

Preventive Mechanisms via Environmental Structures (PMTES) in Military Cantonment Areas

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Abstract

Preventive Mechanisms via Environmental Structures (PMTES) in *Military Cantonment Areas* presents a detailed and structured analysis of how PMTES can be applied to prevent crime in these unique environments. It addresses a common issue in developing new residential societies, particularly within *military cantonment areas*.

While these communities often have advanced safety systems like CCTVs, security personnel, and well-planned lighting, their peripheral areas are frequently neglected. Streets outside these zones are often poorly lit, cluttered with construction debris, or located near informal settlements, making them prone to criminal activity. This lack of attention compromises the safety of the surrounding areas, even though the central residential zones remain silent.

1. Introduction

The introduction addresses a common issue in developing new residential societies, particularly within **military cantonment areas**. While these communities often have advanced safety systems like CCTVs, security personnel, and well-planned lighting, their peripheral areas are frequently neglected. Streets outside these zones are often poorly lit, cluttered with construction debris, or located near informal settlements, making them prone to criminal activity. This lack of attention compromises the safety of the surrounding areas, even though the central residential zones remain secure.

2. Literature Review

2.1 Understanding Crime

Crime in **military cantonment areas** is often driven by fear and insecurity, stemming from inadequate preventive measures such as poor lighting and insufficient surveillance. While the heart of these areas is secure, the outskirts remain vulnerable to criminal activities. Crime can take place anywhere, including residential zones, nearby streets, or public spaces. Its impact isn't limited to physical harm—it can also deeply affect individuals psychologically, lowering their quality of life. Women and children are particularly susceptible to harassment, such as catcalling, increasing their feelings of insecurity.

2.2 The Concept of a Smart Military Station

A **smart military station** integrates cutting-edge technology and urban planning to enhance safety and minimize crime. These stations combine surveillance systems, controlled entry points, and intelligent environmental design to foster a safe living space for military personnel and their families. Through

proactive measures, such as addressing fear of crime, these stations create safer, more connected, and healthier communities.

2.3 What is PMTES?

****Preventive Mechanisms via Environmental Structures (PMTES)**** is an interdisciplinary approach designed for ****cantonment areas****. It involves collaboration between military planners, security personnel, and environmental psychologists to create spaces that deter criminal behavior. The core strategies of PMTES include:

- 1. Enhanced Visibility:** Ensuring well-lit areas, especially in peripheral zones, with cameras for continuous surveillance.
- 2. Controlled Access:** Regulating entry and exit points to monitor the movement of individuals.
Minimization of Hidden Areas: Reducing spaces that may foster criminal activity, making it difficult for offenders to remain undetected.
- 3. Positive Environmental Influence:** Promoting well-maintained spaces and encouraging community engagement within cantonments to create a sense of collective responsibility and security.

PMTES is tailored to meet the distinct security challenges faced by military stations, safeguarding both military personnel and adjacent civilian populations.

Second Generation of PMTES

The second generation of PMTES places emphasis on the role of social interaction and community involvement in reducing crime in cantonment areas. While physical security measures remain crucial, the sense of community among residents also plays a significant role in crime prevention. Key aspects include:

- 1. Social Cohesion:** Strengthening relationships among residents through community initiatives like neighborhood watch programs, fostering vigilance and shared responsibility for safety.
- 2. Community Culture:** Organizing social events to foster a sense of belonging, as a tight-knit community is more likely to look out for each other.
- 3. Connectivity:** Encouraging interaction between different neighborhoods through events, creating safer environments.
- 4. Threshold Capacity:** Effective land use to prevent vacant or underutilized spaces, which could become hotspots for crime.

Third Generation of PMTES

Building on the second generation, the third iteration of PMTES integrates sustainability and environmental design to enhance crime prevention efforts. This approach seeks to create secure environments that also improve the quality of life for residents, in line with Maslow's hierarchy of needs.

- 1. Basic Level:** Undeveloped areas with minimal social interaction, poor facade maintenance, and high poverty or health issues are more prone to crime.
- 2. Moderate Level:** These neighborhoods experience lower crime rates but lack a strong social fabric. Inadequate infrastructure and healthcare negatively impact security and well-being.
- 3. Advanced Level:** Well-developed neighborhoods have strong social ties and are less prone to crime.

Gated Communities

Although gated communities provide a sense of security by physically separating socioeconomic groups, they may unintentionally foster social isolation and increase frustration, potentially leading to issues like

vandalism. Barriers such as gates and fences, while protective, can deepen divisions between different social groups, sometimes exacerbating crime.

Methodology

The study employed **observational methods**, including visual surveys, questionnaires, and interviews with residents. Data was gathered to evaluate the effectiveness of PMTES in reducing crime, focusing on elements such as territoriality, surveillance, image management, and target hardening. These factors were analyzed to understand how environmental design and social cohesion work together to prevent crime in gated military and civilian communities.

Case Study

The case study focuses on a gated community in **Koregaon Park, Pune**, consisting of 400 units. Despite the high level of development and security inside the community, the underdeveloped surrounding areas contribute to increased crime risk. This case underscores the need to secure both the interior of gated communities and the surrounding areas.

Applications of PMTES Principles

- Lighting:** Adequate lighting is vital for natural surveillance. Well-lit areas reduce fear and make it easier to identify potential threats.
- Territorial Reinforcement:** Clear boundaries through walls or fences instill a sense of ownership and security.
- Access Control:** CCTV and security personnel at entrances provide additional monitoring of who enters and exits.
- Image Management:** Maintaining cleanliness and order in a neighborhood helps deter criminal activity.
- Target Hardening:** Reinforcing security measures in key areas such as entrances and common spaces can lower crime risks.
- Activity Support:** The absence of organized activities can lead to social isolation and increased vulnerability to crime. Engaging community programs can mitigate this risk.

Conclusion

Careful urban planning and thoughtful use of the built environment can reduce crime and fear. Implementing PMTES principles such as natural surveillance, access control, and target hardening during the planning and design phase can significantly lower crime rates. While gated communities provide enhanced security for women, issues like street harassment arise once individuals leave these protected zones. Neglected streets with construction debris, overgrown trees, and lack of proper signage create opportunities for crime. Future research could explore crime patterns around gated communities in different areas to refine design principles for safer communities.

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