Streets Systems

Case Studies 2018-2019

www.streets.systems

Streets Systems

Street Systems is a Director managed company based in Newcastle-Upon-Tyne. Delivering both short surveys and permanent projects, our use of Machine Vision to automatically extract data from video footage offers added value over and above other methodologies.

Streets Systems supplies and maintains permanent counting equipment, collecting and storing real time data on the movement of people. Our deployments in Newcastle deliver data for the Urban Observatory, Europe's largest deployment of real time urban sensors.

The firm is able to deliver survey projects to tight timescales across the UK, Ireland and Europe. End to end project delivery is carried out completely in house. Our modular camera systems can deploy into both urban and rural environments. All equipment is moved to the project area using Low Emission Zone compliant vehicles.

Unlike many other Traffic Data operations our highly automated data extraction is carried out entirely within the European Union offering compliance by design with the General Data Protection Regulations. We deploy into high profile very high footfall city centre locations with minimal impact on surrounding activity.

We have extensive experience supporting trials of temporary street interventions, including both school zones and high profile city centre locations.

Street Trial in Newport

Partner with us

Data To Solve Complex Problems

The firm's work has received national press coverage in Guardian Cities for our innovative work with The City of London Corporation.

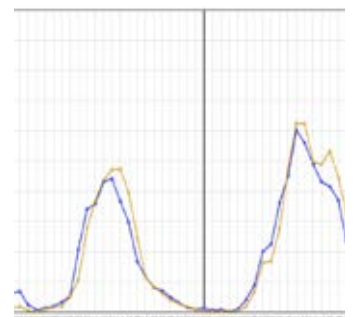The projects we do in collaboration with Arup in Scotland help towns become more livable places.

We have installed permanent equipment monitoring footfall on Newcastle's Northumberland Street, one of the busiest shopping streets in Europe.


Presence
Detection

Movement
Tracking

Meaning
Analysis

Ludgate Circus (Urban Junction)

Busy junction located on the approach to one of the capital's key bridges. Limited space for a large number of motor vehicles, pedestrians and cyclists causes high levels of friction between street users, sometimes resulting from inattention, informal behaviours or breaking the law.
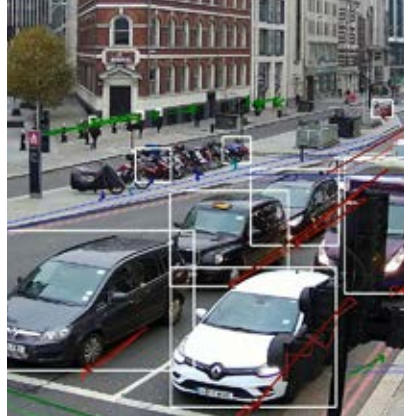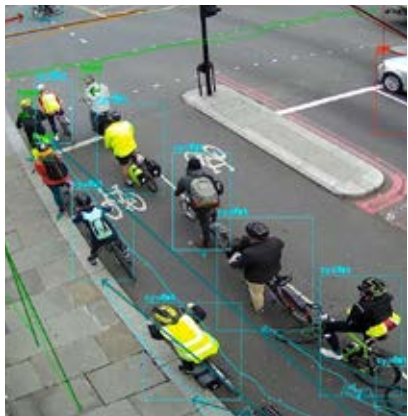
Provide information on how pedestrians cross the junction, quantifying high volumes of informal movements and higher risk interactions. Specify how often the drivers and cyclists do not comply with stop lines and signal changes. Measure how widespread is the perceived smart-phone distraction problem among pedestrians. Supply the data to inform change at this vital commuting hub.

We calculated the number of pedestrians crossing the junction in an informal way, determined how often near miss situations happen, which parties are involved, and what are the circumstances. We counted how many and where pedestrians cross the intersection while being smart-phone distracted. We created a dataset that combined the junction's SCOOT signals log with actual movements.

Capturing movement paths of pedestrians, documenting informal movement both spatially and within the signals phasing. We recorded exact moments when vehicles and cyclists cross stop lines, when pedestrians enter the road and detected changes in traffic lights. We identified individuals looking at hand held devices while crossing the street enabling a real assessment of the scale of the problem based on fact rather than anecdote.

Moffat (Market Town)

A busy High Street in this Scots Borders Town attracts a mix of locals, tourists and shoppers from it's rural catchment. As well as being a destination the street also carries through traffic including forestry industry goods vehicles and agricultural plant.

We aimed to inform a feasibility study for possible changes to the public realm. We were asked to collect information on traffic volumes, speeds and car parking occupancy. Required data included calculating which areas are most often used by pedestrians and mapping where pedestrians cross the street.


30 viewing points were used to provide saturation coverage of 7000 square metres of the Town Centre. We measured pedestrian, cyclist and motorised traffic, monitored use of parking bays throughout the area and digitally tracked pedestrian movements. ANPR gateways were used to create an origin destination matrix.

We proved that pedestrian footfall is higher where motor traffic volumes are lower and speeds are lower. We identified speed variations across the length and width of the High Street. We mapped where pedestrian activity interacts with traffic flows identifying key desire lines. We calculated the split of vehicle flows between gateways, identifying passing traffic, vehicles visiting area multiple times a day for short periods of time and those who visit for longer periods.

30 — camera shots

7000 — sq metres
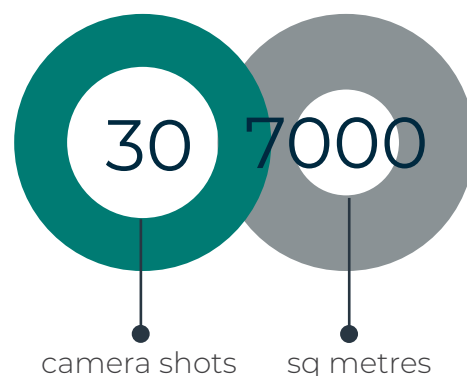
The Giants Causeway (World Heritage Site)

Breathtaking landscapes visited by thousands of tourists from all over the world. Huge number of paths, a large part of footfall takes place in the open spaces where visitors are roaming freely.
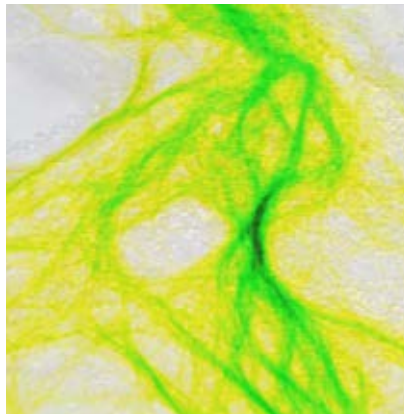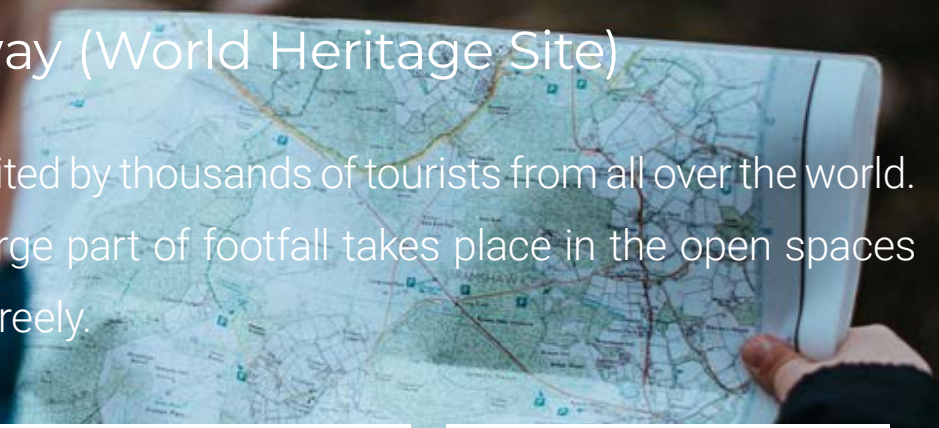
The brief asked us to collect data on routes in a systematic way, measuring how often individual zones are visited. Long term management of ecologically and historically important areas required mapping visitor traffic in open areas and across geological features. We were also asked to calculate visitor travel time and measure the boarding of buses and their punctuality.

We calculated density of visitors in zones at regular intervals, combined images captured with multiple cameras to illustrate patterns of movement across open spaces. We derived travel time profiles for pairs of locations by reidentifying individuals in both places. Datasets included actual numbers of boarding and alighting passengers, together with arrival and departure times of buses transporting visitors to areas of interest.

Streets Systems uncovered the dynamics of visitor movement in all survey locations, indicated areas which are visited frequently and those to which access is difficult. We discovered how long visitors dwell in individual areas. Movement was mapped at both micro and macro levels to inform long term management of tourism at these ecologically sensitive sites.

1.5ha

filmed with
4K cameras

Streets Systems 2019

Newcastle (Urban Observatory)

Machine Learning enabled footfall monitoring from rooftop positions overlooking Northumberland Street, one of Europe's busiest shopping streets. Baseline of people and traffic flows captured for city centre regeneration areas.

Streets Systems supports the largest deployment of urban sensors and air quality monitoring equipment in Europe by installation of real time pedestrian traffic monitors. Covered areas include city's prime shopping district, University Campus and regeneration sities.

Our sensors are deployed both as standalone units and as an extension to existing video systems operating 365 days a year. Fully maintained hardware compatible with wider urban camera network.

Deployment managed in partnership with the City's existing camera and communications contractors.

Streets Systems

6th Floor Commercial Union House

Pilgrim Street, Newcastle upon Tyne

NE1 6QE

www.streets.systems

hello@streets.systems

+44 191 603 0877