

NEWS, VIEWS AND ANALYSIS ON TODAY'S RAILWAY

*modern*

# railways

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# Railways reshaped for retail emporium

The huge whitecity complex in west London is prompting the construction of two new stations, remodelling of another, plus shifting of the Central Line sidings. James Abbott reports

An enormous new shopping and leisure centre is taking shape on Wood Lane in west London, close to the BBC television centre. When it is completed in 2008, the £1.5-billion whitecity development will have floor space of 1.4million square feet and will feature a cinema, new library, affordable and key worker housing as well as a retail emporium. Covering 40 acres, the new complex will be one of the largest in-town retail centres in Europe, on a par in size with centres such as Lakeside and Bluewater. But unlike those car-dependent out-of-town retail parks, whitecity is rising out of the dense urban fabric of west London and as many as two out of three of its shoppers are expected to arrive by public transport. It is for this reason that £170million is being spent on public transport improvements in the area, to complement whitecity's car parks that will be able to accommodate over 4,000 cars.

At the southern end of the new complex there will be a transport interchange centred

on Shepherd's Bush station on the Central Line, with a new over ground station on the West London line nearby. At the other end of the whitecity complex a new station is being built on the Hammersmith & City Line, close to White City station on the Central Line.

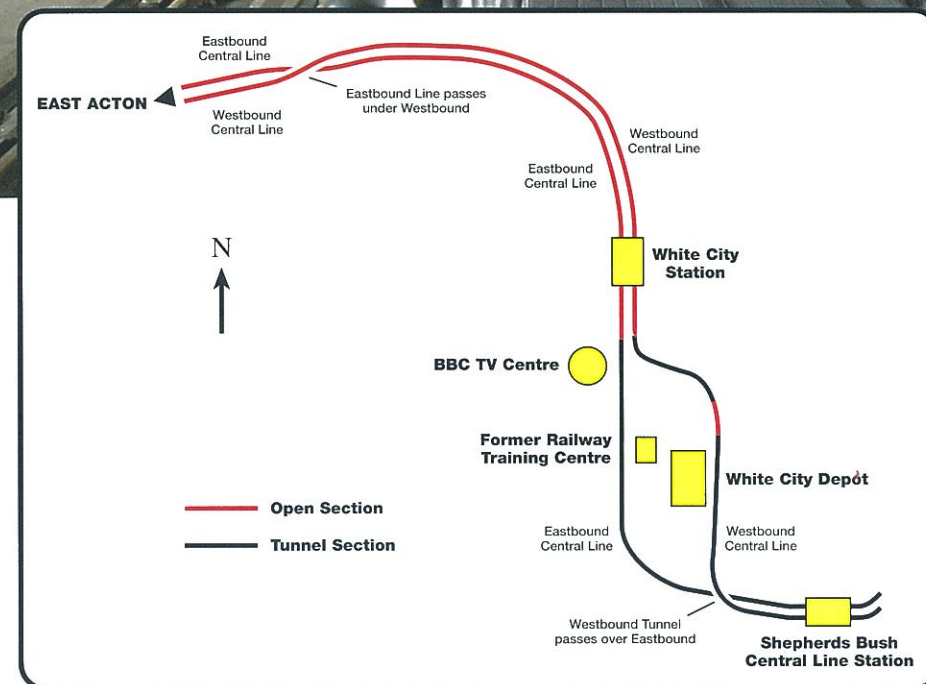
## Complicated history

The area on which whitecity is taking shape is rich in railway history (this has been written up in a paper by LU's Paul Godwin, which is drawn upon here). Much of the land on which the retail centre is being built is in railway ownership, with the developer Westfield leasing the land from London Underground for 203 years. A large part of the site is occupied by a 16-road siding complex for the Central Line: this is being cleared to make way for the new development. A new set of sidings is being built underneath the shopping centre.

The sidings are here because Shepherd's Bush was the western end of the Central London Railway when it opened in 1900. A

depot was built in the grounds of Woodhouse Park, a nearby mansion. A few years later, an area of about 140 acres west of the depot (much of which is now occupied by the BBC) was selected for the Franco-British exhibition of 1908, and as much of the exhibition was housed in buildings covered in white stucco, the area was dubbed 'White City'. The White City stadium was also built here, where the 1908 Olympics took place (the stadium, famous for greyhound racing, was closed in 1984 and the site is now occupied by BBC offices).

To serve the exhibition centre a new station, Wood Lane, was built on the Central Line (another station was built on the Hammersmith & City Line to serve the exhibition, as discussed below). Existing track used to reach the Central Line depot was augmented by some new track to form a loop line out from Shepherd's Bush station and back again, with the new Wood Lane station on the western extremity of this loop. In 1920, the Central London was extended to Ealing

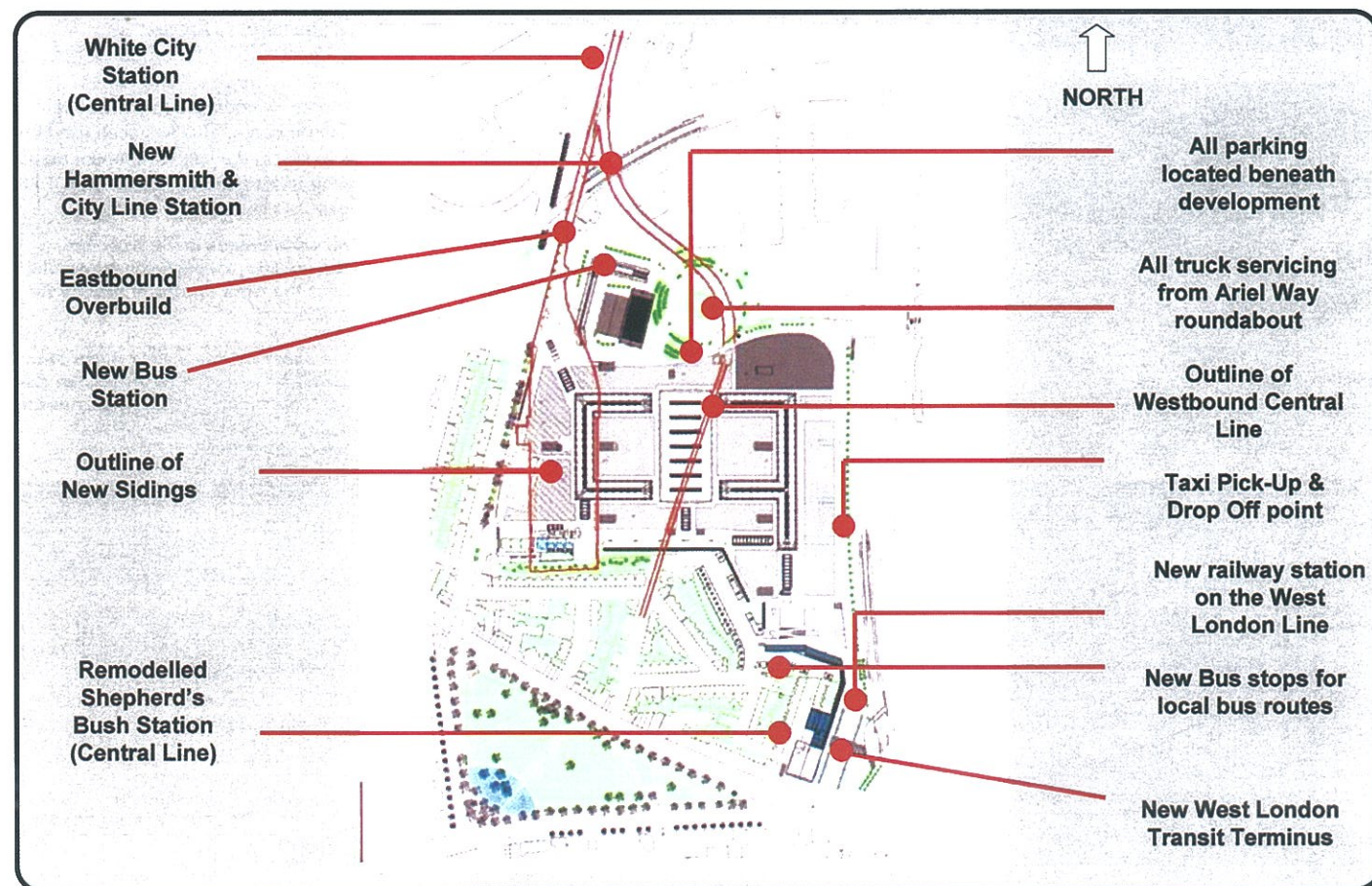


The new Central Line sidings are underneath the shopping complex. Brian Morrison

## New sidings

While no longer the principal train servicing point for the Central Line (that is now West Ruislip), the sidings at Shepherd's Bush are used for overnight stabling and for accommodating trains at times of disruption. Access to the yard at Shepherd's Bush is from the centre road at White City station; a train coming out of service from central London will go into White City station and then set back into the sidings.

The old layout now being scrapped is less than ideal as there is a sharp curve at the throat of the sidings. The new set of sidings, which has 16 roads like the old one, is being



All parking located beneath development

All truck servicing from Ariel Way roundabout

Outline of Westbound Central Line

Taxi Pick-Up & Drop Off point

New railway station on the West London Line

New Bus stops for local bus routes

New West London Transit Terminus

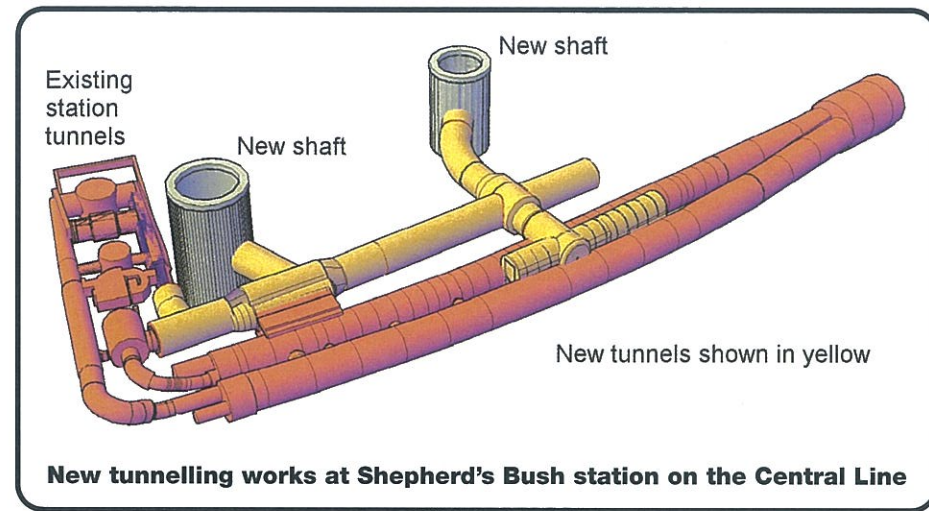
The old Central Line sidings in the early afternoon of 3 May - no trains present means a good service is operating, with no need to turn services back. The roads on the far right have already been taken for development.

Brian Morrison

Broadway, with extra platforms built at Wood Lane to accommodate the new service.

Wood Lane station was cramped and inconvenient and powers were obtained before World War 2 to resite the station further north. The new station, White City, was opened in 1947, and Wood Lane was closed. The complex history of the area has resulted in the two running lines on this section of the Central Line being transposed. Westbound from Shepherd's Bush, the line turns north on a sharp curve, known as the Caxton curve (as it runs below Caxton Road). This is the sharpest running line curve on the LU system. The curve takes the westbound line over the eastbound tunnel. The two lines are on the 'wrong' sides at White City station, and as the Central Line passes Wormwood Scrubs, it regains normal left-hand running.





**FIT FOR USE**

To meet London Underground's Standards, Scott Wilson Railways has developed the Systems Engineering Management Plan for the new station on the Hammersmith & City Line and for all the transport investments at White City. This Plan defines the considerations and processes required to ensure that the User Requirements are met on completion, and that all relevant standards and codes of practice have been complied with. The work additionally includes the identification and subsequent integration of all project interfaces to verify the various stakeholder requirements, which Scott Wilson Railways says are both key to a systems engineering approach.

**WHITE CITY RAIL WORKS: CONTRACTORS**

- Retail developer:**  
Westfield Shoppingtowns Ltd
- Main contractor for retail complex:**  
Multiplex Constructions (UK) Ltd
- New feeder track enabling, civil work:**  
Costain
- New sidings, civil work:**  
Costain
- New sidings, trackwork:**  
Grant Rail
- New sidings, signalling:**  
Westinghouse
- New sidings, electrical & mechanical work:**  
T. Clarke
- Concrete works:**  
P. C. Harrington
- New H&C Line station:**  
Costain
- Shepherd's Bush, below-ground works:**  
Morgan Est
- New West London line station:**  
Norwest Holst

built to the west of the original set. The access is better aligned. 'Constructing the feeder line track from White City through to the new underground sidings was an engineering challenge which Multiplex were comfortable with,' explains Phil Todd, Rail Director with Westfield's main contractor, Multiplex Constructions (UK) Ltd. 'When completed, this new part of the Central Line railway provides a significant improvement in the quality of facilities available to the operator, London Underground and the maintainer Metronet Rail.'

The bridge and viaduct structure on which the Hammersmith & City Line crosses over Wood Lane had to be broken through to fit in the new Central Line siding access, with some of the brick arches of the H&C viaduct to the east of Wood Lane replaced by a steel bridge. This was slid into place last summer, when there was added pressure on the engineering teams not to over-run the possession as the Mayor was adamant that London's public

transport system should be as functional as possible in the wake of the 7/7 attacks.

The new siding access goes under the new bridge in cut and cover tunnel and under Ariel Way. Here it hit the site of the Central Line's former Wood Lane station. The Central's eastbound track had to be exposed to allow work teams access to remove the remains of the station; at the time of my visit (early May) the mosaic floor of the booking office hall was still visible underfoot near here.

Once through the old station site the access line fans out into 16 roads under the western part of the shopping complex. The new sidings have been built to modern standards, with slab track and raised steel walkways to enable cleaners to access the trains. Safety and operations are enhanced by a full signalling system for the siding complex, provided by Westinghouse Rail Systems. Complementing the new sidings is new staff accommodation for train crew and cleaners.

*Right: Two 'listed' buildings on the site dating from the original Central London Railway depot, the so-called Dimco buildings after the Dimco Lathe Company which occupied them in the early years of the 20th century, are being painstakingly restored. A bus garage and other transport infrastructure will occupy these buildings. Brian Morrison*

*Below: New bridge for the Hammersmith & City Line. The access line to the new Central Line sidings runs under here. The entrance for the new H&C station for the shopping centre will be here, with platforms on the brick arch to the right. Wood Lane is to the left, and White City station on the Central Line is 200m away in the distance.*

Part of the old set of sidings had already been removed by the spring to make space for the building work. The switchover from old to new is scheduled for the end of September in a '2-5-2' procedure, explains Martin Roach, Metronet Rail's Head of Infrastructure Protection - White City Project. '2-5-2' signifies a weekend possession, followed by a week in which trains will be stabled at West Ruislip (avoiding the need to reconnect any sidings at White City) and a second weekend possession to finish the job.

**Shepherd's Bush interchange**

Shepherd's Bush station on the Central Line is at the southern end of the whitecity retail complex and passenger numbers using the station are expected to increase from 27,000 a day in 2001 to 45,000 a day after the retail centre opens. The station is being remodelled to accommodate the increased pedestrian flows.

The architect for all the schemes at the station is Tony Meadows Associates. Responsibility for the work splits in two, with the above-ground section the responsibility of the developer and below-ground the bailiwick of LU/Metronet.

The present station superstructure will be demolished and replaced with a new expanded building. The contract for the new ticket hall and staff accommodation will be awarded later this year.

Morgan Est has been charged with undertaking the congestion relief works underground under a £33million contract awarded by LU.

Additional staircases and passageways are being provided, with step-free access through the provision of

lifts. Dovetailed in with this will be improvement work by Metronet under the Public Private Partnership programme, involving items such as passenger information and security cameras.

Outside Shepherd's Bush station, improved interchange with bus services is being provided. It is expected that 40 buses per hour will serve this interchange (more if the West London Tram is not built). Bus routes that currently terminate here will be extended to another new bus station on the north west side of the retail site.

A new station on the West London line (which runs from Willesden Junction to Clapham Junction) will be part of the Shepherd's Bush interchange. Construction of the new station began in March 2006, with Norwest Holst the contractor, and should be completed by spring 2007. This station will be served by the new franchise replacing Silverlink Metro that will be let by the London Rail division of Transport for London next year. An improved timetable is planned for the peaks, when there will be three trains per hour (off peak frequency will remain at 2tph).

**MILESTONE DATES**

Development agreement signed  
**Aug 2004**

H&C Line viaduct completed  
**May 2006**

Completion of Central Line sidings  
**Autumn 2006**

Completion of new H&C Line station  
**Autumn 2007**

Completion of bus station north of site  
**Autumn 2007**

Completion of Shepherd's Bush congestion relief / step free  
**Spring 2008**

Opening of retail and leisure centre  
**Spring 2008**

Completion of southern interchange  
**Autumn 2008**

Completion of Shepherd's Bush station ticket hall  
**Winter 2008**

If the West London tram project is built this will also serve the Shepherd's Bush interchange; the latter will form the eastern terminus of a line to Uxbridge.

**New Hammersmith & City Line station**

A new station is being built on the Hammersmith & City Line to serve the northern side of the retail complex; it will also benefit workers at the BBC and football fans visiting the Queen's Park Rangers ground. Enabling works are underway and construction will get going in July. The pedestrian access to the new station will be adjacent to the new bridge over Wood Lane that was put in when the Central Line siding access was constructed, with the platforms running alongside the brick viaduct. Thus the new station will be on the east side of Wood Lane, the opposite side from the old Wood Lane (Exhibition) station built on this line to serve the 1908 Franco-British exhibition, which closed in 1959 (by the time of closure it had been renamed White City).

The new station has been designed by Ian Ritchie Architects, who were responsible for Bermondsey station on the Jubilee Line Extension, while Costain is to undertake the works. Costain has recent experience of London Underground work as it is part of the Costain Taylor Woodrow consortium that is responsible for upgrading King's Cross St Pancras tube station, and was also involved on the new sidings at White City. 'The developer, having seen what a good job Costain did on the civils work on the sidings, appointed the company to build the new station on the Hammersmith & City Line' relates Phil Todd of Multiplex.

The new station on the H&C, whose name has yet to be decided, will be located about 200m from the existing White City station on the Central Line and will provide a new out-of-station interchange between the two lines, explains Steve Washington, Project Director with London Underground's White City Project Management Team. The opening of the new station on the H&C Line is planned to coincide with the opening of the retail development. **MIR**

*The eastbound running line of the Central Line is in the centre of this picture, with the access line to the new sidings to the left. This will all be covered over. Brian Morrison*

