

Foreword

David Bailey, OBE

The building of the extension of the Jubilee Line under London to its new terminus at Stratford will represent in the new millennium one of the outstanding achievements at the end of the present millennium. Not only does it evidence a tremendous civil engineering feat, but also a celebration of public transport interchanges: of the eleven stations on the extension, all but Bermondsey have direct connections with other Tube services, bus services, national rail services and/or river services. Four of the stations have large new bus stations integrated with them.

The route and stations of the extension effectively link Victorian construction with the modern world and propel both into the future. While the Jubilee Line ticket halls have been carved out of the vast 19th century vaulted undercrofts of Waterloo and London Bridge stations, Bermondsey and Canning Town stations have been built to advanced architectural concepts.

Each of the eleven stations of the extended line is designed as an individual entity. Each has been designed to be unique to and to contribute strongly to its neighbourhood and, at the same time, to represent recognizably, the best of London Underground. A rigid corporate identity has not been imposed on the project, but its architects have re-defined and reinvented Underground engineering and produced stations that respond to needs and to location and which are united by a common philosophy. The architecture, though dramatic, is very simple, and should feel as right in 2050 as it does in 2000.

Clearly, the Jubilee Line's civil infrastructure, new trains and new stations have been built to the latest safety standards. More noteworthy, however, has been the opportunity to enhance the safety provision of highly complex old stations at Westminster, Waterloo and London Bridge. Likewise, it has enabled the Underground to provide access for the mobility impaired from Westminster to Stratford—the first entire section of the railway to do so. These improvements have been a key consideration in the design.

The strategic approach both to safety and to the environment for this immense construction project has resulted in an exemplary performance. There has been not one fatality, an unusually low number of reportable accidents, and no 'near miss' catastrophes despite eight under river crossings and a vast amount of exceptionally difficult underground excavation work. This is an

achievement to be proud of today and modelled for the future.

The project has had its shortcomings and disappointments. The vision and scope set in the early 1990s included new technology features in the areas of train control systems and communications which have not been fully achieved. The programme for construction was set at 53 months to have full line opening in March 1998. In the event, that was far too ambitious and full line opening will have taken an additional 18 months. Similarly, the original project cost estimate of £2 billion has increased to in excess of £3 billion. We need to reflect on these dimensions to understand why the differences occurred. Indeed, we may find that the outturn construction performance and cost were always so, in which case it would be interesting to wonder whether the extension would have been approved had these outturn facts been known then.

Immediately after the opening of stage 1 of the line, *New Civil Engineer* commented that

'without doubt, the JLE is a piece of infrastructure to be proud of and it will serve London well for decades, but its construction has done little to promote the profession's contribution to society... a balanced view is that it belongs both in the long British traditions of engineering triumphs and heroic failures'.

Undoubtedly, there are many lessons to be learned from the project, positive and negative. Work is already underway to capture these, but the time for sharing them is not now.

Maximum effort needs to be put into completing the project and successfully integrating the extended Jubilee Line into the Underground network. Once that is done, we can reflect on the past and share lessons for the future. The extended Jubilee Line will transform the public's appreciation of travel in the deep-level Tube network. Apart from the introduction of escalators, station and interchange design has barely changed since the first Tube line opened 110 years ago. The extended Jubilee Line will bring to London a world's best design taking forward pioneering work of (often British) engineers in Hong Kong and Singapore. It is a magnificent product which will be a joy to use and will contribute to ensure the future of London as a world-class city.



Former Jubilee Line Extension project client director and former London Underground Board member