Urban Intelligent Transport Solutions

Connecting the World with Smarter Solutions

ARUP
Our smarter mobility experts fully understand urban transport networks and the challenges facing authorities who are responsible for managing, operating and maintaining the transport system network.

Increased urbanisation and population growth in cities, driving down energy costs, improving safety, finding more sustainable methods of travelling and a desire for better integration of transport modes, are some of the challenges which city authorities face when developing their transport policies. Advancements in technology are now providing global opportunities in smart transport management as cities try to reduce the burden of congestion and improve the lives of their residents.

Arup has had a significant involvement in many of the world’s major mobility management projects on behalf of a wide range of clients, drawing upon our global knowledge and experience from feasibility studies through to implementation and on-going operational advice and assistance. The planning, design and implementation of mobility management systems requires an integrated and multi-disciplinary approach.

The range of projects we have successfully delivered includes:

- Traffic and traveller information
- Traffic signal control design
- Urban and adaptive traffic control systems
- Surveillance systems
- Access control management
- Parking information systems
- Public bicycle sharing schemes
- Traffic control centre design and operations
- Electromobility design and operations
- Public transport priority
- Public transport integrated ticketing
- Website design and content management
- Equipment maintenance
- Asset management
Ticketing Study and AFC Implementation, Bangkok

Arup was appointed by AMP Consultants to undertake a study on the development of a Common Fare System for public transport in Bangkok, including development of a fare structure, analysis of optimum fare level, establishment of service standards and evaluation of potential funding sources. Following this, Arup was appointed as independent consultant and advisory service for the implementation of the Automated Fare Collection system (AFC) for Bus Rapid Transit (BRT). This role included demonstration of how to make efficient use of Stored Value Tickets (SVT) based on modelling, financial analysis and consideration of laws and regulations; followed by specification, supervision of implementation and certification of the efficiency and reliability of the system.

Public Bicycle Schemes, Regional Cities, Ireland

Following the success of the Dublin Bike Scheme, Arup was commissioned by the NTA to expand the scheme to the regional cities of Cork, Limerick and Galway. The scheme will involve the development of web interfaces and smartphone applications to assist in efficiently operating and utilising the scheme.

Parking Management, Sheraton Park, Doha

Arup designed a state of the art parking information and guidance system combined with an area wide Variable Message Sign (VMS) system. Our specialists provided multi-coloured LED arrays above each parking bay which display occupancy, disability and reservation information resulting in a stress free experience with environmental benefits through reduced time searching for available spaces.

Traffic Signals, LUAS B1, Ireland

Arup designed the 7.5km Luas Light Rail B1 Line linking Sandyford to Bride’s Glen. Arup was responsible for managing the delivery of an integrated light rail and traffic signal design. The traffic signals were designed to incorporate light rail signal priority and were integrated with the Sydney City Adaptive Traffic System (SCATS) as managed by Dublin City Council from their Traffic Management Centre.
**Transport modelling for London 2012 Olympics**

To facilitate the safe and efficient movement of Games Family, everyday London commuter and business traffic, a number of games related road interventions were developed for the London 2012 Olympic and Paralympic Games. These included the Olympic Route Network (ORN), Active Traffic Management (ATM), Movement Management Areas (MMA) and traffic management around venues. This was part of London 2012’s objective to ‘keep London and the rest of the UK moving’. Arup assisted the Olympic Delivery Authority (ODA) in undertaking strategic highway modelling to forecast the predicted impacts of the movement of traffic, both in isolation and in combination, on London’s road network during the games.

**Future Bus Swansea, UK**

Arup was commissioned by Swansea Council to undertake the preliminary, and then, detailed design of a 15km long Bus Rapid Transit (BRT) route across Swansea. The main focus of design was to create a ‘tram-like’ priority route system, including off-line routes in the city centre and bypass routes of major junctions, such that delays to the Streetcar and buses is minimised. Route design included provision of priority measures and associated urban traffic control (UTC) signal control. Micro-simulation of the key junctions along the route, and the whole city centre network, was undertaken by Arup to confirm feasibility and to refine the performance of the BRT network. Arup also provided appraisal information for funding applications, which were successful.

**Intelligent Street Lighting pilot schemes**

Arup was commissioned by the National Roads Authority (NRA) to design and manage a number of Intelligent Street Lighting pilot schemes located throughout Ireland which focused on central management systems, energy efficient lighting, wind energy generation and a range of innovative communication technologies.

**Khalifa Avenue Masterplan, Doha**

Arup provided consultancy services in relation to the master planning of Khalifa Avenue which sought to enhance the user experience through the deployment of a wide range of innovative technology solutions. The solutions focused on promoting urban life, allowing a high level of exterior comfort and granting the required accessibility for the existing and proposed land uses.

**Pedestrian Footfall Detection Survey System**

The imaged based pedestrian counting system is currently deployed at key locations within Cork city centre, providing important and accurate pedestrian footfall data. These statistics are utilized to quantify the performance of specific initiatives or broader strategic changes proposed.

**Camarthenshire, Passenger Information, UK**

Arup provided specialist consultancy services in developing a detailed options assessment in relation to the deployment of a Real Time Passenger Information (RTPI) system including web based traveller information, RTPI signage at public transport stops and on-board Advance Vehicle Location (AVL) systems for Carmarthenshire County Council.
Arup is the creative force at the heart of many of the world’s most prominent projects in the built environment and across industry.

We are an independent firm of designers, planners, engineers, consultants and technical specialists offering a broad range of professional services. Through our work, we make a positive difference in the world.

We are truly global. From 100 offices in 38 countries our 11,000 planners, designers, engineers and consultants deliver innovative projects across the world with creativity and passion.

Founded in 1946 with an enduring set of values, our unique trust ownership fosters a distinctive culture and an intellectual independence that encourages collaborative working. This is reflected in everything we do, allowing us to develop meaningful ideas, help shape agendas and deliver results that frequently surpass the expectations of our clients.

The people at Arup are driven to find a better way and to deliver better solutions for our clients.

We shape a better world.
Our services include:

- Research and development
- Planning and feasibility studies
- Systems engineering
- ITS architecture
- Regional deployment planning
- Detailed design
- Systems integration
- Communication and power design
- Procurement development and assistance
- System implementation oversight and coordination
- Systems evaluation
- Traffic control system operations
- Asset management