




Appendix G

Crime Prevention Through Environmental Design Review

Author: Urbis



URBIS

ALKIMOS CENTRAL - CPTED REVIEW

CPTED Assessment

Prepared For Development WA
July 2021 (updated Nov 2021)

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Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

Urbis staff responsible for this report were:

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Project code	P008935
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PURPOSE AND METHODOLOGY

Purpose	Methodology	Basis and Assumptions
<p>This Crime Prevention Through Environmental Design (CPTED) assessment has been undertaken by Urbis for the proposed Alkimos Central Project, as part of the Activity Centre Plan approvals process.</p> <p>The assessment follows an integrated, multi-disciplinary design process that considered all aspects of safer design in the formulation of the proposed Development Plan.</p>	<p>The methodology for this assessment comprised:</p> <ul style="list-style-type: none">▪ Review of relevant strategies and guidelines;▪ Development of a key CPTED principles which the development should satisfy;▪ Investigation of contextual issues affecting CPTED for the subject site and the implications for the development;▪ Review of the proposed Activity Centre Plan to identify how they address CPTED and any areas of concern; and▪ Assessment of the proposed development against the key CPTED principles. <p>Documents considered in the preparation of this assessment include:</p> <ul style="list-style-type: none">▪ Designing Out Crime Guidelines for Western Australia (Department of Planning, Lands and Heritage); and▪ CPTED Guidelines for Queensland, Part B. Implementation Guide (2007).	<p>The audit is based on the <i>Activity Centre Plan Version 6 Revision Q</i> prepared by Urbis and dated 22nd June 2021 (refer to Appendix A).</p> <p>It is assumed that best practice design resolution and documentation would result in a constructed outcome consistent with CPTED principles. For example, the landscape adjacent to pedestrian thoroughfares would comprise canopy trees with clean trunks with a low understorey planting, allowing for clean line of sight and no opportunities for concealment.</p> <p>The town centre or the project is focused around a new train station and bus port. The detailed station design and associated parking areas are not part of this assessment although the interface and integration of the station and park and ride facilities as major destinations within its context has been considered.</p>
		<p>The level of detail at this stage of the development is limited to arrangement of the site, land uses and features</p>

CONTEXT

Site Context

The site currently exists as 200+Ha of undeveloped land within the northern expansion corridor of Perth. In its current undeveloped state the site has a high level of vulnerability and is subject to antisocial behaviours including waste dumping and off road vehicle and dirt bike trails. Development exists or is already underway to the south and west of the site and links into the site have been identified. A future freeway reserve sits along the western edge and retained bushland corridor sits to the north of the site.

A dune intersects the site providing a natural amphitheatre around the town centre. This will be retained in its natural form and will be revegetated where possible. Walking trails and active or destination points will be provided along this dune walk. A rail corridor runs north south through the site and a future train and bus station will be provided as part of this development.

The project will add around 2,500 residential units to the site as well as extensive retail and commercial land uses and a new train station. These will bring with it additional opportunities for passive surveillance but also a greater need to ensure the development of a safe place.

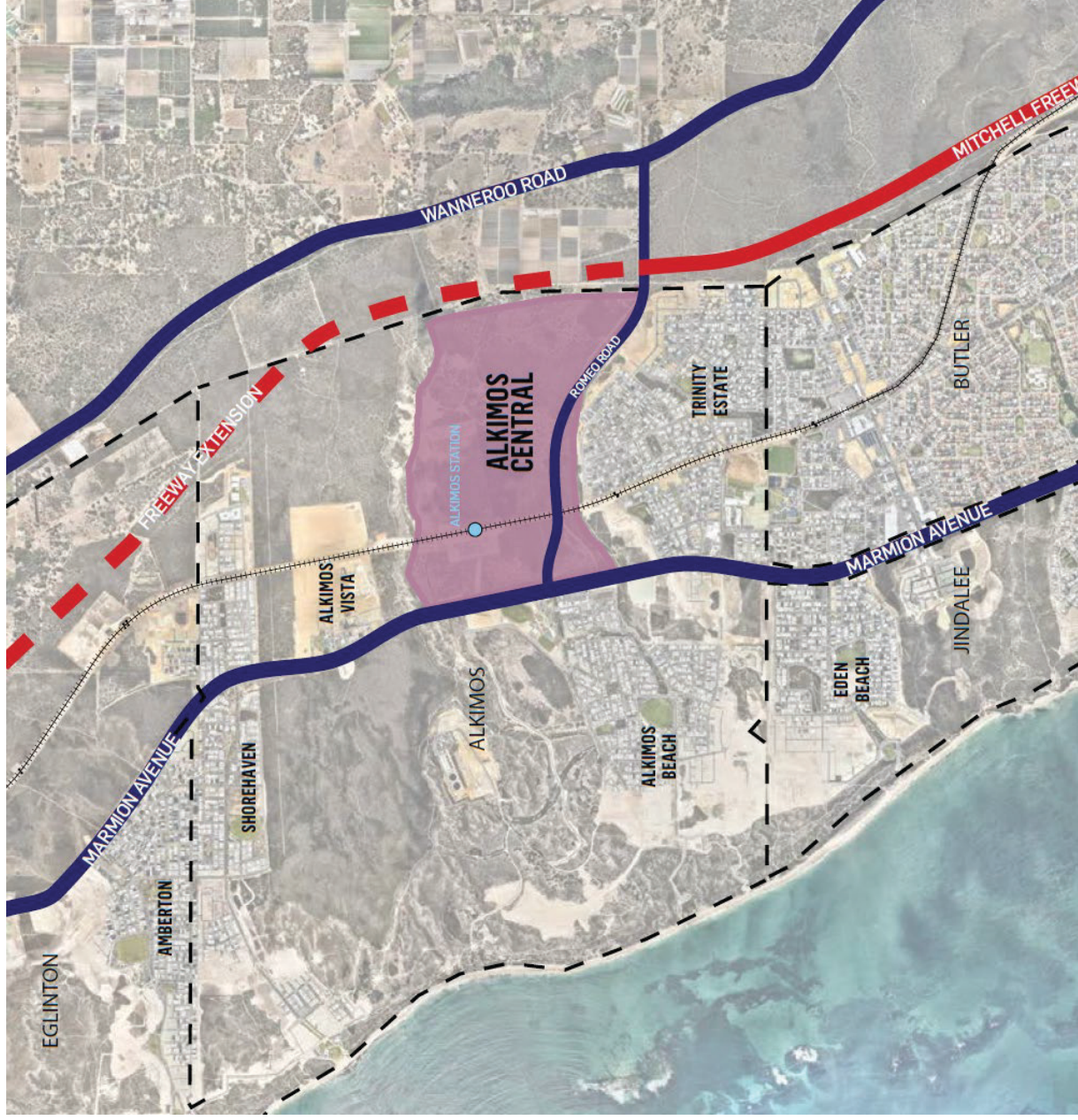


Figure 1 – Context Plan.

ASSESSMENT

Vulnerable land uses

Vulnerable land uses refer to places or amenities which could present a comparatively higher risk of criminal harm compared to most others. This can be for a variety of reasons, such as the operating hours, the likelihood of a person being isolated, consumption of alcohol or the presence of an incentive for criminal activity (e.g. cash being withdrawn from an ATM). Particular attention should be paid to the design of these land uses in order to minimise any risks.

The site will likely include a number of vulnerable uses, however, given the scale of development and its current stage in the development process the exact number, scale or detailed layout of a number of these has not been determined at this time. Items that have been embedded into the design and addressed include:

- interfaces with public open spaces
- overpasses
- interface with car parks
- interface with public transport (including after hours)
- after hour uses (Recreation Centre)

The development of these land uses should consider their impact on their context particularly as they relate to public spaces such as the Town Square and Train Station. The proposed layout provides opportunities to ensure overlooking of these vulnerable spaces and the land use mix indicated will assist in this.

This includes the integration of the train station into the street, ensuring that development around the bus station provides passive surveillance opportunities across all hours of the day and a development lot over the rail corridor to complete the street. Further afield, residences integrate with the service commercial and business zones providing passive surveillance and a suitable mix of uses in these areas.

It is recognised that development will occur in stages over a 30 year + timeframe and there may be periods of time where areas are more vulnerable. Consideration of additional security measures should be investigated during these times including electronic surveillance, additional security patrols and means to delineate ownership of spaces such as banner or bunting around future development sites.

The PTA car parks to the north of the station are a vulnerable land use that will need further attention. Whilst these are not part of the project, they sit within the overall site boundary. To supplement the PTA's CPTED response for this car park, residential lots have been provided on the periphery to provide passive surveillance and overlooking of the western car park. Additional consideration of an at grade access point into the carpark from Brindabella and NS1 and a suitable approach to lighting is required at design stage of this car park.



Figure 2 – Western PTA car park and passive surveillance.

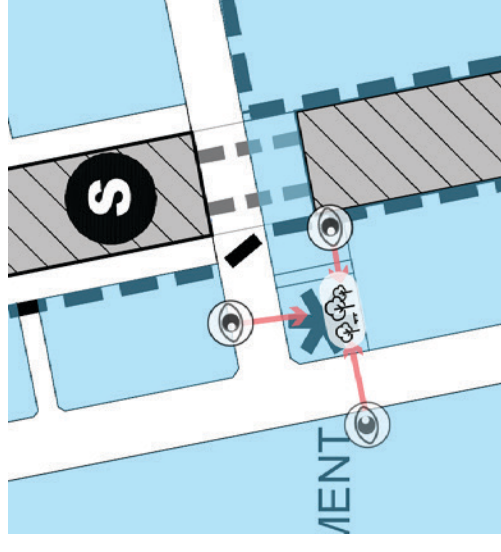


Figure 3 – Town Square and passive surveillance.

ASSESSMENT

Vulnerable land uses

The eastern car park is separated from residences by a large public open space including a drainage function. Vegetation within the POS should be low lying or trees with high canopies to facilitate views across the open space to the car park. Mixed use land-uses to the south of the eastern car park should provide unimpeded views to the car park. Residential uses should be encouraged to facilitate 24hr passive surveillance of the car park.

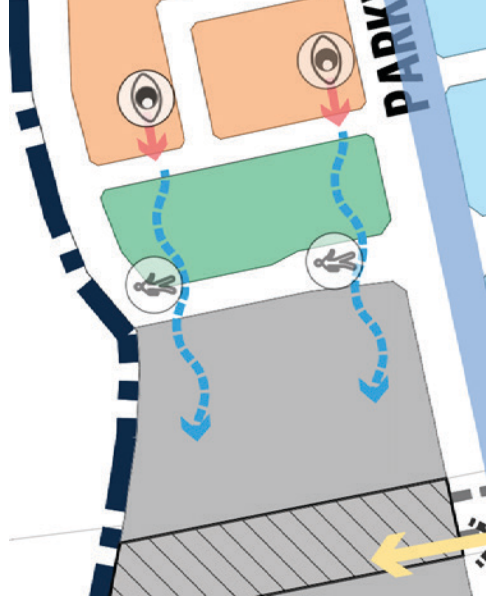


Figure 4 – Eastern PTA car park and passive surveillance.

Vulnerable Land Uses Recommendations

- 1) Development adjacent to vulnerable land uses should be designed and oriented to provide passive surveillance and contribute to a sense of ownership of the space during the construction phase.
- 2) Lighting should be considered during detailed design phase.
- 3) Consideration should be made to facilitate additional security and surveillance during early stages of development.

ASSESSMENT

Visibility - Interfaces with public open space.

The concept design has provided a road edge against all public open spaces including the dune edge with the exception of two specific areas (shown in Figure 6). This approach has ensured that public open spaces across the site will have an activated street adjacent and not be addressed by the back of houses or sight restricted fence lines. The disbursement of the open spaces into neighbourhood clusters will help to ensure that there is a sense of ownership for each space from the surrounding residences. The depth of the public open spaces has been managed to provide visual surveillance into the spaces. It is anticipated that these spaces will include lighting and clear view lines. This provides passive surveillance of the public open spaces and minimise opportunities for antisocial behaviours.

Streets fronting the dune edge have been provided with a minimum 15m width to ensure the inclusion of a footpath within the right of way and ample opportunity to facilitate safe and visible movements along the dune corridor. Indicative sections show clear sightlines to the footpath from the adjacent residential uses. Residential blocks adjacent to the dune are oriented parallel to it, to minimise fence lines facing the dune. Where these do occur, we recommend that the housing at the block ends be oriented towards the dune to facilitate passive surveillance. Lighting associated with dune fronting streets should be provided on the dune edge to maximise visibility of these pathways.

The depth of the dune and associated topography means that some of the movement paths along the crest of the dune will be located out of site from the street edge. In these locations on both sides of the crest path lower lying shrubs are recommended to maintain good sightlines. This is in keeping with the typical dune vegetation types. Multiple access points to the crest path should be provided to minimise entrapment opportunities.

There are two residential blocks that are not separated from POS by a street and front directly onto POS. In both of these cases the POS is narrow in its width (less than 40m) and is fronted by a road on the opposite side. Access to these lots is achieved from a rear laneway and the front of the property and associated living areas would face the POS to assist in passive surveillance.

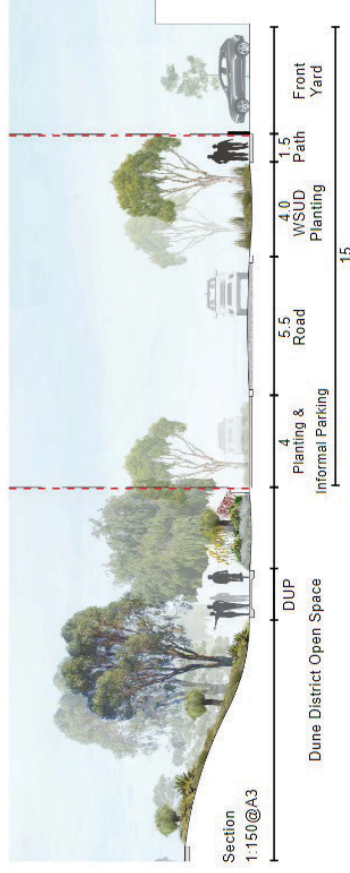


Figure 5 – Interface with Dune Edge (prepared by UDLA).

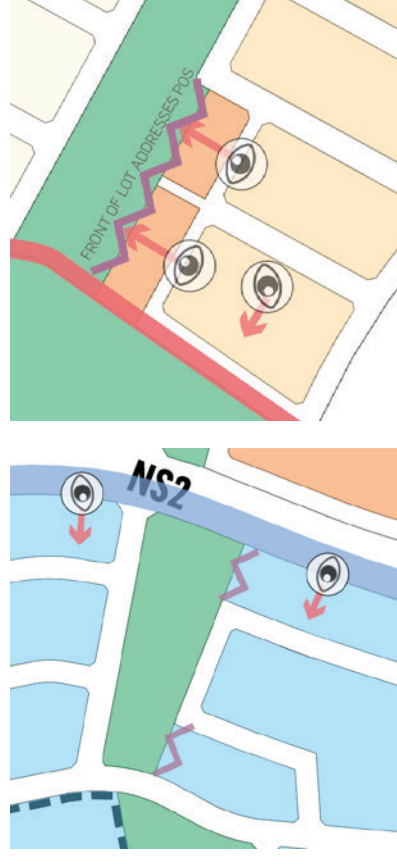


Figure 6 – Direct Residential Interfaces with POS
– Rear access ensures living areas face POS or side lot provides visual aspect to POS.

ASSESSMENT

Visibility - Interfaces with public open space.

POS Interface Recommendations

- 1) Provide a road edge against all public open spaces including the dune edge to increase passive surveillance.
- 2) Residential blocks are oriented parallel to the dune to minimise fence lines facing the dune.
- 3) Housing at the block ends be oriented towards the dune to facilitate passive surveillance
- 4) Clear sightlines to the dune footpath from adjacent residential uses should be maintained.
- 5) Lighting associated with dune fronting streets should be provided on the dune edge to maximise visibility of pathways.
- 6) Internal POS path ways provide lower lying shrubs to maintain good sightlines for path users.
- 7) Multiple access points along POS dune path should be provided to minimise entrapment opportunities.

ASSESSMENT

Visibility – Underpasses and Overpasses

The concept plan does not include underpasses as part of the DevelopmentWA scope of works but there will be underpasses as a result of the Public Transport Authority (PTA) work in relation to the rail corridor. This rail corridor will have a Principal Shared Path (PSP) running along its western boundary. This PSP will cross under two roads within the site boundary at Romeo Road and at Brindabella Drive. Whilst these are not part of the project the context will interface with these underpasses.

The underpass to the north connects the PTA car part to the PTA bus and train station under Brindabella. This underpass reconnects with the site adjacent to the Bus Station but behind a line of structures along Main Street (NS1). This potentially creates a location with limited passive surveillance. To address these concerns an alternate at-grade route between the station and the car park has been provided along Main Street that will provide an activated and well lit route between these uses. Within the PSP path and underpass itself we recommend maintaining low scale vegetation between the bus station and the PSP to ensure sightlines are maximised. We recommend that buildings along the eastern edge of NS1 provide views to the east overlooking the bus station and PSP. Lighting along the PSP edge particularly between the station and the car park will also be important to improve visibility.

The southern underpass connects via the rail reserve under Romeo Road. Public Open Space (POS) sits on either side of this underpass. The POS to the north is an activated open space and has cultural significance incorporating an indigenous site (the 'pinnacles') and also a threatened ecological community (TEC). The pinnacles feature sits below the street grade in a bowl. However, this POS will have a level of activation associated with the cultural feature and also sits on the edge of a high traffic intersection (NS1/ Romeo Road) with the entry to main street.

It is recommended that adjacent land uses to the north and west front this POS. This will assist in providing passive surveillance of the open space and adjacent underpass. The POS to the south of the underpass is more isolated and will have less opportunity for overlooking. It is recommended that this POS have clear sightlines to the PSP and underpass from Romeo Road and NS1 extension and provide connections to the at grade path along the street edge. An alternate pedestrian/cycle route also exists at grade street along NS1.

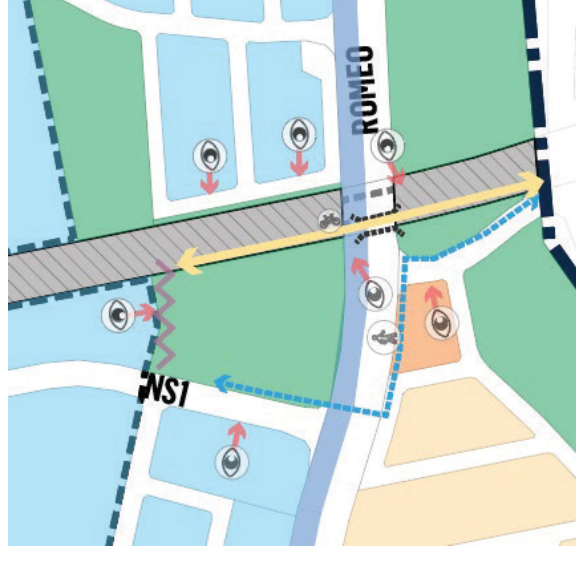
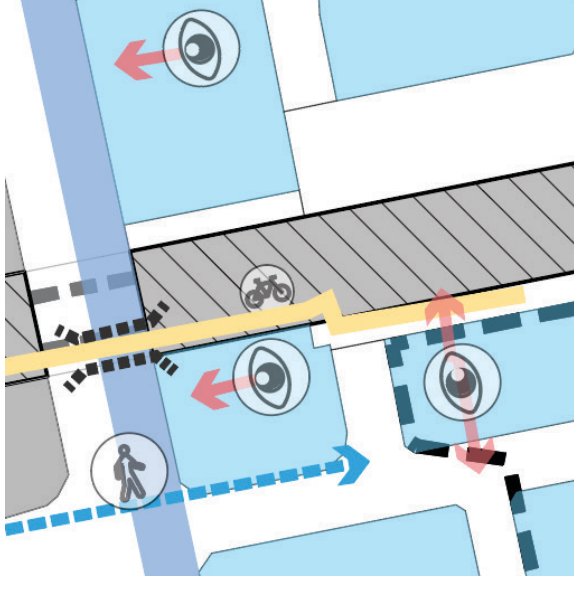


Figure 7 – PTA underpass North and South – passive surveillance and alternate route.

ASSESSMENT

Visibility – Underpasses and Overpasses

There are six (6) overpasses indicated within Alkimos Central along the crest walk route. These form part of a wider movement system offering an off-street movement opportunity. The length of each crossing is different and the context changes with four road and two rail crossings achieved.

These crossings all cover what will likely be busy movement corridors including the rail, NS1, NS2, Romeo Road and Tuart Drive. Visibility from the street to the overpass should remain clear to passing movements. Each crossing point has a range of access links shown to limit entrapment points and ensure a range of movement choices. These routes connect back to residential areas as part of Alkimos Central or adjacent residential neighbourhoods. It is recommended that these routes be constructed as part of the development process.

Underpass/ Overpass Recommendations

- 1) **Minimise the use of underpasses and overpasses across the site and provide alternate routes in tandem where these do occur.**
- 2) **Where underpasses and overpasses do occur on site, or adjacent to the site, ensure clear end to end sight lines from surrounding land-uses and movement systems to improve passive surveillance.**
- 3) **Where overpasses are shown, ensure that a range of access points are provided to minimise entrapment opportunities.**

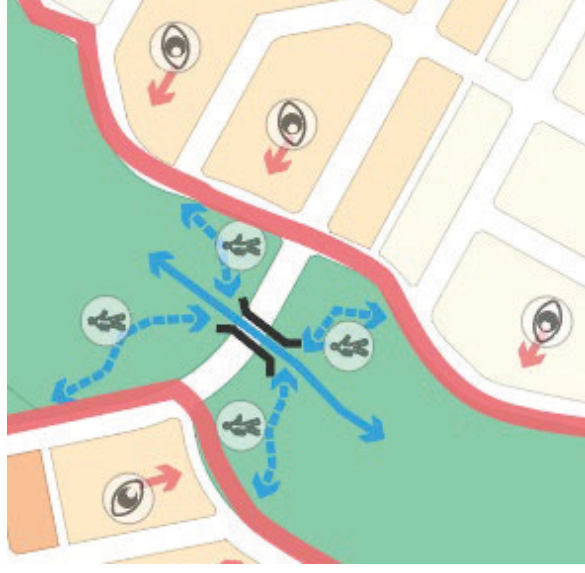


Figure 8 – Crest Walk with alternate connections and low scale planting

ASSESSMENT

Boundaries - Ownership of space

A clear sense of ownership of space across both the public and private realm assists in maintenance, ongoing passive security and can act as a deterrent to antisocial behaviour. At a high level, the layout for Alkimos Central provides a clear establishment of ownership for each development block, providing both passive surveillance and direct interface with each street, laneway and public open space. Rear or side fence lines facing street edges has been avoided or minimised in the main. A few locations have been identified where rear or side fences will face streets. Where these occur, these should be addressed through design guidelines for corner lots ensuring future buildings address both streets.

There is a location on Marmion Avenue where the development block will result in buildings that will face internally and present a rear fence to Marmion Avenue. Whilst not ideal, this is not an uncommon occurrence along Marmion Avenue. The rear facing lots are contained in a block below 140m in length and the volume of traffic along Marmion Avenue will assist in providing passive surveillance for pedestrian movements along this street. Opposite the street is a range of commercial premises which will also provide additional passive surveillance and activity along this edge.

The southern underpass connects via the rail reserve under Romeo Road. Public Open Space (POS) sits on either side of this underpass. The POS to the north is an active open space and has cultural significance incorporating an indigenous site (the 'pinnacles') and also a threatened ecological community (TEC). The pinnacles feature sits below the street grade in a bowl. However, this POS will have a level of activation associated with the cultural feature and also sits on the edge of a high traffic intersection with the entry to main street.

It is recommended that adjacent land uses fronting this POS assist in providing passive surveillance of the open space and adjacent underpass. The POS to the south of the underpass is more isolated and will have less opportunity for overlooking. It is recommended that this POS have clear sightlines to the PSP and underpass from Romeo Road and NS1 extension and provide connections to the at grade path along the street edge. An alternate pedestrian/ cycle route also exists at grade street along NS1.

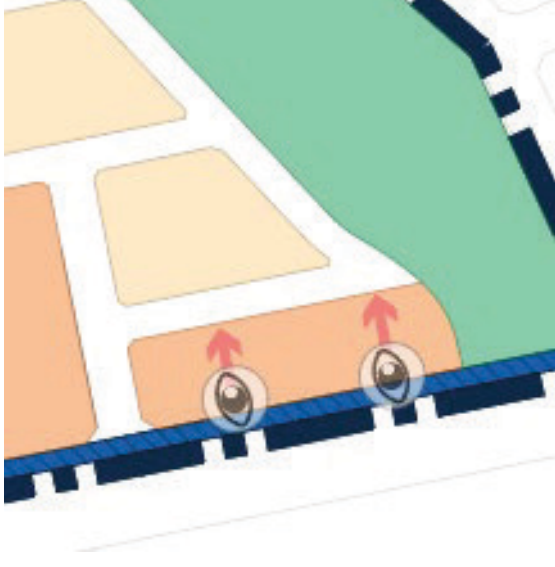


Figure 9 – Rear Fence Lines facing Marmion Avenue

ASSESSMENT

Boundaries - Ownership of space

Properties fronting open space at the intersection of Romeo Road and NS2 should also provide present an active edge to the adjacent POS. The zoning in this location is anticipated to be higher, in accordance with the locations functioning as part of the city centre. In this instance, we anticipate that the buildings here will have multiple frontages and be designed to address both streets at ground level.

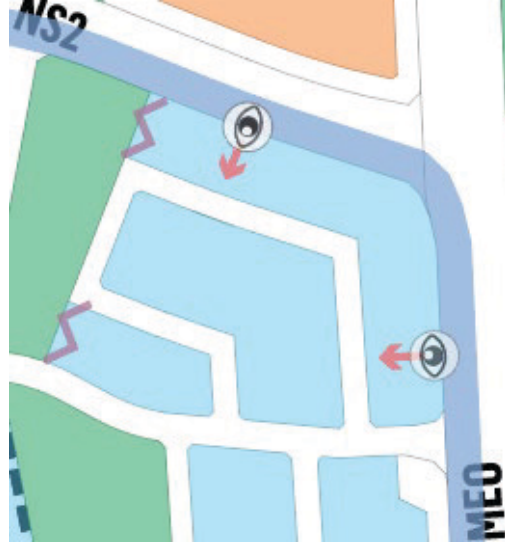


Figure 10 – interface to Romeo Road and NS1.

Ownership of Space Recommendations:

- 1) Provide clear delineation of ownership for all open spaces and rights of way.
- 2) Development blocks should minimise back and side fences and blank facades to streets. This can be achieved through building design and guidelines relating to the development of corner lots.
- 3) Where lots address multiple streets ensure that the built form addresses both.

ASSESSMENT

Built Form

Buildings located across Alkimos Central offer a further opportunity to provide CPTED relief. At this early planning stage, the detailed designs of each site have not been considered. However, a range of design guidelines are being prepared as part of Activity Centre Plan process that will provide detailed guidance on outcomes and include embed design for safety principles. These align with the DesignWA State Planning Policy 7.0 Design for the Built Environment policy suite which embeds CPTED principles into its guidance.

Combined, these design guidelines include recommendations on:

- percentages of window glazing for shop fronts to minimise blank walls.
- guidance on frontage interfaces to establish clear ownership and boundary thresholds to the street.
- orientation of buildings to streets and addressing corner lots.
- preferred locations of living spaces and balconies
- built form interfaces with public open spaces

Adherence to both the SPP 7.0 Design Suite and the specific design guidelines prepared for Alkimos Central will provide a comprehensive approach to CPTED principles.

Built Form Recommendations

- 1) **Enforcement of design guidelines across the project.**

RECOMMENDATIONS SUMMARY

Recommendations Summary

The Alkimos Central Concept has been developed with design for safety in mind.

The following recommendations will ensure these principles remain embedded through the design and development process.

Vulnerable Land Uses Recommendations

- 1) Development adjacent to vulnerable land uses should be designed and oriented to provide passive surveillance and contribute to a sense of ownership of the space.
- 2) Lighting should be considered during detailed design phase.
- 3) Consideration should be made to facilitate additional security and surveillance during early stages of development.

POS Interface Recommendations

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Ownership of Space Recommendations:

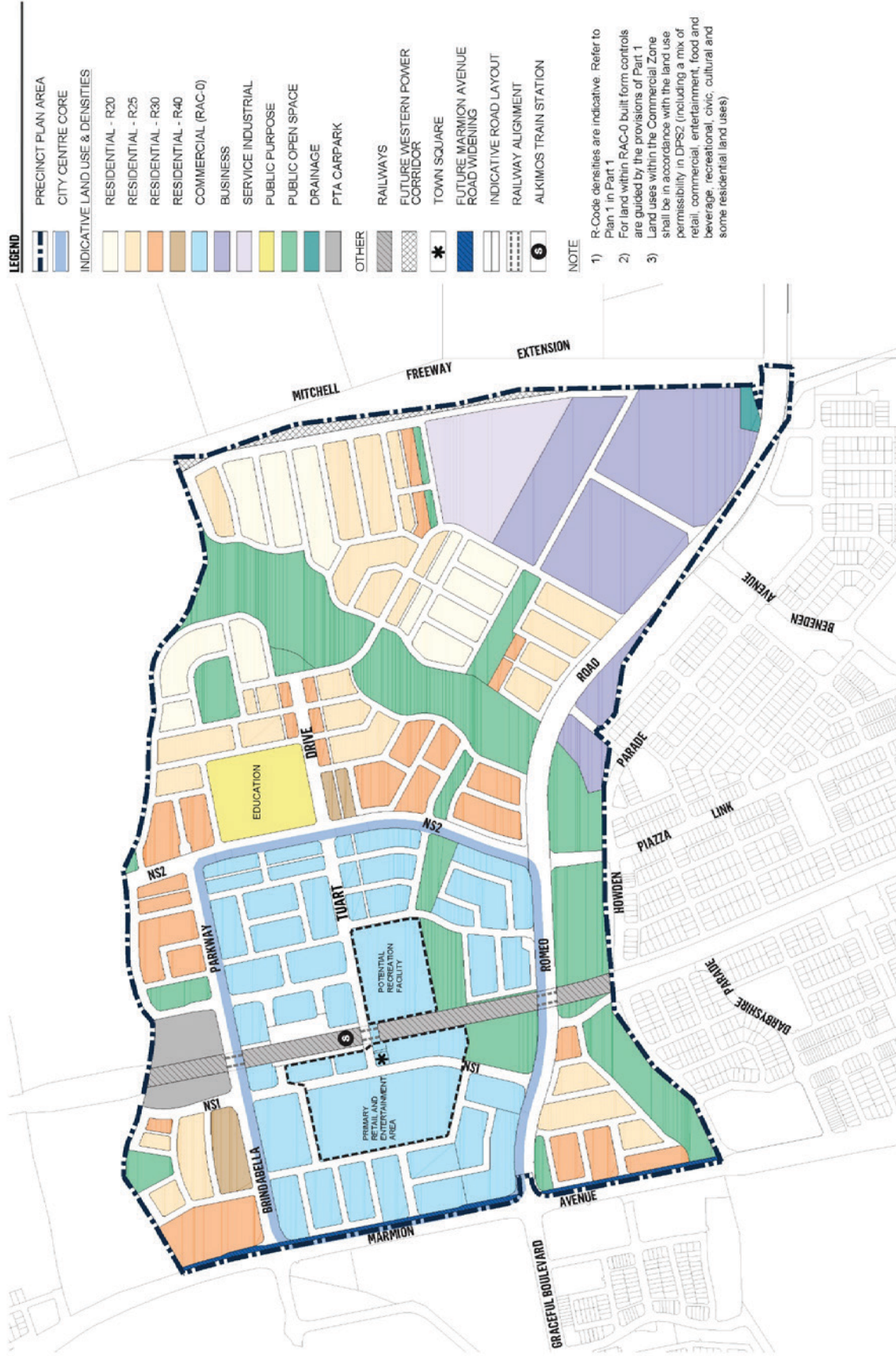
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- 3) Where lots address multiple streets ensure that the built form addresses both.

Built Form Recommendations

- 1) Enforcement of design guidelines across the project.



APPENDIX A



LEGEND

- PRECINCT PLAN AREA
- CITY CENTRE CORE
- INDICATIVE LAND USE & DENSITIES
- RESIDENTIAL - R20
- RESIDENTIAL - R25
- RESIDENTIAL - R30
- RESIDENTIAL - R40
- COMMERCIAL (RAC-0)
- BUSINESS
- SERVICE INDUSTRIAL
- PUBLIC PURPOSE
- PUBLIC OPEN SPACE
- DRAINAGE
- PTA CARPARK
- OTHER
- RAILWAYS
- FUTURE WESTERN POWER CORRIDOR
- TOWN SQUARE
- FUTURE MARMION AVENUE ROAD WIDENING
- INDICATIVE ROAD LAYOUT
- RAILWAY ALIGNMENT
- ALKIMOS TRAIN STATION

- NOTE**
- 1) R-Code densities are indicative. Refer to Plan 1 in Part 1
 - 2) For land within RAC-0 built form controls are guided by the provisions of Part 1
 - 3) Land uses within the Commercial Zone shall be in accordance with the land use permissibility in DPS2 (including a mix of retail, commercial, entertainment, food and beverage, recreational, civic, cultural and some residential land uses)