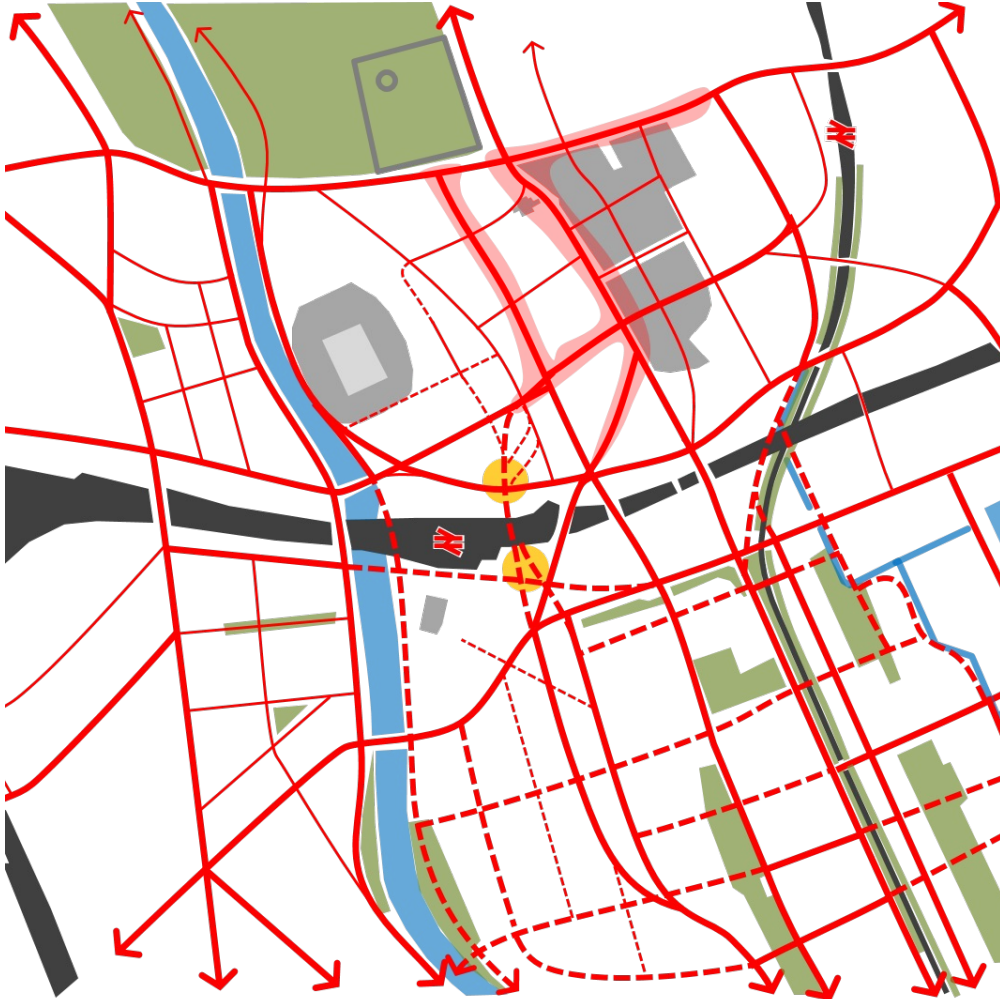


Case study | Cardiff Central Station Cardiff, UK



Construction of a Pedestrian Movement Forecast Model to evaluate design options for the comprehensive redevelopment of the station & its surroundings.

Client

Network Rail

Year

2015

Role

Strategic urban design advisor

Team

Powell Dobson Architects

Key Features

Urban baseline study

Design assessment and development

Pedestrian movement forecast

The opportunity

Cardiff Central Station is the main gateway to Cardiff. The local context of the station is currently constrained by the largely vehicle oriented road infrastructure, the railway infrastructure and the poor quality of the public realm.

Cardiff Central Masterplan represents an opportunity for Cardiff and the surrounding region to raise the profile of the area both within the UK and internationally.

The masterplan includes the BBC project with a Central Square to the north of the station, a new Arena and public sector offices to the south and a new public route through the Central Station.

In order to assess the impact on pedestrian movement patterns of the station masterplan and the future developments around it, Network Rail commissioned Space Syntax to develop a Predictive Movement Model and Forecast.

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Our contribution

One of the unique inputs of Space Syntax was to provide contextual understanding of the site in terms of connectivity and movement potential. Firstly, our Spatial Accessibility Model of the existing network of Cardiff was used to analyse spatial opportunities and constraints of the site.

During the design development process, this model was used as a design tool to test the impact of spatial layout changes as a result of the emerging design options. This informed the design development and influenced strategic decisions by enabling an objective evaluation of proposed scenarios in terms of potential impact on movement patterns and activity potential.

Combined with land use, population and transport data, the Spatial Accessibility Model was used as the base for the Predictive Movement Model.

This was used in order to translate future changes in layout, quantum of development and station demand uplift into a Pedestrian Movement Forecast for the preferred masterplan option and its immediate context.

The outcome

The Spatial Accessibility Analysis highlighted the potential of the proposed public route to create a well-used north-south connection that would contribute to the overall improvement of connectivity in the area.

This was validated by the Pedestrian Movement Forecast for the future scenario.

A. The future developments around the station and the introduction of a public route through it creates an opportunity for enhancing the connectivity of the area and embedding the station into the wider movement network (previous page).

B. Spatial accessibility analysis of the proposed masterplan.

