during the war, it was damaged. Post-war photographs of the station in general show that huge areas of glass and metalwork were damaged by enemy action, even if they escaped actual destruction. It is likely that the roofing in Departures Road was in a similarly poor state, and notation on the 1948 drawings for its replacement note the removal of glazing 'and zinc sheeting' from the ridge and furrow roof which probably indicates some temporary patching to the roof structure. It also may have been felt that the Paxton-style roof was outdated, and the necessity of reconstructing the eastern part led to an opportunity to build a more modern structure; lighter, cheaper and more easily maintained.

4.6.4 The roof constructed was a low curved structure, the form of which must have been, at least in part, dictated by the decision to reuse the surviving

external trusses as part of the internal roof structure. It is likely that all of the historic trusses were relocated, particularly due to the insertion of RSJs to support the trusses to the north and south. 23 new trusses were also constructed. The roof constructed in the 1940s is largely that currently visible in Departures Road, although some renewal of the fabric of the roof as part of general maintenance seems likely. This constitutes a curving structure largely covered in corrugated sheeting, although including two rows of glazed panels adjacent to the departure building over the pedestrian walkway.

4.6.5 In the 1954 the last of the war damage was made good with the reinstatement of the railings to the central and eastern sections of the area. These were designed to mirror the style of the surviving original railings, but used a simplified form and were placed on low brick walls rather than the distinctive curved metal base used originally.

#### **4.7 Late 20<sup>th</sup> century maintenance**

4.7.1 Following this post-war reconstruction no significant alterations have been undertaken, although minor maintenance has led to some changes, such as the insertion of the wind braces in the western bay of the roof structure in the 1980s. It is possible that ongoing maintenance has also seen the replacement, on a like-for-like basis, of some elements of the roof structure including the historic trusses, although the possible date of the repairs noted is not easy to identify from the current examination.

## 5 Conclusion

- 5.1.1 The archaeological and documentary evidence shows that the Departures Road area was constructed in 1852 as an integral part of the original design for Paddington Station. Its design was a considered and important part of Brunel's intentions for the station, providing a low-key but attractive means of accessing the departures side buildings. As constructed, the area's most distinctive feature was the large glazed canopy constructed of distinctive ridge and furrow glazing with external trusses in between to support trough guttering. This feature was unique to the Departures Road area, other areas of the station utilising a different form. Although this roofing has now been replaced, considerable parts of the early station were found to have survived, including the retaining wall, one section of historic railings to the western end of Departures Road and a number of historic trusses retained within the more recent roof structure.
- 5.1.2 The area was subject to considerable alteration in the ensuing part of the 19<sup>th</sup> century, following the continued expansion of the buildings along the departures side. This included the construction of at least one, and possibly two extensions to the roof canopy. In the early 20<sup>th</sup> century the railings and canopy were modified with the inclusion of rendered brick piers. Against the retaining wall this modification is indicated by the brick buttresses built up against the original wall.
- 5.1.3 Following significant damage to the structure in the Second World War, the Departures Road canopy was completely replaced, although retaining 23 of the pre-war trusses in the new roof structure. In the 1950s the majority of the railings were replaced, following their removal in the war, probably because of a demand for materials. In the late 20<sup>th</sup> century, the area has been subject to only minor alteration and maintenance, leaving the area generally in the form constructed in the 1940s, and retaining a significant amount of original fabric.

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- DMFP60017494 GWR Paddington Station Alteration to Railings &c Along the Entire Eastbourne Terrace Front. Part Plan Elevation and Sections [Undated]
- DMFP60017610 GWR Paddington Station Alteration to Railings &c Along the Entire Eastbourne Terrace Front. Extra Supports to 'Paxton' Roof Over Approach Road on Departure Side [Undated]
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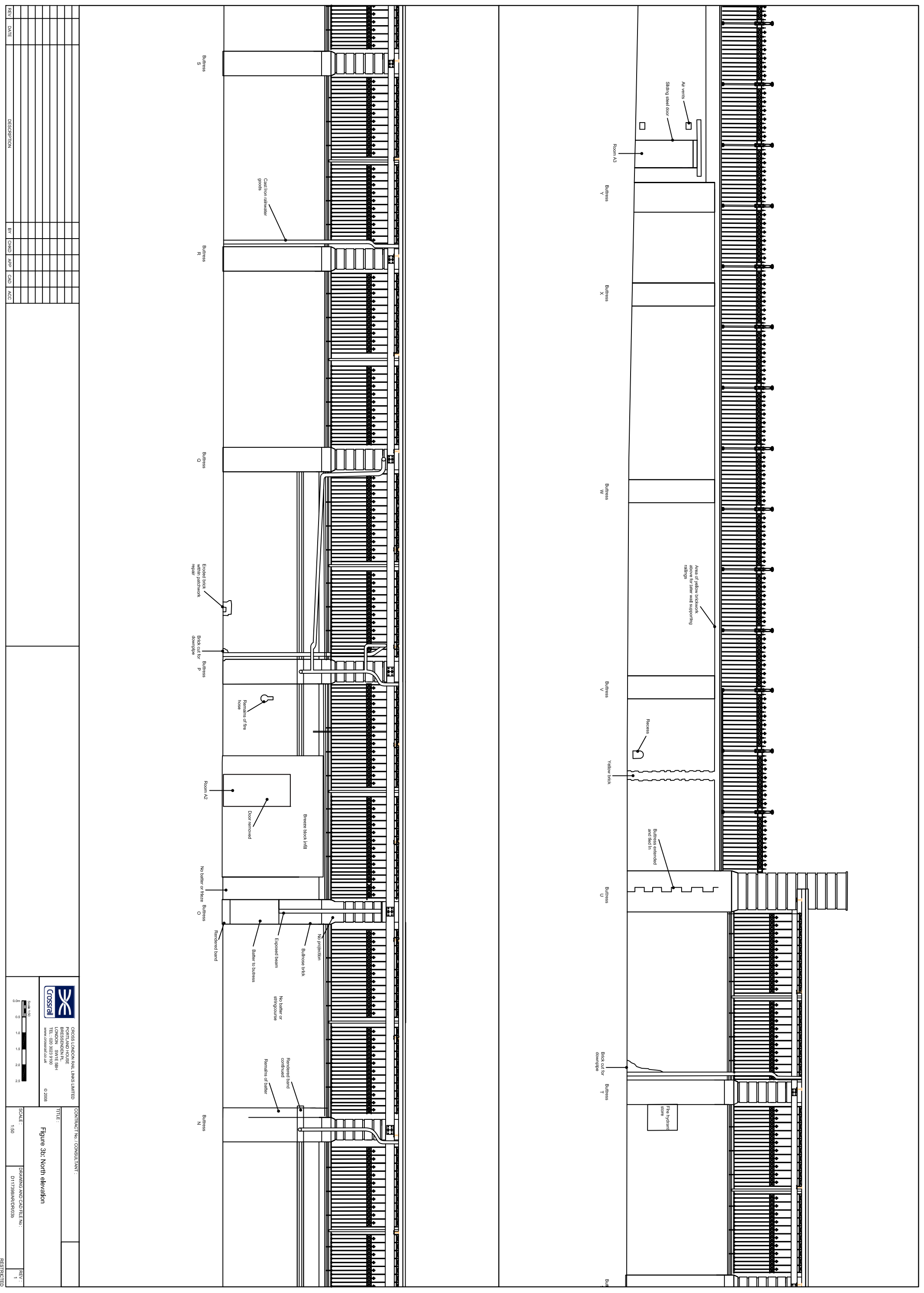
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- 1862 Stanford Map (MoLAS Archive)
- 1869, Ordnance Survey map. Scale 25": 1 mile. Sheet xxxiii.

1894-96, Ordnance Survey map. Scale 25": 1 mile. Sheet xxxiii.

1916, Ordnance Survey map. Scale 25": 1 mile. Sheet xxxiii.

# Appendix 1 Figures





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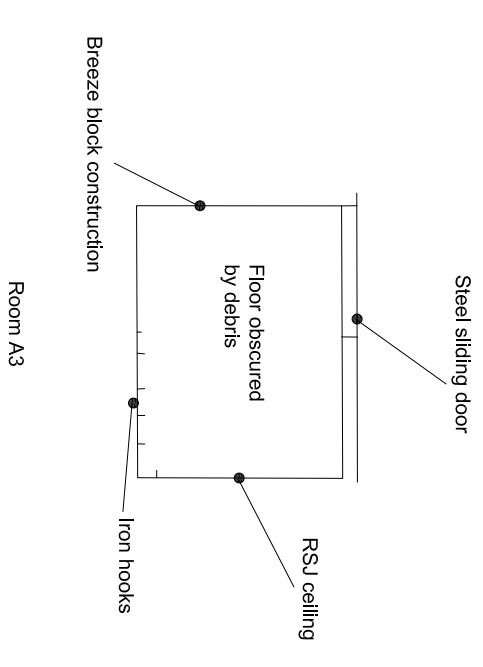
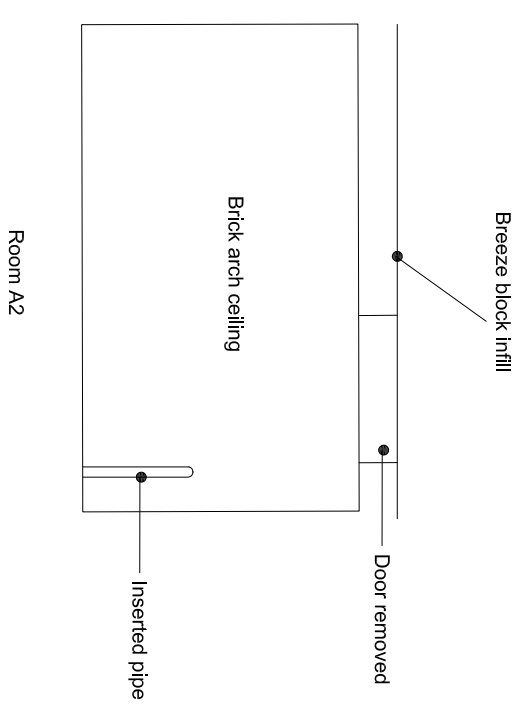
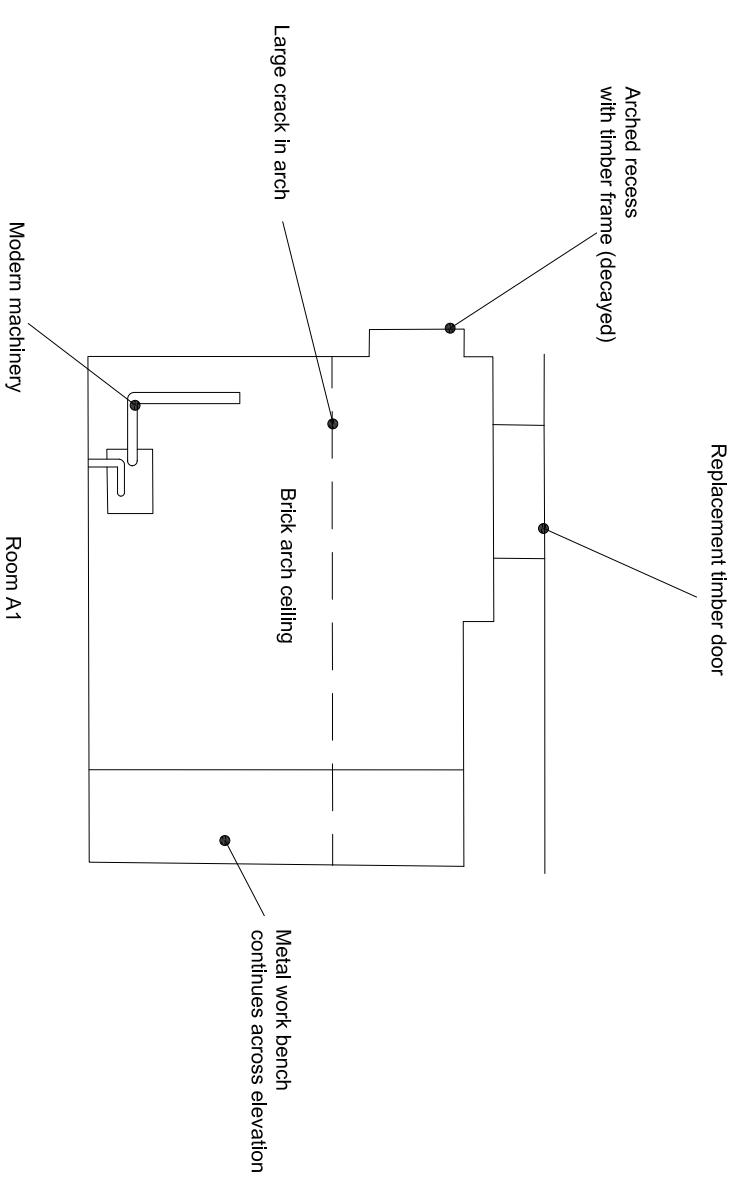
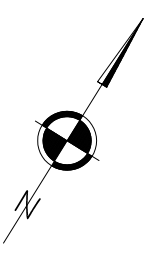




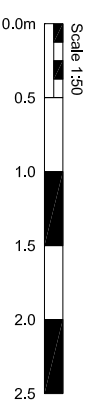








1	24.03.09	Departures Road, room plans behind retaining wall	AJ	RL	AH				
REV	DATE	DESCRIPTION	BY	CHKD	APP	CAD	ACC		



CONTRACT No. / CONSULTANT :  
SCOTT WILSON

SCALE :  
1:50

TITLE :  
**Figure 4: Room Plans**

DRAWING AND CAD FILE No :  
D117398/AR/DS/04

REV :  
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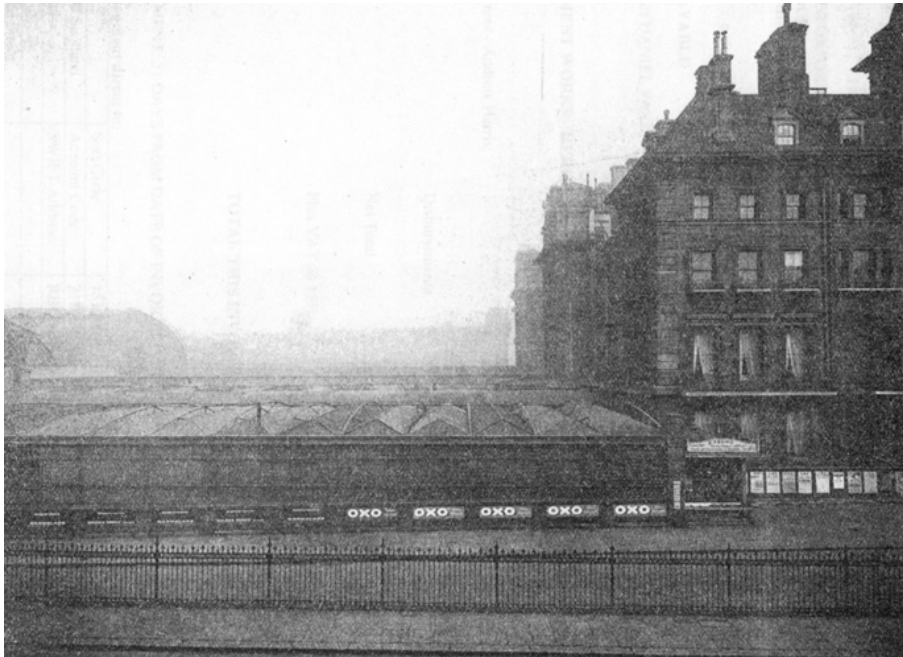
**Appendix 3 Plates**



**Plate 1:** Greenwood's 1824 map showing Paddington prior to the development of the station (MoLAS Archive)



**Plate 2:** Stanford's 1862 Map of London showing Paddington Station completed and the area around developed



**Plate 3:** Early 20<sup>th</sup> century view of a section of ridge and furrow roofing in the departures road area (Culverhouse 1934, 76)



**Plate 4:** View of the departures road canopy, including extended area of canopy

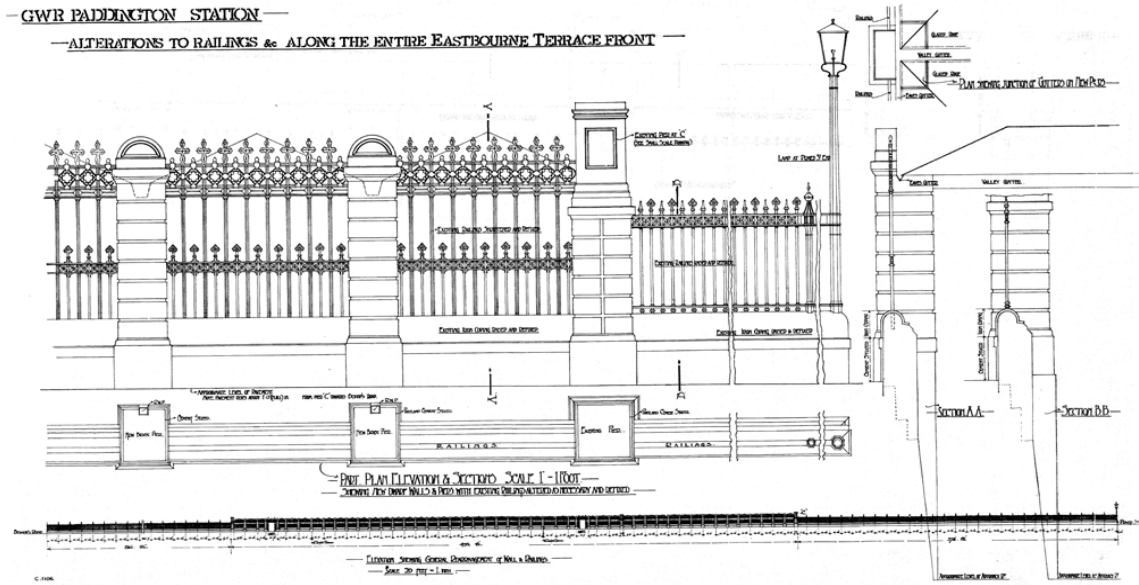


Plate 5: Early 20<sup>th</sup> century modifications to the railings and retaining wall of Departures Road (Network Rail Archive DMFP60017493)

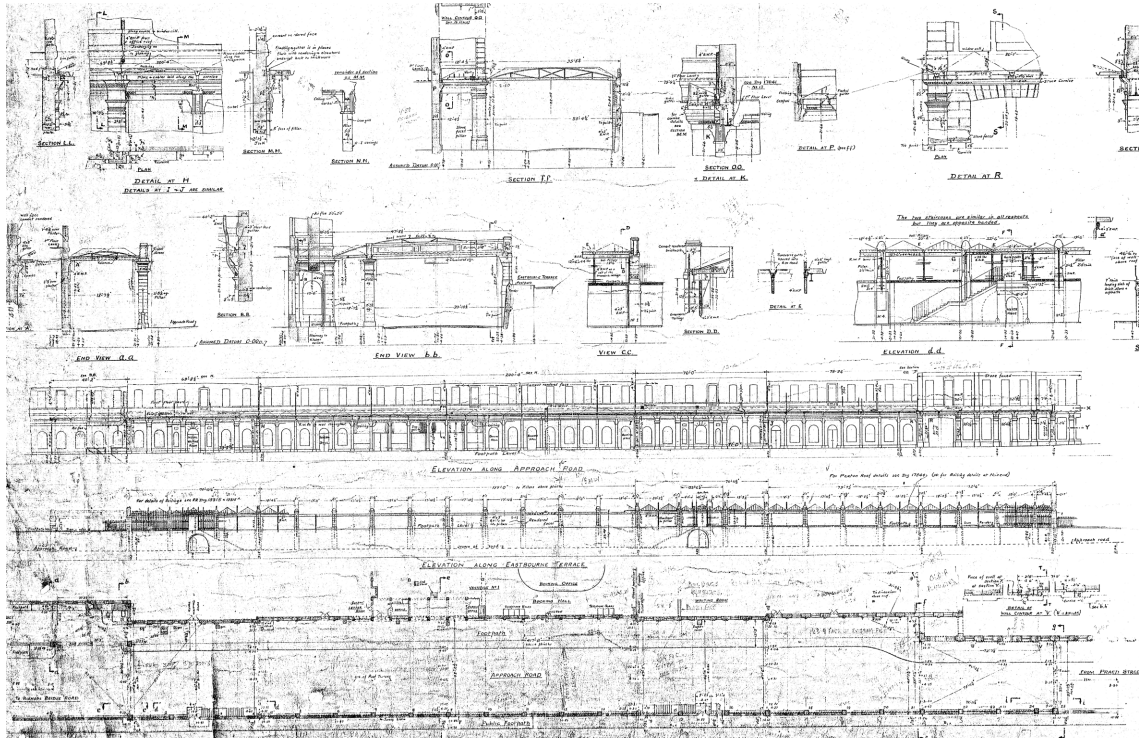


Plate 6: 1940 plan and elevations of Departures Road area (Network Rail Archive MF17975)



Plate 7: Bomb damage to the east end of Departures Road (Bryan 1997, 12)

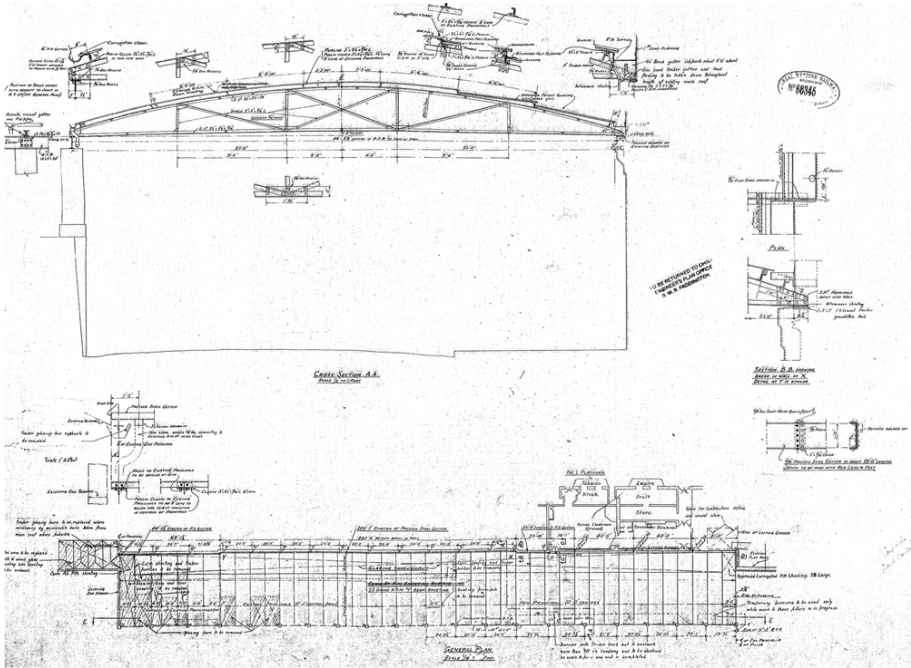
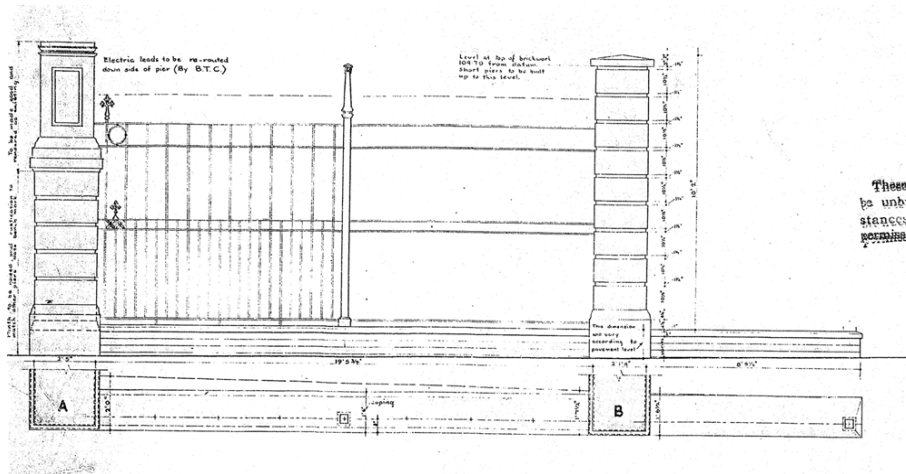


Plate 8: 1948 plan and elevation of the restoration of the Departures Road canopy (Network Rail Archive MF15840)



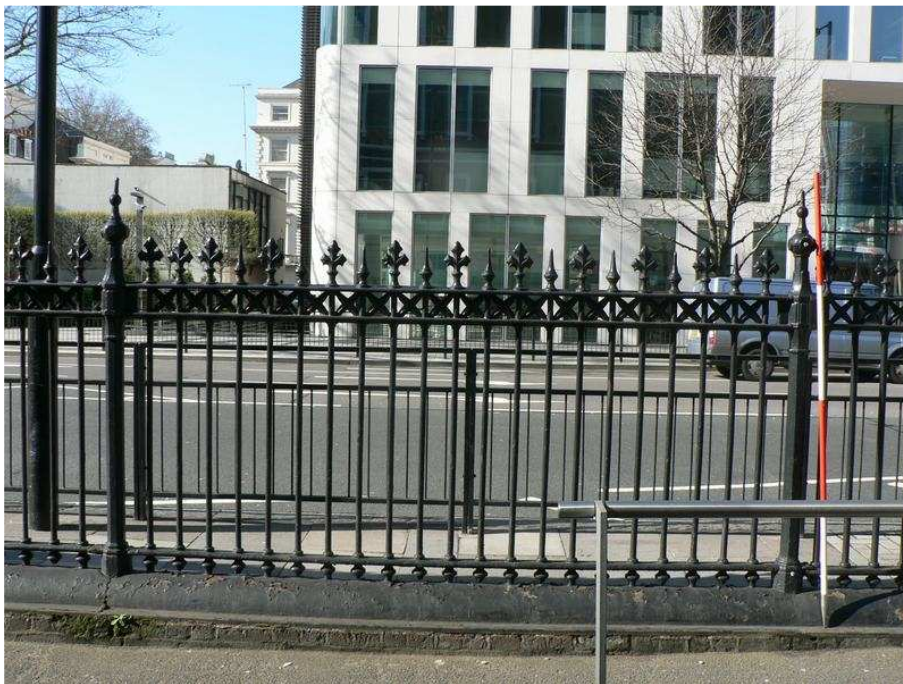
**Plate 9:** 1956 elevation for the insertion of the replacement railings (Network Rail Archive R70896)



**Plate 10:** Cast iron base to railings in western section



**Plate 11:** Original railings in the western section



**Plate 12:** Western section railings, panel 5, looking south showing repair with additional fleur-de-lis head to the eastern end



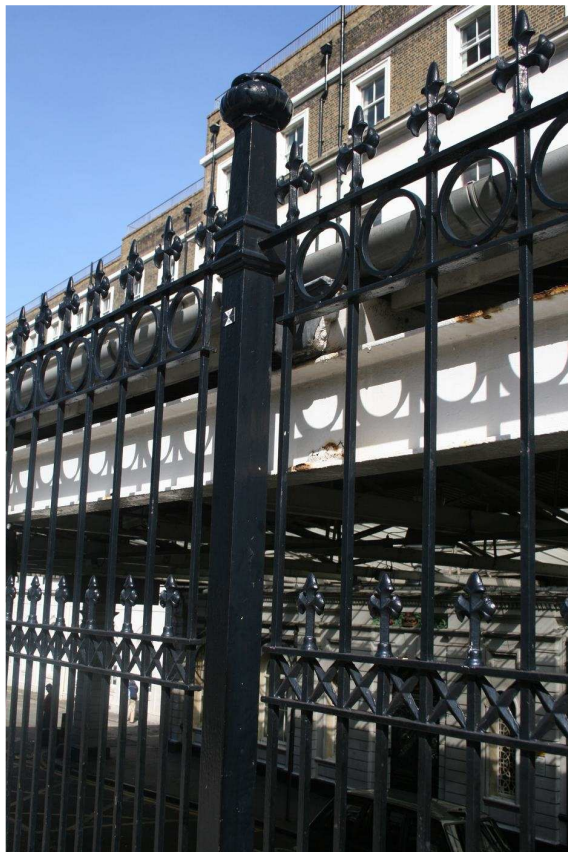


**Plate 13:** Western section railings, panel 42, balusters bolted to base



**Plate 14:** Western section railings, panel 44, metal clamp to centre of high level rail

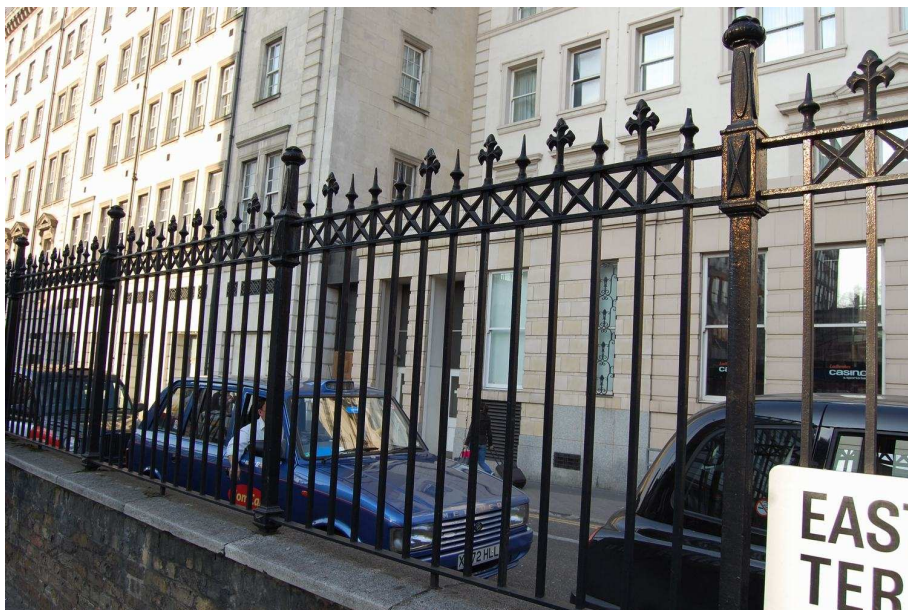
**Panel 15:** Central section showing railing arrangement in typical bay



**Panel 16:** Central section railings, detail of balusters



**Plate 17:** Eastern section, typical panel of railings



**Plate 18:** Eastern section railings, panel 51 with three spear-head finials together to the west



**Plate 19:** Western section of retaining wall



**Plate 20:** Recesses in western section with metal grilles



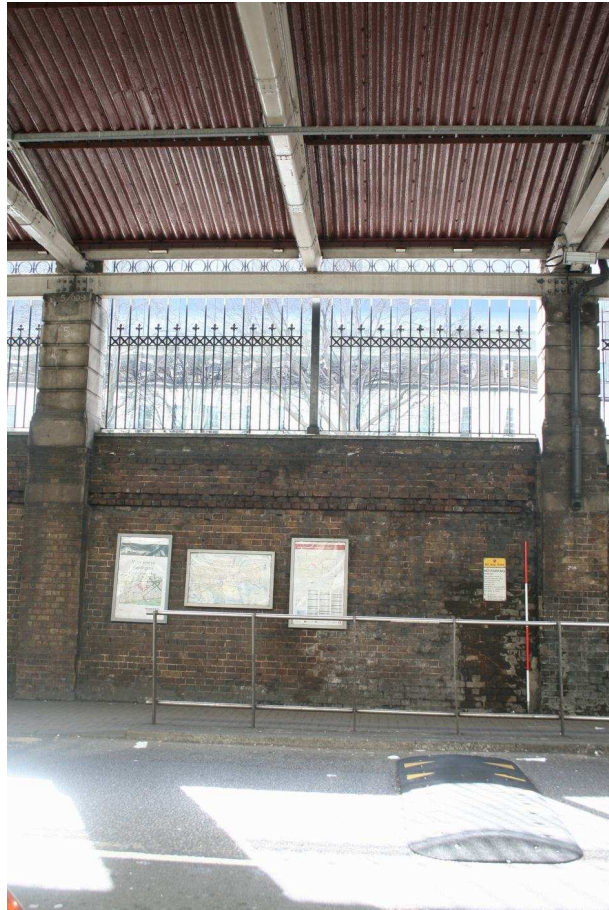
**Panel 21:** Central section, buttresses A and B and bay in between



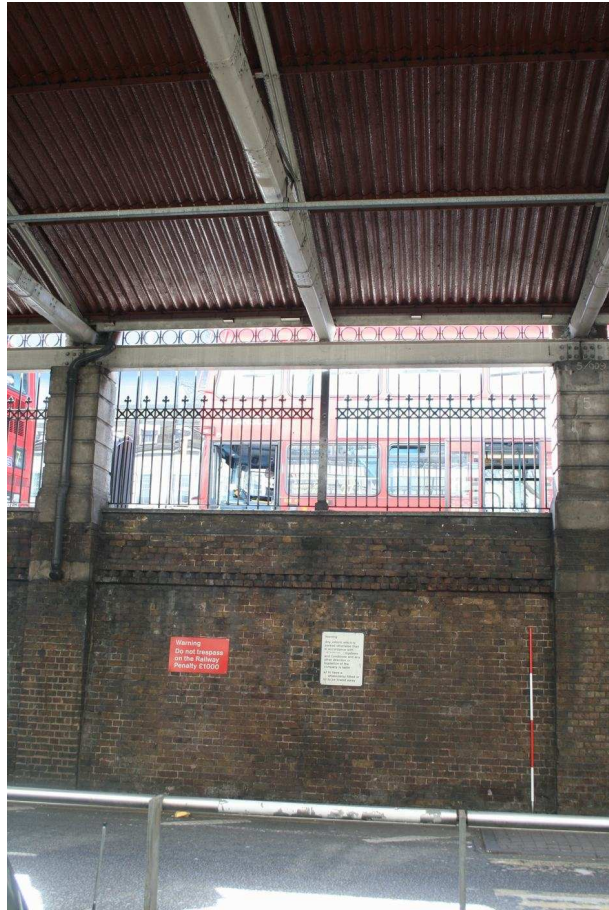
**Panel 22:** Staircase between buttresses B and C



**Panel 23:** Detail of bull-nosed brick to buttress C

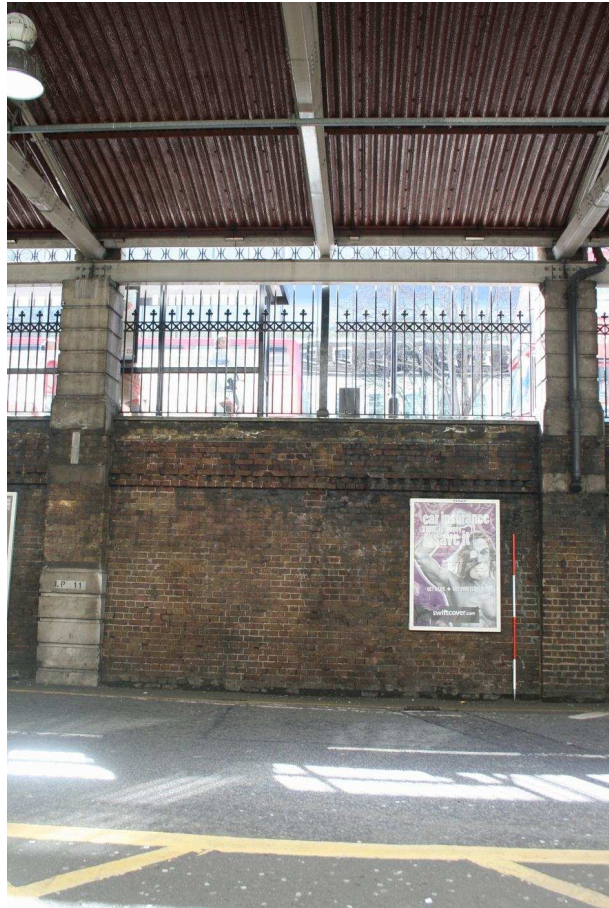


**Plate 24:** Buttress D and adjacent bay showing dog-tooth stringcourse

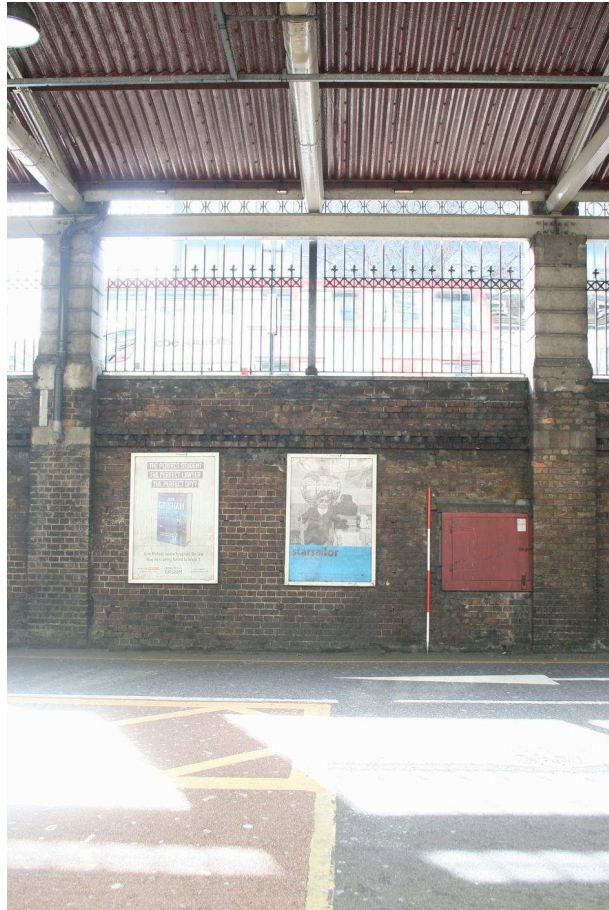


**Plate 25:** Buttress E and adjacent bay to east

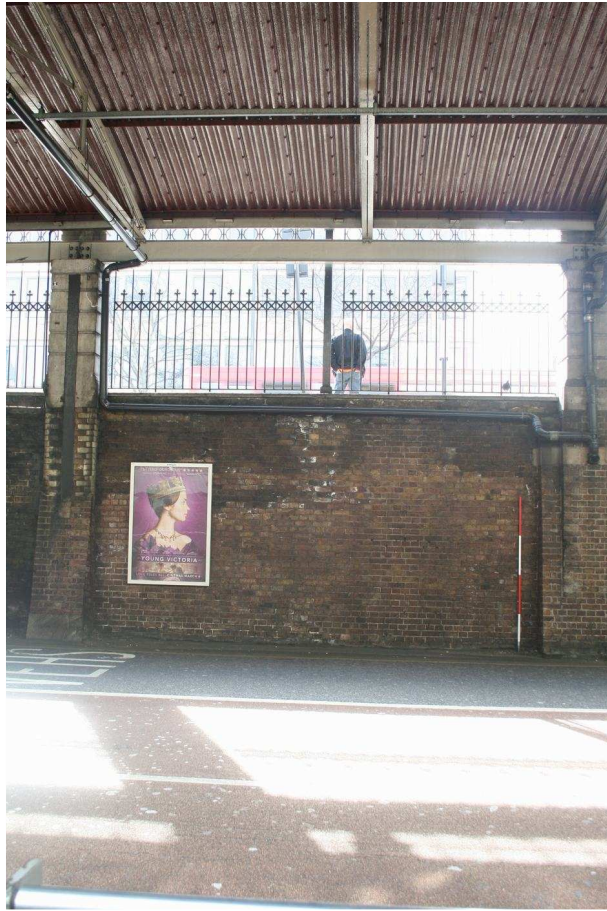




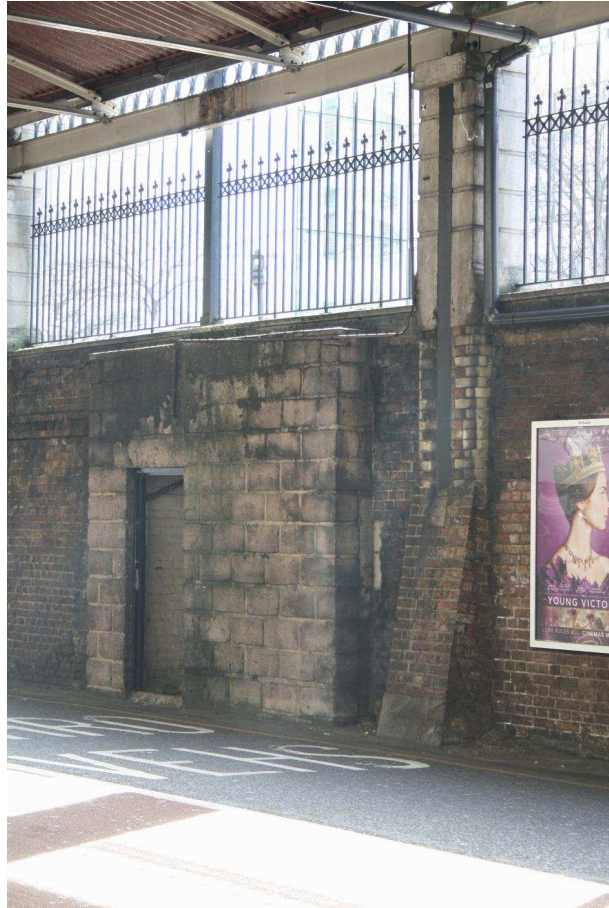
**Plate 26:** Buttresses F and G with intermediate bay, showing render detailing to  
buttress G



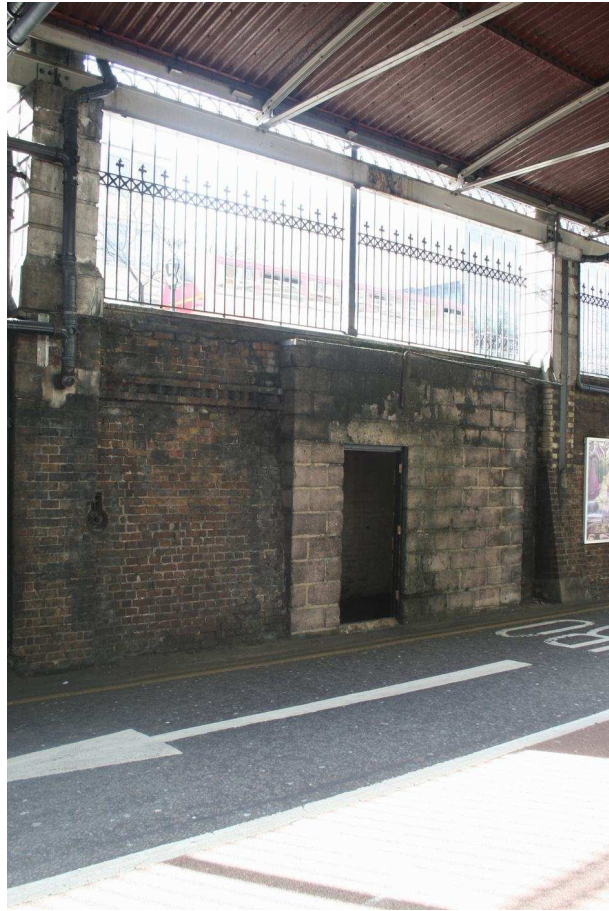
**Plate 27:** Buttress I and adjacent fire hose cupboard



**Plate 28:** Buttress N and bay to east, with no batter to retaining wall



**Plate 29:** Buttress O showing high level bull-nosed brick and lower sloping section to buttress



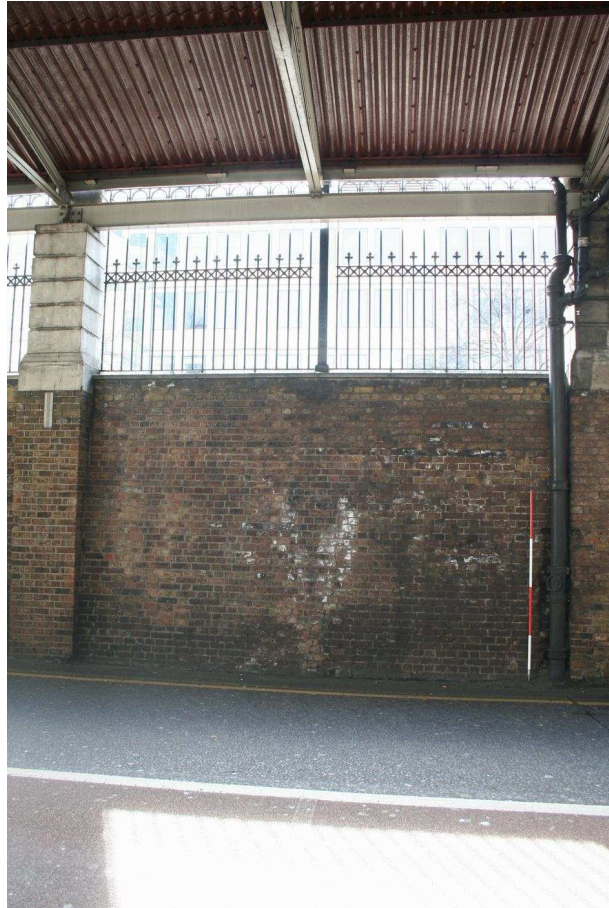
**Plate 30:** 'Ashlar' render around entrance to room A2, between buttresses O and P



**Plate 31:** Buttress P and adjacent bay to east showing dog-tooth ornament

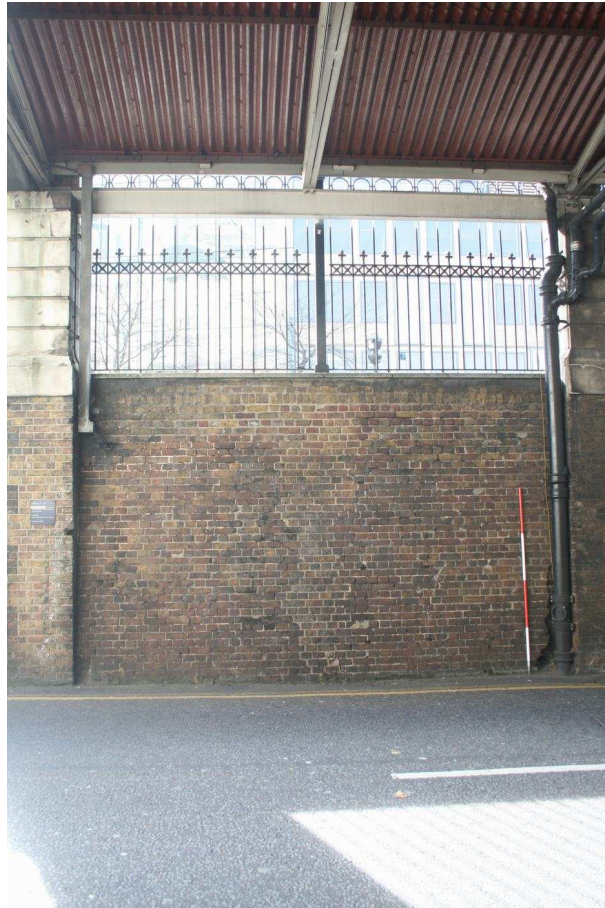


**Plate 32:** Buttress Q and adjoining bay to east with no dog-tooth stringcourse

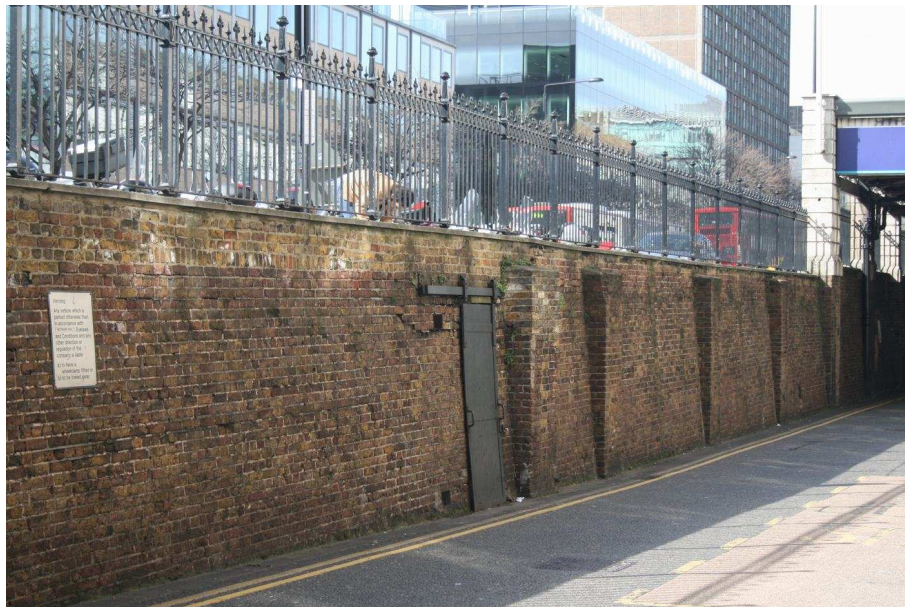


**Plate 33:** Buttrass R and adjoining bay to east

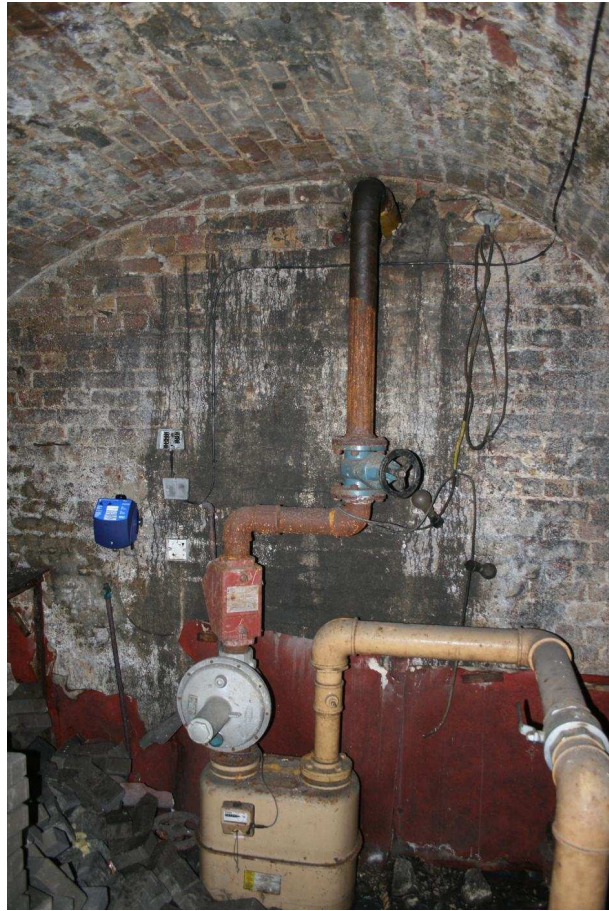




**Plate 34:** Bay to west of Buttress U and part of Buttress U showing disturbance in brickwork of bay, and junction in brickwork on buttress U



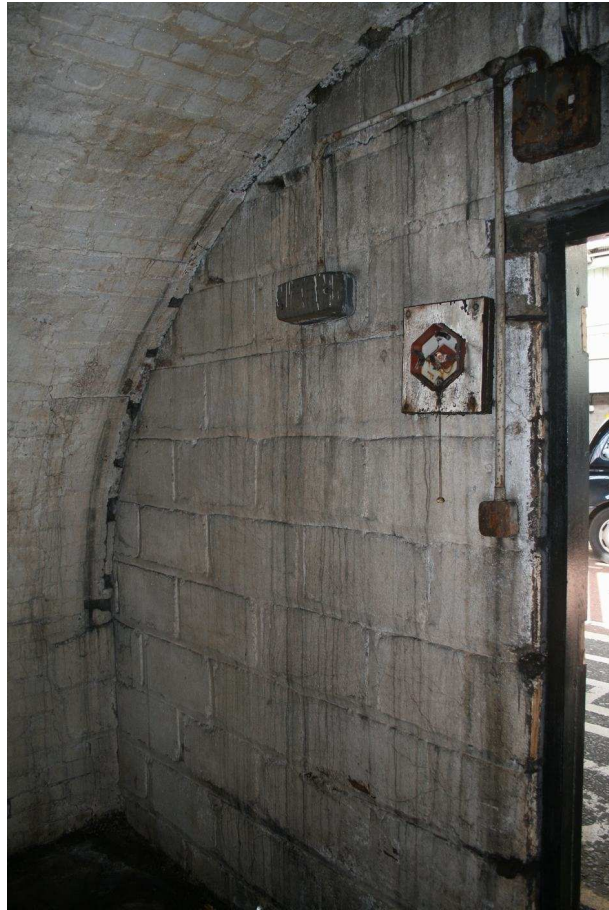
**Plate 35:** Eastern section of retaining wall showing buttresses V to Y and doorway to room A3



**Plate 36:** Interior of room A1



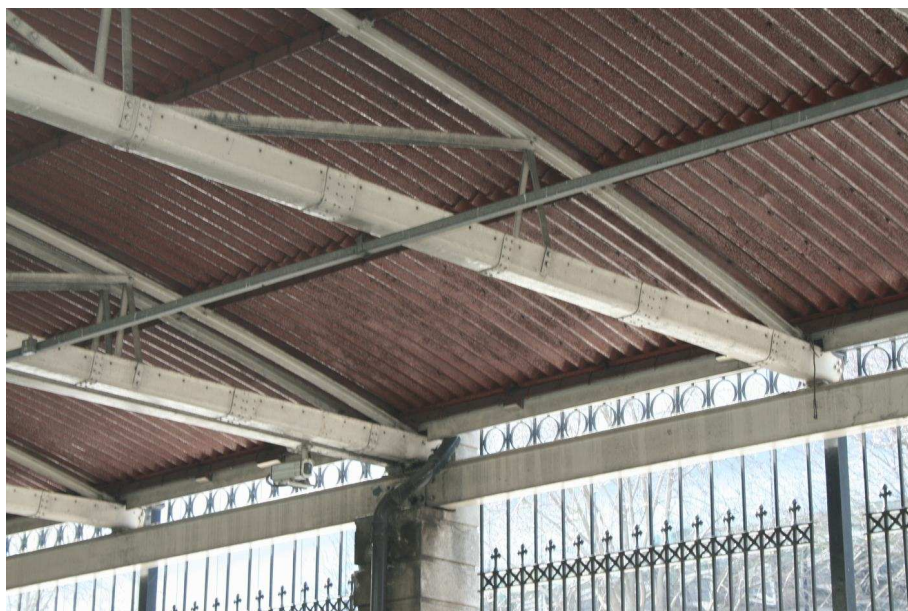
**Plate 37:** Detail of wall niche with wooden frame in room A1



**Plate 38:** Interior of room A2 showing whitewashed brickwork and cement block walling to north



**Plate 39:** Interior of room A3 showing RSJ ceiling



**Plate 40:** Detail of trusses resting on southern RSJ



**Plate 41:** Detail of double truss at 8



**Plate 42:** Detail of truss showing trough riveted together with plates of varying widths



**Plate 43:** Detail of truss showing struts attached to the outside of the trough



**Plate 44:** Detail of residual holes to truss



**Plate 45:** Detail of repair to northern end of a truss (upper) contrasted with the unrepaired truss (lower)

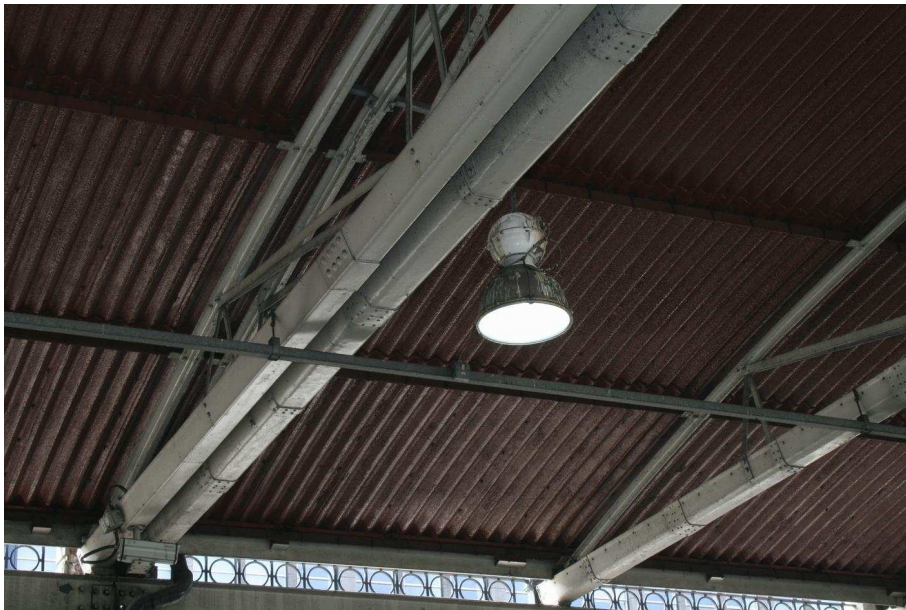


**Plate 46:** Detail of truss with possible repaired strut running into the interior of the trough

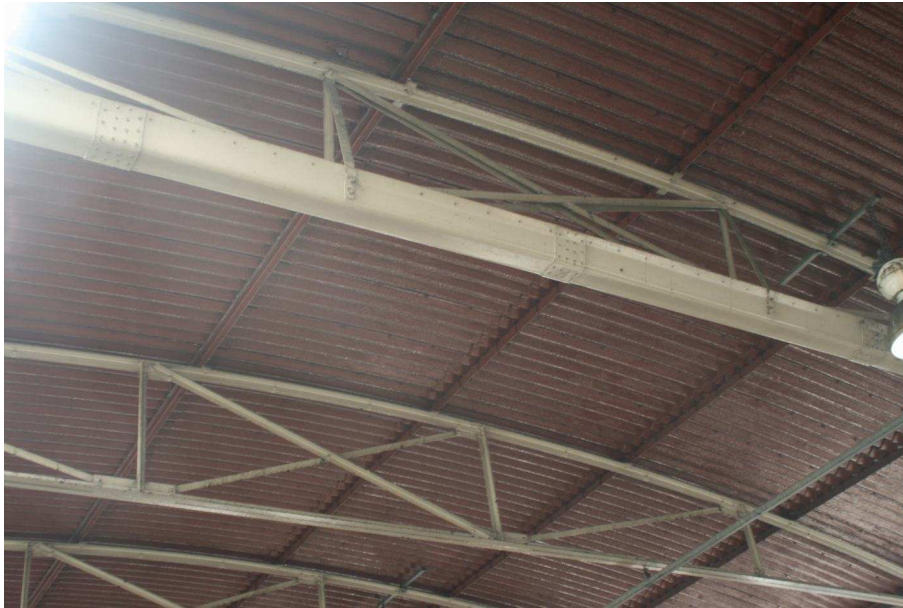




**Plate 47:** Detail of truss type 2 showing fewer plates and larger rivets in comparison to the type 1 trusses



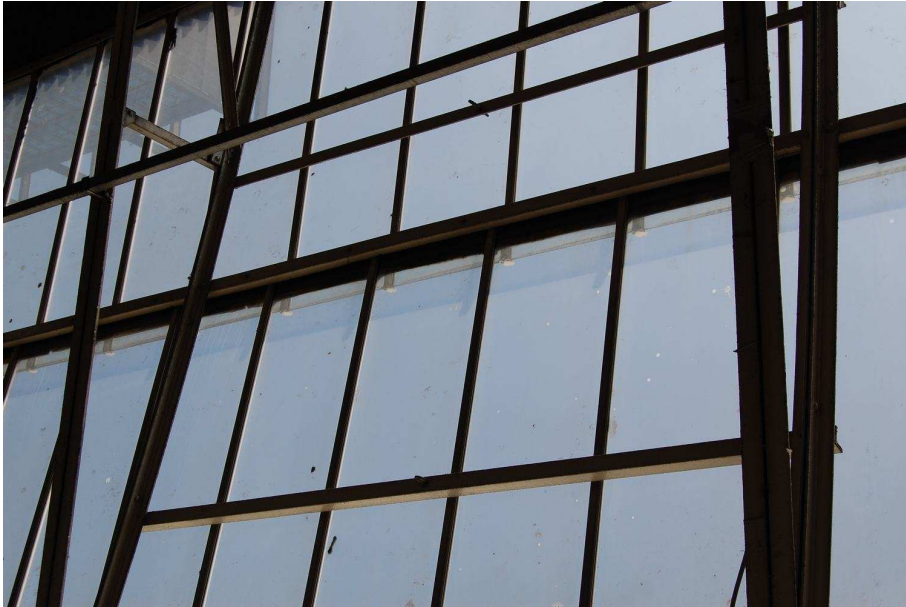
**Plate 48:** Detail of truss type 2 showing no residual holes



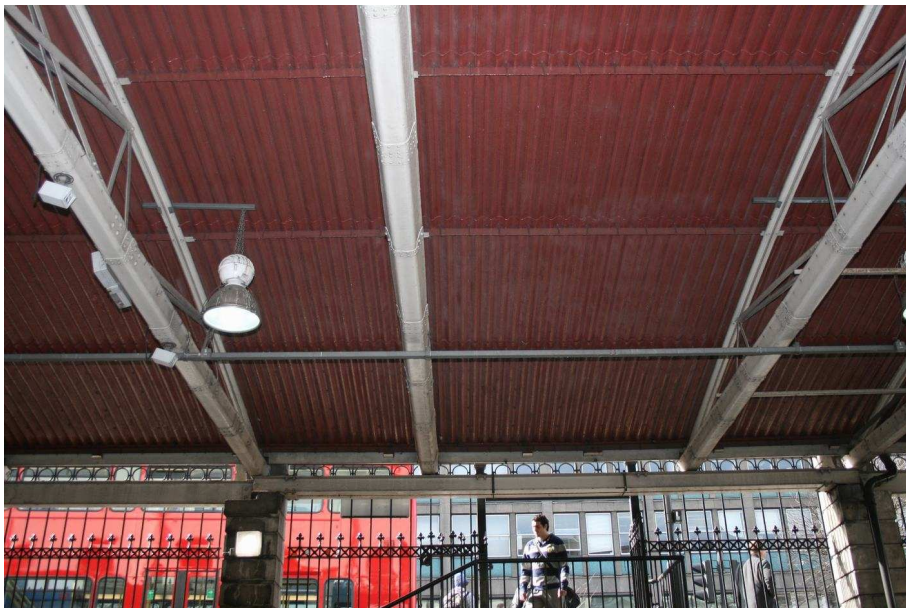
**Plate 49:** Detail of base to modern truss, contrasted with adjacent historic truss



**Plate 50:** Wind braces between trusses 1 and 2



**Plate 51:** Additional bracing between trusses 19 and 20



**Plate 52:** Detail of purlins running above the trusses and the corrugated sheeting it supports

## Appendix 4: Additional Recording at Departures Road, Paddington Station

### Introduction

- 5.1.4 This document forms an appendix to an existing building recording report at Departures Road Paddington Station (Document No: CR-DV-PAA-X-RT-00047) produced as part of the Crossrail development at the station.
- 5.1.5 The background to the recording and the wider project is detailed in the main document and is not reproduced here in full but in summary the recording was undertaken as part of a City of Westminster Heritage Agreement (listed building) covering Crossrail works affecting this part of Paddington Station (*Departures Road Canopies, Eastbourne Terrace Retaining Wall and railings*).
- 5.1.6 The recording required in this area was detailed in a method statement (CR-SD-PAA-EN-MS-00002) -dated 30/9/08. The main recording in response to this method statement was undertaken and reported on in 2009 (Doc CR-DV-PAA-X-RT-00047). The current additional recording was intended to complement the previous work by documenting previously hidden elements which were exposed by the dismantling works.
- 5.1.7 Further archaeological recording in this area has also been undertaken as part of the general Crossrail archaeological mitigation, as opposed to the Heritage Agreement recording which specifically relates to the impact of the development on the listed building. There is clearly overlap in the two sets of requirements or agreements but the work detailed here just covers the Heritage Agreement (listed building). A separate report will be produced detailing the general archaeological mitigation in this area.

### Methodology

- 5.1.8 The current phase of recording has focused on several structures and features along the south-western side of Paddington Station including:
- retaining wall and railings on the Eastbourne Terrace frontage
  - the canopy over Departures Road
- 5.1.9 The recording was in the form of an intermittent watching brief and did not cover all the dismantling works.
- 5.1.10 The archaeological works covering this area have the site code XSD10.
- 5.1.11 The main recording covered by the current report was undertaken from March to June 2012 although as outlined elsewhere it formed part of a longer programme of archaeological recording.
- 5.1.12 The 1850s railings are to be dismantled and reused in the redesigned Eastbourne Terrace layout.

## Historical background

- 5.1.13 The main historical background to Paddington Station is detailed in the main body of the report and is not reproduced here although a short summary, particularly in relation to the Departures Road area, would be use.
- 5.1.14 Paddington Station was designed by IK Brunel, in collaboration with Matthew Digby Wyatt and built between 1851-1854 to replace a temporary station in the same area. The platforms were set below street level and thus Brunel designed the station with ramped roads providing access down to the departures platforms on the south side and the arrivals platforms to the north.
- 5.1.15 The south face of the ramped Departures Road is a tapering terraced wall with railings to the top, which supports a higher road called Eastbourne Terrace, immediately to the south of, and parallel with, Departures Road. There is a partially glazed canopy over the central section of Departures Road, between the retaining wall and the main station building which in this area is a long low facade also called Eastbourne Terrace. The southern edge of the canopy is supported on stanchions integral to the terrace railings.
- 5.1.16 The retaining wall, railings, glazed canopy and ramp were each important elements of Brunel's design although the area has undergone various alterations since the station was originally laid out.
- 5.1.17 Brunel's glazed canopy used 'Paxton' roofing on slender wrought iron trusses and cast iron columns towards Eastbourne Terrace. The south-east end of the canopy had a gable with a clock and the GWR arms.
- 5.1.18 This canopy was then extended to the south-east by eight bays in 1880 and map evidence suggests that it was then extended a further eight bays to the south-east by 1911 (see Building Recording at Departures Road report)
- 5.1.19 In 1941 bomb damage destroyed part of the eastern section of the canopy over Departures Road and after the war this section was replaced. The new section returned the canopy to the extent of its first 1880 expansion but not the second stage of expansion from the same phase. Also after the war the original Paxton glazing to the older central section was also replaced. The current canopy broadly replicates Brunel's design and it is believed to incorporate some original ironwork.
- 5.1.20 Several original designs for the cast iron railings along Eastbourne Terrace survive but they were altered in the late 19<sup>th</sup> and early 20<sup>th</sup> century. Among the early 20<sup>th</sup>-century modifications was the addition of large rendered piers between the panels of railings and buttresses immediately beneath, facing onto the terrace wall (see Building Recording at Departures Road). It is thought that the alterations were to improve the support to the roof and to improve drainage with larger downpipes incorporated.
- 5.1.21 It is understood that the railings were largely replaced after wartime bomb damage (or wartime removal) and the only original railings which survived prior to the current development are those to the central section, west of the main canopy roof.

## Description of observations

### *Railings*

- 5.1.22 As stated above the current recording was undertaken in the form of a watching brief, during development works, to complement rather than replicate or replace the previous recording. It was intended to add observations made of features or areas which were obscured during the previous recording but which have been exposed by the development works. Only the oldest section of railings, west of the canopy roof, were subject to watching brief recording
- 5.1.23 The removal of the facing skin of brick and infill from the terrace wall beneath the railings exposed the lower sections of each of the iron principal posts embedded within the terrace wall. Each principal post is a single casting from the top of the railing down through the plinth and continuing down for c.75 cm beneath the semi-circular cast iron plinth cover to a square section iron base embedded within the wall.
- 5.1.24 The embedded posts (c.12 cm wide) are octagonal in section and the square plate at their base is bolted into the wall (Plate 12). Towards the top of the embedded section there appears to be an octagonal iron sleeve around the post which continues up through the cast iron cover over the top of the plinth and up to the underside of the horizontal rail just above the plinth. The sleeve is bolted onto the post within.
- 5.1.25 The cast iron plinth cover on which the railing is set (Plates 9, 13) is constructed from individual individual lengths, with a broadly semi-circular profile, extending between each of the principal railing posts. The ends of each length abuts each other and they ends are connected with separate curved iron plates immediately inside the plinth cover, with two bolts to either side of the junction. The plinth cover is directly over a row of special shaped (chamfered edged) bricks (Plate 10). This plinth cover incorporates projecting lips to either side (Plate 9) so that that on the higher road side is set directly beneath the pavement slabs while that on the Departures Road side is set at the top of the retaining wall.
- 5.1.26 The wall immediately in front of the posts is constructed with a very hard light grey mortar with coal flecks.
- 5.1.27 The demolition of the retaining wall itself was monitored and this confirmed that the vertical buttresses which were added in the 20th century were not bonded into the battered brickwork of the main wall (Plates 18-19). The main wall steps out towards the south towards the base.

### *Canopy*

- 5.1.28 The trusses which support the main eastern section of the canopy are of a common type typical for the 20<sup>th</sup> century (1930s?) with simple steel members riveted together with junction plates. The heads of the rivets are 23 mm in diameter. Each truss has a horizontal tie-beam along the base (L-section 6 cm deep) and a ridge (T-section 6 cm deep) forming the overall shallow arched profile and between these members each truss divides into five main sections separated by vertical struts (L-section 5.5 cm wide). In the

central section there is a pair of cross ties from corner to corner (flat section 5.5 cm wide) while in the sections either side of this there is a single raking strut (also flat section 5.5 cm wide).

- 5.1.29 The trusses at the western end of the canopy have a distinctive type to those further east. These later trusses are largely constructed from a bolted, galvanised metal (probably steel) and they almost certainly date from the second half of the 20<sup>th</sup> century (1960s?). They have a U-profile member along the base which forms a gulley and flat section struts are bolted to either side of this in pairs. The two struts in each pair are set apart at the base (either side of the gulley) but they meet at the shallow arched ridge member.
- 5.1.30 The gulley beams are supported at the south end by an I-section RSJ (16 cm tall x 14 cm wide (lower flange) and 12 cm wide (upper flange)). There is a steel plate/pad between and in the westernmost truss the south end of the beam is bolted to a bracket on top of a concrete pad on a pier. At the northern end the gulley beams are supported within a recess in the main wall of the station, immediately above the cornice. The recess is 45 cm deep and the beam is set on a 30 mm steel plate.
- 5.1.31 The main arched ridge is formed from a T-section steel which is bolted with plates to the gulley. The purlins (four to each side) are formed from L-section steel members and they are bolted with simple brackets to the backs of the arched ridge.



Plate 1 : Detail of railings with secondary strengthening strap



Plate 2: Railing detail



Plate 3: Railing base detail before demolition



Plate 4: Railing detail





Plate 5: Railing post detail



Plate 6: Exposed section of railing during demolition



Plate 8: Exposed railing post



Plate 7: Exposed section of railing during demolition



Plate 9: Cast iron railing base after removal of posts

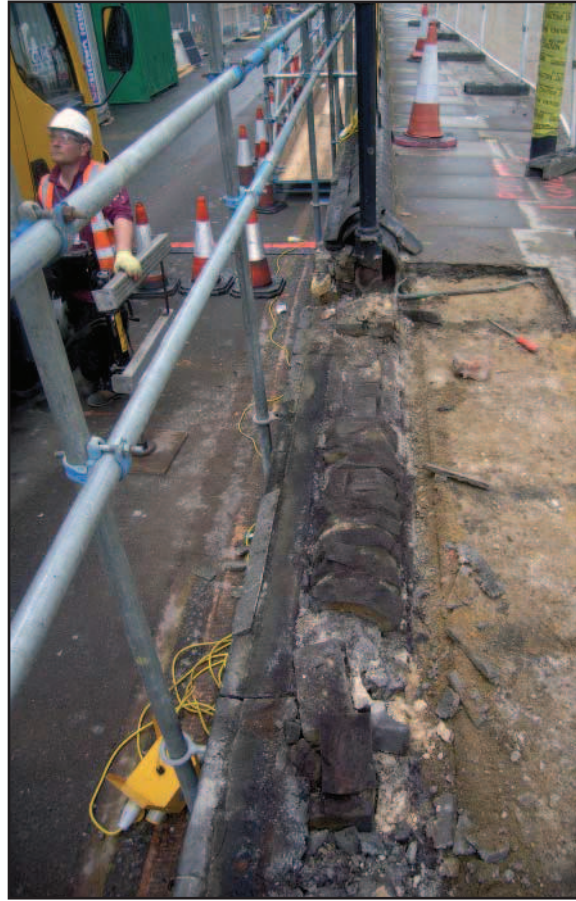


Plate 10: Exposed brick base of railings



Plate 11: Truncated railing post



Plate 12: Exposed railing post during dismantling



Plate 13: Section of railings during removal



Plate 14: Section of railings during removal (20th-century type)



Plate 15: Detail of secondary section of railings (20th century type)



Plate 16: Ex-situ railing posts (20th century type)



Plate 17: Terrace wall during demolition



Plate 18: Detail of terrace wall. Later buttress added to earlier wall



Plate 19: Detail of terrace wall.  
Later buttress added to earlier  
wall

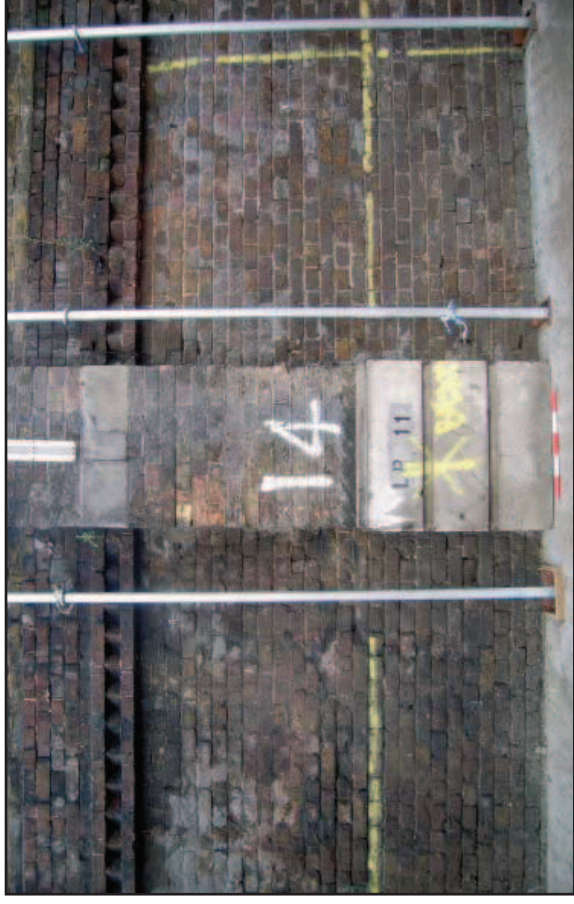


Plate 20: Wall buttress before demolition



Plate 21 : Departures Road canopy during dismantling



Plate 22: Departures Road canopy during dismantling



Plate 23: Departures Road canopy during dismantling



Plate 24: Departures Road canopy during dismantling