

REQUEST FOR PROPOSALS (RFP) FOR Main Street Viaduct Placemaking Initiative

CITY OF JAMESTOWN, NY



RESPONDER DUE DATE: November 13, 2026 @ 4:00 P.M

ISSUE DATE: October 5, 2026



Designated Contact: Jason Kulaszewski, Principal Planner

City of Jamestown, New York

200 E. 3rd St., Jamestown NY 14701

716-483-7657 | kulaszewski@jamestownny.gov

Main Street Viaduct Placemaking Project

Project Background

The City of Jamestown is working to improve an underutilized connecting corridor to help improve public safety, support economic development, recreation opportunities, support regional tourism and placemaking initiatives with the goal of creating an inviting and active connection between Downtown Jamestown and the Chadakoin River Basin recreational areas. Creating vibrant creative connections between Downtown Jamestown and the Chadakoin River Basin is a highly favorable endeavor for supporting tourism in Jamestown and will allow for enhanced resident and visitor experiences.

This project offers opportunities to generate substantial new economic activity on its own, while complementing the existing Jamestown attractions that play a large role in local and regional economic development objectives.

The project contains several components of placemaking and community engagement and will be a significant step toward activating the underutilized public space. It takes an underpass that is a perceived safety hazard on an underutilized parcel in the City of Jamestown's Downtown and seeks to improve public safety and activate a strategic public space near the Greater Jamestown Riverwalk, while improving quality of life and economic opportunity in and around the project area.

Project Summary

Through this RFP, the City of Jamestown will select a qualified firm to oversee all aspects of implementation of the Main Street Viaduct Placemaking project. This project will take place at 14-24 Main Street, Jamestown, NY. Enhancements will include public engagement, lighting and safety improvements, public art, active placemaking initiatives, opportunities for vendor/commercial opportunities, and enhance connectivity and accessibility between Downtown Jamestown, the Greater Jamestown Riverwalk, and the Brooklyn Square commercial district.

The selected firm will develop and execute plans, which must include realistic timetables and budgets, in cooperation with the City Departments of Development and Public Works, and any other relevant agencies or organizations as necessary.

This project will be funded with U.S. Housing and Urban Development (HUD), New York State Dormitory Authority (DASNY), and City of Jamestown funds and the total budget for consulting fees is **\$139,000**. The Consultant must comply with all New York State and Federal procurement requirements.

Proposals are due on or before **November 13, 2026, no later than 4:00 P.M.** (Eastern Standard Time). Proposals shall be submitted electronically. Proposals received after the deadline will not be accepted.

The City of Jamestown reserves the right to accept or reject any proposals or to make no award at all, extend the period for accepting proposals, advertise the RFP at any time, and waive any minor irregularities in any proposals. Please note that no information given will be binding upon the City unless such notification is issued in writing as an official addendum to this RFP.

Scope of Work

Task 1: Design

The City's selected engineering design consultant will prepare detailed plans and designs for each of the proposed projects. The design documents will be used for the construction of the planned projects listed below. In addition to the standard design considerations, the following items will be addressed for the specific tasks listed below:

Lighting and Safety Improvements:

- As Part of the planning and design of the space, public safety and lighting improvements will play a vital role in creating an inviting, accessible, and engaging space for all residents and visitors.
- Safety Improvements should also consider how the placemaking initiative and elements interact with the streetscape to ensure safety of the underpass for users as well as drivers using Main Street.
- Main Street is a major thoroughfare through Jamestown, and lighting should not interfere with or distract street traffic, but contribute to a safer, more vibrant, pedestrian friendly community space.
- Highly encourage application of Crime Prevention Through Environmental Design (CPTED) Standards (see EXHIBIT C)

Public Art:

- Public Art should pay tribute to the rich history of the City of Jamestown, it's contributions to Chautauqua County and broader Western New York Region, and the nearby Chadakoin River and former Brooklyn Square Neighborhood.
- Public Art should be used to engage and educate users about the City of Jamestown and should incorporate other project elements (such as lighting, or physical improvements) as part of the artistic installation.

Placemaking Initiatives:

- Placemaking initiatives should be developed through a public engagement process that includes local businesses, residents, and visitors that may use the corridor and adjacent areas.
- Engineering considerations will include:
 - Traffic safety recommendations
 - Evaluation of locations for piling, trusses, and other structural features
 - Detailed design and impact of placemaking installations on the property
 - Electrical utilities and lighting

Deliverables – Final engineering design, permit applications and associated permits

Task 2: Lighting

Low lighting and the stark environment of the existing main street viaduct has led to public safety concerns that impact the quality of life for City residents and visitors to Jamestown. Adding lighting to increase visibility improves public safety and reduces reluctance to utilize spaces that are meant for the enjoyment and safe passage for pedestrians and the public at large. Improving the lighting at this location will improve safety and accessibility between vital assets in the City of Jamestown, including the Downtown Central Business and Entertainment districts, Greater Jamestown Riverwalk, and Brooklyn Square Commercial district.

The development of the Main Street Viaduct will enhance the Main Street corridor, and assets along the Greater Jamestown Riverwalk. Improved lighting is meant to create a welcoming and safe pedestrian amenity in an underutilized asset in the public realm, while creating a unique attraction to compliment Jamestown's existing arts and cultural placemaking initiatives.

In addition to public safety, lighting can also enhance, compliment, and transform an engaging parklet. Lighting should ideally also serve as a public art amenity while offering improved visibility and public safety, and compliment existing lighting installations in the area.

Deliverables – Constructed Lighting Installations

Task 3: Creative Leisure, Seating and Placemaking Initiatives

A crucial element of placemaking are the amenities that enhance an already unique place. This includes creating a safe, family-friendly, engaging place for residents and visitors to share through creative play, social (and social media) engagement and strategic event programming. These places also provide places to relax and enjoy the surrounding activity and/or scenery, giving time to rest and recharge, so creative seating should also be a consideration for this task. As Jamestown continues to be a hub of activity, swings, chairs, and benches, and other engaging amenities become highly prized and important elements of the overall experience. Other amenities may be installed to provide visual or sensory highlights, improved aesthetics, opportunities for active engagement, or complementary elements for food truck or local vending on site.

This project includes the design of placemaking amenities by a qualified design firm with a background in public spaces, the development of conceptual plans, and the installation of the proposed amenities.

Deliverables – Constructed Swings, Benches, Chairs, other Placemaking Activities

Task 4: Public Art

Public Art plays a major role in placemaking initiatives. The current aesthetic of the viaduct is a stark blank canvas where vibrant colorful murals and art that celebrates the City's history, creates a sense of place, and engages users to shift the perception of a place and make it more inviting for all, thereby increasing visitors to the area and improved public safety.

This task includes the design and installation of public art that will complement the overall design, theme, and aesthetic of the Main Street Viaduct Placemaking initiative.

Deliverables – Installed Public Art

Task 5: Landscaping

Although this project is largely hardscape, it is adjacent to an existing park and Riverwalk amenities. Landscaping should help transition between the hardscape and park space and provide an opportunity to support any minimal stormwater runoff that may occur. Native plant species and pollinators are encouraged as appropriate.

Deliverables: Planted landscaping and maintenance guide

Equal Opportunity Commitment

The City of Jamestown, in accordance with the provision of Title VI of the Civil Rights Act of 1964 (78 Stat. 252) and the Regulations of the Department of Commerce (15 CFR, Part 8) issued pursuant to such Act, hereby notifies all Bidders that the City affirmatively ensure that in any contract entered into pursuant to this solicitation that minority businesses will be afforded full opportunity to submit Bids in response to this advertisement and will not be discriminated against on the grounds of race, color, or national origin in consideration for award.

Article 15-A of the New York State Executive Law was enacted in 1988 and created a Division of Minority and Women's Business Development (DMWBD) within the New York State Empire State Development Corporation (ESD). The DMWBD has the right and responsibility to issue regulations and oversee State agency and authority contracting responsibilities regarding Equal Employment Opportunities and Minority and Women-owned Business participation. The purpose of Article 15-A is to ensure and promote fair and equal employment and minority and women-owned business participation in State contracts through the establishment of goals for minority- and women-owned business participation. Regulations further detailing the MWBE requirements are set forth in 5 NYCRR 140-145.

The City of Jamestown actively seeks Minority and Women business enterprises to participate in bids to meet the City's procurement needs.

The goal for Minority Business Enterprise (MBE) participation is 15% of the total bid value.

The goal for Women's Business Enterprise (WBE) participation is 15% of the total bid value.

The goal for combined MBE/WBE participation is 30% of the total bid value.

Only businesses certified with the State of New York as minority and/or women business enterprises are counted towards the City's goals. Eligible minority or women-owned businesses are encouraged to seek certification from the State of New York Division of Minority and Women's Business Development (DMWBD) at <https://esd.ny.gov/doing-business-ny/mwbe>.

The City of Jamestown encourages the participation of Service-Disabled Veteran-Owned Business Enterprises (SVDOBs) and Disadvantaged Business Enterprises (DBEs).

Submission of Proposals:

Digital copies of the proposal must be e-mailed to dod@jamestownny.org. Please attach as a PDF or provide a link to the PDF.

Interested respondents may also submit three (3) full copies of their proposal and one digital copy received no later than 4:00 p.m. on **Friday, November 13, 2026**, which are to be mailed to:

**Jason Kulaszewski, Principal Planner
Department of Development
200 East Third Street
Municipal Building – 4th Floor
Jamestown, NY 14701
PH: 716.483.7657**

Proposals received after the scheduled time and date will not be accepted.

VII. KEY DATES

Request for Proposal Issued: Monday, October 5, 2026

Submission of questions deadline: Friday, October 16, 2026, 4:00 pm

Submission of proposal deadline: Friday, November 13, 2026, 4:00 pm EST

Project Award: December 4, 2026

Project Kick Off: January 11, 2027

Project Completion: December 1, 2027

The City of Jamestown reserves the right to change this process, and the timing of any step, based on their needs and on the responses to this RFP. The City of Jamestown reserves the right to reject any or all responses to this RFP. The City of Jamestown is an equal opportunity employer. Minority- and woman-owned firms and individuals are encouraged to respond.

General Terms

Each proposer must submit a complete proposal which addresses each component of the RFP. Please note the described objectives are the minimum scope that is acceptable. Proposers are encouraged to be creative and propose additional work that the proposer feels beneficial, necessary, or improves the outcome of this planning effort.

1. **Project Understanding & Approach-** A full description of the Scope of Work, along with a schedule detailing when milestones will be reached and when the project will be completed.
2. **Team Overview & Key Personnel-** A description of each staff member or sub-consultant who will be involved with this project, along with a description of their role in this project.
3. **Project Experience-** A client list for similar projects in the last three years, including contact name and phone number, and a brief description of the project(s).
4. **Fee Proposal-** Budget and expense information which details all costs including:
 - a. Personnel expenses which state the name and title of each individual assigned to the project, their hourly rate, and the number of estimated hours the individual will be working on the project. The same information and detail should be submitted for subcontractors.
 - b. Administrative costs for travel, postage, photocopying, telephone, printing, and other related expenses must be detailed.
 - c. Estimates of expense for each of the tasks with assumptions.

VII. CONDITIONS GOVERNING PROPOSALS

- Only those proposals which contain complete information and are responsive to the RFP will be considered.
- Proprietary or patented information which may be included in the proposal must be clearly identified and brought to the City of Jamestown's attention.
- The City of Jamestown reserves the following rights:
 - to accept or reject any or all proposals;
 - to waive or modify minor irregularities in proposals received;
 - to negotiate with proposers, within the proposal requirements, to best serve the interests of the community and project funders;
 - to amend specifications after their release, with due notice given to all bidders to modify their proposals to reflect changed specifications;
 - to consider every offer as firm and not revocable for a period of sixty (60) days unless withdrawn in writing or unless otherwise specified in the solicitation; and
 - to award a contract for any or all parts of a proposal and negotiate with the successful bidder.

- By submitting a proposal, the respondent agrees that it will not make any claim for or have any right to damages because of any lack of information or misinterpretation of the information provided in this RFP.
- The City of Jamestown will not utilize any of the materials submitted in the RFP process included in unsuccessful proposals without permission.

VIII. INQUIRIES

All inquiries regarding the RFP should be made by e-mail only and must cite the RFP section in question. Answers to substantive questions will be provided to all inquirers. Inquiries should be directed to: Jason Kulaszewski, Principal Planner, at kulaszewski@jamestownny.gov

IX. LIABILITY

The City of Jamestown is not liable for any costs incurred by any individual or firm for work performed to prepare its proposal or for any travel and/or other expenses incurred in the preparation and/or submission of its proposal. Further, the City of Jamestown is not liable for any costs incurred prior to approval of the contract.

X. EVALUATION PROCESS

The City of Jamestown will review submitted proposals with reference to the qualifications and criteria as detailed in this Request for Proposals. The intent is to select the consultant having the technical capability and necessary experience to perform the services as outlined in this RFP within the time frame required.

XI. SELECTION CRITERIA

The selection of a consultant for this effort will be based on the following criteria:

- **Technical Proposal:** Proposals will be evaluated based on their quality, clarity, and demonstrated understanding of the project objectives. The proposal must include a plan outlining how each item in the proposed Scope of Work will be addressed.
- **Implementation Schedule:** Proposals will be evaluated based on their ability to complete the project within the time frame described in this RFP. The proposal must include an implementation schedule that lists all milestones for the development and implementation of project deliverables.

- **Team Composition and Resumes:** The proposer must provide a list of all person(s) who will be assigned work pursuant to this RFP (including subcontractors), as well as their resumes showing qualifications, educational background, training and experience.
 - Team members will be evaluated based on relevant education, work experience and professional accreditation.
 - The proposer must designate an individual as the Project Manager who will be directly responsible for all activities of the organization relevant to this RFP and provide their resume showing qualifications, educational background, training and experience. The project manager must have managed the implementation of at least one other project of a similar scope and nature. A description of the project must be submitted with the resume.
- **Relevant Experience:** The proposer must provide a list of all projects of similar scope and nature completed in the last five years. The projects listed will be used to determine the proposer's expertise, experience, and knowledge. Submission of sample reports or products from previous projects is encouraged.
- **Cost Proposal:** A Cost Proposal Outline must be submitted. Proposers must break down each task in the Scope of Work and assign a detail of cost for the action including personnel costs and reimbursable expenses.
- **References:** The proposer must submit five references from projects of a similar scope and nature. Each reference should include a contact person and phone number along with a statement describing the project. The Steering Committee reserves the right to obtain information from other sources.

I. NOTIFICATION OF AWARD

The City of Jamestown will notify the successful bidder by phone, followed by written confirmation. Each bidder whose proposal is not accepted will be notified in writing.

The City of Jamestown will authorize the award of a contract to the successful proposer. In the event that a contract cannot be finalized within thirty (30) days of the award, the City of Jamestown reserves the right to enter into negotiations with the consultant which received the second highest evaluation.

FEES/BUDGET

The total fee amount for combined services for the Main Street Viaduct Placemaking project shall **not exceed \$139,000** including all professional services, expenses, overhead, and profit.

Consultants should review project scope of work tasks and present a cost breakdown consistent with the above budget.

PROJECT TIMELINE

The project is intended to be completed within 12-18 months upon the finalization of a contract and notice to proceed is issued.

ADDITIONAL INFORMATION

Relevant City Resources

- In-process development and progression of new Zoning Code update
- Jamestown Urban Plan Design (2006)
- Jamestown Traffic and Streetscape Enhancement Plan (2008)
- Urban Design Plan 2.0 (2019)
- Neighborhood Revitalization Plan (2010) and Update (2017)
- Downtown Jamestown Economic Development Strategy (2015)
- Downtown Revitalization Initiative (2016 and 2026).
- Pearl City 2045 – Comprehensive Plan (2026)

Other relevant policy and regulatory documents, or maps that may be deemed relevant/useful to respondents which may be available on the City of Jamestown website or upon request.

No Gratuities

- Respondents will not offer any gratuities, favors, or anything of monetary value to any official or employee of the City for the purpose of influencing the selection.
- Any attempt by a respondent to influence the selection process by any means, other than disclosure of qualifications and credentials through the proper channels, will be grounds for exclusion from the selection process
- Accordingly, contacts with members of the Staff Evaluation Panel, which are outside of the established process, should not be initiate

Verifiable information

- By submitting a response, respondents represent and warrant to the City that all information provided in the response submitted shall be true, correct and complete.
- Respondents who provide false, misleading or incomplete information, whether intentional or not, in any of the documents presented to the City for consideration in the selection process may be excluded.

Interviews

- After the initial evaluation of the statements of qualifications, respondents will be notified by e-mail of their status in the selection process.
- Respondents who are "short-listed" will be contacted by both phone and e-mail.
- "Short-listed" respondents will be invited to participate in interviews that will focus not only on the respondent's application, their project approach, and an appraisal of the planning professionals who would be directly involved in the project.

Cost of Responses

- City is not responsible for the costs incurred by anyone in the submission of responses.

Contract

- This RFP is not to be construed as a contract or as a commitment of any kind.
- To ensure that the appropriate staff is assigned to the project, the City intends to make the inclusion of a "key persons" clause a part of the contract negotiations.

No Obligation - The City reserves the right to:

- Evaluate the responses submitted
- Waive any irregularities therein
- Select candidates for the submittal of more detailed or alternate proposals
- Accept any submittal or portion of submittal
- Reject any or all respondents submitting responses, should it be deemed in the City's best interest
- Cancel the entire process.

Professional Liability Insurance

- The respondent shall have the appropriate liability insurance written by an insurer authorized to transact insurance in the State of New York.

EXHIBITS

EXHIBIT A: Municipal Procurement Requirements

EXHIBIT B: Project Precedents

EXHIBIT C: CPTED Guidebook

Exhibit A - MUNICIPALITY PROCUREMENT REQUIREMENTS

CITY OF JAMESTOWN STANDARD INSURANCE REQUIREMENTS

Insurance shall be procured and certificates of insurance delivered to the Corporation Counsel, and the City department responsible for the agreement, prior to commencement of work, deliver of material or equipment. **The Certificates of Insurance shall be made to the "City of Jamestown, Corporation Counsel, 200 East Third St., Jamestown, NY 14701"** must comply with all coverage specification of the contract, and must be executed by an insurance company and/or agency or broker who is licensed by the Insurance Department of the State of New York. The "ACORD" form certificate may be used, providing the following two additional conditions are added to the form verbatim:

A. ACKNOWLEDGMENT: The insurance companies providing these coverages acknowledge that the named insured is entering into a contract with the City of Jamestown in which the named insured agrees to defend, hold harmless, and indemnify the City, its officials, employees and agents against all claims resulting from work performed, material handled and services rendered. The contractual liability coverage evidenced above covers the liability assumed under the City-contractor agreement.

B. Prior to non-renewal or cancellation of these policies, at least thirty (30) days advance written notice shall be given to the City's Corporation Counsel, and the City department requesting this Certificate before such change shall be effective.

Minimum coverage limits are as follows:

COMP. GEN. LIAB. *	CONSTRUCTION & MAINTENANCE	PROFESSIONAL SERVICES
-PREM & OPS		
-PRODS. & COMPL. OPS	\$1,000,000 CSL	\$1,000,000 CSL
-INDEPEND. CONTRACT		
- CONTRACTUAL		
-BROAD FORM P.O.		
-X.C.U.		
-PERSONAL INJURY	\$1,000,000 CSL	\$1,000,000 CSL
AUTO LIABILITY		
-OWNED		
-HIRED		
-NON-OWNED	\$1,000,000	\$1,000,000
EXCESS UMBRELLA LIAB*	STATUTORY	STATUTORY
WORKER'S COMPENSATION & EMPLOYERS LIABILITY	STATUTORY	STATUTORY
DISABILITY BENEFITS		\$1,000,000
PROFESSIONAL LIAB.	NOT APPLIC.	



All coverage shall provide for a minimum of \$3,000,000 coverage for multiple occurrences.

City of Jamestown shall be named as additional insured on all policies for purpose of coverage but not by payment of premium.

*The comprehensive general liability can be met by one or more policies or in combination with an excess umbrella liability policy. No umbrella policy is required if underlying coverage is at least \$1,000,000.

Bid specifications or particular contracts, leases, or agreements may require alternative coverages or limits, which may be evidenced on the certificate in lieu of the coverage specified.

The expiration date for any claims-made policy must be at least ninety (90) days after the expiration of the contract for services or final delivery of any products.

The City reserves the right to modify, reduce or expand the coverage required herein on a case-by-case basis, where the scope of the project, or the potential exposure of the City so warrants.

Investigation Authorization - Company

The undersigned organization, a prospective proposer to provide design and construction services for the City of Jamestown, recognizes that public health and safety requires assurance of safe, reliable, services. That assurance will require inquiry into aspects of company operations deemed relevant by the City of Jamestown, or its agents. The company specifically agrees that the City of Jamestown or its agents may conduct an investigation into, but not limited to the following matters:

1. The financial stability of the company, including its owners and officers, any information regarding potential conflict of interests, past problems in dealing with other clients or cities where the company has rendered service, or any other aspect of the company operations or its structure, ownership, or key personnel which might reasonably be expected to influence the City of Jamestown's selection decision.
2. The company's current business practices, including employee compensation and benefits arrangements, pricing practices, in-service training programs, means of competing with other companies, employee discipline practices, public relations efforts, current and potential obligations to other buyers, and general internal personnel relations.
3. The attitude of current and previous customers of the company toward the company's services and general business practices, professional knowledge of the company's past work, as well as other units of local government with which the company has dealt in the past.



4. Other business in which company owners and/or other key personnel in the company currently have a business interest.
5. The accuracy and truthfulness of any information submitted by the company in connection with such evaluation.

This authorization shall expire one year from the date of signature.

AUTHORIZATION FOR SUCH INVESTIGATION IS HEREBY EXPRESSLY GIVEN BY THE COMPANY:

Company Name

Date

By: Signature (authorized representative)

Name & Title Printed

State of: _____

County of: _____

On this _____ day of _____ 20____ before me, the
undersigned,
date month

_____ a Notary Public in and for the said County and
State,
name (printed)

personally appears.

To me known to be the person described herein and who executed the foregoing statement, and acknowledged that s/he executed the same as her/his free act and deed. Witness my hand and Notary Seal subscribed and affixed in said County and State, the day and year above written.

Notary Public (signed)



Certification Pursuant to Section 103-g Of the New York State

General Municipal Law

- A. By submission of this bid/proposal, each bidder/proposer and each person signing on behalf of any bidder/proposer certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the New York State Finance Law. Such list can be found on the website of the office of general services, <http://ogs.ny.gov/default.asp>."

Print

Signature

Title

Company Name

Date

On January 13, 2012, Chapter 1 of the Laws of New York for 2012 was signed into law by Governor Andrew M. Cuomo. The law is known as the "Iran Divestment Act of 2012" (the "Act") and can be found at § 165-a of the NY State Finance Law. The Act became effective on April 12, 2012. The Act imposes limitations on "persons" that are determined to be engaged in investment activities in the Iranian energy sector, as defined in the Act.

On July 17, 2012, Governor Cuomo signed into law Chapter 106 of the laws of 2012, which extended the Iran Divestment Act to State and local public authorities, the State University of New York, and the City University of New York.



NON-COLLUSIVE BIDDING CERTIFICATION
Required by Section 139-D of the State Finance Law

By submission of this bid, bidder and each person signing on behalf of bidder certifies, and in the case of joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his/her knowledge and belief:

[1] The prices of this bid have been arrived at independently, without collusion, consultation, communication, or agreement, for the purposes of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

[2] Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the Bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

[3] No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

A BID SHALL NOT BE CONSIDERED FOR AWARD NOR SHALL ANY AWARD BE MADE WHERE [1], [2], [3] ABOVE HAVE NOT BEEN COMPLIED WITH; PROVIDED HOWEVER, THAT IF IN ANY CASE THE BIDDER(S) CANNOT MAKE THE FORGOING CERTIFICATION, THE BIDDER SHALL SO STATE AND SHALL FURNISH BELOW A SIGNED STATEMENT WHICH SETS FORTH IN DETAIL THE REASONS THEREFORE:

[AFFIX ADDENDUM TO THIS PAGE IF SPACE IS REQUIRED FOR STATEMENT.]

Subscribed to under penalty of perjury under the laws of the State of New York, this ____

day of _____, 20____ as the act and deed of said corporation of partnership.
month year

IF BIDDER(S) (ARE) A PARTNERSHIP, COMPLETE THE FOLLOWING:

NAMES OF PARTNERS OR PRINCIPALS

LEGAL RESIDENCE



IF BIDDER(S) (ARE) A CORPORATION, COMPLETE THE FOLLOWING:

NAMES

LEGAL RESIDENCE

President

Vice President

Secretary

Treasurer

Identifying Data:

Potential Contractor: _____

Street Address: _____

Telephone: _____ Title: _____

If applicable, Responsible Corporate Officer Name

Title

Signature

Joint or combined bids by companies or firms must be certified on behalf of each participant:

Legal name of person, firm or corporation

Legal name of person, firm or corporation

By- Name

By- Name



Title

Title

Street Address

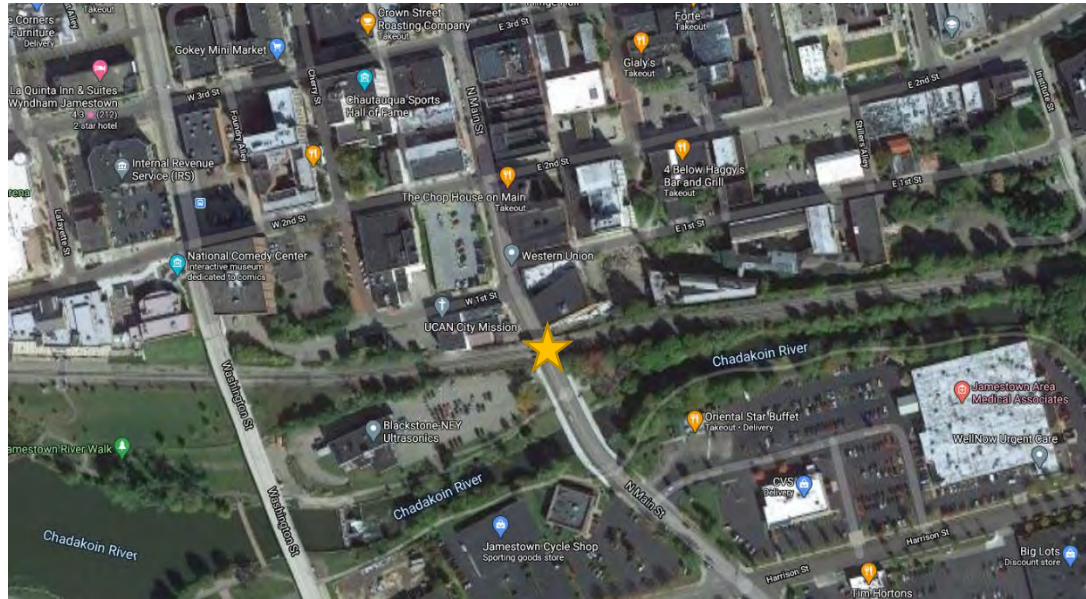
Street Address

City and State

City and State

EXHIBIT B:
Project Precedents

Main Street viaduct



Main Street viaduct- looking north



Main Street viaduct- looking south



Main Street viaduct



Precedent images











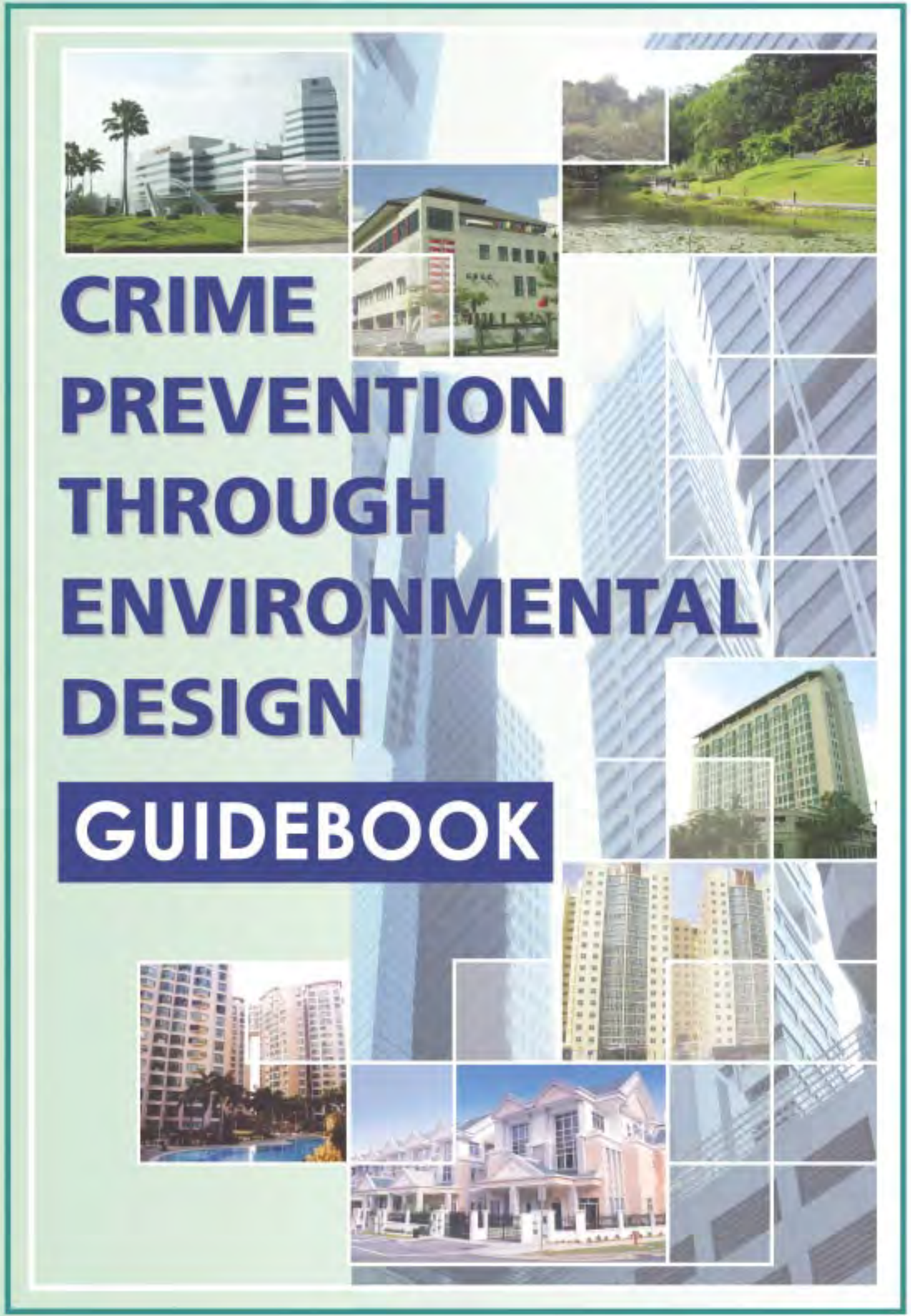






EXHIBIT C:

**Crime Prevention Through
Environmental Design (CPTED)
Guidebook**



CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN GUIDEBOOK

VISION

Making Singapore
Safe & Secure for all.

MISSION

We work in ***Partnership***
with the ***Community*** and
the ***Police*** to ***prevent crime***.



National Crime Prevention Council

c/o Public Affairs Department, Police Headquarters, Level 4,
New Phoenix Park Tower P, 28 Irrawaddy Road, Singapore 329560
Tel: (65) 6252 4101 Fax: (65) 6251 2913
Website: www.ncpc.gov.sg Email: spf_ncpc@spf.gov.sg

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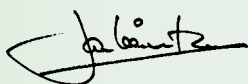
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FOREWORD

Since its inception in 1981, the National Crime Prevention Council (NCPC) of Singapore had been actively working towards the objectives, such as, to raise the level of public awareness about crime; to encourage self-help in crime prevention; to examine, develop and recommend crime prevention measures to the public and to coordinate efforts of various organisations in crime prevention.

The NCPC engages the public through the organisation of crime prevention activities such as crime prevention campaigns, exhibitions, seminars and workshops. The NCPC also forges close alliances with various professional, social and trade organisations to tackle the problem of crime. In addition, various sub-committees have been formed to address problems of security in specific areas. They are the Hotel Security Committee, Security in Construction Worksites Committee, Children and Youth Committee, Security in Housing Committee, Security in Commercial Premises Committee and Focus Group Committee.

Working in partnership with the stakeholders in the construction and real estate industry to design out crime is the latest effort by the NCPC in its strive towards making Singapore a safe place. This is achieved through the use of Crime Prevention Through Environmental Design (CPTED) principles when designing buildings, facilities and the surrounding. In view of the emerging trend of extreme crimes, such as terrorism, in the region as well as globally, the adoption of CPTED principles can also be adapted and applied to counter these threats. This CPTED Guidebook will serve as a useful reference for planners, building professionals, security agencies and homeowners to incorporate suitable crime prevention and security measures in their planning and design of their building and infrastructure projects.



Mr Tan Kian Hoon

Chairman

National Crime Prevention Council

INTRODUCTION

Crime is a social problem in our society that affects thousands of people's lives each year. Serious crimes against persons and properties generate considerable fear within the community. Crimes like theft, break-in, rape and murder are serious threats to the safety of the community. The resulting fear of crime in itself can restrict people's freedom of movement and prevent them from fully participating in the community. In particular, some groups of people are more vulnerable to crime and the fear of crime, for example, older people, women, parents, teenagers, etc.

Many different strategies are needed to combat the complex issues of crime and fear of crime. A whole range of responses involving strategies in design, community action and law enforcement would be required to achieve successfully the objective of crime prevention. In this connection, there is widespread acknowledgement that planners, architects and developers can play an important role in enhancing the safety of our communities as they have a major influence in the design of the built environment.

Traditionally, the community has turned to the police and the judicial system to protect them by deterring criminals and punishing offenders. The general public's indifference towards self-protection arises mainly from the lack of knowledge of the means of protection, and perhaps a perception that somebody else - the government or insurance companies - bears most of the cost of theft and vandalism.

On the other hand, Crime Prevention Through Environmental Design (CPTED) asserts that the community, homeowners, planners, developers and architects can play a greater role in protecting the community and themselves from crime by integrating CPTED principles and concepts into the design and management of the physical environment. In this connection, CPTED may be viewed as a subset of the total set of measures required for effective crime prevention and control.

The purpose of this guidebook is to raise awareness of homeowners, developers, architects, and town planners on the concepts and principles of CPTED. CPTED seeks to enhance the safety of developments and minimise the opportunities for crime to be committed. This guidebook presents information, illustrations and suggestions on how this can be done through the application of CPTED.

Notwithstanding the relevance and usefulness of CPTED, the recommendations in this guidebook may not be compatible with the requirements, standards and codes of various relevant authorities. In such situations, the demands of the authorities will take precedence over the recommendations in this guidebook.

CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN PRINCIPLES

The basis of Crime Prevention Through Environmental Design (CPTED) is that proper design and effective use of the built environment can reduce the incidence and fear of crime. This in turn leads to improvements in the quality of life.

In contrast to the approach of addressing crime concerns by implementing visually affronting security or target hardening measures such as locks, hard barriers, security gates, security patrols, etc., CPTED promotes high quality and visually pleasing solutions as first responses that aim to enhance the legitimate use of space.

CPTED can be applied without interfering with the normal use of the space. It is easy to apply and can be economical to implement, especially if it is done early at the planning and design stages of a project.

THE FOUR PRINCIPLES OF CPTED ARE:

- ☐ Natural surveillance
- ☐ Natural access control
- ☐ Territorial reinforcement
- ☐ Maintenance and management

There are strong overlaps and synergies among the four CPTED principles. These have been identified separately for convenience and clarity of understanding. In practice, it may be useful to see all four principles as different facets of a single technique for dealing with the security of the physical environment. In respect to the first two principles, the term 'natural' refers to deriving surveillance and access control results as a by-product of normal and routine use of the environment.

NATURAL SURVEILLANCE

The fundamental premise is that criminals do not wish to be observed. Surveillance or the placing of legitimate 'eyes on the street' increases the perceived risk to offenders. This may also increase the actual risk to offenders if those observing are willing to act when potentially threatening situations develop. So the primary aim of surveillance is not to keep intruders out (although it may have that effect) but rather, to keep intruders under observation.

Natural surveillance can be achieved by a number of techniques. The flow of activities can be channelled to put more people (observers) near a potential crime area. Windows, lighting and the removal of obstructions can be placed to improve sight lines from within buildings.

NATURAL ACCESS CONTROL

Natural access control relies on doors, fences, shrubs, and other physical elements to keep unauthorised persons out of a particular place if they do not have a legitimate reason for being there. In its most elementary form, access control can be achieved in individual dwellings or commercial establishments by the use of adequate locks, doors and window barriers.

However, when one moves beyond private property to public or semi-public spaces, the application of access control needs more care. Properly located entrances, exits, fencing, landscaping and lighting can subtly direct both foot and vehicular traffic in ways that decreases criminal opportunities. Access control can be as simple as locating a front office to a warehouse.

While access control is more difficult on streets and areas that are entirely open to public use, there are other techniques for controlling access in these circumstances. For example, non-physical or 'psychological' barriers can be used to achieve the objective of access control. These barriers may appear in the form of signs, paving textures, nature strips or anything that announces the integrity and uniqueness of an area. The idea behind a psychological barrier is that if a target seems strange, or difficult, it may also be unattractive to potential criminals.

Because any strategy that fosters access control is also likely to impede movement, careful consideration should be given to access control strategies. Such strategies may limit the opportunity for crimes, but should not hinder the mobility of potential victims.

TERRITORIAL REINFORCEMENT

People naturally protect a territory that they feel is their own, and have a certain respect for the territory of others. Clear boundaries between public and private areas achieved by using physical elements such as fences, pavement treatment, art, signs, good maintenance and landscaping are ways to express ownership. Identifying intruders is much easier in such well-defined spaces.

Territorial reinforcement can be seen to work when a space, by its clear legibility, transparency, and directness, discourages potential offenders because of users' familiarity with each other and the surroundings.

MAINTENANCE AND MANAGEMENT

This is related to the neighbourhood's sense of 'pride of place' and territorial reinforcement. The more dilapidated an area, the more likely it is to attract unwanted activities. The maintenance and the 'image' of an area can have a major impact on whether it will become targeted.

Another extension of the concept is that territorial concern, social cohesion and a general sense of security can be reinforced through the development of the identity and image of a community. This approach can improve not only the image of the population has of itself, and its domain, but also the projection of that image to others.

With clear spatial definitions such as the subdivision of space into different degrees of public/ semi-public/ private areas and the raising of standards and expectations, the level of social estrangement would decline. This is known to be related to reduction in opportunities for aberrant or criminal behaviour, such as vandalism.

Maintenance and management need to be considered at the design stage, as the selection of materials and finishes will impact on the types of maintenance regimes that can be sustained over time. For example, plant material should be selected for its size at maturity to avoid blocking of sight lines.

THE “THREE D” APPROACH

CPTED involves the design of the physical space in the context of the normal and expected use of that space by the users as well as the predictable behaviour of people around the space. CPTED emphasises the connection between the functional objectives of space utilisation and behaviour management. Conceptually, the four CPTED principles are applied through the 3-D approach, i.e. **Designation**, **Definition** and **Design**. The 3-D approach is a simple space assessment guide that helps the user in determining the appropriateness of how a space is designed and used. The 3-D concept is based on the three functions or dimensions of human space:

- ☐ All human space has some designated purpose.
- ☐ All human space has social, cultural, legal or physical definitions that prescribe desired and acceptable behaviours.
- ☐ All human space is designed to support and control the desired behaviours.

By using the “Three D’s” as a guide, space may be evaluated by asking the following questions:

1. DESIGNATION

- What is the designated purpose of this space?
- For what purpose was it originally intended?
- How well does the space support its current use or its intended use?
- Is there a conflict?

2. DEFINITION

- How is space defined?
- Is it clear who owns it?
- Where are its borders?
- Are there social or cultural definitions that affect how space is used?
- Are legal or administrative rules clearly set out and reinforced in policy?
- Are there signs?
- Is there conflict or confusion between purpose and definition?

For example, in a given space, certain behaviour or activities may be socially or culturally discouraged while others may be clearly prohibited by display of written instructions or rules. On the other hand, what is not acceptable in a certain space may be acceptable in others.

3. DESIGN

- How well does the physical design support the intended function?
- How well does the physical design support the desired or accepted behaviours?
- Does the physical design conflict with or impede the productive use of the space or the proper functioning of the intended human activity?
- Is there confusion or conflict in the manner in which physical design is intended to control behaviour?

Consideration of these questions may reveal areas that requires changes or improvements. For example, a space may need to have a designated purpose, it may need to be more clearly defined, or it has to be better designed to support the intended function. Once these questions have been considered, the information received may be used as a means of guiding decisions about the design or modification of the space so that the objectives of space utilization as well as natural surveillance, natural access control, territorial reinforcement and maintenance and management can be better achieved.

BASIC DESIGN AND MANAGEMENT STRATEGIES

The four CPTED principles can be translated into various planning and design strategies that would enhance security. These strategies can be categorised as follows:

1. allow for clear sight lines,
2. provide adequate lighting,
3. minimise concealed and isolated routes,
4. avoid entrapment,
5. reduce isolation,
6. promote land use mix,
7. use of activity generators,
8. create a sense of ownership through maintenance and management,
9. provide signs and information and
10. improve overall design of the built environment.

The decision of which strategy or combination of strategies to apply will depend on the site condition, the functional requirements and the desired programming of the space, as well as the design intent. These strategies are summarised in the checklist in Appendix A. Further examples of CPTED strategies that can be applied to various developments and public spaces are listed in Appendices B and C respectively.

SIGHT LINES

Sight line is defined as the desired line of vision in terms of both breadth and depth. The inability to see what is ahead along a route due to sharp corners, walls, earth berms, fences, bushes or pillars can be serious impediments to the feeling of being safe. Large columns, tall fences, overgrown shrubbery and other barriers blocking sight lines adjacent to pedestrian paths could shield an attacker. Alternatively, low hedges or planters, small trees, wrought iron or chain-link fences, transparent reinforced glass, lawn or flower beds, benches allow users to see and be seen and usually discourage crime and vandalism.



Residential apartments with windows overlooking carpark and park allow for clear sight lines

1. DESIGN VISIBILITY

Design visibility in the built environment means allowing for clear sight lines and avoiding isolated or hidden spaces. Recessed doorways can result in corners that are hidden from casual surveillance. Sharp “blind” corners create the same problem, especially on stairs or corridors where there may be no alternative routes of escape. Sudden changes of grade on walkways can also create “blind spots”. Certain improvements can be made. For example, columns and walls can be tucked into the built design as protrusions can hinder visibility. Visibility can also be improved through modification such as creation of windows and other openings in otherwise blank walls

and removal of protrusions along walls. Improving visibility through such modifications will permit natural surveillance. Similarly, the location and design of fences, shrubbery and berms must also be carefully studied when design visibility is essential. In blind spots where no modification to the building is possible, the use of security mirrors or other security devices such as video cameras would be necessary even though these are not optimal solutions.

2. PROBLEMATIC SPACES

Visibility should especially be taken into account when designing or planning spaces where risk to personal safety is perceived to be high, such as stairwells in multi-storey car parks, underpasses and lobby entrances to high-rise buildings.

3. FUTURE SIGHT LINE IMPEDIMENTS

As the landscape matures over time, unintended screens, barriers or hiding places could be created. Therefore, planting in a landscape must take into consideration the growth, final height and habit of the plants. Plantings are best made with due consideration to the resources to be committed to their maintenance so as to ensure that the original sight lines designed do not get obscured over time.

LIGHTING

Sufficient lighting is necessary for people to see and be seen. From a security point of view, lighting that is strategically placed can have a substantial impact on reducing the fear of crime. A basic level of lighting should allow the identification of a face from a distance of about 10 metres for a person with normal vision.



Exterior lighting for night time use should provide adequate visibility

1. MINIMUM STANDARDS

If the area is intended for night time use, lighting should provide adequate visibility. Pedestrian walkways, back lanes and access routes open to public spaces should be lit so that a person with normal vision is able to identify a face from a distance of about 10 metres. Inset spaces, signs, entrances and exits should be adequately lit. On the other hand, lighting of different wattage, colour temperature and rendition may also be used to make certain public areas “less hospitable” to gathering for long periods.

2. PATHS NOT INTENDED FOR NIGHT TIME USE

Lighting is not desirable in an isolated area or for a path leading to some obscure places. Lighting such areas may provide a false sense of confidence for people during night

time use. The paths or spaces not intended for night time use could be fenced off and remained unlit to avoid giving a false sense of security or impression of being used.

3. CONSISTENCY OF LIGHTING

Lighting should be uniformly spread to reduce contrast between shadows and illuminated areas. More fixtures with lower wattage rather than fewer fixtures with higher wattage help reduce deep shadows and avoid excessive glare.

4. DESIGNING FOR NIGHT TIME USE

Design proposals should take into account the night time use of the outdoor spaces and specify the type, placement and intensity of lighting.

5. PROTECTION OF LIGHTING

Light fixtures should be protected against casual vandalism by means of vandal resistant materials and design.

6. PLACEMENT OF LIGHTING

Lighting should also be directed on roadside pavement and possible entrapment spaces other than on roads. Lighting should take into account vegetation, such as mature trees, and other obstructions that would cause light to be blocked off.

7. BUILDING MATERIALS

Light colour finishes on walls and ceilings should be used for places such as car parks and isolated routes leading to it. This may be preferred to using lights of higher intensity that consume more energy and are costlier to maintain.

8. MAINTENANCE

Lighting requires maintenance to preserve visibility. Bushes and trees that block off light should be trimmed. Lighting fixtures should be located at suitable heights for easy maintenance and replacement. Light fixtures should be maintained in a clean condition and promptly replaced if burnt or broken. Posting information indicating who to call in case of burnout or vandalised lights is desirable.

CONCEALED OR ISOLATED ROUTES

Concealed or isolated routes are often predictable routes that do not offer alternative for pedestrians. An attacker can predict where pedestrians will end up once they are on the path. Examples are underpasses, pedestrian overhead bridges, escalators and staircases. Predictable routes are of particular concern when they are isolated or when they terminate in entrapment areas.



See through fencing covering a predictable route provides visibility

1. VISIBILITY OF CONCEALED OR ISOLATED ROUTES

If there is a need for the concealed or isolated route, it should be designed to incorporate visibility. If there is an existing concealed or isolated route and security is in question, it should be modified or eliminated. Concealed or isolated routes can be made safer by bringing in more activities, ensuring clear sight lines, improving lighting, installing emergency telephones and electronic surveillance devices.

2. LOCATION OF CONCEALED OR ISOLATED ROUTES NEAR ENTRAPMENT AREAS

If there is an entrapment area or isolated area within 50 to 100 metres of the end of a concealed or isolated route, it should be modified or eliminated. An entrapment area located near a concealed or isolated route such as a tunnel or an isolated path provides the attacker with an opportunity to take a victim to a nearby entrapment area where a more serious crime could be committed.

3. NATURAL SURVEILLANCE

Natural surveillance of a concealed or isolated route should be encouraged. A stair or a ramp may be located such that it has external glazed/ open areas and has a view from the surrounding properties.

4. SIGHT LINES

If a pedestrian cannot see what is on or at the end of a concealed or predictable route, the visibility should be improved by lighting and/ or the use of a reflective surface such as mirror.

5. LIGHTING

Concealed or isolated routes should be adequately and uniformly lit. Lighting should be vandal proof and properly located. Light coloured walls and ceiling materials help to reflect light and can enhance the brightness of an area. Natural lighting is preferred and should be encouraged.

6. SURVEILLANCE THROUGH HARDWARE

If a concealed or isolated route is enclosed and prone to crime e.g. passageway or stairwell, surveillance through security hardware should be considered and these hardware should be properly monitored.

7. ACCESS TO HELP

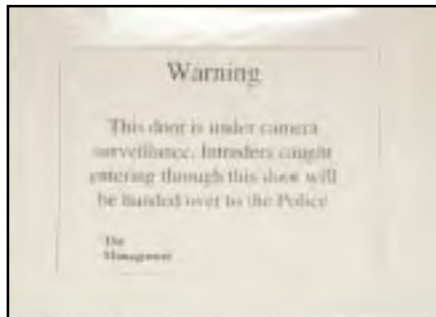
Emergency telephones, intercoms, security alarms should be installed to concealed or isolated routes to allow users to summon help in emergency.

8. ALTERNATIVE ROUTE SIGN

Signs should be placed at the entrance to indicate alternative well-lit and/ or frequently travelled routes. Certain pedestrian walkways, in the city for example, may be preferable during day time hours only. As such, an alternate route should be indicated for evenings and weekends at the entrance.

ENTRAPMENT AREAS

Entrapment areas are small, confined areas near or adjacent to well-travelled routes that are shielded on three sides by some barriers, such as walls or bushes. Examples are lifts, tunnels or bridges, enclosed and isolated stairwells, dark recessed entrances that may be locked at night, gaps in tall vegetation, a vacant site closed from three sides by barriers, narrow deep recessed area for fire escape, grade-separated driveways or loading/ unloading areas off a pedestrian route. Parking lots, petrol kiosks and school buildings isolated by school yards can also become entrapment areas, especially when there is less activity after operating hours.



An entrapment area can be secured with some form of surveillance

1. ELIMINATION OF ENTRAPMENT AREA

If there is an entrapment area, such as a hidden area below or above ground, a private dead alley, a walled area or a storage area adjacent to a main pedestrian route, it should be eliminated.

2. CLOSING OF ENTRAPMENT AREA AFTER OPERATING HOURS

If elimination of an entrapment area is not possible, it should be locked or closed after operating hours. For instance, a passageway connection to a locked building should be locked as well.

3. VISIBILITY

It is preferable to have natural surveillance. However, if an entrapment area is unavoidable, the area should be well lit with some form of formal surveillance. In the case of lifts, incorporation of glass windows in the design of lift doors would be helpful.

4. ESCAPE ROUTE AND HELP

Design should provide for an opportunity to escape and find help. For example, fenced parking areas can have more than one pedestrian exit points. Deep recessed fire escape could act as an entrapment area despite being lit and thus it should be avoided.

ISOLATION

Most people feel insecure in isolated areas especially if people judge that signs of distress or yelling will not be seen or heard. People may shy away from isolated areas and in turn such places could be perceived to be even more unsafe. Natural surveillance from adjoining commercial and residential buildings helps mitigate the sense of isolation, as does planning or programming activities for a greater intensity and variety of use. Surveillance by the police and other security personnel to see all places at all times is not practical, nor economical. Some dangerous or isolated areas may need formal surveillance in the form of security hardware, i.e. audio and monitoring systems. Aside from its cost, the hardware must be watched efficiently and attentively by staff trained for emergencies.



Banking facilities can be located near pedestrian activities to reduce sense of isolation

1. NATURAL SURVEILLANCE OF ISOLATED ROUTES AND PUBLIC SPACES

Natural surveillance of public spaces such as plazas, open green spaces, isolated pedestrian routes and car parks should be encouraged through planning and design. Blank facades or buildings set far back at street level should be avoided as they can create a sense of isolation.

2. PROBLEMATIC ROUTES

Isolated routes to and from car parks should preferably be overlooked by surrounding buildings. In a low rise development, it is desirable to provide parking so that there is natural surveillance from the occupants of the buildings or surrounding areas.

3. FORMAL SURVEILLANCE

Telephones, emergency telephones or panic alarms should be adequately indicated by signs. Video cameras and patrols could help monitor isolated areas.

4. INCREASING ACTIVITIES

Compatible land use and activity generators create activities, thereby allowing visibility by users.

LAND USE MIX

A balanced land use mix is important for environmental, economic, aesthetic and safety reasons. Mixed uses must be compatible with one another and with what the community needs. For a residential development, a number of uses can be included by having a main street, a town square or park, prominent civic buildings and above all the ability of residents to walk to the place of work, to day care centres and to shops. The social value of frequenting local businesses provides a sense of security and safety as the local business people “watch” the street. Generally, any design concept that encourages a land use mix will provide more interaction and a safer place.



Compatible mixed uses can encourage activity, natural surveillance and contact among people

1. COMPATIBLE MIXED USES

Mixed uses should be compatible in order to encourage activity, natural surveillance and contact among people throughout the day. The first purpose in mixing uses should be to provide adequate and appropriate services to the primary users of an area. Examples include convenience retail shops, personal service shops and offices in primarily residential areas, especially if they provide local employment opportunities.

Childcare centres, health and fitness clubs and grocery stores in office areas including the possibility of adding residential uses at a later date, are other examples of compatible mixed uses.

2. BALANCING LAND USES

Land uses such as pubs, clubs and bars are inevitable elements of urban life. However, they can be perceived as negative or undesirable depending on their locations in the neighbourhood. In order to minimise their impacts on the community, such uses should be balanced with positive measures by carefully selecting their locations in relation to surrounding uses.

ACTIVITY GENERATORS

Activity generators are uses or facilities that attract people, create activities and add life to the street or space and thus help reduce the opportunities for crime. Activity generators include everything from increasing recreational facilities in a park, to placing housing in the central business district or adding a restaurant to an office building. They can be provided on a small scale or be added as supporting land use, or intensifying a particular use.



Open space within the central business district can be used for various activities

1. COMPLEMENTARY USES

Complementary uses should be introduced, to provide surveillance to potentially isolated areas, e.g. by locating administration office, lounge, TV room facing back lanes or side entrances.

2. REINFORCING ACTIVITY GENERATORS

Activity generators should be located along an “active edge” or along one or two pedestrian paths in large parks or on the boundary of large developments. An “active edge” creates a boundary of space that is inviting rather than threatening to passers-by. Appropriately licensed street vendors or food vendors should be encouraged in parks and the sensitive placement of seating areas informally generates activity along the edge of a path.

3. DESIGN FOR PROGRAMMING ACTIVITY MIX

Park planning and design should provide opportunities for enhanced programming, such as cultural, recreational and community activities.

4. GROUND-LEVEL ACTIVITY

Pedestrian oriented activities should be encouraged at ground level in high and medium density areas. Increased density generally attracts more people and may create more anonymity and a sense of fear. This sense of fear can be mitigated by creating more ground level activities such as retail which could add “eyes” on the street.

OWNERSHIP, MAINTENANCE AND MANAGEMENT

Sense of ownership, or territoriality, is often considered a vital factor in making a place safer. Taking responsibility and caring for an environment helps make it safer. If residents in a residential estate for instance, feel that the areas outside their doors do not belong to them, they will feel less safe, and will be less likely to intervene in a dangerous situation. Not knowing who has formal ownership contributes to insecurity since it is not clear who to report the problems to. On the other hand, measures taken to increase the sense of territoriality may sometimes increase opportunities for crime. The visual or real barriers separating many new housing developments from surrounding neighbourhoods may isolate residents from the wider community.



Artwork by residents of an apartment block at ground level promote sense of ownership

1. TERRITORIAL REINFORCEMENT

The properties that are normally not protected and that can easily be intruded should be defined by the presence of design features and maintenance. For example, poorly defined front and rear yards could be defined by a small fence or by regular maintenance of the surrounding landscape.

2. USE OF MATERIALS

Materials used for common facilities should be vandal resistant so that maintenance is minimal. Street furniture should be made of durable and vandal resistant materials.

3. MAINTENANCE ENFORCEMENT

Properties should be well maintained to create a perception of ownership and safety. Building maintenance by law enforcement is a critical part of fostering a sense of ownership.

4. REPORTING MAINTENANCE

Well displayed telephone numbers or web sites to call for repairs and report vandalism to properties, especially in public areas are desirable. For example, a broken lock, door or window or light could be reported.

5. MAINTENANCE PRIORITIES

Offensive graffiti should be promptly removed either by the property manager or the public authority. Response to litter pickup and repairs should be prompt. A well maintained space gives an impression of 'ownership' and 'care'.

6. MANAGEMENT

Efficient programming and management of spaces, formal surveillance and good maintenance, for example by the management corporations of condominiums, and town councils taking care of public housing, can also enhance personal safety. If prompt attention is not given to maintaining a property, the result of lack of maintenance can contribute to a sense of fear.

SIGNS AND INFORMATION

Well designed, strategically located signs and maps contribute to a feeling of security. Signs should be standardised to give clear, consistent, concise and readable messages from the street. Having addresses lit up at night will make them even more visible. Where it is difficult to find one's way around; signs with maps may help. Signs must be visible, easily understood and well maintained. Graffiti and other vandalism can make signs unreadable. If signs are in disrepair or vandalised, it gives an impression of lack of ownership and thus adds to a sense of fear.



Maps and directories should be well designed and strategically located

1. SIGN DESIGN

Signs should be large, legible and identifiable. The use of strong colours, standard symbols, simple shapes and graphics is recommended for signs of washrooms, telephones, information and help.

2 MESSAGE

Signs should convey the message with adequate information. For example, it should indicate where to go for assistance or help, or where the telephones and washrooms are, or the hours of operation of a underpass. The message should be conveyed in suitable language(s) or pictographs.

3. SIGN LOCATION

Signs should be strategically located at entrances and near activity nodes (e.g., intersections of corridors or paths) and placed for visibility at an appropriate height.

4. MAINTENANCE

Signs should be maintained on a regular basis to ensure that they are visible. This may involve trimming any landscaping growth or cleaning the sign. Clear signs in a car park help users to identify their location.

5. MAPS

In large parks and buildings, maps or leaflets containing information appropriate to the different needs of various groups of users should be available.

6. HOURS OF OPERATION

Where and when exits are closed should be indicated at the entrance of a route.

OVERALL DESIGN

The design and management of the environment influences human behaviour. A barren, sterile place surrounded with security hardware will reinforce a climate of fear, while a vibrant and beautiful place conveys confidence and care. Both the functional and aesthetic values of public and semi-public spaces contribute to a sense of safety. In particular, the degree to which users can find their way around influences the sense of security. Good design reinforces natural use of space and lessens the need to depend on signs in order to find one's way around.



Good functional and aesthetic design can contribute to a sense of safety

1 IMPORTANCE OF QUALITY AND BEAUTY

The design of the space, besides fulfilling functional objectives, should create an aesthetically pleasing environment that a person can enjoy. The security aspects should be considered as part and parcel of designing the space and fulfilling aesthetic values.

2. DESIGN CLARITY

The design of the space should be easy to understand. The entrances and exits, the places to find people and the places to find services such as washrooms or telephones should be easy to find for a person visiting the place for the first time. The more complex

a space, the more signs and other measures to improve accessibility need to be provided and this may lead to more confusion. An inviting environment creates an image that attracts people.

3. AVOID UNUSABLE SPACES

The purpose for designing a space should be clear. Unused and unusable “dead spaces” should be avoided.

4. NIGHT TIME USE

The design of the space should address night time use.

5 CONSTRUCTION MATERIALS

For better public safety and security, the design of the space should take into consideration appropriate materials, its placement, colour and texture to make the space inviting or uninviting. For example: bright and vibrant finishes create a sense of safety.

Appendix A

CHECKLIST

The design guide is summarised in the form of a checklist. The questions help you to go through the security aspects of a project. The checklist will provide an initial crime prevention through environmental design review for the project.

1. Sight lines
2. Lighting
3. Concealed or Isolated Routes
4. Entrapment Areas
5. Isolation
6. Land Use Mix
7. Activity Generators
8. Ownership, Maintenance, and Management
9. Signs and Information
10. Overall Design

Design guide for reviewing project – CHECKLIST

1. SIGHT LINES	Yes	No
• Can sharp corners or sudden changes in grades that reduce sight lines be avoided or modified?	☐	☐
• Does design allow clear sight lines and visibility at those areas where they are desired?	☐	☐
• Do areas of concerns such as stairwells, lobbies of high-rise building have clear sight lines?	☐	☐
• If sight lines are blocked, can it be made visible by using glass or can other enhancements such as mirrors or security cameras be provided?	☐	☐
• Does design allow for future sight line impediments such as landscaping in maturity?	☐	☐
• Does access to hidden areas such as underpasses or parking areas have clear sight lines?	☐	☐
2. LIGHTING		
• Is there a need for lighting to be provided if the paths or spaces are not used at night?	☐	☐
• Is lighting adequately provided such that a person can recognise a face from about 10 metres?	☐	☐
• Does lighting provide uniform spread and reduce contrast between shadow and illuminated areas?	☐	☐
• Is lighting provided too glaring?	☐	☐
• Are light fixtures provided for areas that require good visibility such as pedestrian routes and entrapment areas?	☐	☐
• Are light fixtures protected against vandalism or made of vandal resistant materials?	☐	☐

	Yes	No
• Is lighting at areas used during night time e.g. car parks, space around buildings adequately provided?	☐	☐
• Is back lane lighting required?	☐	☐
3. CONCEALED OR ISOLATED ROUTES		
• Can concealed and isolated routes such as staircases, passageways or tunnels be eliminated?	☐	☐
• Are there entrapment areas within 50 - 100 metres at the end of a concealed or isolated route?	☐	☐
• Is there an alternate route?	☐	☐
• If a pedestrian cannot see the end of a concealed or isolated route, can visibility be enhanced by lighting or improving natural surveillance?	☐	☐
• Are concealed or isolated routes uniformly lit?	☐	☐
• Is there natural surveillance by people or activities through various land uses?	☐	☐
• Is there formal surveillance?	☐	☐
• Is access to help e.g. security alarm, emergency telephones, signage and information available?	☐	☐
4. ENTRAPMENT AREAS		
• Is there an entrapment area and can it be eliminated?	☐	☐
• Can it be closed during off hours?	☐	☐
• Is the entrapment area visible through natural or formal surveillance?	☐	☐
• Does design provide for escape routes?	☐	☐

5. ISOLATION	Yes	No
• Does design incorporate natural surveillance?	☐	☐
• Do areas of concerns such as isolated routes and parking areas provide natural surveillance?	☐	☐
• If providing natural surveillance is not possible, are emergency telephones, panic alarm and attendants provided?	☐	☐
• Can compatible land uses be provided to increase activity?	☐	☐
6. LAND USE MIX		
• Are different land uses compatible?	☐	☐
• Can land uses that raise security concerns e.g. bars and pubs, be located where their impact is minimised?	☐	☐
7. ACTIVITY GENERATORS		
• Can complementary uses that promote natural surveillance be provided?	☐	☐
• Does design provide for complementary users?	☐	☐
• Does design reinforce activity?	☐	☐
• Is the area programmed for various events or activities?	☐	☐
• Can a clustering of uses be used to support the intended activity?	☐	☐
• Are ground level activities incorporated in design?	☐	☐
• Can areas be programmed to facilitate increased activity?	☐	☐
8. OWNERSHIP, MAINTENANCE & MANAGEMENT		
• Does the design provide territorial reinforcement through design features?	☐	☐
• Does the design allowed for easy maintenance?	☐	☐

	Yes	No
• Are there signs and information to guide people on how to report maintenance?	☐	☐
• Does the management of space provide maintenance priorities e.g. removal of offensive graffiti?	☐	☐
9. SIGNS AND INFORMATION		
• Are signs visible and legible?	☐	☐
• Are signs conveying messages clearly?	☐	☐
• Is information adequate?	☐	☐
• Are sign strategically located to allow for maximum visibility?	☐	☐
• Are signs well maintained?	☐	☐
• Are maps provided in large areas such as underpasses, parks, etc.?	☐	☐
• Are signs displaying hours of operation?	☐	☐
10. OVERALL DESIGN		
• Do quality and aesthetically pleasing built environments compromise security concerns?	☐	☐
• Is the scale of development consistent with neighbours to avoid large gaps on streets?	☐	☐
• Is design of the built environment simple and easy to understand?	☐	☐
• Is there space that can become dead space?	☐	☐
• How is the built environment used at night time?	☐	☐
• Are construction materials used to enhance safety and security?	☐	☐

Appendix B

EXAMPLES OF CPTED STRATEGIES APPLICABLE TO VARIOUS DEVELOPMENTS

CONDOMINIUMS AND PUBLIC HOUSING



Residential apartments overlooking outdoor play areas provide natural surveillance

1. SIGHT LINES AND HIDDEN SPOTS

Essential walkways through the area leading to and from MRT/ LRT stations, bus stops, parking lots and retail areas should have clear sight lines. The lift lobby should be open and visible from the interior of the building or the street.

Avoid hidden areas in corridors and stairwells. If not possible, use transparent materials or lift doors with glass windows and security mirrors to improve sight lines.

The interior of a lift may need installation of surveillance cameras or an angled mirror if the entire interior area is not visible to a person about to enter.

2. OPTIMISING USE AT GROUND LEVEL

Empty space should be used for housing, commercial and community services that are complementary to the needs of the residents.

3. ACCESS TO INDIVIDUAL BUILDINGS

Entrance areas to individual buildings should be clearly visible from adjacent streets and apartments.

4. SIGNS

Street names and block numbers should be visible from the public road as well as within the development.

Site maps at central locations may be located for visitors, delivery people and emergency services.

5. LIGHTING

Pedestrian walkways leading to buildings and car parks should be lit to public street standards.

Lighting of common areas such as corridors, lift lobbies and stairwells should be adequate and areas of shadows should be avoided.

6. FORMAL SURVEILLANCE

Management and maintenance staff should be trained to respond to emergencies.

Residents should be encouraged to report suspicious activities.

Security or maintenance staff should patrol parking areas and other common areas.

7. PARKING

Parking areas and access should be visible and well lit.

Visitor parking should be designated.

Parking within a building should be access controlled, well lit, properly signed and preferably with formal surveillance.

8. MANAGEMENT OF BUILT SPACE AND SECURITY

Management should have explicit policies related to security that allow for improving the quality of the environment and fostering a sense of common purpose.

9. LOCATION OF ACTIVITY GENERATORS

Outdoor play areas should be placed at safe locations where natural surveillance is possible.

10. NATURAL SURVEILLANCE

Drain pipes, parapets and ledges should not be located near windows, corridors and balconies. If unavoidable, they should face car parks, children's playground or roads to allow for natural surveillance.

Mailing boxes should be visible by the residents at the interior of the building corridor or lifts or stairs.

LANDED DEVELOPMENTS



An active resident committee can promote proper management of the neighbourhood

1. STREET PATTERN

The street pattern should be designed and/ or modified to reduce the opportunities for crime within the housing estates by maintaining simple and predictable grid patterns and by observing the following:

- reduce the number of intersections;
- access points to the neighbourhood should be highly visible;
- major traffic routes should not pass through the neighbourhood;
- conflict between pedestrian and vehicular traffic should be minimised to encourage pedestrian activity; and
- street pattern should be designed such that it is easy to find an address especially by emergency services.

2. LAND USE PATTERN

Commercial uses such as retail shops and offices should be located on main roads.

On the other hand, incompatible uses such as having a bar next to a school or religious assembly building should be avoided.

3. SCALE

The scale of new developments should be compatible with the surrounding developments.

4. MANAGEMENT AND MAINTENANCE

Sidewalks should be cleared of undesirable litter.

Neighbourhoods should be well managed by an active resident committee.

Safety audits may be conducted to identify problems in the neighbourhood.

Maintenance problems such as litter, vandalism, graffiti, burnt out lights on private property should be reported to the property owners/ management and dealt with.

5. OPEN SPACES

Open spaces and walkways should be designed to enhance security and safety.

6. SIGN AND INFORMATION

Signs may display maps at the entrances of individual developments indicating road names and block addresses.

This displayed information should be readable to motorists from a distance of at least 20 metres.

7. NATURAL SURVEILLANCE AND ACTIVITY GENERATORS

Opportunities for natural surveillance on the street should be introduced by encouraging front porches, balconies, more windows and convenience stores.

Open railings at balconies would be preferred to solid parapet walls.

8. CONTINUITY AND CLEAR OWNERSHIP

Entrances should be accentuated and well defined with landscaping, architectural design, lighting or symbolic gateways.

Fences that allow visibility from the street would be preferred.

Gaps such as empty lots should be given priorities for lighting and fencing.

9. STREET AND BACK LANE LIGHTING

Lighting should be of sufficient intensity to light the sidewalk as well as the street.

Trees and bushes should be trimmed adequately to allow unobstructed lighting.

Accesses from dwelling units to back lanes should be well lit and clearly visible from the street.

CENTRAL BUSINESS DISTRICT/ REGIONAL CENTRES/ TOWN CENTRES



Retail and entertainment uses at street frontages attract and enhance pedestrian activities

1. NATURAL SURVEILLANCE THROUGH GENERATING STREET-RELATED EVENING ACTIVITIES

Building along street frontages should be enhanced and strengthened by incorporating pedestrian oriented activities.

Retail and entertainment uses that open late such as restaurants and theatres should be encouraged at street level.

2. LAND USE MIX - RESIDENTIAL

A variety of land use mix should be encouraged with emphasis on residential and appropriate supporting services. As such, sidewalk cafes, street entertainers and street vendors which generate pedestrian activities could be introduced into the central business district, regional and town centres.

3. ACTIVITY GENERATION

Cultural and entertainment activities should be encouraged. These uses bring vitality after business hours and increase appeal for hotels, restaurants, shops and more business to locate within the central business district, regional and town centres, thereby attracting more people and tourists.

4. PEDESTRIAN ENVIRONMENT

Pedestrian environment should be visible.

Special treatment of sidewalks with adequate width, trees, lighting, banners, street furniture could contribute to an attractive and comfortable pedestrian environment.

OFFICES/ RETAILS/ HOTELS



Clear line of sight from reception desk allows easy surveillance of entrance

1. LOCATION OF WASHROOMS

Washroom entrances should be highly visible.

If the washroom entrance is through a corridor, it should be made visible from the shopping area. Alternatively, the security office could be located in close proximity to the washroom corridor.

2. SIGHT LINES

Receptionists should have clear sight lines of entrance areas from their workstations.

Receptionists should have communication link with security staff or other workers in case of an emergency. Security numbers could also be posted in the office.

3. REDUCTION OF ENTRAPMENT AREAS

Back lanes and loading/ unloading areas should be well lit.

Access to the service areas should be lockable.

Vacant properties should allow for natural surveillance so that there are no hidden spots that can act as entrapment areas.

Public telephones and ATMs should be located in areas of high use and away from entrapment areas.

4. CLUSTERING OF USES

Shops that open late should be clustered in one area, preferably near the entrance of the building.

5. SITTING AREAS

Ensure that public seating is located in areas which discourage loitering but enhance natural surveillance by placing seating in high traffic areas with clear sight lines in a number of directions.

6. SIGNAGE

Signs should be posted for washrooms, telephones, and other amenity areas in the shopping areas.

7. LIGHTING AND SURVEILLANCE IN PARKING AREAS

Surface parking area should be adequately lit.

For buildings with built-in car parks, the access to the car park and its interior should be well lit, free from entrapment areas with clear sight lines.

Avoid locating loading areas at entrapment areas.

Stairs or lift lobbies should be visible and allow for natural surveillance.

8. FORMAL SURVEILLANCE

There should be formal mechanical surveillance for areas and accesses to shops that operate late hours and facilities such as ATMs.

Organised security patrol in areas very prone to crime and vandalism is desirable.

Formal surveillance is encouraged in areas prone to loitering problems.

Management should monitor the access to the building.

Offices should be connected directly to security staff.

9. ACCESS TO ROOF TOP

There should not be unauthorised access to roof tops from within or from adjacent buildings.

EDUCATIONAL INSTITUTIONS AND SCHOOLS



Location and landscaping of school can be arranged to encourage natural surveillance from surrounding buildings and streets

1. LOCATION OF SCHOOL YARDS

Location and landscaping of school yards should be such that it encourages natural surveillance from surrounding buildings and streets.

2. OPTIMISING LAND USE

If possible, activities such as the use of school facilities for community activities or sports activities to bring people into the school yard after school hours should be encouraged.

Supervised recreation activities before and after school hours should be encouraged.

3. WALKWAYS

Frequently used walkways between buildings and other isolated walkways should be well lit to city street standards.

Walkways should avoid entrapment areas.

Emergency telephones should be well signed and lit along the walkways and bicycle tracks.

4. SIGHT LINES AND POTENTIAL ENTRAPMENT AREAS

Major walkways, bicycle tracks and entrances to buildings should have clear sight lines.

5. SIGNAGE

Besides other prominent signs, polytechnic and university campuses should include signs for emergency telephones along bicycle tracks, walkways and other isolated areas.

6. WASHROOMS

Washrooms should be well lit, visible and should not be located at isolated or remote areas.

7. FORMAL SURVEILLANCE

Walkways, bicycle tracks and parking areas should be regularly patrolled by the campus security.

Surveillance through hardware may be provided for any underpass connections between buildings.

INDUSTRIAL AREAS



Neat, visible and well-lit loading/ unloading areas minimise potential for hiding

1. SIGHT LINES

Land parcels and buildings should be visible from public or secondary roads.

Driveways should meet in areas where there are activities and orientation of buildings could be such that driveways are visible from the buildings.

The path to parking lots, bus stops and taxi stands should be visible from the buildings that they serve.

Avoid dead end driveways and street should be designed to increase surveillance opportunities from passing traffic and patrol.

Avoid creating hiding places such as alleys, storage yards, loading/ unloading areas and so on.

Parking lots should be visible from the street and well lit for night shift.

2. LAND USE MIX - INTENSIFICATION OF ACTIVITY AND DEVELOPMENT

Activities and developments that should bring in a steady stream of people to make the area less isolated should be encouraged, e.g. housing on the fringe, eating places, recreational areas etc.

3. LIGHTING

Lighting along entrance paths to buildings should be provided at the same level as street lighting.

Back lanes and loading docks should be well lit.

Internal footpaths should be well-lit and visible from buildings.

Lighting should illuminate entrapment areas such as the entrances to loading/ unloading areas.

Reporting of burnt out or vandalised lights should be encouraged.

4. LANDSCAPE

Trees and hedges along public or secondary roads should not obstruct visibility from buildings.

Hedges if necessary should not become convenient hiding spaces and could be spaced out to avoid total visual obstruction. This also applies to internal landscaping.

5. PARKING

Parking lots should be visible from the street and well lit.

Visitor parking should be designated.

6. LOCATION OF WASHROOMS

Washrooms should be well lit.

Entrance should be highly visible and not tucked away in inconspicuous locations.

7. SURVEILLANCE AND HOUSE KEEPING

Drain pipes, parapets and ledges should not be located near windows, corridors and balconies. If unavoidable, they should face car parks, children's playgrounds or roads to allow for natural surveillance.

Parking lots, bus stops and taxi stands should preferably be visible from the workstations of building security personnel.

Security or maintenance personnel should patrol parking and common areas and monitor access to buildings.

Common areas that do not have good visibility with the surroundings should be equipped with surveillance hardware.

Avoid locating loading areas at entrapment areas.

Good housekeeping should be encouraged to minimise hiding places.

Appendix C

EXAMPLES OF CPTED STRATEGIES APPLICABLE TO PUBLIC SPACES

CAR PARKS



Attendant booth should be located near entrances and predictable routes

1. SIGHT LINES AND POTENTIAL ENTRAPMENT AREAS

Stairwells and lift lobbies should be located where they can be viewed by the maximum number of people, for instance, near the outer edge of a building where there is a glass wall, or at the entrance to a shopping area.

Major route(s) in the car parks and to the exit(s) should be free of sharp turns. If there are sharp turns or pillars obstructing sight lines, this could be modified by using mirrors or other methods.

Potential entrapment areas such as storage rooms along the route should be kept locked.

Sight lines to the surface lots should be cleared of dense bush, solid fences, or advertisements that block the view.

Sight lines should be maximised especially from the entrance to a lot and from the parking attendant's booth, if there is one.

For road side parking in front of stores, low (not more than 1 metre in height) wrought iron fencing or low-growth, low maintenance bushes are preferable to other barriers. Gaps that could be used as hiding spots should be avoided.

2. LIGHTING

Car parks should be lit to the minimum standard of being able to identify a face from a distance of about 10 metres for a person with normal vision.

Lighting should be consistent and located where it can provide maximum visibility.

Light fixtures should be protected against breakage by, for example, the use of wired glass or other vandal proof materials.

The colour of the walls should allow the lighting to be used efficiently, i.e. painted white or other light colours.

Lighting at surface car parks should be adequate and uniformly distributed to avoid deep shadows. This could be achieved by providing more fixtures with lower wattage rather than fewer with higher wattage.

3. NATURAL SURVEILLANCE

Street level pedestrian activities should be incorporated at the ground level of multi-storey car parks.

Car park design should incorporate permitted kiosks for car accessories and car cleaning kiosks etc.

Car park design should be open (railings instead of walls) to allow for natural surveillance from adjacent streets and nearby buildings.

For surface parking, windows and openings can be placed in adjacent buildings to overlook the lots.

Surface parking lots should be located where it can be viewed by shops and residents.

Landscaping foliage should be maintained.

4. ATTENDANTS

Attendant booths should be located near entrances and predictable routes where there are clear sight lines.

Information and signs should provide guidance on how maintenance problems can be reported to attendants.

There should be attendants at all times who is trained to respond to emergencies in multi-storey car parks that operate into the late hours.

If there is no attendant, there should be several well-lit, clearly marked entrances/ exits, in order to avoid the car park lot becoming an entrapment area.

5. DESIGNATED PARKING LOTS

Designated lots for people with disabilities should be provided near an attendant if there is one, or otherwise near a safe accessible exit or near areas of natural surveillance.

6. FORMAL SURVEILLANCE

In larger car parks there should be emergency telephones on each level with illuminated telephone signs.

Additional surveillance measures such as well signed audio links or video cameras should be provided in stairwells, lifts and other isolated areas.

Patrols by security/ maintenance staff should be encouraged.

The repair of broken bulbs and other common maintenance problems should be promptly undertaken by the maintenance staff, who should be trained to respond to or report emergencies.

7. SIGNS AND INFORMATION

Exits and main routes should be clearly signed using distinctive colours and symbols so that users can easily find their cars.

Relevant telephone numbers should be displayed prominently so that users can be guided to report security problems.

Location identification signs should be provided.

Emergency telephones, if provided, should be signed with raised illuminated telephone sign.

8. BICYCLE PARKING

Bicycle parking facilities should be provided close to buildings.

In isolated areas such as parks, bicycle parking may be located adjacent to activity areas.

Secure bicycle racks should be provided.

9. TRAFFIC CALMING DEVICES

Traffic calming devices such as speed humps should be installed. Landscaping, providing it does not obstruct lines of sight, is a useful psychological influence to slow drivers down.

PARKS/ OPEN SPACES/ PLAYGROUNDS



Parks and open spaces can be planned and programmed for a range of activities

1. NATURAL SURVEILLANCE AND SIGHT LINES

Small parks or play areas should be clearly visible from adjacent streets.

Small parks or the edges of larger parks should preferably be overlooked by housing or commercial developments.

Where practical, walkways should have clear sight lines, especially where they curve or change grade.

2. ENTRAPMENT AREAS

Entrapment areas close to pathways through park design should be avoided.

Pathways may have a border of low-lying vegetation or high-branching vegetation, as opposed to other types of trees and bushes that can easily create entrapment areas and reduced sight lines.

Multiple entry and exit points should be provided in parks or playgrounds.

3. CLUSTERING AND PROGRAMMING FOR A RANGE OF ACTIVITIES

To increase use and natural surveillance, activity areas may be clustered or programmed for a range of activities. Some examples of leisure activities include community services, cafes, snack bars, community gardens, gardening centres, childcare, adult and senior health programs and travelling libraries.

Parks and open spaces should be planned and programmed for a range of activities, even if they are intended for passive use.

Space for street activities and supervised washrooms are some of the amenities that the public might appreciate.

4. LOCATION OF ACTIVITY GENERATORS

Park design should allow for the incorporation of activity generators such as food kiosks, information centres or special events.

Activity generators facing the park such as outdoor cafes and restaurants should be encouraged to attract users.

Activities should be located either along the edge of parks close to vehicular traffic or gathered together along pedestrian walkways.

To avoid isolation, some benches, fitness trails, tennis or basketball courts and bicycle paths in parks could be located adjacent to the perimeter of parks or along through-roads or combining them with the most used pedestrian paths.

For trails leading to dense vegetation, adequate warning signs should indicate that these trails lead users into isolated areas and suggest alternate routes.

Washrooms should be near children's playgrounds.

Food kiosks may be located near playgrounds where they are visible.

5. NIGHT TIME USE

The planning and design of the parks should take into account the possibility of night time use such as night tennis or evening walks. Such areas of the parks must be highly visible, properly lit and away from entrapment areas.

6. SIGNS AND INFORMATION

Signs should clearly indicate, using words, symbols and maps, the location of telephones, washrooms, isolated trails, less isolated alternative routes and any places where people are likely to be at most times while the park is open e.g., tennis courts.

Signs should be located at decision points, such as the intersection of two major paths or the entrance to the park.

Signs should indicate where and how help can be found and where maintenance problems and cases of vandalism can be reported.

The hours of operation should also be posted. Parks and open spaces should be signed for emergency telephone or panic alarm.

7. LIGHTING

Lighting along paths and areas intended for night use should be provided at the same level as streets.

A clear demarcation in terms of lighting levels should be introduced to differentiate areas that are not likely to be used at night from areas where there is likely to have activities.

Landscaping elements should be chosen and maintained so that they do not block light.

If the parks and open spaces are intended for night use, the paths and potential entrapment areas should be lit at pedestrian scale to street lighting level.

8. FORMAL SURVEILLANCE

In large parks, formal surveillance should be considered either by police, park attendants or community organised patrols.

Conducting safety audits should help identify safety and security concerns.

Park attendants or organised patrols should know how to respond to emergencies.

9. OPTIMISATION AND LINKAGES

Parks and open spaces should be improved to provide access to and from populated areas in order to increase the use of the park system.

Parks and open spaces should complement and be integrated with the sidewalk system to develop an open space and pedestrian network that attract more people.

10. MAINTENANCE

Parks and open spaces should be well maintained. Removing litter and graffiti, and replacing vandalised or burned out bulbs should be a priority.

BACK LANES



Back lanes should be well-maintained and free of inappropriate outdoor storage

1. LIGHTING

Back lane lighting should be provided.

2. AVOIDING ENTRAPMENT

Back lanes with dead ends should be avoided.

Dead end spaces should be blocked off with fences or gates.

3. ACCESS TO BACK LANES

Back lanes should be closed to vehicular traffic as much as possible.

Removable gates or bollards should be placed at the entrances to prevent access of vehicles. If access to vehicles is required, one way traffic can be considered.

4. MAINTENANCE

Maintenance of back lanes should be carried out regularly.

Inappropriate outdoor storage should be discouraged.

PUBLIC WASHROOMS



Approach to washroom entrances should be highly visible

1. SIGHT LINES/ LOCATION

Approaches to washroom entrances should be highly visible. Deep, contorted and recessed corridors leading to such facilities should be avoided.

2. ENTRANCES

For office and commercial buildings, maze entrances should be provided. Avoid placing public telephones near the entrance as potential offenders may monitor the movement in and out of the washroom from the public telephone.

Entrances to washrooms near playgrounds should be visible from the playgrounds as far as possible.

If there is more than one washroom, they should be located close to one another with clear sight lines.

3. MAINTENANCE

Vandalism and graffiti should be promptly cleaned.

The quality of finish and maintenance are important to a pleasant and safe washroom.

4. SIGNS

Washrooms should have signs alerting users to the location of emergency assistance and providing telephone numbers to report vandalism or maintenance problems.

5. ATTENDANTS

Attendants may be practical and required for washrooms which are located in remote areas.

6. LOCKS

Doors should not be lockable without a custodian's key in order to reduce the danger of entrapment.

SIDEWALKS/ WALKWAYS



Walkways should be clean and well maintained

1. SIGHT LINES AND POTENTIAL ENTRAPMENT AREAS

Walkways should be designed to allow good visibility around sharp corners. Inset areas along buildings or walls, tall fences, earth berms or overgrown vegetation may restrict visibility and offer potential for entrapment and should be avoided as much as possible.

2. MAINTENANCE AND CLEANLINESS

Walkways should be regularly maintained and cleaned.

3. LIGHTING

Where regular street lighting is not illuminating the walkways, lighting at pedestrian scale should be provided for the well travelled walkways.

Lighting should be at consistent levels, vandal resistant and at appropriate height.

Lighting intensity should allow a pedestrian to be able to identify a person about 10 metres away.

4. FORMAL SURVEILLANCE THROUGH PATROLS

Natural surveillance should be encouraged by creating opportunities for pedestrian activities.

Walkways in large isolated park areas may have formal surveillance by police or park patrol.

UNDERPASSES/ PEDESTRIAN OVERHEAD BRIDGES



Pedestrian underpasses can be designed with good visibility and clear sight lines

1. NECESSITY FOR GRADE SEPARATION

If the above or below ground pedestrian walkways has to be located in an isolated area with low pedestrian volume, signs should be provided at strategic locations to indicate where it leads to and if any alternate route is available.

2. AVOIDANCE OF HIDDEN SPACES

Pedestrian walkways should as much as possible, allow for high visibility by incorporating clear sight lines.

Any recessed surfaces or possible areas for hiding should be avoided.

If it is necessary for pedestrian walkways to take a sharp turn of more than 60 degrees, an angled full-length mirror should be placed so that pedestrians can see around the corner.

3. SIGN AND INFORMATION

Signs should display information such as the pedestrian walkways, hours of operation, alternate routes, location of telephones and panic hardware.

4. ACTIVITY GENERATORS

If underpasses are long and well used, supporting activity generators should be encouraged such as a small confectionery or coffee shop/ kiosk.

Activity generators should be encouraged at route intersections to create higher visibility.

5. MAINTENANCE AND CLEANLINESS

Underpasses should be maintained and cleaned as regularly as possible.

6. VISIBILITY OF BELOW GRADE PEDESTRIAN WAY TRAFFIC

Access to the underpasses should be highly visible from the streets, adjacent uses, frequent pedestrian traffic areas and activity generators.

7. LIGHTING

The underpasses should be lit by natural or artificial sources to be able to identify a face from a distance of about 10 metres. Lighting sources should be protected from vandalism or manipulation.

Lighting should be regularly maintained.

8. FORMAL SURVEILLANCE

If the underpasses are more than 35 metres long, mechanical surveillance of the underpass or alternatively an alarm device or emergency telephone should be made available.

BUS SHELTERS/ TAXI STANDS/ MRT/ LRT STATIONS



Materials and construction details for bus shelters should be vandal resistant

1. SIGHT LINES

Commuters at bus shelters, taxi stands and entrances to MRT/ LRT stations should be clearly visible from streets and buildings as far as possible.

Any walls, berms, bushes, power boxes or solid fences that block the view should be eliminated or modified.

Advertisement on bus shelters should be located to ensure visibility of commuters.

2. AVOIDANCE OF ENTRAPMENT AREAS

Nearby entrapment areas created by landscaping or built form should be eliminated or modified.

3. SIGNS AND INFORMATION

Passenger information signs should indicate route schedules.

4. REDUCE ISOLATION

Bus shelters or taxi stands near to an isolated area such as a large parking lots, vacant land and, alleys or buildings set far back from the street should be avoided if possible.

5. BUS SHELTER AND TAXI STAND DESIGN

Bus shelters and taxi stands should be designed to ensure that there is no hiding space in or around the shelter.

Sitting rails instead of benches should be provided so as to prevent people from sleeping in bus shelters or taxi stands.

The materials and construction details for the shelter should be vandal resistant.

6. LIGHTING

The areas adjacent to bus shelters or taxi stands should be well lit.

7. MAINTENANCE

Bus shelters and taxi stands should be well maintained as far as possible.

The shelters should be identified by number and preferably a telephone number posted to report maintenance problems.

8. FORMAL SURVEILLANCE

Measures should be taken to improve drivers ability to respond to dangerous situations, e.g. through two way communications or a panic alert button.

Drivers should be trained to respond to emergencies.

All MRT/ LRT stations should have video and/ or other formal surveillance.

9. PATROLS

Police should be made aware of problematic MRT/ LRT stations, bus shelters or taxi stands.

REFERENCES

- City of Edmonton Planning and Development (1995) Design Guide for a Safer City, Edmonton
- City of Tucson, Development Standard No. 2-14.0, Crime Prevention Through Environmental Design
- City of Virginia Beach CPTED Committee (2000) CPTED - General Guidelines for Designing Safer Communities. Virginia Beach, Virginia
- CPTED: Durham Guide to Creating a Safer Community. Durham County, North Carolina.
- Crowe, T. (2000) Crime Prevention Through Environmental Design. Butterworth-Heinemann, Stoneham, Massachusetts
- Crowe, T. (2003) Advanced Crime Prevention Through Environmental Design (Seminar notes). American Crime Prevention Institute, Louisville, Kentucky
- Geason, S. and Wilson, P.R. (1989) Designing Out Crime. Australian Institute of Criminology, Canberra
- Government of South Australia (2002) Crime Prevention Through Environmental Design and Urban Design. Adelaide, Australia
- Lismore City Council (2000) Development Control Plan No. 43 - CPTED. Lismore, Australia.
- National Crime Prevention Council (U.S.) (1997) Designing Safer Communities - a CPTED Handbook. NCPC (U.S.), Washington D.C.
- Office of Planning, Baltimore County (2000) Comprehensive Manual of Development Policies, Division VI, Section H (CPTED). Baltimore County, Maryland
- Plaster, S. and Carter, S. (1993) Planning for Prevention: Sarasota, Florida's Approach to CPTED. Florida Criminal justice Executive institute, Tallahassee, Florida.
- Smith, M. S. (1996) Crime Prevention Through Environmental Design in Parking Facilities. National Institute of Justice, Washington D.C.
- Tempe City Council (1997) CPTED Guidelines. Tempe, Arizona
- Wekerle, G. R. et al (1992) A Working Guide for Planning and Designing Safer Urban Environments. Planning and Development Department, Toronto.

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CREDITS

CPTED PROJECT COMMITTEE

Mr Chong Lit Cheong (Chairman)
Chief Executive Officer
JTC Corporation

Mr Benedict Tan (Deputy Chairman)
Deputy Chief Executive Officer
Building and Construction Authority

Dr John Keung
DCEO
Housing and Development Board

Mrs Lee Wai Chin
DCEO
National Parks Board

Mr Ong Geok Soo
ACEO
JTC Corporation

Mr Tan Bing Chui
Member
National Crime Prevention Council

Professor Cheong Hin Fatt
Dean of School of Design & Environment
National University of Singapore

Mr Lim Tow Fok
General Manager, Keppel Land
Real Estate Developers' Association of Singapore

Mr Eugene Yong Kon Yoon
President
Singapore Contractors Association Limited

Mr John Ting
President
Singapore Institute of Architects

Er Dr Lock Kai Sang
President
Institution of Engineers Singapore

Mr Ng Lip Joon
Hon. Secretary
Singapore Institute of Landscape Architects

Mr Francisco John Celio
Director, Security Consultancy Department
Commercial & Industrial Security Corporation

ADVISOR

Mr Timothy D Crowe
Criminologist

CPTED GUIDEBOOK WORKGROUP

Mr Lim Tow Fok
General Manager, Keppel Land
Real Estate Developers' Association
of Singapore

Mr John Ting
President
Singapore Institute of Architects

Associate Professor Teh Kem Jin
Department of Architecture,
School of Design & Environment
National University of Singapore

Mr Cheong Kin Man
Housing and Development Board

Mr Cheang Tick Kei
JTC Corporation

Mr Chin Jen Chyi
Building and Construction Authority

SECRETARIAT

Mr Chin Jen Chyi
Building and Construction Authority

Mr Lim Cheng Yong
Building and Construction Authority

Mr Ng Man Hon
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