



AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
Urban Planning

Safety and Security of Cities: Towards a Conceptual Framework Appropriate for the Egyptian Context

A Thesis submitted in partial fulfillment of the requirements of the
degree of
Master of Science In Architectural Engineering
(Urban Planning)

by
Nada Aly Moustafa
Bachelor of Science in Architectural Engineering
(Urban Planning)
Faculty of Engineering, Ain Shams University, 2013

Supervised By
Prof. Marwa A. Khalifa
Associate Prof. Ahmed S. Abd Elrahman
Cairo - (2018)



AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING
Urban Planning

Safety and Security of Cities: Towards a Conceptual Framework Appropriate for the Egyptian Context

by

Nada Aly Mustafa Ahmed

Bachelor of Science in Architectural Engineering

(Urban Planning)

Faculty of Engineering, Ain Shams University, 2013

Examiners' Committee

Name and Affiliation

Prof. Rewaida Mohammed Reda

Architecture , Cairo University

Prof. Ghada Farouk Hassan

Urban Planning, Ain Shams University

Prof. Marwa Abo El Fetouh Khalifa

Urban Planning, Ain Shams University

Ass.Prof. Ahmed sami Abdel Rahman

Urban Planning, Ain Shams University

.

Signature

.....

.....

.....

.....

Date: 08 July 2018

Statement

This thesis is submitted as a partial fulfilment of Master of Science in Architectural Engineering, Faculty of Engineering, Ain shams University.

The author carried out the work included in this thesis, and no part of it has been submitted for a degree or a qualification at any other scientific entity.

Nada Aly Mustafa Ahmed

Signature

.....

Date: 08 July 2018

Researcher Data

Name : Nada Aly Mustafa Ahmed

Date of birth : 1-5-1990

Place of birth : Cairo, Egypt

Last academic degree : Bachelor of Science

Field of specialization : Urban Planning and Design

University issued the degree : Ain Shams University

Date of issued degree : 2013

Current job : Teaching Assistant, Faculty of
Engineering, Ain Shams University

Acknowledgement

I would like to show my appreciation and gratitude to my supervisors and mentors; Professor Marwa Khalifa, whom I have always considered as a role model, for giving up her valuable time and for her useful comments and feedback. Ass.Prof Ahmed Sami, whom i consider as my older brother more than my professor, for his continuous efforts to help and advise me.

Second I would like to express my sincere thanks to my beloved family; my parents whom without their continuous love and support i wouldn't have been here, and if the only benefit i would get from this thesis is making them proud that would be more than enough. Special thanks to my sister Shrouk who has been more of a partner in this research than just a support and nothing I can do can ever pay her back for saving me so much time and effort. My thanks are also extended to my dear husband who has always been my backbone and his motivation and support have always pushed me forward.

Finally, special thanks are given to my friends, colleagues and second family in UPD for their support and encouragement; especially my beloved sister Eng. Moureen Nazir who has always been there for me in my ups and downs and for that she will always have a special place, and my dearest friends, Eng. Meriham Kheleg, Eng. Aya Adel, Eng. Eman Hossny and Eng. Ahmed Habib whom without their continuous help and support, i wouldn't have been able to finish this thesis.

Abstract

The need for shelter, safety and security deeply affects our urban environment. Cities witness growing threats to safety and security due to its vulnerability. These threats were not taken into consideration during the city's planning phase, which to a more comprehensive solution in order to be able to face such threats. However, in Egypt, the militarized solution with its security measures was the first to be adopted without any reflection on the legal framework or planning decisions. The militarization and fortification of the city affects its urban form, traffic patterns, pedestrian mobility, and the street life.

Urban security is a major concern, especially against acts of violence that call for mitigation strategies to become a safe city resilient to different types of urban violence. Both the concept of vulnerability and resilience have been increasingly embedded in urban planning and city safety, mainly to describe how cities try to overcome disasters and shocks.

Notably, the environmental design contributing in city safety is not new to urban planning and design as it firstly emerged in Jane Jacobs's book, *The Life and Death of Great American Cities* (1961), where she suggests that a successful city is where a person can feel safe and secure in the streets. This concept has been developed through several theories, which would be reviewed and criticized in this research.

The study examines city safety and security issues and the different urban threats. It discusses urban violence, its different types namely terrorism and crime, their impacts on our cities and the different theories and

strategies of mitigation and response; all within the concept of vulnerability and the risk chain with its three main elements which are; Risk, Outcomes and Response. Eventually, it examines the case study of Cairo after the events of Jan 25, its vulnerability, and the outcomes of violence on the shape of the city and the used responses and mitigation strategies.

Finally, the research came to the conclusion that urban violence is a matter of good urban governance, with the focus on social awareness and community based approaches as a long term radical solution; that might help in reducing the risk factors. In the case study of Egypt most of the outcomes were not directly bounded to violence, but rather a secondary outcome, which mostly resulted from the military oriented approach during the absence of other stakeholder groups from the scene.

Keywords: Urban Violence, Urban Security, Militarization, Urban Fortification.

Table of Contents

Acknowledgement.....	I
Abstract	II
List of Figures	i
List of Tables.....	iii
Chapter 1	
Introduction	1
1.1. Research Problem.....	3
1.2. Research Questions	3
1.3. Aim and Objectives.....	3
1.4. Research Structure:	5
1.5. Methodology:	7
Chapter 2: Vulnerability and Outcomes of Urban Violence and Terrorism.....	
Introduction	10
2.1. City Safety and Security.....	11
2.2. Vulnerability and the Risk Chain	16
2.3. Conclusion.....	34
Chapter 3: Response to the Risk of Urban Violence and Terrorism	
Introduction	36
3.1. Development of Crime Prevention Theories and Strategies:	37
3.3. Conclusion.....	57
Chapter 4: Review of international examples	
Introduction	60
4.1. Case Study Selection.....	60
4.2. High Park, Toronto, Canada.....	63
4.3. Ring of Steel, England, London	69

4.4. US Embassy, Germany, Berlin	74
4.5. Conclusion.....	78
Chapter 5: Case study: Cairo, Egypt	
Introduction	80
5.1 Cairo's Vulnerability to Risk.....	81
5.2. Outcomes of Violence and Terrorism on Egypt Generally and Cairo Specially (Post Revolution and Reclaiming the City).....	83
5.3 Response.....	94
5.4. The Case Study of Downtown	95
5.5. Conclusion.....	101
Chapter 6: Conclusion and Recommendations	
Introduction	103
6.1. Conclusion.....	103
6.2. Recommendations	107
6.3. Further Research	111
References.....	

List of Figures

1. Figure 1 The research questions and objectives matrix	4
2. Figure 2 The methodology chart.....	9
3. Figure 3 vulnerability and risk chain chart	17
4. Figure 4 the levels of risk.....	22
5. Figure 5 the cost of terrorism on the world.....	30
6. Figure 6 scale of response and level of intervention chart.....	34
7. Figure 7 Outcomes of terrorism and crime	35
8. Figure 8 Different aspects of intervention chart	37
9. Figure 9 Time line of crime prevention theories	40
10. Figure 10 Layers of defence	54
11. Figure 11 Crime prevention theories and strategies matrix...	58
12. Figure 12 Proposed vulnerability and risk chain process	59
13. Figure 13 Toronto, Canada	63
14. Figure 14 Toronto's rank in safe cities index	63
15. Figure 15 London, Englan.	69
16. Figure 16 The impacts of an IRA bomb on London City	70
17. Figure 17 the injuries since 1970 due to the terroristic attacks	70
18. Figure 18 the ring of steel 1997	71
19. Figure 19 the ring of steel 1993	72
20. Figure 20 Berlin, Germany	74
21. Figure 21 the entrance to the U.S. Embassy in Berlin	77
22. Figure 22 The crime rate in Egypt	81
23. Figure 23 Egypt ranking in terrorism.....	81
24. Figure 24 Gated communities in Cairo	84

25. Figure 25 Eypatian central Bank in 2015	85
26. Figure 26 Fencing public spaces, El Azhar Park fence	87
27. Figure 27 Fencing Belal's Mosque and park, Nasr City.	87
28. Figure 28 graffittie in mohammed mahmoud st.	88
29. Figure 29 public spaces turned into outdoor cafes.....	89
30. Figure 30 Tivoli Dome Food Court. Source:	90
31. Figure 31 Cairo Festival Mall . source :	90
32. Figure 32 Wadi Degla Sports Club.....	91
33. Figure 33 fence around a residential block, Nasr city.	92
34. Figure 34 Barricades in the middle of the streets	92
35. Figure 35 the five governorates with building violations	93
36. Figure 36 The location of the ministry of interior	95
37. Figure 37 The concrete walls around the ministry interior....	96
38. Figure 38 the security gate in Mansour St. beside the ministry of interior	96
39. Figure 39 EL kasr El Eini wall	97
40. Figure 40 Mohammed Mahmoud st. wall.....	97
41. Figure 41 The Surrounding of the ministry of interior after 2011.....	98
42. Figure 42 Downtown after the reallocation of the ministry of interior.....	99
43. Figure 43 The new location of the ministry of interior.....	100
44. Figure 44 Research Questions Matrix source	106
45. Figure 45 Vulnerability assesment process.....	109

List of Tables

1. Table 1 The Risk Chain in Crime and Terrorism	21
2. Table 2 the features of safe street	42
3. Table 3 Newman defensible space design qualities.....	43
4. Table 4 Types of interdictory spaces	45
5. Table 5 CPTED security design strategies.....	47
6. Table 6 Jon Coaffe security strategies	48
7. Table 7 The UN Habitat Security Strategies.....	49
8. Table 8 The EU-Standards.....	50
9. Table 9 Different Lines of Defense	54
10. Table 10 Different Security Procedures:.....	55
11. Table 11 The case study selection matrix	58
12. Table 12 The response in High park, Toronto	66
13. Table 13 the Ring of Steel	72
14. Table 14 The Pariser Platz	74
15. Table 15 the strategies applied to the US. embassy	76
16. Table 16 Conclusion of the international exampls	79
17. Table 17 Case Study Conclusion	102
18. Table 18 Framework and guidelines.....	110

Chapter 1: Introduction

Introduction

The human's fundamental need is for survival, which includes the need for shelter, safety and security, these needs affects our environment deeply (Maslow, 1987). *"Over the past decade, the world has witnessed growing threats to the safety and security of cities and towns. Some have come in the form of catastrophic events, while others have been manifestations of poverty and inequality or of rapid and chaotic urbanization processes"* (UN Habitat, 2007b, p. 7). Recently urban design and planning had to deal with antisocial behavior that affects our city's safety and security such as terrorism, crime and vandalism, through designing to reduce the opportunities and outcomes of such events on urban form and the appearance of cities. Also ensuring that security design has no conflict with maintaining the amenities and aestheticism of the space (Lang, 2005). City safety is a priority due to its vulnerability and not only because of its density. In addition, it is the political, economic and cultural center (Jacobs, 1961). However, lately cities became militarized and dominated by the security measures (J. Coaffee, 2009). Now the question is what role will planners and designers play in this war?

The contribution of environmental design in city safety emerged in Jane Jacobs's book, *The Life and Death of Great American Cities* (1961). Where she suggested that a successful city is where a person can feel safe and secure in the streets. Urban security has become a major concern especially against acts of violence -urban terrorism and crime- that calls

for mitigation strategies to become a safe city resilient to different types of urban violence.

The concept of vulnerability have become increasingly embedded in urban planning and addressing different safety and security issues, and the use of urban securitization and contingencies planning to minimize the risk. Vulnerability can be better studied through the "**Risk Chain**" and its key components: risk, response and outcome (Alwang, Siegel, Jørgensen, & Tech, 2001; UN Habitat, 2007b).

Even though urban violence and crime may cause injury, death and physical destruction, it also leads to a long-lasting trauma and psychological effect through spreading the feeling of insecurity and fear among citizens. Threats such as terrorism do not target only population but also civilization by attacking the physical environment, especially landmarks and symbolic forms (F.Paizs, 2013). The media plays a critical role in the perception of insecurity in cities that it depends on the amount and flow of information the residents get, and this fear contributes largely to the decline of the urban quality in cities (UN Habitat, 2007b).

This study examines urban violence, its different types - terrorism and crime-, and their outcomes on our cities. It also discusses the concept of vulnerability in relation to the risk chain and its three main components; risk, outcomes and response. It examines the vulnerability of mega-cities and potential targets. The study reviews three international examples with different context: Toronto, London and the US Embassy in Germany by applying the risk management process. Finally, it assesses the safety and security situation in Egypt and the Greater Cairo Region and explores the