

Building our future

Edinburgh has been through decades of development. The City's economy and encouraging inward investment now ensures that when a business comes to Edinburgh, it comes to stay. One of the contributory factors to this success has been the vision and strategy of the City's leaders; politically, economically and socially.

The City is now on the cusp of a monumental change – one which will drag it into the 21st century and place it as a leader in Europe in terms of its public transport infrastructure. The agent of this change is the Edinburgh Tram Project – which in April 2008 moved into a new phase, achieving a critical milestone in its delivery programme, with the signing of the contracts for the scheme's infrastructure and the manufacture of its rolling stock.

In my own experience, Edinburgh is no different to any other successful Capital City, where the knock-on effect of its successful and growing economy is that its current public



Willie Gallagher

*Executive Chairman,
Transport Initiatives Edinburgh (tie)*

Willie Gallagher joined the Board of tie in February 2006, as a Non Executive Director and was appointed Executive Chairman in June 2006. He brings with him extensive engineering and transport experience and has held senior roles within Scottish Power Group, the Strategic Rail Authority, Scottish Legal Aid Board, Lothian Buses and Transport Edinburgh Limited (TEL).

Gallagher is a Board Member of the Scottish Legal Aid Board, a Non Executive Board Member of Lothian Buses and Transport for Edinburgh, and he is also the Director of Touchdown Services Ltd, which provides consultancy and engineering services to the utility and construction sectors.

transport system, although one of the best in the country, is nearing capacity.

The City leaders understand the importance of public transport and it is clear to them that doing nothing is not an option. Hence the tram project, a solution supported by the Scottish Government and the business community.

Trams are renowned across the world as being the best carriers of people in busy cities, getting people where they want to go quickly and cheaply, and improving connections between people, their jobs and their leisure. They attract new development, investment and businesses along their routes.

Indeed, although we are only in the preliminary stages of construction on the Edinburgh Tram Project, we are already seeing development opportunities opening up. This is borne out by previous experience, with cities including Dublin, Nice, Nottingham and Strasbourg seeing rejuvenated city centres and business areas coupled with accelerated growth in residential and suburban areas, all driven by trams.

Edinburgh's scheme is based around two routes; Line 1(a) which links Edinburgh Airport

in the West with the port of Leith in the East via key business areas and the City's historic centre; and Line 1(b) which joins the emerging housing and business developments in the north of the city to Line 1(a) at an interchange at Haymarket.

To get to the position where we can award these contracts and move into the main construction phase of the project has taken many years of hard work. The scheme had to seek approval from the Scottish Parliament; a process which took two years, followed by a year spent finalising the business case. As part of this process, we've talked and listened to the experiences of other organisations that developed tram projects elsewhere.

This was one of the drivers behind the innovative procurement that assisted us in selecting the contractors now charged with delivering the scheme. The process was designed to manage delivery and cost and minimise the risks associated with both. Split into four main contracts – design, utilities, tram and infrastructure – the focus has been on delivering the best for Edinburgh balancing quality and price.



The new tram infrastructure will allow safe and efficient travel around the City of Edinburgh

UK PROFILE: TRANSPORT INITIATIVES EDINBURGH (TIE)

I firmly believe that we have an opportunity to deliver the best scheme in the UK and I truly believe that Edinburgh's tram system will be world class, built on solid foundations of safety, quality, innovation and value for money.

We have brought together a group of companies to partner us in achieving this goal. Procurement has taken two years and after

The trams are world class, matching Edinburgh's high expectations and providing the right 'fit' for the Capital. They will be the biggest in the UK at over 40m long and will be able to negotiate the city's tight curves and gradients. Each tram has a capacity of 250 and features a world class travelling experience – excellent ride quality, low noise, smooth acceleration and

champions and advocates for Lines 2 and 3 will become far more vocal as tram patronage on the first two lines exceeds forecasts.

The Tram-Rail-Airport interchange at Gogar in the West of Edinburgh will be built using trams to link Edinburgh Airport into Scotland's rail network.

If we want to keep Edinburgh as the best place to live and work in the UK, then we must invest in an infrastructure that will allow safe and efficient travel around the city. We have the vision and we now have the team in place to achieve it.

How will we measure our success? Well, in simple terms, if I can hear people in Edinburgh who were critics talking about what we would have done without the Edinburgh trams, then I know our job is done!

The Tram Contractors

The Edinburgh Tram Project attracted the world's best tram and infrastructure organisations.

CAF:

Construcciones y Auxiliar de Ferrocarriles (CAF) is a Spanish specialist rolling stock company, which has enjoyed a strong period of growth over the last ten years. CAF is an independent company with 90 years experience and specialises in rolling stock and maintenance. The company had a turnover of €14 million in 2006 and boasts a broad portfolio of products from high-speed trains through to low floor trams. CAF are international specialists in urban transportation, having previously provided rolling stock for Amsterdam, Brussels, Rome, Helsinki, Madrid, Barcelona, Lisbon, Dublin and many others worldwide.

CAF also has a good track record in the UK, having supplied the rolling stock for projects including Heathrow Express (in Consortium with Siemens), the Class 333 - Northern Spirit (in Consortium with Siemens) and the Class 3000 DMUs (Northern Ireland).

CAF has developed a successful and rapidly growing maintenance business, including contracts for: RENFE, Metro Madrid, Metro Barcelona, Rome Metro, Bilbao, Seville, North Ireland Railways and many others worldwide.

CAF has a long track record in the light rail sector including projects which have been



intensive negotiations, **tie** has appointed world class contractors in line with the ambitions of the scheme

The infrastructure component will be carried out by BBS (a consortium comprising Bilfinger Berger and Siemens Group). BBS will carry out the design, construction and maintenance of the Edinburgh tram network. Spanish provider CAF will provide the trams that run on it.

Both contracts could arguably be described as the largest of their kind in the UK and are unprecedented in Scotland.

The infrastructure contract has novated to it the design contract, delivered through SDS and the tram contract, delivered by CAF. Phase 1(a) comprises 18km of track, nine substations, 22 tram stops and a tram depot. Phase 1(b) comprises 6km of track, three substations and nine tram stops.

The tram contract involves the manufacture of 27 trams and their maintenance for 30 years.

braking, state of the art security features and information systems.

The signing of these contracts has allowed **tie** to commence with the main construction programme. Beginning on 1 June, it will run until January 2011, with full services running in Edinburgh in June of that year.

The preparation work involving the movement of utilities will overlap this work and finish in late 2008. This preliminary phase has gone smoothly, mainly due to the innovative Multi Utility Diversion Framework Agreement that was developed, allowing one contractor to move all existing public utility from under the line of the proposed tram route. This is indicative of our creative approach – it minimises disruption and ensures completion on time and on budget.

What does the future hold once Phase 1(a) is operational? The vision is clear. I believe that Phase 1(b) will follow quickly and

undertaken or secured in the last ten years, including: Seville, Lisbon, Valencia, Amsterdam, Malaga, Bilbao and many others worldwide.

BBS:

BBS members have built over 30 turnkey systems in countries including Austria, France, Portugal, the US, China, Mexico and Taiwan. It has also delivered a Turnkey Project for the First LRT System in Houston.

Siemens was responsible for project management, system integration, planning, delivery, assembly and commissioning of 18 low floor Avanto S 70 LRVs, operating management system, traction power supply, contact line system, communications technology, track construction and fare collection.

Siemens / Bilfinger Berger Consortium:

Siemens is responsible for the integration of systems and of Rolling Stock, whilst Bilfinger Berger is allocated responsibility for civil engineering within the consortium.

Siemens scope of work:

- Tram Detection and Control Signalling equipment - VICOS control system
- Systems Control systems & SCADA – Control & Information CROMOS system
- Transmission – Siemens OTN Solution
- Telecoms – Siemens Hipath PABX
- Electrification (including Overhead line)
- Traction Power & Overhead line equipment – supply of Siemens DC Traction power substations and Overhead lines
- Track Solution – CDM solution, installed and commissioned by TS TK
- Integration of Systems and Rolling stock.
- PM & Systems Integration
- Onshore Staff
- Track
- Depot Equipment

Bilfinger Berger:

Bilfinger Berger Services (BBS) is a specialist contractor with expertise in asset management, design engineering, process technologies, project management, construction contracting, facilities management and operations and maintenance services.

Bilfinger Berger is a technically innovative group. In addition to Germany, business



Scottish Government understands the importance of public transport for the City

activities are currently focussed on international markets such as Australia, North America, the Gulf States and selected European and African countries. Recently completed projects include, among others, high-speed railway lines in Germany, France and Taiwan.

Siemens Group:

With 474,900 employees in nearly 190 countries, Siemens operates from some 290 manufacturing facilities worldwide. The group's Research and Development facilities are also organised globally, with major centres located in Germany, the U.S., Austria, China and India.

The Transportation Systems Group (TS) of Siemens AG is one of the leading international suppliers to the railway industry. As single-source supplier and system integrator, the Group combines in its business segments Automation & Power, Rolling Stock, Turnkey Systems and Integrated Services all the expertise necessary to cover the spectrum from signalling and control systems to traction power supplies, as well as rolling stock for mass transit, regional and main line services.

As a full-range supplier and systems integrator, TS is a leader in the international rail industry.

Siemens established the Viennese tram network, which boasts vehicles with the world's lowest entry height of only 19cm. These 'ultra low floor' trams ensure optimum boarding convenience and rapid passenger transfer.

Carillion:

Carillion plc is one of the UK's leading support services and construction companies and is responsible for the diversion and protection of utilities along the tram route. The company operates across Britain, Europe and worldwide. Carillion was awarded the contract following an agreement reached between *tie Ltd* and the relevant utility companies, to put in place a single contract, co-ordinating the diversion of all pipes and cables under the tram route. Utility diversion is underway, in preparation for the tram network construction, which will start later in 2008.

TRANSDEV:

TRANSDEV is an international company with a reputation for delivering high quality public transport and will be the operator of Edinburgh Trams. TRANSDEV operates 100 public transport networks worldwide across various transport systems and is responsible for carrying more than a billion passengers every day. The company operates and maintains over 7,200 transport vehicles, including 750 light rail vehicles. The appointment of TRANSDEV at an early stage (2004) was innovative and will ensure that the trams integrate with the local bus services, and fit into Edinburgh's unique streetscape.

Members of the core team working on Edinburgh's tram network draw on international experience and have been involved in four key light rail schemes in the UK – in Manchester, Sheffield, Nottingham and the Docklands Light Railway in London. ●