

**CORBER Consortium (Costain, O'Rourke, Bechy, Emcor Rail)  
St.Pancras Station Refurbishment**

**St Pancras Railway Station** also known as **St Pancras International**. Sited in Central London the original station was celebrated for its Victorian architecture. The original building, which has a Grade I status stands on Euston Road between the British Library, King's Cross Station and the Regent's Canal. It was originally opened in 1868 by the Midland Railway as the southern terminus of that company's Midland Main Line, serving trains from the East Midlands and Yorkshire. In its day, the arched Barlow Train shed was the largest single-span roof in the world, even by today's standards it still boasts as an impressive structure.

Lucky to escape demolition in the 1960s, the complex was completely renovated and expanded in the 2000's at a cost of £800 million. The Station is now home to the Eurostar Train services to the continent, via the Channel Tunnel. In addition to the Eurostar trains, the Station has retained its domestic function and connections by serving the north and south of England. The restored station houses fifteen platforms, a shopping mall and bus station, in addition to London Underground services.

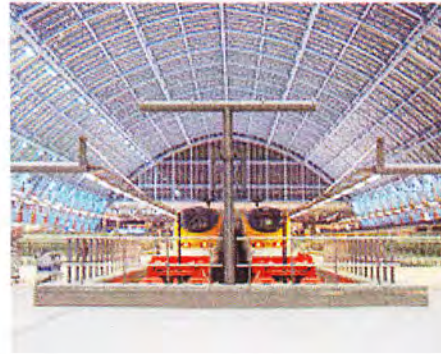
St Pancras includes two of the most celebrated structures built in Britain in the Victorian era. The main Train shed completed in 1868 by the engineer William Barlow was the largest single-span structure built up to that time. The frontage of the station is formed by St Pancras Chambers, formerly the Midland Grand Hotel is a magnificent example of Victorian architecture.



The main entrance from St Pancras Road which illustrates the extensive glazing to the Interim and Deck Extension (These's works formed some of the packages handled by Styda's representative)



The upper level of *The Arcade*, looking south under Barlow's roof, just after opening to the public and just prior to Christmas 2007



*Eurostar trains in the renovated train shed, January 2008*

#### **Platform Layout**

The international platforms used by Eurostar extend back into Barlow's train shed, whilst the other platforms terminate at the southern end of the deck extension. The longer international platforms do not occupy the full width of the Barlow train shed, and sections of the floor of this area have been opened up to provide natural light to the new international concourse, named *The Arcade*, that lies below. This has been fashioned from the undercroft and runs the length of the Barlow train shed to the west of the international platforms. Arrival and departure lounges lie below these platforms.

The various domestic service platforms, both above and below ground level, are accessed from a new street level domestic concourse, named *The Market*.

#### **Public Art**

The Station is decorated with a 9-metre (30 ft) high, 20-tonne bronze statue named *The Meeting Place* stands beneath the

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station clock. It is intended to evoke the romance of travel through the depiction of a couple locked in an amorous embrace.

Also on the upper level, above the Arcade concourse, stands a bronze statue of the former Poet Laureate Sir John Betjeman gazing in apparent wonder at the Barlow roof. The monument to Betjeman commemorates the poet's successful campaign to save St Pancras station from demolition in the 1960s.

**Design and Construction**



*St Pancras Station clock*



*St Pancras clocktower rises above tenement blocks in King's Cross in the 1980s. Etching by Colin Bailey*



*Close up view of the clock tower*

The original plan of the station was laid out by consulting engineer William Barlow. Barlow modified the original plans, by raising the station 6 metres (20 ft) on iron columns, thus providing a usable undercroft space and also allowing the approach tracks to cross the Regent's Canal on a bridge rather than in a tunnel. The single span 74-metre (243 ft) wide roof was the greatest built up to that time. It allowed the station to make maximum use of the space beneath without obstructions. A space for a fronting hotel was included in the plans. Acceptance of the plans resulted in the birth of the original St Pancras Station in 1865.



*A close-up of some of the intricate decoration used in the station*

Design of the station buildings and hotel continued in 1865. This resulted in the impressive Victorian gothic frontage to the hotel that outclassed all the other stations in the capital at that time. Initial construction work associated with the Station began in the autumn of 1864 with a temporary bridge over the canal and the demolition of Somers Town and Agar Town. Construction of the station foundations did not start until 1866. The

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Project suffered a number of set-backs and delays throughout the course of its construction.



*The former Midland Grand Hotel at the front of St Pancras railway station*

Although the Station was not finished it opened on 1 October 1868. Work on the hotel did not begin until mid-1868 and



St Pancras in 1984. This photograph, when compared with the earlier photograph of the upper level of *The Arcade* taken from a similar position, shows the scale of the change that has happened to the station.



Train about to depart the unfinished station. The gas holder in the background is similar to a 'triple' gasholder removed

during construction of CTRL route with the intention that it is rebuilt nearby.

The 20th century did not, on the whole, serve St Pancras station well. In addition, The Midland Grand Hotel was closed in 1935, and the building was subsequently used as offices. The station also suffered bomb damage during the Second World War and as a result it was only partially reglazed after the war.

By the 1960s, St Pancras station had come to be seen as redundant, and several attempts were made to close the station and demolish the hotel (by then known as St Pancras Chambers). A campaign of Strong and successful opposition saved the Station from demolition.

Numerous changes in the rail industry finally led to privatisation, despite this St Pancras remained under utilised. During the 2000's a major rebuild of the West Coast Main Line, saw the resurgence of St Pancras.



*Model overview of the extended St Pancras station (left) and King's Cross station (right)*

The Channel Tunnel Rail Link (CTRL), regeneration and environmental pressures eventually led to the use and regeneration of the largely redundant St Pancras station as the new terminus. Although the proposed route posed many construction and environmental issues the idea of using the under used St Pancras station as the core of the new terminus survived debate and inquests.

London and Continental Railways (LCR), which was created at the time of British Rail privatisation, was selected by the UK government in 1996 to undertake the

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reconstruction of St Pancras, the construction of the CTRL and to takeover the British share of the Eurostar operation.

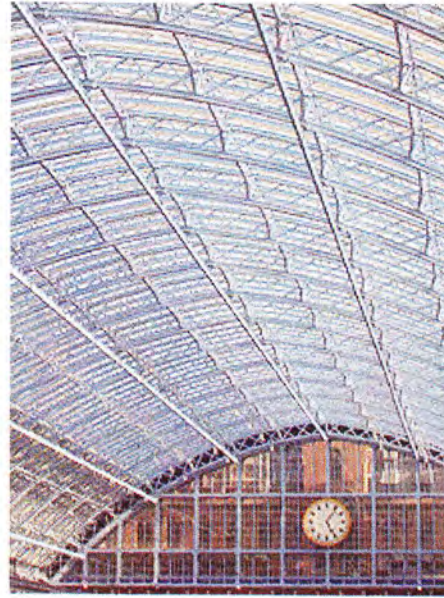
The design and project management of reconstruction was undertaken, on behalf of LCR, by Rail Link Engineering (RLE), a consortium of Bechtel, Arup, Systra and Halcrow.



*St Pancras train shed during renovation (2004) with the spires in the background*

In order to accommodate the unusually long Eurostar trains, and provide capacity for the existing domestic trains to the Midlands and the proposed domestic services on the high speed rail link, the existing station train shed was extended a considerable distance northwards, by a new flat roofed shed. The station was planned to feature 13 platforms under this extended train shed. Services to the East Midlands would use the western platforms, Eurostar services would use the middle platforms, and domestic high-speed services to Kent would occupy the eastern platforms. The Eurostar and one of the Midland platforms extend back into the Barlow train shed. This original design was later modified, with access to the Eurostar platforms from below, utilising the station undercroft and allowing the deletion of the visually intrusive access bridge. By dropping the extension of any of the Midland platforms into the Barlow train shed, space was freed up to allow wells to be constructed in the station floor, which

provided natural daylight and access to the undercroft.



*The reglazed and repainted Barlow train shed in September 2007*



*This statue of John Betjeman celebrating his role in saving the station, was unveiled at the re-opening of the station*

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*The Meeting Place Paul Day*

By early 2004, the eastern side of the extended train shed was complete, and the Barlow train shed was closed to trains. From 12 April 2004, Midland Mainline trains terminated at an interim station occupying the eastern part of the extension immediately adjacent to the entrance.

As part of the construction of the western side of the train shed extension, which now began, a new underground 'box' was constructed on the Thameslink route, which at this point ran partially under the extended station. This box was intended to eventually house new platforms for the Thameslink service.

After the blockade of the route was over, the new station box was still only a bare concrete shell, and could not take passengers. The CTRL budget did not include work on the fitting-out of the station.

In 2005 planning consent was granted for a refurbishment of the former Midland Grand Hotel building, which will be refurbished and extended as a hotel and apartment block.

By the middle of 2006, the western side of the train shed extension was completed, and on 14 July 2006 the Midland Mainline trains moved from their interim home on the east side to their ultimate home on the west side of the station.

From an initial budget estimate of £310 million, the final re-build costs were in order of £800million.

St Pancras station was officially re-opened as **St Pancras International**, and the High Speed 1 service launched, on 6 November 2007.



*Eurostar train at St Pancras*



*Midland Grand Hotel extension under construction*

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**Styda's Role**

At the time of joining the Project much of the civils works were complete and the deck Extension, which was to house the Eurostar trains was well under construction. In fact, as described earlier the eastern part of the shed extension already housed the Midland Mainline Trains. However, at this juncture the deck extension was far from complete.

Styda's representative role was to manage and control the commercial and quantity surveying aspects of the Deck Extension subcontractors, totalling some £40million of subcontract orders, amongst which included:-

**Structural Steel frame**

External Façade of the building – the majority of the external walls to the Deck Extension are constructed from stainless steel cassettes housing glazed units

Deck Extension roof – Internal and External skins

Interim extension roof – glazed in a similar fashion to the Barlow shed

Glass facades and automatic doors

Temporary Works scaffold –this both extensive and elaborate to meet the demands and the requirements of the contract.

Duties included the letting of sub-contract orders, management of account including interim and final accounting. The assessment and agreement of compensation events. All of the subcontract orders were based on various NEC Subcontract Agreements ranging from Option A – E, depending upon the type and nature of the work. The Main Contract had been awarded to the CORBER Consortium (Costain, O'Rourke, Bachy, Emcor Rail) on an Option C.