



How WSP works with Transit



When we heard about Transit, we thought it would be exciting to be part of it and to really feel we've contributed to moving the industry forward."

Jon Elphick

Director, Rail Digital Advisory, WSP



WHO IS WSP?

WSP is a global engineering consultancy with around 73,000 employees in more than 50 countries. It is one of the world's biggest professional services, engineering and science and technology consultancies.

The company helps its clients plan, design, engineer and manage projects in four key areas: transport and infrastructure; earth and environment; property and buildings and power and energy.

WSP's 200,000 active projects include railways, roads, aviation and shipping facilities, tunnels, bridges and buildings from schools and hospitals to football stadia and museums.

The company is listed on the Toronto Stock Exchange, with global headquarters in Montreal, Canada, and offices across the UK.

We're very keen to see the development of digital twin models which use real time data from physical transport systems.

Paul Byron

Technical Director, Strategic Modelling, WSP

WHAT TEAM MEMBERS WORK WITH TRANSIT?

Jon Elphick, Director in WSP's Rail Digital Advisory group



Jon is a control systems engineer by training and an expert in railway systems. He has 25 years' experience in control systems and railways, including heavy rail, metros

and trams. Jon's role at WSP is focused on developing digital transformation in the rail industry. Jon is also a Royal Academy of Engineering Visiting Professor of Railway Systems integration at the University of Birmingham, which has strong expertise in digital twinning and is one of Transit's eight university partners.

Paul Byron, Technical Director in WSP's strategic modelling team



Paul is a transport modeller with 35 years' experience in the profession. This involves modelling the behaviour of transport users including rail passengers, motorists, pedestrians and cyclists. Paul's work at WSP is focused on carbon emissions forecasting for transport – including the development of new assessment tools and digital twin approximations in transport modelling.

WHAT IS TRANSIT?

Transit is the UK's largest research hub dedicated to rapidly decarbonising transport using digital twins. We are a collaboration of eight universities and almost 70 industry partners, jointly led by Heriot-Watt University in Edinburgh and the University of Glasgow, and funded by the UKRI Engineering and Physical Sciences Research Council. Digital twins are digital replicas of the physical world that allow decarbonisation scenarios to be identified and tested much faster and more affordably than in real world trials.

HOW IS WSP INVOLVED WITH TRANSIT?

WSP's involvement is focused on one of TransiT's five demonstrator projects – Challenge-Led Demonstrator 2 (CLD 2). This is developing a digital twin of passenger transport in the West Midlands, using data from rail, tram and bus services, public transport and car, cycle and taxi use.

The twin will help policymakers and transport planners identify what interventions would be most effective in shifting travel behaviour towards public transport and active travel choices like walking and cycling.

Partners in this demonstrator include Transport for West Midlands – the public transport authority for the West Midlands – and Midlands Connect, which is focused on improving major transport infrastructure across the Midlands.

Durham University is leading this demonstrator, alongside researchers at University of Birmingham and Heriot-Watt University in Edinburgh.

WHAT DOES WSP'S ROLE MEAN IN PRACTICE?

WSP is part of TransiT's Challenge-Led Demonstrator 2 steering group and draws on expertise across its business to support the demonstrator. This includes:

Advising on best practice – for example, by sharing and interpreting guidance on emissions and forecasting tools developed for policymakers and industry.

Reviewing research – reviewing academic papers and other research outputs to ensure they are industrially applicable and have maximum impact.

Workshop participation – this includes taking part in workshops to scope and agree the demonstrator's priorities.

Industry engagement – helping researchers to work with the demonstrator's industry partners and request data from them.

Ad hoc calls – for example, to discuss different ideas, approaches or datasets.

HOW DOES WSP BENEFIT FROM WORKING WITH TRANSIT?

- ✓ **Shared goals** – delivering environmental and social good in line with WSP's net zero goals and its 'Future Ready' strategy. Jon explains: "This recognises that the roads, ports and other infrastructure we're helping to build will be around for a long time, so has to meet the requirements needed in 20, 50 or 100 years' time, and not just today."
- ✓ **Digital innovation** – being part of pioneering research that could transform transport planning and modelling.
- ✓ **Digital twinning insight** – sharing digital twinning knowledge that can help clients and researchers in the wider industry.
- ✓ **Commitment** – being involved with a decarbonisation research project like TransiT enhances WSP's commitment to empowering net zero with clients and the wider industry.
- ✓ **Industry contacts** – access through TransiT to a broad base of industry and academic experts.
- ✓ **Early career professionals** – WSP is helping to develop its early career professionals by involving them with the TransiT work.

ENGAGE WITH US

Get in touch with our Stakeholder Engagement Manager, Adam Kesby  a.kesby@transit.ac.uk

 transit.ac.uk