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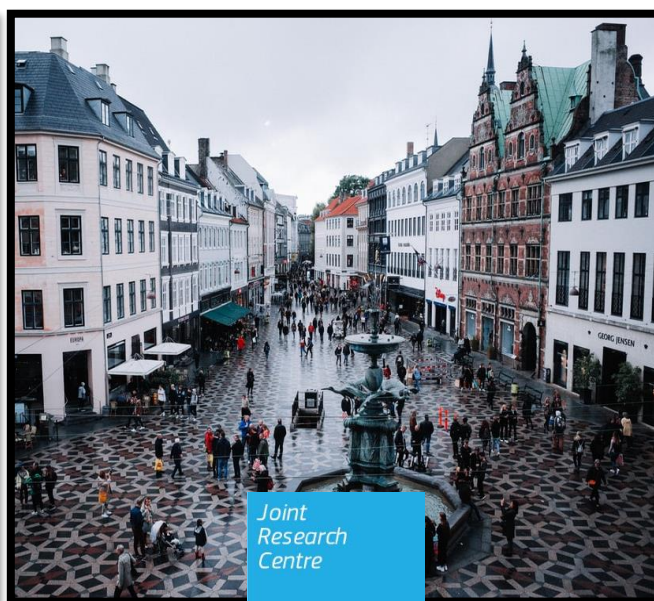
JRC TECHNICAL REPORT

A guide to key information on the protection of Public Spaces

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Abstract

The purpose of the current document is to provide a list of the available information sources focusing on the protection of public spaces against terrorist and other types of malicious extremist attacks. Public spaces represent vulnerable assets under public or private ownership, that allow open, easy access and may attract a great number of people. Their vulnerability lies to the fact that they usually lack specialised protective measures and consequently, can be attacked by aggressors using both simple and more elaborated tactics. Such targets are often selected by terrorists in their effort to maximize casualties, attain media coverage and inflict fear to the population.

The information sources presented herein aim at raising awareness and bringing to the attention of interested security stakeholder existing documents with specialized information and practical guidance on available measures that facilitate the prevention of a potential attack and mitigation of the consequences, should such an attack materialize. The documents are grouped according to the following broad domains relating to public spaces: public space/soft target definition, protection of public places during events, protection of education/religious/health sites, protection of retail/entertainment facilities, protection from hostile vehicles, risk assessment/management, protection of transport facilities, protection of critical infrastructures/buildings and protection against Unmanned Aerial Systems (UAS).

The referenced information sources originate from various countries and bodies, such as UK, France, Sweden, Czech Republic, USA, Australia etc. and they mainly focus on aspects of physical protection against terrorism threats. The list is mainly limited to publicly available documents and practically to those found in English, German and French.

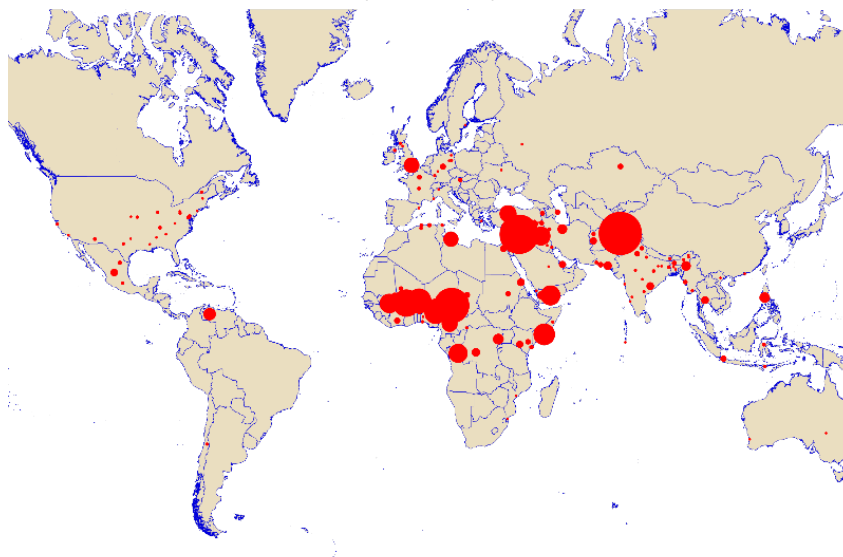
1 Introduction

The worldwide rise of terrorism has been accompanied by a series of attacks against targets that were characterized by limited protection measures. A tendency has appeared for assaults at unprotected places of people congregation, irrespective of the gathering purpose (recreational, political, religious, commercial etc.). Public spaces due to their open nature do not employ strict security measures, which makes them vulnerable to terrorist attacks even with simple tactics. In the recent past, Europe has experienced numerous terrorist attacks against public spaces by terrorists using various methodologies, such as in Paris (bombing-shooting, 2015), Nice (vehicle ramming, 2016), Brussels (bombing, 2016), Barcelona (vehicle ramming, 2017), Utrecht (shooting, 2019) and Vienna (shooting, 2020). Independent of the rarity of such attacks, their psychological, economic and political impact on society can be disproportionately high. The European Commission in order to support the Member States has taken concrete steps towards enhancing the security and resilience of public spaces, as illustrated in the 'Action Plan to support the Protection of Public Spaces'¹, the EU Security Union Strategy² and the Counter-Terrorism Agenda³. As declared in these communications, technical solutions need to be sought that can help make public spaces more secure while at the same time preserving their open and public nature. As part of these efforts, the European Commission's Joint Research Centre is organizing on a regular basis dedicated security workshops and trainings for operators of public spaces and national, regional and local authorities to facilitate the exchange of good practices and lessons learnt, including the creation of networks that can cooperate across the EU.

Terrorist events can be defined as intentional violent acts performed under the pretext of political, religious or social crimes and may be carried out with a variety of methods. Weapons (e.g., firearms, knives), vehicles, CBRN (Chemical, Biological, Radiological and Nuclear) devices and improvised explosive devices (IED) that are either homemade or illegally purchased, are some of the most common tactics of terrorist groups and lone actors. However, it needs to be underlined that these tactics may rapidly transform, as new technologies emerge, the skills and capabilities of the aggressors evolve, the instructions from propaganda sites and magazines are renewed, while the political, religious and economic landscape that drives the motives of terrorists can be modified.

The risk of terrorism is present in both developed and developing countries and it still poses a great concern in certain regions that are mainly located in Africa, the Middle East and Asia, as shown in Fig. 1. Nevertheless, the worldwide dispersion of attacks, clearly demonstrates that it should be considered as a cross-border phenomenon, featuring both direct (e.g. victims, injuries, property loss) and indirect (e.g. psychological) consequences on the society.

Figure 1. Global terrorism threat level in 01/2020-12/2020 by JRC terrorism database using EMM. (Background map © OpenStreetMap).



¹ COM (2017) 612, European Commission

² COM (2020) 605, European Commission

³ COM (2020) 795, European Commission

Unprotected public spaces are typically selected by terrorists in their effort to maximize casualties, thus inflicting fear to the population and attaining media coverage. The last decade has demonstrated that the methodology of the attackers has shifted by placing the citizens as their main target instead of hardened structures, which would require better planning, larger support and funds, and where the chances of success could be lower. In response to this threat, considerable attention has been drawn by many countries to methods and techniques for enhancing the security of public spaces and providing protection to places that would otherwise remain fully unprotected. It is a common belief among the public, the security officials and the administrators that more effective protection measures are necessary. This is a considerably difficult task as public spaces vary widely and their characteristics range from fully open spaces with no protection to areas where basic or more elaborate protection has been introduced. Standardized solutions may not exist or may not be adequate due to the ever-changing nature of the hazard, and for this reason information on protection guidance or best practice techniques is urgently needed. This has resulted in a considerable number of guidance and best practice documents, which, by not being in the form of official standards, may not always have come to the attention of all security officers, premise owners, building designers or other interested professionals.

An effort has been made in the current document to provide a list of the available information sources focusing on the protection of public spaces against terrorist and other types of malicious extremist attacks. These documents aim at bringing to the interested security stakeholder information on measures to prevent potential attacks and mitigate their consequences, should such attacks materialize. The list of documents included in the present report can serve as a tool for the public space/soft target definition and for establishing techniques that could be adopted for enhancing the security of specific sites. The referenced information sources originate from a wide variety of countries and bodies (UK, France, Sweden, Czech Republic, USA, Australia etc.). The focus is on recent documents and they are categorized in the following non-strictly separable categories: public space definition, event protection, education/religious/health site protection, retail/entertainment facility protection, critical infrastructures/buildings protection, risk assessment & management, protection from hostile vehicle attacks and protection from Unmanned Aerial Systems (UAS). As will be noted, in Europe the listed guidelines originate mainly from the UK and France.

The material that is collected and presented in the current report mainly focuses on information regarding physical protection measures for security and not safety purposes. The distinction between safety and security may be a challenging task in some cases, such as in vehicle barriers as they both share many common characteristics and can satisfy different protection needs. For example, safety barriers are utilized for preventing and/or mitigating the results of an accident (errant vehicle) that can result in life loss, injuries or environmental destruction, while vehicle security barriers are adopted for creating a physical obstacle against unauthorized entry and other forms of relevant attacks against a public space or critical infrastructure. This means that for the purposes of this document vehicle barriers are devices or other structural obstacles that allow the controlled access of vehicles to an area that is designated as protected.

The documents are of public domain and most of them freely downloadable from the indicated web sites.

Towards enriching this list, the authors would be grateful to receive any additional information regarding missing or newly-produced documents on the subject.

Functional Mailbox: JRC-PUBLIC-SPACES@ec.europa.eu

2 Availability of information sources

The following tables contain guidance documents available from various information sources regarding the protection of public spaces. The document type, its origin and a short description are also included. The identified sources originate from several countries and are predominantly written in the English, French, or German language. As mentioned above, it would be highly appreciated if informed readers point out to the authors the existence of similar documents in other languages.

2.1 Public Space/Soft Target Definition

The information sources included in the current section describe the basic features that would categorize an asset as a public space and/or soft target and propose some general measures that may be adopted to deter potential aggressors from performing an attack or mitigate its consequences should it materialize.

Legend: Document type



Guideline Advice



Book



Plan



Best practice



Webtool App

Category	Publisher-Author	Specification	Issue date	Type
Public Space/ Soft target definition	Czech Republic (Ministry of Interior)	Basics of Soft Targets Protection	2016	
	M Fagel, J. Hesterman	Soft Targets and Crisis Management: What emergency planners and security professionals need to know	2016	
	J. Hesterman	Soft target hardening	2016	

Document description and links

Basics of Soft Target Protection

The document focuses on the protection of individuals from assaults through the introduction of prevention strategies and mitigation measures. Recommendations are provided to increase the resilience of soft targets through courses of action, including personnel training, response planning, suspicious behavior detection, management coordination planning, awareness raising and integration of rescue systems. Various specialized examples are also included.

Link:

<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwihkZCTw5PrAhWljQKHbdIAteQFjAAegQIARAB&url=https%3A%2F%2Fwww.mvcr.cz%2Fcthh%2Fsoubor%2Fbasics-of-soft-target-protection-guidelines.aspx&usq=AOvVaw1Fl22iF0fseDLI6i-EZ4kG>

Type:



Soft Targets and Crisis Management: What Emergency Planners and Security Professionals Need to Know

Practical advice is provided from a number of different practitioners based on case studies and examples regarding risk assessment, mitigation strategies, emergency planning and hardening measures. A methodology is described for responding and recovering during a soft target crisis event. Focus is on emergency planning and management strategies, while famous terrorist attacks are used to illustrate the importance of detection, prevention, deterrence and mitigation.

Link:

https://books.google.gr/books/about/Soft_Targets_and_Crisis_Management.html?id=b6GKDQAAQB_AJ&redir_esc=y

Type:



Soft Target Hardening

An extensive list of soft target attacks is presented, focusing on the methodology, objective and the motives of the aggressors that might prove useful to assess the threat from domestic terrorism. A general threat assessment for various US-based soft targets is illustrated and hardening examples from potential targets in the Middle East are illustrated. The advice provided is mainly based on the practical experience from case studies and best practices from international hot spots.

Link:

<https://www.taylorfrancis.com/books/9780429422966>

Type:



2.2 Protection of Public Spaces during Mass Gatherings and Events

The following resources provide information on the protection of public places with high people congregation. The resources include planning documents that facilitate the relevant stakeholders in the design and implementation of protection strategies against terrorism acts.

Legend: Document type



**Guideline
Advice**



Book



Plan



**Best
practice**



**Webtool
App**

Category	Publisher-Author	Specification	Issue date	Type
Public Spaces Events	Australia (NCTC)	Protection of Places of Mass Gathering from Terrorism	2011	
	Australia (ANZCTC)	Australia's Strategy for Protecting Crowded Places from Terrorism	2017	
	Australia (ANZCTC)	Improvised Explosive Device (IED) Guidelines for Places of Mass Gathering	2017	
	Australia (ANZCTC)	Active Armed Offender Guidelines for Crowded Places	2017	
	Australia (ANZCTC)	Active Shooter Guidelines for Places of Mass Gathering	2015	
	Australia (ANZCTC)	Chemical Weapon Guidelines for Crowded Places	2017	
	European Commission	Good Practices to Support the Protection of Public Spaces	2019	
	France (République Française)	Guide à Destination des Dirigeants d'Établissements Culturels Patrimoniaux	2016	
	France (République Française)	Guide à Destination des Organisateurs de Rassemblements et Festivals Culturels	2016	
	France (République Française)	Gérer la Sécurité et la Sûreté des Évènements et Sites Culturels	2017	
	New Zealand	Protecting our Crowded Places from Attack	2020	
	Spain	National Strategy against Terrorism	2019	
	Sweden	Event Safety Guide	2017	
	UK (NaCTSO)	Crowded Places Guidance	2017	
	USA (CCICADA)	Best Practices in Anti-Terrorism Security for Sporting and Entertainment Venues	2013	
USA (CISA)	Security of Soft Targets and Crowded Places – Resource guide	2019		

Document description and links

Protection of Places of Mass Gathering from Terrorism

The document includes information concerning the jurisdiction and the role of the different key stakeholders in the protection of places of mass gathering. It points out the authorities responsible for disseminating the relevant intelligence, threat-related information, while it proposes a systematic protection strategy plan.

Link:

<https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Documents/national-guidelines-protection-places-mass-gatherings.pdf>

Type:



Improvised Explosive Device (IED) Guidelines for Places of Mass Gathering

The provided guidance aims to assist stakeholders on the issues faced during the development of risk mitigation and contingency plans. Information is provided on the identification and assessment of suspicious objects and activities, the aspects to be considered during evacuation situations and the emergency response activities. Mention is also made on the key recovery concerns that ensure a smooth transition from response to recovery.

Link:

<https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Documents/IED-Guidelines/IED-guidelines-crowded-places.pdf>

Type:



Active Shooter Guidelines for Places of Mass Gathering

Presents the main characteristics and general features of active shooter incidents, while underlining the primary objectives of the stakeholders in order to minimize both the offender's access and the number of potential victims. Moreover, various prevention strategies that aim in reducing the severity of an incident are analyzed and special attention is paid on contingency planning to counter threats and attacks. Response actions are laid out for both the public and law enforcement units.

Link: <https://completecrisisolutions.com.au/wp-content/uploads/2018/05/active-shooter-guidelines-places-mass-gathering.pdf>

Type:



Australia's Strategy for Protecting Crowded Places from Terrorism

Provides information on the definition of crowded places and the roles of the different actors in their protection. It focuses on the pillars that define Australia's strategy in the protection of public spaces, through building strong partnerships, enabling better information sharing and implementing protective security.

Link: <https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Documents/Australias-Strategy-Protecting-Crowded-Places-Terrorism.pdf>

Type:



Active Armed Offender Guidelines for Crowded Places

Presents the main characteristics and general features of active shooter incidents, while underlining the primary objectives of stakeholders to minimize both the offender's access and the number of potential victims. Moreover, various prevention strategies that aim in reducing the severity of an incident are analyzed and special attention is paid on contingency planning to counter threats and attacks. Response actions are laid out for the public and law enforcement units.

Link: <https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Documents/active-armed-offender-guidelines-crowded-places.pdf>

Type:



Chemical Weapon Guidelines for Crowded Places

Provides stakeholders with information concerning indicators of a chemical weapon attack, and the performance of chemical agents. A range of measures is proposed to owners and operators of public spaces to strengthen detection and efficiently deter, delay and respond to terrorist attacks with the use of chemical weapons. Moreover, members of the public are encouraged to adopt certain responsible behaviors that promote safety and awareness.

Link: <https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Documents/chemical-weapon-guidelines-crowded-places.pdf>


Type:



Good Practices to Support the Protection of Public Spaces

Identifies a non-comprehensive list of best practices to protect public spaces in terms of vulnerability assessments, security planning, awareness campaigns, training schemes, physical protection measures and cooperation establishment.


Link: https://ec.europa.eu/home-affairs/sites/default/files/what-we-do/policies/european-agenda-security/20190320_swd-2019-140-security-union-update-18_en.pdf

Type: 

Guide à Destination des Organismes de Rassemblements et Festivals Culturels

Underlines the basic principles that guarantee an efficient preparation planning, through developing relations with external stakeholders and personnel training. Methods for analyzing the terrorist threat and reinforcing the perimeter security for various sites are also pointed out.


Link: <http://www.sgdn.gouv.fr/uploads/2017/02/guide-bonnes-pratiques-surete-des-festivals-et-rassemblements-culturels.pdf>

Type: 

Protecting our Crowded Places from Attack

The New Zealand's strategy in protecting crowded places is presented focusing on listing threats and raising public awareness. The gains of partnership building, information sharing and protective measures are underlined and the responsibilities of stakeholders involved in the security plan are presented.


Link: <https://www.etnz.org/wp-content/uploads/2020/10/NZ-POLICE-Crowded-Places-Strategy-30092020.pdf>

Type: 

Guide à Destination des Dirigeants d'Établissements Culturels Patrimoniaux

Aims at informing law enforcement agents on ways to develop relations with external actors and prepare crisis action plans that need to be tested on a regular basis to control their efficiency. Moreover, advice is provided on the personnel and the public reactions depending on the attack location (at the interior or the exterior of the establishment).


Link: <http://www.sgdsn.gouv.fr/uploads/2017/02/guide-bonnes-pratiques-surete-institutions-patrimoniales.pdf>

Type: 

Gérer la Sécurité et la Sûreté des Événements et Sites Culturels

Provides technical advice on the assessment of the terrorist threat and preparation of the site's defense through the use of CCTV, access control, internal communication, alarm systems and aggressor reconnaissance. Moreover, reaction and prevention measures are proposed against attacks with the use of drones, vehicles, suicide attacks, NRBC (Nuclear, Radiological, Bacterial, Chemical) agents and weapons. The importance of evacuation and intervention planning is also pointed out.


Link: <https://www.loir-et-cher.gouv.fr/content/download/9845/63834/file/guide-referentiel-securite-culture.pdf>

Type: 

National Strategy against Terrorism

Advice is provided concerning the protection of urban areas from terrorist attacks and the objectives of the stakeholders for efficient prevention, protection and response. Best practices are listed and methodologies for preparedness evaluation are provided.

Link: https://www.dsn.gob.es/sites/dsn/files/Estrategia%20contra%20Terrorismo_SP.pdf.pdf

Type: 

Event Safety Guide

Indicates the steps for efficient protection during an event and the importance of preparedness and safety planning. The role of each stakeholder is clearly defined and the assessment criteria for setting the security requirements for an event are stated. Specific aspects of planning, such as stage design, infrastructure and accessibility adaptations are included. Moreover, safety and security aspects during the implementation stage of an event and preparedness for serious incidents are emphasized.

Link:

<https://rib.msb.se/filer/pdf/26172.pdf>

Type:



Best Practices in Anti-Terrorism Security for Sporting and Entertainment Venues

Information is provided on conducting basic risk assessments and analyze various threats in terms of likelihood and consequences. In addition, the design of a security program to detect, deter, defend, mitigate and respond to threats is proposed and appropriate training schemes for personnel are presented. The importance of communication among staff and response teams is also underlined to ensure robust operability and effective risk mitigation during emergencies.

Link:

<https://www.safetyact.gov/externalRes/refdoc/CCICADA%20BPATS.pdf>

Type:



Crowded Places Guidance

Protective security advice is provided for a number of sectors (e.g. cinemas, health, places of worship, commercial centers, hotels, restaurants, events, stadia, schools) covering physical, personnel, people and cyber security. It provides security advisers and business owners/managers the steps for delivering an effective security plan, starting from a comprehensive risk assessment, accompanied by mitigation measures, awareness policies, cyber security and response tactics.

Link:

<https://www.gov.uk/government/publications/crowded-places-guidance>

Type:



Security of Soft Targets and Crowded Places – Resource guide

Includes a collection of US information sources directed towards both the public and security professionals for improving the security and resilience of soft targets and effectively planning and responding to potential terrorist threats, such as attacks with the use of weapons, Unmanned Aerial Systems and explosives.

Link:

https://www.fema.gov/sites/default/files/2020-03/fema_faith-communities_security-soft-targets-crowded-places.pdf

Type:



2.3 Protection of Educational/Religious/Health Sites

The current resources facilitate security stakeholders in protecting educational, religious or health sites against terrorist attacks. Advice is provided for understanding suspicious behavior patterns and methodologies are proposed for reinforcing the protection scheme.

Legend: Document type



**Guideline
Advice**



Book



Plan



**Best
practice**



**Webtool
App**

Category	Publisher-Author	Specification	Issue date	Type
Education Religion Health	European Commission	Quick Guide to Support Places of Worship	2021	
	Faith Associates	Incident Management Guide for Faith Communities	2016	
	France (République Française)	Guide à Destination des Présidents d'Université, des Directeurs d'Établissement d'Enseignement Supérieur et des Référénts Défense et Sécurité	2016	
	France (République Française)	Guide à Destination des Équipes de Direction des Établissements de Santé, Sociaux et Médico-Sociaux	2016	
	France (République Française)	Guide à Destination des Personnels des Établissements de Santé, Sociaux et Médico-Sociaux	2016	
	France (République Française)	Guide Pratique à Destination des Organismes, des Directeurs, des animateurs en charge d'Accueils Collectifs de Mineurs à Caractère Éducatif	2016	
	France (République Française)	Guide à Destination des Chefs d'Établissement, des Inspecteurs de l'Éducation Nationale et des Directeurs d'École	2016	
	India (Ministry of Human Resource Development)	Terrorist Attacks on Schools	2014	
	UK (NaCTSO)	Counter Terrorism Protective Security Advice for Schools	2016	
	UK (Department for Education)	School Security	2018	
	United Nations (UNAOC)	Plan of Action to Safeguard Religious Sites	2019	
	USA (CISA)	Mitigating Attacks on Houses of Worship	2020	
	USA (FEMA)	Guide for Developing High-Quality Emergency Operations Plans in Houses of Worship	2013	
	USA (Homeland Security)	FEMA-428: Primer to Design Safe School Projects in Case of Terrorist Attacks and School Shooting	2012	

Document description and links

Quick Guide to Support Places of Worship

Advice is provided on basic security measures to mitigate terrorist attacks against 'low risk' places of worship. A series of questions helps operators to evaluate the security of their site, while trying to raise awareness among both the staff and the public. Due to the sensitive nature of the document, interested stakeholders should come to contact with DG HOME D.2 unit.

Link:

Contact [DG HOME D.2](#)

Type:



Guide à Destination des Présidents d'Université, des Directeurs d'Établissement d'Enseignement Supérieur et des Référents Défense et Sécurité

Advice is provided on the appropriate methodologies for threat assessment and developing relations with external partners. The importance of information sharing is highlighted as a key feature in reinforcing the overall security scheme. Finally, recommendation is given on the appropriate reaction of the personnel and the public in case of an attack.

Link:

<http://www.sgdsn.gouv.fr/uploads/2017/02/guide-a-destination-des-presidents-duniversite-des-directeurs-detablissement-denseignement-superieur-et-des-referents-de-defense-et-securite.pdf>

Type:



Guide Pratique à Destination des Organismes, des Directeurs, des Animateurs en Charge d'Accueils Collectifs de Mineurs à Caractère Éducatif

Provides advice for developing a security culture through proper preparedness exercises, awareness initiatives, vulnerability assessments and tailor-made protection measures. Appropriate reactions and student handling in case of an incident are also presented.

Link:

<http://www.sgdv.gouv.fr/uploads/2016/09/guide-vigilance-attentat-accueil-collectifs-mineurs.pdf>

Type:



Incident Management Guide for Faith Communities

Serves as a summary of the basic steps that need to be taken in order to ensure enhanced security in places of worship. The main aspects of preparedness, organization, response and incident management are presented.

Link:

<http://mosquesecurity.com/incident-management-resource/>

Type:



a) Guide à Destination des Équipes de Direction des Établissements de Santé, Sociaux et Médico-sociaux

b) Guide à Destination des Personnels des Établissements de Santé, Sociaux et Médico-sociaux

These two documents provide guidance on preparedness methodologies, reaction measures, information campaigns and organizational aspects. The focus is on practical advice, such as alarm systems, detection measures and awareness policies.

Links:

a) <http://www.sgdsn.gouv.fr/uploads/2017/02/guide-pratique-pour-les-equipes-de-direction-des-etablissements-de-sante-sociaux-et-medico-sociaux.pdf>

b) <http://www.sgdsn.gouv.fr/uploads/2017/02/guide-pratique-pour-les-personnels-des-etablissements-de-sante-sociaux-et-medico-sociaux.pdf>

Type:



Guide à Destination des Chefs d'Établissement, des Inspecteurs de l'Éducation Nationale et des Directeurs d'École

Provides a methodology to create relations with external partners and analyse the threats that are relevant for each site. Specific measures and awareness campaigns are also proposed.

Link:

<http://www.sgdv.gouv.fr/uploads/2017/02/guide-chefs-etablissements.pdf>

Type:



Terrorist Attacks on Schools

A list of preventive measures against terrorist attacks are proposed accompanied by certain actions in case of security incidents. Drills are advised to take place at regular intervals to test the effectiveness of the measures and the readiness of the personnel.

Link:

https://www.mhrd.gov.in/sites/upload_files/mhrd/files/SOP.pdf

Type:



School security

Serves as a guide for the introduction of a policy and response plan for managing security related incidents. It explains how to manage the relevant risk by investments in preventive measures, efficient management and training schemes.

Link:

<https://www.gov.uk/government/publications/school-and-college-security/school-and-college-security>

Type:



Mitigating Attacks on Houses of Worship

Indicates the main perpetrator tactics against house of worships and proposes a framework for developing a holistic security strategy. Advice is given for conducting a comprehensive vulnerability assessment and proposes methods for enhancing both public awareness and physical protection. Light is also shed on more recent threats, such as those posed by cyber-attacks.

Link:

https://www.cisa.gov/sites/default/files/publications/Mitigating%20Attacks%20on%20Houses%20of%20Worship%20Security%20Guide_508_0_0.pdf

Type:



Counter Terrorism Protective Security Advice for Schools

A significant number of good practice checklists are introduced providing advice on good housekeeping, access control, evacuation procedures, communication and event planning. Recommendations are provided for detecting and responding to specific threats, such as explosions, CBR and firearm attacks.

Link:

https://safeguardingchildren.salford.gov.uk/media/1400/counter_terrorism_protective_security_advice_schools.pdf

Type:



Plan of Action to Safeguard Religious Sites

Advice is provided for effectively identifying and employing preventive strategies through promoting education programs that focus on tolerance and respect towards other religions and cultures, monitoring, analysing and addressing the causes of hate speech, and stressing out the importance of the development of a response plan.

Link:

<https://www.un.org/sg/sites/www.un.org.sg/files/atoms/files/12-09-2019-UNAOC-PoA-Religious-Sites.pdf>

Type:



Guide for Developing High-Quality Emergency Operations Plans in Houses of Worship

Information is provided regarding emergency planning depending on the considered threat. It is stressed out the importance of a collaborative planning team that has to clearly determine goals and objectives. Special attention is also drawn to the appropriate strategy for addressing active shooter situations.

Link:

https://www.dhs.gov/sites/default/files/publication/Developing_EOPs_for_Houses_of_Worship_FIN.AL.PDF

Type:



FEMA-428: Primer to Design Safe School Projects in Case of Terrorist Attacks and School Shooting

Introduces methodologies for assessing school risk and proposes practical architectural and engineering design considerations for responding to and minimizing the effects of potential attacks. The most common vulnerabilities in school complexes are presented through a revision of past events and potential consequences from various threats are listed.

Link:

https://www.dhs.gov/xlibrary/assets/st/bips07_428_schools.pdf

Type:



2.4 Protection of Retail/Entertainment Sites

These resources focus on the protection of entertainment and shopping sites. They focus on awareness raising for recognizing suspicious behavior patterns and the goals and priorities of an appropriate protective strategy.

Legend: Document type



Guideline Advice



Book



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Best practice



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Category	Publisher-Author	Specification	Issue date	Type
Retail Entertainment	France (République Française)	Guide Pratique pour les Équipes de Direction des Centres Commerciaux	2016	
	France (République Française)	Guide Pratique pour le Personnel des Espaces Commerciaux	2016	
	France (République Française)	Guide à Destination des Dirigeants de Salles de Spectacle, de Cinémas ou de Cirques	2016	
	SAFE/NCSC	Guide to Shopping Center Risk and Security	2019	
	USA (Homeland Security)	Commercial Facilities Sector-Specific Plan	2015	
	USA (FEMA)	Incremental Protection for Existing Commercial Buildings from Terrorist Attack	2008	

Document description and links


a) Guide Pratique pour les Équipes de Direction des Centres Commerciaux **b) Guide Pratique pour le Personnel des Espaces Commerciaux**

Provides information to effectively respond to terrorist threats against commercial spaces, by organizing information and awareness campaigns and promoting the development of relations with external actors. Advice is also given on proper reaction methodologies if the attack originates at the exterior or the interior of the protected site.

Links:

a) <http://www.sgdsn.gouv.fr/uploads/2017/02/reaagir-en-cas-dattaque-terroriste---guide-pratique-pour-les-equipes-de-direction-des-centres-commerciaux.pdf>


b) <http://www.sgdsn.gouv.fr/uploads/2017/02/reaagir-en-cas-dattaque-terroriste---guide-pratique-pour-le-personnel-des-espaces-commerciaux.pdf>

Type: 

Guide to Shopping Center Risk and Security

Presents the key actions to be followed for an efficient security risk management and tips for proper organisation and strategic planning. Advice is also given for ensuring business continuity and informing the operators on their responsibilities in securing their assets.

Link: <https://mailchi.mp/safeassetgroup/guide-to-shopping-center-risk-and-security>


Type: 

Incremental Protection for Existing Commercial Buildings from Terrorist Attack

Lists potential threats that may be encountered by a commercial building and presents considerations to reduce the relevant risk. Specific steps are proposed for effectively planning and managing the terrorism risk reduction strategy, emphasizing on design principles for reducing the risk related to blasts, CBR threats and operational security.

Link:

https://www.fema.gov/sites/default/files/2020-08/fema459_complete.pdf


Type: 

Guide à Destination des Dirigeants de Salles de Spectacle, de Cinémas ou de Cirques

The guide focuses on preparedness principles that have to be followed by the responsible stakeholders to render the services competent to effectively respond in case of an attack and points out how to develop relations with external actors that play a key role during an attack. The development of a crisis plan and the regular testing of the established measures are also considered an important aspect for improving the security of the site.

Link:

<http://www.sgdn.gouv.fr/uploads/2017/02/guide-bonnes-pratiques-surete-salles-de-spectacle---cinemas---cirques.pdf>


Type: 

Commercial Facilities Sector-Specific Plan

Assets that may pose an attractive target for terrorists are identified and the relevant risks are described, while techniques for effectively managing the risk are proposed. Preparedness efforts and the goals and priorities of a protective strategy that needs to be adopted by the operators of such facilities are underline.

Link:

<https://www.cisa.gov/sites/default/files/publications/nipp-ssp-commercial-facilities-2015-508.pdf>

Type: 

2.5 Protection of Assets from Hostile Vehicles

The threat of vehicle ramming calls for the adoption of specially designed measures whose performance is assessed through dedicated documentation. Herein, the resources focus on the selection of appropriate crash-rated barriers and their proper installation.

Legend: Document type



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Book



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Category	Publisher-Author	Specification	Issue date	Type
Barrier Testing	International Organization for Standardization (ISO)	IWA 14-1: Vehicle Security Barriers – Part 1: Requirement, Vehicle Impact Test Method and Performance Rating	2016	
	Germany (Polizei)	Technische Richtlinie: Mobile Fahrzeugsperren	2018	
	UK (British Standards Institution)	PAS68 - Impact Test Specifications for Vehicle Security Barrier Systems	2013	
	USA (ASTM)	Standard Test Method for Vehicle Crash Testing of Perimeter Barriers	2020	
Barrier Selection and Security Design	Australia- New Zealand (ANZCTC)	Hostile Vehicle Guidelines for Crowded Places	2017	
	France (Direction générale de l'aviation civile)	État de l'art des systèmes de protection périmétrique des aérodomes	2012	
	Germany (VDS)	Perimeter Security	2014	
	UK (CPNI)	Crash Rated Barriers List	2021	
	USA (CISA)	Dams Sector: Active and Passive Barriers Guide	2020	
	USA (Department of Homeland Security)	Guide to Active Vehicle Barrier (AVB) Specification and Selection Resources	2014	
	USA (NCPC)	Designing and Testing of Perimeter Security Elements	2007	
	USA (DoD)	DoD Anti-Ram Vehicle Barrier List	2020	
Application Installation	International Organization for Standardization (ISO)	IWA 14-2: Vehicle Security Barriers – Part 2: Application	2016	
	UK (British Standards Institution)	PAS 69 - Guidance for the Selection, Installation and Use of Vehicle Security Barriers	2013	
	USA (UFC)	UFC 4-022-02: Selection and Application of Vehicle Barriers	2010	
	USA (UFC)	UFC 4-022-03: Security Fences and Gates	2013	
	USA (USACE)	UFGS-34: Crash Rated Active Vehicle Barriers and Controls	2020	

Document description and links

IWA 14-1 : Vehicle Security Barriers – Part 1: Requirement, Vehicle Impact Test Method and Performance Rating

Specifies the impact performance requirements for vehicle security barriers and provides a detailed test methodology for assessing their performance under the single impact of an accelerating vehicle.


Link: <https://www.iso.org/standard/64736.html>

Type: 

PAS68 - Impact Test Specifications for Vehicle Security Barrier Systems

Describes the specifications for physically testing security barriers under vehicle impact and provides the characteristics for assigning impact performance ratings. It also identifies test tolerances and criteria that a barrier has to conform to.


Link:
<https://shop.bsigroup.com/ProductDetail/?pid=0000000030273707>

Type: 

Hostile Vehicle Guidelines for Crowded Places

Provides an overview of vehicle attack mitigation options by setting out the basic physical security elements to be used for separating vehicles from pedestrians. A small section is dedicated to the integration of these elements to the urban environment.


Link:
<https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Documents/hostile-vehicle-guidelines-crowded-places.pdf>

Type: 

Perimeter Security

Describes options for safeguards to protect perimeters without classifying the proposed solutions. A non-exhaustive list of physical protection measures is provided, while the guide mainly focuses on electronic surveillance systems and detection possibilities.


Link:
<https://silo.tips/download/security-manual-perimeter>

Type: 

Technische Richtlinie: Mobile Fahrzeugsperren

Advice is provided on the efficient use of mobile barriers and a test is proposed for assessing the performance of such physical security elements. Focus is on both the security and safety characteristics of such protective systems.


Link:
<https://www.dhpol.de/microsite/pti/richtlinien/041-Technische-Richtlinien.php>

Type: 

Standard Test Method for Vehicle Crash Testing of Perimeter Barriers

Provides a procedure to establish the penetration rating for vehicle barriers under vehicle impact. A range of impact conditions, designations and penetration performance levels is described.


Link: <https://www.astm.org/Standards/F2656.htm>

Type: 

État de l'art des systèmes de protection périmétrique des aéroports

A list of perimeter barriers is provided that may guarantee protection of airports from both vehicle ramming and other intrusion acts. Technologies that can deter illegal intrusion are also presented, pointing out their unique characteristics and pros/cons.


Link:
https://www.stac.aviation-civile.gouv.fr/sites/default/files/protec_perimetrique.pdf

Type: 

Crash Rated Barriers List

Provides an extensive catalogue of hostile vehicle mitigations products that are either impact or delay-rated as a result of physical tests performed from CPNI.

Link:
Delay rated: <https://www.cpni.gov.uk/cse-chapter-hvm-delay-rated>
Impact rated: <https://www.cpni.gov.uk/hvm-impact-rated>

Type: 

Dams Sector: Active and Passive Barriers Guide

Serves as an introduction to the available barrier types and their integration into a site's security planning. It mainly provides solutions for minimizing the threat of vehicle-borne explosive devices and mitigating their consequences in case of an attack.

Link:

https://www.cisa.gov/sites/default/files/publications/CISA_Dams_Sector_Active_and_Passive_Vehicle_Barriers_Guide_100220_508.pdf

Type:



Designing and Testing of Perimeter Security Elements

Serves as a quick manual for selecting protection measures and designing public spaces against the threat of vehicle ramming. Includes the basic characteristics of design and the steps to be followed during the design process.

Link:

<https://www.yumpu.com/en/document/read/30135006/designing-and-testing-of-perimeter-security-elements-national->

Type:



IWA 14-2: Vehicle Security Barriers – Part 2: Application

Provides criteria for selecting physical security barriers, conducting site assessment and describes the process of producing operational requirements. It also gives guidance on a design method for assessing the performance of a vehicle security barriers.

Link: <https://www.iso.org/standard/64737.html>

Type:



UFC 4-022-02: Selection and Application of Vehicle Barriers

Provides the parameters to be taken into account during the selection, design and installation of vehicle security barriers. The various types of available barriers are presented along with operational and installation requirements.

Link:

https://www.wbdg.org/FFC/DOD/UFC/ufc_4_022_02_2009_c1.pdf

Type:



Guide to Active Vehicle Barrier (AVB) Specification and Selection Resources

Presents available vehicle barrier specifications and the relevant site design considerations. It introduces barrier selection criteria and provides a template for structuring barrier specifications.

Link:

<https://www.cisa.gov/sites/default/files/publications/Guide-to-Active-Vehicle-Barrier-2014-508.pdf>

Type:



DoD Anti-Ram Vehicle Barrier List

Provides a list of active and passive barriers that have been rated under vehicle impact tests. The barriers included in the list have been tested under one of the following standards: ASTM, DOS, CWA or PAS.

Link:

<https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/4624>

Type:



PAS 69 - Guidance for the Selection, Installation and Use of Vehicle Security Barriers

Explores different types of barriers in the market and proposes the development of site and threat assessments. Focus is also on the construction, correct installation and safe removal of barriers.

Link:

<https://shop.bsigroup.com/ProductDetail/?pid=0000000030274479>

Type:



UFC 4-022-03: Security Fences and Gates

Advice is provided on the required characteristics for fences and entry points that can be used for protection against unauthorised entry and vehicle ramming. The design of access control points as part of a secured perimeter is also described.

Link:

https://www.wbdg.org/FFC/DOD/UFC/ufc_4_022_03_2013.pdf

Type:



UFGS-34: Crash Rated Active Vehicle Barriers and Controls

Lays out the requirements to be respected from the producers when designing a security active barrier. It includes parts concerning the system's description, its installation and the certification of its various parts.

Link:

<https://www.wbdg.org/FFC/DOD/UFGS/UFGS%2034%2071%2013.19.pdf>

Type:



2.6 Urban/Security Planning against Terrorist Attacks

The information sources in this section facilitate the design of urban public spaces against terrorist acts. Design principles and best practices are presented for the implementation of security elements in the urban environment in a security-by-design concept, while advice is provided on appropriate reactions in case of terrorist attacks.

Legend: Document type



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Category	Publisher-Author	Specification	Issue date	Type
Urban/Security Planning	Austria (Bundesministerium für Inneres und des Kuratoriums)	Sicherheit in öffentlichen Gebäuden- Eine Information für Führungskräfte	2019	
	Belgium (Perspective Brussels)	Guide to the Integration of Security Systems in Public Spaces	2019	
	Coaffee J. (Ashgate)	Terrorism, Risk and the Global City	2009	
	France (République Française)	Guide à Destination des Maires et des Présidents d'Intercommunalité	2016	
	GCDN	Beyond Concrete Barriers	2018	
	Sweden	Prevent, preempt and Protect-the Swedish Counter-Terrorism Strategy	2015	
	UK (HO-CPNI-NaCTSO)	Protecting Crowded Places: Design and Technical Issues	2014	
	UK (CPNI)	Protecting Against Terrorism	2010	
	USA (FEMA)	FEMA-427: Design of Commercial Buildings to Mitigate Terrorist Attacks	2003	
	USA (FEMA)	Site and Urban Design for Security (against potential terrorist attacks)	2007	
	USA (FEMA)	Safe Rooms and Shelters (Protecting People against Terrorist Attacks)	2006	
	USA(NCPC)	The National Capital Urban Design and Security Plan	2002	
USA (Interagency Security Committee)	Best Practices for Planning and Managing Physical Security Resources	2015		

Document description and links

Sicherheit in öffentlichen Gebäuden- Eine Information für Führungskräfte

Advice is provided regarding awareness campaigns and the public's response in case of a terrorist attack. Various attack scenarios are examined and the people's suggested actions are described, while focus is also given to the formation of a crisis management team and its responsibilities.

Link:

https://www.bundeskriminalamt.at/202/Gewalt-widersetzen/files/832_BK_Broschuere_Sicherheit_in_oeff_Gebaeuden_WEB_V20190723.pdf

Type:



Terrorism, Risk and the Global City

Explores the changes of the threat landscape in cities due to the rise of terrorism and proposes physical protection measures through urban restructuring and resilient planning. London's defensive measures are presented as a case study by illustrating the distinct steps that were followed as a response to terrorist risk.

Link: <https://www.routledge.com/Terrorism-Risk-and-the-Global-City-Towards-Urban-Resilience/Coaffee/p/book/9780754674283>

Type:



Beyond Concrete Barriers

Serves as a collection of case studies and technical specification sheets for the use of urban furniture for security purposes. Information regarding the development, manufacturing and installation of these security measures are included, as well as the intended outcome of their employment.

Link:

https://gcdn.net/wp-content/uploads/2018/01/GCDN-Urban-Furniture-Study-A4-FINAL-highres_web.pdf

Type:



Guide to the Integration of Security Systems in Public Spaces

A strategy for introducing security systems in public spaces is presented focusing on ways to effectively integrate safety and security elements into the layout of public spaces. Recommendations regarding design principles are provided for streets, pedestrian areas, squares and parks, while the proposed security systems have been either certificated through physical tests or not. Video surveillance equipment are also presented.

Link:

https://perspective.brussels/sites/default/files/documents/bbp_guidesecu_fr_v06.pdf

Type:



Guide à Destination des Maires et des Présidents d'Intercommunalité

Provides the methodology for reinforcing relationships with external partners and organizing the security plan based on the threat assessment for the site under examination. The importance of tailored-made measures is also emphasized, while simple instructions for creating public awareness are also provided.

Link:

<http://www.sgdn.gouv.fr/uploads/2017/02/guide-pratique-amf-sqdsn-mai-2016.pdf>

Type:



Prevent, Preempt and Protect-The Swedish Counter-Terrorism Strategy

Methodologies are proposed for preventing aggressors and reducing their capabilities and opportunities to commit terrorist attacks. Advice is given towards law enforcement units on how to handle various cases (firearms, explosives etc.) and how to act in case of an incident. Moreover, the social aspect of an attack is examined, by promoting ways to mitigate potential societal consequences.

Link:

https://www.government.se/4a80d6/contentassets/b56cad17b4434118b16cf449dbdc973d/en_st-rategi-slutlig-eng.pdf

Type:




Protecting Crowded Places: Design and Technical Issues

Advice is given on counterterrorism protective design by providing methodologies to integrate security measures into the surrounding urban environment. A number of case studies is presented to pinpoint the best practices during the design of such protective solutions. A link between counterterrorism and crime prevention in a built environment concept is also proposed to allow the reduction of a public space's vulnerability in an imaginative and considered way.

Link:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/302016/DesignTechnicalIssues2014.pdf


Type: 

FEMA-427: Design of Commercial Buildings to Mitigate Terrorist Attacks

Provides information regarding the likelihood of potential terrorist attacks and the damage mechanisms that may cause a building's partial or progressive collapse. Design approaches to limit or mitigate damage caused by explosive loads and practical checklists are included to address issues regarding mitigation measures, site layout and interior/exterior building design.

Link:

<https://www.fema.gov/sites/default/files/2020-08/fema427.pdf>


Type: 

Safe Rooms and Shelters

Information is provided for the design of shelters and safe rooms to protect occupants from various hazards (e.g., blast, toxic substances, armed attacks). Structural design considerations and criteria are illustrated for both new and retrofitted shelters. Emergency management options that are in line with the US national emergency response framework and specific operation plans are proposed.

Link:

<https://www.fema.gov/sites/default/files/2020-08/fema453.pdf>


Type: 

Protecting Against Terrorism

A number of points that need to be considered when creating, reviewing or updating security plans are provided, starting from the need for a robust risk assessment and the adoption of security measures at an early construction stage. The proposed security response includes a combination of physical, information and personnel security measures. The adoption of business continuity and communication planning are also addressed, along with preparations that guarantee an efficient incident response.

Link:

<https://www.cpni.gov.uk/system/files/documents/5a/c9/Protecting-Against-Terrorism.pdf>


Type: 

Site and Urban Design for Security (against potential terrorist attacks)

Focuses on site design aimed to protect buildings from attacks with the use of vehicles borne explosive devices. Strategies for cost management of site security are outlined, emphasizing on key elements of security design, such as setting the site's secure perimeter and designing access zones. Special cases of security design for city centres are presented, where space for implementing a security perimeter is usually limited.

Link:

<https://www.fema.gov/sites/default/files/2020-08/fema430.pdf>


Type: 

The National Capital Urban Design and Security Plan

Addresses threats generated from unauthorised vehicle entry by proposing security measures to strengthen the building perimeter security. Security is provided in the context of streetscape enhancement (security-by-design) and a case study is illustrated that was adopted for setting up a security perimeter at Washington's monumental core and the downtown district.

Link:

https://www.ncpc.gov/docs/National_Capital_Urban_Design_and_Security_Plan.pdf

Type: 

Best Practices for Planning and Managing Physical Security Resources

Guidance is provided on structuring an efficient process to effectively allocate resources to implement physical security programs. It includes a procedure for establishing roles and responsibilities for the personnel involved in the allocation of physical security resources.

Link:

<https://www.cisa.gov/sites/default/files/publications/isc-planning-managing-physical-security-resources-dec-2015-508.pdf>

Type:



2.7 Risk Assessment and Management for Terrorist Attacks

Terrorism risk assessment is the main concern of the current resources, proposing methodologies that may reveal prevailing threats and site vulnerabilities. Rating systems are proposed in some of the documents in an effort to adopt a quantitative predictive approach.

Legend: Document type



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Category	Publisher-Author	Specification	Issue date	Type
Risk Assessment/ Management	European Commission	Vulnerability Assessment Checklist	2020	
	European Commission	Recommendations for National Risk Assessment for Disaster Risk Management in the EU	2021	
	USA (FEMA)	FEMA-452: Risk Assessment	2005	
	USA (FEMA)	FEMA-455: Rapid Visual Screening of Buildings to Evaluate Terrorism Risks	2009	
	USA (Interagency Security Committee)	The Risk Management Process for Federal Facilities	2016	

Document description and links

Vulnerability Assessment Checklist

Provides practical checklist to be used for assessing the risk of one's facility from various threats, including blast, vehicle ramming, CBRN, active shooter and Unmanned Aerial Systems. In the future it will be also available in the form of an electronic tool. Due to the sensitive nature of the tool, interested stakeholders should come to contact with DG HOME D.2 unit

Link:

Contact [DG HOME D2](#)

Type:



Recommendations for National Risk Assessment for Disaster Risk Management in the EU

Recommends approaches that may be used from Member States for assessing their national risk for various threats, such as terrorist attacks, drought, floods, earthquakes, biological disasters etc. The guide also tries find interactions among the different threats in order to build a multi hazard assessment approach.

Link:

<https://drmkc.jrc.ec.europa.eu/Knowledge/Science-for-DRM/NRA>

Type:



FEMA-452: Risk Assessment

It provides five steps for conducting risk assessment of a building structure and selecting mitigation options. The first step describes the threat assessment process and the identification of the relevant hazards, the second step concerns the identification of the building's value, while the third regards the vulnerability assessment. The last two steps describe the analysis of the risk and the mitigation options associated with the results of the analysis.

Link:

https://www.fema.gov/sites/default/files/2020-08/fema452_01_05.pdf

Type:

**FEMA-455: Rapid Visual Screening of Buildings to Evaluate Terrorism Risks**

Provides an assessment procedure for the risk of single buildings or the relative risk among various buildings. Advice is given on the performance of visual screenings and the development of consequence and vulnerability assessments. A rating is proposed for determining the risk of assets and evaluate mitigation options and protection levels.

Link:

https://www.fema.gov/sites/default/files/2020-08/fema_455_handbook_rapid_visual_screening.pdf

Type:

**The Risk Management Process for Federal Facilities**

Provides a methodology for assessing the criticality of a facility and determines the strategy that needs to be followed depending on the required protection level. Different countermeasure design approaches are proposed depending on the kind of infrastructure (e.g. new, existing, renovation, leasing), while focus is also given on the operator decision-making process.

Link:

<https://www.cisa.gov/sites/default/files/publications/isc-risk-management-process-2016-508.pdf>

Type:



2.8 Protection of Transport Facilities

A number of terrorist attacks in the past have taken place in means of mass transportation or transport hubs. Resources in this section provide recommendations and guidance on procedures and measures that can enhance the security of such facilities.

Legend: Document type



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Category	Publisher-Author	Specification	Issue date	Type
Transport facilities	ACI	Landside Security Handbook	2018	
	PARAS	Recommended Security Guidelines for Airport Planning, Design, and Construction	2017	
	UIC	Rail High Speed Network Security Handbook	2015	
	UIC	Station Security for Station Business	2017	
	UK (Department for Transport)	Bus and Coach Security	2018	
	UK (Department for Transport)	Light Rail Security	2014	
	UK (Department for Transport)	Framework for an Aviation Security Management System (SeMS)	2018	
	UK (Department for Transport)	Security in the Design of Stations (SIDOS)	2018	

Document description and links

Landside Security Handbook

Identifies and demonstrates the elements of airport landside security as a combination of physical, detection and deterrence methods. Measures are proposed to ensure high preparedness and response, swift recovery, efficient communication, secure building design, enhanced security trainings and the adoption of an overall security culture.

Link:

<https://store.aci.aero/product/landside-security-handbook-first-edition-2018/>

Type:



Recommended Security Guidelines for Airport Planning, Design, and Construction

Contains advice on security planning and design regarding airside, landside, terminal, perimeter, IT, surveillance, access control and the publicly accessible side of an airport. The proposed approach aims at minimizing the cost of security features by integrating them early into the planning and design stages of airport facilities improvements.

Link:

https://www.sskies.org/images/uploads/subpage/PARAS_0004.Recommended_Security_Guidelines_FinalReport.v2.pdf

Type:




Rail High Speed Network Security Handbook

Presents generic security concepts for various threats (e.g. terrorism, crime, property crime, cybercrime) and provides general planning. Various threat scenarios are included in an attempt to identify the majority of threats that have to be considered by the operators.

Link:

https://uic.org/IMG/pdf/2015-hs-security_handbook_public.pdf


Type: 

Bus and Coach Security

Proposes concrete steps for building a security culture, while ensuring personnel and station security. Advice is given for handling threats and securing vehicles, while practical tips are provided for enforcing secure coach stations and locker facilities.

Link:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/875547/bus-and-coach-security-recommended-best-practice.pdf


Type: 

Framework for an Aviation Security Management System (SeMS)

A framework for integrating security into the daily operation in the aviation field is provided. The basic elements of risk management, responsibility allocation, performance monitoring, resources provision, incidence response, communication and training are briefly analysed illustrating key points for their successful implementation.

Link:

https://publicapps.caa.co.uk/docs/33/CAP%201223%20SeMS%20Framework_Feb18_correction_s.pdf


Type: 

Station Security for Station Business

Provides an overview of available threat-specific security measures. Presents the impact of these tools on aspects of station management and station business and gives recommendations on strategies for different types of rail stations.

Link:

https://uic.org/IMG/pdf/station_security_for_station_business_handbook_2.pdf


Type: 

Light Rail Security

Provides organisational advice for enforcing a security culture and handling various threats (e.g. firearms, suspicious items, powders). Recommendations for screening of passengers and rail carriages are included. The security design principles of stations and depots is addressed through specific instructions.

Link:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/316816/light-rail-security-best-practice.pdf


Type: 

Security in the Design of Stations (SIDOS)

Contains physical security considerations for railway stations and how to perform site evaluations. Design recommendations are provided for the interior, the exterior and the surrounding area of the station and specific advice are included for protection against blast and vehicle ramming.

Link:

<https://www.gov.uk/government/collections/land-transport-security>

Type: 

2.9 Protection of Critical Infrastructures and Buildings against Terrorist Attacks

This section lists resources that address the protection of critical infrastructure facilities against terrorist attacks. The importance of the development of a national protection strategy is underlined and practical solutions are proposed for enforcing an effective perimeter protection.

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Category	Publisher-Author	Specification	Issue date	Type
Critical infrastructures Buildings	European Commission (JRC)	Building Perimeter Protection	2020	
	Germany (Bundesministerium des Innern)	Schutz Kritischer Infrastrukturen- Risiko- und Krisenmanagement (Leitfaden für Unternehmen und Behörden)	2011	
	India (Gujarat State Disaster Mitigation Authority)	Measures to Mitigate Effects of Terrorist Attacks on Buildings	2007	
	Organization for Security and Co-operation	Good Practices Guide on Non-Nuclear Critical Energy Infrastructure Protection from Terrorist Attacks Focusing on Threats Emanating from Cyberspace	2013	
	United Nations, Interpol	The protection of Critical Infrastructures against Terrorist Attacks: Compendium of Good Practices	2018	
	USA (CISA)	Critical Infrastructure Security and Resilience	2019	
	USA (CISA)	Security and Resilience Guide Counter-Improvised Explosive Device	2016	
	USA (FEMA)	FEMA-426: Mitigate Potential Terrorist Attacks against Buildings	2011	
	USA (GSA)	The Site Security Design Manual	2007	
USA (VA)	Physical Security and Resiliency Design Manual	2021		

Document description and links

Building Perimeter Protection

Recommends measures for the physical protection of infrastructures against terrorist threats. Practical solutions are proposed for the introduction of protective solutions against explosions, vehicle ramming, intruder access, and malicious use of Unmanned Aerial Systems. A vulnerability assessment approach is also illustrated.

Link:

<https://ec.europa.eu/jrc/en/publication/guideline-building-perimeter-protection>

Type:



Measures to Mitigate Effects of Terrorist Attacks on Buildings

Strategies for reducing the risk from terrorist attacks against building sites are presented and special attention is paid on building damage due to explosions and on lessons learnt from past experience. Specialised security measures for new and existing building construction are proposed, providing insight to the aspects of vulnerability assessment and risk management.

Link:

<http://www.iitk.ac.in/nicee/IITK-GSDMA/TM01.pdf>

Type:



The Protection of Critical Infrastructures against Terrorist Attacks: Compendium of Good Practices

Advice is provided on the challenges and solutions in the development of a national strategy to reduce the risk of terrorism to Critical Infrastructures. A large number of cases show how different States determined criticality, built risk and crisis management strategies, mapped threats, minimized vulnerability to terrorist attacks, shared information and ensured coordination among different agencies.

Link:

<https://unrcca.unmissions.org/publication-“-protection-critical-infrastructure-against-terrorist-attacks-compendium-good-practices>

Type:



Schutz Kritischer Infrastrukturen- Risiko- und Krisenmanagement (Leitfaden für Unternehmen und Behörden)

Information regarding the risk and risk management within the protection of critical infrastructures is provided. Potential threats are documented and practical checklists are proposed for assessing the risk and crisis management status, while providing insight on potential security enhancement measures.

Link:

https://www.bbk.bund.de/SharedDocs/Downloads/BBK/DE/Publikationen/PublikationenKritis/SchutzKRITIS_Risiko_und_Krisenmanagement.pdf?__blob=publicationFile

Type:



Good Practices Guide on Non-Nuclear Critical Energy Infrastructure Protection from Terrorist Attacks Focusing on Threats Emanating from Cyberspace

Highlights methodological issues to be taken into account for the protection of non-nuclear critical energy infrastructures and mitigate potential vulnerabilities from cyber-related terrorist attacks. The recommended good practices include awareness raising exercises, national/international cooperation and information exchange between public agencies and operators, and the creation and use of standardized national/international forums for introducing coordinated measures.

Link:

<https://www.osce.org/secretariat/103500>

Type:



Critical Infrastructure Security and Resilience

The outline of the US approach to critical infrastructure protection is provided. A list of the relevant threats is included and the main principles of critical infrastructure protection and security are described, while setting up the risk management framework and the role of training and education programs.

Link:

<https://www.cisa.gov/sites/default/files/publications/Guide-Critical-Infrastructure-Security-Resilience-110819-508v2.pdf>

Type:



Security and Resilience Guide Counter-Improvised Explosive Device

Provides detailed guidance for the IED risk and its characteristics, while it applies a list of goals and tasks to prevent incidents from occurring, and protect citizens and infrastructure. It promotes the development of emergency operations planning and the conduction of risk/capability assessments.

Link:

https://www.cisa.gov/sites/default/files/publications/Security-and-Resiliency-Guide-Counter-IED_0.pdf

Type:



The Site Security Design Manual

Serves as a quick guide for establishing the principles of security design of federal buildings. Describes how to introduce security elements in urban design, evaluate risk factors and provides examples and strategies applied to a variety of facility types.

Link:

https://www.wbdg.org/FFC/GSA/site_security_dg.pdf

Type:



FEMA-426: Mitigate Potential Terrorist Attacks against Buildings

Contains advice for the protection of critical infrastructures against bomb and CBR attacks. Methodologies for calculating risk by assessing the threat and guidance for site layout design are also included. Specific protective measures are proposed for mitigating the results of attacks with the use of explosives and/or CBR agents.

Link:

<https://www.dhs.gov/xlibrary/assets/st/st-bips-06.pdf>

Type:



Physical Security and Resiliency Design Manual

Presents the considerations to be taken into account during designing and employing building perimeter and entrance design. It also focuses on maintaining the structural integrity of the facility and the functionality of its utilities and services after a potential terrorist attack.

Link:

<https://www.cfm.va.gov/til/PhysicalSecurity/dmPhySec.pdf>

Type:



2.10 Protection against Unmanned Aerial Systems (UAS)

The information sources in the current section address the risks posed by non-cooperative UAS. For instance, these documents provide different perspectives on the inherent challenges and the possible mitigation measures that can be taken to better secure different volumes of airspace from UAS, but especially those with malicious intent.

Legend: Document type



**Guideline
Advice**



Book



Plan



**Best
practice**



**Webtool
App**

Category	Publisher-Author	Specification	Issue date	Type
Unmanned Aerial Systems	ACI Europe	Drones in the Airport Environment	2020	
	EUROCAE	ED-286: Operational Services and Environment Definition for Counter-UAS in Controlled Airspace	2021	
	European Commission - EASA	Drone Incident Management at Aerodromes	2021	
	European Commission - EASA	Easy Access Rules for Unmanned Aircraft Systems	2021	
	France (SGDSN)	L'Essor des Drones Aériens Civils en France: Enjeux et Réponses Possibles de l'État	2015	
	GCTF	Berlin Memorandum on Good Practices for Countering Terrorist Use of Unmanned Aerial Systems	2020	
	INTERPOL	Framework for Responding to a Drone Incident	2020	
	Markarian G., Staniforth A.	Countermeasures for Aerial Drones	2021	
	NATO (JAPCC)	A Comprehensive Approach to Countering Unmanned Aircraft Systems	2021	
	UK (CPNI)	Countering Threats from Unmanned Aerial Systems	2020	
	USA (ISC)	Protecting against the Threat of Unmanned Aircraft Systems (UAS)	2020	
USA (NUSTL)	Counter-Unmanned Aircraft Systems	2019		

Document description and links

Drones in the Airport Environment

Describes how drones could safely be used in the airport environment and the roles and responsibilities of the different actors. Preferred actions are illustrated as a factor of different scenarios and aspects of safety/security management are laid out.

Link:

<https://www.aci-europe.org/downloads/resources/DRONES%20IN%20THE%20AIRPORT%20ENVIRONMENT%20-%20CONCEPT%20OF%20OPERATIONS%20%20INDUSTRY%20GUIDANCE.pdf>

Type:



Drone Incident Management at Aerodromes

Provides advice for coping with the risk of unauthorized drones to airports depending on their category and the management of safety or security related incidents by the relevant organisations. Some guidance is also provided as to the procurement and testing of technological Counter-UAS solutions.

Link:

https://www.easa.europa.eu/sites/default/files/du/drone_incident_management_at_aerodromes_part1_website_suitable.pdf

Type:



L'Essor des Drones Aériens Civils en France: Enjeux et Réponses de l'État

Contains obligations for UAS users within the domains of information, training, registration and identification. Describes the UAS typologies and the risks from potential accidents and malicious use, while presents the international cooperation strategy to develop measures for limiting these risks.

Link:

<http://www.sgdsn.gouv.fr/uploads/2017/01/151016-rapport-du-gouvernement-au-parlement-sur-les-drones.pdf>

Type:



ED-286: Operational Services and Environment Definition for Counter-UAS in Controlled Airspace

Introduces the capability requirements of a C-UAS system, focusing on the protection of airports. Provides a detailed description of the operational services of a C-UAS system depending on the operating environment.

Link:

<https://eshop.eurocae.net/eurocae-documents-and-reports/ed-286/#>

Type:



Easy Access Rules for Unmanned Aircraft Systems

Contains the European Commission regulation on the proper use and categorisation of unmanned aircrafts and describes the requirements to be followed from the operators. It also provides definitions and clarifications for UAS-related terms.

Link:

<https://www.easa.europa.eu/document-library/easy-access-rules/easy-access-rules-unmanned-aircraft-systems-regulation-eu>

Type:



Berlin Memorandum on Good Practices for Countering Terrorist Use of Unmanned Aerial Systems

Provides information to governments to identify, develop and refine policies, practices, guidelines, regulations and approaches for countering the terrorist use of UAS. It identifies 26 good practices on assessing risk, awareness raising, information sharing, regulation implementation, crisis planning and implementing C-UAS solutions.

Link:

<https://www.thegctf.org/LinkClick.aspx?fileticket=j5qj4fSJ4f1%3D&portalid=1>

Type:




Framework for Responding to a Drone Incident

Provides guidelines for first responders in both managing and processing a drone incident. The focus is on the procedures to be followed and the principles of forensic analysis. Examples from drone data are illustrated and an overview of tools that are used in drone forensics are presented.

Link:

<https://informaticoadomicilio.com/wp-content/uploads/2020/03/respuesta-ante-incidentes-drones-interpol.pdf>

Type: 

A Comprehensive Approach to Countering Unmanned Aircraft Systems

Studies from experts are provided from a military and civilian perspective. Defensive and offensive counter-air, cyberspace and space operations are considered, and their use from law enforcement entities and the protection of critical infrastructures is addressed. The legal landscape and potential future threats are also analysed.

Link:

<https://www.japcc.org/portfolio/a-comprehensive-approach-to-countering-unmanned-aircraft-systems/>


Type: 

Protecting against the Threat of Unmanned Aircraft Systems (UAS)

Advice is provided for performing site vulnerability assessments and an overview of action strategies is included. The importance of response planning through laying down precise steps is indicated along with methodologies for increasing awareness.

Link:

https://www.cisa.gov/sites/default/files/publications/Protecting%20Against%20the%20Threat%20of%20Unmanned%20Aircraft%20Systems%20November%202020_508c.pdf?utm_content=148326425&utm_medium=social&utm_source=twitter&hss_channel=tw-3328861337

Type: 

Countermeasures for Aerial Drones

Examines the threat landscape and provides countermeasure challenges, priorities, technologies, emerging trends and best practices. Case studies are also included to provide an insight to the development of counter-UAS policies, practices and procedures.

Link:

<https://uk.artechhouse.com/Countermeasures-for-Aerial-Drones-P2035.aspx>


Type: 

Countering Threats from Unmanned Aerial Systems

Provides a framework for developing a C-UAS strategy without providing detailed information of the individual elements of the plan. Assists security planners to select appropriate measures that will reduce the threat from hostile activity use, taking into account the results of the proposed vulnerability assessment. A practical C-UAS planning checklist is included.

Link:

<https://www.cpni.gov.uk/system/files/documents/40/14/c-uas-branded-doc-public-V4.1.pdf>


Type: 

Counter-Unmanned Aircraft Systems

Provides an overview of UAS technologies and their components. Identifies and describes available C-UAS technologies and divides them in those using sensors and those using other mitigation options (electronic-kinetic). A practical comparison among the different technologies is also included.

Link:

https://www.dhs.gov/sites/default/files/publication/s/c-uas-tech-guide_final_28feb2020.pdf

Type: 

List of abbreviations and definitions

ACI	Airports Council International
ANZCTC	Australia-New Zealand Counter-Terrorism Committee
C-UAS	Counter Unmanned Aerial System
CISA	Cybersecurity and Infrastructure Security Agency
CPNI	Centre for the Protection of National Infrastructure
DCTF	Global Counterterrorism forum
DG	Directorate General
EASA	European Aviation Safety Agency
EC	European Commission
FEMA	Federal Emergency Management Agency
GCDN	Global Cultural Districts Network
GSA	General Service Administration
HOME	Directorate General of Migration and Home Affairs
ISO	International Organization for Standardization
NaCTSO	National Counter Terrorism Security Office
NCPC	National Capital Planning Commission
NCSC	Nordic Council of Shopping Centers
NUSTL	National Urban Security Technology Laboratory
ISC	Interagency Security Committee
JRC	Joint Research Centre
PARAS	Program for Applied Research in Airport Security
SGDSN	Secrétariat général de la défense et de la sécurité nationale
UAS	Unmanned Aerial Systems
UFGS	Unified Facilities Guide Specifications
UIC	International Union of Railways
UNAOC	United Nations Alliance of Civilizations
VA	Veteran Association

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Figure 1. Global terrorism threat level in 01/2020-12/2020 by JRC terrorism database using EMM.
(Background map © OpenStreetMap).....2

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