

Research Article

Evaluating Crime Prevention Through Environmental Design (CPTED) Principles in Educational Institutions: Occupant Insights

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The research aims to comprehend the impact of Crime Prevention through Environmental Design (CPTED) principles, particularly third-generation concepts, on the well-being, security, and efficiency of occupants within educational institutions. To achieve this, a comprehensive examination of CPTED principles was conducted through literature analysis, followed by administering a thorough questionnaire to various educational stakeholders. The study employs both qualitative and quantitative analyses to investigate how CPTED principles contribute to preventing criminal incidents within educational settings. Expected findings emphasize the significant improvement of safety, security, and well-being through CPTED principles, stressing the importance of involving occupants in campus assessments and community engagement for effective crime prevention. Additionally, the research includes an analysis and comparison of case study results with the work of prominent researchers in the field, who have extensively studied CPTED principles in educational settings. Ultimately, the research aims to provide empirical evidence to guide architects and educational institutions in implementing CPTED principles for enhanced safety and well-being. Finally, the research study investigates whether the findings would contribute to the extension of the 3rd generation of CPTED to ensure its effective use and integration into campus. Also The findings of this paper will assess the safety aspects of student and faculty and showcases whether implemented CPTED principles are giving any impact to avoid campus violence and also recommend any other additional measures to be taken in order to reduce the gap by bringing the issues to the administrations based on the survey and thus it helps the college authorities to find impactful solutions and devise student-friendly frameworks to provide and take necessary initiatives at campuses.

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1. Introduction

Campus violence encompasses various forms, including sexual harassment, ragging, and disputes driven by caste or politics, which tragically can lead to fatalities or severe injuries. Educational institutions, entrusted with the responsibility of nurturing students' awareness of societal ills and fostering their intellect and ethical values, have been grappling to quell the surge of campus violence. The intricate socio-political fabric of India further fuels the factors that ignite such violence. This study delved into an exploration of Crime Prevention through Environmental Design (CPTED) concepts, particularly focusing on the third-generation principles. These principles encapsulate an inclusive blend of psychological and emotional considerations, championing community well-being, and fostering inclusivity. This entails integrating social aspects like community engagement, guardianship, and the maintenance of public spaces. Additionally, it underscores the pivotal role of community involvement and social cohesion in thwarting criminal activities within educational institutions.

The study aimed to comprehend the impact of these principles whether their implementation or absence thereof on the welfare, security, and efficiency of occupants within educational institutions. To achieve this, a thorough examination of the concepts of crime prevention through the built environment and third-generation CPTED principles was conducted through literature analysis. Subsequently, a comprehensive questionnaire was administered to various educational institution stakeholders, encompassing faculty, students, and others, to assess the effectiveness of CPTED principles in preventing crime and eventually to ensure students' and faculty well-being and perceptions of safety.

The study hinges on investigating how the application of CPTED principles, especially those belonging to the third generation, contributes to the mitigation or prevention of criminal incidents within educational institutions. This evaluation was performed via both qualitative and quantitative analyses. The culmination of the study aims to present insights into the effectiveness of CPTED implementation in fostering safe and productive environments. The intention is to equip architects and educational institutions with empirical evidence to make informed decisions regarding the integration of CPTED principles, ensuring the safety and well-being of their occupants. This research draws reference from case studies where CPTED principles have been effectively implemented, enhancing the depth and breadth of the study's approach and assess the effectiveness of safety in other colleges by investigating

and seeking information from the stakeholders such as students and faculty of the educational institutions.

2. Research Questions

- a. how effective CPTED has been on educational institution, and whether it provides safe learning environment for Students and faculty.
- b. Are occupants of institution buildings being aware about the safety system in the context of CPTED is incorporated in the educational campus.
- c. What is the rating of the occupants against CPTED variables with respect to safety.

3. Aim

The aim of this dissertation was to understand whether CPTED strategies are implemented and to investigate the inputs from the users about the impact it creates with respect to campus safety.

4. Research Design

The study adopted a mixed methods approach, and it was conducted in the following three phases:

The first phase was an observatory method by visiting the campus with the checklist derived from the literature study. Identifying the important spaces as per third generation principles and documenting using photography method. The documented pictures are measured with respect to the principles of CPTED and its application in a college campus.

The second phase was a comparative assessment of the relationship between students' and staff perception of safety with the principles of CPTED and its application in a college campus. The data were collected by administering survey questionnaires and conducting in-site observation method. This phase was carried out at both college of multi campus and its residential facilities of SPA, New Delhi and other colleges across India which is differed in terms of compatibility with CPTED.

The third phase is to assess and to rate the existing facilities of the campus by students and faculty and to identify about their difficulties and suggestions to solve their issues. Qualitative methods were utilized to identify the strengths and challenges of applying CPTED approach in the university context and to determine what modifications are needed to increase its effectiveness in academic settings.

5. Scope of Study

This study majorly concentrates on the insights of the occupants of college campus targeting only students and faculty to a larger extent. Typically, the campus safety needs to have clear policy, participation from all stakeholders, law enforcement, budget, etc. Firstly, the term safety needs to or should include both on-campus and on-line aspects of learning. This study will only concentrate only on the psychological aspects with respect to satisfaction level of safety in the campus by relating with the physical planning and functional aspects of the built environment.

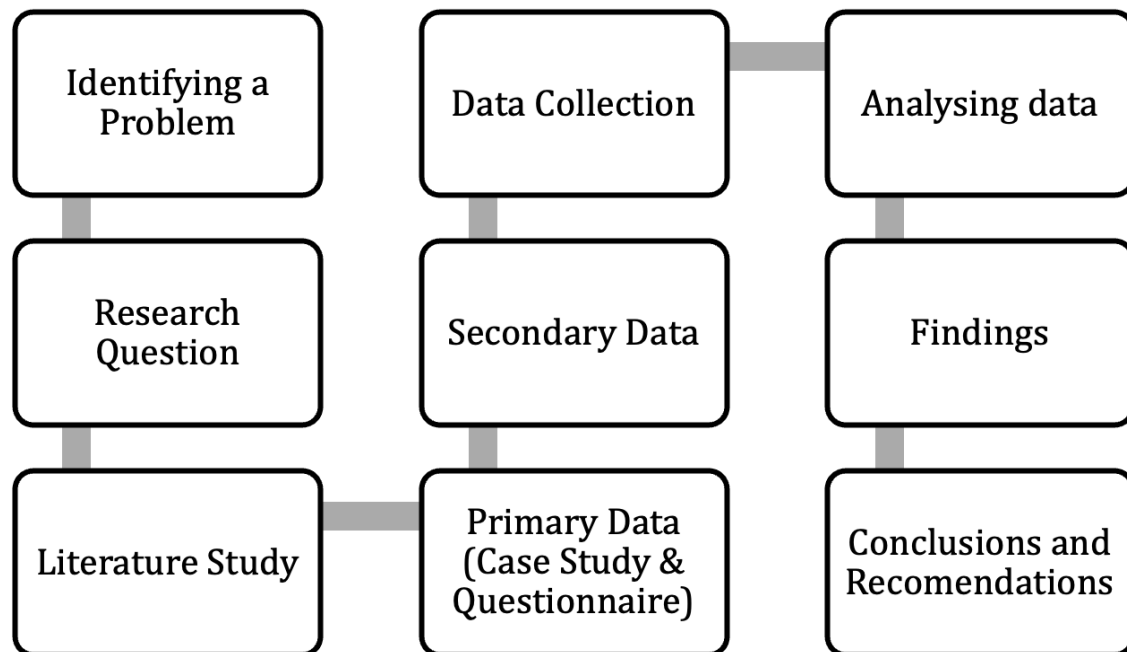
6. Limitations of the study

Typically, the campus safety needs to have clear policy, participation from all stakeholders, law enforcement, budget, etc. Firstly the research study limited to survey the existing scenario of campus considered in the case study without interviewing the administrators of the campus, instead used observation method to track the initiatives which supports CPTED third generation principles. Secondly, the term safety needs to or should include both on-campus and on-line aspects of learning. In this study, on-line aspects of learning are not considered.

7. Research Hypothesis

Assessing Educational Institutions by involving Occupants' insights would improve Safety and wellbeing by bringing awareness about the concept of third generation principles of Crime Prevention through the built environment which reveals and supports physical planning, social and environmental improvements in the educational campus which could prevent campus violence.

8. Research Methodology



Flow chart: Research Methodology

The above chart explains the step by step procedure to be followed for the research, secondly raising research question, thirdly by doing literature study to understand the principles of CPTED and understanding the occupants insights by comparing secondary data from the previous research findings with the primary data collection using questionnaire as a tool. Then analysing the results of the questionnaire and concluding with findings and recommendations.

9. Literature Review

9.1. College Campus

As per study conducted by authors Ankita Singh Gujjar 1 and Simran 2 on topic “Campus Violence: Infringement of Fundamental Rights” which was published in International Journal of Policy Sciences and Law Volume 1, Issue 3. A standard definition of a college campus is “the grounds of a school, college, university or hospital”. Although it can also be referred to as a mind-set or as a physical property (Whitaker & Pollard, 2013). To simplify this debate, a system of levels of where and to whom violence can

take place is necessary. These levels of violence are:

- a. The violence that happens to anyone within the geographical boundaries of campus, regardless of whether a constituent or an outsider is a target or an offender (Whitaker & Pollard, 2013).
- b. The violence that happens between its constituents in their institutional and social roles, outside of its institutional boundaries (Whitaker & Pollard, 2013).
- c. The violence that takes place in the institutional roles even though it happened to constituents outside both institutional boundaries and institutional roles (Whitaker & Pollard, 2013).1489 International Journal of Policy Sciences and Law Volume 1, Issue 3 .
- d. The violence that is inflicted on others beyond their institutional roles and beyond the institutional roles and the institution's boundaries (Whitaker & Pollard, 2013).
- e. Most college authorities agree that the college administration is responsible for the first level of violence. As one moves down the levels, away from institutional roles and responsibilities, the college administrators become less responsible.
- f. Violence is thus a highly debatable concept in terms of levels.g. For example, Analysis of type, level, factors and effects of campus violence are represented

(Table 1- Analysis of type, level, factors, and effects of campus violence)

INCIDENT	TYPE OF VIOLENCE	LEVEL OF VIOLENCE	FACTORS UNDERLYING VIOLENCE	EFFECTS OF VIOLENCE
JAWAHARLAL NEHRU UNIVERSITY	Non-sexual physical attack	Level 1 i.e. violence that happens within the geographical area of a campus.	Political influence	Physical harm, social effect, economic effect, cognitive effect, etc.
JAMIA MILLIA ISLAMIA	Non-sexual physical attack	Level 1	Political Influence	Physical harm, economic effect, cognitive effect.
GARGI COLLEGE, DELHI UNIVERSITY	Bias-related violence	Level 1	Gender, Alcohol and substance abuse.	Social effect, Cognitive effect, Affective reactions.

Figure 01- Analysis of type, level, factors, and effects of campus violence)

9.2 Measures to prevent Campus Violence

(i) Community Involvement: Engaging the community in the design, planning, and management of spaces is a key aspect of CPTED. When residents and users have a say in how their environment is shaped, they are more likely to take an active role in its protection.

(ii) Environmental Design Guidelines: CPTED principles are often implemented through specific design guidelines tailored to the needs and characteristics of a particular community or space. These guidelines help architects, urban planners, and law enforcement agencies incorporate CPTED principles into their projects.

(iii) Adaptability: CPTED is not a one-size-fits-all approach. It should be adaptable to different environments, cultural contexts, and community needs. Flexibility in design and implementation is crucial for its success.

9.3. Overview of CPTED Concept and Principles

Crime Prevention Through Environmental Design (CPTED) has evolved over several decades, with its roots dating back to the mid-20th century. The concepts of CPTED started to gain attention in India in the late 20th century. Urban planners, architects, and criminologists began to recognize the importance of designing environments that deter crime. The 1990s and early 2000s saw a growing interest among Indian academics and professionals in integrating CPTED principles into urban planning and design projects. Indian academics and researchers have contributed to the study of CPTED in the Indian context, discussing its relevance, challenges, and potential impact. CPTED's adoption in India aligns with global trends in recognizing the importance of creating safe, inclusive, and well-designed environments. Several organizations in India such as National Institute of Urban Affairs (NIUA), Safety and Security Society of India (SSSI), Smart Cities Mission (Ministry of Housing and Urban Affairs), Educational institutions like IIT Delhi, Tata Institute of Social Sciences (TISS) Mumbai, India are working towards promoting and implementing CPTED principles to create safer and more secure environments.

9.4. Difference between first, second & Third Generation CPTED Principles

CPTED PRINCIPLES				
s.no	Topic	FIRST GENERATION	SECOND GENERATION	THIRD GENERATION
1	Origin	1960s - 1970s	1980s - 1990s	2000s - Present
2	Concept introduced by	Architect Oscar Newman	Criminologist Timothy Crowe	-
4	Focus	Physical Design	Social Interaction & Management	Holistic Approach
5	Principles	This generation emphasizes the use of physical design elements to deter criminal activities.	In addition, it incorporates social interactions and management techniques.	In addition, considering psychological and emotional factors.
6	Strategies	It includes strategies like natural surveillance (increasing visibility), access control (limiting entry points), and territorial reinforcement (clearly defining private and public spaces).	It introduces concepts like guardianship (having responsible individuals present), community involvement, and maintaining an organized environment.	It emphasizes inclusivity, sustainability, and a deep understanding of the community's needs.
7	Aim	The aim is to reduce opportunities for crime by making spaces less attractive and accessible to potential offenders. This generation mainly focuses on altering the physical environment.	Beyond physical changes, this generation aims to encourage a sense of ownership and responsibility among occupants. By fostering a community that actively watches over the	The objective is to create environments that are not only safe but also conducive to well-being, comfort, and community interaction. Third-generation CPTED goes beyond crime prevention to promote quality of life and community cohesion.

			environment, it helps prevent crime.	
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Table 01 Difference between first, second and Third Generation CPTED Principles

The above table explains how different generation principles are added in various era and the principles and other parameters are added gradually to enhance and achieve better results in the context of various parameters and not just physical design. This research study initiates to evaluate the current scenario of understanding of CPTED Principles in the Educational Institutions among students and faculty by considered the physical design of Educational institution and seeks the inputs of faculty and students that how they are able to relate the principles of third generation principles.

9.5 Influence of CPTED Concept and Principles in India

The concepts of CPTED started to gain attention in India in the late 20th century. Urban planners, architects, and criminologists began to recognize the importance of designing environments that deter crime. The 1990s and early 2000s saw a growing interest among Indian academics and professionals in integrating CPTED principles into urban planning and design projects. Indian academics and researchers have contributed to the study of CPTED in the Indian context, discussing its relevance, challenges, and potential impact. CPTED's adoption in India aligns with global trends in recognizing the importance of creating safe, inclusive, and well-designed environments. Several organizations in India such as National Institute of Urban Affairs (NIUA), Safety and Security Society of India (SSSI), Smart Cities Mission (Ministry of Housing and Urban Affairs), Educational institutions like Indian Institute of Technology Delhi (IIT Delhi), Tata Institute of Social Sciences (TISS) Mumbai, India are working towards promoting and implementing Crime Prevention Through Environmental Design (CPTED) principles to create safer and more secure environments.

S.No	Themes based on	Common Themes studied with respect to CPTED by Researchers	Methodology
1	Principles of CPTED	The literature often discusses the core principles of CPTED, which include natural surveillance, territorial reinforcement, access control, and maintenance.	Researchers explore how these principles can be applied to design safer environments.
2	Effectiveness of CPTED	Studies examine the effectiveness of CPTED strategies in reducing crime and enhancing community safety.	Researchers might analyze crime data before and after CPTED interventions to determine their impact.
3	Design & Planning Strategies	Literature on CPTED delves into the design and planning strategies that align with its principles.	This includes discussions on architectural elements, landscaping, lighting, and the layout of spaces to discourage criminal activities.
4	Psychological and Sociological Aspects	Researchers often explore the psychological and sociological factors that influence crime and how they intersect with physical design.	This might involve examining how environmental cues affect behavior and perceptions of safety.
5	Technological Integration	The integration of technology into CPTED strategies is a growing area of interest.	Studies might investigate how surveillance systems, access control technologies, and data analytics can enhance crime prevention efforts.
6	Cultural and Contextual Adaptation	Literature might discuss how CPTED principles can be adapted to different cultural contexts and urban settings..	This could involve considering the needs and preferences of diverse communities
7	Evaluation and Metrics	The literature might focus on developing standardized metrics .	Evaluation frameworks to assess the effectiveness of CPTED interventions consistently across different studies.

S.No	Themes based on	Common Themes studied with respect to CPTED by Researchers	Methodology
8	Case Studies	Researchers often present case studies that showcase successful implementations of CPTED strategies in various locations.	These case studies provide practical insights into how theory translates into practice.
9	Community Engagement	Many studies emphasize the importance of involving communities in the CPTED process.	Engaging with residents and stakeholders can lead to more effective and sustainable crime prevention strategies

Table 02: List of studied parameters by various researchers with respect to CPTED.

9.6. Researchers Overview about CPTED in current scenario

Crime prevention through environmental design (CPTED) strategies have received new attention and active usage in the planning of school buildings (Fujii et al., 2013). Systematic inquiries of the effects of CPTED in learning environments are still relatively new (Shariati & Guerette, 2019), but advocates hope that the approach will enable educators to succeed in their objective to reduce opportunity for violent behavior while allowing students to feel safe and comfortable (Lamoreaux & Sulkowski, 2020).

Scholars describe these crime prevention strategies as a comparatively cost effective yet meaningful set of interventions to address safety concerns (Vagi, 2018); they represent a less obtrusive alternative to the "fortification" of schools with potential to satisfy the competing goals of securing schools from external threats and students' psychological comfort (Lamoreaux & Sulkowski, 2020; Vagi, 2018). While CPTED strategies are generally considered promising tools to reduce opportunities for crime (Shariati & Guerette, 2019), research on CPTED in learning environments has moved from its potential for crime prevention towards the effects on students' fear of crime or violence at school (Lamoreaux & Sulkowski, 2021). Teenagers' fears are noteworthy because feeling unsafe affects school climate (Perumean-Chaney & Sutton, 2013), students' test scores, and attendance rates (Benbenishty et al., 2002; Laco, 2016; Milam et al., 2010).

10. Data Collection

In this research study, following 5 Data Collection Methods were attempted

- Surveys, quizzes, and questionnaires.
- Interviews.
- Focus groups.
- Direct observations.
- Documents and records (and other types of secondary data, which won't be our main focus here)

11. Secondary Data

Parameters to cover all the three phases to be implemented in primary data which was derived from the literature study are as follows:

Inferences with respect to

11a. CPTED Principles

CPTED has evolved over several decades, with its roots dating back to the mid-20th century. It is a set of principles and strategies aimed at reducing crime and enhancing the safety of communities by influencing the physical and social environment. It is a proactive approach to crime prevention that focuses on designing and managing the built environment to create spaces that are less conducive to criminal activity. Here's a small overview of CPTED concepts and principles:

(i) Natural Surveillance: This principle emphasizes the importance of designing spaces in a way that allows for natural surveillance. It involves maximizing visibility and sightlines to discourage criminal behavior. Examples include well-placed windows, clear lines of sight, and lighting that illuminates public areas.

(ii) Territoriality: CPTED encourages the establishment of clear territorial boundaries and the promotion of a sense of ownership and responsibility among residents or users of a space. When people feel a sense of ownership, they are more likely to monitor and protect their environment, deterring potential criminals.

(iii) Access Control: Limiting access to certain areas can help prevent crime. This principle involves using physical barriers and controls to restrict access to private or sensitive spaces while ensuring easy access to public areas. Techniques may include fencing, gates, or electronic access systems.

(iv) **Maintenance and Management:** Proper maintenance of the environment is crucial for CPTED. Well maintained spaces send a message that an area is cared for and monitored, which can discourage criminal activity. Neglected or poorly maintained spaces may attract criminal behavior.

(v) **Target Hardening:** This involves making it more difficult for criminals to commit crimes by implementing physical security measures such as locks, alarms, and security cameras. While this is a component of CPTED, it is important to balance it with the other principles to avoid creating fortress-like environments.

11b. Researchers Methodology approach identified to incorporate in this study

This research covered the following theme to analyse the data related to CPTED effectiveness in prevention of campus violence and creating safety and increased productivity by seeking insights and analysing the effects from the occupants of Educational Institutions.

- a. Design and Planning Strategies
- b. Psychological and Sociological aspects
- c. Technological integration
- d. Evaluation and Metrics
- e. Case studies
- f. Community Engagement

11c. check list to be followed for Observation method while doing case study

To conduct the observations in a more manageable way, the work was divided into three spatial assignments: campus common areas, campus surroundings, and internal parts of campus buildings. The check-list was used while investigating CPTED indicators in 80 each spatial field. The observed indicators were check-marked and field notes were taken when needed. This method helped to better examine environmental characteristics of campus aside from the campus. The observed indicators were check-marked and field notes were taken when needed. This method helped to better examine environmental characteristics of campus aside from the campus design features specified by college officials.

CPTED Elements	Indicators	Field Notes
Natural Surveillance	Campus Visibility	
	Buildings Visibility	
	Regular Control of Lighting	
Access Control	Main Entrance Control	
	Restricted Access to Residential Buildings	
	Restricted Access to Non-Residential Buildings	
Territoriality	Defining Campus Boundaries	
	Defining Individual Buildings' Boundaries	
	Defining Boundaries between Residential and Non-Residential Areas	
Maintenance	Landscaping	
	Grounds Keeping	
	Regular control of broken fixtures	
Activity Support	Holding Events	
	Existence of Recreational facilities	
	Existence of Gathering Areas	

Figure 02: Field Observation Check List

To gain further insight into the college safety policies and practices, secondary sources of data were reviewed. These data included the official college website issued by the campus safety department. The campus safety webpage provides an overview of the department's mission and the available safety and services related initiatives. To obtain more in-depth information on campus safety programs as well as on the actual campus safety status, physical and environmental features of campus, including lighting, access control, and maintenance. Lastly, campus maps and newspapers were examined.

11d. Parameters for questionnaire survey 01

	Variables	Sources	Year
DV: Campus Crime	Violent Crime Property Crime Violence against Women Crime Other Violations	Clery Reports	2014
IV: CPTED	Natural Surveillance Access Control Maintenance Territoriality Activity Support	Clery Reports Campus Maps	2014

Figure Variables and Data used for Survey 02

11e. Assessment parameters for questionnaire survey 02

Crime and safety are integral parts of Third-Generation CPTED; however, they are linked to other quality of life factors, especially as they satisfy different needs on the satisfaction level with respect to students and faculty wellbeing in college campus.

- Their perception with respect to safety and wellbeing connecting with the physical planning of the campus is very essential to be surveyed, the inputs given by the occupants would reveal information about the workability of spaces are connected to CPTED principles and to assess that they are creating an impact or not.

12. Primary Data

a. To analyse whether principles of CPTED is applied in the Built environment of Institutions Spaces.

This phase was conducted on a college campus to understand how the CPTED approach works in an educational setting. The study sought to identify the strengths and challenges of using CPTED and identify the alterations needed to ensure its effectiveness for college campuses. These objectives could be achieved by observing real-life situations and collecting data on various aspects of the environment.

Campus selected for case study was SPA, New Delhi, because this was recognized as “An Institute of National Importance under an Act of Parliament” in 2015. The current SPA, New Delhi is multi campus

Institution with planning department and architecture department are located at 1 km distance near ITO in Indraprastha Estate in New Delhi. The first-year residential campus is located in SPA Planning department and the SPA Residential Campus and Hostel is located at Maharani Bagh, New Friends colony, New Delhi and a girl's hostel at Indraprastha Estate.

It was observed that SPA, New Delhi has taken necessary initiatives with respect to CPTED principles in the following ways.

i. Code for prevention of sexual harassment in school of planning and architecture, New Delhi document explains the clear agenda, policies and measures to be taken with respect to any issues related to sexual harassment.

ii. Anti Ragging Squads has been constituted as per UGC regulations on curbing the menace of Ragging in Higher Educational Institutions, 2009.

Posters and strict punishment details were highlighted in the form of posters, displayed in the common areas for awareness and to caution about actions to be taken


b. Analysing the existing Built Environment scenario with respect to Safety

This phase was conducted in 2 levels by preparing questionnaire 01 & 02

Sample of Questionnaire 01 are as follows:

<p>This survey is conducted to analyse whether principles of CPTED is applied in built environment of Institutional Spaces</p> <p>Your opinions are valuable to us. Overview of CPTED Principles : The four main CPTED tenets are as follows: Increasing visibility and the capacity to observe activity in a certain space are the main goals of the natural surveillance principle. Potential criminals are less likely to commit crimes if spaces are well-lit, open, and devoid of visual barriers because they know they can be easily spotted. Well-placed windows, unobstructed sightlines, and other elements that encourage natural surveillance</p> <p>7. 1.How do you perceive the importance of institutional safety spaces?</p> <p>Mark only one oval.</p> <p><input type="radio"/> Negligible, as safety spaces are not necessary in educational institutions.</p> <p><input type="radio"/> Essential, as they provide a sense of security and well-being on campus.</p> <p><input type="radio"/> Indifferent, as safety spaces do not impact academic performance.</p> <p>8. 2.How can institutional safety spaces positively impact students' mental health?</p> <p>Mark only one oval.</p> <p><input type="radio"/> By promoting competition and stress among students.</p> <p><input type="radio"/> By fostering open communication and emotional support.</p> <p><input type="radio"/> By segregating students based on their backgrounds.</p> <p>9. 3. .How do people generally react to the presence of institutional safety spaces?</p> <p>Mark only one oval.</p> <p><input type="radio"/> They embrace them as necessary tools for personal growth and development.</p> <p><input type="radio"/> They are indifferent and pay no attention to their existence.</p> <p><input type="radio"/> They consider them irrelevant to their overall college experience.</p>	<p>10. 4. What role does natural surveillance play in ensuring students' safety in institutional spaces?</p> <p>Mark only one oval.</p> <p><input type="radio"/> It increases the number of security cameras to monitor student activities.</p> <p><input type="radio"/> It promotes a secluded and hidden design of safety spaces.</p> <p><input type="radio"/> It encourages the presence of staff and students to observe the areas actively.</p> <p>11. 5. How can the design of safety spaces using CPTED principles positively impact a person's mental well-being?</p> <p>Mark only one oval.</p> <p><input type="radio"/> By offering recreational activities unrelated to safety and security.</p> <p><input type="radio"/> By designing spaces with natural elements and abundant natural light.</p> <p><input type="radio"/> By implementing random entry points to maintain unpredictability.</p> <p>Analysing the existing Built Environment scenario with respect to Safety</p> <p>Your opinions are valuable to us.</p> <p>12. 1.According to you, bright lighting in campus common spaces can lower the likelihood of criminal activity.</p> <p>Mark only one oval.</p> <p><input type="radio"/> True</p> <p><input type="radio"/> False</p> <p>13. 2.The majority of people concur that having obvious signs and directional aids can increase their sense of security and save them from becoming lost.</p> <p>Mark only one oval.</p> <p><input type="radio"/> True</p> <p><input type="radio"/> False</p>
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13. How satisfied are you with respect to the following in your campus Entry & Exit areas ? *



Check all that apply.

	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lighting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Natural or technological surveillance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access Control & Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. How satisfied are you with respect to the following in Open Space & Community gathering space ? *



Check all that apply.

	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lighting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Natural or technological surveillance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical Planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access Control & Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. Analysis

13.1. To analyse whether principles of CPTED is applied in the Built environment of Institutions Spaces and what is the satisfaction level with respect to the occupants about the safety and wellbeing in different zones such as access, surveillance, physical planning and lighting aspects etc. Two types of survey questionnaire were prepared and circulated to the occupants of educational institutions only across India.

- a. Survey form 1 titled as “CPTED Survey- Institutional space”
- b. Survey form 2 titled as “Assessment Level 2 on CPTED in Educational Campus through Built Environment”

The research underwent a random sampling method, the total samples collected were 61 online using google form, the feedback were taken from the occupants of educational institutions only and they were students, faculty , non teaching staff and others contributed their inputs for the survey.

13.2. The questionnaire were filled up by 18 institutions across India as listed below:

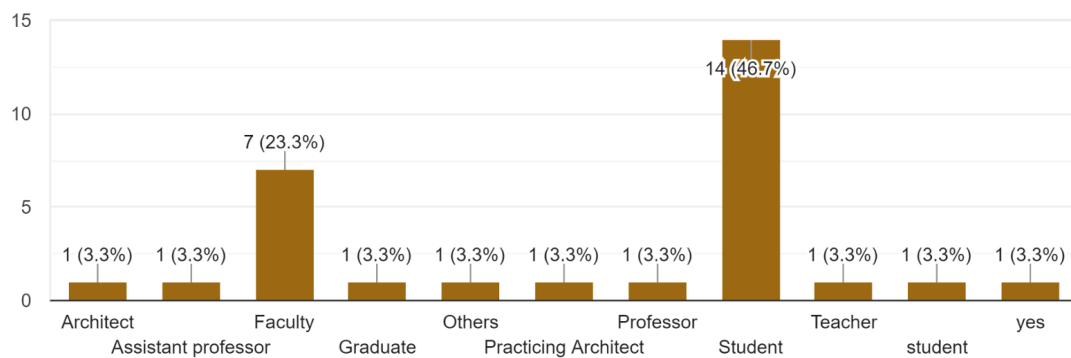
S.No	Name of the Institution	Location	Participants of Survey
1	SPA, New Delhi (Case study considered)	New Delhi	Practicing Architects, Assistant Professors, Faculty, Students,Non Teaching Staff & Others
Others			
2	Nehru Institute of Information Technology and Management	Coimbatore	
3	ITM	Navi Mumbai	
4	MGM's Institute of Management Studies and Research New Mumbai	Kamothe, New Mumbai	
5	LPU	Punjab	
6	Jamia Millia Islamia New Delhi	Jamia Nagar ,South Delhi	
7	DAV Public school	Navi Mumbai	
8	Industrial Design	Architecture Block	
9	Integral University	Lucknow	
10	IGDTUW	Kashmere Gate	
11	NOVATR	Gurugram	
12	Sathyabama	Chennai	
13	Amity School of Planning and Architecture, Amity University Uttar Pradesh Noida	Noida	
14	University school of architecture and planning	Dwarka sec 16	
15	Indo global college of architecture	Chandigarh	
16	Odisha University of technology and research	Ghatikia, Bhubaneswar	
17	Integral University	Lucknow	
18	Delhi University	North campus	

13.3. Sample of questionnaire and its results in the form of graph is attached below:

1. Based on the first question, personal information such as name, their email id was collected for future reference.
2. Question was related to the name of the educational Institutions. Out of various applications of educational institutions, the highest scoring 14 percent of samples were received by students compared to faculty which was 7 percent and other players such as professionals, Professors and non-staff residents were more or less 3.3 %. The total number of random samples collected across the country were 61 numbers only.

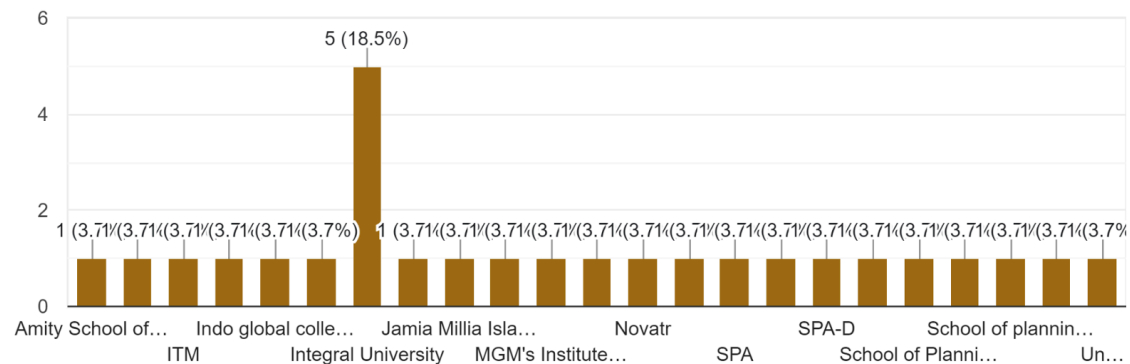
2.Are you a student / Faculty / Others working in Educational Institutions.

30 responses



Bar chart 01: Types of Occupants participated in online survey

3. The next question understand the samples from various institutions across India



Bar chart 02: List of Various Institutions, where the occupants are associated with.

14. The survey 1 were designed under three Phases

14.1 Phase 1: Case study Approach

Checklist

Photographs collected through observation method as per details derived from literature study in the following order.

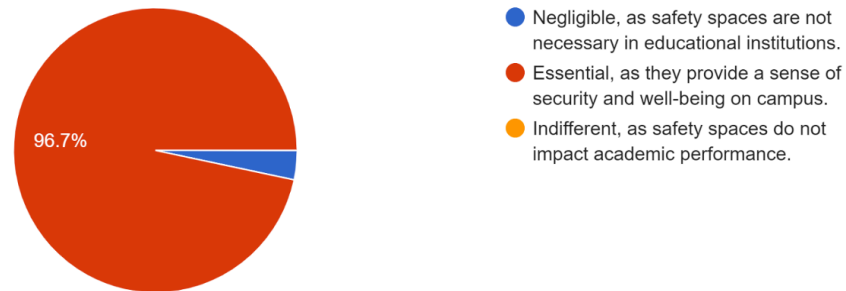
14.2. Phase 02: Survey 1

To analyse whether principles of CPTED is applied in built environment of Institutional Spaces

(i) Questions were related to understand the perception of occupants with respect to safety, impact of mental health in relation with spaces, reactions of existing scenario of educational institutions with respect to safety, awareness and application of CPTED principles in the campus.

1.How do you perceive the importance of institutional safety spaces?

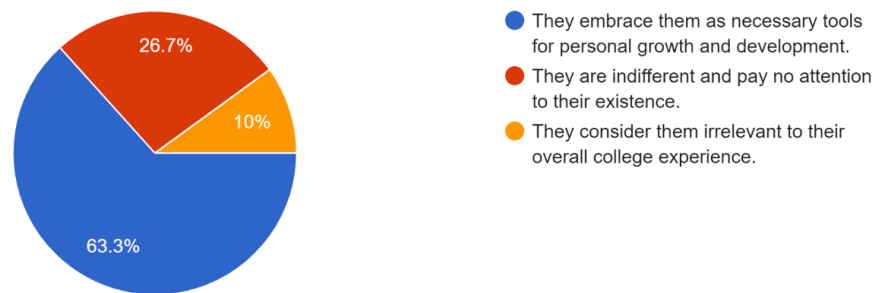
30 responses



Pie Chart 01 : perception of institutional safety spaces

3. .How do people generally react to the presence of institutional safety spaces?

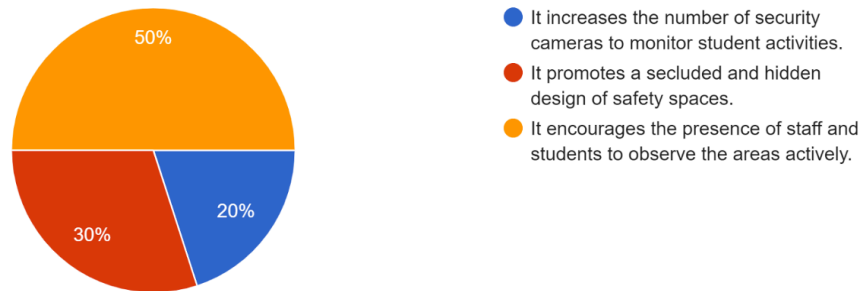
30 responses



Pie Chart 02 : Current Scenario and occupants perception of institutional spaces

4. What role does natural surveillance play in ensuring students' safety in institutional spaces?

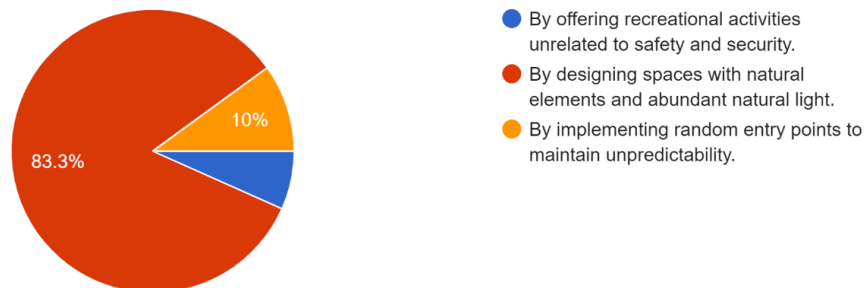
30 responses



Pie Chart 03 : Impact of Surveillance measures

5. How can the design of safety spaces using CPTED principles positively impact a person's mental well-being?

30 responses



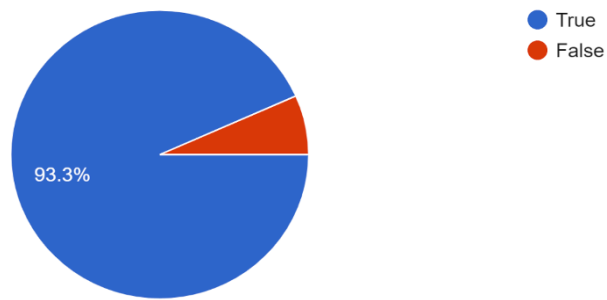
Pie Chart 04 : CPTED Principles and its impact on mental wellbeing of occupants

14.3 Survey 1 *Section B: Analysing the existing Built Environment scenario with respect to Safety*

(i) Questions were related to understand impact of design elements such as lighting, importance of directional aids and results of principles of CPTED implementation in educational campuses.

1. According to you, bright lighting in campus common spaces can lower the likelihood of criminal activity.

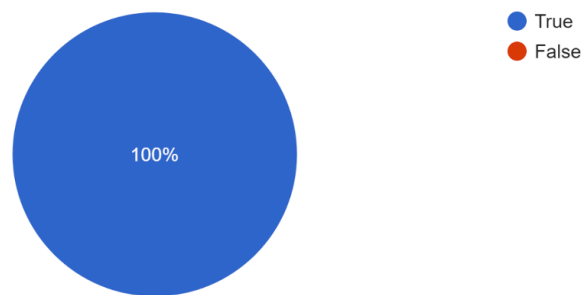
30 responses



Pie Chart 5: Impact of Lighting component in common spaces

2. The majority of people concur that having obvious signs and directional aids can increase their sense of security and save them from becoming lost.

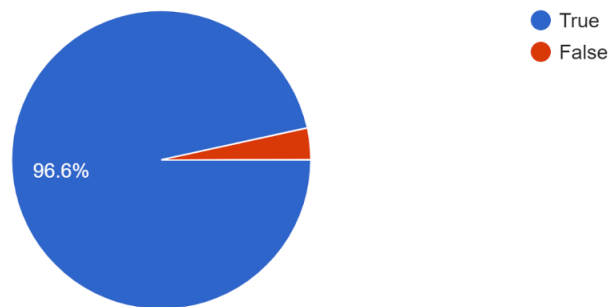
30 responses



Pie Chart 6: Essence of Signs and directional aids

3. Do you feel that incorporating CPTED principles into the design of new buildings and campus renovations is crucial to maintaining a secure environment.

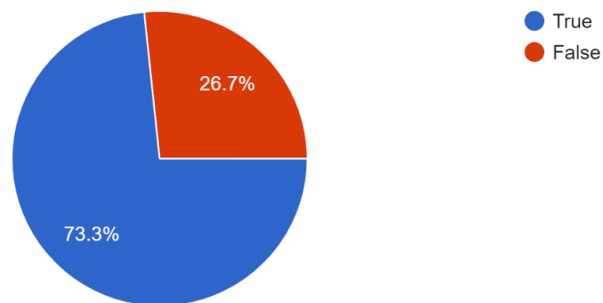
29 responses



Pie Chart 07: Effect of Implementation of CPTED principles in the educational campuses

4.Many people think that adding features of natural monitoring, like big windows looking out onto outside areas, can discourage criminal activity the institutional spaces.

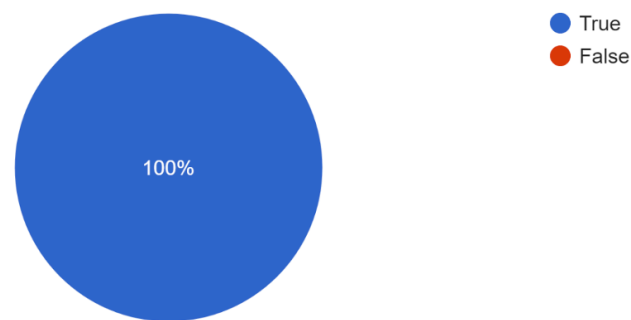
30 responses



Pie Chart 08: Application of Design elements such large window with natural surveillance effects

5.Do you believe that strategically placing panic buttons or emergency call boxes throughout campus can be helpful in urgent situations.

30 responses



Pie Chart 09: Use of Technology advancement to secure safety at the time of emergency

14.4. Survey 1Section C: Insights from Occupants (Community Involvement in improvements)

a. Analysing the Design and planning strategies such as architectural elements with respect to lighting, security and safety environments.

1.What type of lighting would you prefer to see in the institution's exterior areas to improve safety and security?

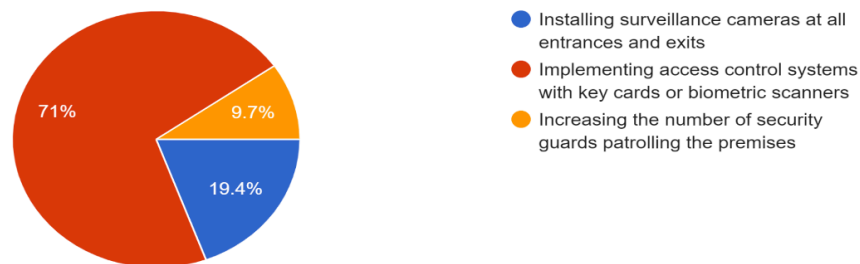
31 responses



Pie chart 10: Safety and Security in the exterior space of Institution

2.Which security mechanism do you think would work the best to stop people from getting into buildings without permission?

31 responses



Pie Chart 11: Security Mechanism

3.In order to promote a safer environment, how would you like to see the institution improve its landscaping?

30 responses



Pie chart 12: Analysis regarding Landscaping in the college campus

14.5. The survey 2

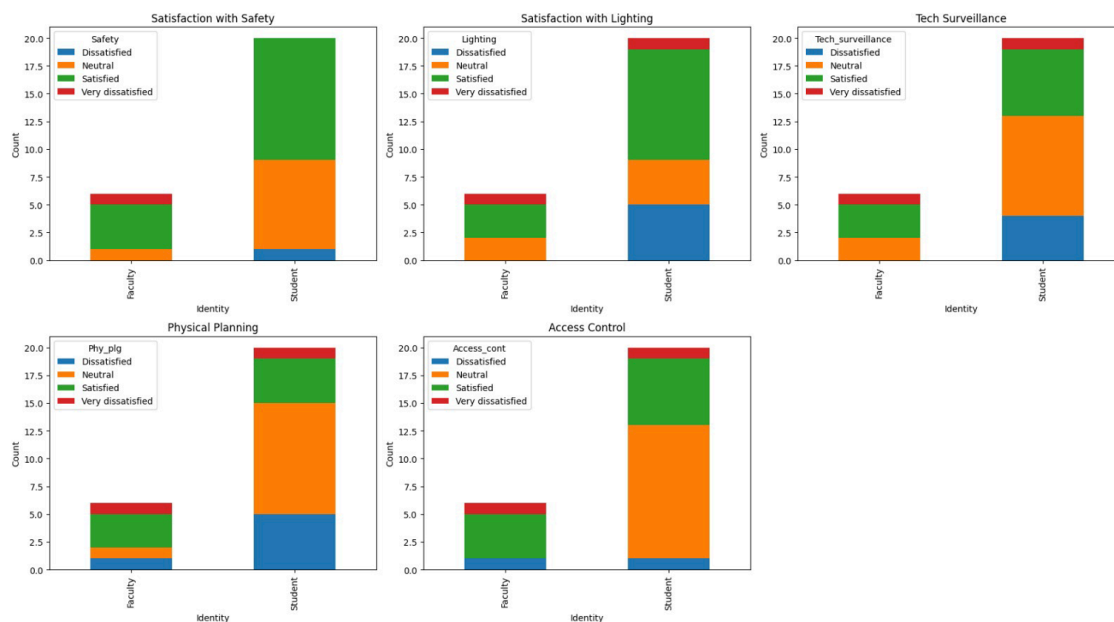
This survey was designed to know about psychological aspects of safety and security was analysed with respect to college Campuses along with the parameters of Safety , lighting, natural or technological surveillance, physical planning and access control and maintenance with illustrations of various functional spaces of institutional campuses.

9.1. Fear of crime experienced in and out of educational campus:

- Robbery Outside the campus gate
- Not safe for girls during night outside the campus
- Attack of Snakes and monkeys
- Inside campus felt safe but not immediate outside of the campus

15. Findings

Entry & Exit area of Institutional campus



Bar Chart 01: Analysed Report with various parameters with respect to entry and exit.

Analysed Bar chart about the satisfaction level with respect to safety, lighting, surveillance, Physical planning & access control with respect to entry and exit areas of educational institutions.

Similar analysis underwent various critical areas such as Indoor areas, common circulation areas, services core areas, open space and community gathering, parking area, common facilities such as library.

15.1. Summary of Suggestions submitted by occupants from various Educational Institutions are as follows:

- Occupants suggested that Implementation of CPTED principles are mandatory, believing that it helps to stop external threats , internal malpractices and threats. Also mentioned, female students and staff would be benefited too.
- Supporting the point, the educational campus must be safe and secure for students and staff.
- Recommended for a checklist to ensure safety and comfort in the campus environment.
- As per their experience , it is informed that CPTED has been overlooked for a long time and the idea developing will bring positive results in securing a safe environment.
- Insisted different levels of safety to be incorporated in different zones based on the requirements and assessments.
- Most important spaces where surveillance is suggested in the dead zones or spaces where less people movement is happening.
- Use of sensory appliances are advised.

Overall, from the survey type 1, it is understood that all the occupants were suggesting to implement CPTED Principles and considered safety and wellbeing with respect to the built environment mandatory. It is believed that their personal growth and development is benefitted. The occupants voted for natural surveillance in the physical planning, requested to incorporate emergency buttons in the system, improvement in security mechanism, and maintenance in the common areas with respect to landscaping.

16. Conclusions

CPTED has been widely adopted in urban planning, architecture, and law enforcement practices to create safer and more secure environments. By focusing on the physical and social aspects of the built environment, CPTED seeks to reduce the opportunities for criminal activity and promote community well-being

This research focuses only A social-ecological model

1. Many campuses have adopted a social-ecological model as a framework for campus violence prevention. A social-ecological model is a system of strategies that identify and change the physical,

social, legal, and economic factors that lead to negative behaviours in an environment (Wies, 2013).

2. The social-ecological model focuses on the interplay of four environmental levels: the individual, the relationship, the community, and the society (Wies, 2013).

Prevention strategies in this model take into account the experiences of the individual with peers and family; their place in the college, workplace, and home as well as the influences of health, education, and social policies.

Overall It is mandatory that CPTED principles are benefitting in the improvement of safety, security and wellbeing of Educational Institutions. Then their assessment of campuses needs to be implemented by involving occupants to scale the services provided and for the improvements to be made. Thus the study ensures that initiatives from educational institutions and involving the community in the development and maintenance phase would majorly prevent crime by following CPTED principles.

17. Acknowledgement

We would sincerely thank the responders of the survey form, my student komal for building a questionnaire and collating information and insights and the support from faculty of School of Planning and Architecture team to introduce this concept and providing awareness about CPTED. Because of this opportunity, I could understand the importance of principles and its impact with the occupants connecting to build environment. Also to researchers who gave reviews for this paper in Qeios platform, based on those review, we could improve this paper further. My sincere thanks to my colleague Mr. Amit Kumar for his guidance and support given in solving my queries.

18. Future Scope of Study:

Future research can examine the different factors which impact crime and safety involving Institution administrators, architects involved in designing the campuses with respect to CPTED and policy board along with occupants in detail.

19. Recommendations:

19.1 Education and Awareness

1. Learning of factual information related to violence, sexual assault, stalking, etc. should be imparted to college students with a special focus on dispelling myths that contribute to these campus evils. 1503

2. Making students understand the university's code of conduct and protocol of response to incidents of violence both on and off-campus contributes to their knowledge of acceptable and unacceptable behaviours (CALCASA, n.d.).

3. Students should be familiarized with both on and off-campus resources i.e. medical, psychological, legal, academic, etc., and how to access them (CALCASA, n.d.). Training programs should be devised and students should be encouraged to participate in these so that they can learn appropriate ways to respond to incidents of campus violence.

19.2 College Administration

i. The effectiveness and efficiency of College administration can reduce the probability of campus violence. Even if the violence occurs, the administration has to be quick and logical in its statements and actions.

ii. The administration should develop response teams consisting of a variety of stakeholders affiliated with the campus. Faculty, students, and off-campus experts should be involved in devising safety measures in line with emerging safety concerns (Mayegun, 1996).

19.3 Student-Teacher Relationship

i. Solidarity in educational institutions can make the way to a safe environment easier. However, students and teachers sometimes have deep divisions amongst themselves. In such an environment, every student has to remain aligned to one group or the other to protect themselves. Not only students, but the division is also present among the teachers. So there is firstly a need for unity among the students as well as teachers association to prevent such violence in the campuses.

ii. There should be a friendly relationship between teachers and students. Informal meetings should be organized to improve communication and the flow of information between students and teachers.

19.4 Undergraduate Grants Commission

i. There is an urgent need to critically analyze the UGC Guidelines. The University Grants Commission issued "Guidelines on the safety of students on and off campuses in Higher Educational Institutions" in 2015. 1504 International Journal of Policy Sciences and Law Volume 1, Issue 3

ii. However, these guidelines contain several problems (Chandra, 2015). According to many, if these guidelines are enforced then it would be asserting the state's notion of morality. Students are submissive

infantile entities requiring permission from authorities all the time

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newspaper_criminal activities in campus

<https://timesofindia.indiatimes.com/city/visakhapatnam/rising-incidents-of-violence-in-schools-colleges-raise-alarm/articleshow/70352721.cms>

Speaking to TOI, noted psychiatrist NN Raju said, “We have o ..

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Declarations

Funding: No specific funding was received for this work.

Potential competing interests: No potential competing interests to declare.