

Research Project on Pedestrian Access to Tren Urbano:

Creating  
Pedestrian-Friendly Environments  
Around Tren Urbano Stations

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## I. The Purpose of This Paper

The purpose of this paper is to provide a brief review and discussion of my work for the Tren Urbano project related to improving pedestrian access to proposed station sites. More specifically, this paper introduces an approach to the pedestrian-access issue which I have loosely named the "Pedestrian-Friendly Zone Concept" (PFZC). The PFZC will consist of three components. The first component, which is described in more detail below, specifies a set of urban attributes and design strategies conducive to high and sustained levels of pedestrian activity and non-motorized travel mode share. This specification involves broadly defining the meaning of "pedestrian-friendly environment", and then clarifying and expanding upon this definition by identifying and discussing key "elements" of pedestrian-friendly design.

The second component of the PFZC involves creating zoning and other regulatory and incentive mechanisms for stimulating the creation of pedestrian-friendly environments in the vicinity of Tren Urbano stations.

Finally, the third PFZC component involves creating a strategic plan for channeling growth in the metropolitan San Juan area into pedestrian-friendly station areas.

The remaining sections of this paper consist of: (1) a discussion of my "working" definition of "pedestrian-friendly environment"; and (2) a rough outline of what I believe to be some of the more important pedestrian-friendly design elements.

My intention is to use the "elements" outline and the supporting research material I've accumulated to structure much of my future work for Tren Urbano. This may include papers on some or all of the individual elements included in the outline.

Ultimately, I intend to use the outline as the basis for a set of pedestrian-oriented design guidelines for redeveloping and improving areas around Tren Urbano stations.

Additional future work will focus on three further issues: first, pedestrian-friendly zoning regulations; second, the real estate market potential of pedestrian-oriented development; and, third, issues associated with using pedestrian-friendly, station-area development as a tool for channeling growth from the periphery of the San Juan metropolitan region to sites accessible by Tren Urbano.

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## II. High-Quality Pedestrian Environment Defined

Broadly defined, a high-quality pedestrian environment incorporates a broad array of elements. Such environments consist of attributes which not only enable people to circulate well by foot, but also *invite* them to do so. Achieving this end requires incorporating into the environment more than simply sidewalks and crossing signals. It also requires creating opportunities for pedestrian-related activities -- socializing, recreating, etc. -- in settings where people can feel safe and comfortable.

The Tren Urbano system will serve two types of areas. First, areas developed before the wide-spread use of automobiles (Minillas, Bayamon, Rio Piedras, etc.); second, areas developed with a heavy automobile focus or orientation (Hato Rey, Centro Medico, etc.). In the former, creation of high-quality pedestrian environments could potentially prove a relatively easy task. Street patterns and the basically fine-grained nature of land uses in these areas are already highly conducive to pedestrian

movement and activities. In automobile-oriented areas, however, the task is likely to be much more problematic. Here, presumably, extensive redevelopment and densification using appropriate pedestrian-oriented design principles would be necessary.

In either case, the goal would be to incorporate certain pedestrian-friendly features into the urban environment. These features, which highly inter-relate and overlap, include:

- ⇒ *Streets designed and managed explicitly for multiple-use*
  - Street systems should be conceived as networks of public open spaces rather than simply conduits for easy vehicle movement.
- ⇒ *Comprehensive access and circulation*
  - Pedestrians should be able to access all or virtually all destinations within and between neighborhoods and districts conveniently, easily, pleasantly and comfortably.
- ⇒ *Safety*
  - There should be minimal potential for pedestrian/ vehicle collisions or other types of pedestrian accidents (slipping, tripping, etc.)
  - There should be strict limitations and controls placed on automobile circulation and speed.
- ⇒ *Security*
  - The statistical probability of pedestrians becoming victims of crime should be minimized.
  - Pedestrians should not be fearful of becoming victims of crime.
- ⇒ *Structure, Aesthetics, & Character*
  - Design for Use
  - Human Scale
  - Spatial Definition
  - Identity
  - Visual Complexity
  - Transparency
  - Mix of Uses
  - Amenity / Path Pleasantness
- ⇒ *Vitality*
  - A Sense of Vibrancy
  - "Publicness"
  - Public Participation and Input
- ⇒ *Physical Comfort*
  - Adequate shelter from wind, rain and sun
  - Abundant places to rest, people-watch, etc.
  - Air quality should be high and noise levels not excessive in pedestrian areas
- ⇒ *High-Quality Construction and Design*

⇒ *Cleanliness and Maintenance*

This definition represents the first step to formulating the PFZ Concept. Such a concept may be useful in helping to achieve many of the goals of the Tren Urbano project. These goals include strengthening the San Juan metropolitan area's existing urban centers; containing growth at the fringe of the metropolitan area; providing an alternative to traffic congestion; improving air quality; and stimulating economic development.

As already noted above, the first of the PFZC's three components involves specifying a set of urban attributes and design strategies conducive to high and sustained levels of pedestrian activity and non-motorized travel mode share. This specification includes two parts: (1) the definition of a "Pedestrian-Friendly Environment" discussed above; and (2) the "Pedestrian Friendly Design Elements" outlined in the following section of this paper.

# Pedestrian-Friendly Design Elements

## 1.0 Multiple Uses of Streets

A significant step in the direction of establishing strong pedestrian-oriented zones in the vicinity of Tren Urbano would consist of explicit recognition by policy makers that streets may have multiple uses in addition to movement of motorized vehicles. In essence, such a policy re-orientation would elevate and equalize the status of the pedestrian and transit user vis-à-vis the motorist.

In recent decades, street planning and classification has been governed almost exclusively by traffic engineering considerations. Road design has primarily reflected the need to accommodate existing or predicted traffic-demand levels at some desired rates of speed. As a result, pedestrian movement and pedestrian-oriented activities have tended to be neglected at the expense of efficient movement of vehicles. Often, for example, traffic-demand considerations call for widening roadways. Yet wider roadways may be more difficult for pedestrians to cross, or may require severe reductions in sidewalk widths. The result is that fewer pedestrians may be willing or able to use the streets in accustomed and desirable ways.

By contrast, a street classification policy based on multiple use would view efficient traffic flow as only one of several goals to be realized in designing streets. Other goals might include maximizing opportunities for walking, bicycling, transit use, recreating, socializing, retail activity, entertainment, children's play, etc. depending on the street's context within the urban environment. For instance, a street that has traditionally been associated with high levels of pedestrian activity would be classified in such a way that these roles could be preserved if the public considers this desirable. That is, pedestrian-oriented uses of the street would be balanced against traffic flow demands as a means of preserving or enhancing local "quality of life".

- Portland, Oregon has adopted such an approach in its Arterial Streets Classification Policy. For discussion of this policy, refer to Dotterrer, Steve, "Portland's Arterial Streets Classification Policy" in Anne Vernez Moudon, ed., *Public Streets for Public Use* (New York, Columbia University Press, 1991) pp. 170-180. Refer also to City of Portland, *Arterial Streets Classification Policy*, vols. 1 and 2 (City of Portland, 1977) and *Arterial Streets Classification Policy*, update (1983).

## 2.0 Access and Circulation

A fundamental characteristic of high-quality pedestrian environments is that they provide multiple, convenient, easy, pleasant and comfortable walking links to all or most destinations within and between urban districts. While any particular approach to realizing these goals of good access and circulation may be constrained by existing conditions of built form and topography, all approaches will require consideration of four design elements: (1) street pattern and street/walkway relationships; (2) path characteristics related to ease and comfort of pedestrian movement; (3) network and path legibility; and (4) inter-district connectivity.

## 2.1 Street Pattern and Street/Walkway Relationships

Potential networks may be of four general types:

- (1) Organic (unplanned, random or semi-random)
- (2) Rectilinear grid
- (3) Radial
- (4) Curvilinear

Pedestrian paths may be classified into six categories:

- (1) Sidewalks
- (2) Stand-alone paths
- (3) Outdoor, mid-block passages
- (4) Arcades
- (5) Auto space used by pedestrians (e.g. parking lots)
- (6) Pedestrian space used by autos (e.g. Woonerf-style paths)

Choice of pedestrian path/network combinations will depend on:

- (1) Distances pedestrians are willing or reasonably able to walk
  - Necessity of minimizing walking distances (for most types of trips)
  - Maximum distances may range from 1,000 feet to over one-half mile
  - Maximum distances depend on:
    - gender
    - age
    - health
    - income level
    - cultural factors
    - purpose of walking trip (commute, shopping, leisure, etc.)
    - time constraints
    - climate
    - weather
    - topography
    - quality of path
  - Maximum distances are sensitive to *perception* of walking experience
    - Person may be willing to walk longer distance, all things being equal, depending on quality of walking experience
- (2) Desirability of offering multiple route choices
  - Number of intersections as measure of route choices
- (3) Density of coverage
- (4) Permeability
  - Number of access points (entrances, gateways) to neighborhood or district
  - Number of intersections
  - Multiple breaks in activity spaces to encourage and facilitate circulation
- (5) Safety considerations
  - (See Section 3.0 below)
- (6) Security considerations
  - (See Section 4.0 below)
  - Choice of sidewalks over stand-alone paths may be particularly important
- (7) "Fit" with landscape or topography
- (8) Formality v. informality
- (9) Ratio of street space to developable land

- (10) Pre-existing path conditions or street pattern
  - Including alleys, utility easements, organic/spontaneous paths -- these should be preserved, improved, etc.
- (11) Type of development likely to occur
  - Large-scale
    - Office, institutional, hotel, retail, apartment, condominium, mixed-use
    - Market may demand superblocks
  - Mid-scale
    - Office, institutional, hotel, retail, apartment, condominium, mixed-use
    - Small blocks may be acceptable (but may see alley conversion to arcades, etc.)
  - Small-scale
    - Office, retail, apartment, condominium, single-family residential, mixed-use
    - Small blocks and alleys acceptable
- (12) Traffic volume on street segments and network
- (13) Potential for traffic calming or diversion
  - Benefits
  - Local costs
  - Costs imposed on areas receiving diverted traffic
  - Neighborhood servicing problem (garbage, emergency vehicles, etc.)
- (14) Operational necessities of transit
  - Trunk-line bus services
  - Feeder bus services
  - On-demand services
  - Carros publicos
- (15) Land ownership pattern
  - Highly centralized
  - Highly fragmented
  - Mixed
- (16) Land-use relationships
  - Degree of segregation (coarse v. fine-grained mix of uses)
  - Location of uses in relationship to transit
  - Location of residential uses in relationship to convenience retail, etc.
  - Extent of automobile orientation
  - Potential for reorientation of land-use relationships
- (17) Cost of constructing or reconstructing pedestrian facilities

Is an "ideal" path and network form definable? Areas of San Juan to be served by Tren Urbano are already extensively developed. Infill possibilities exist, but any potential pathway network would be constrained in these cases by the surrounding street network and land uses. Thus, even if an ideal pattern could be defined, it may not be achievable anywhere. The best that could be done would be to compromise the ideal pattern in order to fit it into the pre-existing urban form. In cases where infill possibilities are scarce but redevelopment of certain parcels takes place, the existing street and path pattern may be modified selectively to achieve better access and circulation.

- "New Urbanists" and others have advocated a return to grid and radial street networks with adjacent sidewalks. Some use of mid-block passages and stand-alone pathways but only when absolutely necessary. Goal is to take advantage of the path-minimization and path-choice possibilities inherent to grids. Radial elements incorporated primarily to direct visual attention and pedestrian movement toward points of importance (community centers, schools, parks, retail areas, etc.)

within or adjacent to neighborhood or development. Calthorpe's T.O.D. schemes place transit stations or stops at central and prominent points in the street network.

- Applications of Calthorpe's model have been proposed for infill sites in San Diego (Rio Vista West and elsewhere) and the Portland area (Gresham Winmar site, West Side MAX station areas, and elsewhere).

## 2.2 Ease and Comfort of Pedestrian Movement

Designers of pedestrian paths should consider not only legal requirements to provide "barrier free" accessibility, but also the comfort level of walking at a more general level (i.e. the comfort level of *both* the able-bodied and the disabled). Elements to consider include:

- (1) ADA requirements
  - Special needs of elderly or people with disabilities
  - Legal requirements to provide barrier-free accessibility
  - Benefits to everyone of providing better access to those who are least physically able
  - Cost issue
- (2) Pathway continuity
  - Along streets
  - Connections between sidewalks and other paths and building entrances
    - Reduced setbacks as means of facilitating such connections
- (3) Pathway consistency
  - Texture
    - Frictional qualities of paving materials
    - (See also Section 3.0 below)
  - Condition
  - Width
- (4) Curb cuts
- (5) Steepness of ramp structures
  - maximum allowable gradient
  - comfortable gradient
  - platform location requirements
- (6) Steepness of paths
  - Topography
  - Periodic resting points (pocket parks, benches, platforms, etc.)
  - Steps v. ramps
- (7) Objects physically within path
  - Horizontal obstructions (bushes, poles, benches, etc.)
  - Vertical obstructions (overhangs, etc.)
  - Cars parked on paths
- (8) Neighborhood-level barriers
  - Wide, busy streets
  - Fences, walls, hedges, etc.
- (9) Walkway widths
  - Legally mandated minimums
  - Width design for comfort
    - Number of persons able to walk side-by-side
  - Commercial areas
  - Residential areas
  - Special needs for wider sidewalks at certain locations (street corners, sidewalk cafes, and other high-activity or concentration spaces)

- Flared curbs, etc.
- (10) **Pedestrian/Vehicle Separation**
  - A perceptual issue
  - Also a "real" issue of safety
    - (See Section 3.0 below)
  - Means of separation include:
    - Bollards, trees, street furniture, street lamps, etc.
    - Parked Cars
    - Planting strip
    - "Fence" solutions
- (11) **Ground-level street crossings v. under or overpasses**
  - Circumvention preference

### 2.3 Network and Path Legibility

A good pedestrian environment is a legible pedestrian environment. Walkers should be able to orient themselves relatively easily either or both through recognition of physical features of the environment (street pattern, landmarks, etc.) or by recourse to directional aids (signs, maps, diagrams, etc.). This is not to argue, however, that occasional "mystery" in a walking environment is not desirable.

Legibility elements include:

- (1) **Street/path patterns**
  - formal v. informal
    - Visual corridors
- (2) **Street or path hierarchy**
- (3) **Street names**
  - Systems relying on alphabetic ordering (Ann Street, Barbara Street, Carol Street, etc.)
  - Numeric systems (First Street, Second Street, etc.)
  - Hierarchic systems (Central Avenue, Main Street, etc.)
- (4) **Landmarks**
  - Towers, gateways, plazas, conspicuous corner businesses, etc.
- (5) **Design Continuity**
  - Street or path paving
  - Street trees
  - Street lamps
  - Street furniture
  - Street Art
  - Need to balance continuity with diversity and complexity
- (6) **Neighborhood or District Character**
  - Sense of place
  - Urban-space boundaries
  - Gateways
  - Consistent land uses
    - "Shopping District", "Restaurant Row", etc.
- (7) **Sign and Light Controls**
  - Balance between legibility and chaos
- (8) **Sense of enclosure**
  - (See Section 7.0 below)
- (9) **"Active" Directional Aids**
  - Signs

- Maps
- Axonometric Diagrams
- (10) "Pedestrian-Friendly Zone" concept
  - Recognizable and standardized icon and signs
    - Use of icon on Tren Urbano maps, etc.
  - Indicates that zone has pedestrian-friendly qualities

## 2.4 Inter-District Connectivity

Issues include:

- (1) Relationships between districts and neighborhoods
  - "Fuzzy" v. sharp boundaries
    - Physical barriers
    - Subtle forms of differentiation
  - Path connectivity
- (2) Security Concerns
  - "Defensible" Spaces
    - How integrated should districts and neighborhoods be?
  - Alternatives to Exclusion
    - Behavior control through "soft" security
    - (See Section 4.0 below)

## 3.0 Pedestrian Safety

The problem of protecting pedestrians from collisions with vehicles and from other types of accidents has been studied extensively. Pedestrian accidents are of two general types: (1) those involving conflicts with motorized vehicles or bicycles; and (2) those involving tripping, slipping, etc. "Remedies" and issues include:

### 3.1 Pedestrian/Vehicle Conflicts

#### (1) Intersections

- Multiple points of conflict
  - Necessity of dealing with more than one potential conflict at a time for both drivers and pedestrians
  - Number of lanes to be crossed
  - Left turns
  - Right turns
  - Prohibition of right-on-red
    - Problems and opportunities
- Visibility issues
  - Street furniture, light poles, trees, parked cars, etc.
  - Skewed intersections
  - Number of lanes to be crossed
- Traffic Calming
  - Speed of traffic
  - Number of lanes
  - Skewed intersections
  - On- and off-ramps
  - Rough-pavement solutions
    - Cobblestones or bricks
    - Rumble strips

- Speed bumps
- Narrowed lanes
- Lane Retirement
- Flared curbs ("safe crosses")
  - Turn radius problem
  - Large vehicles
- Other design solutions (driver-perception strategies, etc.)
- Signalization
  - Length of pedestrian signal phase
  - Length of crossing
  - Icons v. written messages
  - Bells
- "Channelization" of Pedestrians
  - Advantages
  - Disadvantages
- Safe refuges / medians
  - Barrier free design
  - Minimum width
- Crosswalk marking
  - Paint
  - Paving-material differentiation
    - Traffic-calming advantages
  - Raised crosswalk
    - Problem for sight-impaired
    - Maintenance problem

## (2) Mid-Block Crossings

- Fewer potential conflict points
- Bulbouts
- Visibility
  - Parked cars
  - Street furniture, etc.
- Safe Refuges
- Signalization
  - Driver expectation problem

## (3) Parallel to Walkway

- Driveway consolidation
- Linear separation
  - Parked cars
  - Bollards
  - Street furniture
  - Street trees
  - Street lights and signs
  - Planting strips
  - Fencing solutions

## (4) Traffic Calming

- "Necked-down" entrances
- Bent Alignments
- Traffic circles
- Traffic dividers
- Narrowed lane width
- Parking lane
- Landscaping

## (5) Lighting

- Vertical v. horizontal illumination
- Pedestrian v. Automobile-oriented lighting

## (6) Alternatives to at-grade crossings

- Overpasses and underpasses
  - Crime problems
  - Perception of "no conflict" by drivers may be a problem (i.e. drivers would not expect pedestrians at street level in vicinity of over- and underpasses)
  - Ease-of-travel problems
  - High cost
  - Perception of abandonment of street level to cars

#### (7) Realignment of roadway cross section

- Add sidewalks
- Adjust sidewalk widths
- Add planting strips
- Adjust planting strip widths
- Add/ Adjust medians
- Change lane widths
- Change lane uses (parking to travel; travel to parking)

### 3.2 Other Pedestrian Hazards

#### (1) Slippery Pavement Surfaces

- Rain
- Pavement Texture
- Frictional properties of paving materials

#### (2) Uneven or Broken Pavement Surfaces

- Consistency of materials
- Regularized and consistent maintenance and repair
- See Section 18.0 below

## 4.0 Personal Security

### Lighting

**Activity** -- People on street? What types? Diverse group or similar? What are they doing?

**Design of Spaces** -- trees to hide behind? Dark corners?

**Sidewalks v. Stand-alone pathways** -- Especially relevant at night. Paths next to street have benefit of soft security from passing drivers or from people parking cars. Also, better security from people in buildings. Routes passing through empty parking lots or parks should have alternatives with more activity.

**Land Uses** -- Active at all hours? What are the uses? Diversity of uses?

**Perceived v. Real Threats to Security**

**Outdoor v. Indoor spaces**

**Escape (for both victim and criminal)**

**Concealment and Prospect**

**Transparency** -- Eyes on street; visibility of pedestrian spaces from street or other places of activity

**Police Presence** -- In cars? On foot? On bicycles? On horseback?

## **5.0 Design for Use**

[And user manipulation?]

Spaces for inanimate uses hidden? HVAC, e.g.

Ornamental landscaping. Sterility. Not for use.

At least some space in "ornamental" landscapes should be open to use.

Design spaces within view of walkways for use by people on a day-to-day basis (no transformers, HVAC equipment, etc. within sight of pedestrians).

Purely decorative landscaping treatments may be acceptable under certain circumstances, but these should be the exception rather than the norm. allow possibilities for walkers to stop and sit or linger amidst plantings, or on lawn, etc. plantings should give passers by sensory delight – sight, smell, touch.

## **6.0 Human Scale**

Horizontal v. Vertical Proportions

Size of Objects

"Softness" of surrounding elements of built environment

## **7.0 Spatial Definition**

Horizontal v. Vertical Proportions (harmony of proportion)

Building Spacing

Building Relationships

Focal Points

Sense of Enclosure (urban room)

Spatial definition facilitates concentration of pedestrians along certain routes or within certain spaces. Thus, invigorating them.

## **8.0 Identity**

Sense of Place

Identifiable / recognizable / memorable character

Unique quality

Coherence

## 9.0 Visual Complexity

[Relates to "vibrancy"]

Number of noticeable differences per unit travel time [Rapoport]

Human v. Auto Scale

Jacob's "Qualities that Engage the Eyes" -- Interesting things to see (artwork, plants, etc.) Street should not bore walkers but rather excite them.

Facade articulation

No Blank Walls

Window Recesses

Fine grain mix of uses

Landscaping

Multiple intersections -- since these tend to be focal points of activity

## 10.0 Transparency

[Relates to "vibrancy"]

Sense that something lies beyond

Sense that surrounding places and spaces are *used*

Surrounding spaces and places should not turn their backs to pedestrian spaces

Real v. perceived accessibility

Activity at Ground Level

Activity "in" windows

Open Windows

Balconies

Porches

Shutters, etc.

Links between inside and out

See-through windows

Many doors

## **11.0 A Sense of Vibrancy**

[Related to "Complexity"]

[Commensurate with primary function of space. Commercial areas may have many people, much human activity. Purely residential areas are much quieter but still have life (complexity). At least one or two people, sometimes more should be present along a street section at any one time. Other features of street can also create sense of vibrancy: curtains blowing in wind, open windows, sound of children playing, fluttering of leaves, chirping of birds.]

Motion or sense of motion

Lighting

Activity

"Good noise"

Complexity

Trees or flags, etc. fluttering in wind

Many people implies little street furniture, etc. and vice versa

Enclosure of space can make a place seem less empty by concentrating activity

## **12.0 "Publicness"**

Opportunity space for interaction with others

Limits ability of one group to take a place over and make others feel uncomfortable or unsafe (such as drivers)

Streets should be activity spaces rather than simply travel corridors or channels for auto movement

Should accommodate strolling, playing, commuting by foot, relaxing, people watching, socializing, etc. with more or less emphasis placed on each of these depending on primary use of area (residential, commercial, mixed use, etc.)

## **13.0 Public Participation and Input**

[Initial and on-going.]

[Successful public spaces may be defined as those in which people "not only have access...but also freedom to use, change, and even claim the space, as well as to transfer their rights of use and modification to other individuals." (Francis's summary of Lynch, p.29)]

[Ability to manipulate and change spaces is key to compensating for loss of private space found in suburbs.]

### Importance of democratic spaces to Tren Urbano:

- TU will be used by a variety of groups.
- Fear of neighborhoods may be that TU will bring in undesirables.
- Thus, one solution is to create neighborhoods in vicinity of TU that can tolerate (through design measures, etc.) this diversity – “soft” means of controlling spaces – Create sense of ownership of outdoor, public spaces by those who live or work in an area.

Allows space to evolve in response to the demands and needs of users

## 14.0 Mix of Uses

[Relates to both “Access” and “Vibrancy”]

Sustained Activity

Fine Grain concentration of uses [reduces walking distances]

Many opportunities for doing a variety of activities (shopping, eating, residential [to give around-the-clock presence], etc.)

Types of Uses

Density of development should be medium to high

## 15.0 Amenity / Path pleasantness

Quality of trips may not influence number of non-discretionary trips made, but may affect number of discretionary trips taken. ??? (See Gehl, 1986 as summarized in Owen, 1983 p. 118

- Street art
- Architecture
- Sign control (?)
- Utility line burial (?)
- Street furniture – But care must be taken to avoid visibility obstruction or mobility by disabled. fixed or moveable furniture. Will moveable create obstacle problems?

## 16.0 Physical Comfort

Wind

Rain

Sun

Heat -- Sensitivity dependent on culture

Clean Air -- fumes, traffic reduction (reduce volume by, for example, reducing number of through lanes or better distribution of traffic through neighborhood)

Noise -- traffic calming (see safety); limitations on truck travel, delivery times, etc.

Traffic dust -- control through traffic calming, traffic reduction, regular street cleaning, planting of trees and other vegetation to capture dust

Glare -- light output should be no more than absolutely necessary; lights should be shielded as much as possible (cutoff type fixtures)

Outdoor v. Indoor pedestrian spaces

Places of respite from heat, congestion, noise, etc. (plaza, outdoor cafe, water feature)

Awnings, arcades, trees, etc.

Places to rest, watch people, etc. -- benches, trees, tables, leaning posts, etc.

## **17.0 High Quality Construction and Design**

Buildings, pavement, street furniture, etc. should age well

## **18.0 Cleanliness and Maintenance**

Necessity of keeping spaces fairly clean, and always well maintained

But should avoid Disneyland style attention to cleanliness?

- Street cleaning
- Facilitated by high quality construction and design
- Tree trimming
- Brick replacement along sidewalks
- Weed removal
- Graffiti cleaning
- Regularized and well-funded maintenance program
- Litter clearance
- Frequent trash pick-up
- Trash receptacles present [but problems with vandalism and spillage?]
- Repaint or re-stucco when necessary
- But avoid too strict emphasis on clean spaces because loss of sense of use and vibrancy

Auto restriction

Cultural Issues

Nighttime Safety