The Edinburgh tramway is firmly back on track as the troubled project nears completion, High Speed 2 is a once-in-a-generation opportunity for LRT, and London’s future Oyster card could go nationwide – if only there were the leadership and structure to allow it. Such were the messages from the 8th Annual UK Light Rail Conference – supported for the third year running by the MPT Consortium building the expanded Metrolink network, Transport for Greater Manchester and the UK’s Light Rapid Transit Forum.

There was plenty of debate about these and other issues as diverse as the role of social media and wire-free operation – plus the perennial topic of utilities – at the two-day conference, held in Manchester on 15-16 May.

The message from City of Edinburgh Council Chief Executive Sue Bruce that the city’s trams “are back on track” was welcomed by industry delegates keen to hear the latest on a scheme that at one point seemed like it might not even be finished. Services are now expected to start in 2014.

Ms Bruce, who joined Edinburgh Council at the end of 2010, after the decision to take the dispute over the tramway’s construction to mediation, accepted that the public had been “sceptical to the ‘nth’ degree”. Explaining how the council had subsequently decided to take the city’s controversial project in house and wind-up its ‘arm’s-length’ company TIE (Transport Initiatives Edinburgh), Bruce described how the opportunity of a restructure had been used to introduce a “value engineering culture”. “We have saved multiples of millions by ideas being brought forward from the contractors and also from our side to deliver the job, but to try and find ways of getting better value for money without compromising on quality or the outcome.”

Bruce detailed construction progress, including how the project had dealt with the recurring issue, moving or replacing utilities, as well as topics more specific to Edinburgh such as Georgian cellars that extend under the streets. With extensive utility renewal, Ms Bruce proudly announced that the city now had ‘21st Century utilities’ in the core city area.
A presentation by DB International’s Günter Koch explored the advantages and challenges of tram-train technology as “the connection between the philosophy of tram and railway”. Koch reiterated that despite the ability of tram-train to operate alongside other modes, the optimum is always to have only one mode on any particular infrastructure – and that a practical alternative could often be to integrate lesser-used heavy rail alignments into tramways.

Koch also detailed potential obstacles to future tram-train projects – possibly including European regulation designed for heavy-rail systems.

Network Rail’s Simon Coulthard and South Yorkshire Passenger Transport Executive Project Manager Helen Plummer gave an update on the mode from a UK perspective – specifically regarding work to realise the pilot scheme in South Yorkshire.

The LRT prize: Economic growth

The wider benefits of light rail were emphasised by a city whose tramway is already experiencing expansion. Nottingham Councillor Jane Urquhart – the East Midlands city’s portfolio holder for planning and transportation – spoke in detail of Nottingham Express Transit’s role in creating long-term economic growth and jobs.

Part of that message was about enabling growth through reduction of congestion, and Urquhart showed delegates a slide to illustrate that one tram can shift as many passengers as three buses or 177 cars.

NET line one carries ten million passengers a year and has recorded 94% customer satisfaction; public transport use on the key corridor is up, and congestion is down – other key statistics suggest a transfer of 30% of journeys along the first line from cars had been achieved and that property prices close to the tramway are up by as much as 10%.

Now the network is being more than doubled in size to 32km (20 miles) with the construction of new lines to Clifton and Chilwell. Simultaneously, the redevelopment of Nottingham station is creating a “world class” hub, Urquhart said.

It was the benefits of NET that justified the use of the UK’s first Workplace Parking Levy as part of the 35% local funding for phase two. Urquhart noted that few local businesses had objected to the scheme and that the WPL had contributed nearly GBP85m (EUR9.3m) towards transport investment in its first year.

Some 65% of phase two funding is from central government.

Aims for phase two include taking a further three million car journeys off Nottingham roads and projections suggest that it will generate up to 8000 long-term jobs.

“I believe that infrastructure investment at a time of economic difficulty is sensible and is important,” Urquhart said, adding, “we have already seen huge numbers of jobs created for people who live in my city, which is a city which experiences significant deprivation and significant levels of unemployment.”

Nottingham markets transport investment as beneficial for potential investors – and many companies have already sought out premises in areas that will be served by trams in future.

This proactive approach to transport has also won awards – Nottingham being named transport city of the year, and transport local authority of the year. However, while welcoming such recognition, Urquhart said, “the purpose of all of this isn’t just to have a good tram, [it] is to drive our economy and ensure that people in our city and around it have the opportunity to gain employment, to go to work, to visit our city and to contribute to our economic and environmental sustainability in the years ahead.”

High-speed and light rail together

Nottingham was well represented at the conference, since Light Rapid Transit Forum chairman Roger Harrison also chairs Nottingham Tramlink.

Harrison spoke on the benefits achievable through good integration of high-speed rail and light rail – and how the UK’s proposed High-Speed 2 system can, and should, help grow the country’s LRT.

A presentation by UK Transport Minister Norman Baker MP laid out some challenges for the industry via video address.

The utilities panel always causes heated debate, with consensus that not enough progress is being made by the UK Government to guide tramway promoters and the utilities industry.

TRAMTRAIN: PROGRESS AND OBSTACLES…

Roger Harrison, Chairman of Tramlink Nottingham and the UK’s Light Rapid Transit Forum, urged conference attendees to maximise the ‘once in a generation’ opportunities afforded by the UK’s GBP30bn-plus HS2 high-speed rail project.
Comparing the situations in France, Germany and the USA, Harrison demonstrated that the UK has comparatively high population densities not served by light rail. In particular, he picked out the ‘big gap’ in West Yorkshire (population 2.23m), and another in Merseyside (population 1.38m).

The LRTF Chairman reported that HS2, which is to run from London to the West Midlands and subsequently via a ‘Y’-routing to Manchester and Leeds, will boost demand for complementary LRT and BRT investment. In addition, however, local transit links have an important role to play in boosting the benefits of HS2 itself, he explained. Harrison also reinforced the importance of fixed transport links in giving confidence for the long-term to inward investment prospects.

Putting the argument into a national context, he argued that with the cost to the UK economy expected to be GBP22bn (approx. EUR25.7m) by 2025, congestion is “a major block on Britain developing its economy and competing with the rest of the world.”

Government acknowledgement of the importance of light rail once again came from Parliamentary Under-Secretary of State for Transport Norman Baker. Speaking this year in a recorded address due to official commitments overseas, Mr Baker updated delegates on UK Government plans to devolve funding to local authorities. He also announced that a keenly awaited draft guidance note on a hot topic in terms of tramway construction costs – utilities – is near completion.

This subject provided a lively debate, with many areas of discussion for a panel of cross-industry UK experts, including those working on system expansion in Manchester, Nottingham and the West Midlands. Echoing last year’s conference, it was explained that current legislation and codes are now around 20 years old, dating from a time when there were fewer under-street utilities and that it had been hoped to have a new statutory code on diversions agreed a decade ago.

Revealing that the collective utility companies pay the UK Government over GBP1bn (approx. EUR1.2bn) a year for rights to situate their apparatus under the nation’s highways, National Joint Utilities Group Operations Director Mark Ostoheimer said that, despite recent amendments, existing legislation is “out of date”. He added that, “we are ready, able and willing to look at it, but we need a steer from government so we don’t go off at a tangent. But they are very reluctant… to actually bring in new regulations without taking out older regulations.”

Questions from the audience raised the point about temporary track systems to avoid service disruption, with the panel agreeing that the UK’s ‘culture of health and safety’, make these kind of solutions impractical.

Smartcards and social media…

The cost related to utilities works was just one of a number of practical topics to generate significant interest. Many others, however, related to the benefits of new technology.

Lively questions were generated by the panel discussion on fare collection and revenue protection – and in particular the challenges and opportunities brought by new forms of smart ticketing.

Transport for London’s Head of Business Development Matthew Hudson gave the background to the UK capital’s future ticketing project, which includes the rollout of payment through contactless bankcards, as well as replacement of the current Oyster smartcard with a new version.

Rather than each system having its own card, Hudson suggested, “If we could roll this out there is no reason why the future Oyster card couldn’t be worked all through the UK to become a card for others”. However, as he pointed out, outside London the fragmented nature of transport provision made it “very difficult to have integrated ticketing products.”

Debate surrounded appropriate levels of penalty fares and other ways of ensuring revenue protection – and representatives from Manchester Metrolink, London Tramlink and Nottingham Express Transit explained how methods had evolved over the years. However, TIL’s Matthew Hudson rejected a suggestion from the floor that photocards (as used for example in France), should be introduced: “The state being able to have a record of every card and every photo is not what we want. We want people to be able to pick up a card and use it.”

EXPANSION IN BIRMINGHAM, DUBLIN AND NOTTINGHAM…

- Centro’s Metro Programme Director Paul Griffiths updated the conference on Midland Metro’s Birmingham City Centre Extension - a project detailed in TAJT906.
- Michael Sheedy from Ireland’s Railway Procurement Agency explained the background to the new 5.6km (3.5-mile) Luas Cross City link running from St Stephen’s Green to Broombridge - a project that shares the issue of cellars with Edinburgh. Main infrastructure work on the link between the Red and Green lines could start in 2015. Sheedy also reported that the RPA’s expertise is also in demand in LRT projects in the Netherlands and Norway through its recently-consultancy arm.

- Tramlink Nottingham Chief Executive Phil Hewitt examined progress on the work to expand Nottingham Express Transit by 17.5km (10.9 miles), a project that includes building major structures, creating a mixture of segregated and on-street tramway, and acquiring 22 new Alstom Citadis trams.

... and other highlights

- Ian Wright, Head of Research at Passenger Focus, explained how the organisation plans to establish a Tram Passenger Survey, to complement the heavy rail National Passenger Survey and the Bus Passenger Survey. A pilot already carried out with Centro (covering the Midland Metro LRT system) has resulted in better scores for trams compared to buses in certain categories.

- Met Office Account Manager Steven Wallace told delegates how detailed weather forecasting could work for operators – including in areas such as predicting leaf fall, low railhead adhesion and ice and cold weather affecting overhead lines.

- Delegates were treated to a ride of the East Manchester line to the Etihad Stadium and a brief discussion on how Metrolink copes with the extra traffic caused by having the UK’s top two football teams in one city, as well as Gala Dinner hosted by multi-national transport operator Keolis.
He added “what we’re trying to do in London is make it as easy as possible for people to travel… customers do not want to think about ticketing, they don’t care.”

Further emphasis on how quickly the world is changing for operators came during the discussion of social media and its importance in interaction with customers.

DB Regio Tyne & Wear Managing Director Richard McClean told the conference: “I’m firmly of the conclusion that social media is not an optional extra. It is how so many of our users and key stakeholders live their lives. You have to be there. If you’re not there, they’ll still be there and they’ll still be talking about you, but they’ll hear nothing from you and you’ll not be hearing anything from them.

“So you have to establish an effective presence, if only to establish your credibility and to become the authoritative voice in the social media universe.”

In another lively discussion involving leading providers as well as operators, it was emphasised how social media brings big advantages in allowing operators to get messages to people before they arrive on a system – rather than simply on billboards on stations. It was also considered that through the building of customer profiles, operators would in future be able to send customers messages ‘one to one’.

Harnessing new technologies
The presentation by Mott MacDonald’s Breda Corrigan gave further evidence of how technology is changing the light rail landscape – and this time those changes are being pushed by legislation.

From 2016, the UK Government is insisting that all publicly-funded construction projects meet what’s known as level two of Building Information Modelling – or BIM.

This advanced three-dimensional digital modelling approach is transforming design processes, bringing in efficiencies and allowing easier co-operation between design, construction and stakeholder groups, often across different continents. One of the key advantages is the reduction in time and associated costs with such detailed ‘real-time’ digital project management.

BIM is already being used by Mott MacDonald and its partners for expansion of Norway’s Bybanen tramway, phase three construction of which is due to start this year.

A panel discussion on reducing construction costs included debate on whether there are savings to be made in the UK by reducing rail weights and the ‘scale’ of engineering; on why grassed track is not used despite being common in Europe (maintenance being raised as a key issue, with sedum floated as a potential alternative); and whether there is a place for employing temporary crossovers to facilitate maintenance on individual lines.

Alstom’s Trackwork Project Manager Yann Picard explained the company’s Appitrack system, which automates the process of preparing a trackbed using a thinner concrete base; following use in France and Israel, Appitrack is now being used in Nottingham, laying up to 100 metres per day.

Advancing technology was also the key theme in the final debate, which covered catenary-free tram operation. Bombardier’s Neil Walker explained how the company’s wire-free PRIMOVE system is now in operation on a test bus in Mannheim, claiming 90% efficiency – having been demonstrated on the Augsburg tramway last year. The technology, he explained, is the same for the two modes.

Vossloh Kiepe’s Stuart Kerr explained how Vossloh has projects underway with supercaps and a diesel powerpack (the latter for Chemnitz, see page 305 for more). He also said the company is working with fuel cell technology – to generate electricity onboard vehicles – and noted that ongoing development of battery and flywheel technologies offer alternatives for future use.

“There’s an awful lot of possibilities out there,” Kerr said. “The problem is there’s no real large-scale implementation, so everything is small and therefore expensive because it is re-engineered and specialised on a specific route for a specific customer.”

Kerr argued that various challenges remained – such as making the technologies lighter – and that visionary scheme promoters were needed to commit projects to large-scale implementation.

However, he said: “We’re certainly very clear that there’s going to be increasing use of electric vehicles, zero emission vehicles, that won’t necessarily require an overhead wire… and I’m looking forward to seeing it.”

EXHIBITION
The UK Light Rail Conference is not only a chance to hear from leading experts, but also to see some of the brightest innovations and demonstrations from industry leaders. This year's exhibitors included:

- CIRAS
- Mott MacDonald
- Rosehill Rail
- Rowe Hankins
- Railway Industry Association
- SYSTRA
- Transport Knowledge Transfer Network
- Met Office
- Omnicom Engineering
- PreCast Advanced Track
- STRAIL (UK)

Accompanying the conference was an exhibition of suppliers and service providers to the UK light rail industry, showcasing everything from innovative track construction and weather prediction methodologies to safety and operational consultancies.