

## Balancing Urban Security, Accessibility and Urban Quality in 'Heritage Open Space in Transformation'

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### Abstract

*Urban open spaces in a historic context should be considered of great social, culture and economic value and their transformation would develop a sustainable, smart, and future-proof design for coming generations. However, such places of added value should follow design principles for a flexible and upgradable design that can ensure accessibility, urban security, and quality. In defining the “Heritage Open Space in Transformation”, (HOST) as a historic open space of great challenge that is strictly connected with innovative urban change” one should consider HOST as a space of special architectural and historic interest, the character of which can be sensitively preserved or transformed. While tangible barriers are a pressing concern for many city centres, all actions related to it are more likely to be prioritized and embedded in a well-planned open spaces strategy. Proposing good urban design with promotion of sociability and enjoyment, cultural and economic values does mean a high reflection on urban resilience and protection from urban risks. However, to deliver a substantial change of a HOST is considered to be the most pressing need especially in responding to specific urban design matters. The aim of this paper is to show resilience strategies and design to respond to a number of urban and societal risks. It discusses on how European cities that design for good heritage open specs should face main key issues such as accessibility, urban security, and protection. It discusses on promoting a sense of place and security creating smart HOST places while creating a new urban condition for changing lifestyles. Finally, this paper investigates on how the area UNESCO of the City of Florence could respond properly to the evolving need for security that has to be considered as an opportunity to achieve good design and contribute to a sustainable and resilient urban environment.*

**Keyword:** *Heritage Open Space in Transformation, urban security, accessibility, urban quality, urban change, Florence UNESCO Area.*

### Introduction

This contribution has been developed in the framework of the research study on *Urban Security in Public Open Space in Transformation (Year: 2019)*, that deals with urban security in historic environment. It discusses how to produce a coherent urban strategy to maintain the vitality in core areas of great historic value while to create safety/security of urban spaces. Specifically, it first defines the *Heritage Open Space in Transformation, (HOST)* as a “*historic open space of great challenge that is strictly connected with innovative urban change*”. A HOST must be considered in relation to its: (a) *location*; (b) *size and shape*; (c) *surrounding influence*; (d) *utility and use*. It must also be considered for its contextual use: (a) *socialising*; (b) *rest*; (c) *accessibility*; (d) *mobility*; (e) *heritage protection*; (f) *urban safety/security*. (Babalís, 2018).

The research studio stresses how to manage a HOST providing an appropriate balance between the need to create good urban places and accommodate the perimeter safety of sensitive buildings. This contribution tries to find solutions giving priority of spaces to be managed achieving aesthetic continuity, rather than

solutions carefully chosen exclusively from the needs for security. However, the main aim is to identify an urban strategy that can effectively be adopted in the most effective way.

The research has been developed within the valuable Florence UNESCO Area that must preserve and enhance the historic character and properly designed to protect both inhabitants and tourists from urban risks. Design, quality, and safe environment can influence how people can move through and how they can use and enjoy a HOST. When designing for urban security and accessibility that can reduce the opportunity for crime and fear of crime, consideration needs to be given to a safer urban environment to help ensure from terroristic attacks. This paper mainly seeks to find acquired design principles following a methodology of site analysis, identifying the critical sites in Florence core area. It then shows some given proposals on how urban space can be managed to reflect selected sites' character/distinctiveness and respond to the different urban pressures and risks.

## **Background**

In recent years, changing circumstances and contexts are often under the frequency, difficulty, and impact of terror attacks in public open spaces. Placemaking efforts in core areas involving accessibility and heavy pedestrian and vehicle traffic are focusing mainly on sustainable transformation. However, safety/security is a fundamental premise for successful placemaking. To protect people, public spaces, and streets it is crucial to design properly to help reducing urban risks or minimize impacts from vehicular attacks. To this end, urban space in historic environment must be designed for urban quality whilst its protection is essential. Design for security to be successful must be effective but also hidden and smart. Heritage spaces are seeking for innovative solutions for improvement and security preserving historical value and beauty. However, a HOST must be considered as an opportunity for an effective risk reduction, providing a high-quality environment.

### **From public security to urban security**

Jacobs, (1961) is recognized as the pioneer of the environmental approach to safety introducing design principles on 'natural surveillance' in neighbourhood and community to ensure, the so-called 'eyes on the street' to discourage in committing the crime. Newman, (1972;1996) transformed Jacobs' vision of city safety into design tools. Specifically, in defining the 'defensible space' he introduced the 'territoriality' concept and the 'sense of belonging' with recognition of the resident for a greater responsibility and surveillance of the physical environment. In re-introducing Jacob's theory for a proper design of streets, sidewalks, and buildings he recommended the attractive 'image of the neighbourhood' that could avoid illicit crime activities.

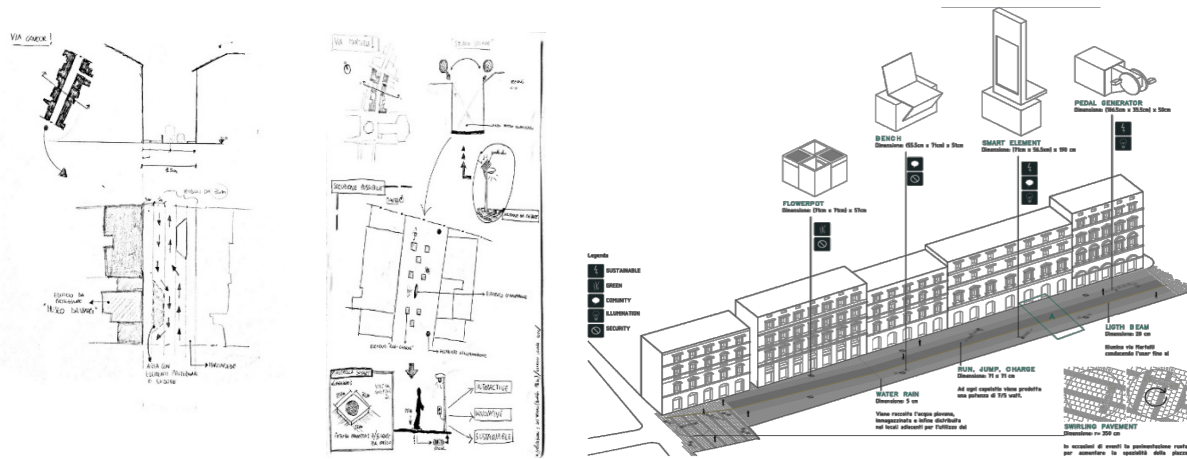
'Crime Prevention Through Environmental Design' (CPTED) is a multidisciplinary crime prevention approach that uses urban and architectural design and management of built and natural environments. The principles of what is known as the first generation CPTED are as follows: (a) *Natural surveillance* to maximize visibility, create landscapes offering clear views to increase ability to observe 'intruders'; (b) *Natural access control* by specific design of roads, sidewalks, building entrances to create a perception of risk; (c) *Territorial*

*reinforcement* to design environment to convey a sense of belonging and clearly distinguishing public from private space; (d) *Maintenance* to maintain the original integrity and control by users of an area. (Cozens, P.M *et al*, 2005) Second generation CPTED is based on more physical design to include social factors as well as active community participation such as: (a) *Social cohesion* aimed at improving social relations between residents, solving local problems, and involving specific groups for the creation of action plans; (b) *Community* to bring people together and create a common sense of belonging; (c) *Connectivity* to connect neighbourhoods physically for inclusiveness. CPTED interventions can be found in the USA and Canada at the neighbourhood-level of planning. Subsequently, the terrorist attacks in New York the 'Federal Emergency Management Agency (FEMA 430, 2007) introduced new protection conceptions identifying different levels of urban security under the following classification: (a) a first level at the neighbourhood/community (b) a second level between building perimeter and security protection (c) a third level at the specific space that needs a major protection. At the current, new concepts on urban security design and a third generation CPTED are developing, more focused on urban-scale design through innovation, sustainability, and green technologies. (UNICRI, 2019). An Urban Agenda for Europe provides recommendations for security in public spaces setting the basis for a shared responsibility among various actors (public and private). (EU,2019:6)

## Methodology

In historic cities the organisation of public open spaces and their safety can contribute not only to improving well-being and quality of life of citizens but can also play a fundamental role in contributing to the spread of the feeling of security. The problem becomes stronger when crime and terrorist attacks generate increasingly difficult to live easily urban spaces such as streets, parking lots, sidewalks, cycle paths, green areas. It is important to find the tools for urban planning and design to best transform public spaces, equipping them properly to be conceived and perceived by users as safe places, easily accessible, liveable, and attractive. However, urban security must be seen as an integrated urban design to create good and safe places. (Little, 2004) In recent years, issues are becoming increasingly topical in cities around the world and terrorist attacks have created fear and discomfort in citizens. Surely, against attacks, cities are equipping with several protection systems. But cities often have a lack of urban strategies, guidelines, and tools for a better implementing regulation for security. Reasonably, the Florence UNESCO Area represents an important tourist attraction and is considered as a potential 'sensitive target' for terrorist attacks.





**Figure 1.** Florence and the “Piazza San Marco - Piazza Duomo Core Zone” under consideration for a more effective security urban design. At the current, existing barriers and planters against urban terrorist are clearly of a poor quality and effectiveness for such valuable urban context. The proposed Site and Landscape Design along “Via Martelli” provides outdoor spaces that welcome citizens and visitors and at the same time improve accessibility. Streetscaping, turntable barriers, smart sitting amenities and lighting can mitigate the impact of perimeter security.

Firstly, the research methodology was mainly based in a comparative case study approach to identify strategies and urban design processes. The key element was to focus on how cities around the world are facing common problems on urban security. The main aim it was to propose a 'Security Design Strategy' as a basis and support for discussion to design. Clearly, the method followed a site analysis of spaces identifying the 'key spaces and key buildings' with a consequent susceptibility to possible attacks. In detail, a number of selected HOST areas are identifying for design with respect of most effectively street furniture giving an account of the way in which the furniture operates *in situ* for security purposes. (Figure 1)

Until recently, the security techniques that have traditionally been applied to public spaces have been based on 'military-style' approaches such as security cordons, barriers, bollards, or planters in ways that often reduce attractiveness of spaces. In the research context it was essential to consider the value of context and try to proceed through soft spatial interventions to seek to make places safer but attractive protecting the cultural heritage. However, street furniture used for security protection in public space must necessarily be placed in the context after a comprehensive site design. Consequently, streetscape elements/sculptured elements/bollards/green elements/water links/security benches/smart sidewalks/turntable vehicle barriers/smart street pavement/smart sitting amenities/protective planters or flowerpots must be used. To help prevent vehicular attacks active barriers such as modular vehicle barriers/concrete blocks/art installations/seats can be used in any type of terrain. (GCDN; 2018)

## Results and Discussions

The Florence’s HOST Areas including squares, streets, nodes, green strips, historic parks, important buildings such as churches and museums are of great value but also considered as sensitive targets to urban terrorist attacks. The research established some criteria subsequently indicated for such locations to be able to

provide guidelines for safety and anti-terrorism urban design, based upon a knowledge of the main critical elements. The problems experienced by the Florence UNESCO Area are typical of a historic centre characterized by heavy pedestrian flows, rising crime and low quality of existing anti-terrorist barriers.

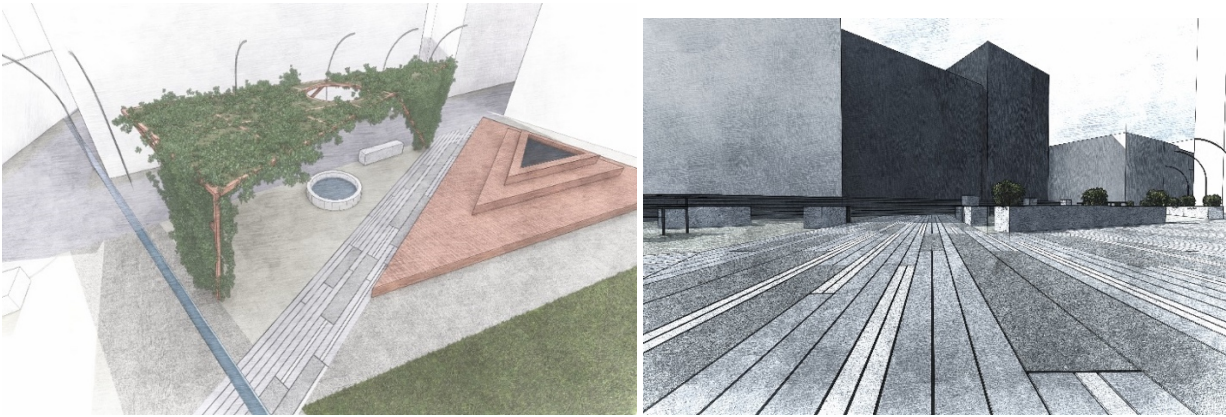
### ***The Proposed Security Design Strategy***

Despite the City Centre of Florence is widely recognized for its historical and architectural value, in recent years City's Centre Community went from a population of mostly local homeowners to renters who were seen as a threat to the stability of the core areas together with a large percentage of empty buildings. The dynamics of population change in the Community had led to increased fear of crime among neighbours, increased feelings of isolation and lack of urban safety mostly perceived as intolerance and incivility in the street related evening activities. Consequently, the terroristic events in USA and Europe core areas need major attention for protection and urban security. (RT,2018 and RT, 2020)

### ***The Proposed Site Security Masterplans***

The advantageous setting of Florence's HOST areas can improve urban change and preserve characteristics of urban life. However, a greater attention is motivated by the following goals: (a) To increase urban security of residents and visitors assigning much of the selected target areas to the control through the use of protection elements; (b) To design a number of pedestrian streets/main axes throughout a masterplan to limit easy accessibility to the focal sites while intensifying walkability and sitting, improving visibility and quality; (c) To improve the image of the squares, small spaces, and nodes through the use of green-blue elements and re-paving grounds for protection. A network of interventions could follow the traces of the Roman City, which presents the highest tourist and citizen flow. Strategic inputs for site security design must also be identified along the rest of the principal axes characterized by the city's key building such as museums, important historic buildings, historic squares, and gardens. Additionally, an important urban context to be considered is the River Arno and its micro-spatiality. Therefore, the 'Security Design Strategy' would need a constant critical consideration and 'contextualisation'.





**Figure 2.** Florence and “Piazza San Firenze – Piazza del Grano Core Zone”. In the area a number of important museums are located, and a big tourist flow goes through. A Masterplan is proposed for standoff and setback to protect and regenerate the key buildings and public spaces. Design site amenities such as furnishings, planters, water features, lighting, and green are proposed while 'hardened street furniture' can easily be integrated into the context with a minimal negative impact.

To this end, the UNESCO Area has been divided into five zones following spaces and streets of heavy tourist flows and favourite destinations for a more detailed studio. A strategic approach to design of the selected target areas is to balance the reduction of risk and the everyday use of the sites. In so doing, to identify specific design principles for protection, urban resilience and preservation of cultural heritage and urban quality, is required to classify many types of interventions. Combination of solutions achieves security goals while creating urban quality. A 'site design' for security reveals a clear expectation for use and effective methods to significantly site access and circulation to reduce a risk. A 'site and landscape design' for security and safety sustainable design creates a usable space to blend with the site's architectural character for accessibility, security, and climate-protected space. (GSA, 2007)

However, there is a clear intention to promote a good site and landscape design within the planning process that could create physical and social improvements. Design against terrorist attacks is “increasingly promoted as integral aspects of urban resilience”. (Coafee J., O’Hare P., 2008: 179)

### ***The target core zones***

In accordance with the City's UNESCO Management Plan and by focusing on core zones the following five target areas have been identified for proposals for site security design and in terms of their physical, functional, accessibility and smart protection: (1) “Piazza San Marco - Piazza Duomo”; (2) “Via Roma - Piazza della Signoria”; (3) “Via Martelli - Piazza della Repubblica”; (4) “Piazza San Firenze - Piazza del Grano - Piazza dei Giudici”; (5) “Piazza Strozzi - Via de’ Tornabuoni”. Understanding the context was useful to propose how security elements and amenities can contribute to both good security performance and long-term focused design. In this contribution only two chosen core zones are briefly described as follows: 1. “Piazza San Marco - Piazza Duomo”: This core axis directly brings to the Florence major monument the *Duomo* and the surrounding square. This zone reveals the most critical checkpoint and needs a major security protection with smart elements such as bollards and planters. The main goal is to minimize site access and conflicts between

pedestrian and vehicles allowing efficient approachability for everyday activity and emergency response while maintaining connections with public transportation systems. 2. “*Piazza San Firenze – Piazza del Grano – Piazza dei Giudici*”: This urban axis brings directly to the River Arno. The creation of a network of new walkable spaces for permeable urban living is needed but also smart solutions to control accessibility and protection from vehicle terrorist attacks. On the other hand, landscape design can create quality by controlling pedestrian circulation, access zones, organising site features provided needed light for pedestrian safety and assist visitors in finding destinations in the evening. A water feature creates a focal point in the square and helps as visual interest. As the surrounding built environment includes several museums, a collapsible paving is proposed to sustain the weight of pedestrian but not this of vehicles, trapping them in the trench. (Figure 2)

## Conclusions

Addressing security design, HOST areas must be considered as an opportunity for a more sustainable and resilient environment providing safer public spaces with a positive impact in everyday life. By promoting a comprehensive security site design can be achieved a successful balance between accessibility, urban quality and available mitigation measures. Security site design can also bring positive changes enhancing surroundings, streetscape while protecting against possible terrorist activity. However, comprehensive design solutions, sustainable techniques and green technologies can be an effective response to mitigate urban security risks.

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## References

1. Babalis, D. (edited by) (2018) *Heritage Open Space in Transformation. Changing Attitudes*, (Altralinea Edizioni, Florence).
2. Jacobs, J. (1961) *The Death and Life of Great American Cities*, (Random House, New York).
3. Newman, O. (1972) *Defensible Space: Crime Prevention through Urban Design*, (MacMillan, New York).

4. Newman, O. (1996) *Creating Defensible Space*, (U.S. Department of Housing and Urban Development Office of Policy Development and Research, Washington).
5. FEMA 430, (2007), *Site and Urban Design for Security, Guidance Against Potential Terrorist Attacks*, 'Risk Management Series', (FEMA, Washington).
6. GCDN Commissioned Research, (2018) *Beyond Concrete Barriers, Innovation in Urban Furniture and Security in Public Space*, (GCDN, Global Cultural Districts Network).
7. NCPC, (2001) *Designing and Testing of Perimeter Security Elements*, (NCPC, The National Capital Planning Commission, D.C).
8. NCPC, (2004) *The National Capital Urban Design and Security Plan*, (NCPC, The National Capital Planning Commission, D.C).
9. Cozens, P.M, Saville G., Hiller D., (2005) "Crime Prevention Through Environmental Design (CPTED). A review and modern" in *Property Management*, Vol.23 No.5, 2005 pp.328-356.
10. Cozens, P.M. (2011) 'Urban Planning and Environmental Criminology', *Planning Practice and Research* 26 - 4: 481-508.
11. UNICRI, (2019) *New energy for urban security. New energy for urban security*, MIT SENSEABLE City Lab.
12. EU Urban Agenda, (2019) *Security in Public Spaces. Orientation Paper*, (EUUA).
13. Little, R. (2004) 'Holistic Strategy for Urban Security', *Journal of Infrastructure Systems*, Vol. 10-2: 52-59.
14. RT-Regione Toscana, (2018) *Toscana Sicura. Libro Bianco sulle politiche regionali di sicurezza Urbana*, (Regione Toscana, Firenze)
15. RT-Regione Toscana, (2020) "Legge Regionale n. 11 19/02/2020, "Norme in materia di sicurezza urbana integrata e polizia locale", (Regione Toscana, Firenze)
16. GSA, (2007) *The Site Security Design Guide*, (U.S. General Services Administration, Washington).
17. Coafee, J., O'Hare P. (2008) 'Urban resilience and national security: The role for planning', *Urban Design and Planning* 161: 173-1