

# **CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN**



# DESIGN OUT CRIME

CITY OF LOS ANGELES

GUIDELINES





Richard Riordan, Mayor

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## **CITY OF LOS ANGELES**

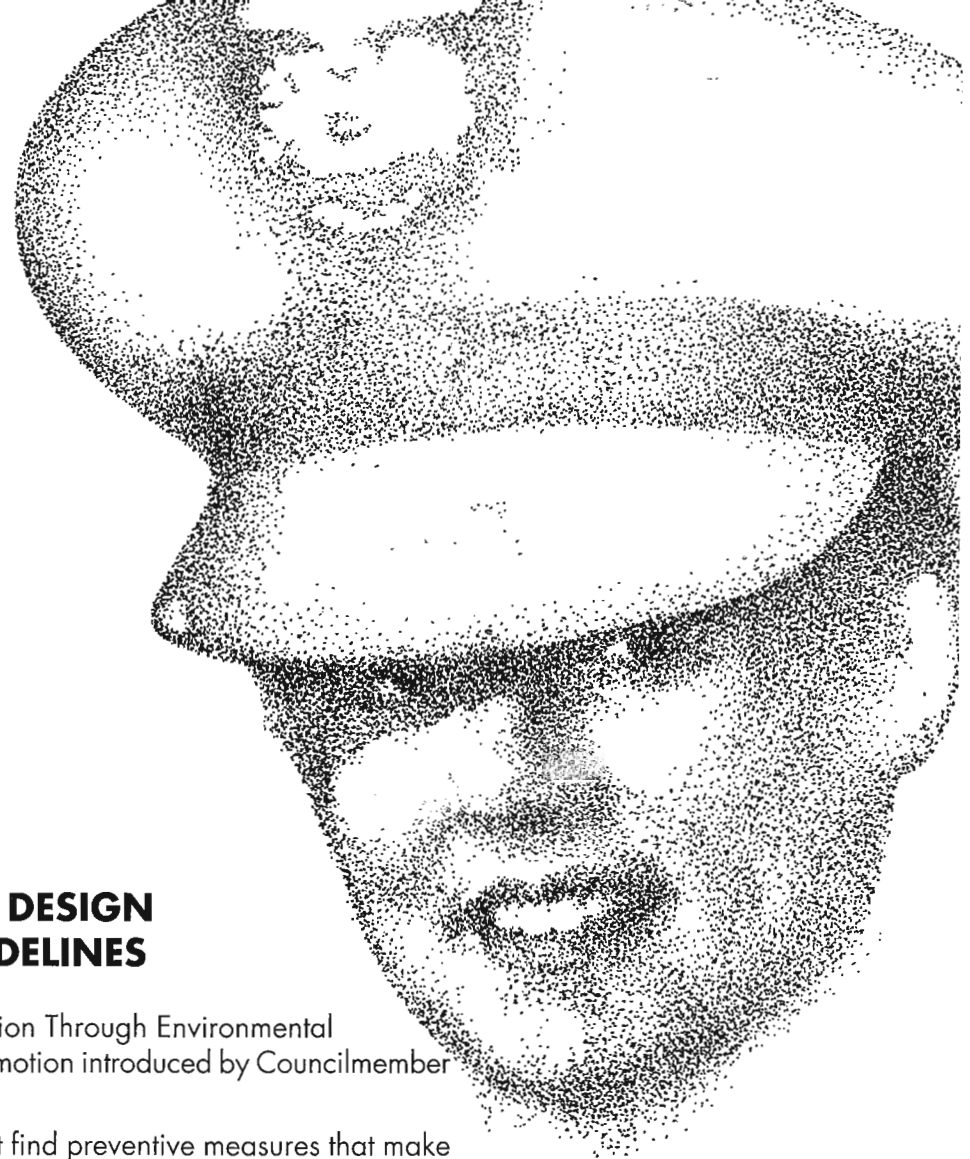
### **CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN CITY OF LOS ANGELES "DESIGN OUT CRIME" GUIDELINES**

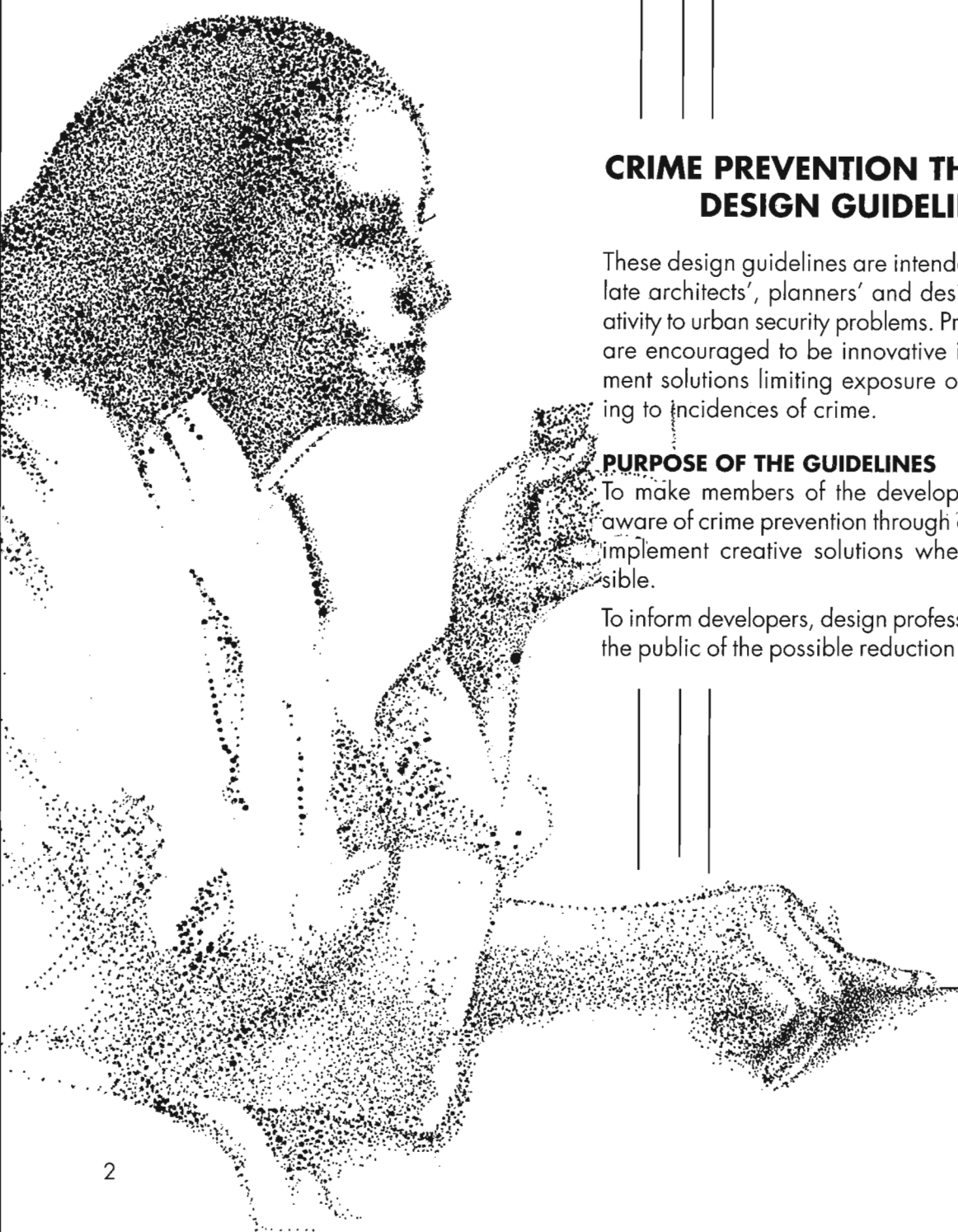
The following design guidelines were prepared by the City's Crime Prevention Through Environmental Design (CPTED) Task Force based on the direction of the City Council under a motion introduced by Councilmember Laura Chick.

In our continuing effort to improve public safety in Los Angeles, the City must find preventive measures that make crime less likely to occur. These guidelines will introduce you to ways that you may incorporate certain design features into buildings to make them more secure and to deter crime.

The City Council has asked that these guidelines be prepared and widely disseminated to design professionals and the development community so that these principles can be incorporated whenever possible in development projects. We believe that their use will not only reduce crime but also add to the value of your properties.

If you have any questions concerning these guidelines or the "Design Out Crime" program, please contact the Los Angeles Police Department's Crime Prevention Section in the Chief of Police's Community Affairs Group, located at Parker Center, 150 N. Los Angeles Street, Room 818, L.A. 90012, (213) 485-3134.





## **CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN DESIGN GUIDELINES: DESIGN OUT CRIME**

These design guidelines are intended to stimulate architects', planners' and designers' creativity to urban security problems. Project teams are encouraged to be innovative in development solutions limiting exposure of urban living to incidences of crime.

### **PURPOSE OF THE GUIDELINES**

To make members of the development team aware of crime prevention through design and implement creative solutions whenever possible.

To inform developers, design professionals and the public of the possible reduction of criminal

opportunity when crime prevention principles are developed during the initial planning stages of a development.

To describe design alternatives which could have an adverse affect on opportunities for criminal activity.

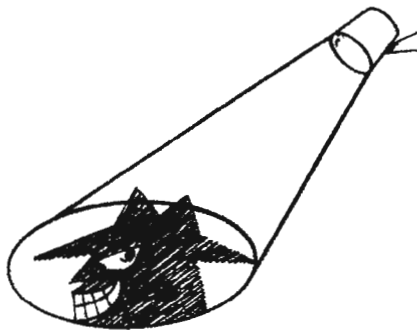
### **THE CPTED PREMISE**

That the proper *design* and effective *use* of the built environment can lead to a reduction in the incidence and fear of crime, reduction in calls for police service and to an increase in the quality of life.



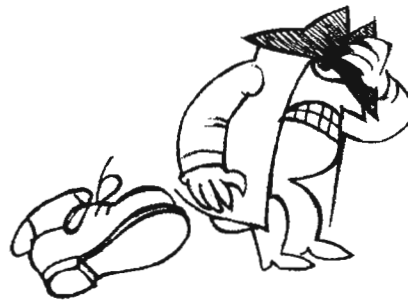
### THREE CPTED STRATEGIES

*Although conceptually distinct, it is important to realize these strategies tend to overlap in practice.*



#### Natural Surveillance

Surveillance is a design concept directed primarily at keeping intruders under observation. Therefore, the primary thrust of a surveillance strategy is to facilitate observation although it may accomplish the effect of an increased perception of risk. Surveillance strategies are typically classified as organized (e.g., police patrol), mechanical (e.g., lighting) and natural (e.g., windows).



#### Natural Access Control

Access control strategies are typically classified as: Organized (e.g., guards), mechanical (e.g., locks) and natural (e.g., spatial definition). This guideline will concentrate on the third strategy of natural access control. The primary thrust of an access control strategy is to deny access to a crime target and to create a perception of risk in offenders.



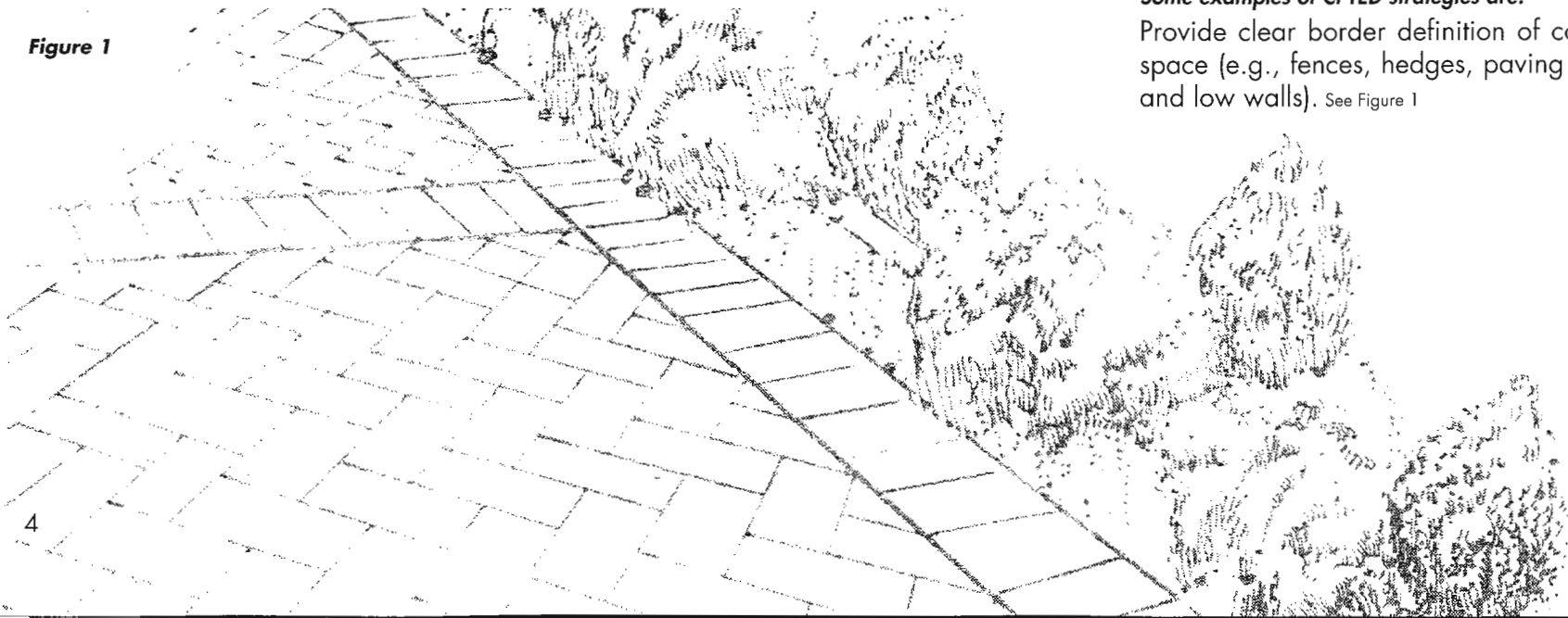
#### Territorial Reinforcement

The concept of territoriality suggests that physical design can contribute to a sense of territoriality. That is, physical design can create or extend a sphere of territorial influence and potential offenders perceive that territorial influence. For example: low walls, landscape and paving patterns to clearly define the space around a unit entry as belonging to (and the responsibility of) the residents of that unit.

#### *Some examples of CPTED strategies are:*

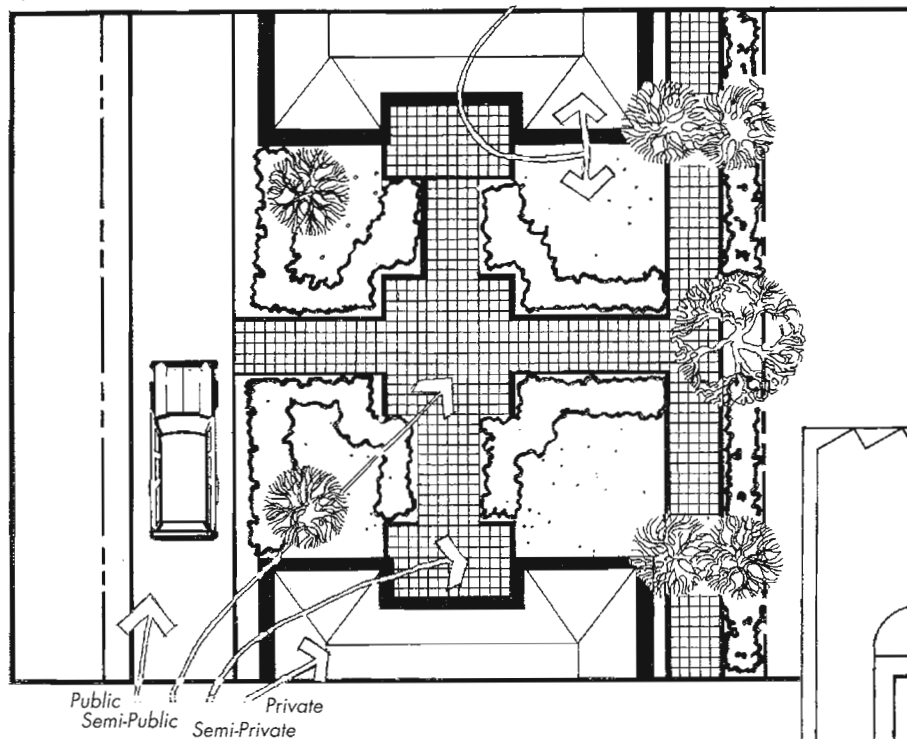
Provide clear border definition of controlled space (e.g., fences, hedges, paving patterns and low walls). See Figure 1

**Figure 1**



**Figure 2**

*Assign outdoor space to adjacent interior space*



Avoid space which is unassigned. As much as possible, all space should become the clear responsibility of someone. See Figure 2

Provide clearly marked transitional zones which indicate movement from public to semi-public to private space. For example, the sidewalk represents *public* space and the main path into a residential development is *semi-private* and the path which branches to individual unit(s) becomes *semi-private* and the interior of the unit becomes *private*. See Figure 2

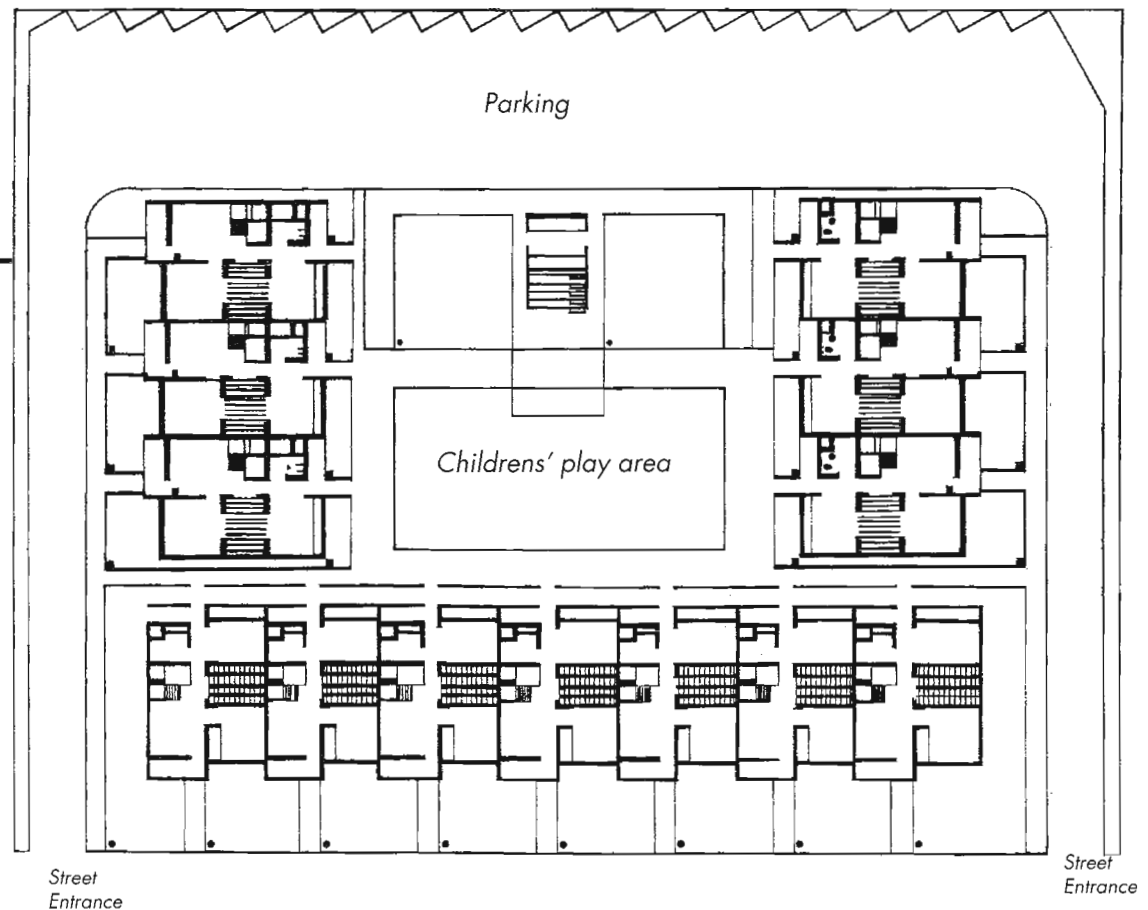
Relocate gathering areas to locations of natural surveillance and access control: as opposed to locations away from the view of would-be offenders. For example, all tot lots should be

located within the central common area of the building with as many units as possible able to glance or actively watch children at play.

See Figure 3

Place safe activities in unsafe locations to create the natural surveillance of these activities to increase the perception of safety for legitimate users and risk for offenders. For example, well used common areas (safe) may overlook a parking area (unsafe) to provide additional security to the parking area.

**Figure 3**



*Traditional planning organization offers pedestrian access at the street and side yards; orients private family activities to the protected courtyard.*



Place unsafe activities in safe locations to overcome the vulnerability of these activities with natural surveillance and access control of the safe area. For instance, common toilet facilities and laundry rooms should not be located in a remote corner of the site or at the end of a long anonymous hallway. See Figure 4-A

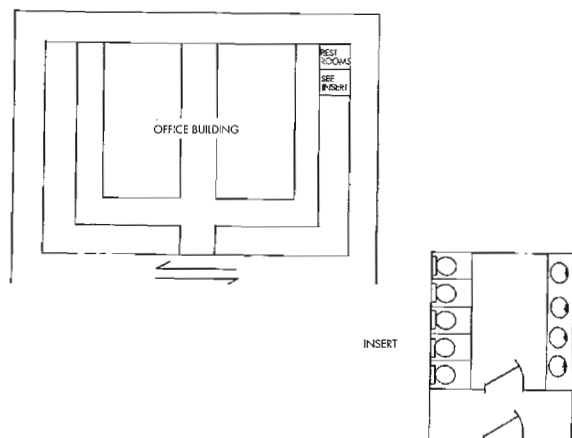
Locate these facilities (unsafe) adjacent to the entry or location where there is normally high foot traffic (safe). See Figure 4-B

Redesignate the use of space to provide natural barriers to conflicting activities (e.g., adolescent recreation area next to seniors' gathering area). See Figure 5

Improve scheduling of space to allow for effective use and appropriate "critical intensity".

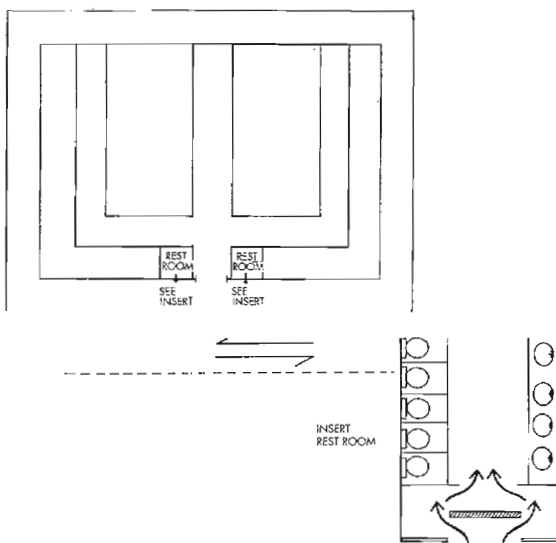
Redesign or revamp space to increase the perception or reality of natural surveillance. Overcome distance and isolation through improved communications.

**Figure 4-A**



- A. Public restrooms are common sites for illegal and illicit activity.
- B. Many children are afraid to use the restroom at school.
- C. Malls and shopping centers have tended to hide the restroom, as a means of reducing demand for this non revenue bearing activity.
- D. The lack of convenient and clean restrooms clearly reduces the average time per visit to most stores and businesses, thereby reducing sales.
- E. Isolated locations and double door entry systems present unsafe cues to normal users and safe cues to abnormal users.
- F. Double door entry system produce a warning sound and transitional time that is an advantage to abnormal users.
- G. A normal user or guard must move inside the second door swing to figure out what is going on in a restroom.

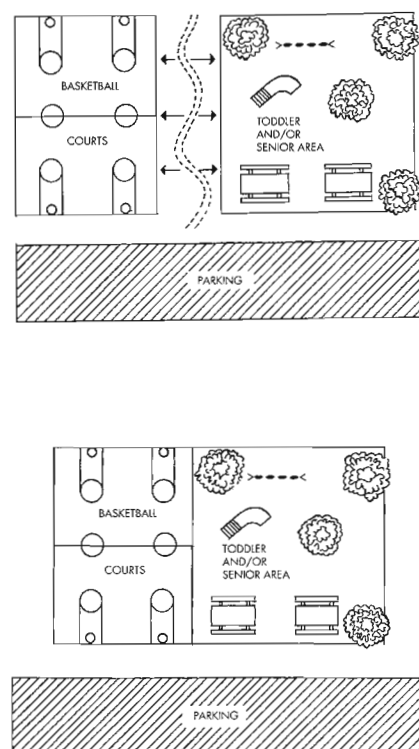
**Figure 4-B**

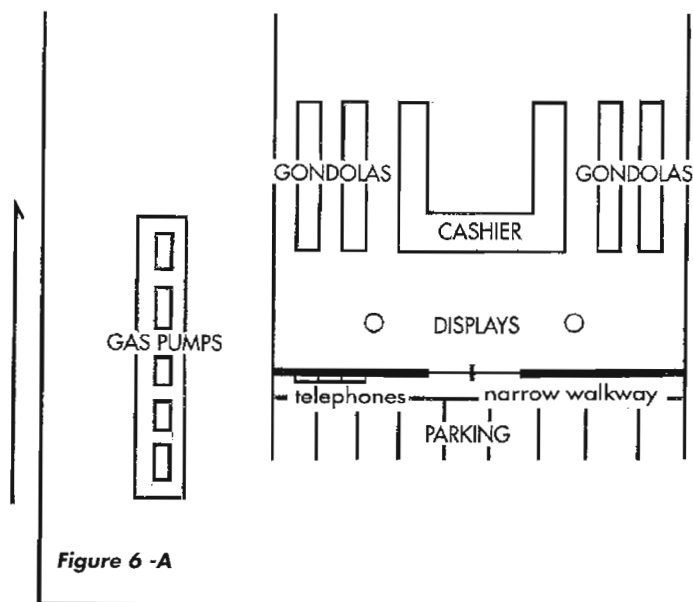


#### **Good Design and Use**

- A. Restrooms should be located in the most convenient and accessible location to increase use, which increases the perception of safety.
- B. A maze type entry system or doors placed in a locked open position will increase convenience and safety.
- C. Normal users may determine who is in the restroom by glancing around the privacy screen or wall.
- D. Abnormal users will feel at greater risk of detection.

**Figure 5**





#### Good Design and Use: Figure 6-A

- Parking in front is always more convenient and safer.
- Most stores use ample amounts of glazing in the front, which improves both natural and perceived surveillance.

#### Convenience Stores: Locations near Dense Commercial or Housing Sites

- Convenience stores located in these sites experience robberies associated with access from the rear of the store to the front. Escape is easy around the back of the store into dense commercial building or housing sites.
- Customer are afraid to use these stores because of hanging-out activity by local residents, and by undesirable users, such as drug dealers and unruly young people.
- The standard *modus operandi* is for the perpetrator to come from behind or the side of the building to the front and rob the cashier. Escape is too easy. People hang out in these areas, as well as undesirables, which discourages normal adult customers. Robbers like to stand at a pay phone as a cover when casing the store.

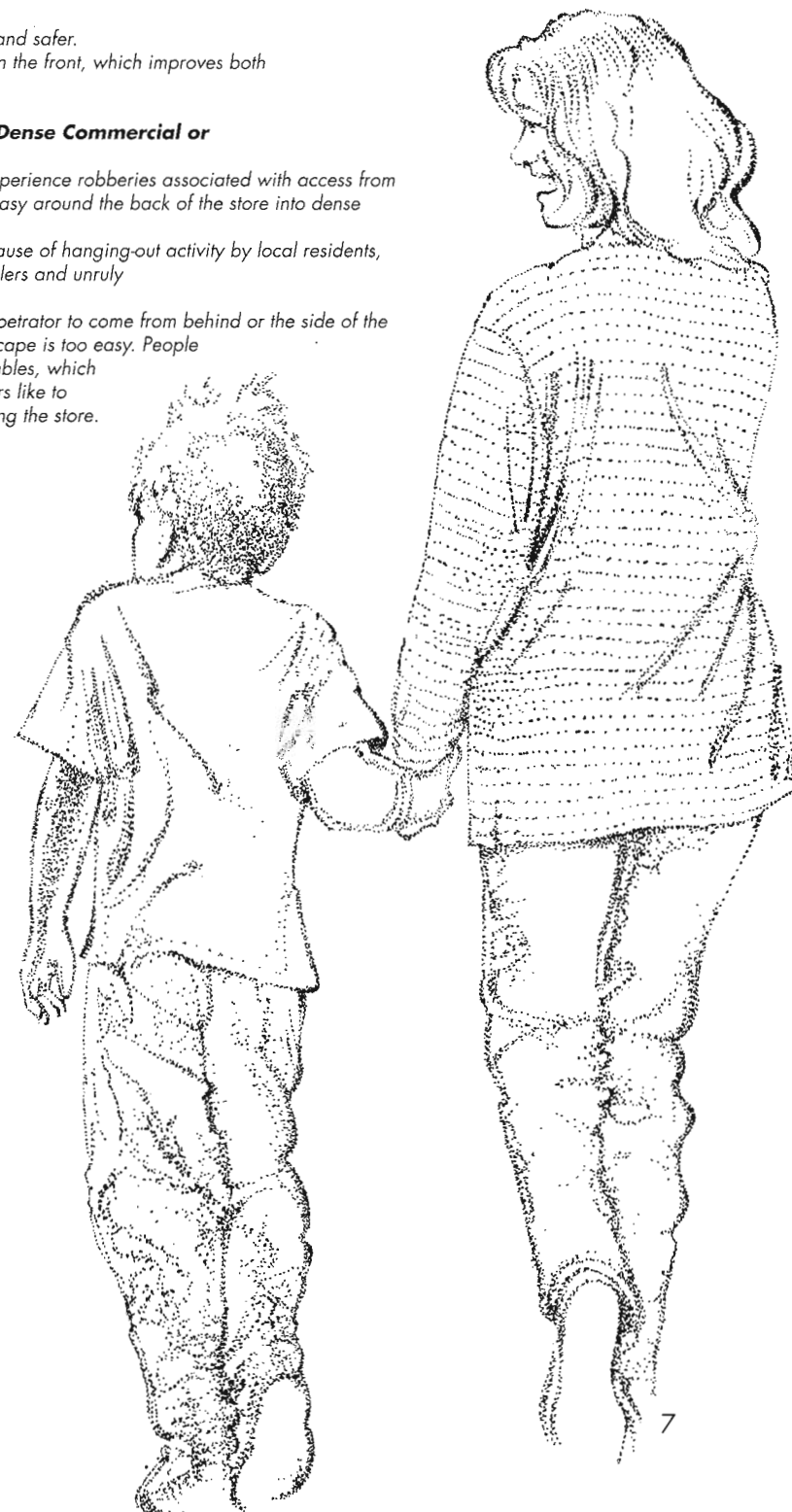
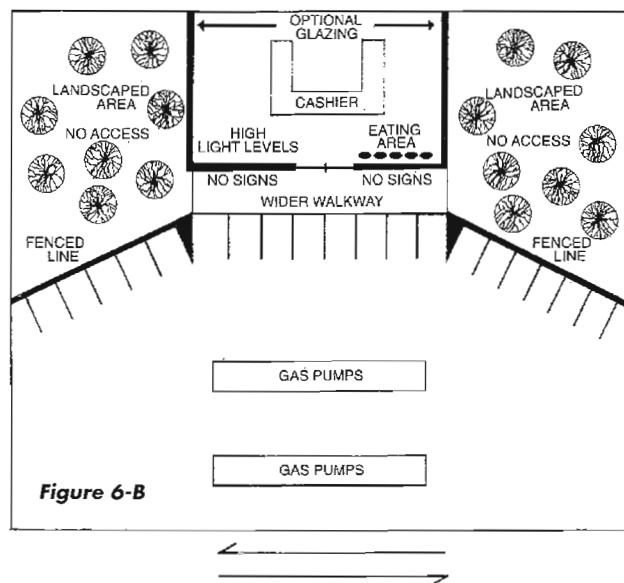


Figure 6-B

- Although the research is conflicting, the centrally located cashier station does result in the cashier having her back to customers when only one clerk is on duty. A frontal or rear location of a central cashier station would be preferable.
- It is common for stores to obscure the front windows with signage and to orient gondolas and shelves perpendicular to the front of the store. Signage prevents customers and police from looking into or out of the store. Improper gondola and shelf orientation prevents clerks from observing customers. Likewise, abnormal users feel safer in stores where gondolas and shelf systems eliminate natural surveillance.



## DESIGN RECOMMENDATIONS

### NATURAL SURVEILLANCE:

#### Visual Connection

Provide an opportunity for people engaged in normal everyday activity to observe the space around them. Place activities where individuals engaged in those activities will become part of the natural surveillance system without any interruption to their activity. See Figure 7

Provide a good visual connection between residential and/or commercial units and pub-

lic environments such as streets, common areas, parks, sidewalks, parking areas and alleys. Place actively used rooms such as kitchens, living/family room and lobbies to allow for good viewing of parking, streets and/or common areas. Managers, doormen, attendants and security personnel should have extensive views of these areas. See Figure 8

Provide for the ability to see into a room or space prior to entering. See Figure 9

Take advantage of mixed use if it exists and provide good visual connection between uses. This may enable natural surveillance during the day and evening (i.e., a commercial zone which becomes vacant in the evening or a residential zone which is uninhabited during the day). See Figure 10

Refer to the Los Angeles Building Code for required minimum building security construction standards.

Figure 7

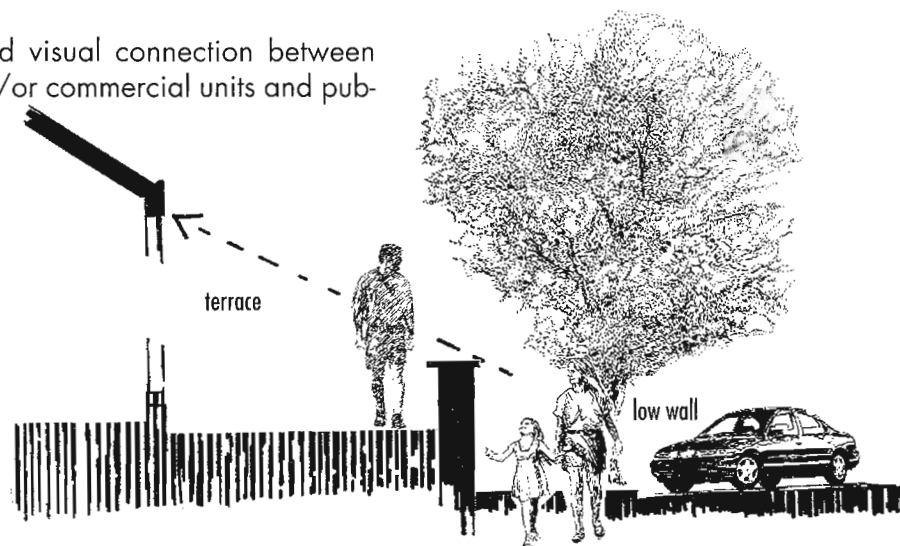
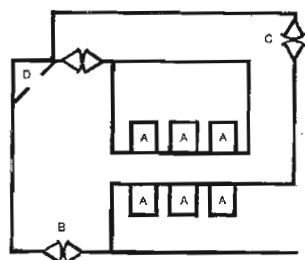
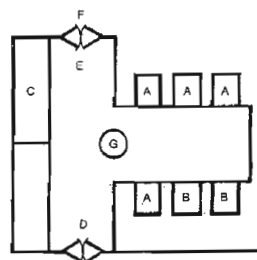


Figure 8



- A. Through elevators from below ground to working floors
- B. Main entrance
- C. Side entrance
- D. Guard booth



- A. Elevators serving lobby and specified floors above
- B. Elevators serving lobby and floors below
- C. Rest rooms
- D. Building main entrance
- E. Main floor corridor
- F. Controlled access/egress door
- G. Receptionist/Security Guard station

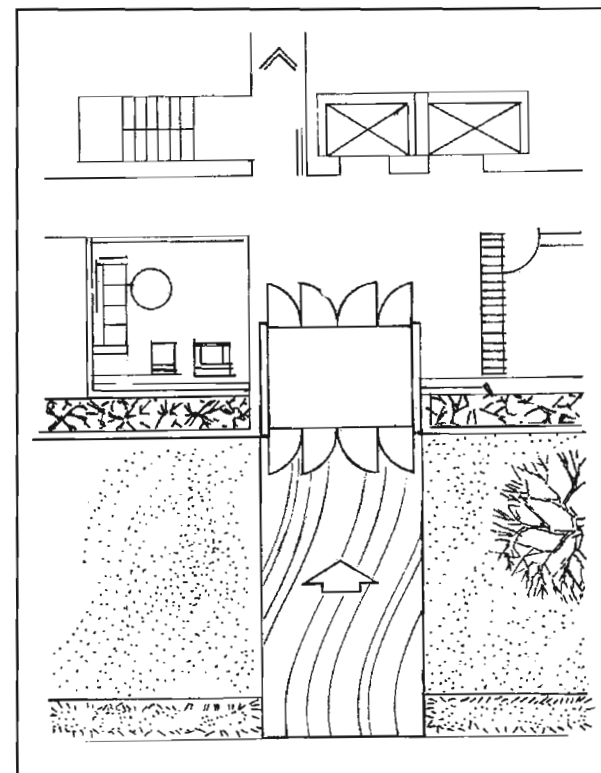
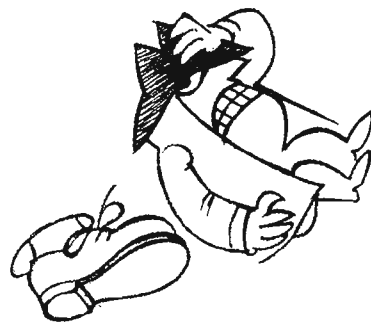


Figure 9. As much of a building's lobby area as possible should be visible from street or entry way



## NATURAL ACCESS CONTROL:

### Spatial Definition

Locate common areas as centrally as possible or near major circulation paths within the project. Avoid remote locations for common areas.

Consider containing common areas within a building lay-out.

Group common areas together so that necessary tasks such as laundry may be done while watching children or using recreation areas.

Provide clear well lit paths from the street to the development through parking and landscape areas and within the development to building entries.

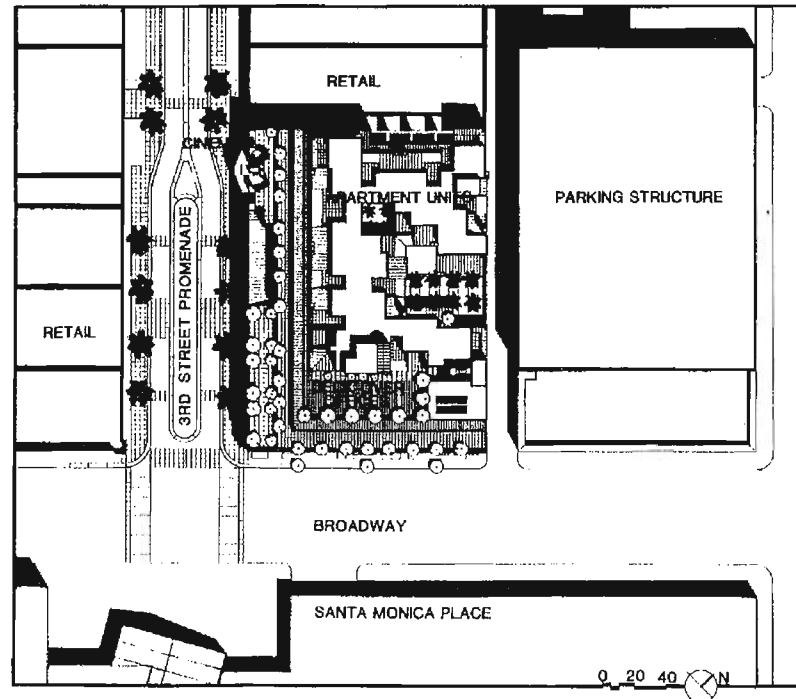
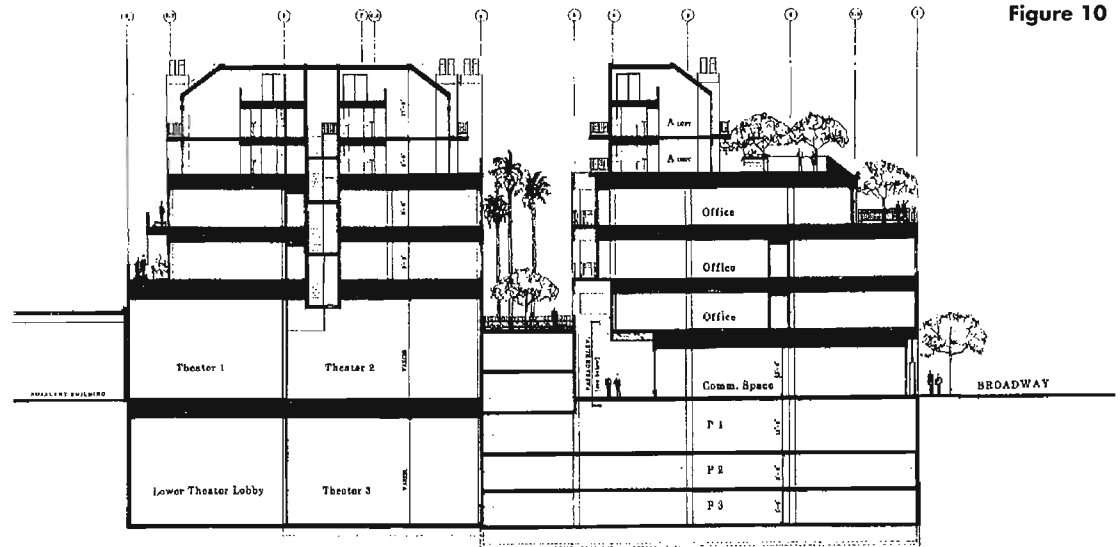
Avoid ambiguous walkways and entries where occupants and guests may become "lost or disoriented" or must search for the correct entry or unit.

Provide adequate lighting, width of path, definition of path and ability to see a destination.

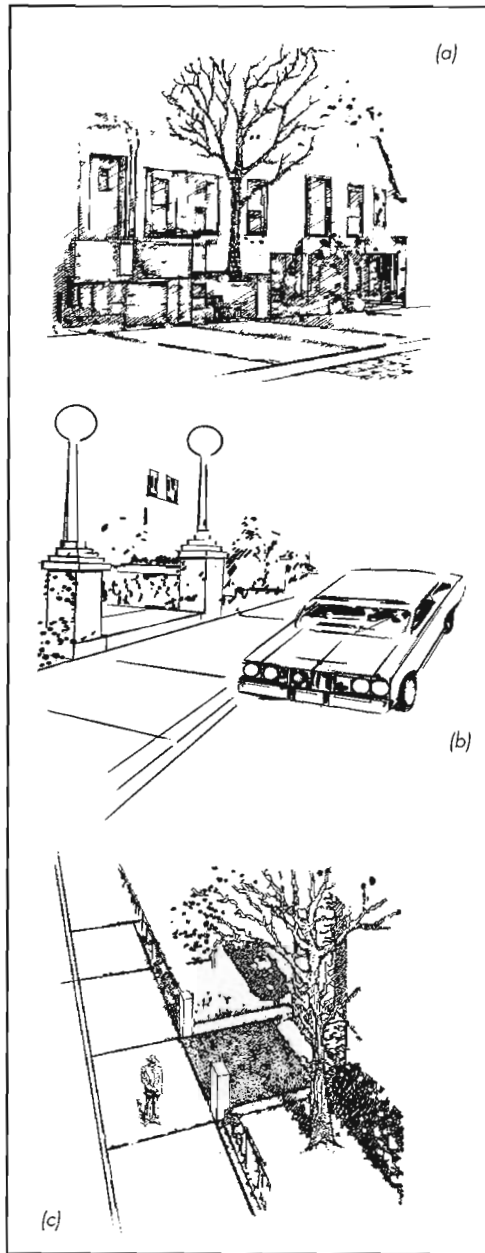
Provide obvious physical security techniques such as locks, lights, walls, gates, security cameras (where necessary) labeled "private security".

Control unwanted entry through attic space. Where ownership changes, provide a wall which extends from the suspended ceiling to the underside of the roof/floor assembly above.

Identify whether surrounding properties constitute a negative or adverse impact on the development. Mitigate the adverse impact whenever possible with enhanced access control techniques.



Janss Court by Van Tilburg Banvard & Soderbergh  
Architecture • Planning • Interiors



**Figure 11:** Examples of symbolic barriers: (a) Change in level; (b) Lights and standards used to define transitional space; (c) low walls, posts, and change in texture used to define transition.

Ground floor units may require security above and beyond the other areas in the development. Walls, fencing, deterrent landscaping and lighting may be necessary.



#### TERRITORIAL REINFORCEMENT:

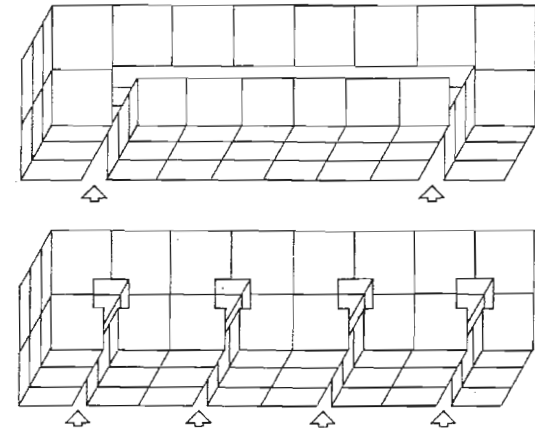
##### Foster A Sense Of Ownership

People take more interest in something they own or which they feel intrinsically involved. Therefore, the environment should be designed to clearly delineate private spaces. Provide obvious defined entries, patios, balconies and terraces. Use low walls, landscape and paving patterns to delineate ownership and responsibility. See Figure 11

Create a sense of ownership to foster behavior that challenges abuse or unwanted acts in that space. Owners have a vested interest and are more likely to challenge intruders or report them to the police.

Provide real amenities in common areas so people will use them and have a stake in maintaining them. Avoid common areas which become a "no mans land".

Provide clearly defined and secure storage areas (including bicycles, outdoor childrens' toys, etc.).



**Figure 12:** Buildings of identical external dimensions. Above: with central double loaded corridor, end stairs, and two common entries serving all apartments. Below: clustered units with four separate entries and stairs.

Consider creating "sub-developments" within a project where people share clustered parking, entries, amenities and common areas. Avoid long corridors which are shared by all and owned by none. See Figure 12

Facilitate the successful Neighborhood Watch program. Cluster units in such a way to allow occupants to interact and see unit entries (and possibly sidewalks and streets) from within other units. Create an environment where strangers or intruders stand out and are more easily identified.

In some developments it may be appropriate to give occupants some autonomy and control over their environment. This may include devoting landscape space to tenant use and upkeep, allowing occupants to determine color, landscape and other "finish" design materials.

### Landscaping and Fencing

Specify thorny landscape as a natural barrier to deter unwanted entry. See Figure 13

Specify vines or planted wall coverings to deter graffiti. Avoid blank spaces which may be an invitation to graffiti vandals.

Provide landscape and fencing that do not create hiding places for criminals. Discourage crime by creating an inhospitable environment for criminals.

As fencing has become more ubiquitous, provide attractive and durable (masonry) fencing whenever possible. Consider creative solutions to fencing schemes which work aesthetically as well as functionally.

### Lighting

Provide lighting systems which provide night-time vision for motorists to increase the visibility of pedestrians, other vehicles and objects (which should be seen and avoided).

Provide lighting systems which provide night-time vision for pedestrians, homeowners and business people to permit pedestrians to see one another, to see risks involved in walking at night and to reduce the risk of trip-and-fall accidents. Provide lighting systems which will enhance police ability for surveillance, patrol and pursuit.

Provide lighting systems that minimize glare, light pollution and light trespass. Where necessary, provide light transition zones.

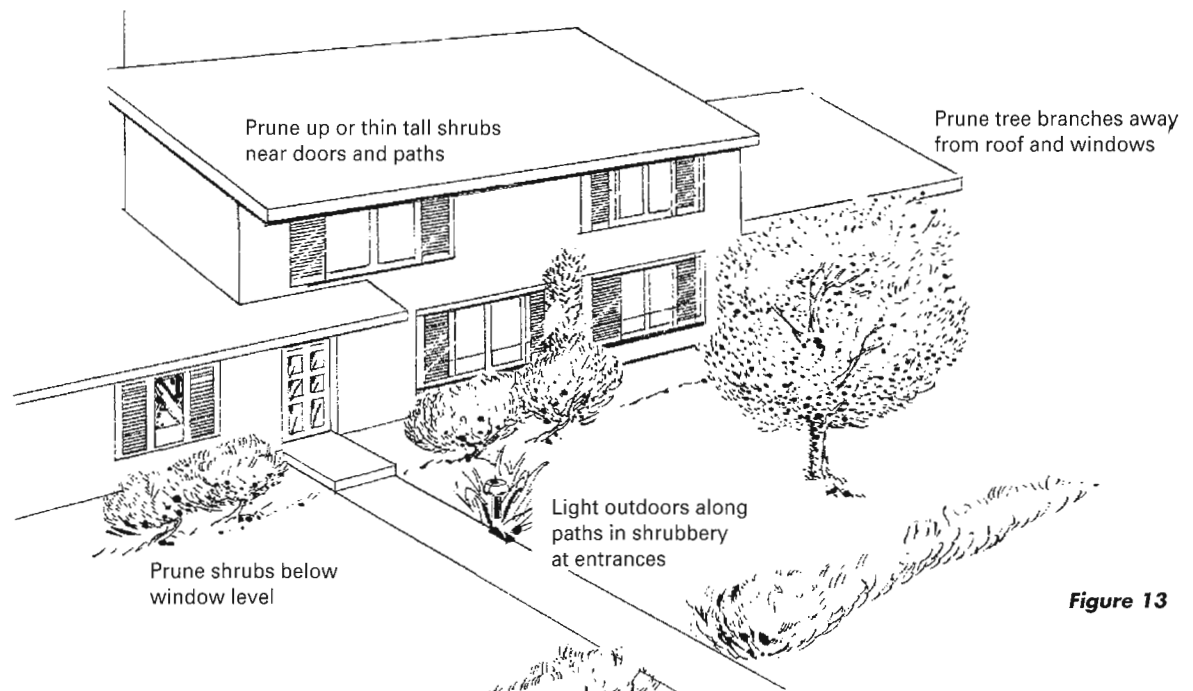
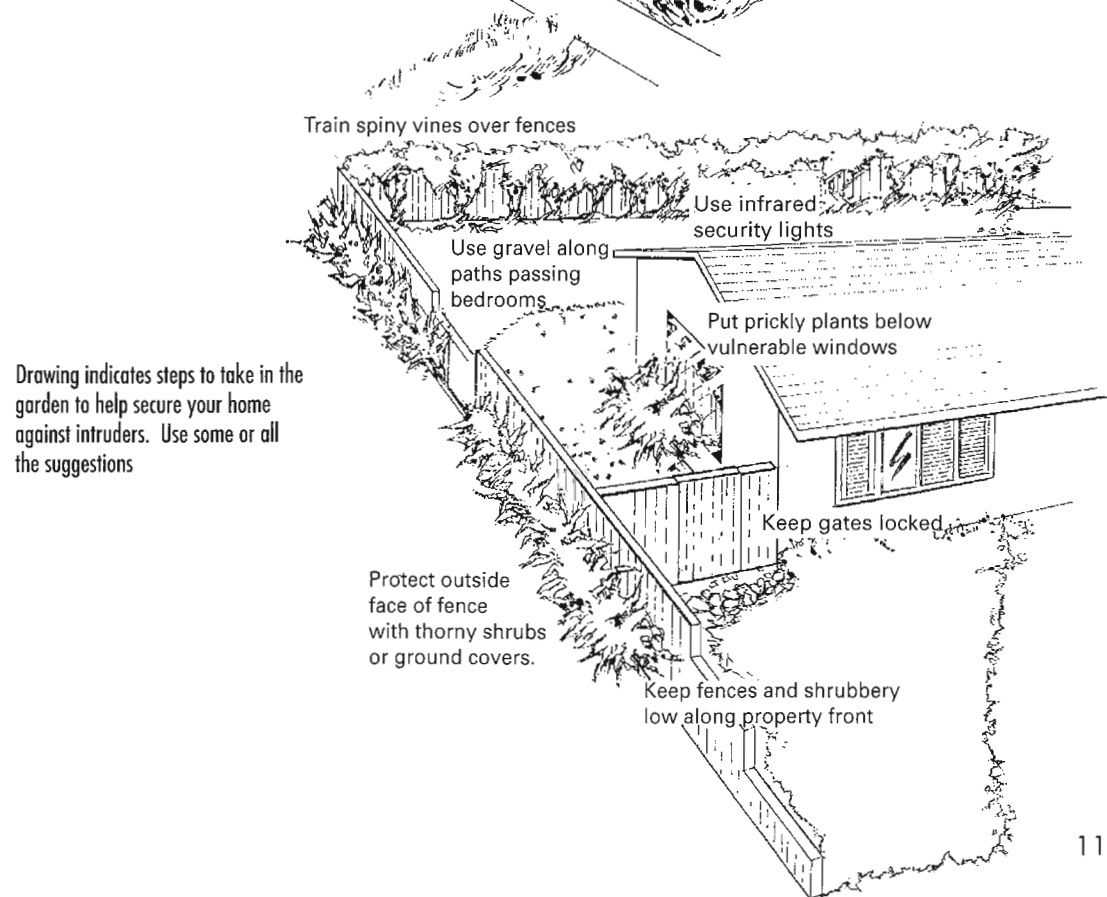


Figure 13





## Security Landscaping

### Barrier Plants

<i>Botanical Name</i>	<i>Common Name</i>	<i>Sunset Zones</i>	<i>Defense</i>	<i>Comments</i>
Blackberry	Blackberry	vary by variety	spiny branches	large patches totally impenetrable; includes Boysenberry, Loganberry, Olallieberry
Bougainvillea spp.	Bougainvillea	19,21, 22-24	sharp thorns along newer growth; old trunks thornless	varieties Temple Fire, Torch Glow, are mostly thornless shrubs; impenetrable ground cover, vine
Bromeliads	Bromeliad	vary by zones	spiny, prickly leaves	some kinds can make good ground covers, border plants, in shade smaller kinds—Coryphantha, Echinopsis, Lobivia, Mammillaria - can merely be stepped over; tropical cacti-Epiphyllum, Rhipsalidopsis, Schlumbergera - spineless
Cactus	Cactus	vary by species	most have spines	
Carissa macrocarpa, and varieties	Natal Plum	18-21, 22-24	spines along branches and at end of each twig	Green Carpet, Horizontalis, Minima, Prostrata are ground covers, easily stepped through
Carnegiea gigantea	Saguaro	18-21	spines	iffy in L.A., will probably die
Cephalocereus senilis	Old Man Cactus	21-24	spines	use many in masses
Cereus peruvianus	Cactus	21-24	scattered spines	not all Cereus have spines, especially the common nightblooming cereus
Chaenomeles spp.	Flowering Quince	18-21	thorns (nonfruiting varieties only)	Red Ruffles, Stanford Red almost thornless
Chamaerops humilis	Mediterranean Fan Palm	18-24	thorny leaf stalks	impenetrable hedge when young
Cleome hasslerana (C. spinosa)	Spider Flower	all zones	spines on stems	unusual
Cortaderia spp.	Pampas Grass	18-24	saw-toothed leaf blades	should not be used at all, since it overruns native plants where adapted
Cycads	none	vary by species	lower leaflets spiny; leaves spine-tipped	notable genera are Cycas, Dioon, Encephalartos, especially the latter; plant close together as a mass
Cycas revoluta	Sago Palm	18-24	lower leaflets stiff, spiny	plant close together as a mass
Dasyliroion spp.	Sotol	vary by species	spiky, spiny leaves	more common in desert - - be suspicious of proposed use in L.A.
Dioon spp.	none	vary by species	mature leaves hard and spiny	plant close together as a mass



<i>Botanical Name</i>	<i>Common Name</i>	<i>Sunset Zones</i>	<i>Defense</i>	<i>Comments</i>
Echinocactus spp.	Barrel Cactus	18-24	wicked spines	more common in desert - - be suspicious of proposed use in L.A.
Echinocereus spp.	Hedgehog Cactus	vary by species	wicked spines	more common in desert - - be suspicious of proposed use in L.A.
Echinops exaltatus	Globe Thistle	all zones	prickly leaves	perennial
Eleagnus pungens	Silverberry	18-24	spiny branches	
Eryngium amethystinum	Sea Holly	all zones	spiny branches around flowers	unusual
Erythrina acanthocarpa	Tambooke Thorn	19-24	thorny branches	unusual
Erythrina bidwillii	Bidwill Coral Tree	18-24	spiny branches	usually seen as a large shrub
Espostoa lanata	Peravian Old Man Cactus	18-24	spines	more common in desert - - be suspicious of proposed use in L.A.
Euphorbia milu (E. splendens)	Crown of Thorns	21 -24	long, sharp thorn	can train on small trellis; many varieties
Ferocactus spp.	Barrel Cactus	18-24	formidably spiny	more common in desert - - be suspicious of proposed use in L.A.
Fouquieria splendens	Ocotillo	18-20	stout thorns	more common in desert - - be suspicious of proposed use in L.A.
Hakea suaveolens	Sweet Hakea	19-24	leaves branched into stiff, needlelike, stickery segments	
Ilex spp.	Holly	vary by species	spiny leaves	Ilex vomitoria (Yaupon) does not have spines
Lantana camara	Lantana (shrub)	18-22	spines along stems	ground cover types have spines, but can easily be stepped through
Lemaireocereus thurberi	Organpipe Cactus	18-24	spines along stems	plant close together as a mass
Mahonia spp.	vary by species	vary by species	spiny leaves	M. lomariifolia truly vicious; native M. fremontii, M. nevadensis, M. pinnata better than barbed wire; creeping M. repens without spines
Nolina spp.	Beargrass	vary by species	razor-edged leaves	will shred anything that comes near; more common in desert - - be suspicious of proposed use in L.A.
Opuntia spp.	Prickly Pears, Chollas	vary by species	spines	beware--chollas leap out at you
Phoenix roebelenii	Pigmy Date Palm	23,24	lower leaves spines	plant close together as a mass

<i>Botanical Name</i>	<i>Common Name</i>	<i>Sunset Zones</i>	<i>Defense</i>	<i>Comments</i>
Protea spp	Proteas - - various species	vary by species	stiff leaves act like knives	for specialists - - be suspicious of proposed use in L.A.
Punica granatum	Pomegranate	18-24	spiny twigs	
Puya spp.; Puya bertoniana (P.alpestris) most common	Puya	19-24	leaves with sharp tips and spiny edges	better than barbed wire
Pyracantha spp.	Firethorn	vary by species	thorny branches, twigs	even ground cover types formidable
Quercus berberidifolia(Q. dumosa)	Scrub Oak	18-24	prickly leaves	
Quercus ilex	Holly Oak Holm Oak	18-24	toothed leaves	select toothed, not smooth-edged, forms; can be held as large shrub indefinitely
Raspberry	Raspberry	all zones	thorny stems	
Ribes sanguineum, R speciosum	Red-Flowering Currant, Fuchsia Flowering Gooseberry	vary by species	spiny, bristly stems	
Romneya coulteri	Matilija Poppy	all zones	prickly stems	forms large, dense patches; rough looking
Rosa spp.	Rose	vary by species, variety	thorns	Lady Banks' Rose (Rosa banksiae) thornless; vigorous spreaders (such as 'Mermaid') will rip anything to shreds
Shepherdia argentea	Silver Buffaloberry	18-24	spine-tipped branches	spreading, suckering shrub
Xylosma congestum	Shiny Xylosma	18-24	some plants spiny	select individual plants for spines
Yucca spp.	Yucca	vary by species	sharp-pointed leaves	shrubby types vicious

## Appendix B

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*Secure and Livable Communities: Crime Prevention Through Environmental Design, Conference Summary*, AIA/ACSA Council on Architectural Research and National Institute of Justice

*National City Survey on Security by Design*, The United States Conference of Mayors

*Security Design Concepts*, 3123 E. Locust Avenue, Orange, CA 92667 714/977-1084

These guidelines were researched and prepared by the Crime Prevention Through Environmental Design Task Force as directed and established by the Los Angeles City Council. The Task Force consisted of the following City departments:

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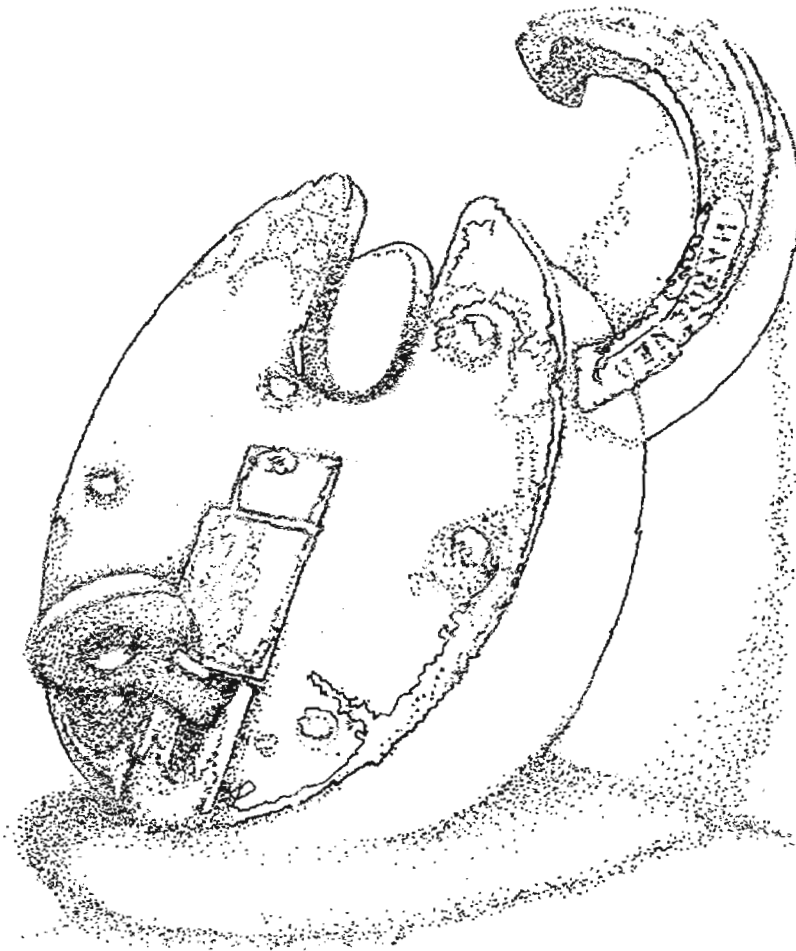
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**COUNCILMEMBER LAURA CHICK, 3RD DISTRICT**

*Mr. Ken Bernstein, Planning/Transportation Deputy*

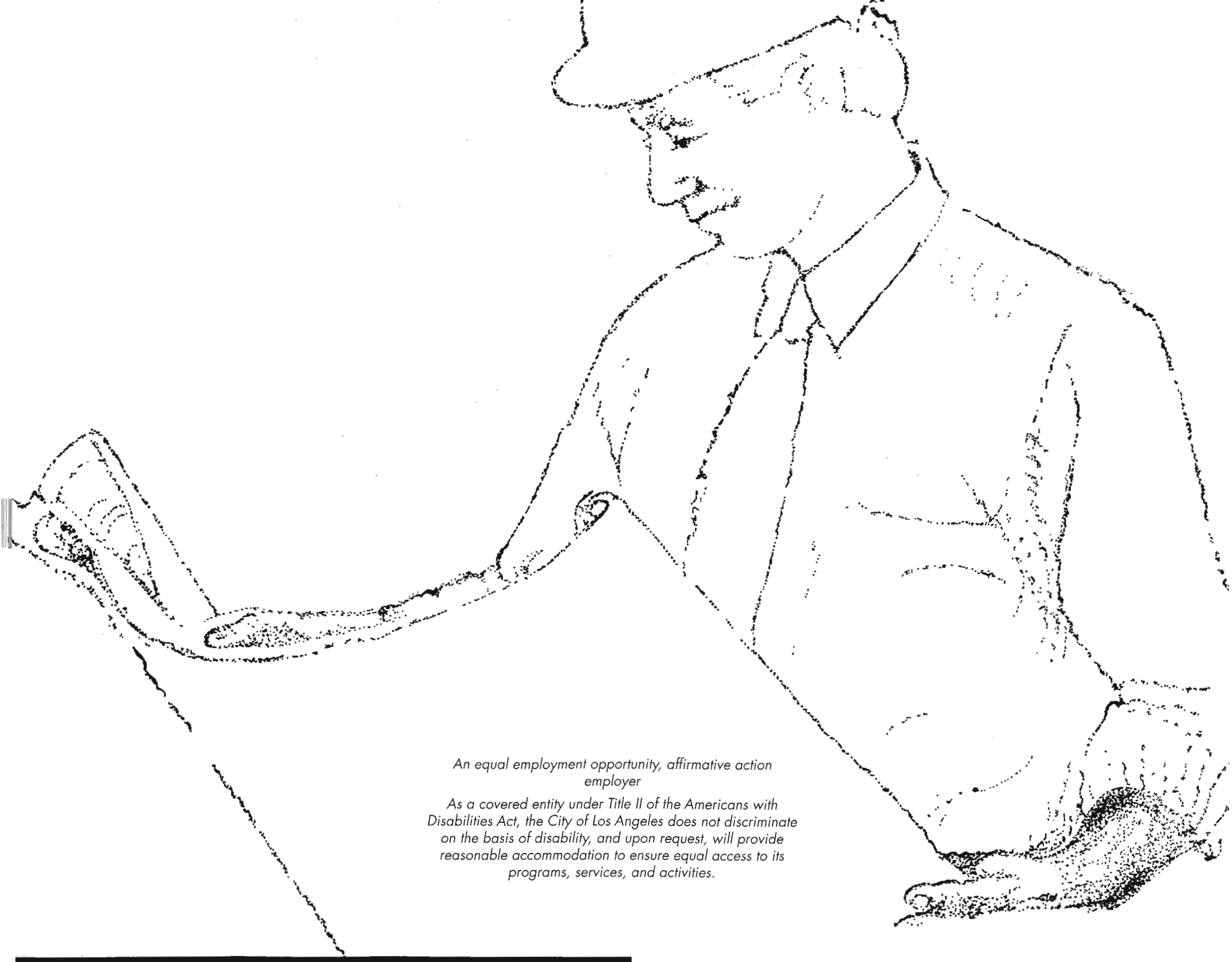
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Planning Department	(213) 485-7824
Police Department	(213) 485-3134
Bureau of Street Lighting	(213) 847-6400



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