Intelligent Space

“Intelligent Space are about making space work for people”
At Intelligent Space we make space work for people. We provide expertise on all aspects of pedestrian movement from urban transport schemes and developments through to circulation within buildings.

We review, model and plan for pedestrian activity, like transport planning but for pedestrians. We provide guidance on how to best support pedestrian activity, be it increasing pedestrian volumes, improving the quality of the pedestrian environment, creating efficiency gains or supporting wayfinding strategies. Our work is used to improve the environment on buildings including schools and hospitals, urban developments (including retail, residential and mixed use schemes) as well as public spaces, high street improvements and city wide pedestrian strategies.

Our aims are: to use an evidence based approach to improve the functionality of public spaces from parks and plazas to city streets – to make them work and meet the needs for all users, especially those on foot; to support safety, both reducing accident risk and supporting crime prevention through design; and to ensure that the economic benefits that designing for pedestrians can deliver are realized through successful new developments, active public spaces and busy, profitable retail schemes.

Intelligent Space is based in central London and carries out projects on an international level. Since its foundation in 2000, Intelligent Space has been working for renowned clients among government bodies, property owners, developers and consultants. The work of the practice is cited in the Department for Transport’s good practice casebook “Walking: The Way Ahead”. IS won the 2002 AGI Innovation Award for the analysis of crowding at Notting Hill Carnival and IS were independent cross party technical advisors to the 2002 UK Parliamentary Debate on Walking in Towns and Cities.

As of September 2007, Intelligent Space is now a business operation within Atkins.

"Intelligent Space are responsive and customer-focused, providing a high level of analytical involvement without blinding you with science" Land Securities
“Intelligent Space are the missing link between buildings and public space” Land Securities

Our services range from design guidance through to detailed scheme assessment. We provide robust approaches to measuring and modelling pedestrian activity to enable decisions to be made that meet the needs of all users.

Surveys

Using our team of trained staff, we provide detailed surveys on current pedestrian activity. This enables quantitative information on pedestrian activity to be benchmarked. Our surveys include: pedestrian flow surveys; questionnaire surveys; road crossing (planned and unplanned crossings); path following surveys; activity surveys; scoping studies; and public space audits.

Pedestrian flow modelling

Intelligent Space have developed bespoke pedestrian modelling software, Fathom. This provides information on pedestrian activity from the pedestrian desire lines at sketch design stage through to detailed pedestrian flow models for junctions up to the scale of the city. The services include: spatial analysis; transport accessibility analysis; wayfinding modelling; strategic pedestrian modelling; detailed pedestrian flow modelling; microsimulation and pedestrian walking networks. Software includes Legion, Vissim, Pedroute, Paxport and Fathom.

Consultation & Strategy

Intelligent Space provides strategic consulting on pedestrian movement and space use. Our consulting work is evidence-based, drawing on rigorous surveys and data analysis. Our use of modelling in our consulting work allows for testing of design options. These areas of expertise together with our wide ranging project experience lead directly to implementation plans for improving the pedestrian environment. Our services include: pedestrian strategy; design evaluation; design guidance; pedestrian safety; retail healthcheck; development of matrices of pedestrian benefits; developing frameworks for city wide strategic reviews.

Design Evaluation of Buildings

We have developed a suite of tools to benchmark building designs using objective and repeatable methods. We can provide assessments of the functionality of building designs from the strategic routes down to the detailed planning of individual departments supporting evidence based design. We have developed a detailed set of benchmarks from our assessments of over 30 hospitals which form the basis of our evidence based evaluations. We are working with Hillingdon Hospital NHS Trust and North Bristol NHS Trust on their PFI developments. We have also worked with the successful bidding teams including: Forth Valley Acute Hospital and Tunbridge Wells.

Pedestrian Analysis

The public realm can affect the activities and the quality of the environment for pedestrians. The assessments of the pedestrian realm that Intelligent Space provide include: level of service determination and analysis for pavements, crossings and public spaces; natural surveillance analysis to support crime prevention through environmental design; and automated land use mapping (to determine A1, A2 etc land use categories).

Post Occupancy Assessments

We use advanced surveys and computer modelling to visualise evidence on the functioning of buildings in use to inform redevelopment strategies and to review current vs. planned performance. This approach has been used on sites including the Royal Sussex County Hospital and Birmingham Heartlands Hospital.

“Intelligent Space helps us to identify and enable the intelligent use and awareness of space. They have established a good knowledge and understanding of healthcare design and apply it in their work” Jane McElroy, Healthcare Director Anshen & Allen
sectors

Intelligent Space provide expertise on pedestrian movement in a range of sectors in the built environment. Our main sector that accounts for around half our workload is in transport planning schemes where we provide transport planning - for pedestrians. Our next largest sectors are urban development and healthcare.

transport

Successful transport planning and masterplanning schemes have one shared feature - they support journeys on foot. High streets need to support pedestrians to flourish, bus and train stations need people to find their way quickly and efficiently to their destination. To ensure that schemes meet their goals, walking needs to be fully considered alongside all other transport modes. With 80% of trips under a mile made on foot, it is clear that walking is a key mode of transport.

Intelligent Space work together with transport planners, urban designers and architects to ensure that pedestrians needs are fully incorporated in transport planning and masterplan developments. Our aim is to redress the balance between vehicles and pedestrians to meet the requirements of the site. We work on schemes from individual junctions to city wide strategies.

Intelligent Space has provided specialist expertise in planning for pedestrians in over 50 transport planning schemes.

Redevelopment Schemes include: Parliament Square, London; Boston Downtown, to support the rebranding of the downtown area; and Streatham High Road: “Drive-Through to Destination”

Transport Interchanges including: Victoria Interchange, London; Golders Green bus interchange; and Docklands Light Railway, West India Quay

High Streets & Town Centres including: Poplar High Street; Station Road Reading; and Pedestrian movement analysis of Duisburg Town Centre

City-wide Strategies include: Central London Pedestrian Study; Peterborough Pedestrian Model and Canberra central movement study

complex buildings

Complex buildings such as schools and large offices have challenging functional requirements. Our expertise in building usability helps developers and owners to strategically plan for functional requirements such as wayfinding, space use and crime prevention. By identifying the likely consequences of building designs prior to development, our research helps to ensure that new buildings will meet their users’ needs. This increases the value of a development and reduces the risk of functional obsolescence.

Some of the services that we provide in this sector are:

- Design Guidance Consulting
- Post Occupancy Space Utilisation Surveys
- Wayfinding Analysis
- Crime Prevention through Environmental Design
Intelligent Space’s expertise in pedestrian modelling enables us to provide clients in the retail sector with more than surveys and data. We work to develop and implement optimisation strategies that improve foot-traffic into stores. By modelling and testing options in advance of development, key functional risks are minimised and new opportunities for improvement are identified.

Analysis of existing retail centres provides objective measures for key performance indices in retail design. Modelling of new retail designs informs investors about the likely performance and functionality of the building prior to construction. Our work in this field includes:

- Pedestrian Movement Analysis
- Movement and Visibility Modelling
- Retail Design Evaluation
- Pedestrian Flow Optimisation Strategies

Developing public spaces that are vibrant and economically sustainable depends on understanding the problems that are faced and created by pedestrians. Our state of the art modelling tools provide the stakeholders in urban development masterplans with effective pedestrian movement and safety strategies. We work alongside architects and engineers to test and develop strategic ideas. Our work in this field includes:

- Movement, Wayfinding and Congestion Modelling
- Pedestrian Movement and Safety Strategies
- Natural Surveillance and Crime Vulnerability Analysis
- Urban Design Evaluation

IS has developed specialist knowledge on hospital design through research for the Department of Health and for the National Audit Office. Our experience has led to us working as part of the design team, both formulating the briefs in conjunction with Trusts, and as part of the bidding teams in helping to optimise designs.

We provide expert advice on schemes at all stages of the development process from briefing through design, implementation to management.

We work in partnership with the Architects and Healthcare planners in reviewing the functional aspects of designs, from exterior movement and wayfinding through to the clinical functioning of departments.
In the past eight years, Intelligent Space has worked on over two hundred projects which have ranged from the redesign of Parliament Square to the Notting Hill Carnival.

Alongside our work in London, we have worked in UK cities including Liverpool, Manchester, Edinburgh, Peterborough, Leeds, Reading, Cambridge and Bristol. Internationally we have worked in Duisberg in Germany, Canberra and Melbourne in Australia, Boston and Washington DC in the USA.

Selected Projects

Victoria Transport Interchange
Pedestrian movement analysis and future scenario modelling in Victoria, for Victoria Transport Interchange project.

Parliament Square
Modelling of pedestrian movement and public space issues of one of London's most famous landmarks to inform the Square's regeneration plan.

Borough Market
London, 2007-2008 for Network Rail
Pedestrian Movement analysis for network rail to inform construction phasing of the viaduct.

Sheffield Retail Quarter
Sheffield, 2008 for Hammerson
Pedestrian Movement Analysis

Barking
Pedestrian modelling of Barking Interchange.

Newham BSF
London, 2007-2008 for Laing O'Rourke
Modelling of pupil circulation within planned school developments.

Clapham Common Interchange
Assessments of the impact of changes to Clapham Common Interchange on pedestrian behaviour.

Hammersmith Pedestrian Model
London, 2007 for Serco
Modelling of pedestrian activity in the Hammersmith area to inform the street cleansing strategy.

Acton Central
Assessment of pedestrian access and activity around two stations in West London.

Bilgrave Street
Reading, 2007 for Reading Borough Council
Pedestrian Movement Analysis for streetscape redesign strategy.

Central London Pedestrian Study - South Central
Assessment of pedestrian activity, density and accessibility for the South Central area of the TLRN. This built on the 2006 study, examining a further 58 sites.

Hampstead Heath Pedestrian and Cycle Observation Studies.
Intelligent Space carried out the first detailed user surveys on Hampstead Heath in order to inform the City of London of pedestrian and cycle patterns, the capacity of paths on the Heath, estimated annual visitor numbers, and to understand public opinion for the City's review of cycle provision on the Heath.

Cabot Circus
Bristol, 2007. For Hammerson Plc
Micro-level footfall analysis and circulation estimates in Bristol shopping development.

Millenium Quarter Masterplan
London, 2007. For Foster and Partners
Modelling of pedestrian movement desire lines and accessibility issues to inform the masterplan's pedestrian strategy.

Clarence Hotel, Dublin
Ireland, 2007. For Foster and Partners
Study of the potential impact of major hotel redevelopment on pedestrian movement patterns within Dublin's Temple Bar quarter.

Kingsland High Street
London, 2007. For The Project Centre
Pedestrian surveys and spatial analysis of existing pedestrian behaviour in and around Kingsland High Street in Hackney, to inform plans for improving the pedestrian environment.

Oxford Street VIP Day 2007
Pedestrian movement analysis of the Oxford Street VIP (Very Important Pedestrians) day when Oxford Street and Regent Street were pedestrianised for the day.

Dublin Central
Ireland, 2007. For Lafferty Property Management
Pedestrian movement analysis for major new retail development on one of central Dublin's primary retail streets.

Kingston Urban Masterplan
London, 2007. For Hammerson Plc
Pedestrian movement study and spatial analysis to inform the masterplan design for Kingston Town Centre.

Education City
Qatar, 2007. For Atkins Doha
Atkins Intelligent Space was commissioned to produce a pedestrian flow model of the Education City masterplan to highlight predicted pedestrian movement levels along the pedestrian network to assess pavement capacity.
Old Medina Tripoli
Libya, 2007. For Foster and Partners. Modelling of pedestrian movement desire lines and accessibility issues to inform the masterplan's pedestrian strategy.

Enniskillen Hospital
Northern Ireland, 2007 for NIHG. Intelligent Space provided an assessment of how well the NIHG scheme for the Enniskillen Hospital performs in comparison to the Exemplar Scheme.

Oxford Road, Reading

US Office Building
US, 2006. For Iris Holdings. IS has been undertaking design assessments of the site and office plans of a proposed new office campus in the US.

Bankside Urban Forest

Boston Downtown Crossing
Boston, 2006. For Boston Redevelopment Authority BRA. Project consultant advising the Boston Regeneration Agency on pedestrian movement issues within the Downtown area and providing modelling and development strategies.

Royal Bank of Scotland

Kingston Town Centre

Bradford Schools
Bradford, 2006. For Costain. Design review of the likely movements of staff and pupils around planned school layouts. IS has been working alongside Anshen & Allen and Architecture PLB on the Bradford Schools BSF project.

Euston Road

DLR Poplar Station
London, 2006. For Docklands Light Railway. A study of pedestrian movement patterns from the station to the surrounding area to provide evidence for streetscape improvements and station redesign.

Poplar High Street

Station Road Reading
Reading, 2006. For Reading Unitary Authority. Pedestrian movement analysis.

Central London Pedestrianisation Schemes

Road Crossing Behaviour Analysis

Islington A1 Holloway Walking Route

Golders Green Bus Interchange

East End of Oxford Street

Duisburg Masterplan
Duisburg, Germany, 2006. For Duisburg Innenhafen. Modelling of pedestrian movement desire lines.

Violent Crime in Haringey

A10 Tottenham High Road

Monument Interchange
London, 2006. For Transport for London. Urban realm and pedestrian movement appraisal to inform improvements to the street environment for pedestrians and cyclists around the interchange.

Central London Pedestrian Study
London, 2006. For Transport for London. Assessment of pedestrian activity, density and accessibility for the Central area of the TLRN. The report provides a reference document indicating the levels of pedestrian activity and assists in the development of pedestrian strategies, programmes and schemes by TfL.

Blackfriars Interchange
London, 2006. For Transport for London. Urban realm and pedestrian movement appraisal to inform improvements to the street environment for pedestrians and cyclists around the interchange.

Peckham Spatial Study

Pedestrian Guard Rail Removal Study

Victoria Interchange Bus Passenger Behaviour Analysis

Tunbridge Wells
Kent, 2005. For Laing O’Rourke (Kent).

Hillingdon Redevelopment

Canberra Central Movement Study
Australia, 2005. For ACT Procurement Solutions.

Bus Stop Design Guidance

Peterborough Pedestrian Model
Peterborough, 2005. For Peterborough City Council.

"Intelligent Space provide a different approach to our work. Through a cutting-edge approach and hard analysis of facts, they produce thought-provoking challenges to our assumptions about what will work." Hammerson
“Intelligent Space are helping us to push boundaries in transport planning, especially in appreciating the value and importance of pedestrian environment issues.”

Transport for London

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