



LESSONS LEARNED

Richard Ellis *reflects on the changing face of physical security following 35 years on the frontline*

Physical security has changed significantly over the past three and a half decades since ATG Access first started out. While its purpose has always been to protect people, places and assets, the way that protection is delivered has evolved dramatically. Looking back over that period, it is clear that three things have changed almost beyond recognition: the threats we face, the applications for physical security and the engineering solutions developed to address

them. Each has influenced the others, driving continual innovation across the sector.

Security has become an integral part of how cities, transport networks, public spaces and critical infrastructure are planned, designed and operated. The threats have changed, public expectations have shifted and the environments we are protecting have become significantly more complex.

Perhaps the most significant change has been in what physical security is trying to achieve. Thirty-five years ago, the physical security landscape looked

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very different. Bollards were primarily used to control vehicle access, demarcate public spaces and prevent ram raids against commercial and residential properties. While the threat posed by vehicle-borne explosive devices was already understood following IRA attacks during the Seventies and Eighties, hostile vehicle mitigation had not yet emerged as the threat we recognise today.

As concerns around VBIEDs grew and protective security evolved, security strategies increasingly focused on protecting buildings and critical infrastructure by controlling vehicle access and creating stand-off distances. More recently, the emergence of vehicle-as-a-weapon attacks fundamentally shifted the industry's priorities once again.

The challenge was no longer simply protecting a building. Busy public squares, transport interchanges, stadiums, retail destinations and entertainment venues all became potential targets, placing much greater emphasis on protecting people within publicly accessible spaces.

That shift required a different approach to physical security. Solutions had to provide effective protection while preserving the openness, accessibility and character that make those places successful in the first place.

As threats evolved, so too did the applications for physical security products. Many products originally developed for security applications now perform multiple operational functions. Vehicle access control systems, for example, support pedestrianisation schemes, traffic management, bus priority measures and the protection of cycling infrastructure, as well as helping to mitigate hostile vehicle threats. In some locations, these schemes have also delivered wider operational benefits through improved traffic flow and reduced congestion.

This reflects a wider change in how security is viewed. Rather than existing as a separate discipline, physical security increasingly forms part of the wider infrastructure that enables cities to operate safely and efficiently. The most successful schemes are those that improve resilience while supporting accessibility, operational performance and the everyday experience of the people using a space.

If changing threats have shaped the security industry, changing cities have shaped its engineering. Modern urban environments are significantly more complex than those of 35 years ago. Beneath the surface lies an intricate network of utilities, communications infrastructure and transport systems. Above ground, projects face increasing expectations around sustainability, accessibility, aesthetics and minimising disruption during construction.

These constraints have forced engineers to rethink traditional approaches. Early hostile vehicle mitigation systems – many originating in the US – were primarily designed for military facilities, government buildings and critical infrastructure. They typically required substantial foundations and extensive civil engineering works, with highly visible installations reflecting the environments they were intended to protect.

As hostile vehicle mitigation became more widely deployed within busy urban environments, engineers faced a different challenge. Underground utilities, transport infrastructure and existing services often

made deep excavations impractical. Innovation, therefore, became less about creating larger barriers and more about achieving certified performance within increasingly constrained sites.

The development of shallow-foundation hostile vehicle mitigation systems by ATG reflected that change, demonstrating that independently certified protection could be achieved with significantly reduced excavation depths and opening up opportunities to protect locations where conventional installations had previously been impractical.

Alongside advances in engineering has come a fundamental change in how physical security is assessed. Historically, specifiers had fewer consistent benchmarks for comparing competing solutions. Today, independently verified testing underpins procurement across the sector.

SUCCESSFUL PROJECTS RELY ON COLLABORATION FROM THE EARLIEST STAGES OF DESIGN

Early American Department of State standards focused primarily on the speed and weight of an attacking vehicle, producing a relatively straightforward pass-or-fail assessment. As threats evolved and the industry's understanding became more sophisticated, testing also evolved. Greater emphasis was placed on factors such as vehicle type, angle of attack, penetration and debris dispersion, providing a far more comprehensive understanding of real-world performance.

The development of standards such as PAS 68 marked an important milestone, creating a consistent framework for evaluating hostile vehicle mitigation systems and giving consultants, engineers and asset owners greater confidence that products would perform as intended.

The collaborative nature of PAS 68's development was just as important as the standard itself. Manufacturers, testing organisations, government bodies and security specialists worked together to establish a common benchmark for the industry. ATG Access' Engineering Director Robert Ball was among those who contributed to the committee responsible for shaping the standard, reflecting the sector's collaborative approach to improving security.

Perhaps the most visible change over the past three decades has been the relationship between security and placemaking. Early hostile vehicle mitigation systems were often highly visible, reflecting their origins in military facilities and critical national infrastructure where appearance was understandably a secondary consideration.

It is absolutely vital that cities do their utmost to remain welcoming, inclusive and commercially vibrant while providing appropriate protection against evolving threats. As a result, security professionals increasingly work alongside architects, planners, landscape architects and engineers to integrate protective measures into the wider design of a place.

Certified protection can now be incorporated into seating, planters, lighting columns, street furniture and landscaping, allowing security to become almost invisible to the people who use the space. This represents one of the industry's most significant achievements. The best security is often the least noticeable, supporting confidence and resilience without dominating the character of a place.

IT IS VITAL THAT CITIES REMAIN WELCOMING, INCLUSIVE AND COMMERCIAL VIBRANT

If there is one lesson the industry has learned over the past 35 years, it is that no single discipline can deliver effective security alone. Successful projects increasingly rely on collaboration between security professionals, engineers, architects, planners, landscape designers, contractors and asset owners from the earliest stages of design. Bringing those disciplines together early enables risks to be understood properly, reduces compromise and results in solutions that are both more effective and more practical to deliver. That collaborative approach will become even more important as urban environments continue to evolve.

Digital technologies, artificial intelligence and connected infrastructure will undoubtedly influence how physical security is managed in the future. At

the same time, the relationship between physical and cyber security will continue to strengthen as critical infrastructure becomes increasingly interconnected.

However, while technology will continue to develop at pace, the fundamentals are unlikely to change. The industry's future success will depend not simply on stronger products or smarter systems, but on understanding risk, applying sound engineering principles and designing resilience into places from the very beginning.

Reflecting on the past 35 years, it is clear that physical security has evolved from being a specialist discipline into something far broader. Today it plays a central role in shaping resilient infrastructure, protecting publicly accessible places and supporting the operation of modern cities. Threats will continue to evolve. Technology will continue to advance. Expectations around sustainability, accessibility and urban design will continue to grow.

The challenge for the next generation of security professionals will not simply be responding to those changes. It will be ensuring that protection becomes an increasingly seamless part of the places that we create, enhancing how they function rather than restricting them.

Ultimately, the future of physical security will not be defined solely by stronger barriers or smarter technology, but by our ability to design resilience into the places where people live, work and gather. That means integrating security earlier, collaborating more effectively and ensuring protection enhances the built environment rather than detracting from it ●

Richard Ellis is Managing Director of ATG Access, which is marking its 35th anniversary this year.

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