



CCTV by design

CASE STUDY



# Hammersmith & Fulham Council

## The Client

Hammersmith & Fulham Council (H&F) administers the London Borough of Hammersmith & Fulham. One of London's busiest and most vibrant inner London boroughs, with 182,500 residents, it covers 6.33 square miles of the centre-west area of London. It is divided into 16 wards including the main town centres of Hammersmith, Fulham and Shepherd's Bush as well as key districts such as West Kensington, Parsons Green, Sands End and West Brompton.

It is also the only London borough containing the stadiums of three major football clubs: two in the Premiership - Fulham FC and Chelsea FC, and one in the Championship - Queens Park Rangers (QPR) FC. It is also the location of large offices for major employers that include the Virgin Group, Sony Mobile Communications, L'Oreal, Coca Cola, AOL, Disney and the BBC. In October 2008, the Westfield Shopping Centre opened within the Borough.

## The Challenge – Sustainable CCTV Growth

The Borough's CCTV system expansion was slow but steady so that by 2001 40 cameras had been deployed across H&F. But operating costs had also risen sharply and looked unsustainable, even to achieve previously agreed expansion plans.

Chroma Vision was contacted by H&F to help plan the future growth of the CCTV system. The Council's priority was to ensure that the capital expenditure and operating costs of the system remained manageable as the system grew.

Since Chroma Vision teamed up with H&F new CCTV funding has been unlocked through property developers' Section 106 community funding payments. H&F benefitted from two large blocks of Section 106 funding from the redevelopment and expansion of Chelsea Football Club's ground at Stamford Bridge in 2002-3 and the Westfield Shopping Centre in Shepherd's Bush in 2008-9, as well as many other smaller developments. Some of this funding was ring-fenced for investment in community safety projects and extension of public space CCTV.

But in order for the CCTV system to grow, investment in video transmission infrastructure was critical. Local and centralised monitoring and storage of video images must be provided for CCTV to be effective and this meant digging trenches in roads and pavements and laying dedicated fibre optic cables for transmitting video images from the cameras back to a local collection point. These cables were then leased by H&F from the carriers. However at this point leased lines were very expensive.

## Leased line rationalisation

One of Chroma Vision's first tasks was to conduct a review of the options after BT quoted over £40,000 to lay a fibre optic cable from Stamford Bridge across to the nearest monitoring station in Fulham Town Hall some 400 metres along the Fulham Road. This line would then have cost over £3,000 per year to lease.

Chroma Vision was able to work very closely with H&F to lay Council-owned fibre down this stretch of road to minimise disruption, reduce installation costs and eliminate ongoing leasing costs. Chroma Vision went further to recommend a programme of rationalising the number of leased fibre links the Borough used.

**This rationalisation saw the reduction of leased lines from a peak of 15 lines costing over £20,000 in 2001, serving just 18 CCTV cameras; down to just three, with a total annual outlay of only £2,250 per year, supporting over 800 cameras. Unlocking these operational savings was also invaluable as Chroma Vision began to recommend expansion and upgrading of the existing surveillance system. So the total annual operational saving; from Chroma Vision laying a private fibre network for H&F rather than relying on leased lines; is over £250,000 today, bearing in mind the considerable expansion of H&F's CCTV system over recent years.**

## Working in partnership to improve Chelsea FC policing

It was clear that a robust centralised monitoring capability was needed to support the Metropolitan Police and other authorities in co-ordinating their response in case of incidents such as those associated with football matches in the three major stadiums across the Borough.



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Extending CCTV links into both Stamford Bridge and QPR's Loftus Road stadium and centralising monitoring into the expanded Central Monitoring Unit (CMU) at the Hammersmith Town Hall in King Street, made it possible for the first time for the Police to get a full overview of the movement of supporters before and after the game.

**From 2004, Chroma Vision worked with the Metropolitan Police, Fulham Broadway Shopping Centre, the Council and the Chelsea FC security management team on a ground-breaking partnership initiative which improved policing and crowd management before and after Chelsea FC home matches.**

This initiative enabled the sharing of intelligence and information between everyone involved. By working together clashes between supporters and overcrowding at key underground stations were almost eliminated. For example, away supporters were held at the ground until home supporters dispersed well beyond the area, effectively 'designing out' potential conflicts.

On Chelsea home match days, representatives of the Metropolitan Police Silver Command unit or its specialist Football Unit will sit inside the CCTV control room at Stamford Bridge to view the stadium's cameras. By working closely with H&F's CMU operators, they can also gain access to images from cameras all the way along the Fulham Road and up as far as the Fulham Broadway Shopping Centre (FBSC) where the nearest underground station, Fulham Broadway, is located.

H&F's CMU operators have access to all FBSC-owned cameras facing out from the shopping centre, while communication with FBSC security and the team at Stamford Bridge gives them a view on any overcrowding at the entrance to the underground station itself. Co-operation between all parties also enables Chelsea FC's CCTV control room operators to pass images from the stadium out to H&F's CMU in rare cases where problems emerge inside the stadium.

When it first launched, this type of partnership was unique but has since been replicated at Loftus Road for QPR matches and elsewhere around city-based football grounds outside the Borough. As a result, incidents, before and after QPR and Chelsea home games, have fallen dramatically despite the clear challenges of moving more than 40,000 people in and out of heavily populated and busy residential and commercial areas in a timely manner.

John Baldwin, Managing Director, Chroma Vision, explained the value of this partnership approach:

**“This type of co-operation between Police, stadium security and shopping centre management teams, led by H&F, was unique back then. It proved so successful that these arrangements became the blueprint for event-based crowd management in built-up areas across the UK.”**

## Working in partnership with the Police to target crime

H&F's CMU is able to work in partnership with the Police on specific crime initiatives. One recent initiative targeted bike theft which had been an increasing problem in the Borough.

The Police tell H&F's CMU operators which bike rack is a current focus for thieves. A CMU operator then focuses on the camera(s) which provide a high aerial view of this bike rack so it is possible to identify thefts in progress, follow thieves away from the site and then relay these images to the Police so they can intercept them.

Many of these cameras are highly robust 360 Vision Technology Predator High Speed PTZ Cameras offering highly effective dual infrared and white light illumination, so positive identification is still possible even after dark. Indeed the Dual IR and White Lighting allows for colour image collection at night for all subjects within 100 metres of the camera.

Chroma Vision also cited high specification CCTV cameras on the roofs of several of the Borough's high buildings. These provide razor-sharp images of the ground using long lenses with up to 20x optical zoom. At this height they go unnoticed by most people on the street yet their zoom capability is so powerful that the still and video images that they gather are good enough to secure convictions.

John Baldwin explains with another example:

**“H&F's CMU operators have helped to disrupt the activities and secure the conviction of ticket touts selling Chelsea match tickets on the Fulham Road through images from these cameras. You can capture the moment of the tickets and money changing hands. The Police have been able to use these to successfully charge touts that have been operating in this area for more than 20 years.”**

## Extending CCTV into H&F's estates

From 2008, crime and anti-social behaviour was becoming a larger problem on H&F's residential estates. This made it an increased focus for the surveillance resources of the Council. Chroma Vision worked with H&F to conduct an extensive survey of residents of the estates to establish levels of perceived and real crime and gauge residents' safety concerns. A proposal of extending centrally monitored CCTV into the estates was submitted and secured backing from council leaders. Chroma Vision then worked with H&F to identify a total of 24 estates which were earmarked for CCTV system implementation over a five year period.

Chroma Vision has since completed CCTV systems for the first 12 key estates in the Borough, putting in new CCTV systems where there were none and routing cameras back to local collection points where CCTV cameras did exist.

Specifications were defined to avoid intrusion on residents' privacy. Cameras were located to identify people entering and leaving the estate and each individual block within the estate. Target coverage of 80 per cent



H&F's CMU, High Street CCTV at King Street, and Chelsea FC's recently added West Stand.

of the external areas was also part of the design criteria. Bi-directional audio and discreet surveillance cameras are also fitted in many of the estates' lifts. This provides instant reassurance if a resident is stuck inside a malfunctioning lift, whilst covert cameras help reduce urination and other anti-social behaviour in lifts.

Andrew Stocker, CCTV Development Manager, H&F said:

***"On two occasions we posted video of residents urinating in a lift, on YouTube. Unsurprisingly this reduces the problem dramatically by spreading the word about who is doing it."***

***"When new CCTV systems go in it sometimes displaces criminal activity into neighbouring areas. When cameras are installed in some estates, drug dealers often move into a different area to deal but often now we've deployed cameras in this new location. They cannot hide if they are dealing on the street. As we extend the number of cameras gradually we close the options down for them until it becomes too difficult to trade in this Borough."***

Six mobile deployable units have now been purchased by H&F's Community Safety Unit. These units are used to solve specific case loads of anti-social behaviour and crime such as drug dealing. So it's now possible to install the unit, which includes a high specification Hikvision megapixel IP cameras supported by a Wavesight wireless transmission unit, within a couple of hours.

The key is being able to gather the video images centrally. The way Chroma Vision has configured the deployable units makes it quick and easy to establish secure wireless connections which transmit images back to the CMU for central recording and analysis.

Today, Borough-wide there are 537 cameras operational on the 12 estates which are all centrally monitored.

## Working in partnership with H&F Highways Department

H&F, in partnership with Chroma Vision, is in the fortunate position of working very closely with the Borough's Highways and Transportation

Department. They give Chroma Vision access to information about road works that are scheduled to take place over the current financial year and open discussions are held as to where additional fibre ducts or CCTV may be beneficial.

These will be installed if it agreed that they may be useful in the future, even where there is no immediate requirement. Chroma Vision assists Council contractors or project managers in recommending the positioning of access pits, new ducts and cabling routes.

John Baldwin of Chroma Vision added:

***"Based on this knowledge we can see where fibre can be laid relatively cost effectively. We aim to put it in at the same time as other services are being installed to reduce costs to the Council and minimise disruption for road and pavement users. If it is possible to run fibre close to a housing estate which is on our wish list, then inevitably this cuts transmission costs for that extension dramatically."***

***"The Highways Department is currently installing a new paving scheme along Fulham Palace Road and these works will include three kilometres of ducts to allow the expansion of the private fibre network to the southern-most point in the Borough."***

***"Every Friday we receive an email with details of civil works that have been scheduled Borough-wide. We can then arrange meetings with the Highways Department to co-ordinate with other statutory suppliers and time our work with theirs."***

## Partnership extends to H&F Planning and other departments

H&F's CCTV Development team also works closely with colleagues in H&F's Planning Department. They even assist with the design and management of CCTV in some of the developments being proposed for construction within the Borough.

As H&F's CCTV Development team consists of the Metropolitan Police Crime Prevention Design Advisors, the Council's CCTV Development



John Baldwin, Managing Director Chroma Vision (left), David Hinton, Metropolitan Police Crime Prevention Design Advisor (centre) and Andrew Stocker, CCTV Development Manager, Hammersmith and Fulham Council (right). Hammersmith Town Hall, King Street (far right).

Manager and Chroma Vision's technical staff, systems are designed to provide maximum coverage whilst ensuring costs are acceptable for developers.

The H&F CCTV Development team also provides support to all other relevant Council departments including the Street Scene, Parks Police and Community Safety licensing teams. The CCTV development team provides CCTV evidence where local nuisance has been reported to H&F's Environmental Health unit.

Video recordings, showing evidence of a number of licensing breaches associated with a bar or club, might lead to the Council imposing restrictions or even withdrawing trading licenses completely in cases of severe and persistent breaches.

## The Results

The proof of the success of the partnership approach at Hammersmith & Fulham Council can be seen through crime statistics that have consistently fallen. Violent crime, burglary, theft from vehicles and bike thefts have all been falling over the last five years.

Andrew Stocker summarised:

**"We have seen incidents of specific crimes falling by as much as 10 per cent in some years. That is despite population increasing consistently over the same period. Some statistics have fallen so much that they have affected London's crime statistics as a whole..."**

**"We are clearly doing something right here and our belief is that the partnership approach, also**

**fostered by Chroma Vision, has been a critical factor alongside adoption of some of the latest camera and video transmission equipment."**

**"H&F Councillor Greg Smith sees that reducing crime and anti-social behaviour is the highest priority for local residents. As such he supports our work heavily because he can see how effectively we work to support the Police and fight crime in the Borough. The partnership is clearly working as is shown by falling crime figures."**

H&F's CCTV Development team, which Chroma Vision's technical team is part of, wholeheartedly believe in the value of close collaboration between key H&F departments and external bodies including the Metropolitan Police, Transport for London, football club security teams and shopping centre security management operations.

By working hard on the relationships with other H&F departments; as well as with the Police, property owners and TfL; H&F's CCTV Development has developed a high and very positive profile with these bodies which means that all parties work together for best results. It is this partnership ethos, fostered in no small part by Chroma Vision over more than 12-year engagement, which is proving critical to the effectiveness of H&F's surveillance system.

**This joined up thinking that is enabling H&F to blaze a trail in surveillance terms – while ensuring CCTV investment delivers concrete and consistent results - reducing crime, stimulating commerce and ensuring that both H&F residents and visitors feel (as well as are) safe.**

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