

Steering the course

Money, people, environment, politics, art and science – they're just some of the twists and turns to navigate when guiding a transport project from inception to completion. Here's how we do it.



Moving stories

Transport planning is a vital discipline in defining the way people and goods move around towns and cities. Done well, it enriches lives, benefits the economy and is good for the environment. In a changing world, planners need to look ahead and predict the ways people move and their varying transport needs.

We are at the cusp of a seismic change in the way we use transport. Many countries have announced a future ban on the sale of petrol and diesel engines vehicles, leading to a likely huge rise in demand for electric vehicles. The very idea of car ownership is being questioned, with many choosing to catch a ride as and when they need one. Artificial Intelligence in this market has a focus on connected, autonomous vehicles and an evolution to driverless cars and the challenges that this entails.

The travel experience is becoming a more important factor than the journey itself, which means planners must design transport systems that connect seamlessly. Modelling is an important method of predicting future transport needs or the way people walk through streets and buildings. We are using visualisation and 3D virtual reality tools to demonstrate how proposed projects would work in real life.

Read on and discover how we use a variety of skills and tools to ensure that tomorrow's towns and cities will become richer places in which to live, work and play, boosting the economy and caring for the environment.

Alan Holcroft

Global practice leader, Transport planning

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‘Robust’: a key word in the transport planning lexicon



Chances are that those outside the profession will never have heard of ‘transport planning’. But it has a profound influence on the environment, economy and society. It’s no exaggeration that transport planners help shape the world.

As a profession, transport planning has only really existed since the inaugural meeting of the Transport Planning Society in 1997. Our young profession has grown up in turbulent times. The practice of ‘predict and provide’ was rejected in the UK in 1998 following a decade of popular protests against road and airport projects that were seen as steamrolling over the concerns of local communities.

More consultative and socially inclusive approaches to transport planning have been pioneered since, while politicians have promoted infrastructure investment to stimulate the growth of battered economies. The profession is now addressing perhaps the most interesting challenges and opportunities in its history.

Unprecedented change

Across developed nations, car ownership is thought to be at or near its peak. Young people’s travel behaviour is changing: the proportion of 17-20 year olds in England with a full driving licence in 2014 was under one third, compared with nearly half 20 years earlier.

People’s need to travel, and the way they use different modes of transport, are being changed by data accessed on mobile phones and laptops, and the evolving nature of work, leisure and shopping habits.

Alongside this, technological innovation offers the possibility of connected, autonomous, shared and electric (CASE) mobility – if society goes for it.

We have, then, a young profession in fast-changing times, tasked with shaping transport infrastructure so that it remains fit for purpose.

Impartial and evidence-based

There is a challenging path to be walked between politics, society, the environment and finance. Those in each camp have strong views, significant stakes, and considerable power when it comes to determining transport provision and outcomes. It’s the role of the transport planner to give robust advice. The goal must always be evidence-based policy-making, never policy-based evidence-making!

Robustness is an important word – defined as the ability to withstand or overcome adverse conditions or rigorous testing. For transport analysis, ‘adverse conditions’ include uncertainties presented by technological and social change – and in many countries, the effects of political regime change. ‘Rigorous testing’ can be expected from any quarter where there’s a strong agenda.

Now more than ever, building robustness requires a transparent, collaborative approach, which values both the qualitative and quantitative narrative and considers the full breadth of future scenarios. Listening, open-mindedness, inquiry, and impartiality – they’re key characteristics.

In the words of a Mott MacDonald colleague: “Transport planning should be about giving the best advice you can, even if the client does not want to hear it.” To which their client replied: “You didn’t give us what we wanted. You gave us what we needed.”

That’s the value of transport planning.

Glenn Lyons

Professor of future mobility, Mott MacDonald

The goal must always be evidence-based policy-making, never policy-based evidence-making!

Anticipating tomorrow's needs

Transport modelling

What social, technological and economic demands will potentially impact your transport network in the future?

How can you work with your key stakeholders to deliver the project in a way that works best for you and them?

Will your assets and services be resilient and reliable in the face of future changes – and how certain or uncertain are they?

These are among the questions we help answer through transport modelling – a combination of forecasting, simulation, analysis and assessment. The aim is to enable robust decisions that meet today's needs and allow for adaptation to meet tomorrow's.

Sharp focus on the value of investment

What transport improvements would contribute most to regional growth? It's a question that we've been helping to answer with a bespoke macrosimulation tool called PRISM – short for policy responsive integrated strategy model.

PRISM was built specifically to analyse and optimise road and rail systems that support the West Midlands' £60bn economy. We developed it with RAND Europe using VISUM software and it has been in constant evolution, mapping every change to infrastructure and services, growing in power over time.

PRISM provides insight into the causes and costs of congestion, what drives demand throughout the day, and the potential

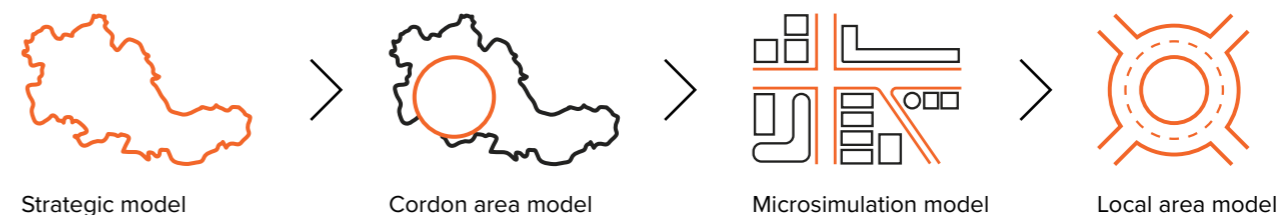
local and regional value gained by creating or improving access and interconnections. All of which informs better decisions about where to invest and the likely returns, in terms of economic growth, social inclusion, and environmental enhancement.

PRISM has been instrumental in more than £890M of investment so far, including the Birmingham Box motorway programme and the Burnt Tree Island upgrade, plus proposed M42 J6 improvements and HS2 access. PRISM is currently supporting the appraisal of airport metro extensions and the 2022 Commonwealth Games rapid transit Sprint bus schemes.

- Project**
Policy responsive integrated strategy model (PRISM)
- Location**
West Midlands, England
- Client**
TfWM on behalf of the constituent authorities of the West Midlands
- Expertise**
Strategic modelling



Supporting robust decision making



Mott MacDonald visualisation

Engaging the public

- Project**
A27 Chichester bypass
- Location**
Chichester, England
- Client**
Highways England
- Expertise**
Microsimulation and visualisation

Road networks that have evolved over time often become congested because a series of conflicting demands have been made of them. Understanding how best to alleviate that congestion requires modelling that can be used to look at future options.

This was the case with the A27 Chichester bypass in the south of England, which is a 4.8km dual carriageway with six roundabouts and junctions.

The layout led to major congestion, poor air quality and increased noise. The Highways Agency needed to put a series of options out to public consultation.

A strategic SATURN highway model provided traffic inputs to a VISSIM traffic-flow microsimulation model, which assessed future scenarios and design details. The information garnered was used to create realistic video visualisations of five shortlisted options, each reflecting traffic flows to 2035.

At the subsequent 17 public exhibitions, nine out of 10 people said the video and other consultation materials were helpful in answering their questions.

People-centred design

Pedestrian analysis and modelling

What's the pedestrian level of service experienced during peak periods through a transport hub or at an event?

Where are the optimum locations for entry/exit routing, retail units, toilets and servicing at a stadium?

What is the likely evacuation time from a facility?

We work with architects, fire engineers, security advisors and others involved in your project's design and operations planning, applying analysis and modelling of pedestrian dynamics so that each and every transport project is efficient and safe. It involves striking a careful balance between function, quality and cost – large enough to allow for ease of movement and emergency access; 'legible' to enable easy navigation; and enjoyable. All with future needs and present-day affordability in mind.

Developing a design solution with an understanding of how people will really behave can yield benefits including construction cost savings, operational efficiency, improved safety and security, and increased revenue.

Opportunities and constraints

Strategic level identification of potential opportunities and constraints associated with a conceptual design layout.



Static analysis

Calculations to determine whether a design meets guideline minimum sizing criteria.



Dynamic analysis

Microsimulation modelling using software such as Legion, STEPS or VisWalk to determine the operational feasibility of a design.

Getting the details right

Network Rail is constantly under pressure to minimise risk in large infrastructure projects and uses an eight-stage process known as Governance for Railway Investment Projects (GRIP).

The transition from GRIP3 stage of the rail industry's investment governance process to GRIP4 is pivotal. It marks the point at which one option is picked from among a number that have been considered and work begins on developing that option towards detailed design and implementation.

We were commissioned by Abellio ScotRail to determine a preferred option for the redevelopment of Motherwell station into a vibrant new transport hub. Key challenges were getting the spatial

configuration right and allowing enough space for future growth in passenger numbers, without making the station and interchange excessively large.

We started with static analysis to define the minimum space required within regulations for projected passenger numbers and the routes they would take.

However, static analysis assumes that people behave in a uniform way when, in reality, humans are anything but. So we used dynamic microsimulation modelling to examine what additional space was required to accommodate people's widely varied behaviour in normal and emergency situations.

We used augmented reality and 3D visualisations of the station to show National Rail and other stakeholders what it would look like and focus discussion on particular design issues. The result: clearer communication, better understanding and faster resolution – giving confidence to press ahead with detailed design of a solution that is optimised for Motherwell station's owner, operator and users alike.

Project

Motherwell station extension – GRIP 4 design

Location

Motherwell, Scotland

Client

Abellio ScotRail

Expertise

Static analysis, dynamic microsimulation modelling using Legion software, Augmented reality (AR), 3D visualisations



Footfall and football: safety is the goal

Project

Anfield stadium – main stand redevelopment

Location

Liverpool, England

Client

Liverpool Football Club

Expertise

Static analysis, dynamic pedestrian modelling using STEPS software, 3D visualisations

Predicting how crowds behave at football matches is a major issue when it comes to planning stadium design or reconfiguration. How people arrive and enter, how they behave at half time and how they would react to an emergency are all critical factors.

The redevelopment of Liverpool Football Club's iconic Anfield stadium to add 8500 seats presented such a challenge. Working with KSS architects, our pedestrian modellers used our in-house pedestrian modelling software tool STEPS to undertake a detailed study of how people would move around under various scenarios.

The study compared the existing stadium layout with those of the construction phase and the final main stand. We identified potential problem areas leading to the redesign of vomitories and reconsideration of the proposed capacity as well as the repositioning of retail outlets.

Work meets play

Visualisation and virtual reality

Planning for the way pedestrians and traffic will coexist in future cities is made easier by visualisation and 3D virtual reality tools. Compared with 2D outputs, they provide colleagues, clients and stakeholders with a greater depth and understanding of how proposed designs will look and function.

Microsimulation modelling tools, such as VISSIM, Legion and our in-house developed STEPS software have in-built 3D capability. This enables the production of visualisations which, when compared with 2D outputs, provide colleagues, clients and stakeholders with a greater depth and understanding of how their proposed designs would look and function.

We have taken microsimulation visualisation output a step further. Using a combination of microsimulation modelling, specialist animation and 3D rendering software we can create an immersive experience of our models. Atmospherics including sounds and wayfinding can help orientation within the virtual model and enhances the experience of what it would be like to be on site during a peak hour period, special event or evacuation scenario.



Urban revolution

Infrastructure design

Ten years ago, half the world's population lived in cities. Within the next 10, the proportion is expected to be 60%. And by 2050 it'll be 80%. Whether the context is an historic city in a mature economy, or a new metropolis taking shape in an emerging economy, infrastructure design has a vital role to play in making the urban realm a place for people.

The trend from urban sprawl towards mixed-use developments has caused many local authorities to reconsider car-focused transport strategies, with more emphasis placed on walking and cycling, and fully integrated planning of public transport.

By strategically considering town and city centre transport and movement, we have designed schemes and supported multidisciplinary funding applications for their delivery, based on the economic, environmental and social impact that this revolution in urban space can bring.

Towards a prosperous future

With strong links to the national road and rail networks, as well as to economically resurgent Liverpool across the Mersey estuary, Birkenhead has much going for it. But the town has been in the doldrums for decades.

To stimulate regeneration, we're working with Wirral Council and other stakeholders on a range of short-, medium-, and long-term transport measures. The aim is to enable people to move around town more easily, especially by foot or by bike, to make work, shopping, education and training, and healthcare more accessible.

Left over from its industrial heyday, Birkenhead has former rail and port land that, with improved connections, would offer attractive and significant regeneration and redevelopment opportunities. Helping people get quickly and safely from A to B isn't the only objective though. Our plans include improvement to the urban realm, to make the streets and public spaces more enjoyable – making the most of Birkenhead's rich architectural heritage.

To pave the way for a major expansion of Chester city centre's retail, education and employment core, Cheshire West and Chester Council proposed relocating the bus station.

The ideal new site for the bus station was a car park on the city centre fringe. We recommended upgrading streets connecting to the site, to make the bus station – and bus travel – a desirable transport choice for the largest number of people.

Our feasibility work led to preliminary and detailed design of the bus station and public realm improvements. We developed a 'statement' design and consulted widely to achieve buy-in from the public and other stakeholders. Discussion with mobility and visually impaired groups provided reassurance that the public realm improvements would make life easier and safer for them. Bus operators wanted reassurance that new routing patterns would not detrimentally affect their operating costs.

As a result, the station now has easy ways of helping people move around, including directional signage, colour contrasting seating, LCD screens displaying real time or scheduled information, tactile maps and paving for blind and visually impaired passengers.

Since completion in 2017, Chester bus interchange and the public realm improvements have been praised by users and have won multiple awards, notably the Northwest Regional Construction Award, and the Chartered Institution of Highways & Transportation award for creating better places.

The people's choice

Project

Chester bus interchange and public realm improvements

Location

Chester, England

Client

Cheshire West and Chester Council

Expertise

Public transport infrastructure and public realm improvements

Project

Birkenhead regeneration

Location

Wirral, Merseyside, England

Client

Wirral Council

Expertise

Urban regeneration



Breadth and depth

Rail planning and operations

Consider the following: who wants to travel by train, when, and what do they want to do while on the move? What's the capacity and condition of your infrastructure and rolling stock? What are the costs of improvements or operational changes, and what impact will they have on revenues? There are many more questions besides – and answering them all isn't easy.

The art of rail planning and operations is to examine the long-term planning horizons associated with rail travel to deliver robust business cases for future investment. We work with private operators, rail franchisees, government departments, local authorities and infrastructure providers to identify the strongest business case and return on investment for projects in heavy rail, light rail and rail freight operation.

How? It starts with deep knowledge of the rail industry, combined with expertise in forecasting demand, modelling and analysing revenue, planning train activities, making the most of capacity, and improving performance.



Cross country runners

Cross Country is a strategically important rail franchise that connects seven major UK cities, serves several university towns and airports, and runs through-trains between Cornwall, the south coast, the Midlands, the South East, South Wales, the North and central and north-east Scotland. When it came to reletting the franchise, the UK Department for Transport appointed us as technical advisor, with the objective of enhancing the journey experience.

We reviewed the timetable and capacity/operability constraints to develop new train service options, then assessed likely costs associated with procuring additional rolling stock, changing train design to make customers more comfortable, fuel expenditure, track access fees and train crews. Next, we used historic performance data to model probable future performance, and modelled revenues using the MOIRA 2.2 rail planning tool over the life of the franchise.

From this work we provided the DfT with options, ranging from 'do the minimum' to 'do something significant'.

Project
Cross Country refranchising

Location
London, England

Client
Department for Transport

Expertise
Financial, revenue and demand modelling, train planning, diagramming and train performance modelling





Fast forward

High Speed Two

The High Speed Two (HS2) rail project is the most nationally significant transport investment in the UK since the launch of the motorway-building programme in the 1960s. It will provide much-needed additional capacity on the rail network and shorten journey times between some of the country's major cities.

We helped develop HS2's analytical capability to support its business case, working over several years with our client and the Department for Transport to turn the PLANET rail models into an integrated multimodal transport model. This was designed to assess the impact of HS2 on long-distance and local rail networks, and on demand for long-distance car and air travel.

The integrated model has also been used to assess route and service options, inform public consultations and to develop multiple business cases for all phases of the scheme. Now, we are preparing a new model to support the final business case for HS2 phase one.

Beyond feasibility and modelling, our services extend to the transport assessment and environmental statement. For both the phase one London Metropolitan area and the phase 2b route section between Crewe and Manchester/West Coast Main Line we are supporting the operational and construction phases of the scheme and assessing the impact on traffic, public transport, intermodal facilities, and communities.

Project

High Speed Two

Location

UK

Client

High Speed Two Ltd

Expertise

Multimodal transport demand modelling and financial business case support





Unlocking investment

Transport economics

Public and private clients make investment decisions that have a profound, long-term impact on their local community. Will a scheme stimulate or bypass the local economy? What groups will find that your decision will open opportunities or risk isolation?

These are fundamental questions asked by our economic and social development (ESD) team, which assesses the value added by capital projects.

The team brings skills more commonly found in the large management consultancy firms, but benefits from being part of a global engineering and development firm. It means that, when assessing value and building

a business case, their findings and recommendations are informed by engineering and project management know-how – risk aware and practically grounded.

For project funders, it helps by countering optimism bias. For local or regional project promoters, it assists by showing where a different planning or engineering approach can deliver previously unseen economic and social advantages.

Our ESD team supports local regeneration and economic growth throughout the lifecycle of a scheme, from strategic definition to delivery.

Tools	Capabilities	Outputs
Transparent Economic Assessment Model (TEAM)	Looks at macroeconomic social and economic factors in addition to conventional microeconomic data, using an adapted 'Green Book' methodology, to make the case for funding local infrastructure improvement schemes	Additional jobs Improved access and amenity Land value uplift Gross value-added
Total Impact (TI)	Captures the economic activity supported by an organisation	Additional jobs Gross value-added
Investment Sifting and Evaluation Tool (INSET)	Enables multicriteria assessment, weighting and prioritisation to inform selection of the most appropriate investment option	Robust evidence-base to inform decision makers
Equality, Diversity and Inclusion Tool (EDIT)	Assesses whether the strategic road network is equally accessible and that economic and social opportunities are maximised	Accessibility and inclusion for all transport users

Sun, sea and investment

Although close to the capital, the relatively poor transport connections to London and the wider South East region makes it challenging to attract business investment in the south coast seaside towns of Hastings, Bexhill and Eastbourne.

The introduction of high speed rail services via the existing High Speed 1 rail link and Ashford would be game-changing, making the towns more desirable to live and work in. East Sussex County Council appointed us to set out the strategic economic need and show how connectivity would create more and better jobs, attract investment and support growth.

Our assessment of the benefits, carried out using our TEAM tool, showed that high speed rail would stimulate the creation of 1300 new jobs and generate more than £700M of gross value-added over a 30-year time horizon, at 2017 prices. The findings gained significant attention from local MPs and potential developers, and are being used to support the case for investing in the necessary infrastructure to enable this to become a reality.

Project:
Economic case for high speed rail

Location
Bexhill, Hastings and Eastbourne, England

Client
East Sussex County Council

Expertise
Transport economic appraisal; wider economic benefits assessment

Equal, diverse and inclusive

What effect will a road widening, junction improvement, spur road or bypass have on local people, and is it equally user-friendly for everyone? The answer depends on a huge range of social variables, such as age, disability, gender, ethnicity, sexuality, religion, and more. And there are no simple answers.

In 2015, Highways England began looking at the effects its projects would have, with the objective of maximising benefits for all. Its focus coincided with an upswing in investment in the strategic road network. An updated roads investment strategy is due to be published in 2019, with works delivered between 2020 and 2025. We've been using a range of tools to assist in the planning and design of projects to gain greatest social value.

User considerations include safety and security, access to the road network and where you can get to using it. Lighting, the number of road crossings, the alignment and width, traffic speed and volume – depending on who you are, these can all be key factors in how comfortable you feel, and what your exposure to risk of accident is.

Wider issues are noise and air quality, for example, and their effects on children's learning in neighbouring schools, or on the health and healing of patients in a hospital – factors that might call for realignment or re-siting.

We've helped Highways England to identify sensitivities, calculate exposures and develop proportionate responses on projects, including the A303 Sparkford to Ilchester, the A358 Taunton to Southfields, the A417 so-called 'missing link' at the Air Balloon roundabout – a congestion hotspot – and the A47 corridor improvement programme. As these projects reach completion and begin delivering their aims, one of the benefits will be easier access people through deliberately inclusive design.

Project:
Socially inclusive highways

Location
UK wide

Client
Highways England

Expertise
Equality, social and environmental impacts assessment

Keeping cities running

Transport demand management

It's your city's chance to shine. Elite athletes have landed. The world's press awaits with pens poised. Passionate fans are touching down, posting live to social media. Will your transport network take the strain, ensuring that stadiums are accessible, visitors return impressed and locals stay content?

Only the most carefully developed transport strategy – led by analysis of the region's supply and demand and followed with effective network management, capacity creation and stakeholder engagement – will keep transport systems running and secure a sustainable, low-carbon legacy. And that's exactly what you get if you deliver a solid and focused travel demand management (TDM) programme.

The same techniques developed in the intensity of week or month-long sporting events are also being applied by our teams to tackle the everyday concerns of thriving cities and expanding infrastructure. Throughout overlapping construction projects that reduce capacity, or heavy seasonal demand from tourists that flood it, ensuring it's 'business as usual' for residents and companies is vital, both economically and politically.

Games makers, history makers

The Glasgow 2014 Commonwealth Games was an unprecedented 11 days for the city. The largest event in its history saw nearly 3.5M people pass through the central rail station alone. We led a consortium of five consultants to develop and deliver a TDM programme, with the aim of keeping the city moving.

A comprehensive picture was assembled to understand the days, times and modes most at risk of gridlock. This informed where additional Games-time services should be targeted, and the engagement strategies to spread background demand and spectator peaks.

Working with key stakeholder groups and public bodies, the programme consisted of four work streams: travel advice to spectators; travel advice to businesses; travel information systems; and marketing communications.

We also undertook a Games-time role to co-ordinate transport communications, providing the 'single source of truth' that is so vital to timely, effective information.

The TDM programme had a very positive impact on the games. Satisfaction surveys and social media monitoring revealed high levels of campaign awareness and behaviour change among spectators and local residents. The successful TDM programme and home nation sporting triumphs gave the city plenty to celebrate.

Project

Commonwealth Games
TDM programme

Location

Glasgow, Scotland

Client

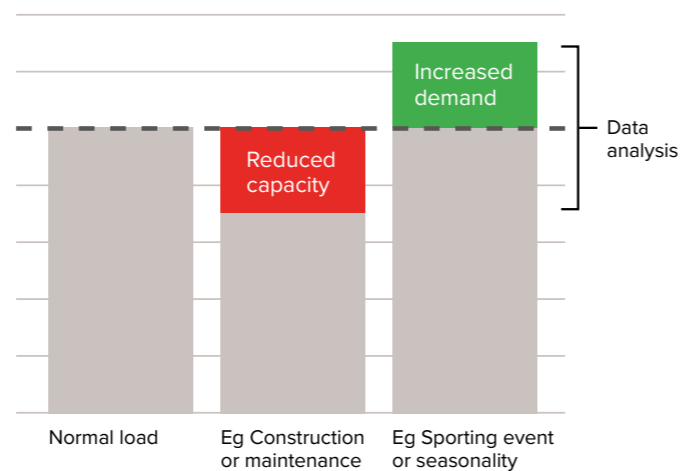
Glasgow 2014 Commonwealth Games Organising Committee

Expertise

Travel demand management, communications, games time operations



Understanding the capacity and demand



Enabling Croydon's ambitious growth plans

In 2016, the UK Government announced a five-year £5.25bn growth zone in Croydon. It will bring huge benefits to south London, including the creation of 23,500 new jobs and 8000 new homes. The unprecedented amount of construction and redevelopment called for a comprehensive TDM programme to mitigate against the effects of the works and allow business to continue as usual.

To assess the requirements of the programme, we undertook extensive scoping in 2017. The experience and lessons learned from previous sporting events fed into this exercise, which established a baseline transport scenario from which the programme could be developed.

It is now being used to implement the programme to ensure businesses are informed and plan for any travel disruption that may impact them and their staff as well as to co-ordinate construction logistics in the borough.

Project

Croydon growth zone travel demand management

Location

Croydon, England

Client

Croydon Council

Expertise

Travel demand management, stakeholder engagement

Delivering for host cities across the globe

Major event transport planning

All over the world Mott MacDonald has delivered – and is working to deliver – successful outcomes for cities hosting or co-hosting major events.

Assembling cross-discipline teams of subject matter experts, we collaborate closely with host cities to consider the event's feasibility studies, bidding, planning, construction and delivery, each with an eye to creating a sustainable, resilient legacy.

Transport is a key success factor for major events and so skills and experience from across our transport planning practice are in high demand. We assist with venue and transport network planning and simulation, play key roles during delivery phases and are also accomplished in assessing the social-economic legacy of major events.

Transport planning for stadia

- Anfield Stadium – Liverpool, UK
- Etihad Stadium – Manchester, UK
- Villa Park Stadium – Birmingham, UK
- Edgbaston Cricket Ground – Birmingham, UK
- Hazza Bin Zayed Stadium – Abu Dhabi, UAE
- Adelaide Oval Stadium – Adelaide, Australia
- Selhurst Park Stadium – London, UK
- Stadium for Cornwall – Cornwall, UK
- Scotstoun Stadium – Glasgow, UK
- Aberdeen Exhibition and Conference Centre (AECC) – Aberdeen, UK
- Yankee Stadium – New York City, USA
- Wembley Stadium – London, UK



Bids and delivery of major events

- Olympic and Paralympic Games 2012 – London, UK
- Olympic and Paralympic Games 2016 – Rio de Janeiro, Brazil
- Commonwealth Games 2014 – Glasgow, UK
- Commonwealth Games 2018 – Gold Coast, Australia
- Commonwealth Games 2022 – Birmingham, UK
- European Games 2015 – Baku, Azerbaijan
- Rugby World Cup Bid 2023 – South Africa
- FIFA World Cup 2022 – Qatar
- European Championships 2018 – Glasgow, UK
- Americas Cup 2017 – Bermuda
- Liverpool Giants 2018 – Liverpool, UK
- UEFA Champions League Final 2017 – Cardiff, UK

A place to live, a place to love

Urban design

Urban design creates places that people fall in love with. From masterplanning on a city scale down to placemaking at a street corner, we design the spaces between the buildings that make being somewhere enjoyable.

There are seven principles of good urban design: character, continuity and enclosure, quality, ease of movement, legibility (ease of navigation), adaptability and diversity. The more of these qualities are present, the better it will work.

At a city or neighbourhood scale, good design can improve quality of life and contribute to wider social benefits, such as mitigating climate change. Good urban design can encourage people to walk, take the bus or cycle, rather than take a car.

Small interventions can build on that by making high-quality provision for active forms of transport. Good street and public space design can improve safety, provide opportunities for more and better social interaction, and help create a more inclusive society or increase a sense of wellbeing.

People's ability to do what they want to do is enabled or hindered by how the city and its public realm is laid out. We ensure these spaces have a positive impact on peoples' lives, making them not only fit for purpose but also the kind of place you can fall in love with.



Loving to be beside the seaside

Project

Worthing Seafront
Investment Plan

Location

Worthing, West Sussex, England

Client

Adur and Worthing Councils

Expertise

Urban design; placemaking,
masterplanning, urban
economics, financing strategy

Worthing, on the south coast of England, is a former fishing town that developed into a holiday resort during the late 19th and early 20th centuries. However, visitor numbers dropped over time with the advent of low cost flights, leading the area's local authorities to devise an investment plan that would look again at the public realm and reconnect Worthing seafront with its town centre and celebrate the shoreline as the key asset.

We organised site visits and stakeholder workshops to identify a series of priority schemes for the seafront, including the repurposing of heritage assets such as the non-operational lido and the reconfiguration of traffic and movement along the main coast road.

We developed concept designs and visualisations for each scheme and undertook an options sifting and appraisal exercise based on the councils' objectives to identify schemes with

the greatest benefit and ensure these are prioritised for delivery.

The councils are now using the investment plan to begin revitalising the seafront. Our expertise in transport planning, public realm design, consultation and funding analysis enabled us to provide a truly integrated approach to the client. The comprehensive proposals that spanned cultural, transport and regeneration investments represented excellent value for money with strong cost-benefit ratios.

Brighton: a celebration of diversity

Project

Brighton Town Hall Public Study

Location

Brighton and Hove, England

Client

Brighton and Hove Council

Expertise

Urban design, public realm
design, placemaking,
feasibility study

Brighton Town Hall in the heart of the English south coast resort was built in the 1830s and is the principal civic space in the city. The Grade II listed building is undergoing a significant reconfiguration to create a new fit for purpose civic space that can accommodate new services such as cafés and office space.

This is accompanied by the redevelopment of an adjacent 1970s building into a prime seafront residential space and a new striking modern architectural landmark. The development has provided an opportunity

to examine the key public spaces around the town hall and develop feasibility design proposals tailored for each area.

Inclusivity was the watchword in establishing multifunctional spaces for a diversity of uses that reflect the different ambitions of Brighton's visitors and residents. We split our response into three key spaces: a modern red-coloured square to celebrate urban life; a restyled heritage streetscape to restore pedestrian priority; and a new market area to reanimate a space that feels forgotten.

Colourful pavers and new street furniture will transform the town hall's public spaces into inviting places that can be shared by all and are publicly accessible throughout the day.

Our feasibility proposals included costing to enable the council to assess what elements of the plan to deliver. These are being used to consult stakeholders and prioritise elements for delivery.



Planning ahead: a masterclass in connectivity

Development planning

Every local authority needs to produce a plan setting out a vision for how an area will develop in the future. Land may be ripe for regeneration, creating new industrial or business areas or there may be demand for new housing. All this requires technical support in planning for future transport needs, locally, as well as at the macro level, connecting with existing infrastructure in the wider area.

People care about the impact of new developments or changes where they live – particularly the effect of traffic or anything that could potentially reduce the quality of life. We are here to make sure people living and working nearby can carry on their lives as usual, or even improve the quality of their journey.

One of the most contentious aspect of planning applications – whether on a citywide or local scale – is the effect they will have on traffic. We support our clients by designing transport systems can work in the future, mitigate traffic impacts and maximise the use of public transport, cycling or walking.

Any new development will create new passenger trips on the transport network. We seek to encourage new residents, employees or leisure users to travel by public transport, or use sustainable transport modes, rather than by single occupancy car trips.

However, we must also think about how the highway network will react to new and diverted trips and where solutions are necessary to cost-effectively mitigate the of new developments on local and strategic roads.

We pull together skills from other parts of the integrated transport business, such as modelling, urban planning, travel planning and traffic engineering to develop plans. This helps to provide our clients with the best insights and transport solutions to complex land-use planning problems.

Moving story of a world heritage site

Project

Princes Dock transport assessments

Location

Liverpool, England

Client

Private developers

Expertise

Transport strategy, planning application support, construction access advice

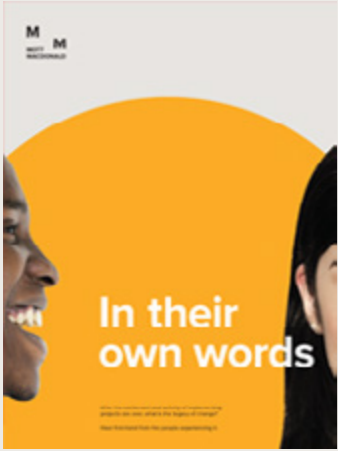
Three private developers – Peel Holdings, Moda Living and Hive – required transport advice relating to three new residential tower blocks located next to each other on vacant land at Princes Dock, all within Liverpool's UNESCO World Heritage Site.

The three developments will share common facilities, including access roads, footways and parking. We provided transport advice in the early design stages through to preparing the transport assessment and travel plan for each planning application.

Planning permission was granted for all three developments and we have been retained by one of the developers to provide construction access advice. With potentially each site being constructed concurrently it is critical that building one development does not affect the construction schedule of another.



Read more in these publications



Opening opportunities with connected thinking.

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