

Case Study on The Bridge, Dartford

The Bridge is the first major regeneration project in Thames Gateway and ACIS has provided the complete RTPI, Control room and traffic management functionality as a turnkey solution to compliment and integrate partner relationships at the development.

Local government guidelines now encourage environmental sustainability by reducing the need to travel and in particular by making the best possible use of existing transport infrastructure, enhanced by intelligent transport solutions. Section 106 agreements between developers and planners are now just as likely to include public transport enhancements as they are to include contributions for improved roads or junctions.

The Bridge is a 264-acre development at Junction 1a of the M25 (Dartford Toll junction) of 1500 homes and future planning for 1.5million sq ft of commercial space, which will bring in 7500 jobs to the area.

ACIS was awarded the telematic partnership tender by Prologis (land owners) in 2001 and started to design the RTPI system specification with other partners. Highways' planning was agreed in 2003 and ACIS received the first order to fulfil The Bridge's innovative transport requirements in 2005.

Challenge Posed to ACIS

To improve modal shift at The Bridge development and surrounding areas in support of the new sustainable home development.

The Dartford Toll currently has circa 100,000 vehicles per day pass the bottom of The Bridge and this number is projected to increase to 190,000 by 2016. To add to this number, Dartford Borough currently has population of 86,000 residing in circa 40,000 homes and as one of the Governments key growth zones. Dartford must build a further 20,000 homes by 2025.

Traffic congestion in UK is projected to grow by 26% between 2000 and 2010¹ and it is stated that the growth in car ownership and traffic levels in the South East region will be above the average figure predicted for the UK. Therefore, the emphasis is based on public transport and towards modal shift is ever increasing along with the delivery of results from ACIS' turnkey solution.

Key Partners and Stakeholders

Dartford Borough is the owner of the brown-field site and keen to find partners who would invest in technical transport solutions thus enabling the successful development of the land to meet housing expectations without the use of public funding.

Prologis (international owner and developer of distribution facilities) is the master planner of the site; they lease industrial space to manufacturers, retailers, transportation companies, third-party logistics providers and other enterprises with large-scale distribution needs. The central location of The Bridge being close to the M25 and M20 made it an obvious choice for investment.

Kent Highways Agency required the development to be neutral in terms of traffic impact on Junction 1a M25 and therefore involved in section 106 discussions with Dartford, Kent County and Prologis.

George Wimpey (of Taylor Wimpey UK Ltd) is the chosen home builder of the 1,500 houses and flats to be built on the site over the coming years, 150 completions in phase one through December 07 and January 08.

Alfred McAlpine is a leading support services business focused on the built environment such as The Bridge and are contracted for Infrastructure build out at the development.

The Overall Solution

A Bus Rapid Transit System (BRT) also known as Fastrack, these are high frequency, dedicated bus ways, priority given through traffic signals. Easily extended through the new development sites throughout Kent Thameside, as unlike trams, trains and guided bus ways Fastrack is able to leave the dedicated bus ways to join existing roads where it receives priority.

ACIS' Turnkey Solution

o Automatic Number Plate Recognition

ANPR provides an accurate mechanism for monitoring vehicle movement, journey times, highlighting delays at junction approach and traffic counting. ANPR is able to monitor and reduce vehicles using developments as 'rat runs' or commuter parking. ACIS ANPR is also used to monitor and manage car parking spaces and by extension can provide accurate records for travel planning rewards for employee reduction in car use at businesses local to The Bridge.

o CCTV

ACIS recommends CCTV on the grounds of enhanced personal security, crime prevention and modal shift. Recent surveys have shown that the more secure a passenger feels the more likely they are to use public transport. CCTV also greatly reduces vandalism and graffiti to street furniture. ACIS has installed CCTV on buses, in shelters and at tactical locations on new developments. Latest technologies allow ACIS to integrate CCTV technology alongside CCTV using the same hardware, delivering this information in real time to a dedicated control station.

o Traffic Light Priority

As buses travel along their routes they can use TLP to request priority passing through the traffic lights. There are four levels of priority available, which may be varied across a vehicle fleet: time of day, lateness, number of passengers or other such settings as agreed by the Operator and Local Authority. The ACIS system uses an on board transmitter which communicates either directly with the traffic light, or over the radio network to a central control point. By using ACIS' award winning GPS and radio technologies, there is no need to install expensive sensors beneath the road surface, enabling infrastructure and maintenance costs to be minimised, while traffic flow remains uninterrupted. ACIS has installed Traffic Light Priority in Belfast, Bristol, Cardiff, Kent, Norfolk, Surrey, West Sussex and York.

'If bus journey times were cut by half through bus priority measures, 26% of car users say They would very likely travel more by bus'

Commission for Integrated Transport

o Smart barriers/Gates and Bollards

Using ACIS on bus technology, barriers, gates and bollards can be integrated into used to police dedicated bus ways, control and monitor parking facilities at universities.

o House display

The House Display is the real innovation that completes the ACIS turnkey solution towards improved modal shift. This is the first RTPI display designed and developed for installation in the home and ACIS is the originator. Every George Wimpey home on The Bridge will have an ACIS House display that is fully interactive to display real-time bus and train information, community updates, weather, news, club, car share and energy monitoring. The displays are now regularly featured in section 106 agreements and travel plans where planning is sought for high density, low trip developments.

'The most effective time to change behaviour is at a transition point in someone's life – so if you can get people when they've just moved into a new house it can be habit-forming.'

David Rowe TfL Head of travel demand management

- **Web**

Passengers can now receive accurate real time travel information via the Web by visiting the ACIS Live website or interacting with their House Displays. With Real Time information available at the touch of a button public transport becomes a real alternative for city visitors who have little if any local knowledge.

“Initiatives like this that provide better passenger information can make public transport much easier to use. That is more and more important as we aim to tackle congestion in the West

Midlands and do our bit to help the environment.”

Councillor Gary Clarke, Chairman of Centro-PTA

- **Control Rooms**

ACIS developed and implemented a state of the art control room which brings together the ACIS elements of TLP, barriers and bollards, CCTV, ANPR, Displays and shelters in one visual hub. Site security and management have a complete picture of all areas of transport and passenger waiting shelters across 12 TFT screens, a XX” commercial display and audio communication into every shelter on the Fastrack route. The system installation, project management and ongoing system maintenance is provided by ACIS from a local office based in Kent.