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COUNTER-TERRORISM PROTECTIVE SECURITY FOR REAL ESTATE: LITERATURE AND PRACTICE

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ABSTRACT

The protection of real-estate assets from malicious acts can be costly and complex, particularly when considering low likelihood, high consequence events such as terrorism. Property owners must respond to legislative and regulatory pressures, alongside public and tenant expectations of protection from harm. Property developers and owners have a significant role to play in the way in which security is delivered on real-estate projects. Through a review of the literature and the conduct of interviews with protective security professionals, the study identifies a divide between the theory of security in the real-estate context and the practice of security. The paper finds limited discussion regarding the integration of security in the design process in the real-estate literature. This is opposed to the interviews with practicing professionals, which emphasise the importance of structuring the security response to terrorism through the real-estate design process, with grey literature publications supporting this view.

Keywords: Security, Counter Terrorism, Protective Security, Risk Management, Design

INTRODUCTION

The built environment continues to be a target for malicious actors, particularly populated areas in our cities. Public spaces in particular are considered to be vulnerable and targetable from a wide variety of criminal and terrorist actors as they are considered soft targets (Clarke and Newman, 2006; Ceccato and Wilhelmsson, 2020; ANZCTC, 2023). With the recent changes in the National Terrorism Threat Alert Level in Australia, this ongoing vulnerability continues to be front of mind for Government, built environment professionals, and investors as they design, operate, and maintain their built assets.

The threat in Australia is continuously evolving, as it is across the UK, Europe, and the United States. As noted by the Australian Security Intelligence Organisation, in their justification for the increase in the threat level on 5 August 2024:

> "Australia's security landscape has entered a vulnerable period and is being challenged by new threats with concerning trajectories. Our landscape is a reflection of the social and political environment in which we live – social cohesion is lower, and trust in governments and democratic processes globally are eroding … Attacks in Australia are likely to be low-cost, using readily available weapons, and simple tactics. Basic weapons, such as knives, vehicles, explosives, and firearms can maximise casualties when combined with simple tactics. The most likely location for a terrorist attack in Australia is a crowded place, in a major city." (Australian Government, 2024)

Consequently, in reviewing the vulnerability and attractiveness of crowded places and real estate assets to terrorist actors, it is considered that the unique mix of socio-demographic, cultural, land use, and other such factors will have significant role to play. In the current configuration of the built environment, the threat is more often than not interacting with private assets, as the crowded public places that are considered the most attractive by terrorist actors are generally either built and owned by, or operated by, private entities. Subsequently, the development and management of privately owned public places presents an interesting focal point for discussion regarding security risk management and target hardening techniques. Particularly where these are as incentivised by capital owners and regulators through legislative drivers, and community expectations of security (Fennelly, 2011; Jore et al., 2020).

Private property owners and operators have an obligation to exercise a duty of care in the design and operations of public places when it comes to protecting people from foreseeable risks to safety, and this includes low

likelihood events such as terrorism (Chambers and Andrews, 2019). Subsequently, these property owners are driven to introduce a wide variety of security interventions on their projects that may or may not be informed by a formalised security risk management activity (Christensen, 2021). Research has demonstrated that security integration in the development process for projects is relatively uncommon at the earlier stages, with security only typically being considered to respond to specific concerns by investors and developers, or to respond to specific development application requirements later in the project design lifecycle (Christensen, 2021; McIlhatton et al., 2018).

Recent grey literature publications are addressing how the integration of security in the development process should be undertaken. For example, the Security Overlay for the RIBA Plan of Work (Royal Institute of British Architects, 2023) articulates the need for a Security Risk Assessment to be undertaken in the early stages of a project lifecycle, which will determine the security requirements for the project. These requirements form part of the project brief and lead into a security strategy that must be prepared to respond to these requirements. Finally, a security plan must be developed for the operations phase of the built environment project. Importantly, RIBA articulate that security must be integrated across the entire project lifecycle to ensure that specific security threats and risks are identified and planned for. This approach has been less common in-built environment projects to date due to the cost and relatively unknown benefits of integrating security in design (Christensen, 2021; McIlhatton et al., 2018).

Real Estate Asset Protection Drivers

While the legislative and regulatory environment drives significant investment and focus on counter-terrorism and crime prevention strategies in the built environment, the economic consequences of terrorist events and criminal acts have impacted the private sector significantly (Abadie and Dermisi, 2008; Phelps, 2021). Such impact also leads to private organisations seeking to protect their investments and assets from serious security risks through the implementation of physical security measures at their sites.

Terrorist acts in particular have a low probability of occurrence but a high impact (Phelps, 2021). Such a low probability of occurrence and the relatively high cost of security investment can lead to organisations not wanting to invest in the protection measures. This is generally countered by the duty of care requirements leading to half-way introduction of security measures, more generally focussed on crime prevention that can be stretched to provide counter-terrorism features (Cozens and Love, 2015; Phelps, 2021). The dichotomy in security spending by private organisations can be considered through reactionary responses to national and international security incidents driving immediate investment, followed by a longer term ‘return to normalcy’ that reduces private sector desire to invest in protection (Hayes, 2007; McIlhatton & Monaghan, 2021).

On the other hand, private sector ownership of publicly accessible spaces, alongside the desire to drive commercial business and other profit-making activities also must be considered in the implementation of security controls (Hayes, 2007). Property owners want to attract orderly and legitimate users to their property to drive business, and this inherently means excluding non-economic participation, vagrants, and other ‘undesirable’ user groups (Németh and Schmidt, 2007). The need to include and exclude users results in security investment occurring to enable this exclusionary power to be implemented (Mitchell, 2003). Such exclusionary approaches can be considered in relation to the rise of private property rights over traditionally public areas and real-estate investment decisions (Mitchell, 2003; Chambers and Andrews, 2019; Abadie and Dermisi, 2008). As Chambers and Andrews (2019) notes, "[Security] is fundamentally shaped by capitalist norms, values and observations ... They are norms that communicate: nothing must interfere with the orderly maintenance of legitimate activity, and what counts as ‘legitimate activity’ involves unimpeded ... profit making and the protection of private property and consumption."

The framework of security ideas that have been embedded in the public consciousness over the last few decades have normalised the idea of protecting public places from extreme threats, as well as everyday insecurities (Coaffee and Wood, 2006; Dalton et al., 2015). This idea is forcibly enacted through standards compliance, legislative duty of care obligations, and capital owner anxiety about managing undefinable threats to their investments (Coaffee and O’Hare, 2008; Coaffee, 2020; Chambers and Andrews, 2019; Krahmann, 2018; McIlhatton et al., 2018). Consequently, there is a need for these property owners and operators to attempt to understand and forecast future threats (Nash, 2017).

Designing in Security

The discussed risk forecasting and protection of assets against threats in the built environment comes about through expert-led risk analysis and risk management activities (Talbot and Jakeman, 2009; Smith and Brooks, 2013). The risk analysis process allows for security interventions to be targeted to specific security incidents that are more likely or more impactful and allows for proportionate controls to be included in the built environment. This risk assessment process varies slightly between jurisdictions; however, the overarching process is largely similar in its phases of analysis (Andersen et al., 2014; Aven, 2010; Aven, 2012; Aven, 2018). Typically, at its most fundamental, security risk management provides the structure and means for security practitioners to determine the nature of threats facing the assets under consideration, identify the specific vulnerabilities present at the asset, understand potential consequences of security events, and analyse the likelihood of these events occurring (Smith and Brooks, 2013). Risk identification is concerned with creating a well thought out and comprehensive determination of the sources of risks and potential events that will have an impact (Talbot and Jakeman, 2009).

While this process of risk assessment and proportionate security interventions appears to be well understood, the academic literature engages on the topic of security risk assessment and its role in the built environment across multiple silos. As an example, there is an emerging literature relating to the scientific processes of security through a systems approach to diagnosing, inferring, and treating security problems as a professional practice (Brooks and Coole, 2017; Smith and Brooks, 2013; Gill, 2022). Further, there is the risk literature, focussed on the specific challenges in correctly forecasting and measuring terrorism risk (Aven and Guikema, 2018; Jore, 2010; Willis, 2007). Finally, the real estate and built environment literature, which is generally more focussed on the consequence of security interventions as opposed to the process of selecting them (Coaffee and O'Hare, 2008; Coaffee et al., 2009; Németh, 2010; Burns et al., 2021). Several others literature streams exist, including in the criminology literature (Ceccato, 2020; Willcocks et al., 2019), however, when looking for an integrating source for the importance of this risk assessment, design, and counter-terrorism protective security (CTPS) intervention activity, it is generally the grey literature as opposed to the academic literature that explores this topic. For example, as a non-exhaustive list, the below demonstrate a few key grey literature publications:

<u>Australia</u>

- Handbook 167: 2006 – Security risk management
- Handbook 188: 2021 – Base-building physical security handbook – Terrorism and extreme violence
- Australia and New Zealand Counter-Terrorism Committee Guidelines – 2017 - 2023

<u>United States</u>

- FEMA 426/BIPS-06 - Reference Manual to Mitigate Potential Terrorist Attacks against Buildings - 2011
- FEMA 430 - Risk Management Series: Site and Urban Design for Security - 2007

<u>United Kingdom</u>

- Royal Institute of British Architects – Security Plan of Work Overlay - 2023
- Centre for the Protection of National Infrastructure – Protecting Against Terrorism 3rd Ed. – n.d.

In summary, the academic literature has several focus areas that do not fully engage with an integrated design process that holistically considers the ways in which security is designed and embedded in the built environment in practice. Grey literature publications appear to be filling this gap. This paper seeks to explore the differences between the academic literature as it relates specifically to the built environment and real estate, and practicing professional views on how security should be embedded in the design process.

METHODOLOGY

This paper combines analysis undertaken through a detailed literature review, and semi-structured interviews. The literature review focussed on articles and publications, written in English after 1990 that reported on counter-terrorism protective security measures in the built environment. A detailed breakdown of this literature review can be found in the forthcoming Ludbey, Christensen, and Carnemolla (2025) paper that significantly develops the methods and further findings.

This literature review informed a series of semi-structured interviews with six purposively selected security industry professionals involved on a multi-billion dollar crowded public place project being delivered in Australia. A semi-structured interview process was selected as it supported a repeatable set of questions for coding and thematic analysis, while enabling the interviewer to explore responses in greater detail where there was opportunity for participants to elaborate (Adams, 2015). The participants were selected as they were directly involved in the implementation of security on Australia's largest infrastructure project and subsequently were experts on project delivery methodologies and standards when it came to security in design. The interviews were related to the integration of security in the project delivery process. Questions related to the integration of security considerations with other disciplines, as well as the RIBA Plan of Work delivery stages. The participants subject to interview included government security stakeholders, and security engineering consultants. A summary of the participants is tabulated below.

Table 1. Interview participants summary

Code	Role	Category	Sector
TB	Senior Manager, Project Delivery	Government	Transport
TM	Senior Manager, Project Delivery	Government	Transport
TR	Senior Manager, Project Delivery	Government	Transport
CJ	Senior Consultant	Consultant	Built Environment
CM	Principal	Consultant	Built Environment
CS	Associate	Consultant	Built Environment

RESULTS

Literature Review Findings

Of the papers that were reviewed within the context of specifically analysing counter-terrorism protective security interventions in the built environment, only a small proportion of these actively discussed a security threat and risk process in the determination of the security interventions. Furthermore, an even smaller proportion of papers discussed underlying security planning theories such as defence in depth, or situational crime prevention. Most of the papers reviewed focussed only on the interventions themselves and their consequences to the public domain, users, or commented on their implications within the broader socio-political environment relating to security without consideration of the process behind their selection.

When compared to the grey literature that is focussed on counter-terrorism protective security in the built environment, it appears that there is a significant gap in the conversation regarding the implications of the risk assessment and design process of the built environment outcome. Most academic discussion focusses on the state of the 'as-built' asset without the design context or security planning context. Many papers did discuss the broader terrorism environment, and the policy and legislative drivers pushing the overt security outcomes found in many modern developments, however there was limited discussion tying this macro policy and legislative environment to the built asset outcome through the design process. Furthermore, the papers analysed did not typically critically discuss which practitioners were involved in this design process.

Interviews

Interview participants generally supported and considered the need for security to be embedded across all stages of the project lifecycle. Participants discussed extensively the need for holistic engagement across all facets of a project from feasibility stages through the design, construction, commissioning, and operations stages, articulating how security planning can reduce opportunity for crime and terrorism through this process.

Participants further outlined the need for considered engagement with a variety of stakeholders both within the project and external to it, to ensure that the threat context being planned for by the project is appropriately understood and embedded in design choices and thinking.

Generally, the participants mirrored the grey literature perspective of a threat driven, risk-based approach to built asset protection. The participants supported comprehensive security risk assessment activities, detailed security strategy and planning processes, and then finally counter-terrorism protective security mitigation selection only after these reviews and assessments had been undertaken.

One key criticism that was highlighted in the interviews were that some of these grey literature publications are produced by individuals who do not have the requisite background or experience to be providing detailed engineering or built environment advice regarding security. There is an acknowledgement that often the authoritative guidance is produced by government officials, police, and other specialist security practitioners who may have strong expertise in the broader counter-terrorism space, but not specific experience in the built environment, engineering, and real estate disciplines. This can result in guidance that is not fit for purpose but must be adopted by the industry.

DISCUSSION

The findings suggest three key areas of discussion, those being the dearth of academic publications specifically discussing the integration of security risk assessment, design, and CTPS intervention selection, the importance of an embedded security role in the design process as expressed by the practicing professionals, and the grey literature's support for this embedded approach.

Academic Publications Related to Counter-Terrorism Interventions Have Limited Discussion Regarding Integrating Risk Assessment and Design

In review of the academic literature, a small proportion of the papers reviewed discussed risk assessment activities or processes, and of these, several were editorial articles written by practicing professionals (Smith & Brooks, 2013). The non-editorial articles were published across a variety of journals and literature streams including engineering, political science, and urban design. The extent to which these papers discussed risk assessment activities also varied, with some going into specific detail regarding the risk assessment process and how it can influence CTPS intervention selection, and others only passing over the fact that a risk informed process should occur (Dalton et al., 2015).

For example, Chambers and Andrews (2019) focusses on a singular type of security intervention (concrete blocks/bollards) in response to the changing threat environment. This discussion is framed by a detailed review of preceding security events, explanation of the legislative and policy environment driving security intervention, and the role of risk assessment. Chambers (2019) is one of the few papers reviewed that links all of these elements together in a holistic picture of how and why security interventions appear in public places and the impact that they have on the local environment. Mirroring this approach but considering a broader range of interventions is Powell and Fletcher (2011)'s paper which focusses on a type of place (railway systems) as opposed to a specific intervention. They detail the risk assessment process, and how it can inform intervention selection. Neither of these papers go into detail regarding the design process and how security should be considered within it.

On the other hand, Whelan and Molnar (2019) detail risk assessment processes in terms of an activity that police and counter-terrorism agencies undertake, without significant detail as to how this process occurs. The paper goes on to detail the interventions made within a case study of the G20 meeting in Brisbane in 2014 but does not outline the role or importance the design process may have played in the final intervention outcomes. Coaffee (2010) discusses the role of risk assessment and design in the PROTECT strand of the UK's CONTEST strategy to prevent and respond to terrorism. Other publications touch on the design disciplines involved in considering counter terrorism protective security but do not delve into the design process and its implications (Coaffee, 2004).

A small proportion of papers specifically address measuring cost-benefit through probabilistic risk assessment to determine if particular security interventions are worth pursuing (Stewart, 2010; Stewart, 2017). These papers detail a method of undertaking these risk assessment processes.

From an intervention effectiveness perspective, Lum, Cave, & Nichols (2018) undertook an expansive review, using underlying criminological theory to tie specific counter terrorism interventions presented in grey literature publications to elements of situational crime prevention, which has been demonstrated in the literature to be supported by strong evidence through experimental study. Further criminological theory attempts to understand the effectiveness of counter terrorism measures was undertaken by Hsu & McDowall (2017), who focussed on situational crime prevention as a basis for their statistical analysis of previous terrorism incidents globally before and after major security interventions (such as the introduction of enhanced security measures in an aviation context after 9/11) to determine if these controls were effective.

Overall, these papers do touch on the risk assessment, design, and intervention selection process that is described by the grey literature; however, the analysis is quite limited in the academic literature within the context of the holistic process, often focussing on one element, or only superficially touching on all elements. Furthermore, these papers are only a small proportion of total papers reviewed that were focussed on built environment interventions for security purposes, which outlines the dearth of discussion on this topic.

Practitioners Express the Importance of an Embedded Security Process in Design and Management of Real Estate Assets

In juxtaposition to the literature review, the participants interviewed demonstrated strong support for an integrated risk assessment, design, and CTPS intervention selection process that follows the project lifecycle for real estate asset development. All participants highlighted the importance of an embedded threat, vulnerability, and risk assessment process within the design activities for real estate projects to ensure that security interventions in the built environment are fit for purpose and proportionate to the risks they are intended to manage.

Several of those interviewed noted that in practice, security is often not brought in at the earlier stages of a project, and this can have implications on the effectiveness of security interventions (Young, 2014). This finding is reinforced through McIlhatton et al. (2018), who conducted 134 interviews internationally, and Christensen, (2021), who conducted 33 interviews in Australia with security and real-estate practitioners, as well as designers, and planners.

As an example of this impact on the project design and development process, if security were engaged during the feasibility and early concept design stages of a real estate project, security controls such as stand-off from roadways and parking areas from a buildings frontage could be achieved, reducing the need for structural reinforcement for blast engineering controls (Cormie, 2019). Such an approach would enable interventions to be done through the design of the project vs retroactively implementing these for a completed design, significantly reducing the impact of intervention inclusion on the overall project feasibility (McIlhatton et al., 2019). This same control could not be effectively implemented where security is not engaged until the detailed design process (Tomlinson and Nelson, 2010). Such a view holds across a spectrum of security mitigations (Garcia, 2008).

Furthermore, there was acknowledgement, in line with Christensen (2021), that security integration in the design process, notwithstanding industry guidance, is driven by the end client's needs and expectations (McIlhatton, et. al, 2019). Project sponsors who put an emphasis on understanding and designing out security risks provide an environment where security can be more effectively integrated into the design process. On the other hand, where the end client or sponsor does not understand the benefits of security integration, security practitioners are unlikely to get traction through the design process, resulting in ill-informed or poorly design CTPS mitigations (Booth et al., 2023). To counter this, participants describe the need for early engagement with a variety of project stakeholders to demonstrate the value that security can bring to the planning process.

Nevertheless, while security guidelines and publications in the grey literature are in alignment with these industry practitioner views in terms of the need for, and extent of, security integration in the design process, there is still an expressed gap by the participants between the considered best practice, and the implemented version of it in project delivery.

Grey Literature and International Standards Support the Practitioners Views

To manage security challenges in the built environment, security standardisation has been introduced over time through legislative and regulatory practices (Karlos et al., 2018; Sissel, 2019; Hess and Mandhan, 2022). In Australia, this can be clearly seen in Australia's Counter-Terrorism Strategy (Commonwealth of Australia, 2022), and subsequent Australia New Zealand Counter Terrorism Committee Guidelines (ANZCTC, 2023). Globally, other approaches include the UK's CONTEST strategy which is underpinned by similar guidance from the National Protective Security Authority (formerly the Centre for Protection of National Infrastructure) (Coaffee, 2010).

The process through which compliance with these regulations and the exercise of duty of care is undertaken is multi-faceted (Coaffee and O'Hare, 2008; Chambers and Andrews, 2019; Sissel, 2019). As with other compliance activities in the built environment, consultants, expert design teams, and operations teams are used to identify and analyse risks, prepare intervention strategies, and provide reporting and documentation

demonstrating an informed, rational, and standardised process has been implemented to absolve property owners and operators of their legislative duties (Reniers et al., 2020; Ilum, 2022). This compliance process, while not consistently applied across all projects, is considered international best practice for the design of security on real estate projects, and is reinforced across the grey literature in the US, the UK, and in Australia, amongst others (Smith and Brooks, 2013). To demonstrate, the below non-exhaustive list of tabulated standards and guidance demonstrates this alignment.

Table 2 Summary of Selected Grey Literature

Region	Publication	Year	Risk Assessment	Integrated Design	Proportionate Security Mitigations	Security Discipline as a Key Stakeholder
AU	Handbook 167: Security risk management	2006	Y	Partial	Y	Y
AU	Handbook 188 – Base-building physical security handbook – Terrorism and extreme violence	2021	Y	Partial	Y	Y
AU	Australia and New Zealand Counter-Terrorism Committee Guidelines: - Hostile Vehicle Mitigation - Hostile Reconnaissance - Improvised Explosive Devices - Active Armed Offender	2017 - 2023	Y	Y	Y	Y
US	FEMA 426/BIPS-06 - Reference Manual to Mitigate Potential Terrorist Attacks against Buildings	2011	Y	Y	Y	Y
US	FEMA 430 - Risk Management Series: Site and Urban Design for Security	2007	Y	Y	Y	Y
UK	Royal Institute of British Architects – Security Plan of Work Overlay	2023	Y	Y	Y	Y
UK	Centre for the Protection of National Infrastructure – Protecting Against Terrorism 3rd Ed.	-	Y	Y	Y	Y

With respect to the participants in the interview activity, this holistic, integrated process of security in design is viewed as being the industry best practice approach to counter-terrorism protective security by all participants. Practicing professionals highlighted the importance of comprehensive security risk assessment across the project lifecycle, the need to effectively plan for the current and emerging security threats, and to ensure that security is integrated in the design for maximum effectiveness. The alignment between the industry practitioner's views and the grey literature publications was significant and demonstrates its influence over practitioners.

CONCLUSION

This paper has demonstrated that there is an academic-practice gap in the area of counter-terrorist protective security design processes for real estate and built assets. While there are many literature silos discussing the topic of counter terrorism protective security, there is limited integrated research focussing on the design process in the built environment and how security can be best embedded in this activity. While there are the beginnings of an emerging literature focussing on the intersection of real estate and protective security planning processes (Christensen, 2021; McIlhatton et al., 2018), it is clear that the practicing professionals in industry have substantively progressed this topic area without academic support or feedback. Consequently, there is opportunity for researchers to unpick the current industry practices and identify areas of improvement or change based on evidence.

The current practice in industry as noted by the interview subjects is driven by government and police stakeholders who may not be best positioned to ensure that the best outcome for real estate-built assets is achieved. This is further apparent when considering the grey literature is typically authored by security practitioners with limited input from broader built environment, planning, or real estate stakeholders. The academic literature has an opportunity to tie these broader stakeholders into a combined and integrated process that enables more effective decision making and better security and real estate outcomes.

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