With the terrorist threat in the UK raised to "severe", **Mike Pickup** considers the requirement for rapidly deployable security barriers to protect major events

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When examining the challenges faced by security forces to protect venues, security officials could easily make the mistake of focusing solely on the event day itself; the significant increase of traffic both pedestrian and vehicle is of course a major concern, but challenges must be overcome much earlier in the event timeline. From the first day of arriving at the venue or facility, the security co-ordinator needs to plan for worst-case scenarios; understanding the threat will have a crucial impact on which system and what specifications are needed. Assessments of the surrounding areas are essential to determine possible areas of weakness and create tiers of security, from semi-permanent outer perimeter walls to internal procedures and response guidelines.

The area concerned must be quickly secured by creating a protective perimeter, protecting access and egress areas, and ensuring appropriate facility protection is in place. There is therefore an essential requirement for a rapidly deployable security barrier at this stage, before any valuable asset is delivered – whether that is

construction equipment or workforce.

Among the main challenges faced by security teams at high profile events are time and disruption; to mitigate these, rapid security solutions are paramount. The design overlay requirements are simple: to deliver a robust, effective security package through the most cost-effective and appropriate means. Depending on the chosen venue, the perimeter fencing may need to be as unobtrusive to the surroundings as possible. Therefore, when installing perimeter security, the event organiser may choose to use existing structure to help contain the event area where possible.

Historically there has always been a requirement for rapidly deployed barriers, as they can be easily re-used or easily removed when required. As the name implies, the barriers have to be operational as soon as they are in place – ergo they are usually surface or very shallow mounted. With the continued threat from person-borne improvised explosive devices (PBIEDs) and vehicle-borne improvised explosive devices (VBIEDs), the requirement for rapidly deployed surface-mounted barriers is particularly relevant in urban areas where excavations are not preferred or allowed due to the potential disruption of services and utilities just beneath the road surface.

Rapidly deployed barriers can typically be recovered quickly with little damage to the surface they are placed on, making them ideal for use in situations or environments where a temporary barrier is required, for example political, music or sporting events.

There are several standards which specify the penetration rating of a barrier when subjected to a vehicle impact, and these usually make no distinction between whether the barrier is fixed or surface-mounted. For a given footprint, being able to absorb the energy and stop a moving vehicle is far more difficult to achieve with a surface-mounted barrier than it is with fixed or buried system.

There are many variations of surface-mounted barriers on the market today, many of which utilise all or a combination of materials such as earth, concrete, steel or wire mesh. A balance is usually required when developing a surface-mounted barrier, as a heavy barrier may provide better vehicle penetration characteristics but may be harder to install and recover. Similarly, a connected series of concrete blocks have been shown to create considerable fragmentation threat when subjected to a large blast from say a VBIED, and in some cases can be more damaging than the blast itself. Conversely, wire mesh earth-filled barriers could, in some situations, be more difficult to recover; they do provide a far better level of protection from a close-in blast, however, as there is very little secondary fragmentation.

Perimeter intrusion detection systems (PIDS) may also be considered. PIDS can increase security at access points and along the perimeter, and can be mounted on the barrier that has been installed, enabling continuous monitoring of access control points and the perimeter, which is critical in securing major events. Also, depending on the determination of the intruder and the threat level – whether it is thievery, sabotage or terrorism, for instance, the use of visible detection equipment and an imposing barrier between the assailant and the venue can be a intimidating deterrent, stopping the threat before it escalates.

If the threat is vehicle-based, the event organisers should keep in mind relevant standards and specification when planning perimeter security. Publicly available standard PAS 68 is useful in this instance. PAS 68 is a BSI-endorsed standard which describes how vehicle security barriers are measured against impact.

Another factor to be considered when securing or creating a temporary perimeter is the need for timely, effective implementation which is easily recovered; especially if the event is held in a customer-facing arena; a seamless and event-friendly transition into and out of operations is highly valued. Equally important to consider is the effective integration of new temporary security measures; with the fixed perimeter security systems already in place, the desire for a compatible and appropriate overlay that supports the surroundings and is in-keeping with the type of event which it protects also becomes a priority.

One aspect of this integration which must be considered is whether the secure perimeter barrier is aesthetically pleasing as well as functional. Security fences have been specially engineered to include an anti-climb fascia, which can be used as a temporary barrier suitable for immediate protection during the construction phase. When requirements change later in the events timeline, it can become an aesthetically pleasing perimeter fence. The mesh frontage can be used to display directional signage and location maps; space on them can be sold to sponsors for marketing or they can be simply covered with the event organiser's branding, enhancing the customer-facing image of the event while still offering a discreet PAS 68-rated security barrier.

In terms of security, the final stage in the event timeline – the decommissioning stage – is often just as important as the construction/assembly stage. Organisers need quick, efficient clean up, invariably leaving the surroundings "unharmed". If the installed security product required prior ground-works, the organiser may well have to absorb the additional cost of any repair. Using surface-mounted fencing allows the perimeter to be dismantled and redeployed with minimal effort and loss of material, enabling event organisers to reutilise the fencing on other sites or locations.

Major events can attract the attention of millions of people worldwide and unfortunately in today's environment this can have a marked increase in the potential for a security breach. Organisers face potential terrorist attacks, hostile crowds, rioting or sabotage, all of which increase the requirement for implementing a security programme which is embedded into each stage of the event timeline – from construction to execution and the decommissioning of the site.The perimeter fence industry is evolving, with organisations applying a wealth of knowledge and unique skill sets. Security measures are constantly improving and adapting to meet these increasing requirements.

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Case Study

Fencing the Olympics

As the threat from domestic and international terrorist groups continues to evolve, there is a growing need for rapidly deployable barriers which can be quickly and efficiently used to protect and reinforce vulnerable facilities housing major events.

During the summer of 2012 an estimated 500,000 additional visitors where expected to arrive in the United Kingdom's capital, London, for the Olympic and Paralympic games. The London Organising Committee of the Olympic Games (LOCOG) and the UK Home Office quickly realised high-profile venues connected to the events could be at risk from opportunistic terror attacks, as well as surrounding critical national infrastructure. The need for an easy to deploy, surface-mounted defensive barriers to provide key venues with protection from blast and hostile vehicle assault became paramount, all of which could not affect the historical landmarks that surround them.

The North Greenwich Arena (O2 Arena), with a seating capacity of 20,000 and Wembley Stadium, which housed an estimated 90,000 visitors per event, utilised HESCO defensive barriers to create a secure perimeter. These defensive barriers are multi-cellular barrier system lined with a heavy-duty geotextile. When joined and filled with sand or earth, these systems create barriers of exceptional strength and structural integrity, designed to help mitigate against blast from an explosive device such as a PBIED or VBIED.

HESCO Redeployable Security Fence (HRSF) also formed a secure outer layer. These rapidly-deployed high-level security fences are PAS 68 rated, can be built on undulating or sloping ground, and can be anchored in place by readily available bulk bags. They provide an ideal example of a robust and diverse surface-mounted perimeter fence, with a counterweight that can be varied to suit likely attack modes.

Another site, Ebbsfleet in London, served as a primary park-and-rail service during the Games. Already a major transport link for daily commuters, the heightened footfall caused by the Games raised security concerns. HESCO Low Redeployable Security Fence (LRSF) was utilised to create lane demarcation. HRSF was also selected to create access control areas and a secure perimeter at the Olympic and Paralympic Sailing Village in Weymouth Bay and Portland Harbour, which housed approximately 400 athletes and team officials in 77 residential units.

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