

ST JAMES INTERCHANGE IMPROVEMENT

Opened on Tuesday 17 August 1993

by

*Lord Fraser of Carmyllie
and Councillor Malcolm Waugh*



THE SCOTTISH OFFICE



Strathclyde
ROADS

BACKGROUND

The £36M St. James Interchange Improvement promoted jointly by The Scottish Office and Strathclyde Regional Council, is the largest "design and construct" contract carried out in the UK to date.

The junction of the M8 and the A740 at St. James is the most important interchange on the M8 west of Glasgow with five major roads linked together by a roundabout above the motorway. Despite the installation of traffic lights on the roundabout some years ago, delays have continued to build up with queues backing down onto the motorway, creating a safety hazard. Without further improvements, the completion of the Johnstone-Howwood bypasses together with the continuing expansion of Glasgow Airport and planning developments in Paisley would have resulted in increased traffic hold ups at this key point on the strategic

road network. The new junction arrangements, involving the construction of direct ramps between the M8 and the A740 and parallel roads to the motorway between the St. James and Airport interchanges, will remove a considerable volume of traffic from the existing roundabout and substantially reduce weaving on the M8.

DESIGN CONSIDERATIONS

The improved interchange was the subject of a competition where the three finalists had to provide details of their proposals to the Royal Fine Arts Commission for Scotland.

Each of the two parallel viaducts has a multi span deck comprising an in-situ reinforced concrete slab acting compositely with four steel plate girders. The substructure of the viaducts consist of reinforced concrete crossheads on twin reinforced concrete columns which are in turn supported by precast driven piles into soft alluvial silts and clays extending to depths of

40 metres. Adjacent to the railway, bored piles had to be used to avoid disruption.

One unusual aspect of the contract was that, due to the poor ground conditions, instead of the normal one year guarantee period the approach embankments have a 20 year guarantee. Agreed settlement performance criteria have been obtained and are guaranteed over the twenty years. To achieve this the contractor has used special measures to stabilise the embankments by means of surcharging and using additional drainage.



Promoters
Strathclyde Regional Council
and
The Scottish Office

Engineer
Eur Ing Professor Donald Carruthers C Eng FCE FIHT
Director of Roads

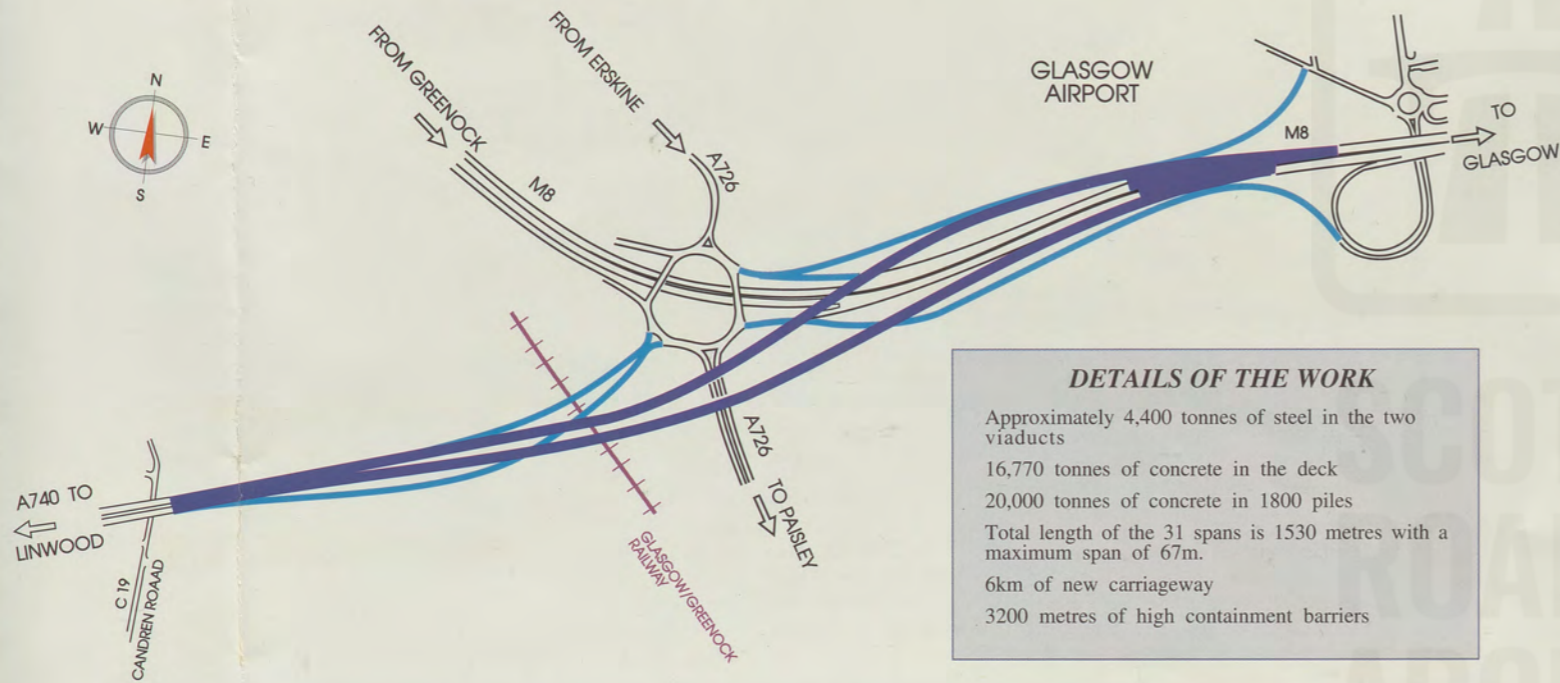
Contractor
Balfour Beatty Construction (Scotland) Limited

Designers
Strathclyde Roads Design
Scott Wilson Kirkpatrick

Quality Assurance Consultant
Quality Management International

Major Sub Contractors
Hercules Piling
Fairfield Mabey
Paisley Welding

St. James Interchange Improvement



DETAILS OF THE WORK

Approximately 4,400 tonnes of steel in the two viaducts
 16,770 tonnes of concrete in the deck
 20,000 tonnes of concrete in 1800 piles
 Total length of the 31 spans is 1530 metres with a maximum span of 67m.
 6km of new carriageway
 3200 metres of high containment barriers

CONTRACT

The contract was awarded to Balfour Beatty Construction (Scotland) Ltd. in April 1991 and work commenced on site in September 1991. The main works were preceded by a number of advance contracts which involved the diversion of major public utility apparatus, the alterations to the football pitches in St. James Park and the provision of drainage control for Paisley Moss.

To ensure compliance with the requirements of the contract the Contractor had to submit a Quality Assurance Plan which was regularly audited by external consultants. Good progress was maintained throughout the contract despite the difficulties which were experienced with ground conditions which required the installation of 25% more piles than anticipated.

Although the work had to be undertaken with very substantial traffic flows through the site, progress on the very extensive road and bridgeworks was carried out with as little disruption to traffic as possible. A small number of

diversions and carriageway closures were necessary for the girder lifts and the erection of the signing and signalling gantries over the existing carriageways.

Only preliminary landscaping was included in the main contract and the final landscaping will be accomplished by a further contract let to coincide with the planting season.

FUNDING

The project was funded jointly by Strathclyde Regional Council and the Scottish Office with grant assistance being provided by the European Regional Development Fund as part of the Strathclyde Integrated Development Operation.

HISTORY

The Interchange is named after the adjacent park which in turn takes its name from the patron saint of the Fitzallan family who founded Paisley Abbey, became High Stewards of Scotland and eventually founded the Stewart Dynasty of Kings.

The park area has been put to various uses by the people of Paisley over the centuries. These include common grazing land, an area for mining and a race course for those horses no longer permitted through the streets of Paisley. One such race was run for the Silver Bells, possibly the oldest remaining British horse racing trophy, which is displayed at Paisley Museum.

The park has been a location for annual fairs and a significant facility for generations of local people to enjoy playing and watching football.





THIS PROJECT HAS BEEN
PART - FINANCED BY THE
EUROPEAN REGIONAL
DEVELOPMENT FUND

STRATEGIC
INTEGRATED
DEVELOPMENT
OPERATION

