



Architects

# Architecture, Urban Planning, and Crime Prevention

Course Number: AIAPDH262

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## **Architecture, Urban Planning, and Crime PREVENTION Final Exam (25 Questions)**

- 1. Which location is considered to be the birthplace of the New Urbanism design movement in the USA?**
  - a. Allensworth, California
  - b. Seaside, Florida
  - c. Eatonville, Florida
  - d. Highland Beach, Maryland
  
- 2. What year was Jeffreys' book "Crime Prevention Through Environmental Design (CPTED) first published?**
  - a. 1963
  - b. 1859
  - c. 1971
  - d. 1965
  
- 3. What is one of the key principles critical for effective traffic signage?**
  - a. Give adequate time for proper response
  - b. Be less than 3'-0" in overall height
  - c. Be as colorful and exciting as possible
  - d. Must be black or brown
  
- 4. How can a sense of ownership be created in a community?**
  - a. Encourage neighbors not to voice their concerns
  - b. Actively choose not to participate in decision making processes
  - c. Avoid building relationships with community members
  - d. Taking responsibility for the upkeep of one's home and shared spaces
  
- 5. How can local authorities educate and connect with residents?**
  - a. Aggressively police the community
  - b. Pull over residents over often to talk
  - c. Host community events
  - d. Stop and Frisk residents frequently
  
- 6. Regarding landscape design and security, what type of vegetation should be planted below all windows?**
  - a. Edible
  - b. Prickly
  - c. None
  - d. Poisonous

**7. When using signage to maintain a semi-private space, which signage is least effective?**

- a. No Trespassing
- b. Private Property
- c. Do Not Enter
- d. Jacuzzi/Swimming Pool

**8. What pairs best with security cameras?**

- a. Glare
- b. Branches from trees
- c. Overgrown shrubs
- d. Adequate lighting

**9. What is the most important visual connection to maintain for a homeowner?**

- a. From the window to the side yard
- b. From the window to the front yard/street
- c. From the window to the neighbors' yard
- d. From the window to the rear yard

**10. Which US state used signage to lower the number of hiker deaths on a trail?**

- a. Florida
- b. Hawaii
- c. Texas
- d. Mississippi

**11. What change of use would benefit a community the most?**

- a. Vacant building to a liquor store
- b. Vacant building to a video store
- c. Vacant building to a grocery store
- d. Vacant building to a candle store

**12. What does biophilic architecture promote?**

- a. Nothing
- b. Improved mental health
- c. Feelings of inadequacy
- d. Anger and frustration

**13. Which is not viewed as an example of activity support?**

- a. Unused shared community spaces
- b. Community cookout
- c. Neighborhood festival
- d. Pool party in the park

**14. What type of climbing vine would be ideal for an external wall in an urban area to prevent graffiti?**

- a. Poison Ivy
- b. Ivy and Virginia Creeper
- c. Jumping Judy
- d. Wall Runner

**15. If a gas station convenience store cares more about profit than staff and customer safety, what will you see driving by?**

- a. No sale signage along the storefront glass
- b. Police cruiser parked in the front
- c. Sale signage covering all of the storefront glass
- d. Someone sweeping the streetfront sidewalk

**16. Which Community Based Program would be the least beneficial to the community?**

- a. Citizen Police Academies
- b. Politics and Patties – Rep your Party
- c. National Night Out
- d. Neighborhood Vacation Watch

**17. When locating CCTVs what should be in the background?**

- a. Something bright
- b. Anything that prevents silhouetting
- c. The sun
- d. Glare from another building

**18. The closer a lamp is to a CRI rating of 100 means what?**

- a. The lamp does not show the true colors of an object
- b. The lamp resembles daylight and shows true colors of an object
- c. The lamp is more incandescent in color
- d. Nothing

**19. What is a “Boxwood (dwarf)” an example of?**

- a. A tree that matures at a height of between 6’-0” to 11’-0”
- b. A type of packaging truck
- c. A tree in the same family as the sequoia tree
- d. A shrub that matures at a height of 3’-0” or less

**20. What is the benefit to utilizing facial recognition cameras or software?**

- a. None, increases crime
- b. Assists in law enforcement identifying criminals
- c. None, makes customers uncomfortable

- d. Store owners can watch their favorite customers

**21. Which landscaping promotes CPTED?**

- a. 8 foot cedar trees along the front yard of a house
- b. 3 foot thorny bushes under a window
- c. 7 foot metal fencing with privacy slats around the entire property
- d. 8 foot sustainable sourced wood fencing along the front yard

**22. When placing exterior lighting, what is one area that must be illuminated?**

- a. The third window from the corner of the building
- b. Main entry/exit points
- c. No areas must be illuminated
- d. Every third window along the side façade

**23. What is an example of a Community Based Program?**

- a. Coffee with Criminals
- b. Neighborhood Vacation Watch
- c. None exist
- d. Learning how to spray paint walls

**24. What is an example of a public space?**

- a. Townhome community playground
- b. Gated community clubhouse
- c. City Park
- d. Living room of a home

**25. What is an example of community ownership?**

- a. Gossiping about the HOA
- b. Ignoring community newsletters
- c. Leading a community project
- d. Doing nothing, yet still complaining

**END OF FINAL EXAM**



## Architecture, Urban Planning, and Crime PREVENTION

' .Mitchell.Ramseur?RA?NCARB.

### Disclaimer Notice:

This course is intended to provide information as an educational benefit for architects, engineers, inspectors, and design professionals. The author has attempted to present a summation of the concepts and published data in a manner that is intended to provide clarification. While the information contained in this course has been reviewed and presented with all due care, the author does not warrant or represent that the information is free from errors or omissions. The author accepts no liability whatsoever for or in respect of any use or reliance upon this publication by any party. Author: Mitchell.Ramseur?RA?NCARB.

### Course Summary

On the world stage the United States has the highest homicide rate among high-income countries.

In 2021, the US had 6.81 homicides per 100,000 people, which was higher than the second-highest rate in the G7 countries. In addition, the US has a higher rate of firearm homicides than other high-income countries and has had more mass shootings and school shootings than any other country.

To make matters worse, a high rate of violent crimes go unreported to the police, especially rape and sexual assault.

To indirectly protect the public, design professionals can take a proactive approach towards reducing crime in their project area by implementing CPTED techniques during the planning and design phases of their projects, especially those in urban and commercial areas.

This course is intended to explain the overall concept of Crime Prevention Through Environmental Design (CPTED) with a focus on its main principles and how they are implemented via urban planning and other means.

### Learning Objectives

1. Understanding the history behind Crime Prevention Through Environmental Design (CPTED) and its purpose.
2. Understanding natural surveillance and access control and how it is implemented.
3. Understanding natural territorial reinforcement and how it is implemented.
4. Understanding maintenance and activity support and how it is implemented.

### Course Structure

- ✓ PART 1 – Crime Prevention Through Environmental Design (CPTED).
- ✓ PART 2 - Natural surveillance.
- ✓ PART 3 - Natural territorial reinforcement.

- ✓ PART 4 - Maintenance and activity support.

## PART 1 - Crime PREVENTION Through Environmental Design (CPTED)

### 1.1 BEFORE CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

Before CPTED arrived up until the 1960s, typical urban planning followed the following principles:

1. Neighborhoods were to be isolated
2. Empty streets meant safer streets
3. Cars took priority over the pedestrian

Jane Jacobs book, “The Death and Life of Great American Cities” was published in 1961 and challenged the urban planning principles of the time and how they were ineffective for self-policing.

### 1.2 FOUNDERS OF CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

The founding minds (past and present) of what is known today as Crime Prevention Through Environmental Design (CPTED), are some names you may be familiar with:

- **1937 - Elizabeth Wood**



Figure.7;Elizabeth.Wood.at.Altgeld.Gardens.Homes.located.on.the.far.south.side.of.Chicago.' . Landmarks;org

First Executive Director of the Chicago Housing Authority (CHA), housing advocate, and planner.

Interesting fact: The CHA was void of corruption and pursued a goal of providing quality, racially integrated housing during Woods’ tenure (1937-1954); Even during the race riots that resulted due to integrated federal housing projects.

- **1961 - Jane Jacobs**



Figure.8;Jane.Jacobs.holding.documentary.evidence.at.a.press.conference.to.help.save.the.West.Village.' .Wikimedia.Commons

An American-Canadian journalist, author, theorist, and activist who influenced urban studies, sociology, and economics. Jane Jacobs’ writings still impact urban planning to this very day.

In their book, "[The Death and Life of Great American Cities](#)", they wrote at length about how physical environments can be used to reduce crime.

- **1973 – Shlomo “Solly” Angel**



An international expert on housing and urban development policy that places a focus on documenting urban expansion and densification in a global sample of cities. Founder of the Human Settlements Planning and Development at the Asian Institute of Technology in Bangkok and publisher of Housing Policy Matters, a comparative study of housing conditions and policies in more than 50 countries worldwide.

Figure.9;Shlomo.is.currently.a. Professor.of.City.Planning.at.the. Marron.Institute.at.NYU.' . marroninstitute;nyu;edu

- **1969;1972 – Oscar Newman**



An architect and city planner that believed architectural and environmental design had the power to increase or decrease crime.

Founder of the defensible space theory and the term “defensible space”, which revolves around ideas of crime prevention and neighborhood safety.

Figure.0;Oscar.Newman.lecture. poster;September.7;2017.' . d;lib;ncsu;edu

- **1971 – C. Ray Jeffery, Ph.D.**



A criminologist that coined the term “Crime PREVENTION Through Environmental Design” or CPTED (“sep-ted”).

Dr. Jeffrey advocated that thoughtful design and effective use of the built environment could reduce the fear of crime and the actual occurrence of crime and violence and improve the quality of life for individuals in the environment. Published a landmark book titled “Crime PREVENTION Through Environmental Design”.

Figure.1;Image.of.Dr;Jeffery. from.The.American.Society.of. Criminology.Awards.' . asc07;org

### 1.3 MODELS OF CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

#### The Two Main Models of CPTED as it relates to Urban Planning

The two main models are rooted in the foundation and principles of the works of Jane Jacobs, Elizabeth Wood, and Shlomo Angel, as mentioned above.

1. **Newman Model** – Defensible space approach and limited to the built environment (this method is more widely accepted and what the majority of CPTED models are based on<sup>1</sup>)
2. **Jeffrey Model** – Multi-disciplinary approach that incorporates biology and psychology and expands beyond the built environment

#### Other Applications of CPTED

**Crowe Model** – Focused on incarceration, specifically offender individuality

**Woodbridge Model** – Geared towards incarceration (prison environments)

### 1.4 HISTORY OF CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

#### 1960s

##### Backdrop & Pivotal Moments

New towns were being built because of the construction effort made by the federal government, innovative guidelines were developed by Elizabeth Wood (though they were never put into practical application) to address security and safety issues through her work at the Chicago Housing Authority (CHA), Jane Jacobs released her paradigm shifting book, “The Death and Life of Great American Cities”, which challenged the urban planning principles of the time and rattled the urban planning community to its core. Around this same time Shlomo Angels’ doctorate thesis, “Discouraging Crime Through City Planning” was published.

Regarding the federal government, their involvement occurred in the form of grants for slum clearance, housing (renovations and new construction), road construction, and urban renewal projects.

The Housing and Urban Development Act of 1965 expanded federal housing programs and created the U.S. Department of Housing and Urban Development (HUD). The act was signed in to law by President Lyndon B. Johnson in 1965.

Examples of new towns that were birthed because of this governmental push were Reston, Virginia, Columbia, Maryland, Jonathan, Minnesota, and Riverside Plaza in Minnesota. Learn more about each below:

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<sup>1</sup> Wikipedia Contributors. “Crime Prevention through Environmental Design.” Wikipedia, Wikimedia Foundation, 18 May 2019, en.wikipedia.org/wiki/Crime\_prevention\_through\_environmental\_design.

## **Reston, Virginia**

Founded in 1964, Reston, Virginia was designed based on the principles of the “Garden City Movement” or GCM.

GCM promotes satellite communities surrounding a central city that is separated by greenbelts. The garden cities contain proportionate areas of residences, industry, and agriculture.

Ebenezer Howard originated the idea as a means to enjoy the primary benefits of the countryside and the city while avoiding the disadvantages presented by both. Locations that used this same model are Letchworth, Brentham Garden Suburb, and Welwyn Garden City located in or near London.

What was emphasized in Reston, Virginia were planned, self-contained communities that merged green space, residential neighborhoods, and commercial development.

The motto of the community was one you have heard before - “Work, Play, Live” or as it is often seen “Live, Work, Play”. Reston was the first 20th-century private community in the U.S. to explicitly incorporate natural preservation in its planning.

This was a landmark decade, as this was the decade of the birth of CPTED in the United States.

## **Columbia, Maryland**

A planned community of 10 self-contained villages with a focus on human values, rather than economics and engineering.

The goal of this community was to eliminate the inconveniences of then-current subdivision design and eliminate racial, religious and class segregation.

## **Jonathan, Minnesota**

A planned community that failed to reach its potential and was eventually annexed.

The vision was to have a large single town center surrounded by smaller villages, which straddled a railway between two lakes, and contained mercantile spaces, businesses and multi-family housing.

## **Riverside Plaza (Minneapolis, Minnesota)**

Initially called Cedar Village, now called Riverside Plaza, this development was unique in that it was developing the “New Town” principles within a downtown area.

Conceptually the town was to be mixed housing. Currently the plaza is composed of six buildings and has 1,303 residential units. The original vision was 12,500 units across four neighborhoods.

Each building is of a different height, intended to reflect the diversity and inclusivity of its population. Ralph Rason the designer took inspiration from his time in various European cities, where people of different ages and levels of wealth coexisted in close proximity.

The complex is listed on the National Register of Historic Places as of 2010. The statement of significance cites its importance as a well-preserved example of urban redevelopment spurred by the U.S. Department of Housing and Urban Development, and that it was the first to receive Title VII funding.

## **1970s**

### **Backdrop**

The Housing and Urban Development Act of 1970 (HUD Act) established a national growth policy and expanded federal assistance for housing. The act also provided grants and loans for community development and urban renewal.

This act created the Community Development Corporation, a non-profit that invested in and developed businesses to revitalize poor communities.

The act also ran the Federal Experimental Housing Allowance Program, which found that housing subsidies may not have the desired effect.

It was the era of the suburbs and the nadir or lowest point for urban areas around the United States, as well as a boom time for highway construction and the development of low-density suburbs on non-gridded street patterns.

This was the first time in the urban history of America that planners put pedestrians first.

This was reflected in pedestrian-friendly main streets with more than ample sidewalks and benches, the enclosed shopping mall (Toledo, Ohio), the international airport, the resort (for vacations, etc.), convention centers (increased drastically in scale), and skywalks (Minneapolis, Minnesota), people movers, and tunnels (in Houston, Texas).

The oil crisis along with gas prices that were skyrocketing, further fueled pedestrian centered designs, concepts, and developments. This was in response to addressing the fact that the primarily used natural resources at the time were not unlimited and very much finite.

The Urban Growth and New Community Development Act or National Urban Policy and New Community Development Act, Title VII provided federal support for the development of new towns by private developers through the department of Housing and Urban Development.

The New Community Development Corporation was formed to distribute and manage bond guarantees to developers.

13 of the "New Towns" were established with HUD funds before ending in 1978. In addition, New York State initiated a related program funding three additional communities. Most of the sites were green field development. Learn more below:

### **The 13 "New Towns"**

#### **St. Charles, Maryland**

It was intended to be composed of five villages — Smallwood Village, Westlake Village, Fairway Village have already been completed or are nearing completion. Piney Reach Village and Wooded Glen Village have not been developed.

Each village contains around three to four neighborhoods.

The community amenities include walking paths, swimming pools, lakes, playgrounds and neighborhood centers. Most of the residents are federal employees employed by some branches of the military or federal government.

The town is serviced by the St. Charles Towne Center, a two-story regional shopping mall.

Areas still under development are a retirement community (60+), and multiple themed restaurants.

#### **Cedar-Riverside, Minneapolis (Reference section 1.4 above, 1960s)**

#### **Jonathan, Minnesota (Reference section 1.4 above, 1960s)**

#### **Gananda, New York**

Gananda is a small "master planned community" (and census-designated place) in Wayne County, New York, United States, approximately twenty minutes outside the city of Rochester. While originally designed to be a city with upwards of 90,000 residents, the removal of Housing and Urban Development (HUD) funding brought about its current design with fewer than 6,500 residents.

The original vision was to have occupied a total of 10,500 acres and have an expected population of over 90,000 after 30 years. The housing stock was to consist of 17,000 houses, 12 neighborhood centers, 1 major regional shopping center, 3 smaller shopping

centers and a system of recreational facilities containing swimming pools, playgrounds and open space for parks and buffer spaces between housing known as "Forever Wild".

The state of New York created an all-new school district for the planned city, Gananda Central School District which had the unique ability to lease school facilities allowing for normal educational usage during school hours and community usage after hours.

Currently, the community has less than 6,500 residents and one educational and community facility, one community pool, one community park, underground infrastructure (Electric, Water, Sewer, Gas and Cable TV) and a water treatment facility.

### **Flower Mound, Texas**

The planned community project was to include elements of the "New Town" movement but was met with resistance from the residents of Flower Mound and eventually was shelved.

### **Harbison, South Carolina**

### **Maumelle, Arkansas**

This community features two recreational lakes (fishing and outdoor eating) surrounded by parkland, thirteen miles of bicycle trails with access to wooded greenbelts, and wooden bridges. The community also has a veteran memorial, "The Maumelle Veterans Memorial" located on the shore of one of the recreational lakes.

### **Newfields, Ohio**

The original vision that was never realized was to have a suburb of 35,000 residents modeled on the ideas of influential environmental planner and landscape architect, Ian McHarg, who believed that each home should have a private garden space, and the overall development should consider the ecology and character of the landscape of the site. The project was shelved or discontinued and most of the land became present-day Sycamore State Park.

### **Park Forest South, Illinois**

One of the region's few planned communities, which included space for residential, commercial, and industrial development and addressed the needs of education, recreation, and faith communities. One of the primary goals was racial integration and "open housing" or housing free of discriminatory practices and policies.

The community has a stop on the Metrol Electric District Line, Nathan Manilow Sculpture Park, industrial park, residential areas with open spaces, bikeways and additional development.

### **Riverton, New York**

The original vision for the community was 2,335 acres of land, housing for over 25,000 people, an 18-hole golf course, 12 swimming pools, 3 artificial lakes, a marina, and commercial and industrial centers.

This planned community did not reach its full potential and currently consists of apartment housing, a combined total of 500 single family residences and townhouses, a golf course, a park with amenities such as a playground, baseball field, walking trail and volleyball court, and a forested nature park.

### **Shenandoah, Georgia**

A community which at one time included 108 residential lots and 170+ residents.

### **Soul City, North Carolina**

The initial vision for the community was to be a collection of diverse and inclusive villages oriented around a core area, with an emphasis on providing opportunities for “minorities” and the impoverished.

In addition, apart from other communities mentioned, Soul City was designed to be a means of reversing out-migration of minorities and the poor to urban areas. Migration would be lessened by the community’s providing jobs, education, housing, training, and other social services.

What was intended was three villages with housing for 18,000 people initially, 24,000 jobs and include industry and retail development for jobs, as well as residential housing and services.

The plan was for residents to work, go to school, shop, receive health care, and worship in town.

Soul City was the first new town to be organized by African-American businesses. McKissick envisioned Soul City as a community where all races could live in harmony.

## **The Woodlands, Texas**

This community is organized into 8 villages which are subdivided into neighborhoods. Each village has community amenities like parks, hike and bike trails, golfing, commercial centers, and a range of residential properties from single family houses to estates.

The Town Center includes shopping and eating facilities, corporate offices, and a waterway modeled after the San Antonio River Walk. The Research Forest district includes a Park and Ride facility and The Woodlands Township Town Hall.

What was initially planned for this community was a conference center, hotels, office parks, retail malls, schools, large distribution centers, and golf courses. Residences would range from moderately priced to expensive.

## **Two Certificate of Eligibility developments were Radisson, New York and Roosevelt Island, New York**

### **Radisson, New York**

Radisson is a planned community with an adjacent corporate park that contains over forty businesses, a golf course, community trails, and a goal to increase to having 3,500 homes and a variety of recreational, educational and community services.

### **Roosevelt Island, New York**

This island community has 3 residential communities (Northtown, Northtown II, and Southtown) with its own newspaper, library, farmer's market, apartments, condominiums, cooperative housing, and exceeds the minimum number of accessible housing units compared to the surrounding communities.

Roosevelt Island has more wheelchair-accessible housing than other neighborhoods. This is due to the island being home to NYC Health + Hospitals.

Northtown contains four U-shaped housing complexes that are 20 stories each which equate to a total of 2,140 apartments. Three complexes are rental apartments, and one complex is for affordable housing.

Each building has a health club. Interesting fact, two of the buildings have skip-stop elevators, which is an elevator system type that encourages users to use the stairs due to the elevators stopping at three-floor intervals. This promotes a healthy lifestyle and allows for more flexibility in the apartment layouts for the floors not served by skip-stop elevators.

Northtown II consists of five buildings, 1,100 rental apartments (affordable and market-rate apartments). Amenities include a garden, outdoor dining area, community center, playgrounds, event venue, and daycare center.

Southtown consists of 9 buildings and 2,000 units (40% are affordable housing). There are also four buildings that are part of the Cornell Tech graduate-school campus and research center, a residential tower with 350 apartments, a conference center and a hotel.

**Schlomo Angels' CPTED concepts gained traction with the US government (Department of Justice), who in turn showed support of said concepts through their wide distribution of the concepts and funding.**

1971 - C. Ray Jeffreys' book "Crime Prevention Through Environmental Design (CPTED)" published.

The phrase Crime Prevention Through Environmental Design (CPTED) was first introduced by C. Ray Jeffrey in his book "Crime Prevention Through Environmental Design (CPTED)". His book outlined the following four critical factors in crime prevention:

- 1) The degrees to which one can manipulate the opportunity for a crime to occur
- 2) The motivation for crime to occur
- 3) The risk to the offender if the crime occurs
- 4) The history of the offender who might consider committing the crime.

Something to note, the first three of these are within the control of the potential victim while the last is not.

The author intended for the publication to be used to inform and guide design and management standards.

1972 - Newman's "Defensible Space – Crime Prevention through Urban Design" is published and discusses crime related to the physical form of housing based on crime data analysis from New York City public housing. This publication changed the nature of crime prevention and environmental design field. Within two years of its publication, substantial federal funding became available to demonstrate and study defensible space concepts.

Defensible space must contain two components:

- 1) Allow people to see and be seen continuously. Why? This diminishes residents' fear because they know that a potential offender can easily be observed, identified, and apprehended.
- 2) Feeling of safety, to encourage people to intervene or report crime when it occurs. Increasing the sense of security in settings where people live, and work encourages people to take control of the areas and assume a role of ownership. When people feel safe in their neighborhoods, they are more likely to interact with one another and intervene when crime occurs. Ask yourself, would you be more apt to help a friend or a stranger?

1977 - C. Ray Jeffreys' book "Crime Prevention Through Environmental Design (CPTED), Second edition" published.

This second edition expands and embraces a more complex model of behavior in which variable physical environments, offender behavior as individuals, and behavior of individual members of the general public have reciprocal influences on one another.

This led to the development of a behavioral model to predict the effects of changing the internal environments (internal and external) of individual offenders.

Oscar Newman and George Rand's study of the crime-environment connection was conducted.

## **1980s**

### **Backdrop:**

Urban planning in the United States was influenced by the New Urbanism movement, which sought to address the issues of urban sprawl and post-World War II suburban development:

### **New Urbanism**

New Urbanism placed a focus on urban planning and design practices prior to the rise of the automobile (pre-1939).

The movement promoted creating a sense of community, development of ecological practices, walkable neighborhoods with a variety of housing and job types, as well as environmentally friendly habits. New Urbanism had the goals of reducing traffic congestion by encouraging people to walk, bike, or take the train and increase the affordable housing stock.

Terms like traditional neighborhood development (TND) and transit-oriented development (TOD) encompass most of the ideals of New Urbanism.

An example can be found in New Haven, Connecticut, where one will find mixed-use streetscapes with corner shops, street-facing porches, and a diversity of well-crafted housing. The neighborhood has the following attributes:

- A discernible center
- Homes are within a five-minute walk of the center
- Mixed housing types (houses, rowhouses, and apartments) to accommodate younger and older people, singles and families, the poor and the wealthy
- Shops and offices of sufficiently varied types to supply the weekly needs of a household, located at the perimeter of the neighborhood
- Each home has a guesthouse in the form of a garage apartment in the backyard of each house. It is also permitted to be used as a rental unit or place to work (for example, an office or woodwork shop).
- Elementary school within walking distance of most homes
- Small playgrounds within 0.10 miles of every home
- Variety of street types that provide a variety of pedestrian and vehicular routes

- Narrow streets, lined and shaded by trees, conducive for pedestrians and bicycles and negating the heat island effect
- At the neighborhood center, buildings are not set back but are placed close to the street, creating a consistent facade
- Parking is relegated to the rear of buildings accessed by alleys and never faces the main streets; This maintains the character of the neighborhood and eliminates the risk of a car related accident from someone backing out of their garage
- Prominent sites or prime real estate at the neighborhood center are reserved for civic buildings. These sites are oft selected as the location for community meetings, education, and religious or cultural activities.

## **Examples of New Urbanism**

### **Prospect New Town in Colorado, USA**

Colorado's first full-scale New Urbanist neighborhood sits on 32-acres and will have a population of approximately 2,000 people in 585 units on 340 lots.

The streets give precedence to the view corridor facing the mountains. The town center (no more than a 5 minute walk from any place in the neighborhood) is surrounded by residential areas, and businesses ranging from restaurants to professional offices.

### **University Place in Tennessee, USA**

University Place in Memphis, Tennessee is a U.S. Green Building Council (USGBC) LEED certified neighborhood.

LEED ND (neighborhood development) standards integrate principles of smart growth, urbanism, and green building. This neighborhood is a 405-unit, 30-acre, mixed-income, mixed use, multigenerational, HOPE VI grant community that revitalized a severely distressed public housing site.

### **The Cotton District in Mississippi, USA**

Cotton District in Starkville, Mississippi consists mostly of residential rental units for college students in addition to restaurants, bars and retail.

### **Seaside, Florida**

Seaside, Florida is considered the birthplace of the New Urbanism design movement and is located on 80 acres of the Florida Panhandle coastline and is a tourist destination. The community has 423 units, retail shops, restaurants, an artist colony, public charter school, interfaith chapel, reparatory theater, amphitheater, a central green space, and beach access.

### **Mueller Community in Texas, USA**

Located in Austin, Texas on 700 acres, the community will be a non-residential development, with retail, 4,600 homes, and 140 acres of open space.

### **Stapleton in Colorado, USA**

Located in Denver and Aurora, Colorado, this community will be home to at least 30,000 residents, six schools, and retail spaces.

### **San Antonio, Texas, USA**

The city of San Antonio, Texas, as part of its new master plan, created new regulations called the Unified Development Code (UDC), which were largely influenced by New Urbanism.

One such influenced feature is six unique land development patterns that can be applied to certain districts:

1. Conservation Development
2. Commercial Center Development
3. Office or Institutional Campus Development
4. Commercial Retrofit Development
5. Tradition Neighborhood Development
6. Transit Oriented Development

Each district has specific standards and design regulations. The six development patterns were created to reflect existing development patterns.

### **Mountain House in California, USA**

Located near Tracy, California, this community will contain 12 villages, each with its own elementary school, park, and commercial area. In addition, a future train station, transit center, and bus system as well.

### **Mesa del Sol in New Mexico, USA**

Located in New Mexico, upon completion it will have 38,000 residential units housing a population of 100,000, a 1,400-acre industrial office park, four town centers, an urban center, and a downtown.

### **I'On in South Carolina, USA**

Located in Mount Pleasant, South Carolina, I'On is a traditional neighborhood development (TND), mixed with a new urbanism styled architecture, whose building designs will show inspiration and influence from the downtown areas of nearby Charleston, South Carolina.

The community has 750 single family homes which are required to have front porches not less than 8 feet in depth.

The community has an immense network of sidewalks, shared public greens and parks, trails, and a grid of narrow, traffic calming streets.

### **Old York Village in New Jersey, USA**

Located in New Jersey, this community prioritizes farmland preservation and has permanently preserved more than 7,000 acres of farmland. This community has a variety of housing types, neighborhood commercial facilities, an elementary school, civic uses, and active and passive open space areas with the preserved agricultural land surrounding the planned village.

### **Civita in California, USA**

This village is in the Mission Valley area of San Diego, California, and is organized around a community park. The vision is to have 70 acres of parks and open space, 4,780 residences (including affordable units), a retail center, and an office/business campus.

The village implemented many green building practices that support innovation and test sustainable strategies that reflect the interdependence of environmental, economic, and community health.

### **Del Mar Station in California, USA**

A transit-oriented development (TOD) in California, with 347 apartments (including affordable units), a retail center linked with a network of public plazas, paseos, and private courtyards.

The TOD project is built above a multi-level subterranean parking garage, with 600 spaces dedicated to transit.

## Examples of New Urbanism principles outside of the United States

New Urbanism is akin to the Urban village movement in Europe; Both occurred at similar times and share many of the same principles, although urban villages have an emphasis on traditional city planning.

In Europe many brown-field sites have been redeveloped following the models of the traditional city neighbourhoods rather than Modernist models. There are many developments around the world that follow New Urbanist principles to a greater or lesser extent:

### Europe

#### Poundbury in England

Located in England, the community has a population of 6,000, multiple businesses, two primary schools, and pedestrian and public transport links.

#### Jakriborg in Sweden

Located in Sweden is a community with over 500 units and has a variety of housing types to accommodate singles, students, families, elderly, and a mixture of incomes. Vehicular traffic is only permitted on the main street, and adjacent streets are only for pedestrians. All parking is done at the perimeter of the community and not within. Amenities include supermarkets, retail space, hotels, restaurants, and a mall.

#### Brandevoort in the Netherlands

Located in the Netherlands, the community has 6,000 homes, a central urban core consisting of 3 industrial estates. Brandevoort is hailed as the best example of New Urbanism in the Netherlands because planners combined traditional Dutch planning with a post-modern aesthetic.

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»• .the.cornerstones.of.Dutch.planning.(i.e.compactness.by.intensive.land\_use? mixed.housing.in.type.and.tenure?clear.zoning.of.functions?maximum permeability.for.slow.traffic?counteracting.traffic.in.residential.areas.by.a.hierarchal.road.system.and.including.surface.water.and.the.drainage.system. from.the.beginning) - [Snail.In.The.City.Blogspot](#)

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### **Fonti di Matilde in Italy**

Located in Italy is an example of New Urbanism principles applied to a resort community. There are public spaces and private courtyards and gardens integrated into the landscape.

### **Kartanonkoski in Finland**

Located in Finland, this community has around 4000 inhabitants with curving street delineations and more organic structures and shapes.

Houses and apartments (built using prefabricated concrete construction) are arranged mostly in terraces with children's play sprinkled throughout the community. Shared green spaces can be found throughout and contribute to the garden village ambience.

Vauban and its surrounding city Freiburg serve as centers for innovation integrating solar roofs, carbon neutral buildings, Passivhaus, and point-access block single-exit apartment blocks into the fabric of New Urbanist architecture and neighborhoods.

### **The Americas**

#### **Ciudad Cayala in Guatemala**

Located in Guatemala City, Guatemala, the community consists of 350 shops, 650 residences, and major civic buildings and institutions, which reflect the architectural identity of the region, especially the central plaza.

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»Paseo.Cayalá's.small.urban.blocks?walkable.streets.and.boulevards?and.public.plazas.promote.social.interaction.among.residents.and.visitors; [CNU](#)

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The community also contains a university campus, academies specializing in foreign languages, visual and martial arts, a pre-school, hotel, health facilities, and co-working office spaces—all in a walkable street network.

#### **Mahogany Bay Village in Belize**

Located in Belize on a 59-acre site, the village is considered a New Urbanism resort and residential community.

The village includes a hotel, exclusive private residences, and a retail town center with shopping, dining, all upscale amenities associated with a 4-star resort, saltwater pool with outdoor bar, private cabanas, and al fresco spa services.

### **Orchid Bay in Belize**

Located in Belize, this is eco-conscious community in the Caribbean that blends the infrastructure of a town based on the principles of “New Urbanism” with the amenities of a resort.

### **Las Catalinas in Costa Rica**

Located in Costa Rica, this 21 acre community is a compact, walkable beach town, free of automobiles. There is also an extensive network of trails for hiking, biking, running, competitions or just relaxing. Amenities include hotels, apartments and houses with private pools.

Nearly all the buildings are located on a small plaza or park, and the properties support residences, guest rooms, and hotels.

### **Cornell in Canada**

Located in Markham, Ontario, Canada, Cornell was designed with walkable neighborhoods, density to support public transit, a variety of housing types and retail. Live-work units are strategically located on a transit corridor which forms the central spine upon which several neighbourhoods converge.

Side Note: The Town of Markham has a community-based Road Watch Program that addresses the public's concern over dangerous and aggressive driving practices. The Road Watch Program gives residents an opportunity to report aggressive and unsafe driving to the police.

The community has around a thousand lots—townhomes, semi-detached, and detached homes, all with garages and laneways at the rear.

Amenities include a hospital, a state-of-the-art community center, schools, and retail. There are also parks, two of which are set up with outdoor ice rinks during the winter. Future plans include a massive park of over 30 acres.

## **Africa**

### **Triple Point in South Africa**

Located in East London, in the Eastern Cape province it is a comparable mixed-use development.

The development contains three apartment complexes with over 30 residential sites as well as residential and office spaces.

- By the 1980s, the defensible space principles of the 1970s resulted in being somewhat effective. The defense space principles worked best in the residential areas, more notably where residents were relatively free to respond to cues to increase social interaction.

Defensible space design tools were observed to be much less effective in institutional and commercial areas.

In response to the above, Newman and others worked to improve defensible space by adding CPTED-based features. In addition, they shifted their focus away from the ineffective aspects of defensive space.

Contributions to the advance of CPTED in the 1980s included:

- The "broken windows" theory (by James Q. Wilson and George L. Kelling in 1982); The theory explored the effect that visible deterioration and neglect in neighborhoods have on an individual's behavior.

The Broken Windows theory may go hand in hand with CPTED. Crime is attracted to the areas that are not taken care of or abandoned. CPTED adds a feeling of pride and ownership to the community. With no more "broken windows" in specific neighborhoods, crime will continue to decline and eventually fail to occur.

Due to the above theory, property maintenance was added as a CPTED strategy on par with surveillance, access control, and territoriality.

- "Environmental Criminology" published in 1981, by Patricia and Paul Brantingham

The publication makes the assertion that a crime occurs when all essential elements are present.

The elements being a:

- 1) law
- 2) an offender
- 3) a target
- 4) a place

These are stated as "the four dimensions of crime," with environmental criminology placing a focus on the last of the four dimensions "place".

- "Situational crime prevention " approach developed by criminologists Ronald V. Clarke and Patricia Mayhew, which focuses on reducing the opportunity for an individual to offend by improving the design and management of the environment surrounding them
- CPTED training programs developed by criminologist Timothy Crowe

## 1990s

Urban planning in the United States saw the technical and political process of designing and developing land use and the built environment take place. This included air, water, and the infrastructure that passes into and out of urban areas.

This equated to being a huge benefit for the largest American cities and for the cities of the Midwest.

The growth of cities was determined by three of the following trends:

- (1) cities with strong human capital bases grew faster than cities without skills
- (2) people moved to warmer, drier places, and
- (3) cities built around the automobile replaced cities that rely on public transportation.

Throughout the 80s and 90s, local governments spending was associated with slower growth, unless that spending was on highways.

- “Criminology: An Interdisciplinary Approach” published in 1990, which assumes that the environment never influences behavior directly, but only through the brain. Any model of crime prevention must consider both the brain and the physical environment.
- “Crime PREVENTION Through Environmental Design” published in 1991 by criminologist Tim Crowe and Lawrence Fennelly
- Launch of the US Government’s largest CPTED technical assistance and training program titled Crime PREVENTION Through Environmental Design (CPTED) in Public Housing Technical Assistance and Training Program

A curriculum was developed for public and assisted housing stakeholders, and follow-up CPTED assessments were conducted at various sites. (1994 – 2002)

- »Creating.Defensible.Space, Institute for Community Design Analysis, Office of Planning and Development Research (PDR), US Department of Housing and Urban Development (HUD)” published by Oscar Newman in 1996
- Article published by Greg Saville and Gerry Cleveland in 1997 encouraging CPTED practitioners to consider the original social ecology origins of CPTED, including social and psychological issues beyond the built environment.

## **2000s**

Urban planning mirrored the same stance as the 1980s and 1990s with the addition of and intense focus on sustainability and green building practices (via USGBC and LEED) because of the perils of climate change.

There was also more suburban sprawl along with the promotion of initiatives like smart growth and transit-oriented development (TOD).

Greater emphasis is placed on community involvement and participation in planning processes.

- Law enforcement embraced the elements of CPTED in 2004; Jeffery's intention that CPTED also embrace the internal environment of the offender did not gain traction

## **2010s**

- Concept of CPTED within a prison environment further developed and showed how prison design allowed offending to continue and introduced changes to reduce crime.

CPTED techniques are increasingly benefiting from integration with design technologies. For instance, models of proposed buildings developed in Building Information Modeling may be imported into video game engines to assess their resilience to different forms of crime.

- Combating discriminatory regulations in the housing markets, transportations systems, and public health was a focus
- Addressing of climate change as was done in the 2000s
- Combating the additional vehicles on the road due to the popularity of ride sharing (i.e. Uber, Lyft, etc.)
- Using urban planning to combat homelessness
- People migrating back to the city centers

## **2020s - PRESENT**

Urban planning is focused on sustainability, resilience, and equity, with a strong emphasis on reducing car dependence, creating mixed-use neighborhoods, prioritizing public spaces, and implementing strategies to combat climate change and public health concerns. Trends in the urban planning industry are as follows:

- Implementing the "15-minute city" concept:

The 15-minute city concept means to design neighborhoods where residents can access most of their daily needs within a 15-minute walk or bike ride. This promotes walkability and reduces car reliance and vehicular traffic.

- Focus on climate change adaptation:

The incorporation of measures to mitigate the effects of climate change like flood protection, heat-resistant infrastructure, and green roofs.

- Affordable housing initiatives:

Strategies to increase the availability of affordable housing options through zoning reforms, incentives for developers, and community land trusts.

- Technology:

Data-driven planning:

Utilizing advanced data analytics to understand urban trends, identify disparities, and optimize planning decisions.

Smart city technologies:

Integrating technology to optimize traffic management, energy usage, and public services.

Remote work considerations:

Designing cities to accommodate flexible work arrangements, with more emphasis on walkable neighborhoods

## **1.5 PURPOSE OF CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)**

The purpose of CPTED as a proactive and preventative model is as follows:

- to minimize crime and the fear of crime by reducing criminal opportunity through the tactical design and effective use of the built environment
- to foster positive social interaction among the users of a space
- to improve the quality of life of the public
- to reduce victimization
- to build a sense of community among residents
- to create a safer environment
- to improve the quality of life

## Part 1 - Crime Prevention Through Environmental Design (CPTED) | Review Exam (5 Questions)

1. **Prior to CPTED, typical urban planning followed which principle?**
  - a. Pedestrians took priority over cars
  - b. Empty streets meant safer streets
  - c. Neighborhoods were not to be isolated
  - d. Front yards were to be concrete only
  
2. **Who was one of the founders of CPTED?**
  - a. Lydia D. Newman
  - b. Jane Jacobs
  - c. Lewis Latimer
  - d. Elijah McCoy
  
3. **Which is one of the two main models of CPTED?**
  - a. Carrington Model
  - b. Scratton Model
  - c. Newman Model
  - d. Hiram model
  
4. **What expanded federal assistance to low-income housing subsidies in the 1970s?**
  - a. Housing and Urban Development Act
  - b. Green Trees Act
  - c. Housing and Clean Air Act
  - d. William S. Grant Housing Act
  
5. **Urban planning was influenced by what movement in the 1980s?**
  - a. Bailiff
  - b. FMJ
  - c. New Urbanism
  - d. Dickinson

**You made it to the finish line! This concludes Part 1 of the course. Let's continue to Part 2.**



## PART 2 - Natural surveillance

### 2.1 DEFINITION

#### What is natural surveillance?



It is being in a residential or commercial space where it is easy to effortlessly observe areas that can be occupied; including but not limited to circulation paths along vehicular routes (i.e. sidewalks), community spaces (like parks, clubhouses, etc.), and the like.

What can aid natural surveillance is the strategic placement of windows, door lites, french doors, exterior lighting and landscaping.

These features affect how much can be seen by occupants and passersby.

Potential criminals are unlikely to attempt a crime if they are at risk of being observed and thus witnessed, and thus being identified in a police lineup.

Figure 2.1. A father walking with their child can easily observe the street when ample, code-compliant sidewalks are provided. —Sasha Kim? Pexels.com

Similarly, we are likely to feel safer when we can see and be seen.

Design strategies focused on natural surveillance make it easier to see people and potential intruders, which thus makes crime less likely to occur.

This is a critical component to thwarting crimes in a passive though effective way.



Figure 2.2. A teen safely sitting outside their home practicing their instrument daily can know who typically comes and goes on their street. —PNW Production? Pexels.com

## 2.2 EXAMPLES

Here are some examples and rules of thumb on how natural surveillance can be executed using different AEC industry components and elements.

### Lighting:



Figure 4. Remember to illuminate potential hiding spots in your design. Riki.Risnandar?Pexels.com

At the exterior, always illuminate main entry and exit points, driveways, pathways, and place security lighting in strategic locations.

Place exterior lighting in such a way to enhance illumination in dark areas around a property.

For example, plazas, parking lots, exterior entry alcoves, potential hiding locations for criminals (such as bushes, low walls, and the like near main, secondary, and tertiary entry/exit points.).

For subdivisions it would be providing lighting throughout the community in areas such as the streets, side streets, including common areas like the clubhouse, parks, sports courts, and

pathways.

For college campuses, it would be spaces as stated above and also having emergency stations that students can activate in the case of an emergency.

Consider placing signage informing occupants to report burnt-out fixtures to the appropriate authorities to help keep everyone safe. As you will learn in more detail in Part 4 of this training, maintenance is essential to all of these security elements.

### CCTV

When it comes to exterior lighting, it is often paired with closed-circuit television (CCTV) or video surveillance, to assist in preventing and solving crimes.

When it comes to lighting next to CCTV elements, a colour rendering index (CRI) of 80 or more is ideal. Cool color temperatures of 4000K or less are ideal.



Do not locate or specify high pressure or low-pressure sodium lighting near CCTV elements and make an effort to specify LED lighting. It is always wise to check with CCTV manufacturers and strongly consider their recommendations.



Figure 5. CCTV is a useful deterrent to those looking to commit crimes. Henrikas.Mackevicius?Pexels.com

»• low.pressure.sodium.street.lighting.produces.a.yellowish.light?distorting.colour.images.on.CCTV.systems; Achieving accurate colour CCTV images is a challenge and a skill; To provide true colour CCTV images? White\_Light illuminators should provide colour corrected illumination matched to the visible spectrum; - .RaytecCCTV

During emergency events, when the emergency lighting activates, the amount of lighting provided is just enough to guide occupants to the public right of way.

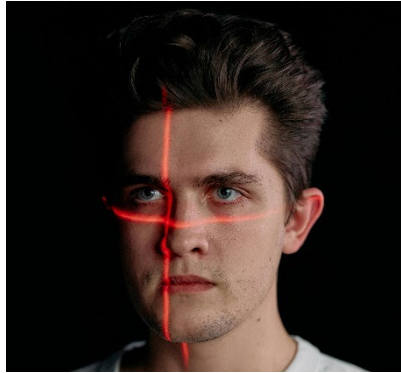


Figure.76; Always provide a secondary light source to assist in CCTV providing facial recognition; .cottonbro?Pexels;com

Unfortunately, the lighting is insufficient for any CCTV cameras to be useful in terms of facial recognition, etc. A good rule of thumb would be to provide a secondary light source.

For facial recognition cameras, the ideal mounting height is between 5'-0" to 6'-0". This mounting height range aligns the camera with the average human face level.



To reduce glare and shadows and improve recognition accuracy, ensure that cameras are slightly above eye level.

To avoid glare, move fixtures away from direct eye level and avoid pointing light sources directly at eye level. Instead, direct light sources upward or downward, or use diffusers to soften the light.

Aim lights towards walls or ceilings, not directly at people. Tilt outdoor lights downward to lessen glare outside. Glare is often caused by too few light sources or direct light.

As a side note, there is also portable street lighting for streets with little to no lighting.



Figure.77; For retail projects? inform clients to minimize signage on windows? especially street fronting windows; .Erik.Mclean?Pexels;com.

**Windows:**



Figure.78; Woman observing activity outside from the safety of her home. © Gustavo Fring, Pexels.com

To promote natural surveillance, position windows to overlook parking lots and sidewalks. Advise your client to make an effort to keep window signage to a minimum, for example if they operate a gas station, jewelry store, even a cafe.

As you can imagine, criminals don't want to be seen committing crimes. Couple that with humans' inherent curiosity about suspicious activity and that we tend to notice things out of the ordinary. (i.e. someone brandishing a weapon at a clothing store)

If neighbors look outside of their window at 2 a.m., they should be able to see the residence across from them clearly. Even more so, they should expect to see a clear street with very little pedestrian movement at that time as well.

### Visibility & Landscaping:

Clear sightlines to the street are what govern the landscaping (i.e. plants, shrubs, etc.) and their maturing heights.

This ensures (as much as possible) that you and your neighbors can intervene and report what crime they are witnessing – from the relative safety of their own home.

The same goes for passersby calling the cops when witnessing a crime in a business environment (retail store, etc.).

If you have a renovation project, regardless if it is an interior or exterior scope, include lowering any high hedges in the scope so that the residence or business can be observed from the street.



For new construction projects, keep shrubs and plants **below window levels**, and suggest the pruning of trees above eye level **at least 10 feet** to reduce hiding places and not block sightlines.



To be on the more conservative side, “low-growing landscaping” should be kept to **less than 3 feet** in the front yard and around the driveway of a home or main entrance of a building. Below is a list of plants that the author from one of our sources suggested:

- **Conifers:**

- Blue Rug Juniper
- Creeping Jenny Juniper
- Dwarf Alberta Spruce

- **Groundcovers:**

- Creeping Phlox
- Creeping Thyme
- Ajuga
- Mazus reptans
- Juniper varieties

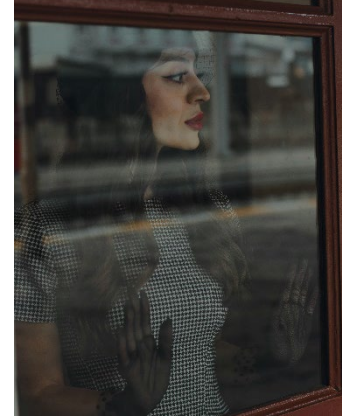


Figure.79;.Ensure.that.building.occupants.have.a.clear.sightline.to.the.street.in.their.neighborhood.or.parking.lot;. Serdar.Göksu?Pexels.com

- Creeping Jenny
- Hostas
- Periwinkle
- **Ornamental grasses:**
  - Little Bunny Ears Fescue
  - Blue Fescue
  - Mondo Grass
  - Feather Reed Grass
- **Perennials:**
  - Dwarf Iris
  - Creeping Veronica
  - Sedum
- **Shrubs:**
  - Boxwood (dwarf varieties)
  - Dwarf Spirea
  - Dwarf Potentilla
  - Dwarf hydrangea
  - Japanese holly
  - Creeping barberry
  - Azalea varieties
- **Small Trees:**
  - Dwarf Japanese maple
  - Hinoki Cypress
  - Flowering Crabapple (certain cultivars)

### Improving Visibility by removing blind spots:

This can be accomplished by mounting a jumbo convex safety mirror that is focused on the blind spot.

Examples of where you might see this are on a busy alley or side street where vehicles are exiting and entering a parking garage and it is difficult to see around the corner, hence the need for a convex safety mirror.

Another location is on blind turns behind and between multi-story buildings where not having the convex safety mirror drastically increases the probability of a car or fatal pedestrian accident occurring.

As stated, earlier lighting can also be used to remove blind spots where criminals may try and hide.



During the design phase implement the use of sidewalks to give access to nearby public spaces, this provides a form of passive security and ensures that there will more than likely always be someone walking by.

### See-Through Barriers:

To provide protection but still provide that visual connection includes the use of see-through barriers (i.e. low picket or wrought-iron fences), glass walls, and large windows into the design.

A more interior version of this is dressing windows with blinds, curtains, and shutters that occupants can leave partially open.

Other simple solutions are street-facing decks, balconies, and front porches that encourage occupants to spend time outdoors and passively surveil their immediate area from the safety of their homes.



Figure.70j. Convex mirrors drivers to see oncoming traffic or pedestrians at blind turns.' Huu. Huynh?Pexels.com

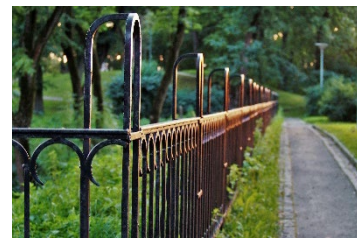


Figure.70k. Wrought iron fencing.' Merilin.Kirsika.Tedder



Figure.7. Ensure that highly targeted items by criminals can be viewed from the outside.' Alexandra.Maria? Pexels.com

Regarding retail design, ensure as much as possible that items highly targeted by criminals can be clearly viewed from the outside and from the inside from any point in the store

For example, valuable items like jewelry in display cases, high priced luxury clothing on mannequins, expensive shoe wear, points of sale or checkout counters/"cash wraps", and cash registers.

Locating CCTV monitors and security cameras where customers, employees, and passers-by can easily see them help as well. You have probably seen something similar at major retail box stores like Wal-Mart.

The 3 M's - More visibility, more people, more eyes.

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»Burglars are most attracted to homes that do not have home security systems? but only 7% of houses have a system in place. Homes without a security system are 96% more likely to be burglarized. - Alarms.org

»Approximately 49 percent said they would try to determine if an alarm was present before attempting a burglary? and 26 percent said they would seek an alternative target if there was an alarm on site. - UNCC Study

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When locating CCTVs do not place them where something bright will be in the background, for example the sun, glare from another building, street lighting, etc. This prevents silhouetting. Rule of thumb, lights should be behind CCTV cameras.

Allow facial recognition from a distance of at least 35 feet.

In terms of identifying criminals and reporting accurate witness information to the proper authorities, ensure that a lights lamp CRI rating is as close as possible to 100 which means it resembles daylight and shows true colors of an object to the naked eye.

**Action & Activities:**

Place work and leisure activities in open spaces where people can see each other. Police officers patrolling the neighborhood at night and observing residences. Community based programs help as well and increase unity amount residents and make it easier to identify strangers to the neighborhood.

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»Overall 76 (19 percent) of the 92 studies demonstrated positive effects of Neighborhood Watch defined as a reduction in crime of nine percent or more; - .  
[National Crime Prevention Council](#)

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Examples of Community Based Programs are below:

- Citizen police academies
- Youth police academies
- Senior citizen police academies
- Coffee with a Cop
- Neighborhood Watch
- National Night Out
- Prescription drug drop-off locations
- Home and business security surveys
- Vacation property checks / Neighborhood Vacation Watch
  - This includes bringing in mail, removing bins from the curb, collecting newspapers for a neighbor to help minimize the obvious signs that they are away from home.
  
- HOA relationship with local authorities



Figure.73. Police officer talking to a youth; .Uttar Pradesh



Figure.74. It is important to get involved with your local Neighborhood Watch program; .August.de.Richelieu? Pexels.com

- Include the contact information of the local authority on the community website and in social media posts. Post a video of the local authorities introducing themselves and their purpose in connecting with the community
- Have a representative of the local authorities contribute to the monthly community newsletter and/or social media posts.
- Invite local authorities to speak at community events (fire prevention week, block parties, pool parties, mental illness awareness week, holiday parties, or health and safety fairs).



Figure.76;.Police.officer.speaking.with.a.resident.about.the.importance.of.having.a.Neighborhood.Watch.program;.Kindel.Media?Pexels.com

- Community Maintenance

- Crimes are more frequent in areas that are the least maintained and cared for. The message this sends to criminals is that no one in the community cares and is not paying attention.

In contrast, a beautiful and well-manicured community which is consistently and properly maintained sends the message to criminals that residents are vigilant, prideful, and concerned about their homes and the safety of themselves and their neighbors.

Simple things that can be done by homeowners are picking up loose trash around one's home that may have been blow into the front yard or as found during a morning walk.

Making use of the doggie disposal stations and properly utilizing the dog barks.

- Proper maintenance means taking good care of one's home and the community amenities.



Figure.86;.It.is.important.to.ensure.that.trash.is.properly.disposed.of.and.not.left.lying.around.the.neighborhood.or.its.amenity.areas;.Ron.Lach?Pexels.com

This includes having a consistent maintenance and repairs program throughout the common areas while also enforcing Homeowners Association (HOA) rules and regulations related to external home care and appearance.

- **Promote Proactivity within the Community**



Figure.87; A.mother.reporting.a crime.that.is.occuring.in.her. neighborhood;'.Yan.Krukau? Pexels;com

- **What this means is encouraging citizens of the community to report crimes as soon as possible, no matter how minor.** The local authorities cannot act without first hearing about the problem from the community.

- **Minor non-violent crimes that must be reported are those such as** junked cars on lawns and in the street, boats stored in the driveway or front yard, old mattresses and tires left to rot in the backyard, couches and refrigerators on porches, garbage piling up.

**Housing:**

Design housing units so neighbors can "self-patrol", this means making it easy for neighbors to passively surveil their adjacent streets and see their neighbors easily.

**Fences:**

Fencing should be laid out in such a way to where no hiding places are created. There should be a formidable barrier in the form of fencing or a wall surrounding the community.



For improved security, incorporate a security gate with a guard to monitor who enters and exits the premises. Naturally, the exterior of the guard house would include CCTV and sufficient lighting for facial recognition.

**Storefronts:**

For commercial businesses, all signage blocking the view from and to the street should be removed. You want a clear line of sight from inside to out and vice versa.

## Walls:

### Graffiti Prevention

Use landscaping to deter graffiti artists from tagging community walls.

This can be done by placing climbing vines (ivy and virginia creepers, which are also urban tolerant) or planted coverings on the exterior walls.

- Surprisingly, removing graffiti as soon as possible is a very effective way to prevent it from recurring.
- Utilizing LED flood lights that turn on when motion is detected can help deter vandalism. Pair the flood lights with security cameras to ensure that if the wall is vandalized, it will be easier to submit evidence to the local authorities and have the criminal caught and prosecuted.
- If your project is in an area that is in transition or just an area where a lot of graffiti is located, be proactive and specify anti-graffiti paint or coatings. Thus, making it difficult for graffiti artists to vandalize surfaces.
- Get ahead of vandals and specify the creation of a mural that promotes the community and instills a sense of pride. The mural would make a criminal think twice about defacing the wall.



Figure.88; Murals that promote the community and look amazing? deter taggers from defacing them.' .Kara.Muse?Pexels.com

## 2.3 PRACTICAL APPLICATIONS

### Lighting

#### NEW YORK CITY, NEW YORK, USA

The practical application of CPTED in the form of lighting fighting crime has taken place in New York City with their public housing developments.

How did they prove and confirm this?

By conducting a tried-and-true standard in scientific research, a randomized controlled trial (RCT) that measured the impact of street lighting on crime. This was done by placing increased lighting in 20 public housing developments and leaving 20 public housing developments as they were.



Figure.89 | New York Housing in New York City | New York | Andrea Piacquadio | Pexels.com

The results of the trial showed that felony and property crimes decreased, which also translated into a decrease in the jail population.

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» the study concluded that increased levels of lighting led to a 9% reduction in index crimes – a subset of serious felony crimes that include murder, robbery, and aggravated assault, as well as certain property crimes – that took place outdoors at night in developments that received new lighting, with an overall 0% percent reduction in index crimes. [The University of Chicago Crime Lab Urban Labs](#)

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#### NIGER DELTA, NIGERIA, AFRICA

In the Niger Delta of Nigeria in Africa, the local development commission implemented the installation of solar powered streetlights, and the result was the reduction in crime for nine states of the region.

A direct result of the reduced crime has been the increase in the nightlife of the community because people feel safe going out after dark.



Figure.80 | A happy family | Darkshade | Pexels.com

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»We are impressed with the light up Niger Delta programme that had seen the light of the day. We have observed very closely that criminality has been reduced in many of our local communities in the region because of the operation light up Niger Delta. - [NDC](#).

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## PHILADELPHIA, PENNSYLVANIA, USA

Philadelphia is in the process of replacing all of their aged high-pressure sodium streetlights with LED streetlights.

Research shows that the benefits to this swap will be a reduction in crime, reduction in energy costs, reduction in greenhouse gas emissions, reduction in nighttime pedestrian injuries and intersection crashes, and reduction in the frequency and severity of nighttime crashes.



Figure 8. Philadelphia City Hall. Joel Zar. Pexels.com

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»Philadelphia has embarked on its largest energy conservation initiative to date, aiming to replace all old streetlights with new LED ones. City crews have been methodically swapping out high-pressure sodium lights for LEDs, a move expected to significantly reduce energy costs and cut greenhouse gas emissions – equivalent to taking more than 8,666 cars off the road a year. - [Philadelphia Inquirer](#)

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## BRAZIL, SOUTH AMERICA

More than 5,000 municipalities in Brazil have streetlights that use inefficient, high-pressure sodium or mercury vapor lamps.

Aside from the lower levels of luminosity, high energy costs, and maintenance costs these lamps also emit toxic fumes and pollutants.

Most of the municipalities have difficulty accessing financing due to lower credit scores or restrictions on public indebtedness.

The federal government has come in due to a program that sets up to 15 public-private partnerships in 2 separate rounds.

LED technology will reduce energy costs, reduce maintenance costs, can tie into a lighting management program that will allow programming of the street lights, an improved view or perception of the municipality by residents and visitors, and reduce crime.



Figure.80. Sao Paulo?Brazil?South.America;'. Caio?Pexels;com

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»This.will.benefit.0;1million.people?help.reduce.energy.costs.by.at.least.06.percent.and.offer.a.wide.range.of.direct.and.indirect.socio\_economic.benefits;jj;. - .WorldBank

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## WONJU, GANGWON PROVINCE, SOUTH KOREA

Wonju, the most populous city in its province, has equipped streetlights with surveillance cameras, et. cetera in locations around the city most vulnerable to crime.



Figure.80. Downtown.South.Korea.in.the.evening;'. cityintake?Pexels;com

The direct results of these surveillance equipped streetlights are that the footage has been used as evidence in a sexual assault case.

LED lighting is known to reduce crime, reduce energy costs, and increases one's perception of an area with LED lighting.

When LED streetlights are paired with surveillance equipment they go a step further in the correct direction regarding crime prevention and resolution.

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»These streetlights significantly contribute to public safety by preventing crime and supporting efficient investigations? a city official said;»We will continue to explore various measures to enhance the safety and security of our citizens; .

[The Korea Biz Wire](#)

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## Windows

### TORONTO, CANADA

Remember how we mentioned the importance of having bilateral and clear sightlines between store interiors and the parking lot exterior?

Well, this practice was executed at a popular convenience store in Toronto, Canada, thanks in part to the regional police promoting CPTED basics, project “Clear Zone”. The program gave merchants a 3-step process to follow to reduce crime and help them solve crimes.



Figure.84. Circle.K.market;'.Erik.Mclean?Pexels;com

One of which was removing signage that blocked sightlines to the exterior and vice versa. More importantly, to remove signage that blocks anyone from the exterior from seeing the checkout area where the cash register is located.

When the convenience store put these steps into practice, they saw a reduction in robberies and thus increased safety for their employees and customers.

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»Robberies of Circle.K convenience stores have decreased by 74 per cent after shop owners in Peel Region removed posters from certain window

Peel police's crime prevention constable Amy Boudreau says the concept is simple;»When you can see directly into a store and the front counter is visible from the street?you deter criminals because they know it's more likely they'll get caught;

»There's a greater chance of someone witnessing the crime?; Police are driving by they're scanning into the store; If there's pedestrians walking by?they're also looking into the store;f.- [CBC Toronto](#)

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## Visibility & Landscaping

### SOUTH KOREA



Figure.86; Downtown.South.Korea; .  
Tranmautritam?Pexels;com

If you are fan of South Korean dramas or “K-dramas” or any detective movie based in South Korea, you have probably seen this one.

So in South Korea most vehicles have a camera installed in the front and one installed facing out of the rear window. This includes taxis as well. In addition for taxis, there may be a camera also facing the back seat, in case they have a belligerent passenger.

What this does is turn every vehicle into a surveillance camera anywhere a vehicle or taxi is located. These dash cams are effective in identifying criminals that commit car-related offenses like hit and runs or accidents. And the dash cams can also serve as another set of “eyes” if any other type of crime is being committed.

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»According.to.a.survey.in.South.Korea.in.867.92.the.absolute.majority.of.  
respondents.agreed.that.dashboard.cameras.mounted.in.automobiles.called.  
fblack.boxesf.in.Korea?deterred.hit\_and\_run.drivers.from.bolting.and.helped.to.  
prevent.traffic.crimes?with.over.63.percent.showing.agreement.with.both.  
statements; . - [Institute.for.Basic.Science. Living.in.Korea.™](#) .Statista

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### VANCOUVER, BRITISH COLUMBIA, CANADA

Similar to what was mentioned previously with the convenience store in Toronto regarding the reduction in crime.

In Vancouver an attempted robbery and murder was stopped and a criminal apprehended because a citizen driving by the convenience store saw the interaction at the store and determined something didn't look right.

If there had been landscaping 6'-0" or higher and other obstructions to a drivers view from the road to the convenience store, the crime would have never been detected.



Figure.96; Vancouver.Police.in.Canada; .  
Sima.Ghaffarzadeh?Pexels;com

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• »In an interview, he said he was driving on East 78th Avenue when he saw a man and woman near a convenience store;

He had his arms and kind of a physical looming presence over her, he said. It was really terrifying all around.

He said he stopped his car and approached the woman to ask if she was OK. The man told him to leave them alone that they were a couple. But he said the woman at first did not respond. < . - [CBC News - British Columbia](#)

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### RETAIL CRIME IN THE UNITED STATES: INCREASED SAFETY USING CPTED

Think of any convenience store, retail store you have visited to buy groceries, buy your favorite clothing item or browse and see what new item was released.

The interior layout of the store was more than likely designed with the principles of CPTED in mind. As was mentioned in Part I, CPTED really took off when the federal government and other authorities started implementing its principles.

The U.S. Department of Justice, Office of Community Oriented Policing Services published a report entitled “[Robbery of Convenience Stores by Alicia Altizio and Diana York](#)” within the report it was stated that out of all of the CPTED principles, increasing natural surveillance and enhancing territoriality were extremely effective in prevention of convenience store robberies.



Figure 97. Galleria Vittorio Emanuele II Shopping Mall in Milan, Italy. - Tuur Tisseghem, Pexels.com

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»Robbers are deterred by brightly lit stores in which employees and the store's cash registers are clearly visible from the street. • An unobstructed view of the entrance and interior of the store provides natural surveillance that increases the risk of apprehension for the offender.

»The store's location within the community, traffic flow, signs and advertisements, and design elements that empower the employee (such as bulletproof barriers) are components of [establishing territoriality]. - [Total Security Solutions Article™ DOJ Report](#)

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## RETAIL STORE DESIGN AND VISIBILITY

We invite you to access the link below and read the full report, we are confident that you have seen some, if not all the principles put into practice at any major retailer you frequent. We will focus on store design as it relates to visibility.

What does that mean?

That means that retail employees must have a line of sight throughout the store – especially of any luxury items.

The store design should not obscure any staff members line of sight, this means no high shelving (ideally less than 60 inches in height; think of your local pharmacy), no odd cash wrap locations (cash wraps should be near an exit) that do not allow for natural surveillance of the store and especially high theft/high loss areas, and the store should also be designed with surveillance cameras and CCTV in mind.

As you know that means adequate lighting for facial recognition and no blind spots. In addition, there should be no cluttered spaces, no narrow aisles, and expensive merchandise should not be located immediately next to exits.

Why no cluttered spaces?

Because with everything nice, neat, and tidy it is easier to notice is something is missing or out of place.



Figure.98; Notice the mirror at the cash wrap area. (in the background) so staff when looking for something at the back wall they can still see who is behind them approaching the cash register. RDNE.Stock.project?Pexels.com

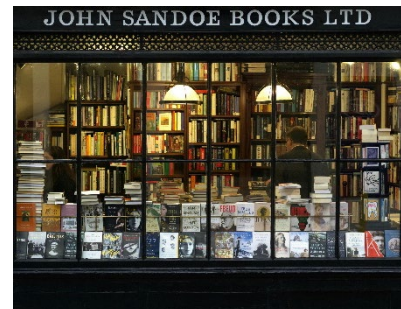


Figure.99; Notice how being able to see inside the bookstore allows for natural surveillance to occur effortlessly. Tuur.Tisseghem?Pexels.com

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»The.study.looks.at.six.types.of.intervention;Tagging.Technologies.Closed.Circuit.Television.Signage?Product.Stickers.and.Campaigns.Security.and.Sales.Staff.Store.Design?Layout.and.Mirrors.and.Shelf\_based.Interventions; - [ECR.Retail.Loss](#).

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Figure.90. Notice the wide aisles and large windows facing the street front. The staff member at the cash wrap has sightlines throughout the store.' . Rachel. Claire?Pexels;com



Figure.90. Notice the positioning of the cash wrap in this very open retail store. Easy to see everywhere and passively surveil patrons without being obnoxious.' . Anna.Tarazevich?Pexels;com



Figure.90. You often see locked display cases in jewelry stores due to their high value.' . Kampus.Production?Pexels;com



Figure.90. Akin to a neighborhood with trash in the streets and laws which convey the message that residents don't care. Retail store shelves can convey that same message if items are disorganized, strewn about, and not folded neatly, which makes both ideal targets for criminals.' . Tembela.Bohle?Pexels;com

## Using Mirrors & Signs



Figure 94. Signage helps to deter crimes and informs criminals when they are being watched. Erik Mclean? Pexels.com

To assist with visibility, mirrors and signs can be effective tools for deterring shoplifters.

We are sure you have seen them in numerous retail stores, pharmacies, and the like.

The trick is to psychologically deter potential thieves by strategically placed mirrors that eliminate blind spots and increase visibility throughout the store for staff and customers.

Regarding signage, it should remind customers about security measures, such as video surveillance, and consequences, like prosecution for theft.

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»Placing mirrors or video surveillance feeds where a potential thief will see themselves is a powerful psychological deterrent. It highlights surveillance efforts while placing the thief at the center of them. This is a common strategy employed by larger retailers like Target, Storflex

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## DETROIT, MICHIGAN, USA

Visibility in terms of blighted areas is important as well, if you know of the [“Broken Windows” theory](#) you know that crime thrives in areas that appear neglected, damaged, and uncared for.

In Detroit, Michigan one part of the city’s plan to improve the quality of life for its residents is to closely monitor vacant lots and abandoned or neglected buildings.

Buildings like these when not closely monitored can be havens for drug dealers, squatters, and the like.



Figure 96. The Monument to Joe Louis? known also as The Fist? is a memorial dedicated to boxer Joe Louis? located in Detroit? Michigan. Element Digital? Pexels.com

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f• There is an association between urban blight and crime? including violent crime? f We want to continue reducing violent crime in neighborhoods by closely monitoring vacant lots and abandoned or neglected buildings f

As of Wednesday? there were 7 fewer homicides year to date than during the same period in 2017? with a 87% reduction in nonfatal shootings? according to Detroit Police data • < - [Detroit News](#)

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## Walls

### **SAN JOSE, CALIFORNIA, USA**

If you have ever “tagged” a building or signage (and for the record no we haven’t), you would be dismayed to find your illegal work it took you hours to create, removed the next day.

For any of your clients that own businesses, make them aware that there are products on the market that make it easy to remove graffiti if landscaping is not used on walls.

Have you ever been on the interstate or freeway and seen some interesting wording on the exit sign you need to take?

Well San Jose, California has this same issue and how “Caltrans” or the California Department of Transportation is addressing it is by applying a Type 11 3M Coating to all of their signage.

The coating reduces energy costs because it is retro-reflective meaning cars headlights reflect off of the signs at night and illuminate them, making them easier to read. And because of this any up lighting or down lighting is no longer needed and can be removed.

With the removal of the lighting, the catwalk to reach the lighting for maintenance is also removed, thus giving “taggers” no easy access to deface the signage.



Figure.06j.San Jose?California; Albee.K?Pexels.com

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» We reached out to Caltrans? District 6 in Southern California; Eric Menjivar with the district explained special crews? plastic film around signs? and spiked columns are just a few ways the district is trying to deter vandals; - [ABC News](#)

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## SAN JOSE, CALIFORNIA, USA

One very creative and community engaging way to prevent the defacing of surfaces (like the walls of stores, et. cetera) is to paint walls with a community themed mural or something uplifting.



Figure.07; A motivational mural in Birmingham, Alabama that inspires all that see it. Luke Webb Pexels.com

Any “tagger” may already know the artist that designed the mural and will not want to defile their work, plus they might actually like it and respect it.

Or better yet, the “tagger” themselves may participate in a city initiative that gives artists the opportunity to showcase their talents by painting murals throughout the municipality; Such is the case in San Jose, California.

Along with the murals, which showcased beautiful designs came the community taking better care of the area and thus

making it safer.

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»One\_hundred\_artists\_are\_building\_a\_better\_Bay\_Area\_one\_brush\_stroke\_at\_a\_time; A\_new\_massive\_mural\_project\_is\_going\_up\_in\_Downtown\_San\_Jose\_in\_an\_effort\_to\_curb\_graffiti\_beautify\_streets\_and\_get\_people\_into\_public\_spaces;

The\_project\_offers\_an\_outlet\_for\_artists\_and\_an\_opportunity\_for\_them\_to\_help\_build\_a\_better\_Bay\_Area;

fIf\_it\_looks\_like\_people\_are\_here\_and\_they\_love\_and\_care\_for\_this\_alleyway\_then\_it\_becomes\_a\_little\_bit\_safer? fThe\_perception\_of\_safety\_becomes\_much\_higherf.-.

[ABC News](#)

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## SAN DIEGO, CALIFORNIA, USA

The way graffiti can be used to prevent future crimes and keep cities safer is being shown in San Diego, California with their “Graffiti Education and Mural Arts program”.

The goal of the program is to lower youth detention rates and keep kids out of the juvenile justice system.



Figure.08; A mural that speaks towards the history of the local community. Anderson Guerra Pexels.com

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»• These recent efforts appear to be working—there are empty beds in San Diego county’s juvenile detention center and the number of kids in juvenile hall there is down nearly half from just six years ago • < . NPR.

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## 2.4 THE FUTURE FOR NATURAL SURVEILLANCE

### NEW YORK, USA



Figure.09; Self-cleaning glass could soon be specified in high-rise buildings, especially in places like New York City, Chicago and the like.' . Brady Knoll?Pexels.com

#### Smart Glass

To further enhance natural surveillance, there are smart glass or switchable glass products available on the market. Along with its energy efficiency and ability to offer instant privacy, the technology can be of great use in the commercial sector.

Picture a shopkeeper being able to easily surveil the main floor from their office window at the flip of a switch and then switch the glass back to being opaque if they need privacy.

#### Self-Cleaning Glass

To also assist with visibility, the market has self-cleaning glass. How does it work? It has a special coating that reacts with the sunlight, which then breaks down organic dirt and during the next rain all of the dirt is washed away.

This would be extremely useful for stores that are closed for the holidays or extended periods of time due to an emergency. The goal being to not have the property look like it is being neglected.

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»Advancements in glass technologies are making a big impact on glazing options; Some cool innovations are hitting the marketplace; Here are some future trends to expect; . AboveAllStorefronts.

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### NEW ZEALAND

Virtual fences or invisible boundaries have been around for a while but when paired with the current technology on the market, they have become even more effective.

From an architectural standpoint the most practical application of a virtual fence will be in the agriculture sector or residential sector.



Figure.00; The skyline of Auckland, New Zealand.' . Donovan Kelly?Pexels.com

The technology uses GPS-enabled collars for the animals and a software interface for the user. Therefore, animals can be tracked in real time and the user can create invisible boundaries for the animals.

What happens when an animal reaches a barrier?

You would assume that the animal would be shocked, but as an animal approaches a barrier their collar emits an audio warning, if the animal persists then a mild electric stimulus or low energy pulse is delivered (less powerful than traditional electric fences).

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»Halter's virtual fencing technology has just launched in the US where it insists it can help the beef and dairy industries become more productive and more sustainable; And despite concerns from some - but not all - welfare groups the company's system can enhance animal wellbeing; it tells AgTech Navigator [AgTech Navigator](#)

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## CHINA



Smart fences are ideal barriers for any architectural application but primarily commercial versus residential. Through the use of voice activation, sensors, alarms, and remote access, business owners can monitor (in real time) and manage whom they let into their lot or property.

In addition, smart fencing can be kitted to be energy efficient by being powered by solar panels or any other renewable energy source.

Figure 001. Shanghai, China; Barry Tan; Pexels.com

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»Smart fencing systems use IoT technology to monitor and manage fencing systems remotely; These systems can be accessed and controlled via smartphones, tablets, and computers, allowing security personnel to view real-time footage, receive alerts, and manage access control from anywhere; KingCats Fence

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## BOSTON, MASSACHUSETTS, USA

On the topic of visibility, AI is being used to prevent shoplifting in retail stores.

How?

The surveillance system has an algorithm that is solely designed to recognize gestures and shows no bias regarding skin tone or melanin content

If someone triggers the system, staff receives a video alert of the suspect so that they can apprehend them.

In addition to this fascinating technology, it is also cost efficient and considerably less than what would be paid to a security guard.

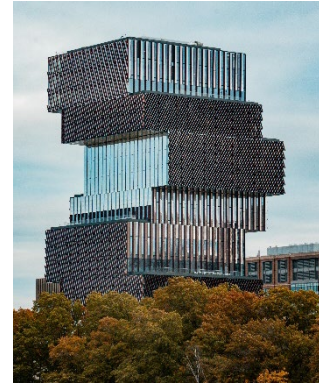


Figure 00. Boston University. Center for Computing.™. Data. Sciences in Boston? Massachusetts? Jack. Sherman?Pexels.com

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»• The technology also picks up the motion of putting something into a backpack or tote bag. If a store employee receives a video alert they can confront the shopper or watch to see if they bypass the register.

We tried to conceal a bottle of vodka in the store and a video of the action quickly popped up on a manager's phone • < \_NBCBoston.

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## SOUTH KOREA

### “Korean researchers develop AI CCTVs to detect, predict criminal activities”

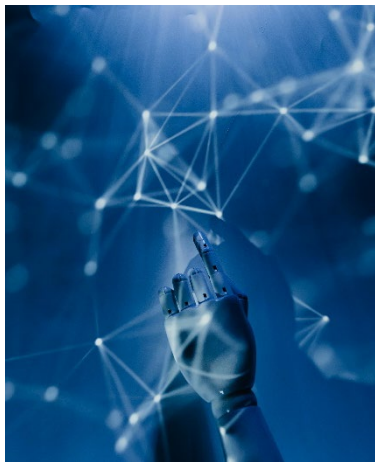


Figure 00. AI technology is the way of the present and future. Tara. Winstead?Pexels.com

Still on the topic of visibility, technology has been developed that can detect and predict signs of criminal activities using real-time CCTV and AI technology.

We know it sounds like something from “Minority Report” (great movie by the way) and well, it almost is.

In addition to this the entire system also incorporates crime related statistics, position determination technology, real-time CCTV footage, and the comparison of current environmental/social patterns with past criminal cases to detect signals of potential crimes and predict the possibility of a crime occurring.

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»For example?if a specific combination of environmental factors is observed in a remote-quiet location where a crime occurred in the past late at night?the system will view the risk of a crime taking place at that location as being very high;

Through this?the system will prevent the occurrence of a crime in advance; The fDejaviewf system is expected to be mainly used by the police and integrated CCTV control centers of local governments nationwide; [TechExplore](#).

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Figure.04 AI-based black box technology in vehicles is on the way; Pixabay?Pexels;com

In South Korea, the dashcam footage found in most cars in the country that is submitted through a public interest report, will be parsed and classified using AI technology to assist in enhancing the efficiency of the authorities and improving their visibility of traffic related crimes.

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»Police plans to introduce an artificial intelligence (AI)-based black box video decoding system to better cope with fast-growing public interest reports on traffic law violations • the AI system will contribute to greatly enhancing the efficiency of police work by automatically classifying and sorting out about 96 different types of traffic law violation cases?including traffic signal violations; [KoreaBizWire](#).

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## USA



Figure 06. AI will be used in the future to predict crime.' Sora. Shimazaki?Pexels.com

In the US, major retailers are utilizing AI driven real-time heat maps, and other technology to combat theft and staff and customer safety via organized “smash and grabs”.

The AI, just like in South Korea will pull data from multiple sources and based on that data create a hot spot on the heat map for areas likely to experience criminal activity.

In addition, all of the major retailers have open communication with each other and share their maps and data in real time.

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»Companies from Target.(TGT)?Walmart.(WMT)?and Home Depot.(HD) to Walgreens.(WBA) and Tj Maxx.(TJX) are collectively investing big bucks in AI? real\_time heat maps?and other advancements in an unprecedented effort to fight against the issue of organized retail theft•

»No one wants to shop in a store that they feel unsafe in?• »Our primary ambition is to provide that safe environment for both customers and associates?and technology- AI in particular- is going to help us along that journey? - [Yahoo Finance](#).

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**PARAMOUNT (NEIGHBORHOOD OF LOS ANGELES), CALIFORNIA, USA**

Technology is being used called “Graffiti Tracker” to assist authorities and municipalities in documenting occurrences of graffiti and permanently storing images of the graffiti.

The information is then analyzed by trained staff who are looking for gang information (like a threat to another gang) or tagging monikers, and if found that intel is used to stop any forthcoming gang violence or to apprehend and prosecute suspects.

These apprehensions and prosecutions in turn then improve the quality of life for the local community and its residents.

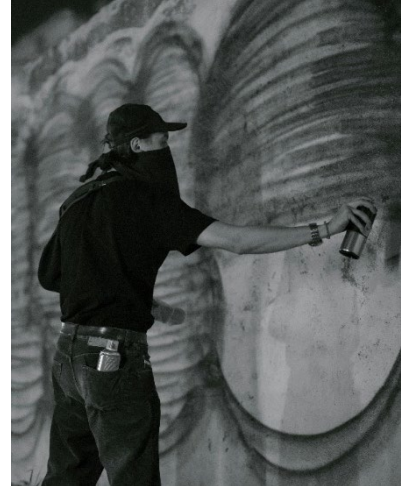


Figure.16; Graffiti Tracker can assist police and public works departments; .cottonbro?Pexels;com

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»• Paramount achieved some impressive statistics in their war against crime;

/ A.24% reduction in graffiti incidents;

/ A.59% .76\_year decrease in gang-related crimes;

/ A.29% yearly decrease in gang-related crimes • < .- .Gov7

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## Part 2 - Natural surveillance | Review Exam (5 Questions)

- 1. The construction drawings from your firm show a minimum CRI of 80 at the exterior lighting near the CCTV cameras. What part of natural surveillance does this involve?**
  - a. Windows
  - b. Lighting
  - c. Landscaping
  - d. Action & Activities
  
- 2. You move into a new neighborhood and the HOA Committee informs you that they have Donuts & Tea with a Cop every other Wednesday. What part of natural surveillance does this involve?**
  - a. Windows
  - b. Lighting
  - c. Landscaping
  - d. Action & Activities
  
- 3. What type of lighting is recommended to promote and aid natural surveillance?**
  - a. High Pressure Sodium
  - b. Light Emitting Diode (LED)
  - c. Low Pressure Sodium
  - d. Incandescent
  
- 4. What are ways to prevent graffiti on exterior walls?**
  - a. Aggressively harass the youth in the community
  - b. Create a mural
  - c. Buffer the exterior wall from the street with grass landscaping
  - d. Do not install motion detector flood lights
  
- 5. What can an architect do within their drawings to a wall to prevent graffiti??**
  - a. Nothing, it is the responsibility of the Authority Having Jurisdiction
  - b. Specify anti-graffiti paint or coatings
  - c. Make the Owner aware of the issue
  - d. Dissuade the owner from placing security cameras at the exterior

**You made it to the finish line! This concludes Part 2 of the course. Continue to Part 3.**



## PART 3 - Natural Territorial Reinforcement

### 3.1 DEFINITION

Proactively deterring criminal activity like trespassing, by clearly defining boundaries (lot lines, public and private spaces, public and restricted access areas, et. cetera) and establishing a sense of ownership in a district, area, community or neighborhood.

### 3.2 EXAMPLES

#### Use physical elements to define public, semi-private, and private spaces

There are many ways to create barriers between private spaces and public spaces.

A few common examples you can find throughout any city or suburb are as follows:



Tall, wrought iron fencing (typically 8'-0" AFF) which is difficult to scale or climb yet visually permeable or easy to see through, providing visibility from inside the home. Thus, you can see an approaching threat or investigate – visually - an odd noise or commotion all from the safety of your home.

Low fencing (5'-0" or lower AFF) that though easily scaled can be combined with a thorny hedge or bush and serve as deterrent against unwanted visitors.



Another example that you are apt to see in the Southwestern and Western states, especially in hot-arid climates is large rock borders being used.

A physical element that displays a visual barrier in the form of change or contrast is the use of two different floor finish materials to clearly define a path. This can be helpful in restaurants and retail stores.

These physical elements define visually what is considered a public, semi-private and/or private space.

#### **What is a public space?**

An area accessible to anyone in the public realm, like a state park, state owned rest area or public sidewalk adjacent to a public road.



Figure.17;Criminals.trespassing. illegally.into.a.building.and.property;.Evan.Velez.Saxer?Pexelsjcom

## Examples of Public Spaces



Figure. 8; Museums are examples of public spaces as they are open to the public and serve the public.' . Hossam.Adel?Pexels;com

Public spaces are where people come together for entertainment and leisure activities, such as free jazz festivals, city owned sports facilities, public libraries, public museums, and public schools.

**Places for physical activity and exercise**, such as public parks with playgrounds, state owned walking trails, workout stations at public park, city owned soccer fields, and public pools.

**Places for cultural appreciation and exploration**, places for artistic performances and cultural expression.

### Other examples

Public roads, public sidewalks, public squares, public beaches, plazas, city-owned markets, and subways.

## What is a semi-private space?

A space that is partially open to the public, often privately owned but with some restrictions on access, like a restaurant and its adjoining patio or a building lobby, where anyone can enter but is expected to be a customer or visitor with a specific purpose, not a loiterer.

### Factors influencing the "semi-private" nature of a space:

- **Ownership:** Is the space owned by a private entity or the public?
- **Access control:** Presence of signage, security personnel, or other security measures that limit who can enter or use the space and at what time.
- **Purpose and intended use:** Whether the space is primarily meant for a specific activity or group of people.

## Examples of Semi-Private Spaces

### Restaurant outdoor seating:

Seating is intended for customers or patrons dining at the restaurant. Sometimes the restaurant patio seating is considered part of the common area of the building and shared with those waiting in the lobby.



Figure. 9; Reception area of a building lobby.' . AS. Photography?Pexels;com



Figure. 10; Outdoor patio of a restaurant.' . Nesrin.Danan?Pexels;com

### **Building lobby:**

Open to entry by the public, but there will be security checks or limitations on activities for those looking to go beyond the lobby.

### **University campus quad:**

Accessible to the public but primarily used by students and faculty. Typically, there is a security check at each main vehicular entry/exit point at the perimeter of the campus.

### **Shopping mall atrium:**

A central area within a mall open to anyone, but primarily meant for those that are shopping.



Figure. 00. The quad of a college campus. Rick.Han?Pexels.com

## **What is a private space?**

A space that is restricted to specific individuals or groups only, for example a person's single family residence in a gated community.

### **Examples**

A bedroom, bathroom, personal vehicle, an apartment, an exclusive private club, and the backyard of a single-family residence or townhome.

Private spaces are typically associated with personal property (home, boat, vehicle, etc.), there is an expectation to privacy and personal space (you do not expect to have some stranger sitting in your car when you return to the parking lot to leave after shopping), and entry is typically solely controlled and administered by the owner.

Any entry gained other than by the Owner requires permission and some way to access the space (key, key fob, passcode, etc.)



Figure. 02. Modernist style bathroom in a single family residence. Jean.van.der.Meulen?Pexels.com

Components that assist in defining public, semi-private, and private spaces:

Physical barriers (such as fences, gates, boom barriers, traffic barriers, security (vehicle) barriers, water-filled barriers, bollards, beam barricades, low walls)

Flooring finishes (such as poured concrete, concrete pavers, brick pavers, ceramic tile, wood decking, artificial grass, grass, pea gravel, stone, rubber tiles, stone pavers, vinyl tiles, cobblestone, marble, pavement, marble signage, lighting,

Landscaping (hedges, et. cetera) and also water features.



Figure.103. 'A traffic barrier helps to define public from private space.' Chandri.Anggara?Pexels;com

**Use natural surveillance**

When using landscaping as a territorial boundary, ensure that natural surveillance is preserved and able to be maintained.

Natural surveillance is the ability to effortlessly surveil an area in passing or even unintentionally. Natural surveillance is a key component of passive security. Find examples below:



Figure.104. 'Front porches are spaces where residents can easily surveil their street front.' Shaantanu.Bhatt?Pexels;com

**Lighting:** Ensure that all exterior doors, loading docks, trash enclosures, pathways, and parking lots are properly illuminated and create no shadows where assailants can hide.

**Landscaping:** At windows that are on grade, place shrubs and bushes that will not grow above the sill height of the windows.

Do not plant landscaping at the points of entry and exit. Groundcover would be acceptable but not hedges, etc. where people can hide and shadows are created due to the exterior door lighting.

**Window Placement:** Place windows, doors with lites, front porches, etc. so that they give a clear line of sight to sidewalks, driveways, side and rear yards, common areas, parking lots, and the like. Regarding apertures and their dressings, minimize or eliminate obstructions that impact the line of sight.

**Building design:** Be mindful to remove all exterior features that give criminals a place to hide or severely obstruct a sight line to the road. Be wary of spaces such as recessed doorways and alcoves, if they must be part of the design (to provide cover from the elements), ensure that the space is well-lit, allows for facial recognition from a distance by passersby, and has some type of two-way communication or emergency feature (if the budget permits).

**Fencing:** For front yard fencing, ensure the fencing material is strong but also visually permeable so that it conveys strength and poses a challenge to criminals but still allows a view to the street from

the interior of the house or building. Side and rear yard fencing can be opaque and paired with motion activated flood lights and security cameras to identify intruders.

**Streets:** Implement multimodal streets to serve more of the public. More people means more eyes traveling at different speeds (this plays a large role in what people see and their ability to identify criminals if needed) which increases natural surveillance.

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»Multimodal streets provide infrastructure for sustainable modes like walking and cycling which can help lower carbon emissions by reducing vehicular exhaust thereby improving overall air quality and reducing a city's contribution to climate change. - [GlobalDesignInCities.org](#)

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**Porches/Balconies:** Incorporate front porches and street facing balconies into the building design. Based on the typical residential home layout, the common areas of a house are always adjacent to the front yard and front porch. This more or less ensures that during non-sleeping hours each house will have people in the common areas of their home able to see their front yard and to the sidewalk and street.

Natural surveillance makes it difficult and gives a cause for pause for criminals to commit non-violent and violent crimes because they are more easily observed and more likely to be identified.

### Use signage

Learn the critical role signage plays in natural territorial reinforcement.

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»The old aphorisms are basically sound. First impressions are lasting. - Jessie Redmon Fauset

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### Entrance to a neighborhood

Signage at the entrance should be well thought out and convey the image that the community wants to give.

Monumental ground signage should be coordinated with the different types of signage found throughout the community. This shows that the community is organized and that they care about the community's image i.e. there are no signs of neglect or disarray.

Even if a criminal makes it into the neighborhood, they will see a thriving community of people engaging one another, using the public spaces, and exercising throughout the neighborhood.; Which coincides with what they visually saw in the signage from the entry point and throughout the community.



Figure. 15, Signage separating public spaces from private. Kelly? Pexels.com

## Within the neighborhood



Figure 26; Signage directing newcomers to where accessibility access is located; Connor McManus; Pexels.com

Order should be established throughout the community in the form of signs that convey parking regulations (where guests can and cannot park and for what length of time) and where trespassing is not permitted. Even more importantly, where ADA accessible entrances and parking are located (if not located in a location visible from the public right of way in front of a business, etc.).

In support of showing cohesiveness as a community, signage should be well thought out in its look but also in how it is arranged and located. The goal is to inform people and guide them, not bury them in a cascade of visual pollution.

If there are too many signs, people become overwhelmed and overstimulated and do not know which sign to look at or to follow and end up making a wrong turn or worse driving the wrong way on a one way. Text size, color contrast, mounting height, signage location, all play a part in this. Zoning ordinances govern the size and number of signage permitted in a zoning district.



Figure 27; Too much signage can overstimulate and misdirect a driver; Bimal Ranabhat; Pexels.com

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»Number and Area of Signs; For residential use two permanent signs per lot shall be permitted; Each sign shall not exceed two square feet in sign area; For institutional uses one sign per street frontage shall be permitted not exceeding 90 square feet in sign area; Subdivisions shall be permitted one sign per entrance and such sign shall not exceed 90 square feet in sign area; - Code Of Ordinances Atlanta Georgia

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The different types of signs you will typically see in a community are directional, informational, identifiers, and the like.

- Examples of directional signage would be wayfinding signage guiding a person to the community clubhouse and pool.



Figure 28; An example of informational signage; Travis Saylor; Pexels.com

- Examples of informational signage would be a post mounted bulletin board informing the public of when an open house is and signage showing how to get there, on that same bulletin board would be postings about when the next HOA meeting will be held.
- Another example is having nature information post mounted on a plaque describing the wetlands area that was protected to develop the community. This would ideally be located along the sidewalk so people can easily stop and read it.
- Another example would be signage that makes the neighborhood safer, such as surveillance camera signs, neighborhood watch signs, no soliciting signs, and no trespassing and private property signs.
- Examples of identifiers would be well-lit signage letting residents and visitors know which building is the clubhouse, which one is the restaurant and dining area, and where trash is to be located.



Figure 20; A resident capturing a criminal trespassing in the neighborhood; Ariel Prajatama?Pexels.com

### Outside of the neighborhood

The same principles apply to anywhere outside of a community.

When on the interstate or freeway you will encounter signage informing you when you cross state lines or entering a new city. And though you may not admit it, a town is typically judged on its signage, especially if someone is just passing through – because what else do you have to go off in that moment? You see poorly kept signage you think “this town is not doing too well financially, since they can’t invest a little money into their signage.” You will see billboards inviting you to visit their small town and make it a place to live, work, and play.

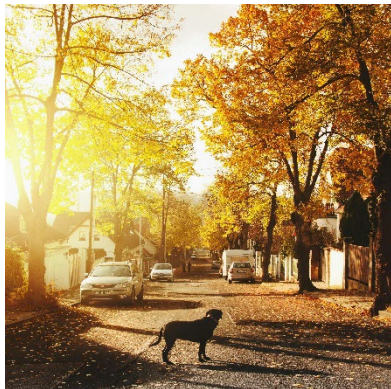


Figure 20; A well-kept neighborhood is the pride of all the residents; Daniel Frank?Pexels.com

Having quality wayfinding signage within a city has lasting benefits. Have you ever been driving and not seen a one-way sign and made a wrong turn and almost caused an accident. What about having difficulty seeing a stop sign due to unkempt and overgrown landscaping. Everything affects everything.

Signage provides critical information to the public and enhances safety by explicitly stating where citizens are allowed and not allowed.

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»Wayfinding is a term that describes the use of signs and connected walkways and bicycle routes to help travelers navigate through neighborhoods, towns, and cities. Directional (or wayfinding) signage should be highly visible – preferably with a standardized decorative color and style – and placed to guide users through a network of routes that connect destinations and neighborhoods; AARP

Additional benefits of well thought out wayfinding signage are:

- Enhances access to goods and services
- Easier to walk, cycle and use public transportation
- Reduces risk of getting lost or injured
- Creates opportunities for community engagement
- Fosters economic/commercial vitality
- Facilitates ease of walking, cycling and use of public transportation
- Helps prevent vehicle/pedestrian/bicycle crashes and near misses



Figure 20. It is always important to place exit signage and directional exit signage in the proper locations; .Mahdi.Chaghari?Pexels.com

Signage helps to provide order by directing traffic (imagine a city without “one way” signage but with one way streets), guiding people (“do not enter” signs, or “dead end outlet” so you know not to turn in on that street), and keeps people out of harms way (think of construction workers holding the pole mounted sign saying “Slow” so you do not hit the cement truck pouring concrete at the site).

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»Traffic signs are critical elements of the highway because they communicate the rules, warnings, guidance, and other highway agency information that drivers need to safely and efficiently navigate roads and streets; Well-maintained signs are important as they help drivers make good decisions; - [USDOT, Federal Highway Administration](#)

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Figure 21. Signage must be able to be read from a certain distance and rate of speed; .Ana.Maria.Moroz?Pexels.com.

On the other side of things, signage can be welcoming and really bolster the image of a city to those that are passing through or those inviting family to their town for the holidays. Following the rules of the FHA when it comes to traffic signage in a city or neighbourhood is a step in the right direction.

“... there are a few key principles that are critical for traffic signs to be effective..

- Fulfill a need
- Command attention
- Convey a clear, simple meaning
- Command respect from road users
- Give adequate time for proper response” - [USDOT, Federal Highway Administration](#)

In addition to the above, you may find it interesting what triggers the decision to use a sign in a certain location. If you

have ever seen ineffective signage in your town, inquire with the authority having jurisdiction and inquire if the signage came because of an engineering study or consultation with any of the entities in the quote below.

“The decision to use a sign at a particular location should be made on the basis of either an engineering study or the application of engineering judgment.

Local jurisdictions that do not have engineering staff knowledgeable of the MUTCD should seek assistance from their State transportation agency, another jurisdiction, or traffic engineering consultant.

The Local Technical Assistance Program (LTAP) in each State and tribal area can be a valuable resource for this assistance as well.” - [USDOT, Federal Highway Administration](#)

Let’s take a look at our next section on how to create a sense of ownership in a community or area.

### **Create a sense of ownership**



Figure. 29. Creating home ownership is key\*  
' .KindelMedia?Pexels.com

Creating a sense of ownership in a community makes it clear who owns the space and increases the likelihood that owners are more likely to challenge intruders.

To show ownership in a community residents can do the following:

- Actively participate in decision-making processes
- Contribute personal and professional skills and time to projects
- Voice concerns, solutions, and ideas often and candidly
- Build relationships with other members of the community
- Take responsibility for the well-being one’s home and upkeep of the shared community spaces

All the above when done shows that each resident of a community has a vested interest in seeing the community thrive and be a success in the present and future. Let’s take a look at each of these more in-depth.

#### **Actively participate in decision-making processes**

This means attending HOA meetings and constructively engaging, joining committees that are of interest, and even when not directly participating, still providing feedback and input on important community initiatives via social media, bulletin board posts, and surveys.

#### **Contribute personal and professional skills and time to projects**

A community is comprised of different individuals who make a living providing some sort of a service or skillset to the betterment of society as a whole. Be it a police officer, accountant, architect, gamer, or landscaping company owner.

Using those same occupations above, the police officer could lead the neighborhood watch, the accountant could be the HOA treasurer, the architect could serve on the Architectural committee, the gamer could spearhead the Teen committee on developing a lounge where people can go and play video games on the weekends, and the landscaping company owner could assist in writing HOA rules and regulations governing the types of landscaping to be used throughout the community.

Voice concerns, solutions, and ideas often and candidly

Everyone complains, but if the complaints are not shared with the appropriate entity, then nothing is done to fix the problem that generated the complaint. If there is constructive feedback paired with active listening on the part of a committee and immediate action – a problem can be addressed quickly. Internally this shows the community that things get done, versus someone seeing a damaged roof on their street for 6-8 months and nothing is being done to fix it. Even a situation like this may motivate an insurance agent in the community to stop by and ask the resident if they need any assistance filing a claim. A community wants to be able to say that their community leadership responds quickly and effectively.



Figure 24. Be sure to include all residents in all community programs. . ROCKETMANN.TEAM?Pexels.com

Build relationships with other members of the community

Walk around your neighborhood and be kind, leave your normal group of neighbors and expand your perspective.

Actively seek out diversity and inclusivity in your own circle of your community.

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»Kindness.is.a.language.the.blind.can.see.and.the.deaf.can.hear; .-African.  
Proverb

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Take responsibility for the well-being of one's home and upkeep of the shared community spaces

Be proactive towards identifying and communicating community needs.

For example, outside of the community at an NPU (Neighborhood Planning Unit) meeting, advocate for the community in the meeting and bring back meeting paraphernalia to inform others and encourage them to participate.

For example, if you live in a community of one-story bungalow homes and a developer proposes a four-unit townhome building spread across two lots - that disrupts the character of the community - to stop this, the community would need to come together to vote against the development.

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fA.proposal.to.build.single\_family.homes.in.southeast.Springfield.ran.into.stiff. opposition.from.Galloway.area.neighbors.at.a.recent.Planning.™.Zoning. Commission.meeting;

City.staff.who.reviewed.the.plans.recommended.that.the.commission.approve. the.project?which.would.add.06.single\_family.homes.on.4.25.acres.near.the. Chimney.Hills.neighborhood;.But.after.hearing.from.more.than.a.dozen.neighbors. who.raised.concerns.about.density?traffic.and.storm.water?a.majority.of. commissioners.voted.against.the.subdivision.plan?which.could.head.to.City. Council.in.the.new.yearf.- .Springfield?Missouri.(Yahoo)

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Next, we will look at ways to make it easy to identify intruders or trespassers into a community or area.

### **Make it easy to identify intruders**

How do you make it easier to identify strangers? You make them stand out.



Figure. 65. A couple enjoying a meal at an upscale restaurant;. cottonbro?Pexels.com

An indirect example is when a couple is at a luxury Michelin star restaurant, and they witness someone who is underdressed due to a poorly enforced dress policy. That person stands out immediately.

To identify potential intruders in a community, you can actively monitor for suspicious behavior, utilize security cameras, establish clear visitor protocols, maintain good communication with neighbors and local authorities, and encourage reporting of unusual activity, while also implementing physical security measures, and communicating regularly with local authorities.

Actively monitor for suspicious behavior and observe and report. Do not actively engage for the sake of one's safety.

Examples of suspicious behavior include:

- People wandering around at odd hours, especially in secluded areas
- Vehicles parked in unfamiliar spots or with license plates not recognized by residents. For example, witnessing a van backed towards the back door of the clubhouse after hours and you notice this as strange behaviour because the person that handles security for the clubhouse drives a different vehicle and is never there that late after closing.



Figure. 66. A criminal serving time in prison;. RDNE.Stock.project?Pexels.com

- Individuals casing properties or looking into windows. If someone is a resident of the community, they should have no reason to be peering into their own home or their neighbor's home.
- Strangers asking unusual questions about the neighborhood and going door to door polling residents. Criminals can use this tactic to try and identify how many people occupy a home and their gender and age so they can know how much opposition they will face.

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»[Police.in.West.Chester?Pennsylvania.are.investigating.after.a.woman.was.assaulted.by.a.scam.artist.going.door\\_to\\_door.pretending.to.be.a.contractor](#)• The victim.told.police.three.men.were.going.door\_to\_door.solliciting.home.repairs»  
[ABC.2Action.News?West.Chester?Pennsylvania](#)

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Utilize security cameras to capture criminal activity when no one is physically present:

- Security cameras with adequate lighting for facial recognition during the day and night should be installed in main and secondary entry/exit locations, shared community spaces, entry/exit doors of shared community spaces including the back doors, and spread throughout the community on main streets that everyone has to use and more hidden side streets, where someone could go unnoticed for an amount of time.
- Form a security committee or outsource someone to regularly review camera footage for suspicious activity on a daily basis. Ensure that recordings are not written over and saved as-is on a daily basis.

Establish clear visitor protocols

- During the development of the community ensure during the site development and planning phase that a security gate with an occupied guardhouse is placed at all vehicular entry points and that pedestrian gates require an access code for entry. Require all visitors without community issued identification cards or devices sign in with their name or surrender their state ID or some form of identification until they leave the community along with who they are going to see and why. If someone does not know who they are visiting that is a red flag and authorities should be alerted.

- Educate the community residents and the local authorities about the community guest protocols and update them on changes.

Maintain good communication with neighbors and local authorities

- This can be done easily by creating or joining a neighborhood watch program to encourage neighbors to look out for each other and report suspicious activity to the local authorities.
- Implement technology and engage community forums, social media groups, or email lists to share information about potential threats and observed out of pattern occurrences.



Figure 97: A community coming together to locate a missing person from the area. Ron Lach/Pexels.com

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Regina Thompson is the neighborhood watch commander for her cul-de-sac in the Southern Hills neighborhoods. She joined the group after someone tried to break into her old house. To help protect her neighborhood, she makes sure she knows all of her neighbors.

One of her neighbors told her she felt safe knowing Thompson was right across the street. The neighborhood works together by making sure one another's garage doors are closed, looking for suspicious cars, and reminding people to lock their doors.

Thompson even sends out a quarterly email to the neighborhood filled with updates and safety reminders. [ABC Nebraska Now? Lincoln Nebraska](#)

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### Implementing physical security measures

- At the exterior of the community, locate privacy fencing (8'-0") along the property lines
- Locate opaque privacy fencing at the side and rear yard of the homes and depending on the lot size at the front of the home
- Ensure that all areas with fencing are well-lit, in good working order regarding the structure, panels, and locks and show no signs of disrepair.

### Communicate regularly with local authorities

- The HOA should build a strong relationship with local police by reporting suspicious activity promptly.
- Host community events where the local authorities speak and share information about known criminals in the area.
- Host community events where cops educate the residents on what to report and how to report it and what number to call.



Figure. 63; A.resident.reporting.a. crime; .Adenir.Figueiredo.Carvalho? Pexels;com

### **Use good landscape design**

Good landscape design can create a buffer that makes intruders stand out and dissuade them from committing crimes.



Figure. 69; Remember.to.use.the.9. Foot-76.Foot.rule.with.landscaping; Digital.Buggu?Pexels;com.

In addition to proactive lawncare, residents should implement the 3 Foot/10 Foot Rule.

3 Foot rule - What that means is all bushes and shrubs should be cut down to no higher than three feet and thinned out or grow no higher than three feet. This prevents criminals from hiding behind bushes to surprise unsuspecting residents.

10 Foot rule - All trees should be cut to hang no lower than ten feet from the ground.

It is recommended that the planting of prickly vegetation be placed below all windows. Be sure to use vegetation native to the region where the home is being constructed, so that it is easily maintained.

In terms of security cameras, keeping branches and overgrown shrubbery from blocking them and the lighting is also important.



Figure. 60. A well-manicured residential property. Vladimir Srajber?Pexels.com

Overgrown or unkempt properties could even appear as though they are abandoned—or at least convey the idea that nobody is closely monitoring them. This can increase the likelihood of crimes like vandalism.

Interestingly, less graffiti, vandalism, and littering in outdoor areas with natural landscapes is present compared to spaces that have no natural landscapes.

- “There are, on average, about 3,800 crime victims per 100,000 population in the U.S. each year.<sup>1</sup>
- Among minor crimes, there is less graffiti, vandalism, and littering in outdoor spaces with natural landscapes than in comparable plant-less spaces.<sup>4</sup>
- Public housing residents with nearby trees and natural landscapes reported 25% fewer acts of domestic aggression and violence.<sup>5</sup>
- Public housing buildings with greater amounts of vegetation had 52% fewer total crimes, 48% fewer property crimes, and 56% fewer violent crimes than buildings with low amounts of vegetation.<sup>2</sup>
- Studies of residential neighborhoods found that property crimes were less frequent when there were trees in the right-of-way, and more abundant vegetation around a house.<sup>6,7</sup>
- In a study of community policing innovations, there was a 20% overall decrease in calls to police from the parts of town that received location-specific treatments. Cleaning up vacant lots was one of the most effective treatment strategies.<sup>12</sup>
- Vegetation can be managed to create a reassuring environment, reduce fear, and increase citizen surveillance and defensible space. Principles of Crime Prevention Through Environmental Design (CPTED) suggest how to achieve safer places.” – [Crime & Public Safety, University of Washington](#)



Figure. 61. Young people taking care of the earth. Ron.Lach?Pexels.com

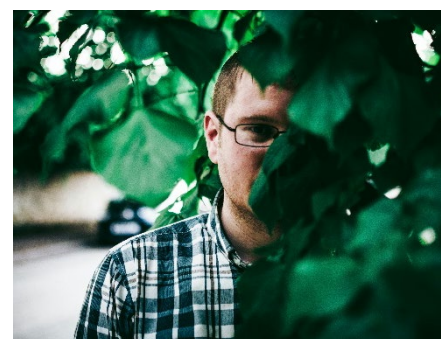


Figure. 62. A criminal lurking behind landscaping. Lisa.Fotios?Pexels.com

While landscaping and plant growth can contribute to the aesthetics of a private residence, multi-family building, commercial business, or government buildings, they can also provide hiding places for people with criminal intent, as stated previously.

Here are some rules of thumb when it comes to landscaping a property to be aesthetically pleasing and still have safety and security in mind.

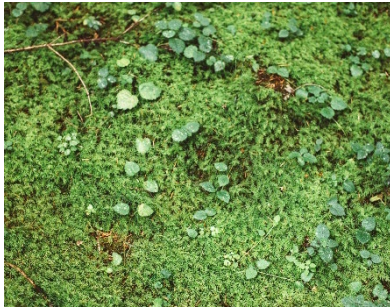
## Barrier Plants

Barrier plants have thorns or needles and a dense or thick structure. Placement: Below and to the sides of windows and adjacent to fences and walls where there should be no access.

## Borders

Bark, coffee grounds, or wood chip borders can be replaced with rock or gravel. Placement: Between a lawn and the building or residence. From a security standpoint, a criminal walking on an uneven rock surface will make more noise and possibly slip or trip than if walking on bark or wood chips, possibly alerting the occupants or a household pet.

## Ground Cover Plants

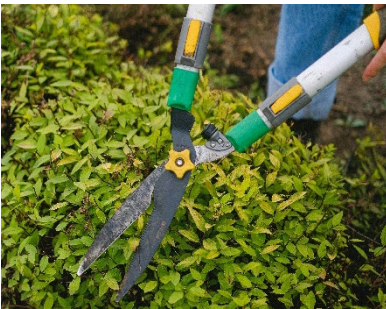


Ground cover plants, including perennial and annual plants, Placement: Within six feet (6'-0") of the edge of walkways and community play areas.

Rule of Thumb: The groundcover should not exceed 2'-0" in height and thus not mature beyond that height.

Figure 69. Ground cover plants. ROMAN. ODINTSOV@Pexels.com

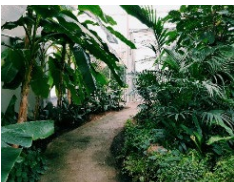
## Shrubs



Shrubs should have a height that does not exceed 3'-0" feet at maturity. Placement: Between 6 and 12 feet from the edge of walkways requiring visual surveillance.

Figure 69. It is important to maintain shrub heights. Anna.Shvets@Pexels.com

## Trees



Tree limbs should be pruned to 10 feet above ground (remember the 3 foot/10 foot rule).

Be mindful of the location of pole mounted elements (light poles, transformers), as you do not want to turn a well-lit space into a space with deep shadows in the evening.

Figure 69. Trees should be pruned 7.6 feet above the ground. Daniel.Frese@Pexels.com

From a commercial standpoint you also do not want your “No Trespassing,” “Private Property,” or “Do Not Enter” signs to be blocked by tree branches or overgrown shrubs.

While we realize that signs like these may not always deter the most determined criminals, it still defeats the purpose of even having them if they are covered.



Figure 66; See how easily you can see inside the mercantile space from the outside! . Vitaliy.Haiduk?Pexels.com

When laying out the landscaping for your next project implement the following design tips:

- Lay out walkways and use landscaping to lead occupants to entry and exit points; Do not lead them past areas where visibility is difficult in front of them or around them
- Ensure shrubs and/or trees do not or will not cover windows or doors once fully matured
- Locate thorny vegetation near fences and operable windows to dissuade criminals
- Do not aid criminals by locating landscaping in such a way that it creates hiding places

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»The.person.was.hiding.in.the.bushes.and.waiting.for.the.woman.to.finish.withdrawing.cash.from.the.Bank.of.America.ATM.in.the.77666.block.of.Pacific.Avenue.South;The.person.robbed.the.woman.at.091a.m;after.threatening.her.with.a. They.reportedly.ran.off?according.to.a.Crime.Stoppers.of.Tacoma\_Pierce.County.bulletin; . [The.News.Tribune?Pierce.County?Washington](#)

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- At the front of businesses or in front yards, create a bilateral visual connection that permits open spaces to be visible from the street and by neighbours and passersby
- Remember that retaining walls, fencing, and low walls guide occupants to where you want them to go and not go
- Employ above average lighting at all apertures, especially windows and doors at the front and rear of a building, along pathways, and at pedestrian gates and entry points
- Implement the 3 foot/10 foot rule, very critical at main entry/exit points and windows

## Use adequate lighting

Adequate lighting and security cameras go hand and hand. What good is having the visual connection from a residence to the street if a resident cannot identify at the very least the color of clothing and relative shape and height of a possible criminal casing their neighborhood.

In addition, adequate lighting at gas stations, parking areas and other circulation zones is a must and can improve safety.



Figure. 06; Well\_lit.auditorium; Jonas.Kakaroto?Pexels.com

Think of your favorite horror movie, the protagonist or even moreso the supporting character is never attacked in a well-lit and heavily congregated space.

To attack someone in this situation is the equivalent of attacking someone on stage at a theater with the spotlight on them.



Figure. 07; Homeowner. looking.out.of.their.window. during.a.conversation; Artem.Podrez?Pexels.com

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»If.lighting.was.in.the.community.like.it.should.be?a.lot.of.things.that.take.place. here.would.not.take.place?

\\\\\\\\'s.son?\\\\\\\\?was.shot.twice.about.two.weeks.ago.on.Annette.Street.in.the. Brookstown.area.of.Baton.Rouge;He.thankfully.survived?but.she.believes.the. lack.of.lighting.on.the.street.did.not.help.the.situation;

»He.said.no.one.even.knew.he.was.shot;He.was.out.here.laying.in.the.road? screaming.and.hollering?shining.his.light.on.his.phone.to.get.help.get.assistance;. He.ended.up.calling.EMS.himself.to.help.because.the.road.was.so.dark.nobody. even.knew.he.was.out.here?-.WAFB.09?Baton.Rouge?Louisiana

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In situations like the one quoted above, if there had been adequate lighting, the assailant would not have felt comfortable stalking and shooting their victim. They knew that one, no one would be able to identify them after they shot the victim and two, no one would see the victim lying dead in the street as they had made their getaway.

When laying out the lighting for your next project implement the following design tips:

- Where security cameras are installed, consult the manufacturer and inquire about the optimum or ideal type of lighting to make their security camera most effective
- Place lighting to illuminate circulation paths and illuminate main entry and exit points without created shadows

- Do not place lighting, especially pedestrian lighting within the trees
- Have the electrical engineer on your team generate a photometric study so you can see how light interacts with the space or environment, which then will inform the electrical engineer as to how much light is needed and how it needs to be distributed.

### **Use natural access control**



Figure. 00; Concrete pavers; . Moussa.Idrissi?Pexels.com

Natural access control is a concept where people are guided through an exterior space by the strategic design of streets, sidewalks, building entrances, and landscaping with the aid of lighting, signage, and security cameras. Changes in exterior finish texture and color can play a role in guiding building occupants and the public.

All the elements mentioned previously are used to aid in implementing natural access control so we will focus on some other elements that should be considered. For example, defining entrances, parking lot design, stairwell design, building layout, and psychological deterrents.

### **Defined entrances**

Clearly marking the main entrance to a building is essential to natural access control.

Imagine visiting a place you are unfamiliar with and being unable to locate the main entrance. Do you exit your vehicle and wander around (whether it is day or night)? Or do you call the business and inquire?

Either way you are lost and do not know where to go and if a place looks too shady most will move on. As mentioned previously, signage, lighting, and landscaping help with locating the defined entrances to a space.

To drive the point home (no pun intended), you rarely if ever see a single-family residence with the main egress door at the side or rear of the house.



Figure. 00; A clearly marked main entrance; . Wendy.Wei?Pexels.com

### **Parking lot design**

Parking lot design is standardized thankfully but the location of parking lot elements like curb ramps, access aisles, crosswalks, pole mounted lighting, landscaping and signage all play a role in guiding pedestrian and vehicular traffic.

And if done incorrectly it can cause confusion for unfamiliar visitors to a site, cause unnecessary vehicular bottlenecks and accidents. Have you ever traveled to a retail store or driven by a restaurant and wondered if they were open due to the lack of parking lot lighting and unkempt asphalt paving? Those are places you should avoid and places that criminals thrive at.

## Open stairwells

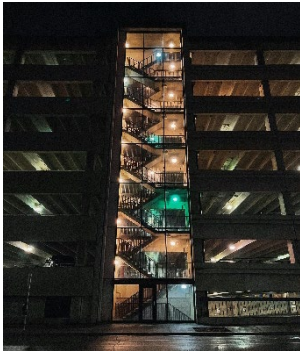


Figure.40. See how easy it is to see inside the stairwell from across the street! . Jayson.Hinrichsen? Pexels.com

Design stairwells with visual connections from inside to outside and vice versa.

Using the image of the parking garage stairwell to the left, you can clearly see the stairs and whether or not they are occupied. If an assault occurs, passerby will be able to alert the local authorities.

In addition, typically parking garage stairwells have emergency stations so that a victim can immediately alert the authorities and communicate with them if able.

## Building layout

When laying out the egress components of a building, ensure locating them with clear sightlines to the street and parking lot and depending on the size of the building, give views into other areas of the building. This promotes passive security and makes criminals think twice before committing a crime.

## Psychological deterrent

Use the architectural elements at your disposal to create the perception that a space is monitored and occupied, and that unauthorized entry is difficult.

For example, for an elementary school where the drop off area is located, have the administration offices with windows giving full view to the drop off area.

Most schools release around 3p and most staff work until 5p, so while kids are awaiting pickup there are always staff members passively observing the area in addition to security officers.



Figure.42. Signage informing parents where the daycare drop-off is located! . Harrison.Haines? Pexels.com

### 3.3 PRACTICAL APPLICATIONS

#### USE PHYSICAL ELEMENTS TO DEFINE PUBLIC, SEMI-PRIVATE, AND PRIVATE SPACES

##### POLISH SHOPPING MALL



Figure 33. A public square in Poland.  
Pexels.com

Thanks to the design of a shopping mall (a semi-private space) a criminal was arrested after hours.

A security officer walking the mall corridors noticed that someone was behind the security gates of a tenant space and helping themselves to the cash register.

Thanks to being able to have a clear sightline of the majority of the tenant spaces, the security officer was able to witness the criminal in the act.

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»• with a bag in his hand froze motionless? pretending to be a mannequin in front of a shop window • After the shopping center closed? the crafty crook plundered a jewelry stand • But the suspect's luck eventually ran out when a security guard spotted him and called the police; [New York Post](#)

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##### FRESNO, CALIFORNIA

St. John's Cathedral, a semi-private space, in an effort to combat vandalism has decided to clearly demarcate where the public space ends and their property begins with a fence being erected along the perimeter of the property.

The fencing type being considered is a wrought iron fence, which does look imposing but also allows for churchgoers to see what is occurring outside of the church after service hours.



Figure 34. Fresno?California; Level.  
89. Media?Pexels.com

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»fMy final assessment was that we had no issue approving the proposed project because it was going to protect this historic resource? which is ultimately what we want for all our historic properties? • the design of the fence is meant to keep crime at bay and off church grounds; [ABC.96?Fresno?California](#)

---

## LANDSCAPING

### BALTIMORE, MARYLAND

An association was discovered in a Baltimore study between crime decreasing in areas that had more trees.

The study is careful not to state that the trees are the cause for the decrease in crime but that there is a strong association.

Interestingly enough, the results of the study paralleled the results of a study conducted by the U.S Forest Service for Portland, Oregon.

So imagine the blighted areas of your city, do they have a lot of trees in the private, semi-private, and public spaces? Or none at all?

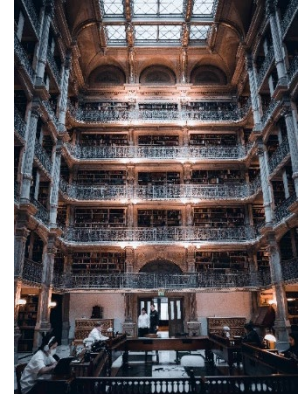


Figure.45; George Peabody Library in Baltimore, Maryland; 'Wandering Bo?Pexels;com

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»These studies?says Grove?are not?»research for the sake of research?but research for policy making? They aim to build common cause with police?public works departments and city planners on the multiple benefits of developing greener cities? \_Yale.School.of.Forestry.™.Environmental.Studies

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### SEATTLE, WASHINGTON

In Seattle, Washington similar results were observed by the report compiled by the University of Washington, Urban Forestry / Urban Greening Research department.

What was revealed was that public housing residents with nearby trees and natural landscaping reported less acts of domestic aggression, less violent crimes, fewer total crimes, and fewer property crimes.

The results of a decrease in crime means less calls reporting crimes to city services which lowers the stress on the city services departments and gives them more time to focus on other crimes elsewhere.

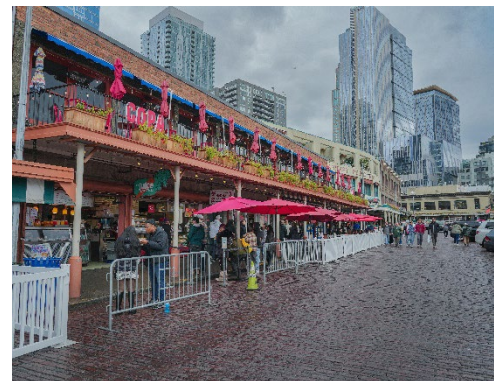


Figure.66; Market square in Seattle, Washington; 'Eddie.Ortiz?Pexels;com

Spoken about more in Part IV, but the cleaning up of vacant lots was an effective strategy in decreasing crime as well.

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»The presence of nearby nature may positively influence social interactions and lessen aggressive and violent behavior; \_Urban.Forestry-Urban.Greening.Research.\_University.of.Washington

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## LIGHTING

### NEW YORK CITY, NEW YORK



Figure 67; Statue of Liberty. Pixabay/Pexels.com

A study conducted in New York City on public housing complexes yielded research results that showed there was drastic reduction in assaults and robberies after the installation of intense street light.

Something to think about when you are designing your next multi-family complex.

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Placing lighting towers randomly in some of the city's highest-crime public housing complexes serious nighttime crimes plunged 26 percent in those areas over the next six months. Because lighting may simply push criminals to operate a few blocks away where no extra lighting exists, the researchers also estimated the reduction over the entire community. [National Bureau of Economic Research](#)

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### SAN PEDRO SULA, HONDURAS



Figure 68; San Pedro Sula, Honduras. Melvin Matute/Pexels.com

Same as what was uncovered through research in New York City's housing complexes, was also discovered in San Pedro Sula in Honduras.

Along with the decrease in crime due to the installation of more efficient lighting in public spaces (streets and parks) and community activities, citizens have an improved perception of their community. This is extremely important when it comes to residents reporting and self-policing their neighborhoods.

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In Latin America, examples abound showing that improving lighting in cities contributes to reducing crime. In San Pedro Sula, Honduras, the authorities' crime reduction efforts include installing more efficient lighting systems in streets and parks, rehabilitating green areas, and promoting community activities. As a result, there has been a noticeable decline in the number of crimes. [infoSEGURA](#)

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## SIGNAGE

### HAWAII

You want to witness the power of signage?

Go visit Olomana trail in Oahu, Hawaii. [Google Maps](#)

The trail is a very popular hike and unfortunately one of the most deadly.

The two years that the city had the signage in place showing the number of deaths and when they occurred of those that hiked beyond the first peak, city services said fatal falls decreased to 0 with only one fall.

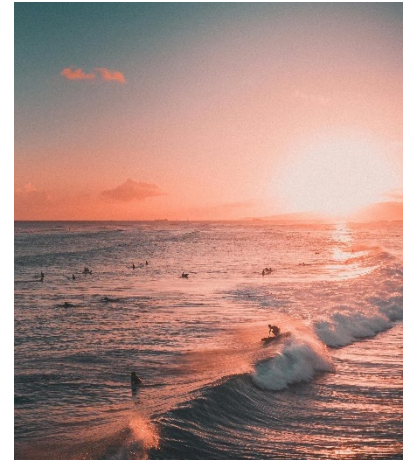


Figure.69;Hawaii; ' Jess.Loiteron? Pexels;com

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»You.step.three.inches.in.one.direction?that's.a.fatal.fall? .said.Honolulu. Emergency.Services.Director;»You.can.never.prevent.all.injuries.and. fatalities?• »But.at.least.if.they.have.that.information?they.can.make.a.good. decision.for.themselves?their.friends.or.their.family; [\\_Hawaii.News.Now.](#)

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### SENSE OF OWNERSHIP

In Flint, Michigan, the community formed a group, they called the University Avenue Corridor Coalition and utilized the principles of CPTED. With this they began to take control of their neighborhood by organizing community wide clean-ups, installing more lighting and sidewalks and bike paths. Even moreso, they were able to execute a change of use on a building from a liquor store to a nationally known subway shop, which reduced the assaults that often occurred in the evening by resident alcoholics at the liquor store.

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»• According.to.the.coalition's.latest.report?assaults.decreased.10.percent? robberies.49.percent.and.burglaries.32percent.between.8679.and.8674 < [\\_NBC. News](#)

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## LANDSCAPE DESIGN



Figure. 60; Kids playing in the park; . cottonbro?Pexels;com

In Anderson, Indiana a criminal was found using landscaping as a cover to commit criminal acts in the presence of youths.

Thanks to clear sightlines from the street and the vigilance of a passerby, the criminal was found in their hiding spot, the authorities alerted and the criminal arrested.

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»A.witness.told.police.she.was.playing.wiffleball.outside.when.she.reportedly.saw.Ponce.Esquivel.pull.up.to.the.area.in.his.car• A.victim.in.the.incident.told.police.that.as.she.was.playing.wiffleball?she.turned.toward.the.bushes.while.swinging.the.bat.and.saw.Ponce.Esquivel.lying.by.the.bushes;- .Fox15

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## CAMERA AND ADEQUATE LIGHTING



Figure. 61; Pole-mounted surveillance cameras; .Thomas.Windisch?Pexels;com

Cameras were used in “Operation Players Club” in Jacksonville, Florida to secure a search warrant and execute an arrest on a local big time drug dealing organization that purchased and distributed cocaine, fentanyl, and meth throughout the community.

More specifically, a live stream camera was mounted to a light pole in the parking lot of the condo complex and caught the criminal in the act.

If you click the link to the news article you will notice that there is not a lot of landscaping at the stair entrances or windows and doors. This was beneficial, because during the operation police officers had to stake out in front of the condo complex and needed to be able to easily identify the individuals that were coming and going.

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»We.will.never.be.able.to.quantify.the.lives.that.were.saved.by.removing.this.poison.from.our.streets?.Waters.continued?»but.unquestionably.(thanks.to).the.excellent.investigative.work.of.the.men.and.women.of.JSO.and.our.law.enforcement.partners.all.over.the.southeast.over.the.course.of.three.months?our.community.enters.a.new.year.safer.and.more.secure?and.a.lot.of.dope.dealers.are.off.the.street; \_ .News0Jax?Jacksonville?Florida

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### 3.4 THE FUTURE FOR NATURAL SURVEILLANCE

#### KANSAS CITY, MISSOURI



Figure 62. The Glass Labyrinth at the Nelson-Atkins Museum of Art in Kansas City, Missouri. Blake Pexels.com

In Kansas City, Missouri, an AI security robot “Marshall” is used to surveil the parking lot of a shopping center.

The robot is equipped with cameras that can read license plates, it can detect IP addresses and also has facial recognition abilities.

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»Despite not carrying weapons, Marshall has successfully assisted in catching criminals;

Marshall was able to provide the IP address and the license plate of the getaway car. News Kansas City Missouri

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#### CENTRAL PARK, NEW YORK

Due to an increase in robberies, felonious assaults, and major crime in Central Park, the local authorities are considering using drone technology to keep eyes on everyone and make citizens feel safe.

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Mayor Eric Adams acknowledged the troubling numbers and said they are looking at new technology like drones and they will roll it out when the time is right. ABC Eyewitness News

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## PUBLIC, SEMI-PRIVATE, AND PUBLIC SPACES



Public spaces in locations around the US are getting creative with how they are innovating public spaces for its citizens.

Milwaukee County in Wisconsin is converting parks to beer gardens due to underfunding and neglect; Baltimore, Maryland is morphing into a field lab on climate-change adaptation thanks to a federal grant, and cities in multiple states are committed to monument projects that will literally change the face of public commemoration

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»For average citizens, the need to solve existing problems with public spaces (too much paving, too few trees, too many colonial statues) is more pressing than the desire for city-funded spectacle. - [Metropolis Mag.](#)

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Figure 68. Adults playing sports in the park. RDNE Stock project. Pexels.com

Due to a surge in interest in National Parks and the desire to maintain and protect the natural landscapes, the National Park System and National Park Foundation are using technology to take the park to the people and expose the masses to other lesser known National Parks. This includes modernizing campgrounds (think “glamping”) and building or renovating visitor centers to be state of the art. - [National Park Foundation](#)

## SLOVENIA, EUROPE

For private spaces, technology is evolving in Slovenia. Most security systems alert and report but this security system dubbed “Eve” fights back.

How?

By being powered by AI, firing paintballs and tear gas pellets at burglars or unwanted visitors.

Eve also has facial recognition (that functions also in the dark) that can discern between humans and animals.

The homeowner can also, by using the app determine who is permitted to enter the home and who is not.



Figure 69. Slovenia, Europe. Rok Romih. Pexels.com.

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»Here's where it gets really interesting; If an unknown intruder appears next to someone known— perhaps your daughter's new boyfriend— Eve asks you to make the call; Should she take the shot? or not?« [\\_TNW](#)

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## BOSTON, MASSACHUSETTS

Similar to what is happening in Slovenia there are now exterior security cameras that utilize AI to save profiles of persons permitted to enter your home and those that are not. Thanks to AI the camera also can differentiate between normal outdoor activity and human gestures and suspicious behavior.



Figure 66 AI technology is being used to monitor and detect security threats; ' This is Engineering? Pexels.com

If an alert goes off, a trained agent of the company will gain access to the camera's live feed and make assessment. Depending on the assessment, the agent will either contact the homeowner or contact the authorities.

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»This combination of AI and human monitoring should ensure that threats are identified and dealt with quickly; According to SimpliSafe agents can respond to a potential security threat within 96 seconds of the initial detection offering a rapid and effective means of protection; [\\_Home Theater Review](#).

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## LONDON, UNITED KINGDOM

- The future of signage thanks to technology seems to be like something out of a sci-fi movie. What will soon be in all types of spaces, especially public spaces will be:
- Digital signage that emits smells to passersby
- Digital signage used as a bulletin board around an office to keep all employees informed or used on a college campus to inform students about topics related to their major
- Mirrors in retail stores that double as digital signage and show advertisements
- Interactive marketing that triggers based on what the occupant is doing
- Utilizing facial recognition to deliver more personalized advertisements to consumers
- “Proximity marketing and digital signage

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»Burberry for example (one of the first retail brands to embrace social media) have mirrors that double as digital signage agents throughout their flagship London store;

The mirrors show advertising content but also react to the items the shoppers pick out in front of them. Walk past one of these mirrors with a top, skirt, or trench coat and the RFID-enabled screen will trigger catwalk footage of the item you hold. [ScreenCloud](#).

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## BIOPHILIC ARCHITECTURE

In this era of focusing on mental health, architecture has responded by bringing the outside – inside.

How?

By design with biophilic architecture in mind, research shows that those who are exposed to nature have less stress and more focus. So this would be ideal for high stress and high pressure industries.

“One of the most significant trends in 2025 will be the move to bring nature from the outdoors in. According to research, exposure to nature helps reduce stress and improve focus, so exhibitors seeking to create calm and inviting spaces amid the high-energy environment of trade shows are increasingly turning to biophilic design— that is, the integration of natural elements into built environments.

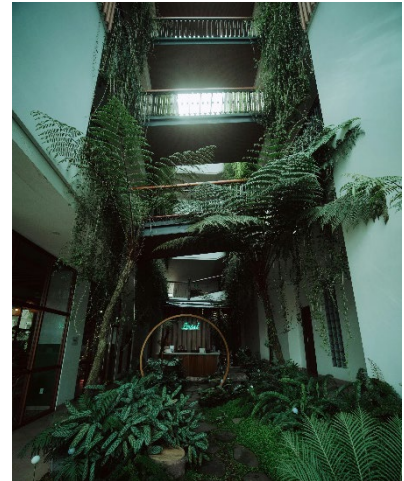


Figure.766: Biophilic architecture. [Pew.Nguyen@Pexels.com](#)

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» Biophilic design can be soothing and make booths stand out in a way that feels fresh and engaging. These can be fully customized to meet businesses' color and texture needs. [Retail Touch Points](#).

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### Part 3 - Natural Territorial Reinforcement | Review Exam (5 Questions)

**1. Which is an example of a public space?**

- a. Windows
- b. Your 1996 Dodge Viper Coupe
- c. County Library
- d. University Campus Yard or Quad

**2. Which is an example of a semi-private space?**

- a. Windows
- b. Your 1996 Dodge Viper Coupe
- c. County Library
- d. University Campus Yard or Quad

**3. Which is an example of a private space?**

- a. Windows
- b. Your 1996 Dodge Viper Coupe
- c. County Library
- d. University Campus Yard or Quad

**4. On the way back to the office after a successful shortlisting interview with a Higher Education client you are stopped at a traffic light. While you wait for the light to turn green you look inside the gas station to your right and lock eyes with the cashier and see a line of customers inside. What type of just occurred?**

- a. Soul connection
- b. Natural surveillance
- c. Invasion of privacy
- d. Traffic violation

**5. You notice how a residence has implemented the “3 foot 10 foot” rule. Which element of Natural Territorial Reinforcement is being used?**

- a. Signage
- b. Landscaping Design
- c. Building Facade
- d. Lighting

**You made it to the finish line! This concludes Part 3 of the course. Continue to Part 4.**



## PART 4 - Maintenance and Activity Support

### 4.1 DEFINITION

Maintenance involves keeping the community environment in good condition and looking well-cared for; For example, mowing lawns in shared spaces, replacing burnt-out light bulbs, and the like. Having regular upkeep of public, semi-private, and private spaces is a simple yet effective basic step to thwarting crime in an area.

A well-maintained home, building, shared community space, or community park fosters a sense of pride and ownership among community members.

The above effort by the community transmits visually a strong signal that this is a neighborhood of individuals who are united and care immensely about their community and are willing to defend it.



Figure.767; A well-kept lawn signals to all that an area is cared for and monitored on a consistent basis. Gustavo Fring?Pexels.com



Figure.768; Does this house look like it is cared for? Criminals would have no qualms with trespassing on this property. Mike..Yak?Pexels.com

As you can imagine, neglected or poorly maintained areas can attract criminal activity as they signal a lack of guardianship and a reduced risk of detection. A criminal thinks “Heck, if they don’t care about their community and they live here, then they definitely won’t mind if I vandalize this empty house for sale.”

Up-keep of an area not only promotes a positive image but proactively shows in everything related to the community. Especially in its design, layout, and improvements. All in an effort to have the best community possible and safest community possible – where people can raise a family safely.

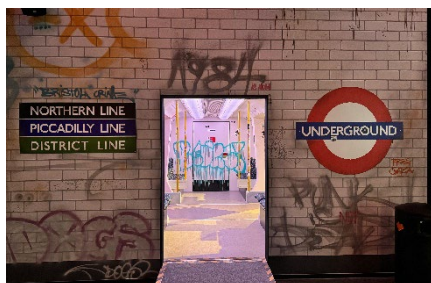


Figure.769; Graffiti in a subway station. Radoslaw.Sikorski?Pexels.com

Graffiti on subways, city buses, buildings, broken cars in the front lawn, in residential or commercial buildings, and litter are all forms of disarray and blight and invite crime, non-violent and violent.

One way to get ahead of criminals is through public art; For example, to paint murals on a building which will then enhance the space and tell the history of

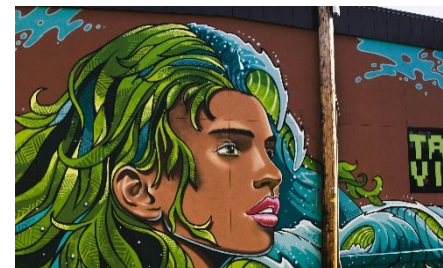


Figure.760; Planned murals offer an opportunity for a community to express its pride and history. Aidan Jarrett?Pexels.com

the community the building is located in.

This gives residents or businesses in the area a heightened sense of pride about where they live or work. In addition, the “taggers” or graffiti artists probably know the artist and also like the work so they do not deface it.

Even more interesting, is that they may ask the community how they can sign up to “tag” buildings in the area and get their name out there to the public in a positive way.

Preventative and proactive maintenance provides the community with reassurance and the ability to prevent crime on its own. This approach can improve the image the population has of itself, and its domain, but also the projection of that image to others. Word of mouth is the best marketing and a community that is known for being well kept and justly managed will never be short of residents.

**Activity support** Involves encouraging the use of spaces to discourage criminal activity, for example hosting neighborhood events (like a summer cookout) to get people out and using semi-private spaces, adding public art that reflects the community (as mentioned previously), and the like.

Criminal acts can be discouraged in public spaces when activities in those spaces involve residents, visitors and other legitimate users.

Activity support promotes the use of the area by the community, such as hosting group games in the park, hosting holiday events, and the like. This includes design and signage to encourage and control and monitor the intended patterns of use.

Activity support provides the community with reassurance and the ability to prevent crime on their own, all while having a good time.



Figure.76. People using a community park or public soccer pitch allows for passive surveillance and many witnesses to unlawful acts or events.' Mizuno.K? Pexels.com

## 4.2 EXAMPLES

### EXAMPLES OF MAINTENANCE

Routine examples of maintenance fall into the following categories: R&R (Repair or Replace), Remove, Landscaping, Cleaning, Lighting, Inspections, and Community Engagement.

#### Repair or Replace



Figure.76. Technician repairing a utility line.' Kelly? Pexels.com

Promptly repairing and/or replacing sidewalks, fencing, playground equipment, light fixtures, doors, and windows.

Priority should be to all damaged items but if priority must be given, address the public facing/serving items first and the resident issues second.

Remove gang graffiti as soon as possible, before more graffiti artists decide to join in and add to what was already done initially.

#### Landscaping

Have a strictly adhered to maintenance schedule that includes trimming trees and shrubs, and keeping grass cut and weeds pulled.

Ensure that the 3 foot/10 foot rule is followed to promote consistency and ensure as much as possible that all residents can observe their property and the streets from the safety of their homes.



Figure.76. Residents cleaning up the public beach. Ron.Lach@Pexels.com

### **Cleaning**

Removing trash and debris, each resident ensuring their trash does not blow into the street or onto someone else's property. Actively picking up trash and litter as one goes for their daily walks goes a long way. Other residents see that their neighbor cares and wants what is best for the community. HOA rules and regulations and ordinances typically prevent this but it is important to make sure front yards are free of junk vehicles and appliances.

To prevent pest infestation and the possibility of a resident being bitten, ensure to keep trash enclosures clean and the drain unclogged.

### **Lighting**

As stated, multiple times in this training course, lighting is incredibly effective in preventing crime and identifying criminals. What that means is quickly replacing burnt-out light bulbs, maintaining ample and adequate lighting, especially those near security cameras.

Also ensure that hiding spots are eliminated and if unable to be removed, ensure they are properly illuminated day and night.

### **Inspections**

Proactively call the local jurisdiction for routine inspections of the community to ensure everything is current and up to date. For example, let's say the pool gate was installed 15 years ago and has broken. One of the committee members is good with tools and volunteers to do the work for free.

Well let's say the reverse the swing of the gate to swing towards the pool even though initially it swung away from the pool.

Nuances like these are something that a code official could highlight and require to be corrected. Swimming pools are required to have all door gates swing away from the pool or in the direction of egress from the pool. (Nerd Note: You can find pool gate requirements in Section 305.3 of the 2018 ISPCS).

In addition, proactively calling for inspections creates a great rapport and reputation with the authority have jurisdiction, which is always beneficial.

### Community Engagement

Promotion of community engagement towards the upkeep of the community's shared spaces makes the tasks a lot more fun (you get to learn more about your neighbors) and makes the work go by faster.



Figure.764. Getting the community involved and knowing your neighbors make it easier to spot criminals but also make new friends. RDNE.Stock.project?Pexels.com

## EXAMPLES OF ACTIVITY SUPPORT

### Hosting

Examples of activity support are as follows:



Figure.766. A creative and resourceful community park using used tires. Ryutaro.Tsukata?Pexels.com

Hosting monthly, quarterly, and annual neighborhood events to get residents and visitors out and using the shared community spaces.

Converting empty shared space into new play spaces for the youth and elderly of the community.

Incorporating public art (see page left, what old tires can be used to create) that reflects the history of the community or shares a unified message that embodies what the community believes.

## 4.3 PRACTICAL APPLICATIONS

### MAINTENANCE

#### Repair and Replace



Figure.776. Tampa, Florida skyline. Pixabay?Pexels.com

#### TAMPA, FLORIDA

Municipalities like Tampa, Florida are providing funds to residents of homes that are in need of dire repair.

Thanks to a grant funded by the federal government, homeowners can make the emergency renovations they need.

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»We hope that we can give homeowners peace of mind while the program's funding takes care of expensive.

## KAMPALA, UGANDA



Figure.777; Scenic view of Uganda; Caleb Falkenhagen; Pexels.com

The incorporation of non-motorized transit corridors is helping to reduce the hazard found in driving on the roads of Kampala, Uganda.

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»Patience Ataliba, who lives in the Ugandan capital of Kampala, commuting was once a harrowing affair. The 89-year-old student and climate activist often had to dodge cars, motorcycles, and three-wheeled taxis as she walked through the streets of Kampala's bustling business district; [UN Environment Programme](#)

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## GIPSY HILL, SOUTH LONDON, UNITED KINGDOM

Community members are taking their community by addressing graffiti in a very artistic way.

Did they knock down the fencing that was being “tagged”? No. They fully restored the fence to its original state and then painted it through the help of local volunteers.

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»Repainting the fence opposite Gypsy Hill Station is just one change to the area in the heart of the community made by Friends of Gypsy Hill volunteers; [Love Lambeth](#)

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## Landscaping

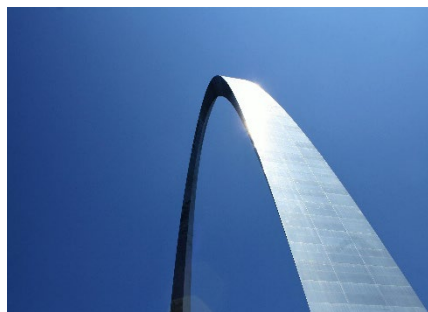


Figure.778; The Gateway Arch in Missouri; Matthias Cooper; Pexels.com

## SHAWNEE, MISSOURI

Remember the “3 and 10” rule, well the municipality of Shawnee helps to maintain and promote safety in its communities through its Neighbors Helping Neighbors program which addresses minor chores (such as hedge trimming, lawn mowing, etc.) for those residents which are incapable.

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»• We wanted to be able to assist the people who basically want to remain in their home and just needed a hand in kind of those common everyday homeowner tasks • » [\\_KansasCity.com](#)

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## Cleaning

### PENANG ISLAND, MALAYSIA

As an architect you are constantly educated on the importance of trees as it relates to the environment, shading, energy usage, comfort, et. cetera.

On Penang Island ahead of the Asian Environmental Summit, Earthday.org partnered with The Malaysia Humanitarian Foundation (MHF) and executed a massive cleanup that removed over 1800 pounds of trash and plastic pollution. In addition to that, the partnership resulted in volunteers planting over 1.2 million trees; But more importantly, all of the trees were 30 varieties of species that were indigenous to Penang Island which ensures their health.



Figure.779; Malaysian Skyline; 'Azri.Suratmin? Pexels;com

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»A key focus of the summit was to activate the youth to get involved in their own communities to help build a more sustainable world; » [\\_EarthDay;Org.](#)

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## Lighting & Repairing

### HOUSTON, TEXAS



Figure.770; Downtown Houston; Texas; 'Eddie.Ortiz?Pexels;com

In an effort to exercise and promote positive community policing, the sheriff's office in Harris County is passing out repair vouchers (up to \$250) instead of traffic violation tickets for those drivers with a broken light on their vehicle.

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»• they've seen success in other law enforcement jurisdictions across the country; The program has already covered the cost of nearly 77,666 repairs through 729 law enforcement agencies across 87 states; Back in July, San Antonio became the first city in Texas to implement the program; » [\\_Houston.Public.Media.](#)

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## Code Standards

## VICTORVILLE, CALIFORNIA



Figure.77 California; Edgar. Colomba?Pexels.com

In an effort to maintain a standard of compliance and aesthetic, the municipality of Victorville is executing on a new initiative, a “Community Enhancement Program” that focuses on citizens maintaining their property and keeping it within code compliance.

For example, some citations have been having a non-functional vehicle in the driveway, weed growth, remedying dirt patches in a front yard, et. cetera. Of the 2,800 homes cited, over 50% complied after receipt of the initial notice.

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The program is educational first. Code compliance officers visit homes with a checklist of common violations like excessive weeds or inoperable vehicles parked at the property. They are given 96 days to begin correcting the violations. Depending on the type of violation we may have programs to assist residents experiencing financial hardships and we invite them to reach out to us to learn about eligible programs. [ABC](#)

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## Community Engagement

### ORANGE COUNTY, FLORIDA

The local government of Orange County engages the community by making them aware of beautification grants that assist residents with securing proper signage for their community.

For example, in East Orlando there was a hand painted sign in place of where the original sign had long fell. The local authorities engaged the community and helped them file paperwork to access the funds given through the grant and now two brand new signs are at the entrance of the community.

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“I’m so happy about this,” said a resident of Piney Woods. It made our entrance beautiful. And the grant application process was very easy. This is just one example of how Orange County’s Neighborhood Beautification Grants make a difference. [Newsroom.Orange.County.Florida](#).

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## EXAMPLES OF ACTIVITY SUPPORT

## Hosting

### NAPERVILLE, ILLINOIS

At more than 40 different locations in Naperville, the local government hosted a “National Night Out” where citizens could get to know their local authorities, be educated by them, and have some fun, all in an effort to continue creating a safe community and city.

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»City employees from the police, fire, public works, and utility departments will attend many of the neighborhood events between 6 and 8 PM with cool trucks and equipment to show off, giveaways, and information for families. [PositivelyNaperville](#).

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## Create

### MIDDLETOWN, VIRGINIA

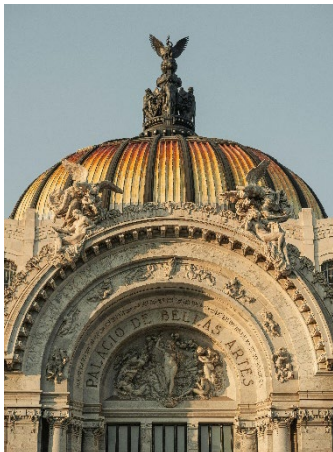
Through the purchase of a conservation easement of 23.5 acres from the city, the Shenandoah Valley Battlefields Foundation (SVBF) will use the funds they raised to also make improvements to the site in the form of adding trails and wayfinding.

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»It's not just about preserving the land; it's about preserving the land and opening the lands to the public so that they are outdoor classrooms. [Winchester Star](#).

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## Add



### MEXICO CITY, MEXICO

The most populated borough of Mexico City - Iztapalapa is unfortunately one of the poorest and experiences water shortages and high levels of pollution and crime.

In an effort to highlight the community's history, send positive messages, and show some community pride the local government recruited 150 artists to paint murals throughout the city.

Figure 77. The dome of Palacio de Bellas Artes in Mexico City, Mexico; Julio Lopez Pexels.com

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»• In total, close to 77,666 murals have been created by local artists over five years in Iztapalapa. That's the largest mural project in the world, according to the local government.

The murals are on public buildings, private businesses, and homes, even on rooftops— visible from cable cars— and they depict local stories, traditions, characters, and neighbors from the area. [TheWorld;Org](#)

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## UMEÅ, SWEDEN

In an effort to balance the “urban planning” scales so to speak and promote gender equality, Umeå is designing spaces with women in mind based on feedback and designing spaces that they can feel safe in.

How do you know if your city doesn't practice gender equality?

A few signs are if your city has:

- Poorly lit underpasses, alcoves, and parking lots
- Public transportation schedules that do not consider care-related tasks (picking kids up from daycare, mid-day appointments, emergencies during work hours, et. cetera)
- No vantage points in public spaces where an entire area can be seen so occupants can know when and where someone is approaching

A few examples of how Umeå shows gender equality is renaming a school after Maja Beskow, one of the first female teachers in Umeå, pedestrian crossings flagged by blue warning signs that portray both a man and a woman, implementing feedback from women when it comes to design via workshops, and more.



Figure.77 Sweden in the evening. Pixabay/Pexels.com

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»In Umeå, gender equality officers Dalén and Linda Gustafsson weigh in on urban policy and planning decisions— from the design of new parks and housing complexes to the course of a new bike route— to ensure they also serve the needs of the women who will use the infrastructure. [Politico;eu](#)

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## 4.4 THE FUTURE FOR MAINTENANCE AND ACTIVITY SUPPORT

### The Future of Sidewalk Repair

#### LOS ANGELES, CALIFORNIA



Figure.77. Beverly Hills, California. Erica Zhao/Pexels.com

You may not believe it but when it comes to sidewalk repair, robots will be an integral part of the process.

How?

By exploring a city near you and detecting and collecting data on barriers that it cannot surmount.

For example, no curb ramps where there is pedestrian crossing or craters/holes on a sidewalk.

This technology when it becomes implemented “en masse” will be extremely beneficial for the accessibility community as they can not be everywhere all the time to report all issues, but a robot can and does not need to rest in between.

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»When we started navigating new cities like Miami many times we saw that the city had limitations for the robot but then it struck; if it's a problem for a robot then it's also a problem for a wheelchair • [AfroLA](#)

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### The Future of Fence Repair

The days of the white picket fence are nearing their end. The future of fencing lies in prefabricated fencing components (click to install) which reduces the cost of skilled labor. Through the use of technology and resource management systems, material waste is reduced and estimates more accurate, which all promote efficiency.

Robots and drones are being used to survey land for fencing and assist in their construction. GPS and laser guided systems ensure mathematical precision when it comes to alignment and uniformity, something every client loves.



Figure.77. Tradesperson repairing a residential fence. Los Muertos Crew/Pexels.com

Not to mention sustainability in the form fences being comprised of biodegradable materials like bamboo, biocomposite (mostly or all organic), and the use of sensors for virtual fencing.

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»• the fences of the future will be installed faster, built stronger, and crafted more efficiently than ever before. - [Illinois Fencing](#)

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### **The future of light fixtures and their repair**

LED streetlights are the wave of the future for municipalities throughout America and help reduce energy costs and can also be programmed to have dimmable capabilities. A white paper from intel foresees streetlights being so much more than mere luminaires. LED lighting paired with sensor-based features will allow streetlights to monitor parking violations, detect air and water quality, issue audio warnings, serve as a location beacon for emergencies, analyze traffic, triangulate where gunshots were fired, and more.

---

»Street lighting is an expensive budget item in many cases up to 06 percent of a city's total energy cost. And these costs are increasing worldwide as cities expand in size and population. Converting from halogen to basic LED luminaires can instantly save up to 46 percent. - [Axios™ White Paper](#)

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### **RHODE ISLAND**

“The Rhode Island Department of Transportation installed LEDs with color-changing light guides integrated into the roadway lighting poles on the Sakonnet River Bridge, which connects the towns of Tiverton and Portsmouth, RI.

New technologies like energy-saving LEDs and adaptive lighting systems that can adjust lighting effects from color to brightness are beginning to change the face of roadway lighting.” - [USDOT Federal Highway Administration](#)

### **The future of graffiti removal**

## LONDON, UNITED KINGDOM

Long gone are the days of degreaser and a brush mop or a towel and dish detergent. The future of graffiti removal has evolved to using dry ice to clean and remove graffiti.

Why?

Because the dry ice method through its use of solid carbon dioxide pellets that dissolve upon impact and leave no secondary waste, is considered to be non-toxic and safe for the environment.

In terms of the dry ice method and its usefulness on other material surfaces – this method can remove graffiti without damaging the material surface and can also be used on delicate materials like masonry (brick, stone, etc.) and metal. - [Embury Environmental](#)

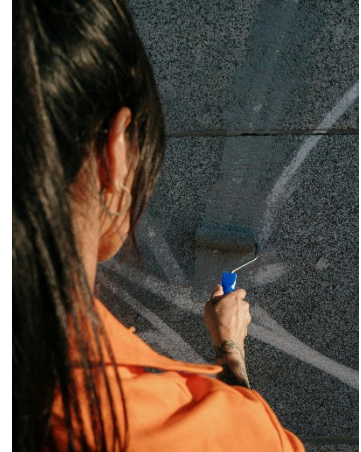


Figure.786;A.concerned.resident.paiping.over.unwanted.graffiti; . cottonbro.studio?Pexels;com

## The Future of Landscaping

“Creeping Thyme Lawns Are the Future of Sustainable Landscaping

As the climate changes and droughts become more frequent, traditional lawns are losing favor with environmentally conscious homeowners.

Enter the creeping thyme lawn – a drought-resistant, aromatic alternative that saves water and transforms your yard into a fragrant, pollinator-friendly paradise.

With water restrictions becoming increasingly common and lawn maintenance costs rising, could a creeping thyme lawn be the sustainable solution your yard has been waiting for?” - [MSN.com](#)

## KENYA, AFRICA

Waste is being converted into potting mix for different species of landscaping in Kenya. The community delivers their waste and it is sorted into what is organic and non-organic, what is organic is then mixed with soil to create compost.

Due to the location of Kiambu County in Kenya the local soil is not ideal for optimal plant growth as it lacks the nutrients and drainage needed.

By mixing the local soil (red soil) with the compost, a nutrient rich planting mix is created that can ensure a plants good health for up to 3 years.



Figure.787;Beautiful.skyline.of.Nairobi?Kenya; .Youngafrikanna? Pexels;com

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»Eva.Ng"ang"a?the.founder.of.PwaniViews.Garden.Centre?has.transformed.a.simple.idea.into.a.pioneering.green.enterprise;.Her.startup.in.Kiambu.County?Kenya?goes.beyond.growing.potted.plants?and.making.hardscapes;.It.also.converts.organic.waste.into.nutrient\_rich.compost?creating.a.sustainable.solution.for.gardening.and.farming;. -Africa.CGTN.

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## SINGAPORE (BIOPHILIA IN ARCHITECTURE)

Imagine your workplace – now imagine your desk, cubicle, or office with a nice and healthy tree in it. Can you imagine the reduction of stress you would feel?

Well the future of landscaping is biophilic design in architecture. This brings the outside inside and incorporates plant life, flowing water, biodiversity, naturally sourced materials, and natural daylight and sunlight into everyday commercial spaces and even residential spaces.

Singapore is known as the “crème de la crème” when it comes to countries incorporating biophilic architecture in their new construction designs. One example is the world’s tallest indoor waterfall surrounded by gardens (with over 100 species of plants) that is located in Jewel Changi Airport in Singapore.

Imagine taking a stroll through a garden while you wait to board your flight.

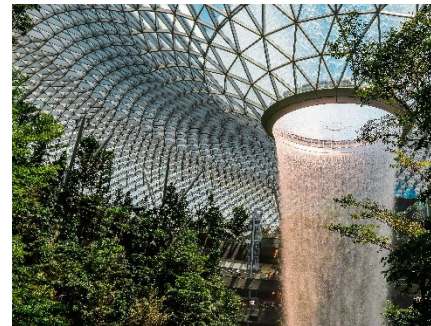


Figure.788;Singapore;.Palu.Malerba?Pexels;com

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»As.a.city.state?Singapore.is.the.poster.child.for.biophilic.design?with.architects.and.designers.reinventing.new.ways.to.live.with.the.natural.world;;;projects.of.note.that.echo.the.tiny.island"s.reputation.as.a.nature\_infused.city\_state.are.the.Gardens.by.the.Bay.and.the.Funan.integrated.development.– both.featuring.ample?accessible.terraces.and.rooftop.gardens.that.refresh.the.mall.and.office.block.typology;. -DesignHotels.

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## The Future of Lawn Care

Have you ever experienced the joy of cutting a lawn with a “push type” mower in the blazing hot sun? Hopefully not. But if you have you will enjoy the direction that the lawn care industry is heading.

Thanks to innovation in the tech field, imaging, sensors and AI, lawnmowers can be fully automated. And not only lawnmowers but also trimmers. How? Thanks to GPS and mapping technology and here is the best part – the lawnmower can maintain consistent grass height with its cuts.

In addition, you have “intelligent” irrigation systems that are fueled by weather data and soil moisture sensors. Efficiency due to the precision built into the technology and sustainability because electric powered lawnmowers reduce the amount of fossil fuels being used which lowers carbon emissions.

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»• [The integration of robots and technology in landscaping represents a paradigm shift in the industry. It not only enhances precision, efficiency, and labour savings, but also fosters environmental sustainability.](#) [WorkplaceInsight](#).

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## The future of junk car removal

USA

Junk car removal is evolving to place more emphasis on recycling, being paperless (to save trees) when it comes to documentation, and using robotics and AI to dismantle and sort car parts in a more efficient manner.

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»• [global economic factors and the fluctuation in raw material prices have played significant roles in shaping the industry's evolution.](#) [The University of Texas at Austin](#).

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Figure.789; Junk car being hauled off. [Mike Bird Pexels.com](#)

## The Future of Cleaning Up Litter

## ERIE, PENNSYLVANIA, USA

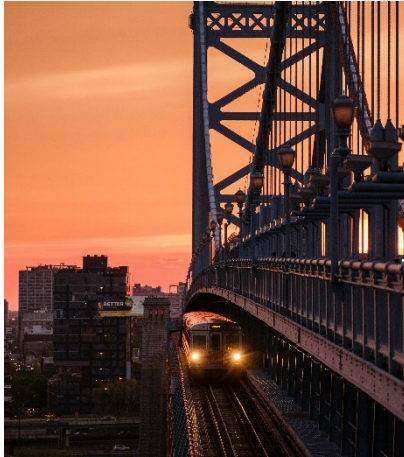


Figure.780j.Pennsylvaniaj.' .Trev.Wj.  
Adams?Pexelsjcom

An issue the world as a whole is having is plastic waste. A solution that is on the market is the use of Robots (like BeBot) and drones (like PixieDrone) to clean up litter found in and around local lakes in Pennsylvania.

The BeBot is energized in numerous ways including by battery and solar power and can clean 32,000 square feet of beach an hour.

The PixieDrone is a drone that collects floating waste in the water and is operated via remote control or autopilot. It has a 160 liter collection capacity and can operate up to 6 hours.

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»An.issue.the.world.as.a.whole.is.having.and.  
Pennsylvania.is.plastics.pollution• < [Go.Erie](#)

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## GENOA, ITALY

Picture a dog, your dog if you have one.

Now imagine that their sole purpose in life was to pick up trash.

Not too farfetched (pun intended) thanks to AI and AI-based detection system. The robotic dog is named VERO (Vacuum Cleaner Equipped Robot) and can pick up all types of litter and on different terrains. Additional uses are infrastructure inspections, seed planting, and even nail and revit replacement on job sites.

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»What.is.truly.novel.is.that.the.system.uses.a.convolutional.neural.network.to.  
spot.litter.and.then.employs.a.planner.to.quickly.figure.out.the.best.way.to.gather.  
all.the.detected.objects• < [The.Cool.Down.](#)

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## TAIPEI, TAIWAN

Taipei in years past had the following statistic “...90% of the waste collected was heading straight into landfills that didn’t meet government sanitation requirements.” Along with this statistic the island’s landfills were at capacity with waste (commercial and industrial).

What was the solution?

Well first it required the community getting involved, so much so that they blocked landfills and prevented new ones from opening. With this the riot police were brought in, but even that didn’t stop the citizens from protesting. Even when the government proposed waste incinerators, they protested.

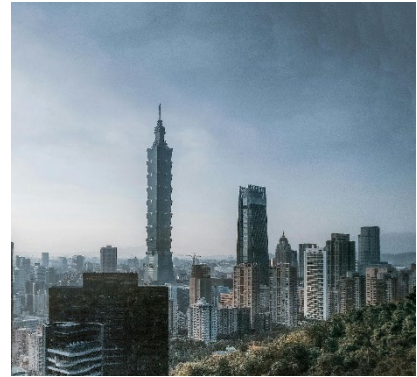


Figure.78 Taipei, Taiwan. Ingo Joseph Pexels.com

After more action by citizens to bring attention to the issue, the government looked to their neighboring countries and locals looked to NGOs. All of this resulted in the Waste Disposal Act, which prioritized recycling and waste reduction.

It also resulted in the “Pay As You Throw” program, which assigned a dollar amount to the amount of trash resident threw away. What happened was that residents found a loophole and exploited it by using public bins placed by the government.

To reinforce the objective of the “Pay As You Throw” program, the government removed the public bins and it forced residents to consider and be mindful of their waste. And now Taiwan's recycling rate is one of the best in the world.

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»Having less bins around and waiting for the trash trucks forces you to consider your waste; You can't just put all that into a bin and forget about it; And if you think about your waste you will change your purchasing habits you'll end up not buying things that you can't recycle; [\\_BBC News](#).

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### **The future of neighborhood watch and neighborhood events**

Technology is being used to keep an eye on the streets and document illegal actions by residents and strangers alike. Examples like cameras with technology to identify “criminal-like” gestures and policy violations, for example someone smoking where they shouldn’t or someone lurking around a property.

Another example is in Denver, Colorado, where homeowner’s associations have license plate readers that monitor every car coming in and out as well as cameras that detect and document the faces of passersby.

This paired with a relationship with the local police department makes it easier for them to prosecute criminals due to solid evidence.

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»The data that private security systems gather are often open for law enforcement to dip into?potentially allowing police to get around restrictions on government surveillance that don't apply to private citizens?privacy experts say. [Axios](#).

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## GRANDVIEW, ARIZONA

Technology is being used with apps like Nextdoor.com which allows neighbors to crowdsource details of crimes and suspicious activities in their area.

This was specifically the case in Grandview, Arizona where a multitude of burglaries were plaguing the neighborhood. The community came together and gathered evidence which led to the local police department taking action and executing drug busts. Along with these busts, the number of burglaries declined immensely.



Figure.78. Rock formation in Arizona. Quintin Gellar. Pexels.com

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»Before they didn't have these tools; It was people chit-chatting in their front yards? »I think it has shown the police department that we are an active neighborhood and that we are very concerned about crime;

»I think it has also shown them that we will stand up for our neighborhood?and by \\?you better pay attention to us; [CNN](#)

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## SALINAS, CALIFORNIA

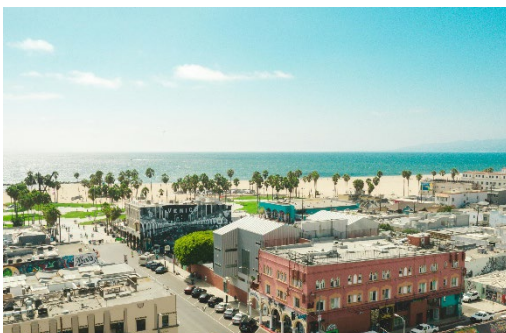


Figure.78. Downtown California city. veeterzy. Pexels.com

As discussed previously, involving the local police in a neighborhood watch program is beneficial. For example in Salinas, California, the SPD (Salinas Police Department) patrols around Dr. Martin Luther King, Jr. Academy as part of a pledge they made to the community to make the streets safer.

Consistent meetings with residents and volunteers in the neighborhood watch program, allow the SPD to teach residents how to prevent car break-ins, avoid scams, and report crimes.

In addition, they make the community aware of local programs from the government that are in place to help communities such as theirs.

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»As.a.block.captain.for.her.North.Salinas.cul\_de\_sac.neighborhood.watch?Maria.Lopez.also.spoke.during.the.question.segment.about.how.helpful.her.watch.has.been.over.eight.years?with.72of.the.82homes.in.her.community.participating;. She.also.discussed.neighborhood.events.she.has.coordinated.with.the.City.of.Salinas.and.the.police.department; .The.Californian

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### WABEERI DISTRICT, MOGADISHU, SOMALIA

CPTED principles are being used in the form of the neighborhood watch program in the Wabeeri district of Mogadishu, Somalia in Africa to minimize criminal events and mobilize communities.

Neighborhood watch creates a link between the communities at the local level and the government.

The way it works is the community appoints a representative who has the duty of recording sightings of suspicious individuals, vehicles, and weapons and then transmitting that information to another team that processes and analyzes the information to create a list of "security-relevant" activities which are then passed to agencies such as the SPF or Somali Police Force, the Ministry of Internal Security (MOIS), and the National Intelligence Agency (NISA).



Figure.784.Somalia;'.Yahye..Somali?Pexels;com

The groups meet daily in the morning and share their observations of suspicious individuals. A district security committee consisting of a commissioner, police force, and NISA district commanders meets once a week.

The program has brought the community together and delivered staggering results.

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f;ij;there.were.00.arrests.attributable.to.neighborhood.watch.sources?06weapons.seized?07.suspicious.persons.identified?and.73suspicious.vehicle.reports.resulting.in.actionable.intelligence;.March.8672figures.show.that.8718.public.complaints.were.received?resulting.in.7068.cases.being.solved;.In.the.first.three.months.of.8672?14.of.complainants.were.women?90.were.children?2.were.elderly.men.and.women?and.8.were.men;.The.Global.Observatory.

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### THE FUTURE OF PLAYGROUNDS

## ALBERTA, CANADA

When you think of a playground, what comes to mind? A metal slide, maybe some swing sets, and a merry-go-round.

Well things have changed.

What is in store for the future of playgrounds is shared below:

1) **Interactive digital play** that fuses learning and playing - every parents dream. This comes in the form of Augmented Reality. What is augmented reality? It is an interactive experience that enhances the real world with computer-generated perceptual information. What this looks like on the playground are touch screens that interact with the user (talking back and playing certain sounds), having certain playground elements "come to life" when a person moves around them, and more. Ultimately, this makes for a new experience every time a child goes to their local playground.



Figure.786; Children enjoying a traditional slide; ' .Quang.Nguyen.Vinh?Pexels;com

## 2) Inclusivity



Figure.796; An inclusive playground permits all users the ability to enjoy its features and functions; ' .SHVETS.production?Pexels;com

We are a world of many different backgrounds, experiences, and cultures - but the one thing among many that we have in common is that at some point in time we were a child. Playgrounds are now making an effort to include all children regardless if they are a child that is disabled, autistic, etc.. For example, wider paths (5'-0" minimum) and ADA compliant ramps make it easy for a person in a mobility aid (wheelchair, etc.) to maneuver throughout the playground and turnaround and showcase some independence and autonomy, which is a huge step in the right direction as the child grows through life.

Tactile surfaces with different textures and sensory-rich environments all engage the youths many senses and creates a unique connection between them and the playground.

## 3) Sustainability in Mind

Sustainable practices are being implemented through the use of recycled materials (which reduces waste), biodegradable materials (reduces waste and environmental impact), and exercising water and energy efficiency. All of these practices are a great opportunity to instill in children the importance of recycling and taking care of the earth. Examples of biodegradable materials are bamboo, bioplastics, seaweed, and cork.

#### 4) Technology Geared towards User Safety

You have seen it in every movie, every tv show, and probably in real life. The playground bustling with children and parents hovering around to ensure their child does not get hurt by the playground or their playmates.

Now playgrounds are more advanced and can aid parents in protecting their children. How?

By using impact-absorbing floor finishes and play surfaces, which reduce the chance of a child being injured.

By utilizing real-time monitoring systems, that monitor the kids and also alert parents if their is an issue or emergency event.

#### 5) Themed designs

This focuses on creating themed immersive environments for kids and utilizing storytelling elements to engage children's minds. For example, pretending to be a Pharoah in Egypt, Africa and walking through sand and climbing a pyramid or pretending to be a spaceship headed towards Jupiter.

#### 6) Nature

So imagine that you did not grow up around lush trees, fragrant grass, and degrees of wildlife near your home in your gated community. All you knew was concrete, Ubers, transients, and canopies. Well now playgrounds are incorporating nature into their design, this means including trees, rocks, bushes, and even streams so that kids can experience the beauty of this planet as well as have their minds engaged with all that they will encounter.

#### 7) Multi-Generational Spaces

Not only are playgrounds and their activities for children, they now have elements that allow anyone of any age to create memories with their loved one as well as get exercise.

#### 8) Sensory Play

For those children with special needs, sensory play is very helpful. What this looks like is having musical instruments around (like the steel drum or banjo), have textured panels in different shapes and made of different materials, all of which aids in tactile learning. Eye-catching colors are also incorporated as a way to keep children engaged and improving their visual processing skills.



Figure.797;.Kids.playground;.HY.AAN?.Pexels.com

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»The.playground.trends.8680.reflect.a.strong.movement.towards.innovative.playgrounds.and.inclusive.and.sustainable.designs.that.foster.healthy?engaging.

play.environments.for.all.children;.These.trends.are.not.just.about.entertainment.  
but.about.creating.spaces.that.support.development?learning?and.community.  
building; [Park.N.Play.Design](#)

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### 9) **Multipurpose and Multifunctional, Adaptive Designs**

Playgrounds are more than just that they are already community spaces but the direction the industry is heading is designing playgrounds to fit different needs adjacent to children. For example, a birthday party, an easter egg hunt, or a victory meal for a winning little league team.

### 10) **Technology**

Children grow up in the single digits already knowing how to use an iPad and iPhone. It only makes sense that playgrounds keep pace. Thanks to forever improving technology, playgrounds - like an iPhone - can have their experience customized to the preferences and abilities of its user. All of this is incorporated into playground design in an effort to create an interactive learning experience for the children.

## **The future of public art**

## USA

“Creative placemaking” is a trending strategy that uses arts and culture to improve overall well-being (physically, socially, and economically) of communities.

This is done by all sectors (public, private, non-profit, and community) joining hands to use the arts to bring attention to community issues, revitalize an underused area, and provide opportunity in different forms for the community at large.

Funding plays a huge role in the overall process and is a substantial hurdle for those poorer communities wanting to use “creative placemaking” to improve where they live.

“At one extreme, public art will likely be a symbol of the city as luxury commodity. At the other, it will be testimony to inadequate and under-resourced government policy. Or society itself will become more equal, and in the process create a new symbolism.” - [Next City](#)



Figure.798;Public.Art.using.storage.containers; ' Jan.van.der.Wolf?Pexels;com

## INDIANAPOLIS, INDIANA, USA

The city of Indianapolis is using public art in a major way to bring in some local pride to all of its local development projects by including monumental art along with an new “builds” that are occurring within the city limits.

Just as we gave examples of neighborhoods utilizing art to cultivate community pride, the monumental art on this scale will be able to share the history of the entire city and also recognize some of its local talent in the process.

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»What.we.want.to.do.is.to.be.a.part.of.a.new.movement.in. Indianapolis.to.create.meaningful.art.experiences.in.every.real. estate.development.that.happens.downtown.and.every.project. that.happens• < \_WYFI.PBS.Indianapolis

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Figure.799;Ventana.De.Campeones - »The.Sharks.Fin?Public.Art.in. Barranquilla?Colombia?South. America;'.MRA.Architecture.'™. Design

## AFGHANISTAN

There is a connection between the arts and social change. At its core the heartbeat of art is creativity and when paired with social change for the good of humanity, very unique solutions are brought to life. Through the lenses of CPTED, murals that promote positive change will be welcomed and cherished in the community and not viewed as a blight or stain on what is a cohesive neighborhood.

One really great example is ArtLords an Afghan-led, Afghan initiative that has “artists” in Afghanistan who used art to create murals on imposing blast walls that were guarded by sentries.

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»• the.city.is.covered.by.these.blast.walls;And.these.blast.walls.were.a.symbol.of.oppression• we.wanted.to.bring.down.the.walls;We.couldn't.do.it.because.these.are.security.walls.and.people.with.the.guns.are.guarding.them• So.we.started.painting.them;And.the.moment.we.started.painting.them?they.disappeared• we.use.it.for.issues.which.is.very.important?like.issues.of.social.change; - [Skoll](#).

[Article.ArtLords](#)

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## Part 4 - Maintenance and activity support | Review Exam (5 Questions)

- 1. What is maintenance in relation to CPTED?**
  - a. Keeping homes facing public streets in good condition only
  - b. Keeping an environment in good condition and looking well-cared for
  - c. Keeping semi-private spaces in communities in good condition only
  - d. Keeping large public spaces in communities in good condition only
  
- 2. What is an example of maintenance in relation to CPTED?**
  - a. Remodeling the bedroom closet of a private residence
  - b. Repairing broken sidewalks
  - c. Leaving graffiti in place
  - d. Not picking up trash and litter
  
- 3. What is activity support in relation to CPTED?**
  - a. Not using public, semi-private, and private spaces
  - b. Team doctors helping an injured sports player
  - c. Converting empty shared space into new play spaces
  - d. Letting criminals take over spaces
  
- 4. What is an example of activity support in relation to CPTED?**
  - a. Eating dinner with one's family
  - b. Neighborhood events in public or semi-private spaces
  - c. Changing out LED bulbs in the living room
  - d. Going fishing by yourself
  
- 5. A community created a program entitled "Can You Help", which does small chores for those that need it. What is this an example of in relation to CPTED?**
  - a. Helping grandma and grandpa
  - b. Maintenance
  - c. Natural Surveillance
  - d. Territorial Reinforcement

**You made it to the finish line! This concludes the final part, Part 4 of the course. Continue to the Final Exam.**



## **Outlook and Conclusion**

As displayed in each part of this training on CPTED, CPTED is alive, well and thriving and its principles are being applied in interesting ways around the world.

In conclusion, use this training and the CPTED design guide (found at the QR code below) to implement CPTED as you work on your projects in your office. No matter if they are commercial or residential or both.

**It has been a joy producing this training for you and we here at MRA Architecture & Design wish you a great day and everlasting success!**

### **CPTED DESIGN GUIDE**



## **END OF ARCHITECTURE, URBAN PLANNING, AND CRIME PREVENTION COURSE**

## Review Question Answers

### Part 1 Review Questions

1. Prior to CPTED, Typical urban planning followed which principle?
  - a. Pedestrians took priority over cars; Incorrect
  - b. Empty streets meant safer streets; Correct. Prior to CPTED neighborhoods were to be isolated, empty streets meant safer streets, and cars took priority over the pedestrian.**
  - c. Neighborhoods were not to be isolated
  - d. Front yards were to be concrete only
2. Who was one of the founders of CPTED?
  - a. Lydia D. Newman; Incorrect
  - b. Jane Jacobs; Correct. Founders of CPTED include Elizabeth Wood, Jane Jacobs, Shlomo “Solly” Angel, Oscar Newman, and C. Ray Jeffery, Ph.D.**
  - c. Lewis Latimer; Incorrect
  - d. Elijah McCoy; Incorrect
3. Which is one of the two main models of CPTED?
  - a. Carrington Model; Incorrect
  - b. Scratton Model; Incorrect
  - c. Newman Model; Correct. The two main models of CPTED are the Newman Model and the Jeffrey Model**
  - d. Hiram Model; Incorrect.
4. What expanded federal assistance to low-income housing subsidies in the 1970s?
  - a. Housing and Urban Development Act; Correct. The Housing and Urban Development Act of 1970 (HUD) established a national growth policy and expanded federal assistance for housing.**
  - b. Green Trees Act; Incorrect
  - c. Housing and Clean Air Act; Incorrect
  - d. William S. Grant Housing Act; Incorrect
5. Urban planning was influenced by what movement in the 1980's?
  - a. Bailiff; Incorrect
  - b. FMJ; Incorrect
  - c. New Urbanism; Correct. In the 1980s, urban planning in the United States was influenced by the New Urbanism movement.**
  - d. Dickinson

### Part 2 Review Questions

1. The construction drawings from your firm show a minimum CRI of 80 at the exterior lighting near the CCTV cameras. What part of natural surveillance does this involve?
  - a. Windows; Incorrect
  - b. Lighting; Correct. Under the Lighting section of Natural Surveillance, when it comes to lighting next to CCTV elements, a colour rendering index (CRI) of 80 or more is ideal.**

- c. Landscaping; Incorrect
  - d. Action & Activities; Incorrect
2. You move into a new neighborhood and the HOA Committee Newsletter informs you that they have “Cops, Community, and Coffee” program every other Wednesday and they would love your participation. What part of natural surveillance does this involve?
- a) Windows; Incorrect
  - b) Lighting; Incorrect
  - c) Landscaping; Incorrect
  - d) **Action & Activities; Correct. Community based programs, like “Coffee with a Cop” are examples of Action & Activities that contribute to natural surveillance.**
3. What type of lighting is recommended to promote and aid natural surveillance?
- a) High Pressure Sodium; Incorrect
  - b) **Light Emitting Diode (LED); Correct. Do not locate or specify high pressure or low pressure sodium lighting near CCTV elements and make an effort to specify LED lighting.**
  - c) Low Pressure Sodium; Incorrect
  - d) Incandescent; Incorrect
4. What are ways to prevent graffiti on exterior walls?
- a) Aggressively harass the youth in the community; Incorrect
  - b) **Create a mural; Correct. You can get ahead of graffiti by specifying the creation of a mural that promotes the community and instills a sense of pride.**
  - c) Buffer the exterior wall from the street with grass landscaping; Incorrect
  - d) Do not install motion detector flood lights; Incorrect
5. What can an architect do within their drawings to a wall to prevent graffiti??
- a) Nothing, it is the responsibility of the Authority Having Jurisdiction; Incorrect
  - b) **Specify anti-graffiti paint or coatings, color per the Owner; Correct. If your project is in an area that is in transition or just an area where a lot of graffiti is located, be proactive in drawings and specify an anti-graffiti paint or coating.**
  - c) Make the Owner aware of the issue; Incorrect
  - d) Dissuade the owner from placing security cameras at the exterior; Incorrect

### **Part 3 Review Questions**

1. Which is an example of a public space?
- a. Windows; Incorrect
  - b. Your 1996 Dodge Viper Coupe; Incorrect
  - c. **County Library; Correct. Public spaces are where people come together for entertainment and leisure activities. These include city owned sports facilities, public libraries, and public museums.**
  - d. University Campus Yard or Quad; Incorrect

2. Which is an example of a semi-private space?
  - a. Windows; Incorrect
  - b. Your 1996 Dodge Viper Coupe; Incorrect
  - c. County Library; Incorrect
  - d. **University Campus Yard or Quad; Correct. An example of a semi-private space is a university campus quad. It is accessible to the public, but primarily used by students and faculty.**
  
3. Which is an example of a private space?
  - a. Windows; Incorrect
  - b. **Your 1996 Dodge Viper Coupe; Correct. Private spaces are typically associated with personal property (home, boat, vehicle, etc.), and entry is typically solely controlled and administered by the owner.**
  - c. County Library; Incorrect
  - d. University Campus Yard or Quad; Incorrect
  
4. On the way back to the office after a successful shortlisting interview with a Higher Education client you are stopped at a traffic light. While you wait for the light to turn green you look inside the gas station to your right and lock eyes with the cashier and see a line of customers inside. What type of just occurred?
  - a. Soul connection; Incorrect
  - b. **Natural surveillance; Correct. Natural surveillance is the ability to effortlessly surveil an area in passing or even unintentionally.**
  - c. Invasion of privacy; Incorrect
  - d. Traffic violation; Incorrect
  
5. You notice how a residence has implemented the “3 foot 10 foot” rule. Which element of Natural Territorial Reinforcement is being used?
  - a. Signage; Incorrect
  - b. **Landscaping Design; Correct. In addition to proactive lawncare, residents should implement the 3 Foot/10 Foot Rule for landscaping. Shrubs should be cut down to no higher than 3 feet and all trees should be cut to hang no lower than 10 feet from the ground.**
  - c. Building Façade; Incorrect
  - d. Lighting; Incorrect

#### **Part 4 Review Questions**

1. What is maintenance in relation to CPTED?
  - a. Keeping homes facing public streets in good condition only; Incorrect
  - b. **Keeping an environment in good condition and looking well-cared for; Correct. Maintenance involves keeping the community environment in good condition and looking well-cared for.**

- c. Keeping semi-private spaces in communities in good condition only; Incorrect
- d. Keeping large public spaces in communities in good condition only; Incorrect

**2. What is an example of maintenance in relation to CPTED?**

- a. Remodeling the bedroom closet of a private residence; Incorrect
- b. **Repairing broken sidewalks; Correct. Examples of maintenance include properly repairing and/or replacing sidewalks, fencing, playground equipment, light fixtures, doors, and windows.**
- c. Leaving graffiti in place; Incorrect
- d. Not picking up trash and litter; Incorrect

**3. What is activity support in relation to CPTED?**

- a. Not using public, semi-private, and private spaces; Incorrect
- b. Team doctors helping an injured sports player; Incorrect
- c. **Converting empty shared space into new play spaces; Correct. An example of activity support is converting empty shared space into new play spaces for the youth and elderly of the community.**
- d. Letting criminals take over spaces; Incorrect

**4. What is an example of activity support in relation to CPTED?**

- a. Eating dinner with one's family; Incorrect
- b. **Neighborhood events in public or semi-private spaces; Correct. An example of activity support is hosting monthly, quarterly, and annual neighborhood events to get residents and visitors out and using the shared community spaces.**
- c. Changing out LED bulbs in the living room; Incorrect
- d. Going fishing by yourself; Incorrect

**5. A community created a program entitled "Can You Help", which does small exterior repairs for those that need it. What is this an example of in relation to CPTED?**

- a. Helping grandma and grandpa; Incorrect
- b. **Maintenance; Correct. Maintenance involves keeping the community environment in good condition, which includes doing small repairs for those who need it.**
- c. Natural Surveillance; Incorrect
- d. Territorial Reinforcement; Incorrect