

CRIME AGAINST WOMEN: AN ANALYSIS OF THE BUILT ENVIRONMENT IN NATIONAL CAPITAL TERRITORY OF DELHI, INDIA

Charu Dhawan* | Sabir Ali **

*Ph.D Scholar & Urban Planner, A-86, Amar Colony, Lajpat nagar-IV, New Delhi, India.

**Ph.D Guide, Professor & Geographer –Urban Planner, Trilokpuri, Delhi, India.

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ABSTRACT

The present work is an attempt at discovering the correlation between incidence of Crimes against Women (CAW) and the quality of built environment (BE) in the National Capital Territory (NCT) of Delhi. The paper reviews classic theories of crime prevention such as Jacobs's "Eyes on the Street", Newman's "Defensible Space", Appleton's "Prospect-Refuge", Wilson & Kelling's "Broken Windows", Hillier & Hanson's "Space Syntax," & Crowe and Zahm's "Crime Prevention through Environmental Design (CPTED)". The work analyses determinants of BE with focus on physical space and examines how CAW can be prevented through CPTED strategies and tactics. Quoting the examples of how CPTED has been adopted as part of the urban planning process in the United States and Australia, the author recommends that the NCT of Delhi should also set up CPTED committees to work in parallel to the government units for urban planning, and simultaneously create a team of certified protection professionals (CPP) to help make the city safer for women.

Keywords: Built Environments (BE); Crime against Women (CAW); Crime Prevention through Environmental Design (CPTED); National Capital Territory (NCT) of Delhi; Urban planning

About Authors



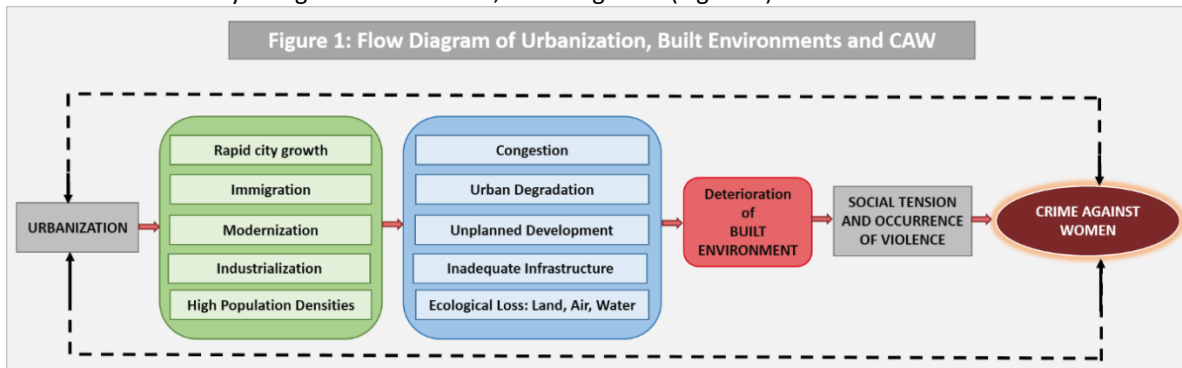
Author Charu Dhawan is an Architect –planner by profession. She has more than twenty years of work experience, out of which fourteen years dedicated to academics as an academican. Having her specialization in *Housing* (M. Planning) she has guided number of students for thesis and dissertation projects both at UG and PG level in Architecture and City Planning fields. She is a lifetime registered member with Council of Architecture (CoA). Her main research areas of interest are safe built environment and affordable housing in urban areas.



Dr. Sabir Ali, Professor of *Urban Planning* having more than forty years of experience in research and development, worked in different organizations in various capacities including Council for Social Development (CSD). He has been associated with number of research projects like – comprehensive planning of small settlements Ranaghat Block-II, West Bengal in 1980, Low cost sanitation program in Uttar Pradesh in 1993, sustainable development in Piparwar, Bihar in 1994, Environmental Hazards of Trilokpuri resettlement colony, Delhi in 2000.

INTRODUCTION

Urbanisation and globalisation resulted in a high degree of immigration into the NCT of Delhi. It has now crossed the threshold level of population, leading to various problems such as inadequate and substandard housing, relatively poor physical infrastructure, inefficient transport services, environmental hazards (in the form of land, air, and water pollution), and ecological damages, which further deteriorate the quality of physical and built environments of the city and give birth to crime, including CAW (Figure 1).



CAW is a universal phenomenon, and poses a severe challenge to national development across all nations. According to a study conducted by the World Health Organization (WHO), at least one among three women worldwide faces physical or sexual violence during their lifetime, and usually from the people they know [1]. McClure and Bartuska [2] stated that built environment (BE) of an area is the outcome of the complex relationship between the area's geographical setup and its existing natural resources, and has a significant impact upon the area's socio-cultural, economical, and technological milieu. In order to understand the impact of BE upon the rise of CAW, the key is to identify the variables. Rama U. Pandey, Yogesh Garg and Alka Bharat [3] claimed that the improvement in built environments can be better managed when there is a quantification of the various elements associated with it. Newman [4] claimed that built environments that are more permanent in nature are comprised of architectural and urban planning features that are ruled by 'defensible space' are safe to live-in.

Literature Review

According to the National Crime Records Bureau of India, the reported proportion of Indian Penal Code (IPC) crimes committed against women in India has increased from 9.2% in the year 2009 to 11.4% during the year 2014, with a negligible dip in 2015 to 10.7% (Table1) [11].

Table 1: Proportion of crime against women (IPC) towards total IPC crimes across India, Year 2009 – 15

Year	Total IPC crimes	Crime against women (IPC cases)	CAW as percentage of total IPC crimes
2009	21,21,345	2,03,804	9.2%
2010	22,24,831	2,13,585	9.6%
2011	23,25,575	2,19,142	9.4%
2012	23,87,188	2,44,270	10.2%
2013	26,47,722	2,95,896	11.2%
2014	28,51,563	3,25,327	11.4%
2015	29,49,400	3,14,575	10.7%

Source: NCRB data; www.ncrb.gov.in

Crime control is the foremost need for urban, social, political, economic, and commercial development of any city. Violence against women in India is escalating every year and the NCT of Delhi has become the epicenter. According to Action Aid [5] reports, there are an alarming number of rape cases reported in Delhi as compared to other Indian cities. Narayanan [6] claims that Delhi ranks highest of any Indian megalopolis in CAW. The NCT of Delhi accounts for 16.2% of the total CAW in the whole country and the crime rate is 27.6 per 100,000 women against

the national average of 14.1 per 100,000 women population (NCRB report 2012). Hence, the NCT of Delhi has acquired the reputation of “Crime Capital of India”.

There are number of studies documented that the places which are dark, lonely, unwelcoming, uncared for, and poorly designed, often result in encouraging crime activities against women Warr [7]. According to Donnelly [8] there is also a direct relation of social variables with the crimes – communities with low income and education see a higher crime rate against women.

Classic theories of crime prevention

Crime prevention through environmental design came in to the spotlight in the 1960s with Jane Jacobs's *The Death and Life of Great American Cities*. Jacobs stressed that some areas have higher crime rates than others owing to their poor planning design. Her work reshaped the way that urban planners and architects thought about urban problems.

Jacobs's Eyes on the Street, 1960

According to Jacobs, cities are an immense laboratory of trial and error, failure and success, in city building and city design. This is the laboratory in which city planning should be learning and forming and testing its theories. Jacobs discussed in depth four qualities that are critical to the healthy development of a city: mixed primary uses, short blocks, aged buildings, and high density of residents. Jacobs's district concept suggests that the edge of an administrative district should not exceed 2.4 kilometers, and that each district should have a minimum population of fifty thousand.

Newman's Defensible Space, 1972

Oscar Newman first made a research-based case in his *Defensible Space: Crime Prevention through Urban Design* to prove that site configuration and building design can be defended against potential crime and fear of crime. The term 'defensible space' refers to a residential environment designed to allow and encourage residents themselves to supervise and be seen by outsiders as responsible for their neighborhoods (National Crime Prevention Institute, 1986). Newman questioned the effectiveness of police control and stressed the important role of informal community control in crime prevention. He also felt that the physical environment should be redesigned in order to strengthen the perception of ownership and to encourage guardianship by legitimate users. Although Newman's defensible space theory was mostly focused on public housing sites, he came up with four crucial factors of physical design relevant to different kinds of projects: territoriality, natural surveillance, image, and milieu.

Appleton's Prospect-Refuge, 1975

Jay Appleton's Prospect-Refuge Theory postulated that prospect and refuge provide the greatest opportunities to 'see without being seen'—which is related to the ability to evade predators but locate prey. “Prospect” was clarified as an unimpeded opportunity to see and “Refuge” was considered as an opportunity for a creature to hide. The ability to see and the ability to hide are important in calculating a creature's survival prospects. The theory postulated that the capacity of an environment becomes a more immediate source of aesthetic satisfaction because of the ability to see without being seen. Appleton contended that a landscape that affords both a good opportunity to see and a good opportunity to hide is aesthetically more satisfying than one which affords neither, and that weakness either in prospect or in refuge may be compensated for by strength in the other.

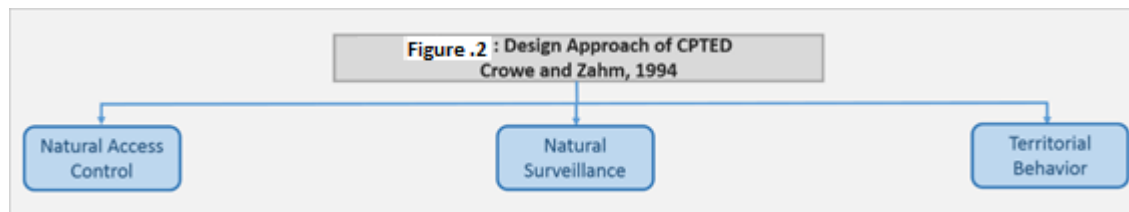
Wilson and Kelling's Broken Windows, 1982

James Q. Wilson and George L. Kelling postulated the theory of Broken Windows that advocates the impact of built environment on crime rate. The theory states that neighborhoods that are facing negligence and decay, and feature uncared-for building exteriors and dilapidated structures are evidence of fear of crime, and residents feel vulnerable in such neighborhoods. The Broken Windows theory has led to initiatives that have sought to reduce violence by restoring deteriorating neighborhoods and sealing or removing vacant buildings and plots.

Crowe's and Zahm's Crime Prevention through Environmental Design (CPTED), 1994

Timothy D. Crowe and Diane L. Zahm solidified the concept of CPTED, and related this theory to the theory of defensible space. The basic tenet of crime prevention through environmental design is that proper design and

effective use of the built environment can reduce the fear and incidence of crime, and thereby improve the overall quality of life. While the tendency is to separate crime and fear of crime from other neighborhood issues, safety and security are components of the quality of life in a neighborhood. That is why the first objective of crime prevention through environmental design is a high-quality aesthetically pleasing built environment—not crime prevention per se, but good physical design. CPTED emphasizes three design approaches: natural access control, natural surveillance, and territorial behavior. The strategies to implement a combination of these approaches were further enhanced by Crowe in 2001 (Figure .2).



Therefore, the objective of this study is to investigate the validation of theories of crime prevention using correlation of elements of BE and incidence of CAW in different districts of Delhi. For this study the presence of vacant houses/structures in different districts of Delhi has been considered.

Analysis of Built Environment

Incidence of CAW and presence of vacant houses in NCT of Delhi

As per the ranking on the basis of incidence of CAW (table 2), West Delhi together with South-West and North-east districts of Delhi seem to be the most distressed, whereas New Delhi and Central Delhi look the safest among all. Comparing the given CAW rate to the built environment of these districts, we find a definite correlation between them. The percentage of vacant houses in South- West and North-West Delhi is 14.1, which is quite high as compared to Central Delhi which is just 6.7 (census 2011). The districts of Delhi can be ranked on the basis of vacant houses as per Census of India 2011 (refer table 3).

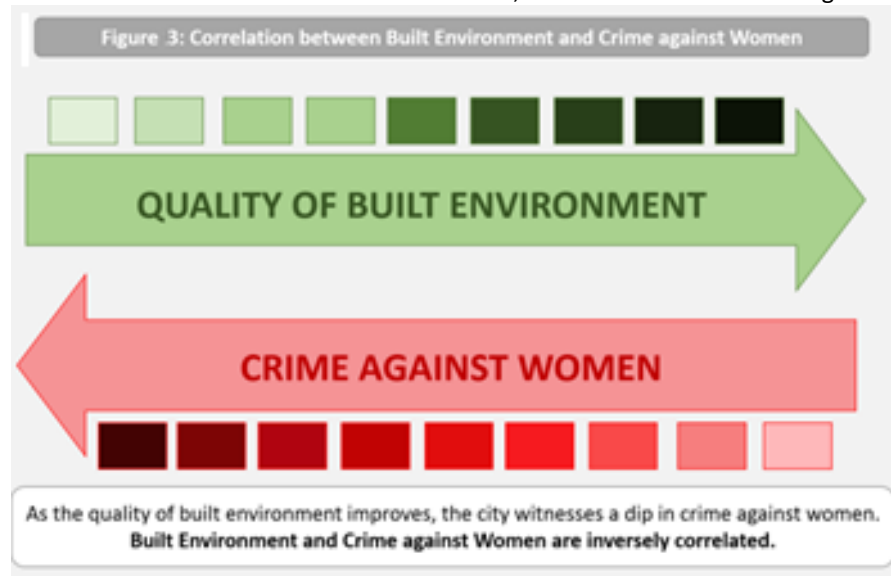
Table 2: District wise ranking of incidence of CAW vs. Total IPC in the NCT of Delhi Year: 2009 - 2013							Table 3: District wise ranking of vacant houses as percentage of total housing in NCT of Delhi. Years 2001 & 2011			
Year	2009	2010	2011	2012	2013		Year	2001	2011	
District	CAW					Ranking	District			Ranking
Central	184	174	173	246	438	8	North-West	13.3	14.1	2
East	461	505	550	672	1392	5	North	6.9	10.3	5
New Delhi	55	69	54	58	163	9	North-East	10.0	7.8	8
North	210	197	212	213	509	7	East	10.8	7.9	7
North-East	522	616	738	737	1524	3	New Delhi	6.5	8.8	6
North-West	363	423	423	505	1085	4	Central	6.6	6.7	9
South	278	367	357	384	1297	6	West	10.6	11.0	3
South-West	374	408	528	646	1488	1	South-West	16.3	14.1	1
West	570	541	700	739	1653	2	South	9.7	10.4	4
Total	3017	3300	3735	4200	9549					
Source: NCRB data, www.ncrb.gov.in							Source: Census of India, 2001 and 2011			

CORRELATION

Spearman’s Rank correlation (ρ) between the percentage of vacant houses and percentage of incidence of CAW exhibits a ‘**moderate positive correlation**’ with a value of **0.50833**. This result supports Wilson and Kelling’s theory of Broken Windows, 1982. As per various theories and studies, vacant houses in the built environment create easy

hubs for criminal activities. Unguarded neighbourhoods do not allow inhabitants to lay their eyes on the streets, and the offenders find easy escape, enhancing the number of victims.

Therefore, there is a clear evidence of inverse correlation between quality of built environments and crime against women. As the built environment deteriorates, it witnesses rise in crimes against women (Figure 3).



RESULTS AND DISCUSSION

Application of CPTED in NCT of Delhi: Prevention of CAW through CPTED strategies

C. Ray Jeffery [40] argued that a new model of crime control needs to develop; one which is based upon prevention rather than on deterrence or treatment. He postulated several distinct capacities of crime prevention programme:

- It will be set in motion before the crime is committed, not after the crime has been committed.
- It will focus on direct controls over behaviour, and not on indirect controls.
- It will focus on the environment in which crimes are committed and on the interaction of the organism with his environment, and not on the individual offender.
- It will be an interdisciplinary effort, based on all disciplines dealing with human behaviour.

Here, the direct control meant the measure which is directly related to the prevention of a criminal act, not indirect controls such as poverty, ego development, education, and employment.

Jeffery indicated that primary prevention is needed in reducing the crime. Primary prevention refers to the preventive measure before the incidence occurs. Paul Van Soomeren's [41] opportunity theory also focusses on prevention before crime, or a proactive approach which implies crime prevention by urban planning, rather than a reactive approach that is prevention after the crime.

Since its inception in the 1960s, CPTED has evolved as a powerful tool to safeguard cities and prevent crimes. Elements of the CPTED approach have gained wide international acceptance due to law enforcement attempts to embrace it. The CPTED term "environment" is commonly used to refer to the external environment of the space. From 1994 through 2002, Sparta Consulting Corporation led by Severin Sorensen, CPP (Certified Protection Professional) managed the US Government's largest CPTED technical assistance and training programme titled *Crime Prevention through Environmental Design (CPTED) in Public Housing Technical Assistance and Training Program*, funded by the US Department of Housing and Urban Development. The Sparta-led CPTED projects showed statistical reductions in self-reported FBI UCR Part I crimes in the range of 17% to 76%, depending on the basket of CPTED measures employed in specific high-crime low-income settings in the United States [42]. Even Australia has legally enforced CPTED measures [43].

Proposed CPTED tactics for NCT of Delhi

The rise in crimes against women in NCT of Delhi proves that the city needs a 360 degree turnaround in its planning, and with immediate effect. It is highly recommended to apply all the CPTED guidelines and directions as a mandatory clause while planning all future constructions in the city as countries such as U.S. and Australia have

set up dedicated councils that issue state-specific updated guidelines every year, CPTED tactics outlined by Crowe in the year 2000 [44] still form the concrete base for the recommendations:

- Neighbourhoods:
 - Minimise the number of entry and exit points on a block
 - Design roadways to discourage through-traffic
 - Maximise the residents' ability to view public spaces
 - Encourage residents' use of public spaces
 - Provide appropriate lighting for streets, paths, alleys, and parks
 - Encourage residents to watch over each other
- Houses:
 - Clearly delineate private property from public space
 - Provide unobstructed views of the surrounding area
 - Ensure entrances are visible and overlooked by the window
 - Avoid landscaping that may conceal offenders
 - Install bright security lights
- Apartment buildings:
 - Provide common spaces to encourage tenant interaction
 - Minimise the number of units sharing a common entrance
 - Equip entrances with an intercom system
 - Ensure hallways are well-lit
 - Install deadbolt locks and peep holes on unit doors
 - Provide children's areas that can be easily observed
- Parking lots and garages:
 - Avoid enclosed, underground, multi-story garages
 - Install bright lights over driving lanes and parking spaces
 - Use paints to increase light levels
- Public spaces:
 - Encourage use by legitimate users
 - Avoid places dark, and/ or hidden areas near activity nodes
 - Install appropriate lighting

CONCLUSIONS

Planning a district, town and/ or city involves a lot of thought as it has a long term impact on the residents for years ahead. The architects and planners initially thought that serene isolated streets with lots of greens to venture around would offer good quality life to the inhabitants. But these became the breeding grounds for criminals and hence led to diminishing security levels. Various theories and studies are now supporting mixed use of land in order to increase the density of population in every area. So ideal land use pattern in the current scenario is a perfect blend of residential, commercial, and industrial sectors that provides an equal ratio of public and semi-public areas, with well-connected roads and minimal vacant land and greens, all allowing end-to-end visibility. It is highly recommended for a country like India to follow the suite of U.S. and Australia, as it is still developing and shows an evident need of reformation of current planning practices.

ABBREVIATIONS USED

- BE: Built Environment
- CAW: Crime against Women
- CPTED: Crime Prevention through Environmental Design
- NCT: National Capital Territory
- CPP: Certified Protection Professional
- HH: Household
- IPC: Indian Penal Code
- MHA: Ministry of Home Affairs
- NCRB: National Crime Records Bureau
- SPUWAC: Special Police Unit for Women and Children
- UN: United Nation

- UNICEF: United Nations International Children's Emergency Fund
- US: United States
- UT: Union Territory

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