Where are we now? Understanding the current considerations of counter terrorism protective security when developing crowded places[1] in Australia.

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Abstract

Between 2013 and 2016 Western countries experienced a nearly 600% increase in terrorist attacks. Among the most significant shift in terrorism trends during this time is the recent focus on civilians in crowded places as a frequent target. Although crowded places have become critical targets for terrorist attacks, there remains a dearth of research studying crowded places or the built environment practitioner's role in creating crowded places that are as resilient as possible against terrorism. This first-of-its-kind study connects the planning, design and development of real estate in crowded places with planning for protective counter-terrorism and investigates *what, when* and *how* counter terrorism protective security (CTPS) is considered in the development process of crowded places. This paper presents the results from 32 foundational interviews with property developers, property investors, property managers, architects, planners, security consultants, and government officials in Australia. The originality and significance of this research extends the current knowledge base on CTPS and has the potential to influence decision makers in both the counter terrorism policy landscape and those influential in developing standards for the planning, design, construction, and management of real estate assets.

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[1] Please see definition in introduction

1.0 Introduction

In the aftermath of recent domestic and international terror events, the previous Prime Minister, Malcolm Turnbull, urged the planning and development community to "rethink the way we design and protect places where large numbers of Australians gather" (22. July 2017, SBS News). This was followed by the release of *Australia's Strategy for Protecting Crowded Places from Terrorism* (ANZCTC, 2017) which provides owners and operators of such locations with guidance designed to enhance resilience and safety but does little by way of challenging how commercial real estate is designed and developed. In the absence of this, we believed it to be important to understand how counter terrorism protective security (CTPS) measures were being considered throughout the real estate development process and to inform future protective security on the barriers that are inhibiting adoption of CTPS and what would incentivise consideration of these measures.

It is essential to first define the concept of crowded places as used in this paper. We refer to the Australian *Strategy for Protecting Crowded Places from Terrorism,* which defines crowded places as:

> "Crowded places are locations which are easily accessible by large numbers of people on a predictable basis. Crowded places include, but are not limited to, sports stadia, transport infrastructure, shopping centres, pubs, clubs, hotels, places of worship, tourist attractions, movie theatres, and civic spaces. Crowded places do not have to be buildings and can include open spaces such as parks and pedestrian malls. A crowded place will not necessarily be crowded at all times: crowd densities may vary between day and night, by season, and may be temporary, as in the case of sporting events, festivals, or one-off events." (ANZCTC, 2017, p.4)

The Australian Institute for Disaster Resilience (AIDR) *Crowded Places Handbook* (2018) further expands the definition by noting three crowd types which are given particular consideration within this framework:

- **Planned events** - such as sporting and music events, festivals and displays;
- **Predicted crowds** - places likely to be crowded some or all the time (e.g. airports, shopping centres, CBDs, beaches, schools, universities and transport hubs);
- **Spontaneous crowds** - such as gatherings at an incident, spontaneous protests or rallies.

The research presented in this article seeks to inform the real estate knowledge base by focusing on the safety and resilience of crowded places by providing an understanding of the considerations of terrorism currently included in the real estate development process in an Australian context. The paper is structured as follows. Section 2 presents an examination of the current literature

focusing on terrorism, real estate and the development process. Section 3 establishes the methodological approach used. Section 4 presents the results and discussion from the empirical stages of the research, with the last section concluding with the key messages from the research.

2.0 Context

The terror threat level for Australia has been at "probable" since September 2014, indicating that Australian intelligence has identified individuals, or groups, with both intent and capability to conduct a terrorist attack in Australia. At least 13 terror attacks were foiled in Australia between 2014-2017 (Public Venue and Soft Target Security Summit, 24 October 2017).

Although Western countries remain the safest in the world, violence in and against them has become increasingly dangerous. Between 1978 and 2013, there was a total of 7,400 terrorist attacks with an average of 4.2 mass-fatality events[2] per year – these events primarily targeted transportation infrastructure. Attacks began increasing dramatically in 2014, with 26 mass-fatality events (Miller 2015). In 2015 we recorded the "deadliest year in terrorism in nearly a decade … [with] [c]ivilians, rather than the state, increasingly the target of terrorist attacks in the West and against Westerners overseas" (AON 2016, pp. 7). The trend continued in 2016 when, for the second consecutive year, Western countries experienced the greatest percentage increase in the frequency of terrorist violence of all regions, with a 174% rise in incidents and a 25% rise in casualties over 2015 (Bolton and Wilkinson 2017). In 2017, the number of international terrorist events more than doubled, from 96 to 204; however, the number casualties remained roughly the same as efforts to restrict access to heavy vehicles – a favoured improvised weapon among terrorists in the past 18 months – became a more integral consideration in security planning (AON 2018).

Two significant shifts in terrorism trends began to emerge in 2015: 1) shootings became more common than bombings[3], and 2) civilians in crowded places (e.g. mass transportation, bars and restaurants, entertainment venues, hotels and tourist resorts) were more frequently targeted than the more traditionally established targets (e.g. security forces, military, government and diplomatic interests)[4] (AON 2016). Low-capability tactics continued to be favoured, however, there has been a shift to vehicular attacks as the most lethal form of attack in Western countries. The use of

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[2] Defined as occasions in which terrorist attack(s) kill more than 100 people in a single country on a single day.
[3] Between 2010 and 2015, bomb attacks comprised 58% attacks in Western countries, compared with 30% armed attacks. Since January 2015, 52% of attacks have been armed attacks, compared with 34% bombings (AON 2016).
[4] Since January 2015, 31% of all attacks in Western countries targeted private citizens and public gatherings. This is a significant change from 2010-2014, when attacks against private citizens and public gatherings made up just 25% of recorded incidents, second to attacks on police, military and government, which totalled 43% of attacks (AON 2016).

vehicles as improvised weapons has continued to be the most lethal form of attack in western countries; however, the impact of improved security response saw the impact of these events reduce the casualty rate by 75% between 2016 and 2017. Far-left extremists are becoming a growing threat, focusing on property damage and sabotage, as seen by the doubling of the number of arson attacks in Western countries from 2016 to 2017. Although none of the arson attacks in the last two years have resulted in fatalities, the impact it has had on property owners and businesses has been significant (AON 2018).

Bolton and Wilkinson note that "targets of [terror] attacks have tended to be unsecured crowded locations that can yield mass casualties and high levels of disruption, such as busy streets, markets, airports, transport hubs and entertainment venues. The impact of the threat in terms of business losses continues to shift away from property damage to business interruption and loss of life" (2017, pp. 38). Furthermore, a major attack can have an immediate and significant impact on local economies through the reduced attraction and reputation of cities as places to visits, as such events are almost guaranteed international publicity. This is particularly true of mass-casualty incidents where the victims are civilians in a social or leisure setting, or other locations with high footfall of tourist visitors. Risk Advisory and Aon TerrorismTracker data (AON 2018) indicates that more than 80% of all terrorism-related fatalities in Western countries in 2017 occurred in locations where tourists are likely to gather – including hotels, airports, public spaces and entertainment venues. Such events often lower traveller confidence and directly alter consumer behaviour, which also impacts the property industry both directly and tangentially. The majority of recent terror targets had limited physical resilience against terrorism because previously adopted counter terrorism protective security (CTPS) measures and investment strategies have focused on securing critical sites, leaving softer targets, such as crowded urban places, vulnerable (Chaurasi etal 2016).

The current research construct focuses on the assessment of critical infrastructure resilience against terrorist attack (Chaurasia etal 2016). Kulawiak and Lubniewski (2014) note that the first step in protecting critical infrastructure is identifying and evaluating potential negative factors, commonly referred to as either a risk assessment or a security vulnerability assessment (SVA). With the shift in terrorist attack strategy toward easy-access, low-capability tactics, businesses and commercial activity in and around crowded places must be considered as the front line of mitigating terrorism. Crowded public places and the activities which take place in them are vital to the socio-economic performance and reputation of cities (McIlhatton etal 2016). For example, after the mass casualty vehicle-impact attack in Barcelona in August 2017, 20% of travellers planning a visit the city cancelled their trips, and the rate of new bookings remained subdued for four weeks (AON 2018). Mitigating the impact of attacks on crowded places is therefore important

not only for saving lives, but for future proofing against the potential impact such an event can have on the Australian economy and its reputation as a good place to live, visit and work.

Bolton and Wilkinson (2017) note that mitigation efforts and the development of solutions is best informed when we better understand what threats might impact our cities. It is therefore essential that we understand *what* and *when* CTPS considerations are being considered during the development of these places and *how* they are being integrated into the planning, design and development process so that we can further improve the development process to ensure resilience of crowded places against terrorism events.

There are currently no legislative requirements for developers in Australia to adopt counter terrorism security measures. Consequently, there have been no decision frameworks developed to advise counter-terrorism security advisors and built environment practitioners on CTPS best practice during the development process. Currently, no research exists investigating the link between the property development process and terrorism in Australia. This research aims to fill that void and demonstrate the need to further explore the potential intervention options available to investors and developers at the early pre-construction stages of the development process.

3.0 Research Design and Methodology

The research presented here is part of a larger international study. The research design used in Australia was consistent with the research design and methods of the larger international study[5]. The first phase of the Australian study was conducted between April and November 2017. The research utilised 32 in-depth, semi-structured interviews with practitioners involved in creating crowded places to gain both breadth of information and a an in-depth of understanding into the perceptions of practitioners in: architecture, urban design, engineering, planning, security consultancy, local government, real estate development, real estate management and real estate investment sectors in Sydney, Canberra and Melbourne. The focus cities were selected based on three determinants, each city either: 1) has been the focus of international-related terrorism in recent times; 2) has developed, or is the process of developing, policies specifically focusing on protecting crowded places; and/or 3) attracts significant numbers of tourist annually to crowded places in the city.

The initial set of interview questions were aimed at understanding whether practitioners involved with creating and developing crowded places currently consider counter terrorism protective security (CTPS) during the real estate development process and, if yes, what types of measures are

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[5] See McIlhatton etal, 2018 for more information

included in the decision-making process. The next set of questions focused on understanding *when* in the planning, design and development process are CTPS measures are currently considered (i.e. is this a final checklist activity or is it done early with the potential to influence the final product).

A snowball sampling method was used to identify participants in the study, with the first group of participating practitioners identified from the project team's existing professional networks as practitioners actively involved with the creation and/or development of crowded places. Additional participants were identified through interviewee recommendations as key actors/ stakeholders with expertise in the topic, and were included if the practitioner was currently, or had been previously, actively involved in the creation and/or development of crowded places.

4.0 Results and Findings

Unsecured crowded places with the potential to yield mass casualties and elevated levels of disruption have become the primary targets, globally, for international-related terrorism and domestic-extremism events since 2015. This has resulted in a string of publications by western governments and professional bodies related to the real estate profession offering guidance on how to mitigate the impact of terrorism on crowded places. However, most countries worldwide still have no legislative requirement to integrate counter terrorism protective security (CTPS) measures into new private sector developments/redevelopments. It is therefore important to understand *what* and *how* CTPS measures industry practitioners pro-actively consider within their decision-making process, as well as *when* such measures are considered during the development process. In this context, we can better understand what barriers exists to integrating CTPS considerations during the planning, design and pre-construction stages of crowded place development, and begin developing strategies to overcome them.

This section presents the current considerations of threats, the impact of recent terror events on the adoption of CTPS measures within crowded places, the organizational CTPS considerations being considered and concludes with a discussion about whether CTPS should become a core consideration in the development process. Quotes from interviews, *in italics*, de-identified for the protection of the interviewee, are used as supporting evidence in each section. Future papers will discuss the barriers to implementation of CTPS measures and identify potential solutions to overcome those barriers.

4.1 Threat Considerations in the Real Estate Development Process

Two clear and distinct themes emerged in response to questions related to participants' current considerations of the breadth of threats during the development process. The majority of the

interviewees were heavily influenced in their decision making by what they were mandated to consider (e.g. via building codes, fire safety requirements, CPTED), and by client requirements. A smaller group of participants discussed an 'all threats & hazards' approach in their decision making. The reasoning presented for taking this approach varied based on the location of the development, the type of development (government, transport hub, stadia, shopping malls, health care), was influenced by whether a security consultant was used (either in-house, or external) in the early stages of the development, and whether there was a mature organizational security culture in the client organisation that was driving the involvement of other involved organisations. Common threats identified across the stakeholder groups fell into four key themes (see Figure 1):
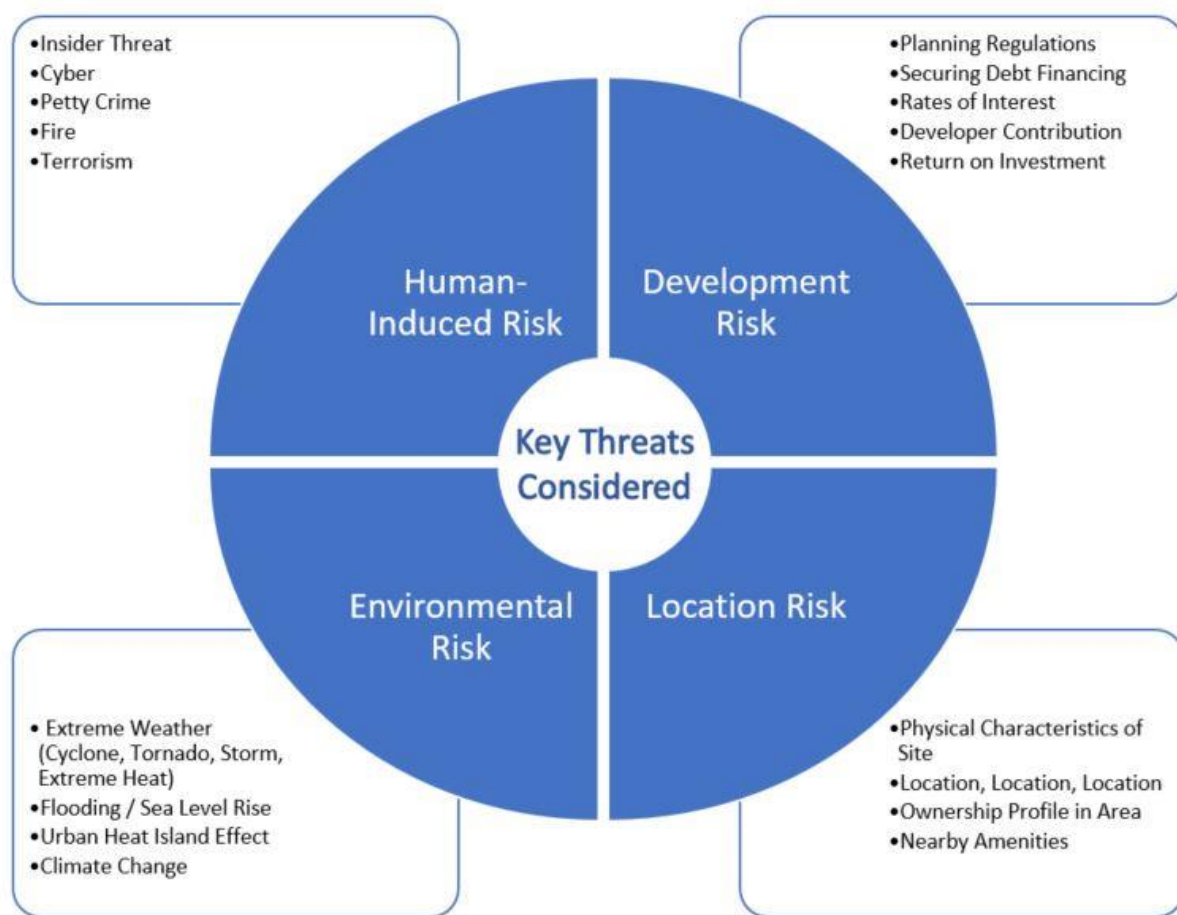

Figure 1: Main Threats Considered in the Real Estate Development Process

It should be noted that terrorism was not identified as one of the key threats considered, and that CTPS measures were primarily included as the result of one of the following factors:

a) Size of the contracting agencies (major multi-national development company with in-house security specialists had greater considerations),

b) Location and type of development (major city and related to critical infrastructure and critical national infrastructure, stadia, or mass transit), or

c) Whether the client/development brief clearly articulated the need.

Although most participants believed there would likely be increased pressure to include CTPS considerations in the development process in the future, they also noted it is not currently a core consideration in real estate development decision making - this was particularly true for small- to medium-sized practices and projects. The lack of a unified process to measure the risk of a terror attack, and understand what mitigations strategies are appropriate for that risk level, also impedes the adopted of these considerations in the decision process.

> "There is no one process… I would probably admit up front that there isn't a very high awareness or clear process to take into account the type of risks [associated with terrorism]. There is probably a more developed approach to the more environmental sustainability and other climatic, traffic, pedestrian, transport … those kind of considerations." [P-01a]

This suggests that enhancing the awareness to terrorist threat within private sector development projects would be a key challenge. Interviewees generally believed the lack of awareness about the potential impact of a terror event in their city is, at least in part, the result of the deep-seated societal belief that Australia is far from the attacks happening in Europe and the US, which we discuss in the following section. The interviewees noted that, currently, the Australian property industry is more focused on higher-frequency threats, e.g. insider threat and crime-based threats, where there is clearer guidance on how to counter and mitigate the threat.

> "Distance from the global events makes a difference – when shooting happened in Paramatta that had a bigger impact than European events." [D-05b]

> "People just feel it is so far away… it's a cultural issue, in part. There is an innocence to Australian culture. We're the lucky country, the country down under, and it is hard to relate to things that you can't see firsthand..." [D-05a]

While the broader, international sample included in McIlhatton et al (2018) also placed a greater emphasis on higher-frequency threats which have clear mitigation recommendations, the reasoning was fundamentally based upon a practical consideration of overall threat analysis. In contrast, the discussions with Australian participants demonstrated how impactful less evidence-based considerations, such as the perceived distance from global terror events and the associated sense of safety, can be in influencing (a lack of) CTPS consideration in the industry.

4.2 Impact of Recent High-Profile Terrorist Events on the Adoption of CTPS Measures in the Development of Crowded Places

It is essential for those tasked with protective security advice and guidance in government, law enforcement and the private sector to understand whether and how the global threat landscape impacts the consideration and adoption of CTPS measures within real estate development in Australia. This understanding can help ensure that vulnerabilities that may have otherwise been exposed and exploited by recent international attacks are not present, or that they are at least considered and mitigated, in the development of new crowded places in our cities. To explore this, interviewees were asked about the impact of recent events - such as those in Paris 2015, Tunisia 2015, San Bernardino 2015, Brussels 2016, Nice 2016, London 2017, and Manchester 2017 – to understand whether and how these events have influenced development decision making for new crowded places.

Two clear and distinct groups emerged in the analysis. The majority believed that recent global events only minimally impacted decision making. While these participants generally acknowledged an increase in the implementation of bollards or other concrete barriers around high-pedestrian areas as a reactive measure to protect existing crowded places, they did not believe these events prompted them to think differently in any significant way or that decision making was substantively changed when considering strategies for new or retrofit development of crowded places.

> *"There still is a very relaxed view on the requirements. Australia is a long way from the rest of the world. Social consideration is still that we are a long way from anywhere, we are fairly relaxed, we are open to all diverse racial mix of people. I think we just have a particular … the separation of distance, not saying that that by any means protects you, as we've seen it now around the world in different places … I don't know whether that's a naïve perspective and whether it would change things. But [CTPS] certainly is not high on the agenda for current developments, current design, current thinking." [D-02]*

A smaller group of respondents felt the industry was reacting in a pro-active manner. These participants generally represented industry bodies or large organisations working on large-scale real estate and infrastructure development projects. Most of these organisations had internal policies and procedures in place to consider security-related issues, and several respondents noted they are reviewing their policies to consider the potential future challenges that terrorism may assert on their organisations.

> *"Yes, at every meeting international events are on the standing agenda, we are being asked by the CEO how they are protecting against those types of events. It is the same as the non-conforming building*

products, we saw it overseas and have been responding in a proactive way. [We] realise if we wait it will cost a lot more to address than if we get ahead of the curve." [PB-02]

While this finding was also evident in the larger sample included in the McIlhatton et al (2018) study, this finding was significantly amplified in the Australian sub-sample. Overall, participants indicated there is still a fundamental "*culture of believing we are so far away from the world ... a kind of inertia*" amongst policy and place makers in Australia. The group also acknowledged that this is not a sustainable perspective and has led some to have a false sense of security.

"The world is a small place and really we are as close to London as we can get and the more we involve ourselves in the world … then everything that is involved in being a city will come to us, including CT. It is just a matter of time." [P-01a]

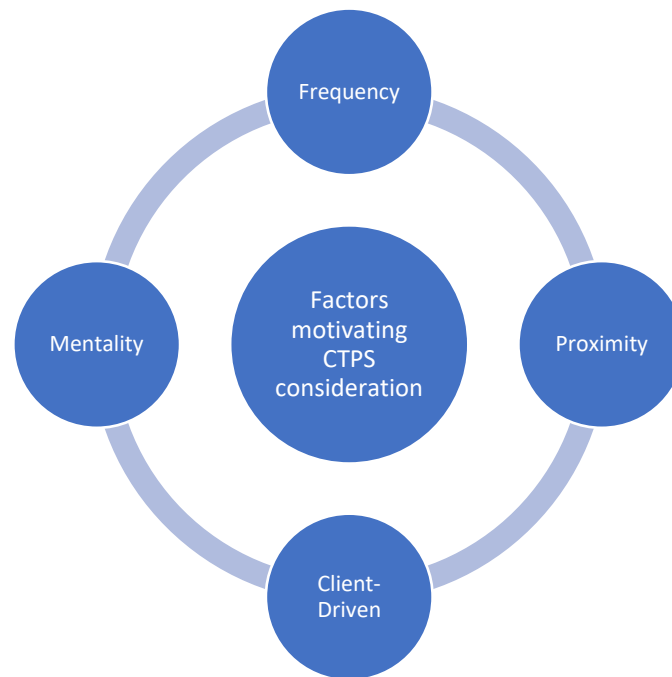The difference between the two groups are motivated by four key factors:

Figure 2: Four factors influencing consideration and uptake of CTPS measures as part development decision making process.

1. <u>Frequency:</u> the relatively low frequency of terror attacks when compared to other issues, such as petty crime, have made CTPS a low priority for those not working on projects immediately considered high-risk targets.

2. <u>Proximity:</u> the perceived distance from global terror attacks reduces their impact on development decision making in Australia. The reactive impact of global terror events also diminished with time. Participants also indicated that the project's proximity to other crowded places might increase the impact of events on localised decision making.

3. <u>Client-Driven:</u> those in the practitioner community who are mindful of the terrorist threat can advise clients on threats and appropriate mitigation response, however, decisions to include/exclude CTPS measures are ultimately made by the client. For example, CTPS measures generally need to be requirements of the leasee, the client, before a developer or property/asset manager decides to make an investment in CTPS.

4. <u>Mentality:</u> there was a strong belief that the 'it won't happen to us' viewpoint was a major influence in decision making. Some respondents considered the current threat landscape to mainly be an external community issue, and not an individual asset responsibility. Others believed that developments outside the CBD and in smaller cities would be less attractive targets and, consequently, the risk of a terrorist attack was reduced.

It is important to note that these factors can have a significant effect on the proportionality of a proposed CTPS response for mitigating the impact of a potential terror event for areas perceived to be higher risk target areas relative to other, previously unaffected, but still potentially vulnerable, areas positioned in close proximity to the development. As noted earlier by Chaurasi etal (2016), this approach may result in limited overall resilience against terrorism because softer targets, such as crowded places, may continue to receive limited physical intervention using this approach and would therefore remain vulnerable to attack.

Research participants generally felt that developments are required built to code and to fulfil the client requirements – and noted that the addition of CTPS mitigation features beyond such requirements are unlikely to be accounted for in the project budget. They also noted that after construction has begun, it is both difficult and costly (from a design and legal perspective- e.g. in relation to aspects such as planning permissions) to revisit the development design and finance model(s). Therefore, increased risk awareness across the real estate investor and developer groupings was identified as a critical area of focus if decision making for crowded places development is to be expanded to include CTPS considerations as an integral part of the early planning and design phases of the project. Interviewees generally believed that there is a need for pro-active, rather reactive, CTPS decision making and that this will require that a thorough assessment of projects at the design, planning and pre-construction phases. However, most noted that this was unlikely to occur unless mandated via government regulation and/or client requirement.

> *"Haven't seen any evidence of it coming through in terms of changed policy in property, per se. If you were to over-engineer every public space at the expense of public engagement that those spaces offer people, then that's going too far. But we do need to be aware of the densities that are likely to attract those types*

of perpetrators – what are the target rich spaces? … Can see why some spaces definitely need more thought, but not all spaces. How can we make it as safe as possible without killing the purpose of the public space?" [P-01b]

Interestingly, the client aspect emerged among the most influential factors with regard to whether recent global terrorism events influenced how decisions were made. Participants in the design and consultancy stakeholder groups noted that when CTPS was not stipulated in the design or lease brief by the client it was difficult to for the design and consultant teams to open discussion with the client about CTPS or influence them to include these considerations, making it is less likely that CTPS would be included or prioritised. Property management participants believed that global events had more of an impact on their leasees, property managers and buyers of property than on the planning and design approaches for the developments. This was supported by their perspective that business continuity concerns and relatedly, insurance concerns, would be a more influential factor for adopting strategies to mitigate the threat, risk and harm of terrorism.

4.3 CTPS Considerations at the Organizational Level and in Professional Education

Across the stakeholder spectrum, participants acknowledged that as the awareness of the terrorist threat increases among industry stakeholders, consideration of CTPS measures is likely to become more prominent within the development decision-making process. Most interviewees believed they already appropriately consider CTPS as relevant and appropriate to their role, however, many added the caveat that that their ability to integrate CTPS measures into the design was solely enabled (or inhibited) through the specification requirements outlined in the developers brief.

"At a strategic level, yes, we consider it. But it doesn't always get integrated into every design, as the client has to want it. If they don't, it is very hard to convince that it needs to be there and, consequently, itemized in the budget" [E-02]

Many respondents believe that security was becoming a core facet of their offering, demonstrated by the fact that their organizations either employed in-house security specialists or contracted security consultants to advise on CTPS and crime-related threat mitigation.

"I really can't see any organisation where they're still not actually investing in dedicated security resource going forward. I think people are coming to the realisation that it's a necessary evil. I would not be surprised if within the next twelve months that we need someone whose sole responsibility is reviewing security across our portfolio." [D-01]

There was a concern among the development community stakeholders that architectural (and other design) professionals located outside of major global practices were not sufficiently trained

or skilled in innovative and integrated design practices related to mitigating terrorist attacks. As a result, they felt that the CTPS-integrated designs these firms propose often resulted in significant additional costs which the development budget could not sustain. Perceived higher costs and lack of innovation in design, in turn, has negatively impacted upon their organizational acceptance of the inclusion of CTPS measures, especially when these are not mandated by law. There was a feeling that there are more options and solutions available that could be integrated into the design of crowded places – but that industry practitioners were not aware what they were, or how to integrate them. Overwhelmingly, all participants noted the need for clearer guidance in developing an integrated threat analysis process, more clearly defined threat levels for development projects, and recommended CTPS measures associated with each threat level.

> *"… there is not a very good resource [developers/designers] can reference to know what they should be thinking about at the various development stages. Guidance is missing…" [PB-02]*

Participants recognised, and supported, the inclusion of terrorism threat mitigation in both the academic education of and professional on-going training for all built environment professionals. Participants representing all sectors predominantly believed the exposure to threat analysis and mitigation strategies in education would enable practitioners involved with creating and developing crowded places to receive, at minimum, a basic level of training to understand what the potential terror threats to a project might be – as well as the ability to know when it is appropriate to bring in an expert.

> *"Should some of our designers be better skilled in the considerations of security, or should the security experts be brought in earlier? Probably a combination of both. Our design consultants need to be brought up to speed on risk identification, risk awareness so that they know … look … big principles I can get, however, do I need to bring that security expert in [to create the right CTPS solution]." [P-01]*

5.0 Should CTPS be a Core Consideration within the Development Process in Australia?

The general expectation that terrorism would be included as a core consideration in the real estate development process is a more complex idea than the research team had initially anticipated. To varying degrees, all participants believed that that CTPS should be, and will need to be in the future, integrated as a core consideration within the real estate development process; however, many believed it will be difficult to initiate and implement such a requirement. Practitioner recommendations on how to proceed differed based on the contracting authority, project team role, and the types of project scale and location on which they work. Participants all highlighted the need for more specific guidance, but also cautioned that CTPS requirements should support

the functionality, design and operations of the buildings, and that solutions must be proportional to potential threat levels.

"HVM [Hostile Vehicle Mitigation] is [a] big [consideration] and architects/designers don't like a sea of bollards … it is a lazy design solution. It looks over securitized and puts people off using the space. They want to understand how to use impact resistant furniture, seating, planter boxes, - meandering streets/paths, etc. Wide open spaces offer natural surveillance, but accessible space is harder to protect against hostile vehicles. The challenge is to balance between accessibility and security" [E-01]

Many participants expressed concern about who was providing security advice, recognizing that security consultants feel obligated to propose solutions to every potential threat – however small – and that most of these consultants have no design or construction experience and therefore don't fully understand the impacts that their proposed mitigation strategies may have on the aesthetics and finances of a development. Similarly, respondents noted that police protective security advisors often do not understand real estate development, design considerations, and costs associated with mitigation. The perceived resultant impact is that recommendations are often disproportionate to the threat, making it near impossible for the site to function as planned, provide a high-quality design, and comply with proposed CTPS recommendations. Combined, participants felt that this disconnect was a significant barrier inhibiting CTPS uptake in the industry.

Some respondents believed that counter terrorism security advisors need to also have a background in design and/or engineering, feeling that this would enable recommendations that not only create safe places, but also solutions that more effectively address the professional complexities associated with real estate development projects. Similarly, participants felt strongly that designers, developers and construction management professionals should be trained to understand these threats – even at a basic level – and be able to identify appropriate design and construction solutions to mitigate specific threats. Increased understanding of threat and appropriate CTPS measures by all actors involved with creating and developing crowded places might be the solution to overcome the current chasm between the knowledge base of those creating crowded places, and that of those tasked with identifying and mitigating threats to the places by facilitating the ability for all parties of communication knowledgably in the discussion.

"[CTPS] should be a core consideration in the planning and design stages and the consideration should respond to advice from people with knowledge of intelligence and threat level of site … it should be a requirement of the development approval process. Difficulty will be determining where and how much is

required … private developers need better guidance (example then discussed: a hierarchy of threats and levels of appropriate response)." [Gov-05]

Additional discussions suggested that future considerations must be based on an integrated security management approach to avoid exposing additional vulnerabilities. It will be important that future CTPS considerations not be based solely on protecting buildings against specific threats or methods of attack, as these continue to evolve, and such strategies result only in protected buildings. If the people employed to work in buildings are not well-trained, educated and vetted, and policies and procedures around other security-related issues are not present, then the physical protective security methods become limited in their effectiveness. It is therefore important that an integrated security management approach be embedded into property management requirements.

The significance of the results of this study extends the current knowledge base on counter terrorism protective security, particularly related to the potential of the built environment to contribute to protecting people and crowded places, and has the potential to reach decision informers in both the counter terrorism policy landscape, and those influential in developing standards for the planning, design, construction, and management of real estate assets.

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