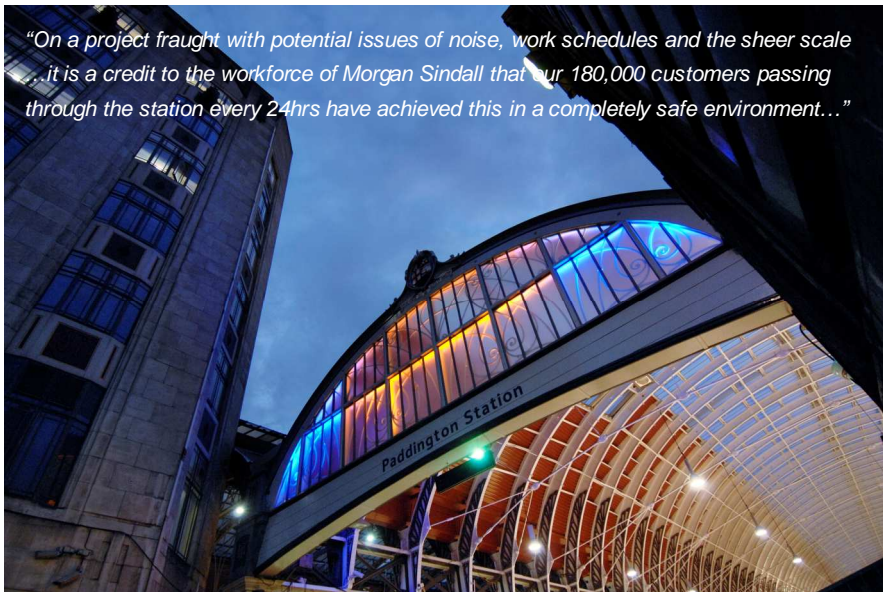


PROJECT CASE STUDY

PADDINGTON STATION SPAN 4 RENEWALS

Nick Hartnell - Station Manager:



"On a project fraught with potential issues of noise, work schedules and the sheer scale ... it is a credit to the workforce of Morgan Sindall that our 180,000 customers passing through the station every 24hrs have achieved this in a completely safe environment..."

Project Details

Project location:

Paddington Station,
Central London

Construction programme:

March 2009 to
4th August 2011

Customer:

Network Rail

Main Contractor:

Morgan Sindall plc

Designer:

WSP

Contract:

ICE Target Cost version 1st edition
(with NR12 amendments)

Project Value:

Circa £42 million

Project Description

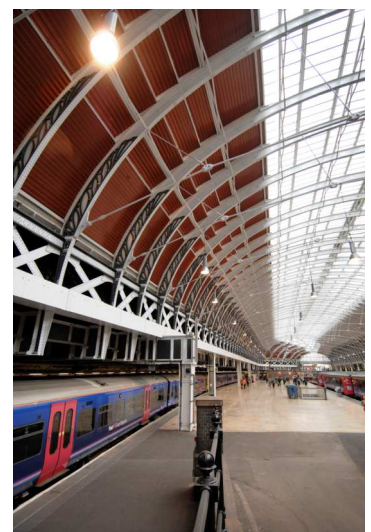
The Paddington Span 4 project commenced in the spring of 2009 and was tasked with restoring the large fourth span of the station roof, a Grade 1 listed building, back to its former glory whilst maintaining a live station environment. Originally constructed in 1916, the roof fell into disrepair in the early 90's and was screened off from the public by a raised protection deck. This deck was reconstructed in order to facilitate the construction works directly above the live station and the public below in a safe environment.

Works included major repairs to the barrel roof steel structure along with cladding and glazing. The platforms have been reconstructed to modern standards and finished with French Limestone paving. All the M&E systems had to be stripped out and replaced with state of the art equipment. The design had to integrate the requirements for access, cladding and glazing to achieve a lightweight weatherproof roof that also provided adequate ventilation for the diesel locomotive fumes.

The Project Team incorporated Heritage concerns by relocating the cable management from below the platform to high level casing containing all electrical services and siphonic drainage. The Project Team also maintained a detailed schedule of all works that had a Heritage impact and developed an excellent relationship with Westminster City Council (WCC) and English Heritage staff.

The Challenge

Along with the inherent challenge of working on London City centre projects. The amount of steel repairs to the historic structure that were required proved more extensive than first anticipated. This presented the project team with a major challenge and in July 2010 a new re-sequenced programme was coordinated and agreed between Morgan Sindall and Network Rail. This included the use of 2 No. tower cranes supported by mobile cranes and the erection of an on-site manufacturing workshop for the steel fabricator. The re-programming also took into consideration maximising the use of limited possession working time.



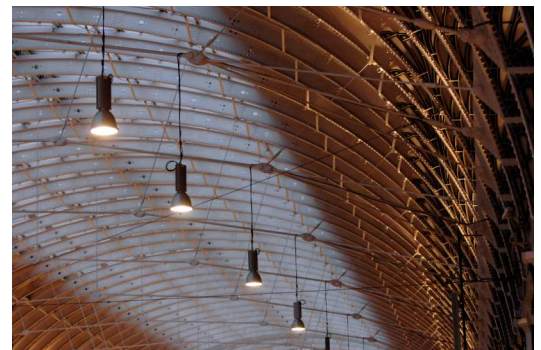
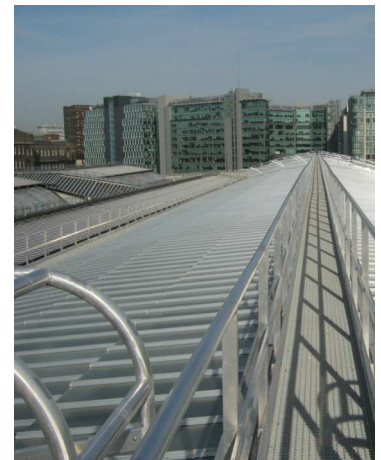
Delivering our Stakeholders' Expectations

Our stakeholders wanted the Grade 1 listed Span 4 structure built in 1916, and not been seen from below since the 1990's, renovated and re-opened to the public whilst protecting them and maintaining a fully operational station serving up to 180,000 passengers daily. The renovation work taking place high above was to ensure that the working life of the structure is extended to 75 years with 25 years to first major maintenance period and final product being agreed with Westminster City Council, English Heritage and Network Rail.



Technical Features

- Major temporary works including over 5,800m² of protection/over deck and 6,000m² of hanging access scaffold
- Refurbishment of 210 metre long 33m spanning barrel arch roof
- Removal of 7,500m² of glazing and sheet cladding
- Replacement of 4,000m² of new glazing and 3,500m² of profiled sheeting
- Repair, strengthening and refurbishment of the roof's existing structural steelwork
- Installation of a new Wind Bracing System with minimal intrusion on the appearance of the structure
- Installation of new lighting, CCTV, PAVA, fire, power and control systems throughout Span 4
- Removal of 5,000m² of protection deck installed in the mid 1990s
- Reconstruction of platforms 9 to 12 finished with French limestone (including new main drainage)
- Re-support of OHLE over 4 rail lines (previously supported from 1990s protection deck)
- Excavation of existing concrete parcels deck over platforms 11 & 12, place new concrete deck with waterproofing
- and black top (4,200m²)
- Refurbishment of the iconic Span 4 London End and Country End screens.





Key Supply Chain Members

Sub Contractor

McNealy Brown
Bailey Rail
Architectural Products Ltd
Gable Rail
Third Eye
Thyssenkrupp Palmers Scaffolding
Volker Laser
TI Coatings
John F Hunt
DMC
Sapoflow
Morgan Sindall Rail Electrification

Service Provided

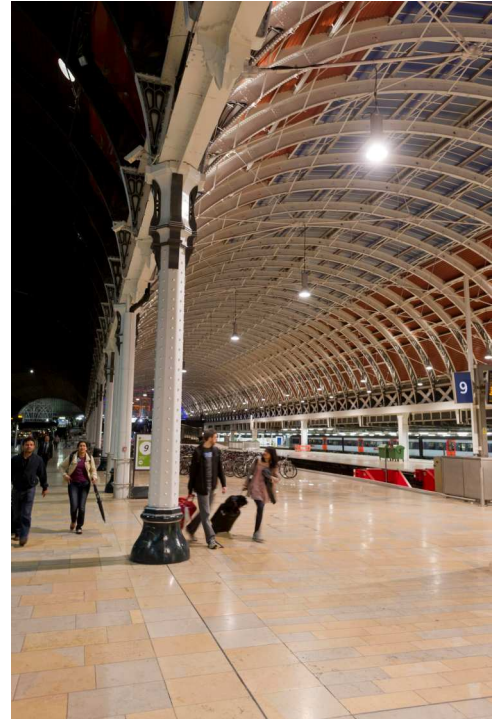
Steel work repairs
Electrical Installation
Glazing
Cladding
CCTV
Temporary works & scaffolding
Ground works
Protective coatings
Demolition
Platform tiling
Siphonic Drainage
OHLE installation.

Our Stakeholders' Comments

Terry Baker – Network Rail Station Interface Manager

“On a project fraught with potential issues of noise, work schedules and the sheer scale of the work being undertaken it is a credit to the workforce of Morgan Sindallthat our 180,000 customers passing through the station every 24hrs have achieved this in a completely safe environment. Pre-planning has been without doubt the king-pin for all of the various work streams, from basement level to the heights of the Span 4 station roof.”

Close co-operation has been maintained from day one of this enormous projectMorgan Sindall have driven the project forward with a 'can-do' attitude, a credit to every person working on this site. Our stakeholder colleagues have been taken on many site inspections to fully understand the project and all have been incredibly impressed and appreciative of the time spent on these walkabouts.’



Paul Futter – Network Rail Senior Project Manager



Martin Treacy – Network Rail Project Manager

“On behalf of the Network Rail Management Team responsible for the Span 4 Renewals I would like to reiterate the sentiments of my Operational colleagues and commend Morgan Sindall (MS) for taking a proactive and collaborative approach to what has been a very challenging project. The works are taking place on one of the busiest Stations on the network, at multiple levels and were further complicated by the sheer volume of additional repairs that had to be completed in order return the Span 4 to its original glory! Throughout all of these challenges I knew that the Morgan Sindall team together with their appointed subcontractors were all galvanised with one goal in mind, and the fruit of everyone’s endeavours is currently being revealed for all to see.”