

Hostile Vehicle Mitigation

Perimeter Protection Systems





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From airports to supermarkets and Olympic events to Royal Jubilee celebrations, there are perimeters and valuable national assets that are vulnerable to attack by terrorists and criminals whose main objective is to benefit from injury and chaos.

Providing effective and economic solutions for both temporary and permanent applications has prompted Highway Care Security Solutions [HC SS] to develop new and innovative solutions for HVM provision. By working with leading UK and international manufacturers, we are able to offer comprehensive and fully integrated solutions, giving specifiers and end users the option of flexible, scalable systems which in most cases, can be easily upgraded should the assessed risk level escalate.

These solutions – tested to the highest industry standards, lead the market in product innovation and provide some of the most dynamic and functional systems available.

Our expertise ranges from the manufacture, supply and installation of British designed perimeter protection systems, to the supply, delivery and installation of UK Highways Agency approved barrier systems. Across this very varied platform HCSS provides cutting edge solutions to meet our customer's needs.



Nigel Bullock
Managing Director

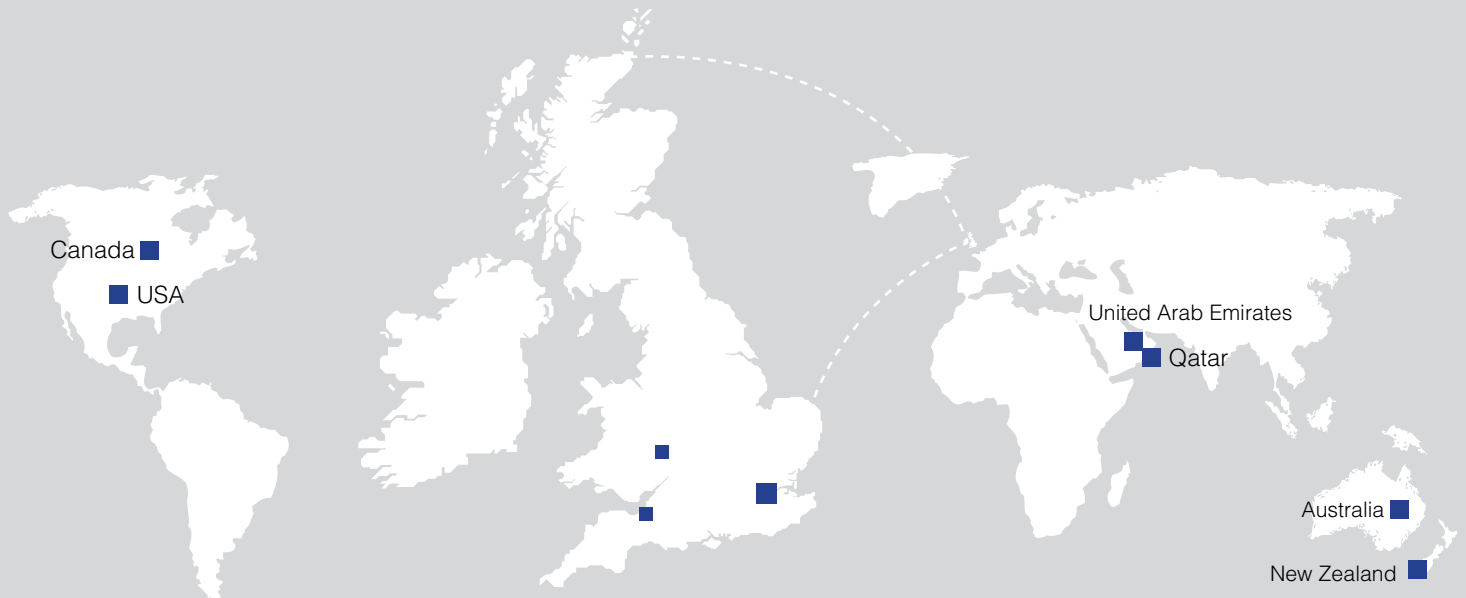
“Highway Care Security Solutions is a leading manufacturer and installer of HVM barriers and perimeter protection products. Customer demand for a highway vehicle safe barrier, combined with a high containment HVM barrier has lead HC SS to develop the SecureGuard range, a system that delivers portable and permanent solutions with flexible levels of protection and offers a suitable platform for continuing product development”.

SecureGuard systems are certified to BSI PAS 68:2007 or BSI PAS 68:2010 and meet the requirements for US DOS K4 and K12 ratings for perimeter barriers. HC SS are members of the PSSA and our customers include major airports, key bank cash handling facilities, government departments and special event organisations.

Our Locations

Key

■ HC SS Barrier Centres



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ZAUN



RDS PAS 68

A **R**apidly **D**eployable fencing **S**ystem

Designed and developed with ZAUN, this innovative system uses a SecureGuard CB block combined with a post arrangement which allows the fence panels to be erected and removed in a matter of minutes.

The RDS systems offer a rapidly deployable, surface mounted, temporary fencing system which is ideal for protecting sites of critical importance during events, site works or for crowd control.

Available in heights up to 2.4 metres, with a modular design, RDS can be quickly erected providing cost effective, secure protection to the asset area. The system features are flexible and monitoring systems such as CCTV & PID can be included in the perimeter protection. RDS PAS 68 is available in three system formats which can be matched to the assessed risk level, offering a viable HVM barrier. Some options can be upgraded after purchase should the risk level escalate.

The Hi Sec fencing system supplied in partnership with ZAUN has the Secure by Design accreditation mark and is tested to leading industry and government standards. This combination allows a high performance, cost effective solution that can be easily matched to the assessed risk level.

The RDS surface mounted system has a minimal ground footprint as the PAS 68 enhancements are integrated onto the block system. This allows the system to be easily deployed and be subsequently removed, compared with similar performance products.

RDS is ideal for sites with moderately undulating ground and semi hard to hard surface conditions. It is particularly suitable for urban situations and due to its capable design it can be combined with our other temporary and permanent barrier/fencing solutions.





Features & Benefits

- Rapidly deployable
- Surface mounted – no sub-surface foundations
- Vertical height up to 2.4m
- Available with Hi Sec fence panels
- Suitable for moderately undulating ground
- RDS PAS 68 systems have a range of performances to suit differing risk levels
- Ideal for urban sites and non linear alignments
- RDS PAS 68 systems are available for rental or purchase





SecureGuard 20 PAS 68

A portable & permanent high security system

SecureGuard 20 is an advanced perimeter protection system capable of immobilising vehicles attempting to penetrate high security areas.

The SecureGuard range of products offers many unique solutions for permanent and portable/temporary requirements – all products in the range are PAS 68 compliant (see table – page 22), having been rigorously and successfully tested to its requirements. In addition Highway Care Security Solutions' membership of the PSSA (Perimeter Security Suppliers Association) demonstrates its commitment to offering cost and performance effective solutions and competent installations for HVM protection.

Available in two configurations that can be upgraded after permanent installation, should the assessed risk level escalate - the SecureGuard 20 system provides 48km/h [30mph] protection for 45 degree impacts and 32km/h [20mph] protection at 90 degrees. This system has been developed for rapid installation with a minimum of shallow anchoring required in hard ground and soil anchors for soft ground, making it an extremely versatile option, ideal for both temporary and permanent applications.

SecureGuard can be installed adjacent to perimeter roads as it is also an approved highways barrier providing H2 & N2 containment levels for EN1317-2:1998 and Test Level 3 (barriers) for NCHRP Report 350 (1993).





Features & Benefits

All variants tested & approved to PAS 68

Low maintenance, durable system

Ease of installation – shallow anchoring in hard ground and soil anchors for soft ground

Highly portable and cost effective transportation

Can be installed adjacent to perimeter and access roads providing protection to errant motorists

Rapidly deployable at locations where a temporary or permanent solution is required



SecureGuard 30 (Angle Top) PAS 68

SecureGuard 30 T2 (Cable Enhanced) PAS 68

A portable and permanent high security system

SecureGuard 30 (Angle Top) and SecureGuard 30 T2 (Cable Enhanced) configurations provide a compact, rapidly installed, cost effective HVM system providing impact protection from 48km/h [30mph] - 90 degree attacks. Both systems are capable of immobilising vehicles attempting to penetrate high security areas.

SecureGuard 30 T2 is the result of a programme of continuous product development offering improved performance, availability and increased installation options to reflect our customers' needs.

SecureGuard 30 barriers are the product of choice for many temporary requirements and have been used extensively throughout the UK for event protection particularly during summer 2012.

The system components are readily available and can be quickly delivered and deployed at site. Installation and anchoring can be carried out with normal construction equipment and with minimal disruption. Anchoring into existing hard standings may be an option, provided the depth of construction is adequate and approved by HC SS. Pedestrian and vehicular access / control can be combined with the HVM perimeter using a variety of tested bollards, portals, rising arm barriers and ground level blockers, all integrated with PAS 68 tested connections. Permanently installed systems can be upgraded should the assessed risk level escalate.

For temporary and permanent applications, SecureGuard barrier systems can be combined with high security upper fence systems, providing safe and effective protection from vehicles and intruders whilst maintaining a minimal footprint.





Features & Benefits

High performance, tested and certified to PAS 68

Durable low maintenance system

Ease of installation - shallow foundations or driven soil anchors

Highly portable allowing cost-effective transportation

Crash-friendly to normal road users (See page 6)

Anchoring into existing hard standings may be an option

Rapidly deployable when a proven HVM solution is required



SecureGuard 50 PAS 68

Generally a permanent high security system

SecureGuard 50 provides a cost effective HVM system with options providing;

- i) impact protection from 80km/h [50mph] - 90 degree attacks
- ii) impact protection and intruder fence options

It immobilises the impacting vehicles and is resistant to secondary vehicular attacks whilst maintaining a moderate footprint and depending upon required configuration can effectively reduce accidental security fence breaches – reducing maintenance costs.

SecureGuard 50 has been used at many locations providing advanced perimeter protection for major UK transport facilities.

The system is delivered in prefabricated component parts which are anchored to shallow, in situ concrete foundations. The shallow foundation requirement is a particular advantage where service diversions and 'permits to dig' can slow down installation of similar performance products. The anchoring can be carried out using normal construction equipment with minimal disruption. Pedestrian and vehicular access / control can be combined into the HVM perimeter.

SecureGuard 50 offers the option of an extensive range of fencing solutions and CCTV, PID, options supplied in partnership with ZAUN. Fence options include systems that carry the Secure by Design accreditation mark and are tested to leading industry and government standards.





Features & Benefits

Quick installation - shallow in-situ concrete foundations, ideal solution where multiple services exist

Highly resistant to secondary vehicular attacks

Modular system - can be tailored to suit risk level

High performance system, tested and certified to PAS 68

Crash-friendly to normal road users (See page 6)

Durable, low maintenance system

A high performance anti-vehicle and anti-intruder perimeter barrier

Additional security fencing, privacy screens, can be easily added



SecureGuard CB PAS 68

A surface mounted, rapidly deployed temporary and permanent high security system

SecureGuard CB is a surface mounted, cost effective HVM perimeter barrier, providing impact protection from 48km/h [30mph] - 90 degree attacks. It immobilises impacting vehicles and is resistant to secondary vehicular attacks whilst maintaining a minimal footprint.

The system is rapidly deployed and is particularly suitable for sites where foundations may be impossible, due to services or ground conditions. It will also tolerate uneven ground and non linear alignments and can be used as a standalone system or in conjunction with other HC SS PAS 68 products.

The system is delivered in two metre long, double block sections that can be easily deployed into congested locations. Installation can be achieved using normal construction equipment and with minimal disruption. Pedestrian and vehicular access / control systems can be attached to the SecureGuard CB barrier providing complete HVM perimeter protection.

SecureGuard CB can be installed adjacent to perimeter roads as it is also an approved highways barrier providing H2 & N2 containment levels for EN1317-2:1998 and Test Level 3 (barriers) for NCHRP Report 350 (1993)

SecureGuard CB is readily available for emergency and planned use.





Features & Benefits

Surface Mounted – no sub-surface foundations required

Rapidly installed - readily available for emergency protection

High performance, tested and certified to PAS 68

Ideal for undulating ground and non linear alignments

Crash-friendly to normal road users - safe to use next to perimeter access roads

Installation easily achieved using standard construction plant

Low maintenance, extremely durable system



Integrated Systems

Pedestrian Access - PAS 68 Bollards

Recently added to our range of permanent HVM products, the HCSS 64A and HCSS 80 PAS 68 tubular steel bollards offer high performance, durability and a cost effective solution wherever a risk from criminal or terrorist attack by vehicle is identified.

Successfully tested with a 7,500kg truck (PAS 68 Class N2), they provide 50km/h [30mph], 64km/h [40mph] and 80km/h [50mph] impact protection and are suitable for many applications, including vehicle intrusion protection at supermarkets, cash handling facilities, warehouses and similar premises, in addition to the usual HVM protected sites.

Designed to withstand direct forces resulting from the impacts of N2 (7500kg) and N3 (7500kg) trucks respectively, the HCSS 64A & HCSS 80 bollards offer protection from both 4x4 off road capability vehicles and 7.5 tonne trucks. They are available in a range of finishes and are the perfect choice for industrial and commercial property protection, whilst allowing free flowing pedestrian movement around store entrances and car parks.

The bollards can be installed as standalone units or in multiple arrays and at a maximum spacing of 1.2m face to face, they provide a PAS 68 compliant HVM perimeter which will protect critical infrastructure threatened by VBIEDs.

The standard unit is a capped tubular steel bollard with a galvanised or black powder coated surface finish. Other finishes are available to special order. Cover sleeves of stainless steel and other durable materials are also available.

When temporary events require pedestrian access, this can be provided by the HC SS Surface Mounted Bollard Array which has been designed to incorporate the ATG Bollard surface mount system. This can be used in combination with SecureGuard barrier systems to provide an open free flow area that can be created anywhere in the barrier line. This option is particularly suitable where ground conditions prevent sub surface foundations or anchoring.





Integrated Systems

Pedestrian Access - PAS 68 Portals

An effective HVM barrier such as the SecureGuard system must include the facility to allow pedestrian access and the HC SS Portal allows both free access and the basis for access control.

The HC SS Portal needs to meet certain criteria for use as both a temporary and permanent pedestrian access and in addition to being suitable for single and multiple arrays; it is designed and tested to withstand a direct impact from a 7.5 tonne truck (PAS 68 Class N2).

The HC SS Portal is a portable, lightweight, surface mounted unit and due to its capable design, it can be connected to any SecureGuard or RDS system allowing considerable choice and combination of perimeter barrier protection. Due to its easily recognizable profile, the HC SS Portal is particularly useful where pedestrians need a visual guide to where access is available, allowing relatively 'free flow' during events.

HC SS Portals are a modular system that can be supplied as single or multiple units which are quickly connected and installed using standard construction plant. When a security intruder fence is required HC SS Portals can be fitted with turnstile or gate controlled access, with a choice of control mechanisms.







Integrated Systems

Vehicular Access - PAS 68

Rising Arm Barriers & Blockers

Where vehicular access is required the SecureGuard barrier system can be enhanced by the addition of manual rising arm barrier gates. Where sub-surface foundations cannot be installed the SecureGuard Surface Mounted Rising Arm Barrier is an ideal solution. It is lightweight and quickly installed, is available with a 4 metre opening (other opening sizes available - please contact HC SS for details) and provides N2 48km/h [30mph] protection.

When a permanent rising arm vehicle barrier is the preferred option the SecureGuard TS Rising Arm Manual Barrier provides N2 48km/h [30mph] impact protection and is available with 3 metre and 4.5 metre openings providing a permanent low intrusion access, requiring minimal foundations. It provides a cost effective, low maintenance access point.

If a rising arm barrier is not the best solution, the SecureGuard - AVS-elli Blocker is an ideal choice. This surface mounted combination provides a low profile road blocker, within an HVM barrier which can be quickly deployed and replaced after impact. The system is capable of manual or automated operation and is suitable for areas where below ground foundations cannot be installed, such as ramps and suspended slabs, which often form access routes for many key installations. There are also stand-alone options which can be surface mounted between existing barrier installations.





Ancillary Products

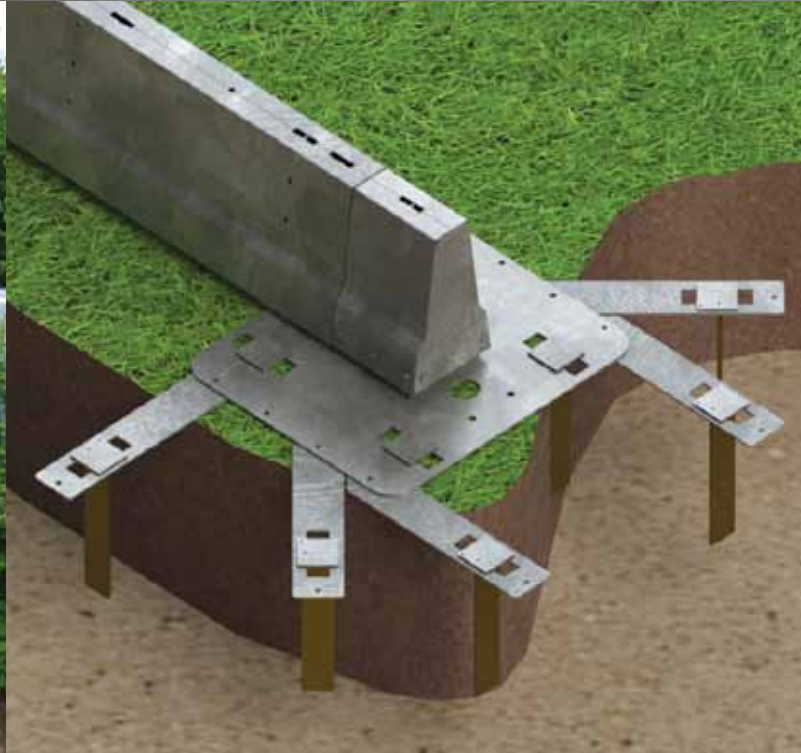
To achieve an installation of SecureGuard which follows a designer's chosen alignment, HC SS have invested design and production resources into ancillary products which can be split into two categories – Standard Units and Bespoke Units.

Standard Units such as the SecureGuard Hinge can be used to provide single changes in direction, segmental radii, and minor changes in vertical alignment. The hinge unit can also be used as a connection to combine different parts of the SecureGuard system. HC SS also have a stock of short barrier sections which can be used singularly as 'make-up' pieces or can be combined with slotted bolted connection plates to accommodate considerable changes in vertical alignment.

The SecureGuard Soft Ground Anchor allows the SecureGuard 20 & 30 systems (including Portals, Surface Mounted SecureGuard Gates, Surface Mounted Bollard Arrays and Blockers) to be installed in parks, playing fields or landscaped perimeters, where hard standings or substantial foundation installation would not be acceptable. This important anchoring development allows any event – no matter where the venue, to be adequately protected if an HVM barrier is required.

Bespoke Units are always site specific and may be as simple as a special length of barrier as a 'make-up' piece, or a 'stepped section' to allow the barrier to follow a short set of steps or a short steep ramp, which may be impossible to avoid. In addition, HC SS are able to offer pedestrian access gates, turnstiles and locking gate systems to enhance SecureGuard Portals and SecureGuard Barrier Systems.





Product Classification

Our commitment to continuous product improvement, development and additions to our range will require this list to be frequently revised, please contact HC SS for a current version.

SecureGuard Barriers - RDS System - Ancillary Products – Bollards PAS 68 CLASSIFICATION

Barriers & RDS System

*SecureGuard 20 [45°]	Barrier V/7 500(N2)/48/45:0.8/0.0 (tested 2004 TRL 21QB 30mph)	N/A Pre PAS 68
SecureGuard 20 [90°]	Barrier V/7 500(N2)/32/90:0.0/2.2	PAS 68:2007 (B3815 TRL)
SecureGuard 20	Barrier V/7 500(N2)/32/90:0.0/0.0 (End Anchor Test)	PAS 68:2010 (L0078 MIRA)
SecureGuard 30	Barrier V/7 500(N2)/48/90:3.7/0.0	PAS 68:2007 (H0013 MIRA)
SecureGuard 30 T2	Barrier V/7 500(N2)/48/90:0.0/0.0 (End Anchor Test)	PAS 68:2010 (L0080 MIRA)
SecureGuard 30	Barrier V/7 500(N2)/48/90:1.3/0.0 (Tested with Soft Ground Anchor)	PAS 68:2010 (K0097 MIRA)
SecureGuard 30 T2	Barrier V/7 500(N2)/48/90:1.7/0.0 (Tested with Soft Ground Anchor)	PAS 68:2010 (L0012 MIRA)
SecureGuard CB	Barrier V/7 500(N2)/48/90:3.1/0.0	PAS 68:2010 (L0011 MIRA)
SecureGuard 30 T2 - SecureGuard CB	Barrier V/7 500(N2)/48/90:2.0/0.0	PAS 68:2010 (L0035 MIRA)
SecureGuard 50	Barrier V/7 500(N2)/80/90:0.0/0.0	PAS 68:2007 (F0080 MIRA)
RDS Fence PAS 68	Anti-ram fence V/2 500(N1G)/32/90:0.8/0.0	PAS 68:2010 (TRL041)
RDS Fence PAS 68	Anti-ram fence V/2 500(N1G)/48/90:4.7/0.0	PAS 68:2010 (TRL065)
RDS Fence PAS 68	Anti-ram fence V/7 500(N2)/32/90:7.7/0.0	PAS 68:2010 (TRL074)
RDS Fence PAS 68	Anti-ram fence V/7 500(N2)/48/90:11.6/0.0	PAS 68:2010 (TRL083A)

Ancillary Products & Bollards

SecureGuard 30 SINGLE PORTAL	Barrier V/7 500(N2)/48/90:2.0/0.0	PAS 68:2010 (L0035 MIRA)
SecureGuard 30 DOUBLE PORTAL	Barrier V/7 500(N2)/48/90:1.4/0.0	PAS 68:2010 (K0032 MIRA)
SecureGuard 30 HINGE	Barrier V/7 500(N2)/48/90:4.0/0.0	PAS 68:2010 (B4624 TRL)
SecureGuard 30 T2 HARDSTAFF MULTIBLOCK	Barrier V/7 500(N2)/48/90:2.0/0.0	PAS 68:2010 (L0035 MIRA)
SecureGuard 30 RISING ARM BARRIER	Barrier V/7 500(N2)/48/90:6.8/0.0 (Tested with Soft Ground Anchor)	PAS 68:2010 (K0107 MIRA)
SecureGuard TS RISING ARM BARRIER 3m	Barrier V/7 500(N2)/48/90 0.0/0.0	PAS 68:2010 (B3773 TRL)
SecureGuard TS RISING ARM BARRIER 4.5m	Barrier V/7 500(N2)/48/90 0.0/0.0	PAS 68:2010 (B3925 TRL)
SecureGuard 30 T2 ATG BOLLARD ARRAY	Barrier V/7 500(N2)/48/90:1.7/0.0 (Tested with Soft Ground Anchor)	PAS 68:2010 (L0032 MIRA)
SecureGuard 30 T2 – AVS - elli BLOCKER	Barrier V/7 500(N2)/48/90:1.5/0.0 (Tested with Soft Ground Anchor)	PAS 68:2010 (L0065 MIRA)
SecureGuard HCSS 64A BOLLARD	Fixed Bollard V/7 500(N2)/64/90:3.3/0.0	PAS 68:2010 (B4240 TRL)
SecureGuard HCSS 80 BOLLARD	Fixed Bollard V/7 500(N3)/80/90:10.6/11.1	PAS 68:2010 (B4310 TRL)

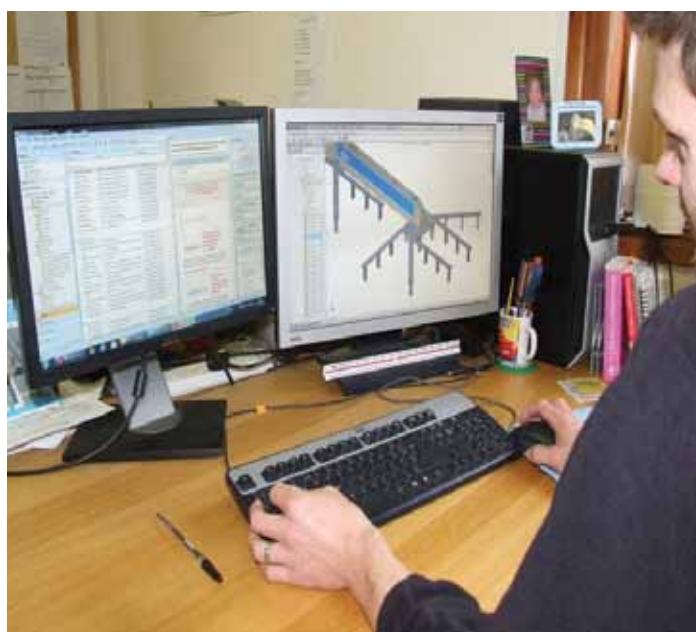
The products listed above have been successfully tested to BSi PAS 68: 2010 or 2007 with the exception of *SecureGuard 20 [45°].
In all instances the vehicles were restrained and the integrity of the HVM system maintained

Accreditations

Hostile Vehicle Mitigation perimeter protection systems are specified by British and international government institutions as well as prisons, banks and leading sport and social event organisers. Our systems are frequently chosen as they offer rapid, secure, cost effective solutions and perform to some of the highest security standards available, including Secured by Design and Publicly Available Specification ratings and accreditations.

HC SS has a continuing commitment to design and development. Our expanding product range ensures we remain at the forefront of the perimeter protection industry, working towards and delivering better solutions for better security capability.

Our long association and membership of the Perimeter Security Suppliers Association (PSSA) demonstrates our aim to deliver the right products, installed to the highest possible standards.



Technical Support

HC SS Engineering is able to offer design advice, site surveys and site specific installation layout drawings.

Our continuing investment in specialist design software enables flexibility in design and manufacture, so that HC SS can offer a total perimeter solution comprising standard and bespoke elements.

Patents Pending



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