



BLAST AND BALLISTIC PROTECTION

Steve Moody says its time to take advantage of new developments to protect and prevent security threats from terrorists around the world

The sheer pace of change in the security industry has arguably never been as rampant as it is today. Digital innovation and the availability of sophisticated technology off the shelf has meant that start-ups and other smaller businesses are able to come to market with new ideas and products, where previously it wasn't possible without a financial backer.

You only need to walk up and down a few aisles at IFSEC or the International Security Expo to get a sense of the sheer variety of protective systems and products on offer. However, that does not mean the pace of change on the ground is the same. Traditional

materials, methods and approaches are still the order of the day on security and asset protection projects around the globe.

This is perhaps no more obvious than in the blast and ballistic arena. The materials and methods that have traditionally been employed to protect against bullets, shells, and explosions haven't really significantly changed in the past 30 years. The basic approach has been to use multiple, sturdy materials to defend against different threats – more material means more stuff to break through before the asset was exposed. It's not a bad approach, nor is it incorrect but there are better, more efficient methods and materials to use today, which we'll come to later.

In fairness, the area of blast and ballistic is hugely challenging to specify for as the properties required to protect against blast damage are almost the opposite of those you need to defend against ballistic damage. To protect against a blast, you typically require a material that can absorb the impact. The opposite is true of ballistic defence, which seeks to stop the object or at least prevent it from reaching the other side of the material. Basically, blast-protective materials are normally constructed using flexible materials, whereas ballistic-resistant products require a material to reduce the impact of an object. Traditionally, steel plates and thick reinforced concrete have been used to repel ballistic and blast damage. This approach works to a certain extent, but it has its issues.

- **Design limitations** – needing to use two types of material in construction inherently makes the design more challenging. This is partly why the industry sticks with materials it knows well – if it's going to require multiple materials, you might as well use ones you've specified before.
- **Cost** – the materials often used for traditional blast and ballistic are expensive, despite being readily available and regularly used. Additionally, the use of multiple materials means the cost increases.
- **Labour intensive** – the use of multiple materials and other traditional methods when it comes to blast and ballistic protection usually means a longer, more complex installation process. That drives up construction, project management and staff costs.
- **More complex** – along with higher construction costs, these builds aren't straightforward either. They only seem that way because the industry has become familiar with the methodology.

STICK TO WHAT YOU KNOW

Protecting public spaces, corporate buildings or government embassies is still extremely expensive. Despite the limitations, including cost, highlighted above, the industry persists with tried and tested materials. It may well be that the perceived cost of trying something new outweighs the use of the familiar. That alone makes it incredibly easy, and understandable, to stick with materials you know well.

In addition, the cost to research, develop and market new system/product types can be prohibitive. Even if you overcome these hurdles, you still need to convince the security market to adopt your new product instead of what they are used to using. It's human nature to continue to use what we are familiar with and works. But is this approach costing us in other ways? Is familiarity leading to complacency? What price can we put on protecting human life and our most valued assets or buildings?

I fear we are overlooking, or not even looking for, newer, better products that outperform what we currently have and also provide cost benefits. In addition, we have developed specialities in each field – normally, system specifiers are either blast or ballistic engineers. This is likely due to the availability of the approved materials in today's market place; they are almost always blast or ballistic protection systems. Finding an engineer or a firm that can oversee or specialise in both blast and ballistic is much harder, but it is also becoming much more common.

The effects of attacks like the 2016 one on Brussels airport could be minimised by employing different building materials

Being able to specify a material that has the properties to provide protection from both blast and ballistic threats would be save time and money for the industry and offer better performance for those needing to make use of it. We are working with such a material. BBX is the first and only block system that defends against both blast and ballistic threats and we hope it is just the start of a new wave of innovations that offer designers, specifiers and engineers more choice when it comes to blast and ballistic materials. The unique mix composition used in the BBX system allows the blocks to have an enhanced tensile strength and flexibility when compared with conventional reinforced concrete and steel plates.

A SINGLE SYSTEM

The advantages of any singular blast and ballistic system should be a real boon to the industry. A singular system, assuming it offers the same or increased levels of protection than conventional materials, will save on cost and installation time. The simplified nature of a singular blast and ballistic system also gives designers more freedom when it comes to the layout and structure of a building, as well as its aesthetics.

In today's environment, all over the world, assets and personnel safety need to be protected against different threat levels, such as forced entry, ram raiding, blast and ballistic attacks. One system which

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provides multiple restraints to attack provide many benefits rather than different systems having to cater for different threat levels, which is time-consuming and costly. This has effectively meant designers and security consultants have had to prioritise one type of defence over another. This isn't ideal when you're trying to develop a cohesive and integrated security system – no stone should be left unturned.

Security engineers along with architects must combine their design theories to cater for a combination of different threat levels that may come at once, rather than traditional single-attack design methods such as blast or ballistic. Combining new industry technology and products in the defence against multiple attacks and threats is the way we must approach security design.

Having a single material which can protect again a combination of attacks will reduce construction time on site, as it's one construction method rather than multiple. This also reduces costs at source and, most importantly, casualties and fatalities will be reduced because a singular blast and ballistic system will perform better than traditional approaches.

Protecting life is the most important aspect when designing security projects and should be the objective in any design scheme. That is precisely why we must not become complacent with the materials we use – even the new singular blast and

ballistic systems we are working will, and should, be surpassed in performance and ease of installation. To stand still is to go backwards.

One of the main barriers to change is convincing industry professionals to adopt new techniques and new materials in the first place. A big part of this is those at the forefront of new technology are too often not involved with those designing or planning the construction. At the very least, they are involved too late in the process to make a real difference to the overall construction design.

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COLLABORATIVE DESIGN

Anywhere where personnel or assets need protecting, security should be addressed at the design stage of a project and aesthetics incorporated around that security package. A security-first and integrated approach should mean new innovations, such as singular blast and ballistic systems, can be incorporated into a design or build from the start.

Costs are brought down because security is built into the design from the get-go, installation times are reduced in many cases as new materials or technologies often improve this aspect compared with previous iterations.

To do this, architects must specify the protection required before fully designing the external/internal finishes. It's an unfortunate reality that security experts or other consultants are brought onboard too late into the process – we are then the bearers of bad news when we have to tell clients the cost of retrospective security measures when it would have been much simpler, cheaper and more effective to have completed it earlier in the process.

In addition, we need to educate builders on security awareness and on what products are available in the marketplace – security is not solely the job of consultant or planners, but also of those who do the installations and, importantly, those who use the systems when they are complete. This is a fundamental shift in how the industry tends to operate, but the benefits are huge and should not be overlooked ●

Steve Moody is High Security Sales Manager at integrated security specialist, RWS Ltd. He has more than 20 years' experience in the security industry spanning perimeter protection, HVM, internal people access security and access control. Steve also oversees RWS Ltd's blast and ballistic products and services.

By involving specialists from the start, a more effective solution can be reached at a lower cost

