

Submission to the Outer London Commission on the development of the Arup Heathrow Hub

Revised
5th April 2009

1.0 The Arup Heathrow Hub and its importance to the development of Heathrow airport

Arup is a trust owned company that uses its resources to invest in the development and promotion of projects that it believes will make a substantial contribution to sustainable development, including the promotion of economic and environmental benefits. For the past three years the firm has been developing and promoting the “Heathrow Hub”, a multi-modal transport Hub that would put Heathrow airport at the centre of a the developing national and international rail network. This will have a significant economic impact on its immediate and regional environment.

By doing so, the proposal will enhance Heathrow’s role as London and the UK’s premier international hub airport by addressing key challenges that the airport faces. The improvements in infrastructure and transport services associated with the development of the Heathrow Hub will make a step change in the provision of surface access to Heathrow by rail and other forms of public transport.

This will bring benefits to both leisure and business users of the airport – contributing to quality of life and employment. By substantially increasing the use of public transport for passengers and employees accessing the airport, and reducing car use, the proposal will contribute to improvements in local air quality in and around the airport and a reduction in congestion for remaining road users. The rail developments associated with the proposal will also enable new and improved rail services into London, particularly for people living to the west of the airport, and will provide the potential for new rail services linking Thames Valley, East London and Thames Gateway – further contributing to economic regeneration.

2.0 The challenges facing Heathrow airport

Although Heathrow is still Europe’s busiest airport, the number of destinations served has declined since 1990 putting Heathrow behind Charles De Gaulle, Schipol, Frankfurt and Munich. Several contributory factors have been identified – but many people have singled out difficulties for passengers of getting to and from the airport and moving around the central terminal area (CTA).

Associated with difficulties of access are highly congested roads around Heathrow, which itself is a major contributor to poor local air quality – and a relatively low public transport (PT) share, particularly for passengers from the west, south west, west midlands, the eastern side of London and Thames Gateway.

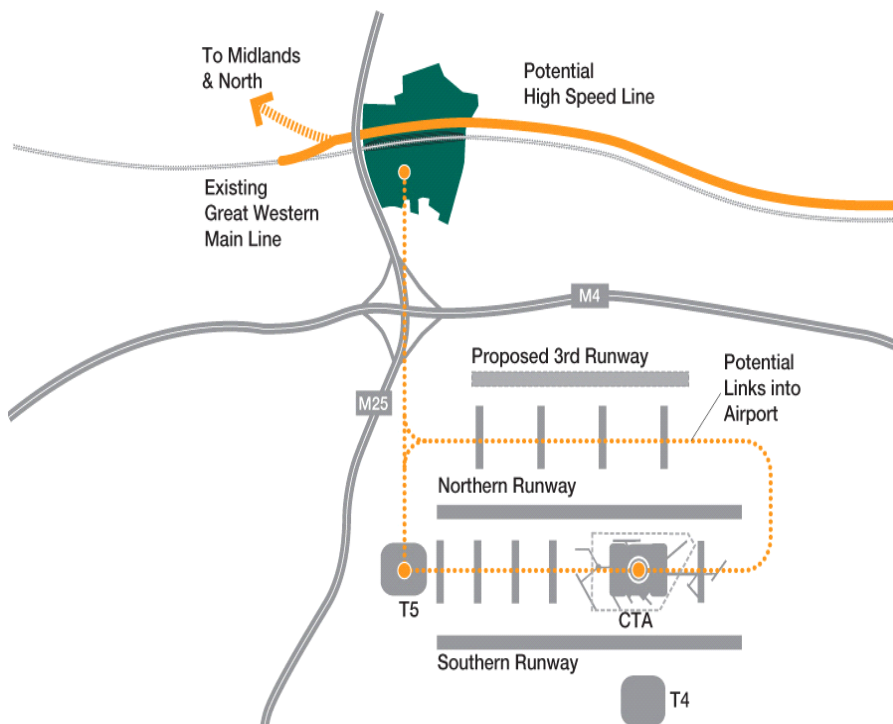
These challenges have led us to develop a rail proposition aimed at enhancing Heathrow’s role through putting Heathrow at the centre of better rail connections. The proposal will complement BAA’s own plans for improving surface access to Heathrow, including Crossrail and Airtrack.

In this context we have noted the Mayor's London Plan proposals set out in 'A new plan for London' (April 2009) and in particular an integrated approach to the environment and growth issues facing the area around Heathrow (para 89); concern at the hidden costs of transportation (CO2 emissions, air and noise pollution); although the Mayor recognises the importance of maintaining and enhancing London's global links, emphasising sustainable airport operations, he opposes the current plans for a third runway at Heathrow

(para 166-7); acknowledgement that London's economy and quality of life depend to a significant extent on the capacity and range of its strategic transport networks, the Mayor's proposal to support strategic rail services and high speed rail hubs, and the recognition that further runway capacity will be needed in the South East to meet London's needs (para 170).

3.0 Hub infrastructure developments

The proposition involves development of a multi-modal transport interchange bringing both new rail infrastructure and the enhancement of existing rail infrastructure to the airport.



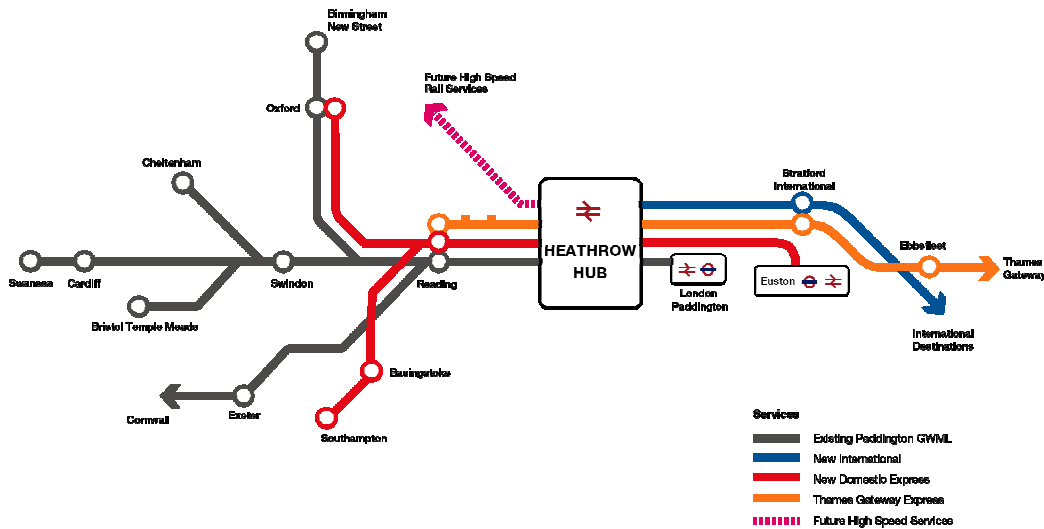
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Figure 1: The Heathrow Hub Proposal

The Hub itself involves the development of a major new 12 platform station on the Great West Main Line (GWML) on a site 3.5kms due north of T5. This station will be linked to the Channel Tunnel Rail Link (HS1) by new rail infrastructure and enhanced existing infrastructure – including a 24 km tunnel and new track.

In addition, we propose to go beyond the existing plans by electrifying track to the west of Maidenhead. This will permit fast, quiet and environmentally friendly electric trains to provide direct services to the airport for the first time, as well as providing new services between locations to the west of the airport, London and Thames Gateway by travelling onwards from the Hub via the new rail tunnel.

The Heathrow Hub Proposal: Regional and international connectivity



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Figure 3: Regional and international connectivity

We also propose to create a new road link from the Hub to the M25 north of the junction with the M4.

Altogether, we estimate the capital cost of these infrastructure developments at £4.5bn (in 2008 prices).

To achieve the scale of services and improvements in travel times that can result, we believe that the interchange needs to be developed outside the current Heathrow airport central terminal area (CTA). The site we have identified has resulted from examining a long list of 22 possible sites, including several alternative sites located on the GWML. The proposed site covers approximately 200 acres.

4.0 Links to the CTA and airport terminal development

To gain the most for passengers and the operation of the airport and its services, passengers using the Hub station will need to get as quickly and efficiently as possible to their terminals – we have examined a range of technical options for enhancing connectivity at the airport and are confident that these links are technically and commercially feasible. We also think it would make sense to locate passenger air terminal facilities at the Hub station - and that it would be worth considering the development of new terminal facilities (the proposed “T6”) at the proposed Hub site.

However, these elements are not yet part of our Hub proposal and are the business of the airport operator, BAA. We are engaged in constructive discussion with BAA on the issues of the location of the Hub, and on how to achieve the best links from the Hub to the rest of the airport.

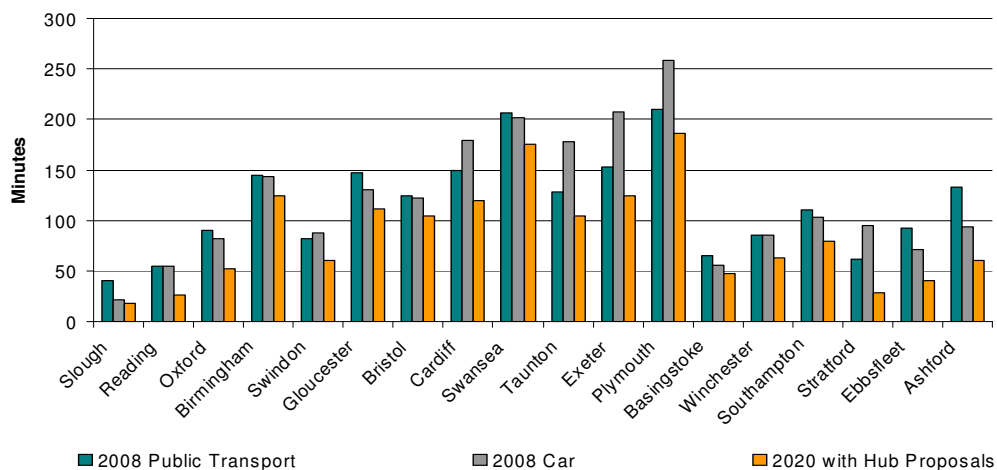
5.0 Links to and routeing of HS2

We believe that whether or not the Heathrow third runway proposals go ahead in the short term, it would be sub-optimal in network terms and fail to make the most of a crucial opportunity, if HS2 were not to serve Heathrow directly. Only by a direct connection can surface access to the airport be improved to enable the potential for reduction in CO2 emissions and improved air quality in the area, and for rail-air substitution, to be realised. These are important first steps to tackling the issues of economy and environment in the Heathrow area, for which, in addition, better local and sub-regional connectivity would be a spur to improved environment and better regulated growth.

6.0 Extent of reductions in journey times

From most of the places we have examined the car is currently the preferred mode of transport for getting to and from Heathrow – and particularly for passengers travelling from the west. If the Hub proposals were in place we estimate that journey times by rail can be reduced by between 30 minutes and 1 hour. This will encourage people out of their cars – the modelling work we have undertaken so far indicates that overall the Hub proposals together with other planned rail schemes can increase the share of journeys made on public transport to over 55% (compared with approximately 37% now). The share of heavy rail journeys would increase from 9% now to approaching 30%.

The Heathrow Hub Proposal: Cutting journey times to and from Heathrow



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Figure 4: Cutting journey times to and from Heathrow

At the same time, the reductions in rail journey times to Heathrow will increase the airport’s catchment area i.e. give a greater number of passengers a wider choice of which airport they choose to fly from.

For example, the new direct journey from Oxford to Heathrow will be possible in just over 50minutes compared with a rail journey of 1.5 hrs now involving a change on to either Heathrow Connect or Heathrow

Express (at Paddington). And a journey between Ebbsfleet and Heathrow on high speed rail all the way will be achieved in only 40 minutes – compared with a current journey time of over 1.5 hrs now.

For international trips, for example for people currently travelling by rail to Paris, any passengers coming from the west or south of Heathrow will benefit from a 30 minutes reduction in journey times compared with travelling on the underground and changing at St Pancras. For many of these places, the 30 minute reduction in travel time by rail will put rail in a strong position to attract new customers – including those who might have otherwise flown from Heathrow or indeed, other airports, as it will bring the rail journey time down to Paris down to between 2.5 and 3.5 hrs, the range at which rail is being shown to capture a sizeable proportion of trips on transport corridors served by both rail and air. So there will also be to some extent, some substitution of rail journeys for flights.

If the high speed network is extended to Birmingham and the north via the Hub, as we propose, the journey time from London to Birmingham could be reduced to 45 minutes, and from Heathrow to Birmingham to 35 minutes.

7.0 Conclusion

We believe that the Hub proposal, which is a combination of both the development of high speed infrastructure and conventional rail infrastructure can contribute substantially to Heathrow’s economic role by placing the airport at the centre of an expanding rail network. By doing so, the Hub proposal will fulfil many of the aims identified by the Outer London Commission as the objectives for the development of the Heathrow area as a “super-hub” to serve London and the UK.

Heathrow will be better connected to the west, south west, west midlands, London, Thames Gateway and Europe. Passengers will benefit from direct rail links, lower journey times and higher rail service frequencies.

As a consequence, passenger choice on how to access the airport will be transformed:

- A greater number of people will be able to take the train rather than use a car, improving journey times and reliability and contributing to improvements in CO² emissions and air quality.
- Rail will become a realistic alternative to flying for some short haul trips.
- A greater number of people will see Heathrow as their preferred airport, given the improvements in rail accessibility.

Overall the economic benefits of Heathrow as the UK’s principal air hub will be more widely shared. Moreover important steps forward will be taken to deal with economic and environmental issues of the Heathrow area.

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