

Crime Prevention through Environmental Design Review



Dr. Kelly W. Sundberg
Associate Professor
Economics, Justice, and Policy Studies

May 23, 2018

Joshua Sartorelli – Project Manager
Calgary Municipal Land Corporation
430 – 8th Avenue SE
Calgary, Alberta, T2G 0L7

RE: Initial Crime Reduction Through Design Review of the new Parkade planned for the East Village

Dear Mr. Sartorelli,

I write regarding the *initial* crime reduction through design review for the new 9th Avenue parkade planned for the East Village. The first phase of this review involved a crime analysis for the project, followed by a site visit, and lastly an analysis of the project plans.

Considering the unique space programming and activation intended for this project — *namely that in addition to vehicle parking, there will be workspaces for independent entrepreneurs, along with a café and other social gathering spaces* — and reflecting on the noted security and criminal risks, the following preliminary recommendations are made:

- 1) *Landscaping materials used along the southern exterior of the structure be of a type that allows access to utilities, yet is not easily removed and discourages sitting or lying down (e.g., large rocks);*
- 2) *All interior and exterior spaces are illuminated in accordance with the Illumination Engineering Society's (IES's) recommended maintained illuminance values for parking garages in the 'mid' demographic range (see Table 1);*
- 3) *All interior and exterior security and control technologies meet the City of Calgary Corporate Security's "Physical Security Standard" and that an advisor from City of Calgary Corporate Security be consulted;*
- 4) *When possible, use design and building materials that support occupants of the structure being able to view the interior spaces immediately inside from an access point, and the exterior spaces immediately outside of an access point, from a distance of $\geq 4\text{m}$ (13ft) beyond the access point. The aim of this recommendation is to support the ability of occupants to passively identify a possible risk, threat, or hazard at a distance of at least 4m (13ft) prior to entering or exiting the structure, a stairwell, or an evaluator loading area;*

4825 Mount Royal Gate SW
Calgary, Alberta, T3E 6K6
CANADA

+1 (403) 440-5646
ksundberg@mtroyal.ca
www.mru.ca/sundberg

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- 5) *When possible, use design and building materials that support normally unoccupied space within and around the structure from being accessed without a key or other locking device, and ensure these places are locked at all times — if appropriate, consider a highly sensitive motion sensor on lighting and use materials that interior illumination can be observed from the exterior. The aim of this recommendation is support the ability of an employee to passively identify a possible risk, threat, or hazard within a normally unoccupied space prior to entering the space, as well as to prevent an unauthorized person from entering and remaining within a normally unoccupied space;*
- 6) *Take specific effort to discourage persons from frequenting, congregating, or otherwise remaining in the normally unoccupied exterior spaces of the structure — paying specific attention to areas along the structural envelope with insets greater than 0.5m (1.6ft). The aim of this recommendation is to deter vulnerable members of the community from 'living rough' or consuming intoxicants along the exterior envelope of the structure (in particular the south side). On this point, it is suggested that signage be placed in these spaces that informs vulnerable persons where they can find emergency services and social assistance; and,*
- 7) *When applying security focused design, along with security and control technologies, take all reasonable and prudent efforts to ensure optimised physical security while also safeguarding against the overt use of 'hostile' architectural techniques (see: de Fine Licht, Karl Persson. "Hostile urban architecture: A critical discussion of the seemingly offensive art of keeping people away." Etikk i praksis- Nordic Journal of Applied Ethics11, no. 2 (2017): 27-44).*

Kindly note this letter and the attached constitutes an *initial* crime reduction through design evaluation for this project — to complete a fulsome review would require more analysis and consultation with the design team. Notwithstanding that more analysis would be required before a definitive determination could be achieved, a review of the project plans and renderings indicate that this project meets the established crime reduction through design tenets included within both traditional crime prevention through environmental design (CPTED) and the SAFE Design Standard®.

Respectfully,



Dr. Kelly W. Sundberg
Associate Professor
Environmental Criminologist

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Illumination Engineering Society (IES) Recommended Maintained Illuminance for Parking Garages

Application	Occupancy Sensor or Schedule	Recommended Maintained Illuminance Targets (lux)		Uniformity Ratios	
		Horizontal Min	Vertical Min	Avg:Min	Max:Min
<i>General Areas</i>	Motion	10	5		10:1
	No Motion	2	1		10:1
<i>Drop-Off/Pick-Up & Vehicle Transaction Areas</i>	Motion	10	5	4:1	10:1
	No Motion	2	1	4:1	10:1
<i>Lobbies, Elevators & Pedestrian Transaction Areas</i>	Motion	15	7.5		5:1
	No Motion	2	1		5:1
<i>Scheduled Events Operation of Pedestrian Areas</i>	Motion	40	20		5:1
	No Motion	2	1		5:1
<i>Vehicle Entries & Exits*</i>	Daytime	500	250		10:1
	Night-Time	10	5		10:1
<i>Pedestrian Stairs*</i>	Pre-Curfew	50	25		
	Post-Curfew	25	12.5		

* Occupancy sensors do not meet standards for these areas

While much of the literature specific to contemporary crime prevention through environmental design (CPTED) suggests higher lighting levels, research from groups such as the SAFE Design Council, recommend that project designers observe the Illumination Engineering Society's (IES's) recommended maintained illuminance levels for the specific spaces indicated within their Lighting Handbook 10th edition. As noted in Table 1, illuminance can be achieved in a manner that allows for the desired lighting design while also promoting a safe and secure spaces.

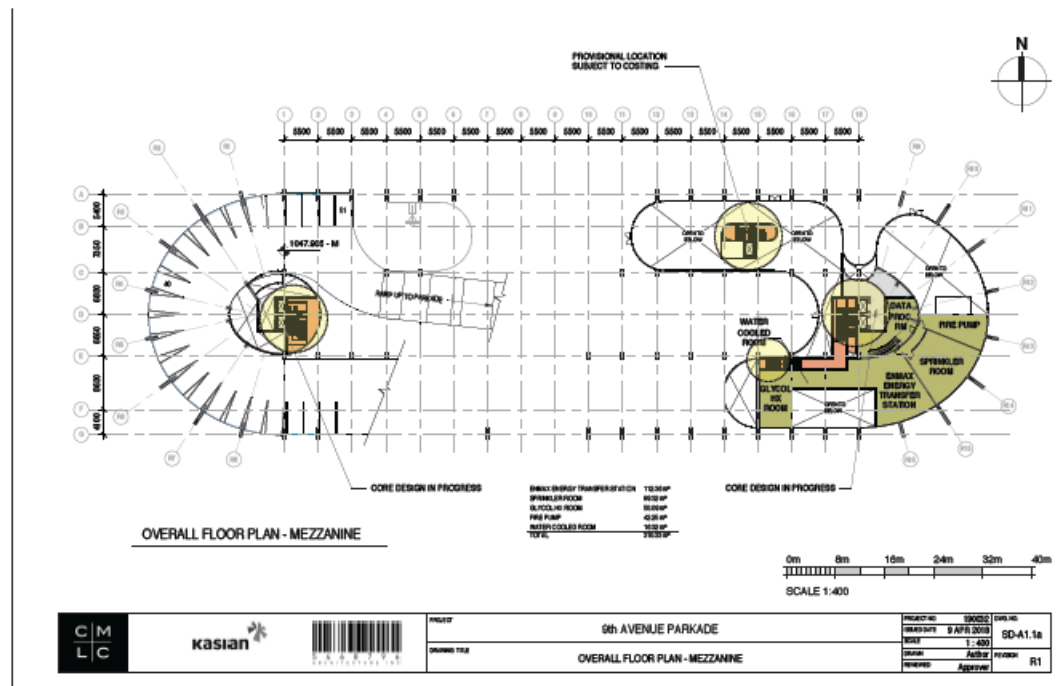
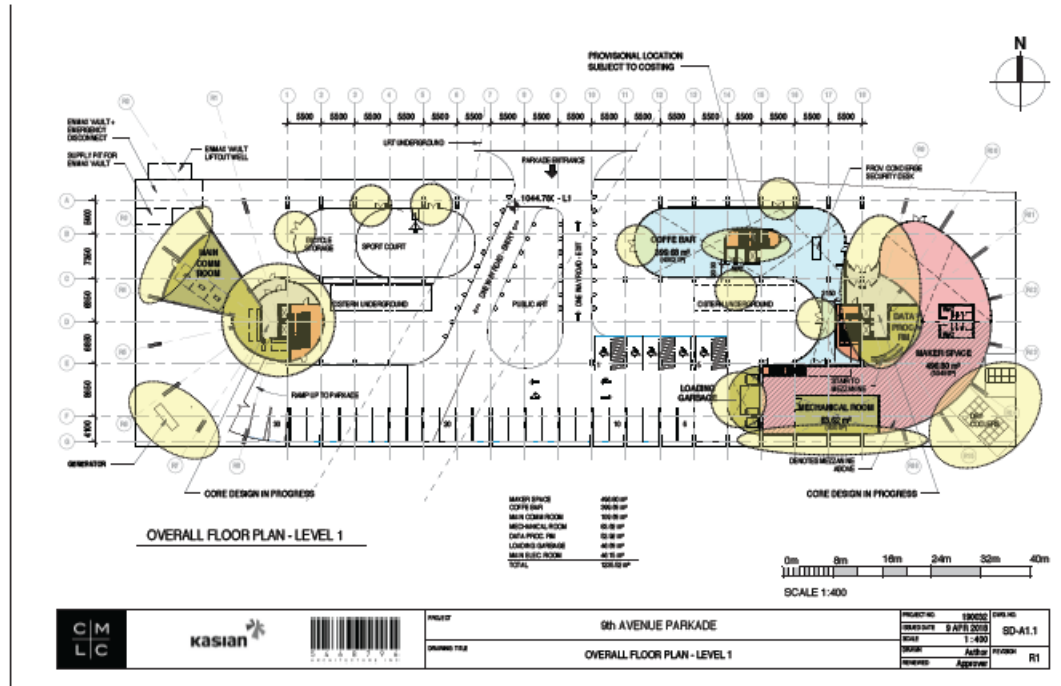
<https://www.ies.org/store/lighting-handbooks/lighting-handbook-10th-edition/>

Cozens, Paul, and Terence Love. "A review and current status of crime prevention through environmental design (CPTED)." *Journal of Planning Literature* 30, no. 4 (2015): 393-412.

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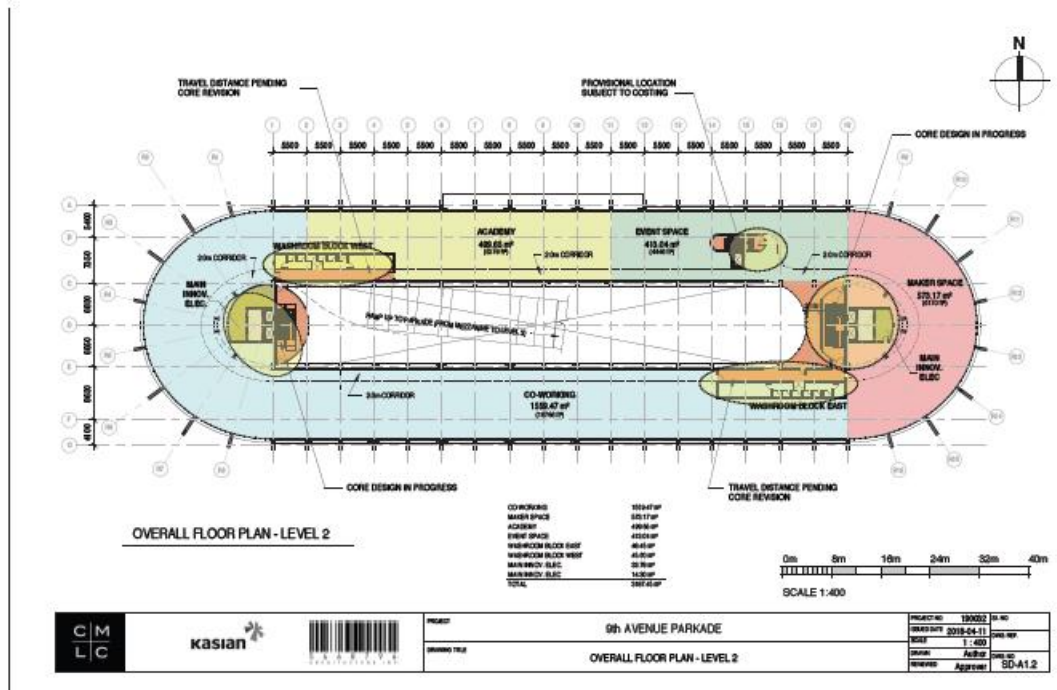
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Highlighted Areas Identify Spaces Vulnerable to Social Disorder, Assault, and Physical Disorder



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Suggest that Design Promotes Maximum Sightlines, Establishes Territoriality, and Effective Wayfinding



Use visually permeable and translucent materials whenever possible to encourage maximum sightlines.

Use design that supports occupants the ability to view possible threats, risks, and hazards at as great a distance possible.

Use uniform signage (i.e. The City of Calgary's signage standard) to aid in establishing territoriality, while also informing occupants of desired use and access — supporting effective wayfinding also supports security.



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CPS CPTED Comments

From: Shirin Radmehr [mailto:SRadmehr@calgarypolice.ca]
Sent: Friday, July 13, 2018 12:03 PM
Subject: DP2018-2774

Graffiti concerns

I was advised by the CPS graffiti team that chain link fences (in this case, the mesh materials) can be tagged and spray painted even though the offenders may not be able to produce a particular image or shape. Our main concern is regarding the south side of the proposed structure adjacent to the CPR where visibility is the minimum—this can provide opportunities for potential offenders to perform illegal activities on this side of the property.

- We strongly recommend the applicant to consider design elements or solutions to discourage graffiti and other illegal activities.

Mesh openings

The application is proposing small rocks at grade level where there are openings through the mesh material. Apparently, the small rocks are suggested to prevent individuals from loitering inside the openings. However, if the surface remains even (whether or not the stones are cemented on the surface), the potential loiters may still be able to place blankets, backpacks, or other items to create comfortable spots for sitting.

- To minimize the opportunity for loitering in these locations, it is recommended to provide alternative solutions to deny access to these spots. For instance, combining various sizes of cemented rocks can create a considerably uneven surface. Or, covering the areas with thorny plants may also discourage access.

Sport court

We would need more information on the facility. What kind of activity will take in this place? What are the hours of operation? Who has the ownership of the facility (maintenance, security, and so forth)? Will the facility be monitored by CCTV cameras?

- Please keep in mind that once a facility/space is public, it is PUBLIC. That means we are allowing everybody to access the facility. If certain users are considered for this facility, then we would recommend to establish the rules right from the start. For example, if the space is supposed to be used by certain ages, it is recommended to provide appropriate signage indicating that.
- Other accepted activities and/or prohibited activities can also be communicated through effective signage, access control, and monitoring.

Parkade

- Parkade should be for vehicle access only. A separate entryway is recommended for pedestrians to access the facilities inside the building.
- It is strongly recommended to actively monitor the parkade using CCTV cameras, especially for isolated locations. Further, provide adequate signage for wayfinding and directions.
- Avoid blind spots by providing convex mirrors where needed.



Shirin Radmehr, MEdes
CPTED Coordinator, Crime Prevention Team
Calgary Police Service | Mail code # 598
5111 – 47 ST NE, Calgary, AB T3J 3R2
T 403.428.8141

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Response to CPS CPTED Review

Graffiti Concerns

- Although not fully developed at this stage, the landscape design will include fencing that will prevent access to the south side of the parkade.

Mesh Openings

- As recommended, these areas will be covered with thorny plant materials that will discourage loitering.

Sport Court

- The sport court will be owned and operated by Calgary Parking Authority. We anticipate that basketball games and other pick-up type sports will take place here such as ball hockey. The sport court will have posted hours of operation and outside of those hours the facility will be locked. CMLC is working with Corporate Security to design a video surveillance system for the sport court.

Parkade

- The parkade will have posted hours of operation. Outside of these hours, only people with contract parking spaces will be allowed access using a Calgary Parking Authority issued card access device. Pedestrians will enter the building through the east or west cores that contain stairwells and the elevators.
- The City of Calgary's Corporate Security group has been engaged to design the CCTV, intrusion alarm and access control systems for the parkade.
- Convex mirrors will be provided as suggested to eliminate blind spots.